VEEDER - ROOT
SERIAL INTERFACE MANUAL

for

TLS4 Series
TLS-450 Series
TLS-450Plus Series

Environmental & Inventory
Management System

VEEDER-ROOT

Notice

Veeder-Root makes no warranty of any kind with regard to this publication, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Veeder-Root shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this publication. The information contained in this publication may be subject to change without notice. This publication contains proprietary information which is protected by copyright. All rights reserved. No part of this publication may be photocopied, reproduced, or translated to another language without the prior written consent of Veeder-Root.

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

Table of Contents

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

1.0   INTRODUCTION

The serial RS-232 interface is used to connect the system to a controlling computer, a display terminal (CRT) or a printing terminal. A modem can be connected directly to the system to provide telephone line access.

NOTE: The software versions for these systems vary depending on when they were purchased and if software upgrades have been installed. The version in which each function code first appeared is indicated in a box next to its description in Section 7.

2.0   HARDWARE CONNECTIONS

TLS-450

The RS-232 interface is a module accessed via a 9-pin D-connector located on the bottom-left of the console.

<div align="center">

Table 2.0 – TLS-450 Console Slots and Supported Comm Device Types

</div>

Comm Device Type	Communication Type	Slot 1		Slot 2		Slot 3		Slot 4		Slot 5	
		P1	P2	P1	P2	P1	P2	P1	P2	P1	P2
RS-232	**Serial**	**X**	**X**	**X**	**X**	**-**	**X**	**X**	**-**	**-**	**-**
RS-485	**Serial**	**X**	**X**	**X**	**X**	**-**	**X**	**X**	**-**	**-**	**-**
Internal Modem	**Serial**	**X**	**X**	**X**	**X**	**-**	**X**	**-**	**-**	**-**	**-**

Notes:
- P1 is port 1, P2 is port 2.
- Slot 1 (Ports 1 and 2), Slot 2 (Ports 1 and 2), and Slot 3 (Port 2) support Comm Device Types that need Full Handshaking for serial communications.
- Slot 3 Port 1 is not available.
- Slot 4 Port 1 does not support Comm Device Types that need Full Handshaking for serial communications. Slot 4 Port 2 is only available for Ethernet devices.

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

TLS-450Plus

The RS-232 interface is a module accessed via a 9-pin D-connector located on the bottom-left of the console.

Table 3.0 – TLS-450Plus Console Slots and Supported Comm Device Types

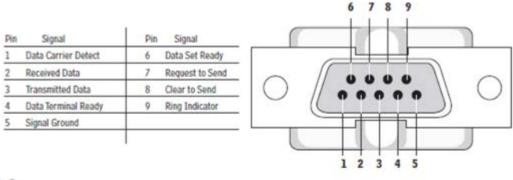| Comm Device Type	Communication Type	Slot 1		Slot 2		Slot 3	
		P1	P2	P1	P2	P1	P2
RS-232 Single Port	Serial	-	X	-	X	-	X
RS-232 Dual Port	Serial						
RS-485 Single Port	Serial	-	X	-	X	-	X
RS-485 Dual Port	Serial						
RS-232/RS-485 Dual Port	Serial						
Internal Modem	Serial	-	X	-	X	-	X
CDIM	DIM	X	-	X	-	-	-

Notes:
- Slot 1 (Ports 1 and 2), Slot 2 (Ports 1 and 2), and Slot 3 (Port 2) support Comm Device Types that need Full Handshaking for serial communications.
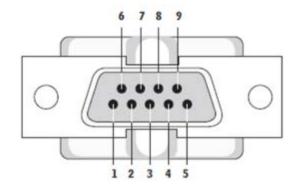- Slot 3 Port 1 is not available
-

TLS4

2 optically isolated serial ports standard, labeled SERIAL 1 supporting full handshaking, and SERIAL 2.

RS-232 signals are wired to the female D-connectors as follows:

SERIAL 1

Pin	Signal	Pin	Signal
1	Data Carrier Detect	6	Data Set Ready
2	Received Data	7	Request to Send
3	Transmitted Data	8	Clear to Send
4	Data Terminal Ready	9	Ring Indicator
5	Signal Ground		

SERIAL 2

Pin	Signal	Pin	Signal
1		6	
2	Received Data	7	
3	Transmitted Data	8	
4		9	
5	Signal Ground		

2.1 RS-232

The RS-232 D-connector is a panel mount, 9-pin female type, wired in a Data Terminal Equipment (DTE) configuration. A modem (DCE) may be connected directly to the interface using a straight-through cable. A CRT or printing terminal (DTE) may be connected to the interface by using a null cable which reverses the sense of the transmit/receive signals. The system does not require or activate any handshake signals.

2.2 EIA RS-232 INTERFACE

The EIA RS-232 interface is designed to connect to modems for transmission of data over telephone lines. It can be used for direct local attachment of terminals if the cable run is no more than 50 feet. In practice, cable runs longer than 50 feet have performed satisfactorily; however, since the RS-232 specification is designed for operation up to 50 feet, direct connect cable runs greater than 50 feet are not warranted for proper operation.

*2.3 INTERNAL MODEM (*TLS-450/TLS-450Plus*)*

The optional internal modem operates at up to 115200 Baud. The modem module contains two RJ11 jacks for phone line connections, and is accessible at the bottom left of the console.

3.0   CHARACTER FORMAT AND BAUD RATE

The system receives and sends characters via the RS-232 interface in an ASCII format that is configured via the system front panel keypads. Selections consist of: 1 start bit; 7 or 8 data bits; odd, even or no parity; and 1 or 2 stop bits. Communications rate is selectable: 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600 or 115200 baud. The system operates in a full duplex mode. Characters are not echoed when received, and transmitted characters must not be echoed back to the system. Transmit and receive can occur simultaneously, and commands can be stacked in the system buffer (up to 128 characters).

4.0   SWITCH SETTINGS

4.1 DIP SWITCH

Not available in the TLS-4xx

5.0   COMMAND MESSAGE FORMAT

All command and response messages are configured in a format which includes a surrounding envelope of control characters and a function code and data field message. The control characters are described in this section while the function codes and data field messages are described in subsequent sections.

The system responds to a command message that has the following configuration:

SOH	Security Code	Function Code	Data Field

SOH is a control-A character (ASCII 01).

The RS-232 security code is an optional six-digit code used to limit external serial access to the system for security purposes. It can be set to any unique set of characters using either the front panel switches or the external communication interface setup commands. The system will not respond to a command without the proper security code, if the DIP switch is set to enable RS-232 security.

The function code is a six character command code which the system interprets to determine the type of action to take and response to return. System function codes and response messages are defined in subsequent sections.

The data field is optional and contains information necessary to perform the selected function (such as setup information).

If the system receives a command message string containing a function code that it does not recognize, it will respond with a <SOH>9999FF1B<ETX>. The "9999" indicates that the system has not understood the command, while the "FF1B" is the appropriate checksum for the preceding <SOH>9999 string.

There is one command which does not follow the above format. The escape command is performed by sending an ESC (escape character, ASCII 27), to the system. It is a means to halt a response message at any time before its completion.

6.0   RESPONSE MESSAGE FORMAT

There are two types of response message formats: computer (or packed data format) and display format. Each format uses a different surrounding envelope of control characters.

6.1 COMPUTER FORMAT

The computer format is a stream of numbers without any formatting characters; i.e., carriage return, line feed, spaces, labels, etc. The message format is as follows:

SOH	Function Code	Data Field	&&	Checksum	ETX

The function code is identical to the received command message function code.

The data field contains the response message which is described in subsequent sections.

The "&&" is a fixed tag character which indicates that the checksum immediately follows.

The Checksum is a series of four ASCII-hexadecimal characters which provide a check on the integrity of all the characters preceding it, including the control characters. The four characters represent a 16-bit binary count which is the 2's complemented sum of the 8-bit binary representation of the message characters after the parity bit (if enabled) has been cleared. Overflows are ignored. The data integrity check can be done by converting the four checksum characters to the 16-bit binary number and adding the 8-bit binary representation of the message characters to it. The binary result should be zero.

ETX is programmable if enabled via the S53100f command. If it is disabled, the ETX is a fixed Control-C character (ASCII 03). Caution should be taken before changing the ETX character, because it affects the transmitted messages on ALL communications ports of the system, and additional host devices may be connected to other ports which expect the ETX to be a Control-C.

6.2 DISPLAY FORMAT

The display format is intended for display on a CRT or printer. It includes all the necessary formatting characters such as carriage returns, line feeds, nulls, spaces, labels, etc. The message format is as follows:

SOH	Function Code	Data Field	ETX

See subsequent sections for a description of the data field response messages.

6.3 ASCII FLOATING POINT FORMAT

6.3.1 NOTES

6.3.1.1   HHHHHHHH (H = 0-9 or A-F) indicates the 8 "nibble" ASCII-Hexadecimal representation of a 4-Byte Floating Point number. Many data parameters are transmitted in this format.

6.3.1.2   The 32-bits are arranged as follows:

Byte	1		2		3		4	
	S EEE	EEEE	E MMM	MMMM	MMMM	MMMM	MMMM	MMMM
Nibble	1	2	3	4	5	6	7	8

S is the sign bit (0 if positive, 1 if negative).

EEE EEEE E represents the 2's exponent. It is a 2's complement value biased by 127 (7F Hex). The exponent can be determined by subtracting 127 from the value of the E field and raising 2 to the resulting power.

MMM MMMM MMMM MMMM MMMM MMMM represents the 23-bit mantissa. Since the mantissa describes a value which is greater than or equal to 1.0 and less than 2.0, the 24th bit is always assumed to be equal to 1 and is not transmitted or stored. The value of the mantissa can be determined by dividing the value of the M field by 8,388,608 (2^{23}) and adding 1.0.

6.3.1.3   The complete value of the floating point number can then be determined by multiplying the exponent by the mantissa and attaching the appropriate positive or negative sign.

6.3.1.4   By convention, 00 00 00 00 represents the value 0.0 even though it actually converts to 5.8775×10^{-39}.

6.3.1.5   The eight "nibbles" are transmitted in sequence from 1 through 8 as shown in section 6.3.1.2.

6.3.2 EXAMPLES

6.3.2.1   3F800000 hex = 0011 1111 1000 0000 0000 0000 0000 0000 bin

S = 0 = + (positive)
E = 011 1111 1 bin = 7F hex = 127 dec
M = 000 0000 0000 0000 0000 0000 bin = 0 hex = 0 dec

Exponent = 2(127-127) = 1.0
Mantissa = 1.0 + (0/8,388,608) = 1.0
Decimal Value = +1.0 x 1.0 = 1.0

6.3.2.2   B8D1B717 hex = 1011 1000 1101 0001 1011 0111 0001 0111 bin

S = 1 = - (negative)
E = 011 1000 1 bin = 71 hex = 113 dec
M = 101 0001 1011 0111 0001 0111 bin = 51 B7 17 hex = 5,355,287 dec

Exponent = 2(113-127) = 0.0000610352
Mantissa = 1.0 + (5,355,287/8,388,608) = 1.63840
Decimal Value = -0.0000610352 x 1.63840 = -0.0001

6.3.2.3   C2C7FAE1 hex = 1100 0010 1100 0111 1111 1010 1110 0001 bin

S = 1 = - (negative)
E = 100 0010 1 bin = 85 hex = 133 dec
M = 100 0111 1111 1010 1110 0001 bin = 47 FA E1 hex = 4,717,281 dec

Exponent = 2(133-127) = 64
Mantissa = 1.0 + (4,717,281/8,388,608) = 1.56234
Decimal Value = -64 x 1.56234 = -99.99

6.3.2.4   461C4000 hex = 0100 0110 0001 1100 0100 0000 0000 0000 bin

S = 0 = + (positive)
E = 100 0110 0 bin = 8C hex = 140 dec
M = 001 1100 0100 0000 0000 0000 bin = 1C 40 00 hex = 1,851,392 dec

Exponent = 2(140-127) = 8,192
Mantissa = 1.0 + (1,851,392/8,388,608) = 1.22070
Decimal Value = +8,192 x 1.22070 = 10,000

7.0 FUNCTION CODES AND RESPONSE MESSAGES

All response messages are sent in a format described in previous sections. The function codes and data fields of these message formats are described in this section. The data field response messages are divided into the following major groupings:

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

Most response messages can be requested for either a single device (tank, sensor, line, etc.) or all devices. A "TT" in the function code signifies single device number 01 through 16. When "TT" is 00, it signifies all devices.

Typically, response messages include information on the active devices only. That is, those devices that are connected and working. However, the system can be forced to send data on inactive devices by using an inactive device number. In this case, if no valid data is available on a device, the message is filled out with question marks (?) in the place of numbers.

Computer format response messages do not include any formatting characters such as carriage returns, line feeds, spaces, nulls, labels, etc. Only those characters shown are actually included in the response message. For convenience, the messages are shown in segments and do not actually include any line feeds, carriage returns, etc. Also, the notes to the right and between the message lines are not included in the messages. All number values contained in the response messages retain leading zeroes.

Display format response messages include the formatting characters shown. All message lines end with a carriage return, line feed and six nulls. All response messages start and end with at least one blank line.

The system function codes and response messages are described in detail in the following sections under the major headings given above. A summary list of all function codes is given at the end of this document.

7.1 CONTROL FUNCTIONS

Function Code: **001**   Version 1
Function Type: System Reset

Command Format:
     Display: <SOH>S00100
     Computer: <SOH>s00100

Typical Response Message, Display Format:

```
<SOH>
S00100
MAR 27, 1996  4:47 PM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s00100YYMMDDHHmm&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   && - Data Termination Flag
    3.   CCCC - Message Checksum

```
    Function Code: 003                                    Version 2
    Function Type: Remote Alarm Reset

Command Format:
     Display: <SOH>S00300
    Computer: <SOH>s00300
```

Typical Response Message, Display Format:

```
<SOH>
S00300
MAR 27, 1996  8:04 PM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s00300YYMMDDHHmm&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              && - Data Termination Flag
    3.            CCCC - Message Checksum
```

Function Code: 010   Version 1
Function Type: Cancel Autodial Computer Mode Session

Command Format:
    Display: <SOH>S01000
    Computer: <SOH>s01000

Typical Response Message, Display Format:

```
<SOH>
S01000
MAR 27, 1996  8:04 PM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s01000YYMMDDHHmm&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   && – Data Termination Flag
    3.   CCCC – Message Checksum

```
          Function Code: 052                                    Version 1
          Function Type: Start In-Tank Leak Detect Test

       Command Format:
           Display: <SOH>S052TT      (Use 203 command for inquiry)
           Computer: <SOH>s052TT
```

Typical Response Message, Display Format:

```
   <SOH>
   S052TT
   MAR 27, 1996  6:28 PM

   TANK   LABEL
     1    UNLEADED REGULAR        LEAK TEST START
                                  TEST BY EXTERN INTERFACE
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>s052TTYYMMDDHHmmTTk&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.               k - Status Flag
                          0=OFF
                          1=ON
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

      Function Code: 053   Version 1
      Function Type: Stop In-Tank Leak Detect Test

    Command Format:
        Display: <SOH>S053TT
       Computer: <SOH>s053TT

Typical Response Message, Display Format:

```
<SOH>
S053TT
MAR 29, 1996  6:27 PM

TANK   LABEL
  1    REGULAR UNLEADED       LEAK TEST STOP
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s053TTYYMMDDHHmmTTk&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   k - Status Flag
                         0=OFF
                         1=ON
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 054   Version 1
Function Type: Delete CSLD Rate Table

Command Format:
      Display: <SOH>S054TT149
   Computer: <SOH>s054TT149

Notes:
1.   TT - Tank Number (command valid for single tank only)
2.   149 - This verification code must be sent to confirm the command

Typical Response Message, Display Format:

```
<SOH>
S054TT
MAR 29, 1996  6:27 PM

T 1:REGULAR UNLEADED   CSLD RECORDS DELETED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s054TTYYMMDDHHmm&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

Function Code: 081   Version 1
Function Type: Start Pressure Line Leak Test

Command Format:
  Display: <SOH>S081QQ149
  Computer: <SOH>s081QQ149

Notes:
  1.   149 - This verification code must be sent to confirm the command

Typical Response Message, Display Format:

```
<SOH>
S081QQ
MAR 29, 1996  6:27 PM

Q 1:REGULAR UNLEADED
STATUS: TEST COMPLETE
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s081QQYYMMDDHHmmQQtt&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
  3.   tt - Test status
                  00=test complete
                  01=dispensing
                  02=testing at 3.00 gal/hr
                  03=testing at 0.10 gal/hr
                  04=test aborted
                  05=running pump (manual test starting)
                  06=line lockout
                  07=disable alarm
                  08=test pending
                  09=testing delay
                  0A=pressure check
                  0B=testing at 0.20 gal/hr
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 082   Version 1
Function Type: Stop Pressure Line Leak Test

Command Format:
    Display: <SOH>S082QQ149
   Computer: <SOH>s082QQ149

Notes:
   1.   149 - This verification code must be sent to confirm the command

Typical Response Message, Display Format:

```
<SOH>
S082QQ
MAR 29, 1996  6:27 PM

Q 1:REGULAR UNLEADED
STATUS: TEST COMPLETE
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s082QQYYMMDDHHmmQQtt&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
   3.   tt - Test status
                 00=test complete
                 01=dispensing
                 02=testing at 3.00 gal/hr
                 03=testing at 0.10 gal/hr
                 04=test aborted
                 05=running pump (manual test starting)
                 06=line lockout
                 07=disable alarm
                 08=test pending
                 09=testing delay
                 10=pressure check
                 11=testing at 0.20 gal/hr
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

Function Code: 087   Version 1
Function Type: Start Pressure Line Leak Test by Type

Command Format:
Display: <SOH>S087QQ149rr
Computer: <SOH>s087QQ149rr

Notes:
1.   149 - This verification code must be sent to confirm the command

Typical Response Message, Display Format:

```
<SOH>
S087QQ
MAR 29, 1999  6:27 PM

Q 1:REGULAR UNLEADED
0.2 GPH SCHEDULED
STATUS: TEST COMPLETE
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s087QQYYMMDDHHmmQQrrtt&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   rr - Test Type
                01=0.10 GPH
                02=0.20 GPH
                03=3.00 GPH
4.   tt - Test status
                00=test complete
                01=dispensing
                02=testing at 3.00 gal/hr
                03=testing at 0.10 gal/hr
                04=test aborted
                05=running pump (manual test starting)
                06=line lockout
                07=disable alarm
                08=test pending
                09=testing delay
                0A=pressure check
                0B=testing at 0.20 gal/hr
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: 089   Version 1
Function Type: Pressure Line Leak Pressure Offset Reset

Command Format:
    Display: <SOH>S089QQ149
    Computer: <SOH>s089QQ149

Notes:
1.   149 - This verification code must be sent to confirm the command

Typical Response Message, Display Format:

    <SOH>
    S089QQ
    JAN 1, 2000 6:27 PM

    Q 1:REGULAR UNLEADED
    PRESSURE OFFSET RESET
    <ETX>

Typical Response Message, Computer Format:

    <SOH>s089QQYYMMDDHHmm&&CCCC<ETX>

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak Line number (Decimal, 00=All)
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

Function Code: 091   Version 1
Function Type: Close Current Shift

Command Format:
    Display: <SOH>S09100
    Computer: <SOH>s09100

Typical Response Message, Display Format:

```
<SOH>
S09100
MAR 27, 1996  8:04 PM

CLOSE CURRENT SHIFT: YES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s09100YYMMDDHHmmff&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   ff – Close Current Shift Flag
                     01=If close accepted
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

Function Code: 092   Version 1
Function Type: Start Pressure Line Leak Profile Line Test

Command Format:
  Display: <SOH>S092QQ149
  Computer: <SOH>s092QQ149

Notes:
  1.   149 - This verification code must be sent to confirm the comand

Typical Response Message, Display Format:

```
<SOH>
S092QQ
NOV 14, 2001  10:15 PM

START PRESSURE LINE LEAK PROFILE LINE TEST

Q 1:UNLEADED REGULAR
STATUS: RUNNING PUMP
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s092QQYYMMDDHHmmQQtt
                QQtt&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
  3.   tt - Test Status
                  00 = TEST COMPLETE   (DONE: BULK MOD   10000)
                  01 = TURN PUMP ON   (RUNNING PUMP)
                  02 = PUMP ON WAIT   (RUNNING PUMP)
                  03 = PRESSURE 1 WAIT (PUMP OFF)
                  04 = PRESSURE 2 WAIT (MEASURING Pxx 19.123 PSI)
                  05 = CALC WAIT TIME (MEASURING Pxx 19.123 PSI)
                  06 = PRESSURE N WAIT (MEASURING Pxx 19.123 PSI)
                  07 = EVALUATE PERIOD (MEASURING Pxx 19.123 PSI)
                  08 = TEST ABORT   (ABORTED)
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

```
        Function Code: 093                                      Version 1
        Function Type: Stop Pressure Line Leak Profile Line Test

      Command Format:
          Display: <SOH>S093QQ149
         Computer: <SOH>s093QQ149
```

Notes:
   1.   149 – This verification code must be sent to confirm the comand

Typical Response Message, Display Format:

```
   <SOH>
   S093QQ
   NOV 14, 2001  10:15 PM

   STOP PRESSURE LINE LEAK PROFILE LINE TEST

   Q 1:UNLEADED REGULAR
   STATUS: ABORTED
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>s093QQYYMMDDHHmmQQtt
                  QQtt&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   QQ – Pressure Line Leak Sensor Number (Decimal, 00 = all)
   3.   tt – Test Status
                    00 = TEST COMPLETE   (DONE: BULK MOD   10000)
                    01 = TURN PUMP ON   (RUNNING PUMP)
                    02 = PUMP ON WAIT   (RUNNING PUMP)
                    03 = PRESSURE 1 WAIT (PUMP OFF)
                    04 = PRESSURE 2 WAIT (MEASURING Pxx 19.123 PSI)
                    05 = CALC WAIT TIME (MEASURING Pxx 19.123 PSI)
                    06 = PRESSURE N WAIT (MEASURING Pxx 19.123 PSI)
                    07 = EVALUATE PERIOD (MEASURING Pxx 19.123 PSI)
                    08 = TEST ABORT   (ABORTED)
   4.   && – Data Termination Flag
   5.   CCCC – Message Checksum
```

**Function Code: 094**                                                    Version 1
**Function Type:** Recalculate Pressure Line Leak Profile Bulk Modulus

**Command Format:**
**Display:** <SOH>S094QQ149
**Computer:** <SOH>s094QQ149

**Notes:**
   1.                149 - This verification code must be sent to confirm the comand

**Typical Response Message, Display Format:**

```
<SOH>
S094QQ
NOV 14, 2001  10:15 PM

RECALCULATE PRESSURE LINE LEAK PROFILE LINE TEST BULK MODULUS

Q 1:UNLEADED REGULAR
STATUS: DONE: BULK MOD     10000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s094QQYYMMDDHHmmQQtt
                QQtt&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
   3.   tt - Test Status
                   00 = TEST COMPLETE   (DONE: BULK MOD   10000)
                   01 = TURN PUMP ON   (RUNNING PUMP)
                   02 = PUMP ON WAIT   (RUNNING PUMP)
                   03 = PRESSURE 1 WAIT (PUMP OFF)
                   04 = PRESSURE 2 WAIT (MEASURING Pxx 19.123 PSI)
                   05 = CALC WAIT TIME (MEASURING Pxx 19.123 PSI)
                   06 = PRESSURE N WAIT (MEASURING Pxx 19.123 PSI)
                   07 = EVALUATE PERIOD (MEASURING Pxx 19.123 PSI)
                   08 = TEST ABORT   (ABORTED)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

```
     Function Code: 09C                                           Version 6
     Function Type: Manually Start/Stop Timed Sudden Loss Detection

     Command Format:
          Display: <SOH>S09C00f                              <SOH>I09C00
         Computer: <SOH>s09C00f                              <SOH>i09C00
```

Notes:
```
     1.              f - Manual Start/Stop flag
                        0=Stop Sudden Loss Detection
                        1=Start Sudden Loss Detection
```

Typical Response Message, Display Format:

```
<SOH>
S09C00
NOV 14, 2014  10:15 PM

MANUAL SCHEDULED TIMED SUDDEN LOSS DETECTION

STARTED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s09C00YYMMDDHHmmF&&CCCC<ETX>
```

Notes:
```
     1.       YYMMDDHHmm - Current Date and Time
     2.          f - Manual Start/Stop flag
                    0=Stopped
                    1=Started
                    2=Not manually scheduled
     3.            && - Data Termination Flag
     4.          CCCC - Message Checksum
```

Function Code: 09D   Version 6
Function Type: Restart Timed Sudden Loss Detection

Command Format:
     Display: <SOH>S09DTT149
     Computer: <SOH>s09DTT149

Notes:
1.   149 - This verification code must be sent to confirm the command

Typical Response Message, Display Format:

```
<SOH>
S09D00
NOV 14, 2014  10:15 PM

TANK PRODUCT LABEL          SUDDEN LOSS OPERATION
  1  UNLEADED REGULAR        RESTARTED
  2  UNLEADED REGULAR        NOT RESTARTED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s09D00YYMMDDHHmmNNTTs&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   NN - Number of tanks to follow (Decimal)
3.   TT - Tank Number (Decimal, 00=All)
4.   s - Status
                    0=Not Restarted
                    1=Restarted
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

7.2 OPERATIONAL REPORTS

7.2.1 SYSTEM REPORTS

```
    Function Code: 101                                        Version 1
    Function Type: System Status Report

       Command Format:
            Display: <SOH>I10100
           Computer: <SOH>i10100
```

Notes:
    1.   This command will report all active OR unacknowledged alarms and warnings up to the limit of 25 alarms in display format, and 150 alarms in computer format

Typical Response Message, Display Format:

```
   <SOH>
   I10100
   JUL 29, 1997  9:02 AM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   SYSTEM STATUS REPORT

     ALL FUNCTIONS NORMAL
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i10100YYMMDDHHmmAANNTT...
                  AANNTT&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time

    2.   AA - Alarm/Warning Category:

```
                00=All Functions Normal
                01=System Alarm
                02=Tank Alarm
                03=Liquid Sensor Alarm
                04=Vapor Sensor Alarm
                05=Input Alarm
                06=Volumetric Line Leak Alarm     (OBSOLETE in TLS-450)
                07=Groundwater Sensor Alarm
                08=Type A Sensor Alarm
                11=Relay Alarm
                12=Type B Sensor Alarm
                13=Universal Sensor Alarm         (OBSOLETE in TLS-450)
                14=Auto-Dial Fax Alarm            (OBSOLETE in TLS-450)
                18=Mechanical Dispenser Interface Alarm   (Version 2)
                19=Electronic Dispenser Interface Alarm   (Version 2)
                20=Product Alarm                          (Version 2)
                21=Pressure Line Leak Alarm
                26=Wireless PLLD Alarm            (OBSOLETE in TLS-450)
                28=Smart Sensor Alarm                     (future)
                29=Modbus Alarm                           (future)
                30=ISD Site Alarm                         (future)
                31=ISD Hose Alarm                         (future)
                32=ISD Vapor Flow Meter Alarm             (future)
```

Function Code 101 Notes: (Continued)
```
                              33=PMC Alarm                             (future)
                              34=Pump Relay Monitor Alarm
                              58=ISD Ullage Pressure sensor Alarm      (future)
                              59=MAG Sensor Alarm
                              60=Vacuum Sensor Alarm                   (future)
                              63=Line Pressure Sensor Alarm
                              64=Printer Alarm
                              65=Pump Alarm
                              66=Line Alarms
                              69=Legacy Resistive Sensor
                              70=Legacy Current Sensor
                              71=Unknown Device
                              72=Undiscovered Device
                              73=Communication Alarm
                              74=Contact Alarm
                              75=AutoEvent Alarm
                              76=LVDIM
                              77=CDIM
                              78=MDIM
                              79=EDIM
                              80=USM Card
                              81=IOM Card
                              82=MUX Card
                              83=Open Circuit
                              84=Blend
                              85=Meter Temp Sensor
                              86=USIOM Card
                              99=Externally Detected Alarm (not reported by Console)

    3.              NN - Alarm Type Number:

                    - If AA is 01 and NN is:
                              01=Printer out of Paper                  (Obsolete)
                              02=Printer Error                         (Obsolete)
                              03=EEPROM Configuration Error            (Obsolete)
                              04=Battery Off                           (Obsolete)
                              05=Too Many Tanks                        (Obsolete)
                              06=System Security Warning               (Obsolete)
                              07=ROM Revision Warning                  (Obsolete)
                              08=Remote Display Communications Error   (Obsolete)
                              09=Autodial Error                        (Obsolete)
                              10=Software Module Warning               (Obsolete)
                              11=Tank Test Shutdown Warning            (Obsolete)
                              12=Protective Cover Alarm                (Obsolete)
                              13=BIR Shift Close Pending              (Version 2)
                              14=BIR Daily Close Pending              (Version 2)
                              15=PC(H8) Revision Warning               (Obsolete)
                              16=System Self Test Error                (Obsolete)
                              17=System Clock Incorrect Warning        (Obsolete)
                              18=System Device Poll Timeout            (Obsolete)
                              19=Maintenance Tracker NVMem Removed     (Obsolete)
                              20=Maintenance Tracker Communication Module Removed
                                                                       (Obsolete)
                              21=Database Error
                              22=File System Error
                              23=BIR Status Warning                   (Version 2)
                              24=VR Bus Power Outage Warning
                              25=Software Upgrade Failure Alarm
                              26=iButton Fault Warning
                              27=iButton Fault Alarm
                              28=Version Upgrade Available
                              29=Expansion Box Unsupported

                    - If AA is 02 and NN is:
                              01=Tank Setup Data Warning
                              02=Tank Leak Alarm
                              03=Tank High Water Alarm
                              04=Tank Overfill Alarm
                              05=Tank Low Product Alarm
```

Function Code 101 Notes: (Continued)
```
                    06=Tank Sudden Loss Alarm
                    07=Tank High Product Alarm
                    08=Tank Invalid Fuel Level Alarm
                    09=Tank Probe Out Alarm
                    10=Tank High Water Warning
                    11=Tank Delivery Needed Warning
                    12=Tank Maximum Product Alarm
                    13=Tank Gross Leak Test Fail Alarm
                    14=Tank Periodic Leak Test Fail Alarm
                    15=Tank Annual Leak Test Fail Alarm
                    16=Tank Periodic Test Needed Warning
                    17=Tank Annual Test Needed Warning
                    18=Tank Periodic Test Needed Alarm
                    19=Tank Annual Test Needed Alarm
                    20=Tank Leak Test Active
                    21=Tank No CSLD Idle Time Warning
                    22=Tank Siphon Break Active Warning
                    23=Tank CSLD Rate Increase Warning
                    24=Tank AccuChart Calibration Warning    (Version 2)
                    25=Tank HRM Reconciliation Warning         (future)
                    26=Tank HRM Reconciliation Alarm           (future)
                    27=Tank Cold Temperature Warning
                    28=Tank Missing Delivery Ticket Warning  (Version 2)
                    29=Tank/Line Gross Leak Alarm
                    30=Delivery Density Warning                (future)
                    31=Density Warning                       (Version 3)
                    32=Fuel Quality Alarm                     (Version 3)
                    33=Density Offset Warning                 (Version 3)

            - If AA is 03 and NN is:
                    02=Liquid Sensor Setup Data Warning
                    03=Liquid Sensor Fuel Alarm
                    04=Liquid Sensor Out Alarm
                    05=Liquid Sensor Short Alarm
                    06=Liquid Sensor Water Alarm
                    07=Liquid Sensor Water Out Alarm
                    08=Liquid Sensor High Liquid Alarm
                    09=Liquid Sensor Low Liquid Alarm
                    10=Liquid Sensor Liquid Warning

            - If AA is 04 and NN is:
                    02=Vapor Sensor Setup Data Warning
                    03=Vapor Sensor Fuel Alarm
                    04=Vapor Sensor Out Alarm
                    05=Vapor Sensor Short Alarm
                    06=Vapor Sensor Water Alarm

            - If AA is 05 and NN is:
                    01=Input Setup Data Warning
                    02=Input Normal
                    03=Input Alarm
                    04=Generator Off
                    05=Generator On
                    06=Input Out Alarm

            - If AA is 06 and NN is:             (OBSOLETE in TLS-450)
                    01=VLLD Setup Data Warning
                    02=VLLD Self Test Alarm
                    03=VLLD Shutdown Alarm
                    04=VLLD Leak Test Fail Alarm
                    05=VLLD Selftest Invalid Warning
                    06=VLLD Continuous Handle On Warning
                    07=VLLD Gross Line Test Fail Alarm
                    08=VLLD Gross Line Selftest Fail Alarm
                    09=VLLD Gross Pump Test Fail Alarm
                    10=VLLD Gross Pump Selftest Fail Alarm
                    11=VLLD Periodic Test Needed Warning
                    12=VLLD Annual Test Needed Warning
                    13=VLLD Periodic Test Needed Alarm
```

Function Code 101 Notes: (Continued)
```
                    14=VLLD Annual Test Needed Alarm
                    15=VLLD Periodic Line Test Fail Alarm
                    16=VLLD Periodic Line Selftest Fail Alarm
                    17=VLLD Periodic Pump Test Fail Alarm
                    18=VLLD Periodic Pump Selftest Fail Alarm
                    19=VLLD Annual Line Test Fail Alarm
                    20=VLLD Annual Line Selftest Fail Alarm
                    21=VLLD Annual Pump Test Fail Alarm
                    22=VLLD Annual Pump Selftest Fail Alarm
                    23=VLLD Pressure Warning
                    24=VLLD Pressure Alarm
                    25=VLLD Gross Test Fault Alarm
                    26=VLLD Periodic Test Fault Alarm
                    27=VLLD Annual Test Fault Alarm
                    28=VLLD Fuel Out Alarm

            - If AA is 07 and NN is:
                    02=Groundwater Sensor Setup Data Warning
                    03=Groundwater Sensor Fuel Alarm
                    04=Groundwater Sensor Out Alarm
                    05=Groundwater Sensor Short Alarm
                    07=Groundwater Sensor Water Out Alarm

            - If AA is 08 and NN is:
                    02=Type A Sensor Setup Data Warning
                    03=Type A Sensor Fuel Alarm
                    04=Type A Sensor Out Alarm
                    05=Type A Sensor Short Alarm
                    06=Type A Sensor Water Alarm

            - If AA is 11 and NN is:
                    01=Relay Setup Data Warning
                    02=Relay Out Alarm

            - If AA is 12 and NN is:
                    02=Type B Sensor Setup Data Warning
                    03=Type B Sensor Fuel Alarm
                    04=Type B Sensor Out Alarm
                    05=Type B Sensor Short Alarm
                    08=Type B Sensor High Liquid Alarm
                    10=Type B Sensor Liquid Warning

            - If AA is 14 and NN is:(Obsolete, replaced with AA=74)
                    Note: Auto-Dial Fax Alarm is obsolete. This alarm
                    category is replaced with CONTACT Alarm [AA=74]
                    01=Autodial Setup Data Warning            (Obsolete)
                    02=Autodial Failed Alarm                  (Obsolete)
                    03=Autodial Service Report Warning        (Obsolete)
                    04=Autodial Alarm Clear Warning           (Obsolete)
                    05=Autodial Delivery Report Warning       (Obsolete)

            - If AA is 18, 19 and NN is:                   (Version 2)
                    01=DIM Setup Data Warning
                    02=DIM Disabled Alarm
                    03=DIM Communication Failure Alarm
                    04=DIM Transaction Alarm
                    05=DIM Firmware Alarm

            - If AA is 20 and NN is:                       (Version 2)
                    01=BIR Setup Data Warning
                    02=BIR Threshold Alarm
                    03=BIR Close Shift Warning              (Obsolete)
                    04=BIR Close Daily Warning              (Obsolete)

            - If AA is 21 and NN is:
                    01=PLLD Setup Data Warning
                    02=PLLD Gross Test Fail Alarm
                    03=PLLD Annual Test Fail Alarm
                    04=PLLD Periodic Test Needed Warning
```

Function Code 101 Notes: (Continued)

```
                    05=PLLD Periodic Test Needed Alarm
                    06=PLLD Sensor Open Alarm
                    07=PLLD High Pressure Alarm                    (Obsolete)
                    08=PLLD Shutdown Alarm
                    09=PLLD High Pressure Warning                  (Obsolete)
                    10=PLLD Continuous Handle On Warning           (Obsolete)
                    11=PLLD Periodic Test Fail Alarm
                    12=PLLD Annual Test Needed Warning
                    13=PLLD Annual Test Needed Alarm
                    14=PLLD Low Pressure Alarm
                    15=PLLD Sensor Short Alarm                     (Obsolete)
                    16=PLLD Continuous Handle On Alarm
                    17=PLLD Fuel Out Alarm
                    18=PLLD Line Equipment Alarm
                    19=Gross Test Needed Alarm                     (Version 3)

        - If AA is 26 and NN is:               (OBSOLETE in TLS-450)
                    01=WPLLD Setup Data Warning
                    02=WPLLD Gross Test Fail Alarm
                    03=WPLLD Periodic Test Fail Alarm
                    04=WPLLD Periodic Test Needed Warning
                    05=WPLLD Periodic Test Needed Alarm
                    06=WPLLD Sensor Open Alarm
                    07=WPLLD Communications Alarm
                    08=WPLLD Shutdown Alarm
                    09=WPLLD Continuous Handle On Warning          (Obsolete)
                    10=WPLLD Annual Test Fail Alarm
                    11=WPLLD Annual Test Needed Warning
                    12=WPLLD Annual Test Needed Alarm
                    13=WPLLD High Pressure Warning                 (Obsolete)
                    14=WPLLD High Pressure Alarm                   (Obsolete)
                    15=WPLLD Sensor Short Alarm                    (Obsolete)
                    16=WPLLD Continuous Handle On Alarm
                    17=WPLLD Fuel Out Alarm
                    18=WPLLD Line Equipment Alarm

        - If AA is 28 and NN is:                            (future)
                    01=Smart Sensor Setup Data Warning
                    02=Smart Sensor Communication Alarm
                    03=Smart Sensor Fault Alarm
                    04=Smart Sensor Fuel Warning
                    05=Smart Sensor Fuel Alarm
                    06=Smart Sensor Water Warning
                    07=Smart Sensor Water Alarm
                    08=Smart Sensor High Liquid Warning
                    09=Smart Sensor High Liquid Alarm
                    10=Smart Sensor Low Liquid Warning
                    11=Smart Sensor Low Liquid Alarm
                    12=Smart Sensor Temperature Warning
                    13=Smart Sensor Relay Active
                    14=Smart Sensor Install Alarm
                    15=Smart Sensor Sensor Fault Warning
                    16=Smart Sensor Vacuum Warning
                    17=Smart Sensor No Vacuum Warning

        - If AA is 29 and NN is:                            (future)
                    01=Improper Setup alarm
                    02=Communication Loss alarm

        - If AA is 30 and NN is:                            (future)
                    01=Stage 1 Transfer Monitoring Failure warning
                    02=Containment Monitoring Gross Failure warning
                    03=Containment Monitoring Gross Failure alarm
                    04=Containment Monitoring Degradation Failure warning
                    05=Containment Monitoring Degradation Failure alarm
                    06=Containment Monitoring CVLD Failure warning
                    07=Containment Monitoring CVLD Failure alarm
                    08=Vapor Processor Over Pressure Failure warning
                    09=Vapor Processor Over Pressure Failure alarm
```

Function Code 101 Notes: (Continued)

    10=Vapor Processor Status Test warning
    11=Vapor Processor Status Test alarm
    12=Missing Relay Setup alarm
    13=Missing Hose Setup alarm
    14=Missing Tank Setup alarm
    15=Missing Vapor Flow Meter alarm
    16=Missing Vapor Pressure Sensor alarm
    17=Missing Vapor Pressure Input alarm
    18=Setup Fail warning
    19=Setup Fail alarm
    20=Sensor Out warning
    21=Sensor Out alarm
    22=PC-ISD Offline

- If AA is 31 and NN is: (future)
    01=Collection Monitoring Gross Failure warning
    02=Collection Monitoring Gross Failure alarm
    03=Collection Monitoring Degradation Failure warning
    04=Collection Monitoring Degradation Failure alarm
    05=Flow Performance Hose Blockage Failure warning
    06=Flow Performance Hose Blockage Failure alarm
    07=Vapor Flow Meter Setup alarm

- If AA is 32 and NN is: (future)
    01=Locked rotor alarm
    02=VFM Setup Data Warning
    03=VFM Device Out Alam

- If AA is 33 and NN is: (future)
    01=Vapor Processor Run Time Fault warning
    02=Processor Monitoring Effluent Emissions Failure
    warning
    03=Processor Monitoring Effluent Emissions Failure alarm
    04=Processor Monitoring Over Pressure Failure warning
    05=Processor Monitoring Over Pressure Failure alarm
    06=Processor Monitoring Duty Cycle Failure warning
    07=Processor Monitoring Duty Cycle Failure alarm
    08=PMC (stand alone mode only) Setup warning
    09=PMC Out Alarm

- If AA is 34 and NN is: (future)
    01=Setup Data Warning
    02=Pump Relay Alarm

- If AA is 59 and NN is:
    02=MAG Sensor Setup Data Warning
    03=MAG Sensor Communication Alarm
    04=MAG Sensor Fault Alarm
    05=MAG Sensor Fuel Warning
    06=MAG Sensor Fuel Alarm
    07=MAG Sensor Water Warning
    08=MAG Sensor Water Alarm
    09=MAG Sensor High Liquid Warning
    10=MAG Sensor High Liquid Alarm
    11=MAG Sensor Low Liquid Warning
    12=MAG Sensor Low Liquid Alarm
    13=MAG Sensor Temperature Warning
    14=MAG Sensor Relay Active
    15=MAG Sensor Install Alarm

- If AA is 63 and NN is:
    01=LPR Sensor Setup Data Warning
    02=LPR Sensor Communication Alarm

- If AA is 64 and NN is:
    01=Printer out of Paper
    02=Printer Error

Function Code 101 Notes: (Continued)
```
                    -  If AA is 65 and NN is:
                       01=Pump Setup Data Warning
                       02=Pump Out Alarm
                       02=Stuck Relay or Continuous Pump

                    -  If AA is 66 and NN is:
                       01=Line Setup Data Warning
                       02=Line Out Alarm

                    -  If AA is 73 and NN is:
                       01=Communication Setup Data Warning
                       02=Communication Setup Data Alarm              (future)
                       03=Communication Setup Data Warning

                    -  If AA is 74 and NN is:
                       01=Autodial SetupDataWarning
                       02=Autodial Failed Alarm
                       03=Autodial Service Report Warning             (future)
                       04=Autodial Alarm Clear Warning             (Obsolete)
                       05=Autodial Delivery Report Warning         (Obsolete)
                       06=Autodial No Dialtone Alarm                  (future)
                       07=Autodial Fax Failed Alarm
                       08=Email Failed                                (future)
                       09=SMS Failed

                    -  If AA is 75 and NN is:
                       01=Auto Event Setup Data Warning

                    -  If AA is 99 and NN is:
                       01=Externally Dectected Communication Alarm
                       02=Communications - Data Reception Timeout
                       03=Communications - Failed Checksum
                       04=Communications - Parity Error
                       05=Modem - Line Busy
                       06=Modem - No Answer
                       07=Modem - No Carrier
                       08=Modem - No Dial Tone
                       09=Modem - Modem Error
                       10=Modem - Modem Not Responding
                       11=Modem - Port Not Available
                       12=Polling - Could Not Update Queue
                       13=Polling - Invalid Data Type Requested
4.            TT - Tank/Sensor Number
5.            && - Data Termination Flag
6.         CCCC - Message Checksum
```

Function Code: 110   Version 1
Function Type: Combined Alarm History Report

Command Format:
Display: <SOH>I11000
Computer: <SOH>i11000

Notes:
1.   This command will report history of all priority & non-
priority alarms up to the limit of 50 alarms in both display
and computer formats.

Typical Response Message, Display Format:

```
<SOH>
I11100
JUL 29, 1997  9:02 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

COMBINED ALARM HISTORY
ID  CATEGORY   DESCRIPTION         ALARM TYPE          STATE    DATE      TIME
W 3 OTHER      SPECIAL             WPLLD SHUTDOWN ALM  CLEAR    1-01-96   8:07AM
    SYSTEM                         PAPER OUT           CLEAR    12-20-95 12:01PM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i11000YYMMDDHHmmAAccNNTTSSYYMMDDHHmm...
               AAccNNTTSSYYMMDDHHmm&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   AA - Alarm/Warning Category:
                      See explanation for "AA" in Function i10100
3.   cc - Sensor Category
                      00=Other
                      01=Annular
                      02=Dispenser Pan
                      03=Monitoring Well
                      04=STP Sump
                      05=Containment Sump
4.   NN - Alarm Type Number:
                      See explanation for "NN" in Function i10100
5.   TT - Tank/Sensor Number
6.   SS - Alarm State
                      01=Alarm cleared
                      02=Alarm occurred
7.   YYMMDDHHmm - Date/Time Alarm state occurred
8.   && - Data Termination Flag
9.   CCCC - Message Checksum

```
        Function Code: 111                                    Version 1
        Function Type: Priority Alarm History Report

        Command Format:
             Display: <SOH>I11100
            Computer: <SOH>i11100
```

Notes:
    1.   This command will report history of all priority alarms and warnings up to the limit of 50 alarms in both display & computer formats.

Typical Response Message, Display Format:

```
<SOH>
I11100
JUL 29, 1997  9:02 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRIORITY ALARM HISTORY
ID  CATEGORY   DESCRIPTION         ALARM TYPE          STATE   DATE     TIME
W 3 OTHER      SPECIAL             WPLLD SHUTDOWN ALM   CLEAR   1-01-96  8:07AM
W 3 OTHER      SPECIAL             WPLLD SHUTDOWN ALM   ALARM   1-01-96  8:06AM
       SYSTEM                      BATTERY IS OFF       CLEAR   1-01-96  8:00AM
       SYSTEM                      BATTERY IS OFF       ALARM   1-01-96  8:00AM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i11100YYMMDDHHmmAAccNNTTSSYYMMDDHHmm...
               AAccNNTTSSYYMMDDHHmm&&CCCC<ETX>
```

Notes:
```
    1.    YYMMDDHHmm - Current Date and Time
    2.            AA - Alarm/Warning Category:
                      See explanation for "AA" in Function i10100
    3.            cc - Sensor Category
                      00=Other
                      01=Annular
                      02=Dispenser Pan
                      03=Monitoring Well
                      04=STP Sump
                      05=Containment Sump
    4.            NN - Alarm Type Number:
                      See explanation for "NN" in Function i10100
    5.            TT - Tank/Sensor Number
    6.            SS - Alarm State
                      01=Alarm cleared
                      02=Alarm occurred
    7.    YYMMDDHHmm - Date/Time Alarm state occurred
    8.            && - Data Termination Flag
    9.          CCCC - Message Checksum
```

Function Code: 112   Version 1
Function Type: Non-Priority Alarm History Report

Command Format:
  Display: <SOH>I11200
  Computer: <SOH>i11200

Notes:
   1.   This command will report history of all non-priority alarms
                     and warnings up to the limit of 50 alarms in both display &
                     computer formats.

Typical Response Message, Display Format:

```
<SOH>
I11200
JAN 22, 1996  3:05 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

NON-PRIORITY ALARM HISTORY
ID  CATEGORY   DESCRIPTION        ALARM TYPE           STATE    DATE     TIME
    SYSTEM                        PAPER OUT            CLEAR   12-20-95 12:01PM
    SYSTEM                        PAPER OUT            ALARM   12-20-95 12:00PM
T 2 TANK       SPECIAL            INVALID FUEL LEVEL   CLEAR   12-20-95 11:59AM
T 2 TANK       SPECIAL            INVALID FUEL LEVEL   ALARM   12-20-95 11:59AM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i11200YYMMDDHHmmAAccNNTTSSYYMMDDHHmm...
                AAccNNTTSSYYMMDDHHmm&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   AA - Alarm/Warning Category:
                       See explanation for "AA" in Function i10100
   3.   cc - Sensor Category
                       00=Other
                       01=Annular
                       02=Dispenser Pan
                       03=Monitoring Well
                       04=STP Sump
                       05=Containment Sump
   4.   NN - Alarm Type Number:
                       See explanation for "NN" in Function i10100
   5.   TT - Tank/Sensor Number
   6.   SS - Alarm State
                       01=Alarm cleared
                       02=Alarm occurred
   7.   YYMMDDHHmm - Date/Time Alarm state occurred
   8.   && - Data Termination Flag
   9.   CCCC - Message Checksum

Function Code: **113**   Version 1
Function Type: Active Alarm Report

Command Format:
    Display: <SOH>I11300
   Computer: <SOH>i11300

Notes:
1.   This command will report ALL active alarms and warnings regardless of their acknowledgement state. If there are more than can be contained in the non-priority and priority history storage areas, they will be reported here without time and date stamps

Typical Response Message, Display Format:

```
<SOH>
I11300
JAN 28, 1996 10:09 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

ACTIVE ALARMS REPORT

ID   CATEGORY   DESCRIPTION        ALARM TYPE              DATE     TIME
     SYSTEM                        PAPER OUT            12-20-95 12:00PM
T 2 TANK       SPECIAL            INVALID FUEL LEVEL   12-20-95 11:59AM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i11300YYMMDDHHmma..ab..bc..cd..dAAccNNTTYYMMDDHHmm...
                              AAccNNTTYYMMDDHHmm&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   a..a - Station Header 1: 20 ASCII characters
3.   b..b - Station Header 2: 20 ASCII characters
4.   c..c - Station Header 3: 20 ASCII characters
5.   d..d - Station Header 4: 20 ASCII characters
6.   AA - Alarm/Warning Category:
                See explanation for "AA" in Function i10100
7.   cc - Sensor Category
                00=Other
                01=Annular
                02=Dispenser Pan
                03=Monitoring Well
                04=STP Sump
                05=Containment Sump
8.   NN - Alarm Type Number:
                See explanation for "NN" in Function i10100
9.   TT - Tank/Sensor Number
10.   YYMMDDHHmm - Alarm Date and Time
11.   && - Data Termination Flag
12.   CCCC - Message Checksum

```
        Function Code: 114                                          Version 1
        Function Type: Cleared Alarm Report

        Command Format:
            Display: <SOH>I11400
           Computer: <SOH>i11400
```

Notes:
```
   1.                      This command will report history of all cleared alarms up to
                           the limit of 50 alarms in both display & computer formats.
```

Typical Response Message, Display Format:

```
   <SOH>
   I11400
   JAN 28, 1996 10:09 AM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   CLEARED ALARMS REPORT

   ID   CATEGORY   DESCRIPTION      ALARM TYPE           STATE    DATE      TIME
   T 4 TANK        PRODUCT  4       PROBE OUT            CLEAR    1-02-96   4:10AM
   T 1 TANK        PRODUCT  1       INVALID FUEL LEVEL   CLEAR    1-02-96   1:12AM
       SYSTEM                       PAPER OUT            CLEAR    1-02-96   1:09AM
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i11400YYMMDDHHmma..ab..bc..cd..dAAccNNTTSSYYMMDDHHmm...
                                AAccNNTTSSYYMMDDHHmm&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.           a..a - Station Header 1: 20 ASCII characters
   3.           b..b - Station Header 2: 20 ASCII characters
   4.           c..c - Station Header 3: 20 ASCII characters
   5.           d..d - Station Header 4: 20 ASCII characters
   6.           AA - Alarm/Warning Category:
                     See explanation for "AA" in Function i10100
   7.           cc - Sensor Category
                     00=Other
                     01=Annular
                     02=Dispenser Pan
                     03=Monitoring Well
                     04=STP Sump
                     05=Containment Sump
   8.           NN - Alarm Type Number:
                     See explanation for "NN" in Function i10100
   9.           TT - Tank/Sensor Number
  10.           SS - Alarm State
                     01=Alarm cleared
                     02=Alarm occurred
  11.       YYMMDDHHmm - Clear Alarm Date and Time
  12.           && - Data Termination Flag
  13.           CCCC - Message Checksum
```

Function Code: 11C   Version 1
Function Type: Extended Alarm Report – Date Based

Command Format:
   Display: <SOH>I11C00RRyymmddYYMMDDnnn
   Computer: <SOH>i11C00RRyymmddYYMMDDnnn

Notes:
   1. RR -Report Type (Report Type should always be given. The rest of the
                       parameters are optional following the rules below.)
               00=Active Alarm Report (for Active and Unacknowledged)
               01=Alarm History Report – All Alarms
               02=Alarm History Report – Priority Alarms
               03=Alarm History Report – Non-Priority Alarms
   2. yymmdd -Starting Date (If no start date is given or either Year, Month or Day
                       are zeroes, it assumes request is for most recent records.
                       If no start date is given, then the request is limited by
                       the Maximum Records (below))
                       Ranges are as follows:
                          yy=Year(01 – 99, for Years 2001-2099)
                          mm=Month (01 – 12, for Months January to December)
                          dd=Day (01 – 31, however, validity depends on Month)
   3. YYMMDD -Ending Date   (If no end date is given or either Year, Month or Day
                       are zeroes, it assumes request is for records starting from
                       start date as evaluated above, limited by the Maximum
                       Records (below)). Ranges are the same as for the Start Date
                       fields.
   4. nnn -Maximum Records – 1 – 999 (Absolute Maximum) (Decimal). (If no Maximum
                       Records is given or it's zeroes, it assumes request is for
                       records starting from start date, ending by end date, and
                       limited by the Maximum Records Default of 100)

Typical Response Message, Display Format:

For an Active Alarm Report:

   <SOH>
   I11C0000
   JAN 22, 1996 3:06 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   Active Alarm Report

   #   Label   Alarm Description   Active   Clear

   T 12 PRODUCT 12   Probe Out   06-13-04 09:00 06-13-04 09:00
   T 2 PRODUCT 2   Probe Out   06-13-04 09:00 06-13-04 09:00
   <ETX>

Function Code 11C: (Continued)

For an Alarm History Report:

```
<SOH>
I11C0001
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

Selected Range:
 Previous 1 Year: 10/15/2004 04:00 PM - 10/15/2005 04:00 PM

Alarm History Report - All Alarms

#    Label               Alarm Description      Active          Clear

T 12 PRODUCT 12          Probe Out              06-13-04 09:00 06-13-04 09:00
T  2 PRODUCT 2           Probe Out              06-13-04 09:00 06-13-04 09:00
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i11C00YYMMDDHHmmAAccNNTTSSYYMMDDHHmm...
                AAccNNTTSSYYMMDDHHmm&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              AA - Alarm/Warning Category:
                         See explanation for "AA" in Function i10100
    3.              cc - Sensor Category
                         00=Other
                         01=Annular
                         02=Dispenser Pan
                         03=Monitoring Well
                         04=STP Sump
                         05=Containment Sump
    4.              NN - Alarm Type Number:
                         See explanation for "NN" in Function i10100
    5.              TT - Tank/Sensor Number
    6.              SS - Alarm State
                         01=Alarm cleared
                         02=Alarm occurred
    7.      YYMMDDHHmm - Date/Time Alarm state occurred
    8.              && - Data Termination Flag
    9.            CCCC - Message Checksum
```

Function Code: 11D   Version 1
Function Type: Extended Alarm Report – Date/Time Based

Command Format:
  Display: <SOH>I11D00RRyymmddhhmmYYMMDDHHMMnnn
  Computer: <SOH>i11D00RRyymmddhhmmYYMMDDHHMMnnn

Notes:
 1. RR – Report Type (Report Type should always be given. The rest of the
              parameters are optional following the rules below.)
              00=Active Alarm Report (for Active and Unacknowledged)
              01=Alarm History Report – All Alarms
              02=Alarm History Report – Priority Alarms
              03=Alarm History Report – Non-Priority Alarms

              Note: All the entries listed below will be ignored when RR=00
                    (Active Alarm Report)

 2. yymmddhhmm – Starting Date/Time (If no start date/time is given or either
              Year, Month or Day are zeroes, it assumes request is for most
              recent records. If no start date/time is given, then the
              request is limited by the Maximum Records (below)). Ranges are
              as follows:
                    yy=Year(01 – 99, for Years 2001-2099)
                    mm=Month (01 – 12, for Months January to December)
                    dd=Day (01 – 31, however, validity depends on Month)
                    hh=Hour (00 – 23)
                    mm=Minute (00 – 59)

 3. YYMMDDHHMM – Ending Date/Time (If no end date/time is given or either Year,
              Month or Day are zeroes, it assumes request is for records
              starting from start date/time as evaluated above, limited by the
              Maximum Records (below)). Ranges are the same as for the Start
              Date/Time fields.
 4. nnn – Maximum Records – 1 – 999 (Absolute Maximum) (Decimal). (If no Maximum
              Records is given or it's zeroes, it assumes request is for records
              starting from start date/time, ending by end date/time, and limited by
              the Maximum Records Default of 100)

Typical Response Message, Display Format:

For an Active Alarm Report:

```
<SOH>
I11D0000
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

Active Alarm Report

#    Label                Alarm Description      Active          Clear

T 12 PRODUCT 12           Probe Out              06-13-04 09:00 06-13-04 09:00
T  2 PRODUCT 2            Probe Out              06-13-04 09:00 06-13-04 09:00
<ETX>
```

Function Code 11D: (Continued)

For an Alarm History Report:

```
<SOH>
I11D0001
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

Selected Range:
 Previous 1 Year: 10/15/2004 04:00 PM – 10/15/2005 04:00 PM

Alarm History Report – All Alarms

#    Label              Alarm Description      Active          Clear

T 12 PRODUCT 12         Probe Out              06-13-04 09:00 06-13-04 09:00
T  2 PRODUCT 2          Probe Out              06-13-04 09:00 06-13-04 09:00
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i11D00YYMMDDHHmmAAccNNTTSSYYMMDDHHmm...
                AAccNNTTSSYYMMDDHHmm&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.             AA - Alarm/Warning Category:
                      See explanation for "AA" in Function i10100
    3.             cc - Sensor Category
                      00=Other
                      01=Annular
                      02=Dispenser Pan
                      03=Monitoring Well
                      04=STP Sump
                      05=Containment Sump
    4.             NN - Alarm Type Number:
                      See explanation for "NN" in Function i10100
    5.             TT - Tank/Sensor Number
    6.             SS - Alarm State
                      01=Alarm cleared
                      02=Alarm occurred
    7.       YYMMDDHHmm - Date/Time Alarm state occurred
    8.             && - Data Termination Flag
    9.           CCCC - Message Checksum
```

Function Code: 11E   Version 1
Function Type: Last Active Alarm

Command Format:
    Display: `<SOH>I11E00AANNTT`
    Computer: `<SOH>i11E00AANNTT`

Notes:
1.   AA – Alarm/Warning Category:
                See explanation for "AA" in Function i10100
2.   NN – Alarm Type Number:
                See explanation for "NN" in Function i10100
3.   TT – Tank/Sensor Number – When a value of 00 (TT) is applied, the last active alarm of any Tanks/Sensors (TT) for the selected Alarm/Warning Category (AA) and the selected Alarm Type Number (NN) will be displayed.

Typical Response Message, Display Format:

If custom alarm labels are enabled:

```
<SOH>
I11E0001
JUL 29, 1997  9:02 AM
```

ID	AC	AN	Category	Description	Alarm Type	Date	Time
T 3	02	08	Tank	Special	FUEL LEVEL TOO HIGH	1-01-96	8:07AM

`<ETX>`

If custom alarm labels are disabled:

```
<SOH>
I11E0001
JUL 29, 1997  9:02 AM
```

ID	Category	Description	Alarm Type	Date	Time
T 3	Tank	Special	Invalid Fuel Level	1-01-96	8:07AM

`<ETX>`

Notes:
1.   AC – Alarm/Warning Category
                See explanation for "AA" in Function i10100
2.   AN – Alarm Type Number
                See explanation for "NN" in Function i10100

Typical Response Message, Computer Format:

`<SOH>i11E00YYMMDDHHmmAAccNNTTYYMMDDHHmm&&CCCC<ETX>`

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   AA – Alarm/Warning Category:
              See explanation for "AA" in Function i10100
3.   cc – Sensor Category
              00=Other
              01=Annular
              02=Dispenser Pan
              03=Monitoring Well
              04=STP Sump
              05=Containment Sump
4.   NN – Alarm Type Number:
              See explanation for "NN" in Function i10100
5.   TT – Tank/Sensor Number
6.   YYMMDDHHmm – Date/Time Alarm state occurred
7.   && – Data Termination Flag
8.   CCCC – Message Checksum

Function Code: 11F   Version 1
Function Type: Extended Sensor Status Report – Date/Time Based
Command Format:
    Display: <SOH>I11FTTRRNNyymmddhhmmYYMMDDHHMMnnn
    Computer: <SOH>i11FTTRRNNyymmddhhmmYYMMDDHHMMnnn

Notes:
1. TT -Device Number (Decimal, 00=all)
2. RR -Report Type (Report Type should always be given. The rest of the
   parameters are optional following the rules below.)
       00=Sensor Status Report (for Active Sensor Alarms and Normal
         Sensor Status as of the time of the request)
       01=Sensor Status History Report (for Sensor Alarms and
         Normal Sensor Status for the specified Time Period)
3. NN -Device Type (If no Device Type is given or it's zeroes, it assumes
   request is for All Device Types as below. Request for All Device Types
   are only allowed when the request is for All Device Numbers (TT=00))
       03=Liquid Sensor
       04=Vapor Sensor
       07=Ground Water Sensor
       08=Type A (2-Wire CL) Sensor
       12=Type B (3-Wire CL) Sensor
       59=MAG Sensor
4. yymmddhhmm - Starting Date/Time (If no start date/time is given or either
   Year, Month or Day are zeroes, it assumes request is for most
   recent records. If no start date/time is given, then the
   request is limited by the Maximum Records (below)). Ranges are
   as follows:
       yy=Year(01 – 99, for Years 2001-2099)
       mm=Month (01 – 12, for Months January to December)
       dd=Day (01 – 31, however, validity depends on Month)
       hh=Hour (00 – 23)
       mm=Minute (00 – 59)

5. YYMMDDHHMM - Ending Date/Time (If no end date/time is given or either Year,
   Month or Day are zeroes, it assumes request is for records
   starting from start date/time as evaluated above, limited by
   the Maximum Records (below)). Ranges are the same as for the
   Start Date/Time fields.
6. nnn - Maximum Records – 1 - 999 (Absolute Maximum) (Decimal). (If no Maximum
   Records is given or it's zeroes, it assumes request is for records
   starting from start date/time, ending by end date/time, and limited by
   the Maximum Records Default of 100)

Function Code 11F: (Continued)

Typical Response Message, Display Format:

For a Status Report:

```
<SOH>
I11F0000
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

Sensor Status Report - All Sensors

#     Sensor Location      Status

L 1   Regular STP Pump     Normal
L 2   Ultra STP Pump       Normal
L 2   Diesel STP Pump      Setup Data Warning
Ms 1  Dispenser 1-2        Water Alarm
Ms 1  Dispenser 1-2        Water Warning
Ms 2  Dispenser 3-4        Normal
Ms 3  Dispenser 5-6        Normal
Ms 4  Dispenser 7-8        Normal
Ms 5  Dispenser 9-10       Normal
Ms 6  Dispenser 11-12      Normal
Ms 7  Dispenser 13-14      Normal
Ms 8  Dispenser 15-16      Normal
<ETX>
```

For a History Report:

```
<SOH>
I11F0001
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

Selected Range:
 Previous 1 Year: 10/15/2006 04:00 PM - 10/15/2007 04:00 PM

Sensor Status History Report - All Sensors

#     Sensor Location      Status                  Active          Clear

L 1   Regular STP Pump     Normal
L 2   Ultra STP Pump       Normal
L 2   Diesel STP Pump      Setup Data Warning  06-13-07 09:00 06-13-07 09:00
Ms 1  Dispenser 1-2        Water Alarm         06-13-07 08:05 06-13-07 09:00
Ms 1  Dispenser 1-2        Water Warning       06-13-07 07:06 06-13-07 09:00
Ms 2  Dispenser 3-4        Normal
<ETX>
```

Function Code 11F: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i11F00YYMMDDHHmmAAccNNTTSSYYMMDDHHmm...
              AAccNNTTSSYYMMDDHHmm&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   AA - Alarm/Warning Category:
                  See explanation for "AA" in Function i10100
3.   cc - Sensor Category
                  00=Other
                  01=Annular
                  02=Dispenser Pan
                  03=Monitoring Well
                  04=STP Sump
                  05=Containment Sump
4.   NN - Alarm Type Number:
                  See explanation for "NN" in Function i10100
5.   TT - Tank/Sensor Number
6.   SS - Alarm State
                  00=Normal status
                  01=Alarm cleared
                  02=Alarm occurred
7.   YYMMDDHHmm - Date/Time Alarm state occurred (all zeroes if status is
                  normal)
8.   && - Data Termination Flag
9.   CCCC - Message Checksum

```
        Function Code: 122                                    Version 5
        Function Type: Setup Warning Detailed Information
       Command Format:
             Display: <SOH>I12200
            Computer: <SOH>i12200
```

Typical Response Message, Display Format:

For a Status Report:

```
    <SOH>
    I12200
    JAN 22, 2014  3:06 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    SETUP WARNING DETAILED INFORMATION

    LINE

    ID   DESCRIPTION           REASON
    L 1  REGULAR SOUTH         PUMP NOT SET
    L 1  REGULAR SOUTH         PUMP INVALID

    TANK

    ID   DESCRIPTION           REASON
    T 1  REGULAR               DIAMETER OUT OF RANGE
    <ETX>
```

Display format when no active setup warnings in the system at the time of the
query

```
    <SOH>
    I12200
    JUN 1, 2000  8:06 AM

    NO SETUP WARNING
<ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i12200YYMMDDHHmmAADDffffffff...
                    SSNNffffffff&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             AA - Device Type (Decimal, 00=all)
                      See explanation for "AA" in Function i10100
    3.             DD - Device Number (Decimal, 00=all)
    4.       ffffffff - Reason flag (Hex)
                -If AA is 02 Tank:
                      0x00000001 = FULL_VOLUME_OUT_OF_RANGE
                      0x00000002 = DIAMETER_OUT_OF_RANGE
                      0x00000004 = MAX_VOLUME_OUT_OF_RANGE
                      0x00000008 = HI_VOLUME_LIMIT_OUT_OF_RANGE
                      0x00000010 = COEFFICIENT_OUT_OF_RANGE
                      0x00000020 = HIGH_WATER_LIMIT_OUT_OF_RANGE
                      0x00000040 = LO_VOLUME_LIMIT_OUT_OF_RANGE
                      0x00000080 = THEFT_ALARM_LIMIT_OUT_OF_RANGE
                      0x00000100 = TILT_OUT_OF_RANGE
                      0x00000200 = OVERFILL_VOLUME_OUT_OF_RANGE
                      0x00000400 = CHART_VOLUMES_INVALID_ERR
                      0x00000800 = UNCONFIGURED_PROBE_ERR
                      0x00001000 = INVALID SLD SETUP
                      0x00002000 = INVALID CSLD SETUP
```

Function Code 122: (Continued)

```
                    0x00004000 = INVALID ACCUCHART SETUP
                    0x00008000 = MISSING PRODUCT ASSIGNMENT
                    0x00010000 = MISSING_DENSITY_CODE
                    0x00020000 = PROBE INCORRECT FLOAT SIZE
                    0x00040000 = PROBE INVALID ADDRESS

            -If AA is 03, 04, 07, 08 or 12 Sensors:
                    0x00000001 = ADDRESS NOT SET
                    0x00000002 = VAPOR THRESHOLD NOT SET

            -If AA is 05 Inputs:
                    0x00000001 = ADDRESS NOT SET

            -If AA is 11 Relay:
                    0x00000001 = ADDRESS NOT SET

            -If AA is 18 Mechanical Dispenser Interface:
                    0x00000001 = ADDRESS NOT SET

            -If AA is 20 Product:
                    0x00000001 = LABEL NOT SET

            -If AA is 59 Mag Sensor:
                    0x00000001 = ADDRESS NOT SET

            -If AA is 63 Line Pressure Sensor:
                    0x00000001 = ADDRESS NOT SET

            -If AA is 65 Pump:
                    0x00000001 = SENSE DEVICE NOT SET
                    0x00000002 = SENSE DEVICE INVALID
                    0x00000004 = CONTROL DEVICE NOT SET
                    0x00000008 = CONTROL DEVICE INVALID
                    0x00000010 = TANK NOT SET
                    0x00000020 = TANK INVALID
                    0x00000040 = LINE NOT SET
                    0x00000080 = LINE INVALID
                    0x00000100 = EXCEPTION DURING CHECK_
                    0x00000200 = PUMP RELAY MONITOR DEVICE NOT CONFIGURED
                    0x00000400 = PUMP RELAY MONITOR DEVICE SETUP WARNING
                    0x00000800 = PUMP RELAY MONITOR DEVICE WRONG TYPE

            -If AA is 66 Line:
                    0x00000001 = PUMP NOT SET
                    0x00000002 = PUMP INVALID
                    0x00000004 = PRESSURE SENSOR NOT SET
                    0x00000008 = PRESSURE SENSOR INVALID
                    0x00000010 = EXCEPTION DURING CHECK
                    0x00000020 = PUMP SENSE MODE DOES NOT SUPPORT PLLD
                    0x00000040 = PUMP NOT TLS PUMP CONTROL
                    0x00000080 = MANIFOLDED PUMP NOT SAME TYPE
                    0x00000100 = MANIFOLDED LINE TANK NOT SET
                    0x00000200 = MANIFOLDED LINE STANDARD PUMP NOT EXT
                    0x00000400 = MANIFOLDED ONLY ONE PUMP ASSIGNED

            -If AA is 74 Contact:
                    0x00000001 = MODEM NUMBER NOT SET
                    0x00000002 = MODEM_DEVICE_NOT_SET
                    0x00000004 = MODEM_DEVICE_DISABLED
                    0x00000008 = MODEM_DEVICE_MISMATCH
                    0x00000010 = FAX_NUMBER_NOT_SET
                    0x00000020 = FAX_DEVICE_NOT_SET
                    0x00000040 = FAX_DEVICE_DISABLED
                    0x00000080 = FAX_DEVICE_MISMATCH
                    0x00000100 = EMAIL_ADDRESS_NOT_SET
                    0x00000200 = EMAIL_SERV_ADDRESS_NOT_SET
                    0x00000400 = TCPIP_ADDRESS_NOT_SET
                    0x00000800 = TCPIP_PORT_NOT_SET
                    0x00001000 = TCPIP_DEVICE_NOT_SET
                    0x00002000 = TCPIP_DEVICE_DISABLED
```

Function Code 122: (Continued)
```
                        0x00004000 = TCPIP_DEVICE_MISMATCH
                        0x00008000 = SATELLITE_DEVICE_NOT_SET
                        0x00010000 = SATELLITE_DEVICE_DISABLED
                        0x00020000 = SATELLITE_DEVICE_MISMATCH

            -If AA is 75 AutoEvent:
                    0x00000001 = TRIGGER_INFO_NOT_SET
                    0x00000002 = ACTION_INFO_NOT_SET
                    0x00000004 = ACTION_CONTACT_NOT_FOUND
                    0x00000008 = ACTION_DEVICE_DISABLED
                    0x00000010 = ACTION_PRINTER_DISABLED
                    0x00000020 = TRIGGER_TIME_INFO_NOT_SET
                    0x00000040 = TRIGGER_EVENT_INFO_NOT_SET
                    0x00000080 = ACTION_DEVICE_NOT_FOUND
                    0x00000100 = ACTION_DEVICE_NOT_ALLOWED
                    0x00000200 = AUTODIAL_ALARM_SET_TO_SAME_CONTACT
                    0x00000400 = LAST_ALM_RPT_NOT_ALLOWED_FOR_EXTINPT
                    0x00000800 = LAST_ALM_RPT_NOT_ALLOWED_FOR_NOTIFY
```

5.   && - Data Termination Flag
6.   CCCC - Message Checksum

7.2.2 IN-TANK REPORTS

Function Code: 201   Version 1
Function Type: In-Tank Inventory Report

Command Format:
    Display: <SOH>I201TT
    Computer: <SOH>i201TT

Typical Response Message, Display Format:

```
<SOH>
I201TT
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

IN-TANK INVENTORY

TANK PRODUCT                  VOLUME TC-VOLUME   ULLAGE   HEIGHT   WATER    TEMP
  1 REGULAR                     5329      5413     4112    51.03    0.00   33.30
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i201TTYYMMDDHHmmTTpssssNNFFFFFFFF...
                TTpssssNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.               TT - Tank Number (Decimal, 00=all)
   3.                p - Product Code (one ASCII character [20h-7Eh])
   4.             ssss - Tank Status Bits:
                        Bit 1 - (LSB) Delivery in Progress
                        Bit 2 - Leak Test in Progress
                        Bit 3 - Invalid Fuel Height Alarm (MAG Probes Only)
                        Bit 4-16 - Unused
   5.               NN - Number of eight character Data Fields to follow (Hex)
   6.         FFFFFFFF - ASCII Hex IEEE floats:
                        1. Volume
                        2. TC Volume
                        3. Ullage
                        4. Height
                        5. Water
                        6. Temperature
                        7. Water Volume
   7.               && - Data Termination Flag
   8.             CCCC - Message Checksum
```

Function Code: 202   Version 1
Function Type: In-Tank Delivery Report

Command Format:
    Display: <SOH>I202TT
    Computer: <SOH>i202TT

Typical Response Message, Display Format:

```
<SOH>
I202TT
JUL 29, 1997  9:02 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

                                                    Volume=GALLONS
                                                      Height=INCHES
DELIVERY REPORT                                    Temp=FAHRENHEIT


TANK  1:


                              Fuel      FuelTC     Water      Fuel      Fuel
           Date / Time        Volume    Volume     Height     Temp      Height

  START: AUG  6, 2009  2:59 PM  7000      7000      0.00      60.00     63.34
    END: AUG  6, 2009  3:09 PM  9000      9000      0.00      60.00     80.98
  AMOUNT:                       2000      2000


  START: AUG  6, 2009  2:41 PM  5000      5000      0.00      60.00     48.00
    END: AUG  6, 2009  2:47 PM  7000      7000      0.00      60.00     63.35
  AMOUNT:                       2000      2000

<ETX>
```

Function Code 202 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i202TTYYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                  TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               TT - Tank Number (Decimal, 00=all)
    3.                p - Product Code (one ASCII character [20h-7Eh])
    4.               dd - Number of Deliveries to follow (Decimal, 00 if no data
                         available for this tank)
    5.       YYMMDDHHmm - Starting Date/Time
    6.       YYMMDDHHmm - Ending Date/Time
    7.               NN - Number of eight character Data Fields to follow (Hex)
    8.         FFFFFFFF - ASCII Hex IEEE floats:
                              1. Starting Volume
                              2. Starting TC Volume
                              3. Starting Water
                              4. Starting Temp
                              5. Ending Volume
                              6. Ending TC Volume
                              7. Ending Water
                              8. Ending Temp
                              9. Starting Height
                             10. Ending Height
    9.               && - Data Termination Flag
   10.             CCCC - Message Checksum
```

      Function Code: 203   Version 1
      Function Type: In-Tank Leak Detect Report

      Command Format:
            Display: <SOH>I203TT
          Computer: <SOH>i203TT

Typical Response Message, Display Format:

```
<SOH>
I203TT
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

TANK    PRODUCT
  1     REGULAR UNLEADED
TEST STATUS: OFF
TEST TYPE/RESULT:   0.2  GAL/HR TEST: PASS
START_TIME: FEB 15, 2007  9:10 AM
DURATION:           1.0  HOURS
START TEMP:        45.0  DEG F
ENDING TEMP:       45.0  DEG F
START VOLUME:    7953.6  GALLONS
LEAK RATE:         0.00 GALLONS/HR
CUMULATIVE PERIODIC VOLUME CHANGE (GALLONS)
-0.01   -0.02   -0.01   -0.03   -0.05   -0.04
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i203TTYYMMDDHHmmTTpYYMMDDHHmmHHNNFFFFFFFF...
                TTpYYMMDDHHmmHHNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.               p - Product Code (one ASCII character [20h-7Eh])
    4.      YYMMDDHHmm - Starting Date/Time
    5.              HH - Test Duration (hours)
    6.              NN - Number of eight character Data Fields to follow (Hex)
    7.        FFFFFFFF - ASCII Hex IEEE floats:
                        1. Starting Temp
                        2. Ending Temp
                        3. Starting Volume
                        4. Ending Rate
                        5. Hourly changes up to the number of fields
    8.              && - Data Termination Flag
    9.            CCCC - Message Checksum
```

```
        Function Code: 204                                    Version 1
        Function Type: In-Tank Active Shift Inventory Report

     Command Format:
          Display: <SOH>I204TT
         Computer: <SOH>i204TT
```

Notes:
```
   1.              TT - tank number, 00 = all tanks
   2.              In Display format mode:
                   a. Shifts will displayed in descending time order
                   b. shifts will be labeled as either OPEN or CLOSED
   3.              In Computer format mode:
                   a. shifts will be sent in descending time order
                   b. only closed shifts will be included in response
```

Typical Response Message, Display Format:

```
   <SOH>
   I20401
   JUN 05, 2008 03:32 PM


                                                 Volume=Gallons
                                                  Height=Inches
   Shift Inventory                              Temp=Fahrenheit


   TANK  1:REGULAR UNLEADED


                   Fuel    FuelTC  Ullage  Ullage    Fuel    Water  Water    Fuel
                  Volume   Volume   100%     90%    Height   Height Volume   Temp

   SHIFT 1  [yy/mm/dd hh:mm – yy/mm/dd hh:mm] CLOSED

     Start        8518     8492    1482    xxxx    76.26    0.00      0    64.57
     End          8518     8492    1482    xxxx    76.26    0.00      0    64.57
     Delivery        0
     Totals          0

   SHIFT  2 [yy/mm/dd hh:mm – yy/mm/dd hh:mm] CLOSED
     Start        8518     8492    1482    xxxx    76.26    0.00      0    64.57
     End          8518     8492    1482    xxxx    76.26    0.00      0    64.57
     Delivery        0
     Totals          0
     <ETX>
```

Function Code 204 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i204TTYYMMDDHHmmTTpssNNFFFFFFFF...
                 TTpssNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   ss - Shift Number [01 - 08]
5.   NN - Number of eight character Data Fields to follow (Hex)
6.   FFFFFFFF - ASCII Hex IEEE floats:
   1. Start Volume
   2. Start Ullage *(100% ullage)*
   3. Start TC Volume
   4. Start Height
   5. Start Water
   6. Start Temperature
   7. End Volume
   8. End Ullage *(100% ullage)*
   9. End TC Volume
   A. End Height
   B. End Water
   C. End Temperature
   D. Total Value *(Start – End + Delivery)*
7.   && - Data Termination Flag
8.   CCCC - Message Checksum

Function Code: 205   Version 1
Function Type: In-Tank Status Report

Command Format:
Display: <SOH>I205TT
Computer: <SOH>i205TT

Typical Response Message, Display Format:

```
<SOH>
I205TT
JAN 22, 1996  3:07 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

TANK STATUS REPORT

TANK    PRODUCT                    STATUS

  1    REGULAR UNLEADED           NORMAL
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i205TTYYMMDDHHmmTTnnNN...
              TTnnNN&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   nn - Number of alarms active for tank (Hex, 00=none)
4.   NN - Alarm Type Number:
                    See explanation for "NN" when "AA" is 02 in Function i10100
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: 206   Version 1
Function Type: In-Tank Alarm History Report

Command Format:
    Display: <SOH>I206TT
    Computer: <SOH>i206TT

Typical Response Message, Display Format:

```
<SOH>
I206TT
JAN 22, 1996  3:07 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

TANK ALARM HISTORY

TANK 1  REGULAR UNLEADED

     LOW PRODUCT ALARM        DEC 22, 1995  3:31 PM
                              DEC 19, 1995 10:05 AM

     INVALID FUEL LEVEL       DEC 20, 1995 11:59 AM
                              DEC 20, 1995 11:58 AM
                              DEC 20, 1995 11:57 AM
<ETX>
```

Function Code 206 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i206TTYYMMDDHHmmTTnnYYMMDDHHmmaaaa...
                    TTnnYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   nn - Number of alarms in history for tank (Decimal, 00=none)
    4.   YYMMDDHHmm - Date and time alarm occurred
    5.   aaaa - Type of alarm:
                           0001=Tank Setup Data Warning
                           0002=Tank Leak Alarm
                           0003=Tank High Water Alarm
                           0004=Tank Overfill Alarm
                           0005=Tank Low Product Alarm
                           0006=Tank Sudden Loss Alarm
                           0007=Tank High Product Alarm
                           0008=Tank Invalid Fuel Level Alarm
                           0009=Tank Probe Out Alarm
                           000A=Tank High Water Warning
                           000B=Tank Delivery Needed Warning
                           000C=Tank Maximum Product Alarm
                           000D=Tank Gross Leak Test Fail Alarm
                           000E=Tank Periodic Leak Test Fail Alarm
                           000F=Tank Annual Leak Test Fail Alarm
                           0010=Tank Periodic Test Needed Warning
                           0011=Tank Annual Test Needed Warning
                           0012=Tank Periodic Test Needed Alarm
                           0013=Tank Annual Test Needed Alarm
                           0014=Tank Leak Test Active
                           0015=Tank No CSLD Idle Time Warning
                           0016=Tank Siphon Break Active Warning
                           0017=Tank CSLD Rate Increase Warning
                           0018=Tank AccuChart Calibration Warning
                           0019=Tank HRM Reconciliation Warning
                           001A=Tank HRM Reconciliation Alarm
                           001B=Tank Cold Temperature Warning
                           001C=Tank Missing Delivery Ticket Warning
                           001D=Tank/Line Gross Leak Alarm
    6.   && - Data Termination Flag
    7.   CCCC - Message Checksum

```
        Function Code: 207                                    Version 1
        Function Type: In-Tank Leak Test History Report

     Command Format:
          Display: <SOH>I207TT
         Computer: <SOH>i207TT
```

Typical Response Message, Display Format:
```
<SOH>
I207TT
JUL 29, 1997  9:02 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

TANK LEAK TEST HISTORY

T 1:REGULAR UNLEADED

                                           AVERAGE     %
    REPORT TYPE       DATE/TIME    METHOD  HOURS  VOLUME   VOLUME
    ---------------   --------------  ------  -----  -------  ------
    FULLEST PERIODIC  08-04-15 12:34   CSLD    199   123456    99.9
    FULLEST ANNUAL    08-04-15 12:34   SLD      99    23456    49.9
    LAST ANNUAL       08-04-15 12:34   SLD       9    23456    39.9
    LAST GROSS        08-04-15 12:34   SLD      22    13456     9.9
    LAST PERIODIC     08-04-15 12:34   CSLD    109     3456    29.9

    <ETX>
```

Typical Response Message, Computer Format:
```
<SOH>i207TTYYMMDDHHmmTTNNRRnnttYYMMDDHHmmhhhhhhhhVVVVVVVVpppppppp...
               TTNNRRnnttYYMMDDHHmmhhhhhhhhVVVVVVVVpppppppp&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.              NN - Number of Leak History Reports to Follow (Hex)
    4.              RR - Leak Report Type:
                         00=Last Test Passed
                         01=Fullest Test Passed
                         02=Fullest Periodic Monthly Test Passed
    5.              nn - Leak History Number (1-12) for first Monthly Tests Passed.
                         For all report types except Fullest Periodic nn = 1.
                         For Fullest Periodic nn is the number of the month the test
                         was performed.
    6.              tt - In-Tank Leak Test Type:
                         00=0.20 gal/hr test
                         01=0.10 gal/hr test
                         02=Gross (3 gal/hr)test
    7.      YYMMDDHHmm - In-Tank Leak Test Start Time
    8.        hhhhhhhh - Leak Test Duration in Hours (ASCII Hex IEEE float)
    9.        VVVVVVVV - Leak Test Volume (ASCII Hex IEEE float)
   10.        pppppppp - Leak Test Percentage of Full Volume (ASCII Hex IEEE float)
   11.              && - Data Termination Flag
   12.            CCCC - Message Checksum
```

Function Code: 208   Version 1
Function Type: In-Tank Leak Test Results Report

Command Format:
        Display: <SOH>I208TT
        Computer: <SOH>i208TT

Typical Response Message, Display Format:

```
 <SOH>
I208TT
JAN 22, 1996  3:07 PM

PREVIOUS IN TANK LEAK TEST RESULTS

TANK 1    REGULAR UNLEADED

  TEST                                LEAK
  TYPE        START TIME      RESULT  RATE  HRS  VOLUME  REASON
 --------  --------------------  -------  -----  ---  ------  ------------------
ANNUAL    NOV 21, 1995 12:34 AM  PASSED   0.00   12    9088
PERIODIC  NOV 21, 1995 12:34 AM  FAILED  -0.75   24   12345
GROSS     NOV 24, 1995 12:04 AM  INVALID  0.00         5432  Product Increase
                                                             Insuf Smpl 1st Per
                                                             Insuf Smpl 2nd Per
                                                             Low Product Level
                                                             Recent Delivery
                                                             Zone Temp Change
                                                             Avg Temp Change
                                                             Head Temp Change
                                                             Temp out of Range
                                                             Test too Short
                                                             % Vol Too Low
                                                             Invalid Fuel level

 <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i208TTYYMMDDHHmmTTNNttmmYYMMDDHHmmRRrrrrrrrrhhhhhhhhVVVVVVVV...
                    TTNNttmmYYMMDDHHmmRRrrrrrrrrhhhhhhhhVVVVVVVV&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   NN - Number of Results to Follow (Hex)
    4.   tt - In-Tank Leak Test Result Type:
                            00=0.20 gal/hr Test
                            01=0.10 gal/hr Test
                            02=Gross (3 gal/hr) Test
    5.   mm - In-Tank Leak Manifold Status:
                            00=Tank Not Manifolded During Leak Test
                            01=Tank Manifolded During Leak Test
    6.   YYMMDDHHmm - Previous In-Tank Leak Test Start Time
    7.   RR - Previous In-Tank Leak Test Result:
                            00=Test Invalid
                            01=Test Passed
                            02=Test Failed
    8.   rrrrrrrr - Test Rate (ASCII Hex IEEE float)
    9.   hhhhhhhh - Leak Test Duration in Hours (ASCII Hex IEEE float)
   10.   VVVVVVVV - Leak Test Volume (ASCII Hex IEEE float)
   11.   && - Data Termination Flag
   12.   CCCC - Message Checksum

Function Code: 209   Version 1
Function Type: Enhanced In-Tank Leak Detect Report

Command Format:
  Display: <SOH>I209TT
  Computer: <SOH>i209TT

Typical Response Message, Display Format:

```
<SOH>
I209TT
JAN 22, 2007  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

IN-TANK LEAK DETECT

TANK    PRODUCT
  1      REGULAR UNLEADED
TEST STATUS: OFF
TEST TYPE/RESULT:   0.2  GAL/HR TEST: PASS
START_TIME: FEB 15, 2007  9:10 AM
DURATION:           1.0  HOURS
START TEMP:        45.0  DEG F
ENDING TEMP:       45.0  DEG F
START VOLUME:    7953.6  GALLONS
PERCENT VOLUME:    79.5  PERCENT
LEAK RATE:         0.00 GALLONS/HR
THRESHOLD:         0.13
FUEL HEIGHT:       70.5  INCHES
WATER HEIGHT:       0.0  INCHES
CUMULATIVE PERIODIC VOLUME CHANGE (GALLONS)
0.00      -0.01   -0.02   -0.01   -0.03   -0.05   -0.04
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i209TTYYMMDDHHmmTTpYYMMDDHHmmHHNNFFFFFFFF...
                 TTpYYMMDDHHmmHHNNFFFFFFFF&&CCCC<ETX>
```

Notes:
 1. YYMMDDHHmm - Current Date and Time
 2.   TT - Tank Number (Decimal, 00=all)
 3.   p - Product Code (one ASCII character [20h-7Eh])
 4. YYMMDDHHmm - Starting Date/Time
 5.   HH - Test Duration (hours)
 6.   NN - Number of eight character Data Fields to follow (Hex)
 7. FFFFFFFF - ASCII Hex IEEE floats:
       1. Starting Temp
       2. Ending Temp
       3. Starting Volume
       4. Ending Rate
       5. Fuel Height
       6. Water Height
       7. Threshold
       8. Hourly changes up to the number of fields
 8.   && - Data Termination Flag
 9.   CCCC - Message Checksum

Function Code: **20A**   Version 4
Function Type: HRM Adjusted Delivery Report

Command Format:
Display: <SOH>I20ATT
Computer: <SOH>i20ATT

Typical Response Message, Display Format:

```
<SOH>
I20ATT
JAN 22, 2011  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

ADJUSTED DELIVERY REPORT

T 1:REGULAR UNLEADED
                         INCREASE    INCREASE               DELIVERY   DELIVERY
INCREASE DATE/TIME        VOLUME    TC VOLUME  ADJUSTMENT    VOLUME    TC VOLUME
JAN 13, 1996  2:06 AM      3795       3859         8          3803       3868
JAN 15, 1996  1:07 PM      5383       5458        30          5413       5487
JAN 17, 1996  3:13 AM      6012       6114        -1          6010       6113
JAN 19, 1996  3:22 AM      4413       4480        -3          4409       4473
JAN 21, 1996  2:52 AM      6005       6112         6          6011       6119
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i20A00YYMMDDHHmmTTpPPrrYYMMDDHHmmNNFFFFFFFF...
                TTpPPrrYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   PP - Probe Type
5.   rr - Number of Records to follow (ASCII Hex)
6.   YYMMDDHHmm - Date/Time of Delivery Start
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE floats:
                      1. Increase Volume
                      2. Increase Temp Comp Volume
                      3. Adjustment factor
                      4. Adjusted Increase Value
                      5. Adjusted Temp Comp Volume
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

> **Function Code: 20B** Version 2
> **Function Type:** BIR Adjusted Delivery Report
>
> **Command Format:**
> **Display:** <SOH>I20BTT
> **Computer:** <SOH>i20BTT

Typical Response Message, Display Format:

```
<SOH>
I20BTT
JAN 22, 2009  3:08 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

BIR ADJUSTED DELIVERY REPORT

T 1:REGULAR UNLEADED
                                    START    END     ADJ    ADJ TC
DELIVERY START    DATE    DELIVERY  END    DATE  VOLUME   VOLUME   DELIV   DELIV
JAN 21, 2009  2:52 AM   JAN 21, 1996  3:12 AM    3193    9197    6011    6119
JAN 19, 2009  3:22 AM   JAN 19, 1996  3:40 AM    4193    8602    4409    4473
JAN 17, 2009  3:13 AM   JAN 17, 1996  3:40 AM    2739    8749    6010    6113
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i20BTTYYMMDDHHmmTTddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                TTddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm – Current Date and Time
2. TT – Tank Number (Decimal, 00=All)
3. dd – Number of Deliveries to follow
4. YYMMDDHHmm – Starting Date/Time
5. YYMMDDHHmm – Ending Date/Time
6. NN – Number of eight character Data Fields to follow (Hex)
7. FFFFFFFF – ASCII Hex IEEE floats:
    1. Starting Volume
    2. Ending Volume
    3. Adjusted Delivery Volume
    4. Adjusted Temperature Compensated Delivery Volume
    5. Starting Fuel Height
    6. Starting Fuel Temperature 1
    7. Starting Fuel Temperature 2
    8. Starting Fuel Temperature 3
    9. Starting Fuel Temperature 4
    10. Starting Fuel Temperature 5
    11. Starting Fuel Temperature 6
    12. Ending Fuel Height
    13. Ending Fuel Temperature 1
    14. Ending Fuel Temperature 2
    15. Ending Fuel Temperature 3
    16. Ending Fuel Temperature 4
    17. Ending Fuel Temperature 5
    18. Ending Fuel Temperature 6
    19. Total Dispensed During Delivery
    20. Starting Fuel Temperature Average
    21. Ending Fuel Temperature Average
8. && – Data Termination Flag
9. CCCC – Message Checksum

Function Code: **20C**   Version 1
Function Type: In-Tank Most Recent Delivery Report

Command Format:
    Display: <SOH>I20CTT
    Computer: <SOH>i20CTT

Typical Response Message, Display Format:

```
<SOH>
I20CTT
JUL 29, 1997  9:03 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

                                                    Volume=GALLONS
                                                     Height=INCHES
LAST DELIVERY REPORT                              Temp=FAHRENHEIT

T 1: UNLEADED
                              Fuel      FuelTC     Water      Fuel      Fuel
          Date / Time        Volume     Volume     Height     Temp      Height

  START: AUG  6, 2009  2:59 PM    7000       7000      0.00     60.00     63.34
    END: AUG  6, 2009  3:09 PM    9000       9000      0.00     60.00     80.98
  AMOUNT:                         2000       2000

<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i20CTTYYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                 TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   p - Product Code (one ASCII character [20h-7Eh])
    4.   dd - Number of Deliveries to follow (Decimal, 00 if no data
                        available for this tank)
    5.   YYMMDDHHmm - Starting Date/Time
    6.   YYMMDDHHmm - Ending Date/Time
    7.   NN - Number of eight character Data Fields to follow (Hex)
    8.   FFFFFFFF - ASCII Hex IEEE floats:
                            1. Starting Volume
                            2. Starting TC Volume
                            3. Starting Water
                            4. Starting Temp
                            5. Ending Volume
                            6. Ending TC Volume
                            7. Ending Water
                            8. Ending Temp
                            9. Starting Height
                           10. Ending Height
                           11. Starting Mass
                           12. Ending Mass
                           13. Starting Density
                           14. Ending Density
                           15. Starting TC Density
                           16. Ending TC Density
    9.   && - Data Termination Flag
   10.   CCCC - Message Checksum

Function Code: 20D   Version 5
Function Type: In-Tank Stick Height Report

Command Format:
Display: <SOH>I20DTT
Computer: <SOH>i20DTT

Notes:
1.   This command will respond only if stick height is enabled.
Tank stick height is fuel height (without tilt) + stick
offset. If the stick height is less then zero, it will be
set to zero. If the stick height is greater than tank
diameter, it will be set to tank diameter.

Typical Response Message, Display Format:

```
<SOH>
I20DTT
OCT 15, 2013  4:29 PM

TANK STICK HEIGHT

TANK   PRODUCT LABEL      INCHES
  1    REGULAR              25.0
  2    MIDGRADE             67.5
  3    SUPER                66.1
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i20DTTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   FFFFFFFF - Stick Height (ASCII Hex IEEE float)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 20F   Version 1
Function Type: Extended Delivery Report – Date/Time Based
Command Format:
    Display: <SOH>I20FTTRRyymmddhhmmYYMMDDHHMMnnn
  Computer: <SOH>i20FTTRRyymmddhhmmYYMMDDHHMMnnn

Notes:
1. TT -Device Number (Decimal, 00=all)
2. RR - Report Type (Report Type should always be given. The rest of the
   parameters are optional following the rules below.)
           00=Delivery History Report (for Inventory Information for
             the specified Time Period)
3. yymmddhhmm - Starting Date/Time (If no start date/time is given or either
       Year, Month or Day are zeroes, it assumes request is for most
       recent records. If no start date/time is given, then the
       request is limited by the Maximum Records (below)). Ranges are
       as follows:
           yy=Year(01 – 99, for Years 2001-2099)
           mm=Month (01 – 12, for Months January to December)
           dd=Day (01 – 31, however, validity depends on Month)
           hh=Hour (00 – 23)
           mm=Minute (00 – 59)

4. YYMMDDHHMM – Ending Date/Time (If no end date/time is given or either Year,
       Month or Day are zeroes, it assumes request is for records
       starting from start date/time as evaluated above, limited by the
       Maximum Records (below)). Ranges are the same as for the Start
       Date/Time fields.
5. nnn – Maximum Records – 1 – 999 (Absolute Maximum) (Decimal). (If no Maximum
       Records is given or it's zeroes, it assumes request is for records
       starting from start date/time, ending by end date/time, and limited by
       the Maximum Records Default of 100)

Function Code 20F: (Continued)

Typical Response Message, Display Format:

```
<SOH>
I20F0001
JAN 22, 2008  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....


                                                    Volume=Gallons
                                                     Height=Inches
     Delivery History Report                      Temp=Fahrenheit

     Selected Range:
      All Records:


     T 1:REGULAR UNLEADED

                                 Fuel      FuelTC     Water      Fuel       Fuel
             Date / Time        Volume    Volume     Height     Temp      Height

      START: AUG 12, 2009  5:06 PM   783465       0      0.00      0.00     267.15
        END: AUG 12, 2009  5:16 PM   803434       0      0.00      0.00     272.11
     AMOUNT:                          19969       0

     TANK  3:REGULAR UNLEADED

                                 Fuel      FuelTC     Water      Fuel       Fuel
             Date / Time        Volume    Volume     Height     Temp      Height

      START: AUG 13, 2009  9:43 AM   783468       0      0.00      0.00     267.15
        END: AUG 13, 2009  9:50 AM   803437       0      0.00      0.00     272.11
     AMOUNT:                          19969       0
     <ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i20FTTYYMMDDHHmmTTpnnnYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                TTpnnnYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1. YYMMDDHHmm - Current Date and Time
    2.         TT - Tank Number (Decimal, 00=all)
    3.          p - Product Code (one ASCII character [20h-7Eh])
    4.        nnn - Number of TimeStamped Records to follow (Decimal)
    5. YYMMDDHHmm - Starting Delivery Time
    6. YYMMDDHHmm - Ending Delivery Time
    7.         NN - Number of eight character Data Fields (Hex)
```

Function Code 20F Notes: (Continued)

```
    8.    FFFFFFFF - ASCII Hex IEEE floats:
                          1. Starting Volume
                          2. Starting TC Volume
                          3. Starting Water
                          4. Starting Temp
                          5. Ending Volume
                          6. Ending TC Volume
                          7. Ending Water
                          8. Ending Temp
                          9. Starting Height
                         10. Ending Height
                         11. Starting Mass
                         12. Starting Density
                         13. Starting TC Density
                         14. Ending Mass
                         15. Ending Density
                         16. Ending TC Density
    9.         && - Data Termination Flag
   10.       CCCC - Message Checksum
```

```
          Function Code: 20G                                    Version 1
          Function Type: Static Leak Test Passed Report
```

Command Format:
         Display: <SOH>I20GTT
        Computer: <SOH>i20GTT

Typical Response Message, Display Format:

```
<SOH>
I20GTT
JUL 29, 2007  9:02 AM

STATIC LEAK TEST LAST PASSED REPORT

TANK 1: REGULAR UNLEADED
                                              TOTAL      AVG.       %
TEST TYPE       DATE & TIME           STATUS  HOURS     VOLUME   VOLUME
Last Gross      JUL 27, 2007   5:00 AM  Pass            7898      79.0
Last Periodic   JUL 28, 2007  10:32 AM  Pass     10     3509      30.0
Last Annual     JUL 29, 2007   6:02 AM  Pass      9     3580      35.8
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i20GTTYYMMDDHHmmTTNNttYYMMDDHHmmhhhhhhhhVVVVVVVVpppppppp
                    ttYYMMDDHHmmhhhhhhhhVVVVVVVVpppppppp
                    ttYYMMDDHHmmhhhhhhhhVVVVVVVVpppppppp….
               TTNNttYYMMDDHHmmhhhhhhhhVVVVVVVVpppppppp&&CCCC<ETX>
```

Notes:
```
   1.        YYMMDDHHmm - Current Date and Time
   2.                TT - Tank Number (Decimal, 00=all)
   3.                NN - Number of Leak History Reports to Follow (Hex)
   4.                tt - In-Tank Leak Test Type:
                             00=0.20 gal/hr test
                             01=0.10 gal/hr test
                             02=Gross (3 gal/hr)test
   5.        YYMMDDHHmm - Static Leak Test Pass Time
   6.          hhhhhhhh - Leak Test Duration in Hours (ASCII Hex IEEE float)
   7.          VVVVVVVV - Leak Test Volume (ASCII Hex IEEE float)
   8.          pppppppp - Leak Test Percentage of Full Volume (ASCII Hex IEEE float)
   9.                && - Data Termination Flag
  10.              CCCC - Message Checksum
```

Function Code: 20H   Version 1
Function Type: Static Leak Test History

Command Format:
    Display: <SOH>I20HTTyymmddhhmmYYMMDDHHMMnnn
    Computer: <SOH>i20HTTyymmddhhmmYYMMDDHHMMnnn

1. yymmddhhmm - Starting Date/Time (If no start date/time is given or either Year,
        Month or Day are zeroes, it assumes request is for most recent
        records. If no start date/time is given, then the request is
        limited by the Maximum Records (below)). Ranges are as follows:
            yy=Year(01 – 99, for Years 2001-2099)
            mm=Month (01 – 12, for Months January to December)
            dd=Day (01 – 31, however, validity depends on Month)
            hh=Hour (00 – 23)
            mm=Minute (00 – 59)

2. YYMMDDHHMM - Ending Date/Time (If no end date/time is given or either Year,
        Month or Day are zeroes, it assumes request is for records
        starting from start date/time as evaluated above, limited by the
        Maximum Records (below)). Ranges are the same as for the Start
        Date/Time fields.
3. nnn - Maximum Records – 1 – 999 (Absolute Maximum) (Decimal). (If no Maximum
        Records is given or it's zeroes, it assumes request is for records
        starting from start date/time, ending by end date/time, and limited by
        the Maximum Records Default of 100)

Typical Response Message, Display Format:

    <SOH>
    I20HTT
    JUL 29, 2007 9:02 AM

    STATIC LEAK TEST HISTORY

    TANK 1: REGULAR UNLEADED
                                    TEST   TOTAL   LEAK   START   %
    TEST TYPE   DATE & TIME   RESULT HOURS   RATE   VOLUME   VOLUME
    Annual   JUL 2, 2008 11:58 PM Passed   10   0.00   4995   43.0
    Periodic JUL 2, 2008 11:58 PM Passed   10   0.00   4995   43.0
    Gross   JUL 2, 2008 10:56 PM Passed   -0.01   4995   43.0
    Gross   JUL 2, 2008 9:36 PM Failed   -1.72   4995   43.0
    Gross   JUL 2, 2008 8:43 PM Invalid   0.00   4836   41.6
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i20HTTYYMMDDHHmmTTNNttYYMMDDHHmmhhSSRRVVVVVVVVpppppppprrrrrrrr
                    ttYYMMDDHHmmhhSSRRVVVVVVVVpppppppprrrrrrrr
                    ttYYMMDDHHmmhhSSRRVVVVVVVVpppppppprrrrrrrr….
                TTNNttYYMMDDHHmmhhSSRRVVVVVVVVpppppppprrrrrrrr&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   NN - Number of Leak History Results to Follow (Decimal)
    4.   tt - In-Tank Leak Test Type:
                    00=0.20 gal/hr test
                    01=0.10 gal/hr test
                    02=Gross (3 gal/hr)test
    5.   YYMMDDHHmm - Static Leak Test Start Time
    6.   hh - Leak Test Duration in Hours (decimal 01-99)
    7.   SS - test status (00=invalid, 01=pass, 02=fail, 03=error)
    8.   RR - Number of IEEE floats
    9.   VVVVVVVV - Leak Test Volume (ASCII Hex IEEE float)
    10.   pppppppp - Leak Test Percentage of Full Volume (ASCII Hex IEEE float)
    11.   rrrrrrrr - Leak Test leak rate (ASCII Hex IEEE float)
    12.   && - Data Termination Flag
    13.   CCCC - Message Checksum

```
        Function Code: 20I                                          Version 1
        Function Type: Enhanced In-Tank Inventory Report

      Command Format:
          Display: <SOH>I20ITT
         Computer: <SOH>i20ITT
```

Typical Response Message, Display Format:

```
<SOH>
I20ITT
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

                                              Volume=Gallons
                                               Height=Inches
   Current Inventory Report                 Temp=Fahrenheit


      Fuel    Fuel TC    Ullage    Ullage     Fuel    Water    Water     Fuel
    Volume    Volume       100%       xx%    Height   Height   Volume    Temp

   Tank 1: Regular Unleaded
      5329      5413       4699      3699    48.97     0.00     0.00    37.39

   Tank 2: Supreme Unleaded
     11375      5413      11413      2697    52.36     0.00     0.00    43.39

   MANIFOLDED TANKS INVENTORY TOTALS
   T1: Regular
   T2: Regular
   VOLUME     =      16705 GALS
   TC VOLUME  =      10826 GALS
   <ETX>
```

Function Code 20I Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i20ITTYYMMDDHHmmTTpssssNNFFFFFFFF...
              TTpssssNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.               p - Product Code (one ASCII character [20h-7Eh])
    4.            ssss - Tank Status Bits:
                        Bit 1 - (LSB) Delivery in Progress
                        Bit 2 - Leak Test in Progress
                        Bit 3 - Invalid Fuel Height Alarm (MAG Probes Only)
                        Bit 4-16 - Unused
    5.              NN - Number of eight character Data Fields to follow (Hex)
    6.        FFFFFFFF - ASCII Hex IEEE floats:
                         1. Volume
                         2. TC Volume
                         3. Ullage
                         4. Height
                         5. Water
                         6. Temperature
                         7. Water Volume
                         8. User Ullage
                         9. Mass
                        10. Density
                        11. TC Density
    7.              && - Data Termination Flag
    8.            CCCC - Message Checksum
```

Function Code: 20L   Version 2
Function Type: BIR Adjusted Delivery Report with Range

Command Format:
    Display: `<SOH>I20LTTyymmddhhmmYYMMDDHHmmnnn`
   Computer: `<SOH>i20LTTyymmddhhmmYYMMDDHHmmnnn`

Notes:
1.   TT - Tank Number (Decimal, 00=all)
2.   yymmddhhmm - Starting Date (00000000 = no starting date = first of the month)
3.   YYMMDDHHmm - Ending Date   (00000000 = no ending date = current date)
4.   nnn - Maximum Records [001…999] (100 = default) (decimal)

Typical Response Message, Display Format:

```
<SOH>
I20LTT
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

BIR ADJUSTED DELIVERY REPORT

T 1:REGULAR UNLEADED
                                              START    END     ADJ    ADJ TC
DELIVERY START     DATE    DELIVERY  END      DATE   VOLUME   VOLUME  DELIV  DELIV
JAN 21, 2009  2:52 AM   JAN 21, 2009  3:12 AM   3193    9197    6011   6119
JAN 19, 2009  3:22 AM   JAN 19, 2009  3:40 AM   4193    8602    4409   4473
JAN 17, 2009  3:13 AM   JAN 17, 2009  3:40 AM   2739    8749    6010   6113
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i20LTTYYMMDDHHmmTTdddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                TTdddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=All)
3.   ddd - Number of Deliveries to Follow (Decimal)
4.   YYMMDDHHmm - Starting Date and Time
5.   YYMMDDHHmm - Ending Date and Time
6.   NN - Number of eight character Data Fields to follow (Hex)

Function Code 20L Notes: (Continued)

```
7.          FFFFFFFF - ASCII Hex IEEE floats:
                      1. Starting Volume
                      2. Ending Volume
                      3. Adjusted Delivery Volume
                      4. Adjusted Temperature Compensated Delivery Volume
                      5. Starting Fuel Height
                      6. Stating FuelTemperature 1
                      7. Stating FuelTemperature 2
                      8. Stating FuelTemperature 3
                      9. Stating FuelTemperature 4
                     10. Stating FuelTemperature 5
                     11. Stating FuelTemperature 6
                     12. Ending Fuel Height
                     13. Ending FuelTemperature 1
                     14. Ending FuelTemperature 2
                     15. Ending FuelTemperature 3
                     16. Ending FuelTemperature 4
                     17. Ending FuelTemperature 5
                     18. Ending FuelTemperature 6
                     19. Total Dispensed During Delivery
                     20. Starting Fuel Temperature Average
                     21. Ending Fuel Temperature Average
8.              && - Data Termination Flag
9.          CCCC - Message Checksum
```

Function Code: 20M   Version 2
Function Type: In-Tank Shift Inventory History Report – Date/Time Based

Command Format:
Display: <SOH>I20MTTRRyymmddhhmmYYMMDDHHmmnnn
Computer: <SOH>i20MTTRRyymmddhhmmYYMMDDHHmmnnn

Notes:
1.   TT – Tank Number (Decimal, 00=All)
2.   RR – Report Type (Report Type should always be given. The rest of
             the parameters are optional following the rules below.)
                 00=Shift Inventory History Report Times or Manual Shift
                 Closings
3.   yymmddhhmm – Starting Date/Time (If no start date/time is given or either
             Year, Month or Day are zeros, it assumes request is for most
             recent records. If no start date/time is given, then the
             request is limited by the Maximum Records (below)). Ranges are
             as follows:
                 yy=Year(01 – 99, for Years 2001-2099)
                 mm=Month (01 – 12, for Months January to December)
                 dd=Day (01 – 31, however, validity depends on Month)
                 hh=Hour (00 – 23)
                 mm=Minute (00 – 59)
4.   YYMMDDHHmm – Ending Date/Time (If no end date/time is given or either Year,
             Month or Day are zeros, it assumes request is for records
             starting from start date/time as evaluated above, limited by
             the Maximum records (below)). Ranges are the same as for the
             Start Date/Time fields.
5.   nnn – Maximum Records [001…366] (Absolute Maximum) (Decimal). (If no
             Maximum records starting from start date/time, ending by end
             date/time, and limited by the Maximum Records Default of 100)

Typical Response Message, Display Format:

```
<SOH>
I20M0001
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

Selected Range:
  Previous 1 Year: 10/15/2006 04:00 PM – 10/15/2007 04:00 PM


                                            Volume=Gallons
                                             Height=Inches
Shift Inventory History                     Temp=Fahrenheit


TANK  1:REGULAR UNLEADED
                 Fuel    FuelTC  Ullage Ullage   Fuel    Water  Water   Fuel
                Volume   Volume   100%    90%    Height  Height Volume  Temp

Shift 1    mm-dd-yy hh:mm am
 Starting Values  8518    8492    1482   xxxx    76.26   0.00      0   64.57
 Ending Values    8518    8492    1482   xxxx    76.26   0.00      0   64.57
 Delivery Value      0
 Totals             0
```

Function Code 20M: (Continued)

```
   Shift  2   mm-dd-yy hh:mm am
    Starting Values     8518      8492     1482    xxxx   76.26      0.00        0  64.57
    Ending Values       8518      8492     1482    xxxx   76.26      0.00        0  64.57
    Delivery Values        0
    Totals                 0
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i20MTTYYMMDDHHmmTTpnnnnssYYMMDDHHmmNNFFFFFFFF...
                          ssYYMMDDHHmmNNFFFFFFFF...
                     TTpnnnnssYYMMDDHHmmNNFFFFFFFF...
                          ssYYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   p – Product Code (one ASCII character [20h-7Eh])
4.   nnnn – Number of TimeStamped Records to follow (hex)
5.   ss – Shift Number [01 - 08]
6. YYMMDDHHmm – TimeStamp
7.   NN – Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF – ASCII Hex IEEE floats:
   1. Start Volume
   2. Start Ullage *(100% ullage)*
   3. Start TC Volume
   4. Start Height
   5. Start Water
   6. Start Temperature
   7. End Volume
   8. End Ullage *(100% ullage)*
   9. End TC Volume
   10. End Height
   11. End Water
   12. End Temperature
   13. Total Value *(Start – End + Delivery)*
   14. End Mass
   15. End Density
   16. End TC Density
   17. End Mass
   18. End Density
   19. End TC Density
9.   && – Data Termination Flag
10.   CCCC – Message Checksum

```
        Function Code: 20N                                        Version 3
        Function Type: In-Tank Mass/Density Shift Inventory History Report

        Command Format:
            Display: <SOH>I20NTT
           Computer: <SOH>i20NTT
```

Notes:
```
    1.                  TT - Tank Number (Decimal, 00=All)
    2.                  In Display format mode:
                        a. Shifts will display in descending time order
                        b. Shifts will be labeled as either OPEN or CLOSED
    3.                  In Computer format mode:
                        a. Shifts will be sent in descending time order
                        b. Only closed Shifts will be included in response
```

Typical Response Message, Display Format:

```
    <SOH>
    I20NTT
    JUN  5, 2008  3:06 PM


                                                         Volume=Gallons
                                                          Height=Inches
    Shift Inventory                                     Temp=Fahrenheit


    TANK  1:REGULAR UNLEADED

                    Fuel     Fuel     Fuel  Fuel TC    Fuel   Water Water   Fuel
                  Volume     Mass  Density  Density  Height  Height Volume  Temp

    SHIFT 1  [yy/mm/dd hh:mm - yy/mm/dd hh:mm] CLOSED

      Start        8518    44521    45.35    47.10   76.26    0.00      0  64.57
      End          8600    45365    46.72    49.55   76.26    0.00      0  64.57
      Delivery        0
      Totals          0

    SHIFT  2 [yy/mm/dd hh:mm - yy/mm/dd hh:mm] CLOSED
      Start        8600    45365    45.35    49.55   76.26    0.00      0  64.57
      End          8410    40899    41.79    46.80   76.26    0.00      0  64.57
      Delivery        0
      Totals          0
    <ETX>
```

Function Code 20N: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i20NTTYYMMDDHHmmTTpssNNFFFFFFFF...
                TTpssNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   ss - Shift Number [01 - 08]
5.   NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - ASCII Hex IEEE floats:
          1. Start Volume
          2. Start Fuel Mass
          3. Start Fuel Density
          4. Start Fuel TC Density
          5. Start Ullage *(100% ullage)*
          6. Start Height
          7. Start Water
          8. Start Temperature
          9. End Volume
         10. End Fuel Mass
         11. End Fuel Density
         12. End Fuel TC Density
         13. End Ullage *(100% ullage)*
         14. End Height
         15. End Water
         16. End Temperature
         17. Total Value *(Start – End + Delivery)*
7.   && - Data Termination Flag
8.   CCCC - Message Checksum

Function Code: 20P   Version 4
Function Type: HRM Adjusted Delivery Report Date/Time Based

Command Format:
Display: <SOH>I20PTTyymmddYYMMDDnnn
Computer: <SOH>i20PTTyymmddYYMMDDnnn

Notes:
1.   TT - Tank Number (Decimal, 00=All)
2.   yymmdd - Starting Date (If no start date is given or zeros are entered
                  for the starting date, then the request is limited by the
                  Maximum Records (below) or the last 240 records.)
3.   YYMMDD - Ending Date (If no end date is given or or zeros are entered
                  for the ending date, then the request is limited by the
                  Maximum records (below) or the last 240 records.)
4.   nnn - Maximum Records [001…366] (default = 240) (Decimal). (If no
                  Maximum records starting from start date, ending by end date
                  and limited by the Maximum Records)

Typical Response Message, Display Format:

```
<SOH>
I20PTT
JAN 22, 2011  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

HRM ADJUSTED DELIVERY REPORT

Selected Range:
 All Records:

T 1:REGULAR UNLEADED
                       INCREASE   INCREASE              DELIVERY  DELIVERY
INCREASE DATE/TIME      VOLUME   TC VOLUME  ADJUSTMENT   VOLUME  TC VOLUME
JAN 13, 1996  2:06 AM    3795      3859          8        3803     3868
JAN 15, 1996  1:07 PM    5383      5458         30        5413     5487
JAN 17, 1996  3:13 AM    6012      6114         -1        6010     6113
JAN 19, 1996  3:22 AM    4413      4480         -3        4409     4473
JAN 21, 1996  2:52 AM    6005      6112          6        6011     6119
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i20P00YYMMDDHHmmTTpPPrrYYMMDDHHmmNNFFFFFFFF...
              TTpPPrrYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   PP - Probe Type
5.   rr - Number of Records to follow (ASCII Hex)
6.   YYMMDDHHmm - Date/Time of Delivery Start
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE floats:
                      1. Increase Volume
                      2. Increase Temp Comp Volume
                      3. Adjustment factor
                      4. Adjusted Increase Value
                      5. Adjusted Temp Comp Volume
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

```
          Function Code: 211                              Version 1
          Function Type: Tank Chart Report

     Command Format:
          Display: <SOH>I211TThhhhhh
         Computer: <SOH>i211TTFFFFFFFF
```

Notes:
```
     1.              TT - Tank number, 00=All tanks
     2.          hhhhh - height step size (inches or millimeters).  Up to 6 decimal
                         digits.  If less then 6 digits are entered, use carriage
                         return to terminate the command.
     3.       FFFFFFFF - height step size (ASCII Hex IEEE float)
     4.              Minimum Step Size:      0.010 inches or 0.397 millimeter
     5.              Minimum Resolution:     3 decimal places
```

Typical Response Message, Display Format:

```
<SOH>
I21101
OCT 15, 1996  4:29 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

TANK CALIBRATION CHART

TANK 1
REGULAR UNLEADED
GALLONS      10028
INCHES       96.00


DEPTH   CAPACITY    DEPTH   CAPACITY    DEPTH   CAPACITY    DEPTH   CAPACITY
INCHES   GALLONS    INCHES   GALLONS    INCHES   GALLONS    INCHES   GALLONS
---------------------------------------------------------------------------
 0.000         0   26.000      2413   52.000      5827   78.100      9021
 0.500        69   26.500      2474   52.500      5894   78.500      9073
 1.000        90   27.000      2535   53.000      5961   79.000      9123
 1.500       114   27.500      2596   53.500      6028   79.500      9173
:
:
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i211TTYYMMDDHHmmTTnnnnaaaaaaaaAAAAAAAAbbbbbbbbBBBBBBBB...
                 TTnnnnaaaaaaaaAAAAAAAAbbbbbbbbBBBBBBBB&&CCCC<ETX>
```

Notes:
```
     1.      YYMMDDHHmm - Current Date and Time
     2.              TT - Tank Number (Decimal, 00=all)
     3.            nnnn - Number of eight character Data Fields to follow (Hex)
     4.        aaaaaaaa - Height 1 (ASCII Hex IEEE float)
     5.        AAAAAAAA - Volume 1 (ASCII Hex IEEE float)
     6.        bbbbbbbb - Height 2 (ASCII Hex IEEE float)
     7.        BBBBBBBB - Volume 2 (ASCII Hex IEEE float)
     8.              && - Data Termination Flag
     9.            CCCC - Message Checksum
```

                Function Code: 212   Version 1
                Function Type: In-Tank Leak Test History Report 2

          Command Format:
                Display: <SOH>I212TT
               Computer: <SOH>i212TT

Typical Response Message, Display Format:

    <SOH>
    I212TT
    JUL 29, 1997 9:02 AM

    TANK LEAK TEST HISTORY

    T 1:REGULAR UNLEADED

                                                    AVERAGE   %
         REPORT TYPE   DATE/TIME   METHOD HOURS VOLUME   VOLUME
    ----------------   --------------   ------ ----- ------- ------
    FULLEST PERIODIC 08-04-15 12:34   CSLD   199   123456   99.9
    FULLEST ANNUAL   08-04-15 12:34   SLD   99   23456   49.9
    LAST ANNUAL   08-04-15 12:34   SLD   9   23456   39.9
    LAST GROSS   08-04-15 12:34   SLD   22   13456   9.9
    LAST PERIODIC   08-04-15 12:34   CSLD   109   3456   29.9
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i212TTYYMMDDHHmmTTNNRRnnttYYMMDDHHmmhhhhhhhhVVVVVVVVppppppppzzmmmmmmmm
                        RRnnttYYMMDDHHmmhhhhhhhhVVVVVVVVppppppppzzmmmmmmmm...
                    TTNNRRnnttYYMMDDHHmmhhhhhhhhVVVVVVVVppppppppzzmmmmmmmm
                        RRnnttYYMMDDHHmmhhhhhhhhVVVVVVVVppppppppzzmmmmmmmm...
                                                        ...&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   NN - Number of Leak History Reports to Follow (Hex)
    4.   RR - Leak Report Type:
                        00=Last Test Passed
                        01=Fullest Test Passed
                        02=Fullest Periodic Monthly Test Passed
    5.   nn - Leak History Number (1-12) for first Monthly Tests Passed
    6.   tt - In-Tank Leak Test Type:
                        00=0.20 gal/hr test
                        01=0.10 gal/hr test
                        02=Gross (3 gal/hr) test
    7.   YYMMDDHHmm - In-Tank Leak Test Start Time
    8.   hhhhhhhh - Leak Test Duration in Hours (ASCII Hex IEEE float)
    9.   VVVVVVVV - Leak Test Volume (ASCII Hex IEEE float)
    10.   pppppppp - Leak Test Percentage of Full Volume (ASCII Hex IEEE float)
    11.   zz - Number of 8 Byte Fields to Follow (Hex)
    12.   mmmmmmmm - In-Tank Leak Test Method (Hex)
                        00000000=Standard
                        00000001=CSLD
    13.   && - Data Termination Flag
    14.   CCCC - Message Checksum

Function Code: 213   Version 1
Function Type: In-Tank Extended Standard Delivery Report

        Command Format:
            Display: <SOH>I213TTnn
            Computer: <SOH>i213TTnn
Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   nn - Number of most recent deliveries (Decimal)

Typical Response Message, Display Format:

    <SOH>
    I213TTnn
    JUL 29, 1997 9:02 AM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

                                                                    Volume=GALLONS
                                                                     Height=INCHES
    DELIVERY REPORT   Temp=FAHRENHEIT

    TANK 1:

                                        Fuel   FuelTC   Water   Fuel   Fuel
              Date / Time   Volume   Volume   Height   Temp   Height

      START: AUG 6, 2009 2:59 PM   7000   7000   0.00   60.00   63.34
        END: AUG 6, 2009 3:09 PM   9000   9000   0.00   60.00   80.98
      AMOUNT: 2000   2000

      START: AUG 6, 2009 2:41 PM   5000   5000   0.00   60.00   48.00
        END: AUG 6, 2009 2:47 PM   7000   7000   0.00   60.00   63.35
      AMOUNT: 2000   2000

    <ETX>

Function Code 213 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i213TTYYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                  TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   p - Product Code (single ASCII character [20h-7Eh])
    4.   dd - Number of Deliveries to follow (Decimal, 00 if no data
                       available for this tank)
    5.   YYMMDDHHmm - Starting Date/Time
    6.   YYMMDDHHmm - Ending Date/Time
    7.   NN - Number of eight character Data Fields to follow (Hex)
    8.   FFFFFFFF - ASCII Hex IEEE float:
                            1. Starting Volume
                            2. Starting TC Volume
                            3. Starting Water
                            4. Starting Temp
                            5. Ending Volume
                            6. Ending TC Volume
                            7. Ending Water
                            8. Ending Temp
                            9. Starting Height
                           10. Ending Height
                           11. Starting Mass
                           12. Ending Mass
                           13. Starting Density
                           14. Ending Density
                           15. Starting TC Density
                           16. Ending TC Density
    9.   && - Data Termination Flag
   10.   CCCC - Message Checksum

Function Code: 214   Version 3
Function Type: In-Tank Mass/Density Inventory Report

Command Format:
Display: <SOH>I214TT
Computer: <SOH>i214TT

Typical Response Message, Display Format:

```
<SOH>
I214TT
JUL 30, 2009  9:02 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

IN-TANK MASS INVENTORY

TANK PRODUCT                 VOLUME    MASS      DENSITY   HEIGHT   WATER    TEMP
  1  PRODUCT 1                 7343    44521       45.35     16.5     0.0    78.8
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i214TTYYMMDDHHmmTTpssssNNFFFFFFFF...
                TTpssssNNFFFFFFFF...&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   p – Product Code (single ASCII character [20h-7Eh])
4.   ssss – Tank Status Bits:
                        Bit 1=(LSB) Delivery in Progress
                        Bit 2=Leak test in Progress
                        Bit 3=Invalid Fuel Height Alarm (MAG Probes Only)
                        Bit 4-16 – Unused
5.   NN – Number of eight character Data Fields to follow (Hex)
6.   FFFFFFFF – ASCII Hex IEEE float:
                        1. Volume
                        2. Mass
                        3. Density
                        4. Height
                        5. Water
                        6. Temperature
                        7. TC Density
                        8. TC Volume
                        9. Ullage
                       10. Water Volume
7.   && – Data Termination Flag
8.   CCCC – Message Checksum

```
        Function Code: 215                                          Version 3
        Function Type: In-Tank Mas/Density Delivery Report

      Command Format:
          Display: <SOH>I215TT
         Computer: <SOH>i215TT
```

Typical Response Message, Display Format:

```
<SOH>
I215TT
APR 30, 2010  3:16 PM


STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....
                                                             Volume=GALLONS
                                                              Height=INCHES
   IN-TANK MASS/DENSITY DELIVERY REPORT                     Temp=FAHRENHEIT


TANK  1:PRODUCT 1
                             Fuel                   Water   Fuel    Fuel
         Date / Time        Volume   Mass Density   Height  Temp    Height
    END: MAY 26, 2010  1:28 PM   5000     0   0.00    0.00   60.00   48.00
  START: MAY 26, 2010 11:56 AM   3000     0   0.00    0.00   60.00   32.65
AMOUNT:                          2000


TANK  3:PRODUCT 3
                             Fuel                   Water   Fuel    Fuel
         Date / Time        Volume   Mass Density   Height  Temp    Height
    END: MAY 26, 2010  1:28 PM   5877     0   0.00    0.00   60.00   54.63
  START: MAY 26, 2010 11:56 AM   3877     0   0.00    0.00   60.00   39.49
AMOUNT:                          2000
<ETX>
```

Function Code 215 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i215TTYYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFFf...
                TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFFf...&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00=all)
3. p - Product Code (single ASCII character [20h-7Eh])
4. dd - Number of Deliveries to follow (Decimal, 00=no data)
5. YYMMDDHHmm - Starting Date/Time
6. YYMMDDHHmm - Ending Date/Time
7. NN - Number of eight character Data Fields to follow (Hex)
8. FFFFFFFF - ASCII Hex IEEE float:
    1. Starting Volume
    2. Starting Mass
    3. Starting Density
    4. Starting Water
    5. Starting Temp
    6. Ending Volume
    7. Ending Mass
    8. Ending Density
    9. Ending Water
   10. Ending Temp
   11. Starting Height
   12. Ending Height
   13. Starting TC Density
   14. Ending TC Density
   15. Starting TC Volume
   16. Ending TC Volume
9. f - Default Density Flag (0=new value,1=default)
10. && - Data Termination Flag
11. CCCC - Message Checksum

Function Code: 217   Version 1
      Function Type: Tank Profile

            Command Format:
                  Display: <SOH>I217TT
                  Computer: <SOH>i217TT

Typical Response Message, Display Format:

```
<SOH>
I217TT
SEP 16, 2004  3:15 PM

TANK PROFILE

T 1: REGULAR UNLEADED
TANK    PRODUCT LABEL              PROFILE
 1      REGULAR UNLEADED              1 PT
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i217TTYYMMDDHHmmTTpp...TTpp&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   pp - Tank Profile Selected (Hex)
                        00= 1 Pt
                        01= 4 Pts
                        02=20 Pts
                        03=Linear
                        04=Multipoint
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
       Function Code: 21A (like 201)                    Version 1
       Function Type: In-Tank Inventory Report With User Ullage (90-100%)

    Command Format:
         Display: <SOH>I21ATT
        Computer: <SOH>i21ATT
```

Typical Response Message, Display Format:

```
<SOH>
I21ATT
JAN 22, 2006  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

INVENTORY REPORT

                    FUEL    FUEL TC   ULLAGE  ULLAGE   FUEL    WATER    FUEL
TANK PRODUCT        VOLUME  VOLUME    100%     95%     HEIGHT  HEIGHT   TEMP
   1  Regular        3112    3112     6888    6543     29.88   0.00    59.99

<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i21ATTYYMMDDHHmmTTpssssNNFFFFFFFF...
                TTpssssNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
   1.        YYMMDDHHmm - Current Date and Time
   2.                TT - Tank Number (Decimal, 00=all)
   3.                 p - Product Code (one ASCII character [20h-7Eh])
   4.              ssss - Tank Status Bits:
                         Bit 1 - (LSB) Delivery in Progress
                         Bit 2 - Leak Test in Progress
                         Bit 3 - Invalid Fuel Height Alarm (MAG Probes Only)
                         Bit 4 - 16 - Unused
   5.                NN - Number of eight character Data Fields to follow (Hex)
   6.          FFFFFFFF - ASCII Hex IEEE floats:
                         1. Volume
                         2. TC Volume
                         3. User Ullage (90-100% : see 572 cmd for percentage)
                         4. Height
                         5. Water
                         6. Temperature
                         7. Water Volume
   7.                && - Data Termination Flag
   8.              CCCC - Message Checksum
```

Function Code: 21B   Version 2
Function Type: BIR Extended Adjusted Delivery Report

Command Format:
    Display: <SOH>I21BTTnn
    Computer: <SOH>i21BTTnn

Notes:
    1.   TT – Tank Number (Decimal, 00=All)
    2.   nn – Number of most recent deliveries (Decimal)

Typical Response Message, Display Format:

    <SOH>
    I21BTTnn
    JAN 22, 2009 3:08 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    BIR ADJUSTED DELIVERY REPORT

    T 1:REGULAR UNLEADED
                                                 START   END   ADJ   ADJ TC
    DELIVERY START   DATE   DELIVERY END   DATE VOLUME   VOLUME   DELIV   DELIV
    JAN 21, 2009 2:52 AM   JAN 21, 1996 3:12 AM   3193   9197   6011   6119
    JAN 19, 2009 3:22 AM   JAN 19, 1996 3:40 AM   4193   8602   4409   4473
    JAN 17, 2009 3:13 AM   JAN 17, 1996 3:40 AM   2739   8749   6010   6113
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i21BTTYYMMDDHHmmTTddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                    TTddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=All)
    3.   dd – Number of Deliveries to follow
    4.   YYMMDDHHmm – Starting Date/Time
    5.   YYMMDDHHmm – Ending Date/Time
    6.   NN – Number of eight character Data Fields to follow (Hex)
    7.   FFFFFFFF – ASCII Hex IEEE floats:
                        1. Starting Volume
                        2. Ending Volume
                        3. Adjusted Delivery Volume
                        4. Adjusted Temperature Compensated Delivery Volume
                        5. Starting Fuel Height
                        6. Starting Fuel Temperature 1
                        7. Starting Fuel Temperature 2
                        8. Starting Fuel Temperature 3
                        9. Starting Fuel Temperature 4
                       10. Starting Fuel Temperature 5
                       11. Starting Fuel Temperature 6
                       12. Ending Fuel Height
                       13. Ending Fuel Temperature 1
                       14. Ending Fuel Temperature 2
                       15. Ending Fuel Temperature 3
                       16. Ending Fuel Temperature 4
                       17. Ending Fuel Temperature 5
                       18. Ending Fuel Temperature 6
                       19. Total Dispensed During Delivery
                       20. Starting Fuel Temperature Average
                       21. Ending Fuel Temperature Average
    8.   && – Data Termination Flag
    9.   CCCC – Message Checksum

<pre>
        Function Code: 21C   Version 1
        Function Type: In-Tank Most Recent Delivery Report with Manifolded Results

        Command Format:
            Display: <SOH>I21CTT
           Computer: <SOH>i21CTT
</pre>

Notes:
   1.   TT - Tank Number (Decimal, 00=all). To eliminate duplication,
                   when TT=00 is used for Display Format the command will print
                   information for a Manifolded Tank only if it is the Primary
                   Tank. A non-Manifolded tank will be printed normally.

Typical Response Message, Display Format:

If the Most Recent Delivery involves a Manifolded Tank:

<pre>
<SOH>
I21CTT
JUL 29, 1997 9:03 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

LAST DELIVERY REPORT

T 1:REGULAR UNLEADED

                                Fuel   Fuel   Water   Fuel   Fuel
            Date / Time   Volume TC Volume Height   Temp   Height

  Start: Jul 25, 1997 2:37 PM   1157   1146   0.00   72.85   23.22
    End: Jul 24, 1997 2:48 PM   4460   4414   0.00   74.56   63.06
  Amount: 3303   3268

T 2:REGULAR UNLEADED

                                Fuel   Fuel   Water   Fuel   Fuel
            Date / Time   Volume TC Volume Height   Temp   Height

  Start: Jul 25, 1997 2:37 PM   2531   2520   0.00   73.58   25.48
    End: Jul 24, 1997 2:48 PM   5387   5365   0.00   73.24   66.36
  Amount: 2856   2845

  Manifolded Tanks: T1, T2

  Volume Increase   = 6159 GALS
  TC Volume Increase = 6113 GALS

  <ETX>
</pre>

Function Code 21C Notes: (Continued)

If the Most Recent Delivery involves a non-Manifolded Tank:

```
<SOH>
I21CTT
JUL 29, 1997  9:03 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

LAST DELIVERY REPORT

T 1:REGULAR UNLEADED
```

	Date / Time	Fuel Volume	Fuel TC Volume	Water Height	Fuel Temp	Fuel Height
Start:	Jul 25, 1997 2:37 PM	1157	1146	0.00	72.85	23.22
End:	Jul 24, 1997 2:48 PM	4460	4414	0.00	74.56	63.06
Amount:		3303	3268			

```
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i21CTTYYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   dd - Number of Deliveries to follow (Decimal, 00 if no data
                    available for this tank)
5.   YYMMDDHHmm - Starting Date/Time
6.   YYMMDDHHmm - Ending Date/Time
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Starting Volume
                    2. Starting TC Volume
                    3. Starting Water
                    4. Starting Temp
                    5. Ending Volume
                    6. Ending TC Volume
                    7. Ending Water
                    8. Ending Temp
                    9. Starting Height
                    10. Ending Height
                    11. Starting Mass
                    12. Ending Mass
                    13. Starting Density
                    14. Ending Density
                    15. Starting TC Density
                    16. Ending TC Density
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

```
        Function Code: 21D                                    Version 1
        Function Type: In-Tank Current Siphon Manifolded Total Volumes

     Command Format:
          Display: <SOH>I21DTT
         Computer: <SOH>i21DTT
```

Notes:
    1.   TT - Tank Number (Decimal, 00=all).

Typical Response Message, Display Format:

```
   <SOH>
   I21DTT
   JAN 31, 2008 14:42


   SIPHON MANIFOLDED TANKS INVENTORY TOTALS

   TANK:PRODUCT
   T  1:PRODUCT 1
   T  2:PRODUCT 2
   T  3:PRODUCT 3
   VOLUME    = 9000 GALLONS
   TC VOLUME = 9000 GALLONS

   T  4:PRODUCT 4
   T  5:PRODUCT 5
   VOLUME    = 6000 GALLONS
   TC VOLUME = 6000 GALLONS
   <ETX>
```


Typical Response Message, Computer Format:

```
   <SOH>i21DTTYYMMDDHHmmNNaabbccvvvvvvvvVVVVVVV...
                    NNaabbccvvvvvvvvVVVVVVV&&CCCC<ETX>
```

Notes:
    1. YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=All)
    3.   NN - Number of tanks in siphon group (hex)
    4.   aa…zz - tank ID numbers (hex)
    5.   vvvvvvvv - Total manifolded volume (IEEE ascii hex)
    6.   VVVVVVV - Total manifolded TC volume (IEEE ascii hex)
    7.   && - Data Termination Flag
    8.   CCCC - Message Checksum

```
        Function Code: 21E                                    Version 2
        Function Type: Hourly Inventory Volume

        Command Format:
            Display: <SOH>I21ETTyymmddhhmm
           Computer: <SOH>i21ETTyymmddhhmm
```

Notes:
1.   yymmddhhmm - Inventory Hour to request starting with this date to the most
                recent. If no yymmddhhmm, return the most recent hourly
                record stored.

Typical Response Message, Display Format:

```
<SOH>
I21ETT
MAR 20, 2009  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

TANK Date/Time           VOLUME TC VOLUME   ULLAGE  HEIGHT    WATER    TEMP
  1  05/01/08 20:00      5329     5413      4699    47.97     0.00     37.39
     05/01/08 19:00      5129     5113      4799    47.97     0.00     37.39
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i21ETTYYMMDDHHmmTTpssssyymmddhhmmNNFFFFFFFF...
                TTpssssyymmddhhmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=All)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   ssss - Number of Hourly Inventory Records to follow (Decimal)
5.   yymmddhhmm - Hourly Stored Inventory Date and Time
6.   NN - Number of eight character Data Fields to follow (Hex)
7.   FFFFFFFF - ASCII Hex IEEE floats:
                        1. Volume
                        2. TC Volume
                        3. Ullage
                        4. Height
                        5. Water
                        6. Temperature
                        7. Water Volume
8.   && - Data Termination Flag
9.   CCCC - Message Checksum
```

Function Code: 21F Version 2
Function Type: Manual Shift Inventory Snapshot Volume

Command Format:
Display: <SOH>I21Fssdd
Computer: <SOH>i21Fssdd

Notes:
1.   ss - Shift Number (00=All, 01, 02, 03, 04) (Decimal)
2.   dd - number Day of Shift (Decimal)
                      00=all days
                      01=current day
                      02=current day-1
                      03=current day-2

Typical Response Message, Display Format:

```
<SOH>
I21F00
MAR 20, 2009  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

SHIFT 1

TANK TIME            VOLUME TC VOLUME ULLAGE  HEIGHT WATER  TEMP
  1 08-05-15 06:00  8518      8492     1482   76.26  0.00 64.57
  2 08-05-15 06:00  8518      8492     1482   76.26  0.00 64.57
  3 08-05-15 06:00  8518      8492     1482   76.26  0.00 64.57
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i21F00YYMMDDHHmmssCCttpYYMMDDHHmmNNFFFFFFFF...
                 ttpYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   ss - Shift Number (Decimal, 00=All, 01-04)
3.   CC - Number of Tanks to follow (Decimal])
4.   tt - Tank Number (Decimal
5.   p - Product Code (single ASCII character, [20h-7Eh])
6.   YYMMDDHHmm - Shift Date and Time close for each tank
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE floats:
                      1. Volume
                      2. TC Volume
                      3. Ullage
                      4. Height
                      5. Water
                      6. Temperature
                      7. Water Volume
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: 21G   Version 2
Function Type: Tank Height Status

Command Format:
   Display: <SOH>I21GTT
   Computer: <SOH>i21GTT

Notes:
   1.   TT – Tank Number (Decimal, 00=all).

Typical Response Message, Display Format:

   <SOH>
   I21GTT
   JAN 31, 2008 14:42

   TANK FUEL HEIGHT STATUS
   ---- ------------------
    1   HEIGHT STABLE
    2   HEIGHT INCREASING
    3   HEIGHT INCREASING
   16   UNKNOWN
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i21GTTYYMMDDHHmmTTF..TTF&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   TT – Tank Number [01..32], (Decimal, 00=all)
   3.   F – Fuel Height Status
                     0=Stable
                     1=Increasing
                     2=Descreasing
                     3=Unknown
   4.   && – Data Termination Flag
   5.   CCCC – Message Checksum

Function Code: 21H   Version 2
Function Type: Time Ordered Chart Sales Comparison

Command Format:
     Display: `<SOH>I21HTTIIiiyymmddYYMMDD`
    Computer: `<SOH>i21HTTIIiiyymmddYYMMDD`

Notes:
1.   TT - Tank Number [01..32], (Decimal, 00=all)
2.   II - First Chart ID Number [01…99] (Decimal)
3.   ii – Second chart ID number [01…99] (Decimal)
4.   yymmdd - Optional Start Date
5.   YYMMDD - Optional End Date
6.   This command will show all daily BIR records within the specified date range.
7.   Variance = change in inventory volume – sales volume

Typical Response Message, Display Format:

```
<SOH>
I21HTT
JAN 31, 2008 14:42


TANK nn CHART SALES COMPARISON          BETWEEN yyyy-mm-dd AND YYYY-MM-DD

                            CHT II      CHT ii      CHT II      CHT ii
    DATE         SALES      VARIANCE    VARIANCE    VARIANCE%   VARIANCE%
  ----------  ----------   ----------  ----------  ----------  ----------
  yyyy-mm-dd   ssssss.s     XXXXXX.X    XXXXXX.X    XXXXXX.X    XXXXXX.X
  yyyy-mm-dd   ssssss.s     XXXXXX.X    XXXXXX.X    XXXXXX.X    XXXXXX.X
  yyyy-mm-dd   ssssss.s     XXXXXX.X    XXXXXX.X    XXXXXX.X    XXXXXX.X
  yyyy-mm-dd   ssssss.s     XXXXXX.X    XXXXXX.X    XXXXXX.X    XXXXXX.X
  yyyy-mm-dd   ssssss.s     XXXXXX.X    XXXXXX.X    XXXXXX.X    XXXXXX.X
              ----------   ----------  ----------  ----------  ----------
    TOTALS: SSSSSSSS.S    XXXXXXXX.X  XXXXXXXX.X  XXXXXXXX.X  XXXXXXXX.X
<ETX>
```


Typical Response Message, Computer Format:

```
<SOH>i21HTTYYMMDDHHmmTTNNNNyymmddssssssssVVVVVVVVvvvvvvvvPPPPPPPPpppppppp..
                         yymmddssssssssVVVVVVVVvvvvvvvvPPPPPPPPpppppppp..
                         yymmddssssssssVVVVVVVVvvvvvvvvPPPPPPPPpppppppp..
                         &&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number [01..32], (Decimal, 00=all)
3.   NNNN - Number of Comparison Records to follow (Decimal)
4.   yymmdd - Time Stamp
5.   ssssssss - Sales Volume in Gallons/Liters (ASCII Hex IEEE float)
6.   VVVVVVVV - Sales Variance in Gallons/Liters for 1st Chart (ASCII Hex IEEE float)
7.   vvvvvvvv - Sales Variance in Gallons/Liters for 2nd Chart (ASCII Hex IEEE float)
8.   PPPPPPPP - Sales Variance in percent for 1st Chart (ASCII Hex IEEE float)
9.   pppppppp - Sales Variance in percent for 2nd Chart (ASCII Hex IEEE float)
10.   && - Data Termination Flag
11.   CCCC - Message Checksum

Function Code: 21I   Version 2
Function Type: Time Ordered Chart Delivery Comparison

Command Format:
        Display: <SOH>I21ITTIIiiyymmddYYMMDD
       Computer: <SOH>i21ITTIIiiyymmddYYMMDD

Notes:
    1.   TT - Tank Number [01..32], (Decimal, 00=all)
    2.   II - First Chart ID Number [01…99] (Decimal)
    3.   ii - Second Chart ID Number [01…99] (Decimal)
    4.   yymmdd - Optional Start Date
    5.   YYMMDD - Optional End Date
    6.   This command will show all ticketed deliveries within the
                    specified date range.
    7.   Variance = estimated delivery volume – ticket delivery
                    volume

Typical Response Message, Display Format:

    <SOH>
    I21ITT
    JAN 31, 2008 14:42

    TANK *nn* CHART DELIVERY COMPARISON   BETWEEN *yyyy-mm-dd* AND *YYYY-MM-DD*

                TICKETED   CHT *II*   CHT *ii*   CHT *II*   CHT *ii*   CHT *II*   CHT *ii*
      DATE   DELIVERY   DELIVERY   DELIVERY   VARIANCE   VARIANCE   VAR%   VAR%
    ---------- --------   --------   --------   --------   --------   --------   --------
    yyyy-mm-dd dddddd.d   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x
    yyyy-mm-dd dddddd.d   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x
    yyyy-mm-dd dddddd.d   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x   xxxxxx.x
                --------   --------   --------   --------   --------   --------   --------
        TOTALS: SSSSSS.S   XXXXXX.X   XXXXXX.X   XXXXXX.X   XXXXXX.X   XXXXXX.X   XXXXXX.X
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i21ITTYYMMDDHHmmTTNNNN
                  yymmddDDDDDDDDVVVVVVVVvvvvvvvvRRRRRRRRrrrrrrrrPPPPPPPPpppppppp..
                  yymmddDDDDDDDDVVVVVVVVvvvvvvvvRRRRRRRRrrrrrrrrPPPPPPPPpppppppp..
                  yymmddDDDDDDDDVVVVVVVVvvvvvvvvRRRRRRRRrrrrrrrrPPPPPPPPpppppppp..
                  &&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number [01..32], (Decimal, 00=all)
    3.   NNNN - Number of Comparison Records to follow (Decimal)
    4.   yymmdd - Time Stamp
    5.   DDDDDDDD - Ticketed Delivery Volume in Gallons/Liters (ASCII Hex IEEE
                        float)
    6.   VVVVVVVV - Delivery Volume for 1st Chart (ASCII Hex IEEE float)
    7.   vvvvvvvv - Delivery Volume for 2nd Chart (ASCII Hex IEEE float)
    8.   RRRRRRRR - Delivery Variance volume for 1st Chart (ASCII Hex IEEE
                        float)
    9.   rrrrrrrr - Delivery Variance volume for 2nd Chart (ASCII Hex IEEE
                        float)
    10.   PPPPPPPP - Delivery Variance percent for 1st Chart (ASCII Hex IEEE
                        float)
    11.   pppppppp - Delivery Variance percent for 2nd Chart (ASCII Hex IEEE
                        float))
    12.   && - Data Termination Flag
    13.   CCCC - Message Checksum

```
        Function Code: 21J                              Version 2
        Function Type: Histogram Comparison of Tank Charts

      Command Format:
        Display: <SOH>I21JTTIIiiyymmddYYMMDD
       Computer: <SOH>i21JTTIIiiyymmddYYMMDD
```

Notes:
```
    1.              TT - Tank Number [01..32], (Decimal, 00=all)
    2.              II - First Chart ID Number [01…99] (Decimal)
    3.              ii - Second Chart ID Number [01…99] (Decimal)
    4.          yymmdd - Start Date
    5.          YYMMDD - End Date
```

Typical Response Message, Display Format:

```
   <SOH>
   I21JTT
   JAN 31, 2008 14:42


   TANK nn CHART HISTOGRAM COMPARISON     BETWEEN yyyy-mm-dd AND YYYY-MM-DD

    %      CHT II   CHT ii
   SALES  COUNTS   COUNTS
   -----  ------   ------
   +5.0    AAAA     BBBB
   +4.5    AAAA     BBBB
   +4.0    AAAA     BBBB
   +3.5    AAAA     BBBB
   +3.0    AAAA     BBBB
   +2.5    AAAA     BBBB
   +2.0    AAAA     BBBB
   +1.5    AAAA     BBBB
   +1.0    AAAA     BBBB
   +0.5    AAAA     BBBB
   +0.0    AAAA     BBBB
   -0.5    AAAA     BBBB
   -1.0    AAAA     BBBB
   -1.5    AAAA     BBBB
   -2.0    AAAA     BBBB
   -2.5    AAAA     BBBB
   -3.0    AAAA     BBBB
   -3.5    AAAA     BBBB
   -4.0    AAAA     BBBB
   -4.5    AAAA     BBBB
   -5.0    AAAA     BBBB
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i21JTTYYMMDDHHmmTTyymmddYYMMDDNNNNrrrrrrrrAAAABBBB...rrrrrrrrAAAABBBB
                    TTyymmddYYMMDDNNNNrrrrrrrrAAAABBBB...rrrrrrrrAAAABBBB
                    &&CCCC<ETX>
```

Notes:
```
    1.     YYMMDDHHmm - Current Date and Time
    2.             TT - Tank Number [01..32], (Decimal, 00=all)
    3.         yymmdd - Start Date
    4.         YYMMDD - End Date
    5.           NNNN - Number of Histogram Bins to follow (Decimal)
    6.       rrrrrrrr - Bin Percent (ASCII Hex IEEE float)
    7.           AAAA - Number of Counts for 1st Chart (ASCII Hex short)
    8.           BBBB - Number of Counts for 2nd Chart (ASCII Hex short)
    9.             && - Data Termination Flag
   10.           CCCC - Message Checksum
```

```
        Function Code: 21K                                    Version 2
        Function Type: Error Plot Comparison of Tank Charts

        Command Format:
            Display: <SOH>I21KTTIIiiyymmddYYMMDD
           Computer: <SOH>i21KTTIIiiyymmddYYMMDD
```

Notes:
```
    1.              TT - Tank Number [01..32], (Decimal, 00=all)
    2.              II - First Chart ID Number [01…99] (Decimal)
    3.              ii - Second Chart ID Number [01…99] (Decimal)
    4.          yymmdd - Optional Start Date
    5.          YYMMDD - Optional End Date
    6.                   Use last 30 days if no dates are supplied
```

Typical Response Message, Display Format:

```
    <SOH>
    I21KTT
    JAN 31, 2008 14:42


    TANK nn CHART ERROR vs. HEIGHT COMPARISON      BETWEEN yyyy-mm-dd AND YYYY-MM-DD

       %     CHT II  CHT ii
    HEIGHT   VAR%    VAR%
    ------  ------  ------
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    XXX.XX  XXX.XX  XXX.XX
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i21KTTYYMMDDHHmmTTyymmddYYMMDDNNNNhhhhhhhhPPPPPPPPpppppppp...
                                        hhhhhhhhPPPPPPPPpppppppp
                    TTyymmddYYMMDDNNNNhhhhhhhhPPPPPPPPpppppppp...
                                        hhhhhhhhPPPPPPPPpppppppp
                    &&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number [01..32], (Decimal, 00=all)
    3.          yymmdd - Start Date
    4.          YYMMDD - End Date
    5.            NNNN - Number of Error Points to follow (Decimal)
    6.        hhhhhhhh - Height Percent (ASCII Hex IEEE float)
    7.        PPPPPPPP - Variance Percent for 1st Chart (ASCII Hex IEEE float)
    8.        pppppppp - Variance Percent for 2nd Chart (ASCII Hex IEEE float)
    9.              && - Data Termination Flag
   10.            CCCC - Message Checksum
```

```
        Function Code: 21L                                    Version 2
        Function Type: Manual Delivery Report

     Command Format:
        Display: <SOH>I21LTT
       Computer: not supported
```

Typical Response Message, Display Format:

```
   <SOH>
   I21LTT
   JAN 31, 2009 14:42


   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   TANK                    VOLUME         INPROGRESS
   T 1: REGULAR            999999         NO
   T 2: MIDGRADE           999999         YES
   <ETX>
```

Function Code: 21M   Version 1
Function Type: Regulator Tank Chart Report

Command Format:
      Display: `<SOH>I21MTTII`
    Computer: `<SOH>i21MTTII`

Notes:
1. This command works for a single Tank and a single Chart ID
2.   TT - Tank Number (Decimal)
3.   II - Chart ID Number [02…99] (Decimal)

Typical Response Message, Display Format:

```
<SOH>
I21M01
OCT 15, 2012  4:29 PM

STATION HEADER 1....                                          TANK 1, CHART 2
STATION HEADER 2....    REGULATOR TANK CHART REPORT    REGULAR UNLEADED
STATION HEADER 3....                                          10028 GALLONS
STATION HEADER 4....                                          96.00 INCHES

DEPTH     CAPACITY      DEPTH     CAPACITY      DEPTH     CAPACITY      DEPTH     CAPACITY
INCHES    GALLONS       INCHES    GALLONS       INCHES    GALLONS       INCHES    GALLONS
-----------------------------------------------------------------------------------------
0.000        0          26.000    2413          52.000    5827          78.100    9021
0.500        69         26.500    2474          52.500    5894          78.500    9073
1.000        90         27.000    2535          53.000    5961          79.000    9123
1.500        114        27.500    2596          53.500    6028          79.500    9173
:
:
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i21MTTYYMMDDHHmmTTIInnnaaaaaaaaAAAAAAAAbbbbbbbbBBBBBBBB...&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal)
3.   II - Chart ID Number [02…99] (Decimal)
4.   nnn - Number of eight character Data Fields to follow (Hex)
5.   aaaaaaaa - Height 1 (ASCII Hex IEEE float)
6.   AAAAAAAA - Volume 1 (ASCII Hex IEEE float)
7.   bbbbbbbb - Height 2 (ASCII Hex IEEE float)
8.   BBBBBBBB - Volume 2 (ASCII Hex IEEE float)
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: 21N   Version 1
Function Type: Tank Chart Report with Chart ID number

Command Format:
Display: <SOH>I21NTTIIhhhhhh
Computer: <SOH>i21NTTIIFFFFFFFF

Notes:
1. This command works for a single Tank and a single Chart ID
2.   TT - Tank Number (Decimal)
3.   II - Chart ID Number [01…99] (Decimal)
4.   hhhhhh - Height Step Size (inches or millimeters)
5.   FFFFFFFF - Height Step Size (ASCII Hex IEEE flaot)
6.   Minimum Step Size: 0.010 inches or 0.397 millimeter
7.   Minimum Resolution: 3 decimal places

Typical Response Message, Display Format:

```
<SOH>
I21N01
MAR 20, 2012  3:25 PM

STATION HEADER 1....                                      TANK 1, CHART 1
STATION HEADER 2....      TANK CHART REPORT               REGULAR UNLEADED
STATION HEADER 3....                                      10028 GALLONS
STATION HEADER 4....                                      96.00 INCHES

 DEPTH    CAPACITY    DEPTH    CAPACITY    DEPTH    CAPACITY    DEPTH    CAPACITY
 INCHES   GALLONS     INCHES   GALLONS     INCHES   GALLONS     INCHES   GALLONS
 ------------------------------------------------------------------------------
 0.000         0     26.000      2413     52.000      5827     78.100      9021
 0.500        69     26.500      2474     52.500      5894     78.500      9073
 1.000        90     27.000      2535     53.000      5961     79.000      9123
 1.500       114     27.500      2596     53.500      6028     79.500      9173
 :
 :
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i21NTTYYMMDDHHmmTTIInnnaaaaaaaaAAAAAAAAbbbbbbbbBBBBBBBB...&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal)
3.   II - Chart ID Number [01…99] (Decimal)
4.   nnn - Number of eight character Data Fields to follow (Hex)
5.   aaaaaaaa - Height 1 (ASCII Hex IEEE float)
6.   AAAAAAAA - Volume 1 (ASCII Hex IEEE float)
7.   bbbbbbbb - Height 2 (ASCII Hex IEEE float)
8.   BBBBBBBB - Volume 2 (ASCII Hex IEEE float)
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

```
        Function Code: 221                                      Version 2
        Function Type: Ticketed Delivery Report

     Command Format:
         Display: <SOH>I221TTtt
        Computer: <SOH>i221TTtt
```

Notes:
```
    1.              TT - Tank Number (Decimal, 00=all)
    2.              tt - Report Type (if not entered will default to current)
                        01=current
                        02=previous
```

Typical Response Message, Display Format:

```
<SOH>
I221TT
MAR 20, 2009  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CURRENT PERIOD TICKETED DELIVERY REPORT
VOLUMES ARE STANDARD

T 1:REGULAR UNLEADED

                         TICKET    GAUGE      DLVY   BEFORE  AFTER  EST DLVY
DELIVERY END DATE        VOLUME    VOLUME     VAR    TMP     TMP    TMP
MAR  7, 2009  8:26 AM    5901.0    5905.0     -4.0   44.8    42.4   41.0
MAR  9, 2009 11:37 AM    5901.0    5905.0     -4.0   44.6    43.2   42.4
MAR 10, 2009 11:34 PM    4099.0    4094.0      5.0   44.6    42.6   40.5
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i221TTYYMMDDHHmmTTpPPdddYYMMDDHHmmNNFFFFFFFF...
                TTpPPdddYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.               p - Product Code (one ASCII character [20h-7Eh])
    4.              PP - Probe type (Decimal)
    5.             ddd - Number of deliveries to follow (decimal) if 0, no more data
                        for this tank will follow
    6.      YYMMDDHHmm - Ending date/ time
    7.              NN - Number of eight character Data Fields to follow (Hex)
    8.        FFFFFFFF - ASCII Hex IEEE floats:
                        1. ticket volume
                        2. gauged volume
                        3. delivery variance
                        4. start fuel temperature
                        5. end fuel temperature
                        6. estimated delivery temperature
    9.              && - Data Termination Flag
   10.            CCCC - Message Checksum
```

Function Code: 222   Version 2
Function Type: Bill of Lading Report

Command Format: **Inquire:**
    Display: <SOH>S222TTtt   <SOH>I222TTtt
    Computer: <SOH>s222TTtt   <SOH>i222TTtt

Notes:
    1.   TT - Tank Number (Decimal, 00=All)
    2.   tt - Report Type (if tt is not entered, default is current)
                        01=current
                        02=previous

Typical Response Message, Display Format:

    <SOH>
    I222TT
    MAR 20, 2009 3:25 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    CURRENT PERIOD TICKETED AND BOL DELIVERY REPORT

    PROD 1: UNLEADED GASOLINE

                            BOL   TICKET   GAUGE   TC GAUGE
    DELIVERY END DATE   NUMBER   VOLUME   VOLUME   VOLUME
    DEC 2, 1993 2:00 AM   123456   0.0   502.0   0.0
    DEC 6, 1993 2:00 AM   123983   7375.0   7369.0   7375.0
    DEC 10, 1993 2:00 AM   123902   2799.0   2790.0   2799.0
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i222TTYYMMDDHHmmTTpPPdddYYMMDDHHmmAAaa...aaNNFFFFFFFF...FFFFFFFF...
                    TTpPPdddYYMMDDHHmmAAaa...aaNNFFFFFFFF...FFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=All)
    3.   p - Product Code (Decimal)
    4.   PP - Probe type (Decimal)
    5.   ddd - Number of deliveries to follow (decimal) if 0, no more data
                        for this tank will follow
    6.   YYMMDDHHmm - Ending date/ time
    7.   AA - Number of ASCII characters to follow (Hex)
    8.   aa..aa - Bill of Lading Number (ASCII characters [20h-7Eh])
    9.   NN - Number of eight character Data Fields to follow (Hex)
    10.   FFFFFFFF - ASCII Hex IEEE floats:
                        1. Ticketed volume
                        2. Gauged volume
                        3. Gauged TC volume
    11.   && - Data Termination Flag
    12.   CCCC - Message Checksum

Function Code: 225   Version 2
Function Type: Periodic Delivery Variance Report

Command Format:
   Display: `<SOH>I225TTtt`
  Computer: `<SOH>i225TTtt`

Notes:
1.   TT - Tank Number (Decimal, 00=all)
2.   tt - Report Type (if not entered will default to current)
               01=current
               02=previous

Typical Response Message, Display Format:

```
<SOH>
I225TT
MAR 20, 2009  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CURRENT PERIOD DELIVERY VARIANCE REPORT
VOLUMES ARE STANDARD

T 1:REGULAR UNLEADED

                              TICKET         GAUGE          VARIANCE
                              VOLUME         VOLUME
MAR  7, 2009  8:26 AM         5901.0         5905.0            -4.0
MAR  9, 2009 11:37 AM         5901.0         5905.0            -4.0
MAR 10, 2009 11:34 PM         4099.0         4094.0             5.0
MAR 12, 2009  8:27 PM         3800.0         3797.0             3.0
MAR 14, 2009  8:28 AM         5900.0         5899.0             1.0
MAR 16, 2009 11:39 AM         5902.0         5916.0           -14.0
MAR 18, 2009  2:02 PM         5901.0         5900.0             1.0

TOTALS                       37404.0        37417.0           -13.0

PERCENT VARIANCE OF SALES      -13.0=-0.0%
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i225TTYYMMDDHHmmTTpPPdddYYMMDDHHmmNNFFFFFFFF...
                TTpPPdddYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Numbers (Decimal, 00=all tanks)
3.   p - Product Number (Decimal)
4.   PP - Probe type (Decimal)
5.   ddd - Number of deliveries to follow (decimal) if 000, no more
              data for this tank will follow
6.   YYMMDDHHmm - Delivery Time
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE floats:
              1. Ticketed volume
              2. Gauged volume
              3. Delivery variance
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: 226   Version 2
Function Type: Weekly Delivery Variance Report

Command Format:
Display: <SOH>I226TTtt
Computer: <SOH>i226TTtt

Notes:
1.   TT - Tank Number (Decimal, 00=all)
2.   tt - Report Type (if not entered will default to current)
                          01=current
                          02=previous

Typical Response Message, Display Format:

```
<SOH>
I226TT
MAR 20, 2009  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CURRENT WEEK DELIVERY VARIANCE REPORT
VOLUMES ARE STANDARD

T 1:REGULAR UNLEADED

                          TICKET          GAUGE          VARIANCE
                          VOLUME          VOLUME
MAR 16, 2009 11:39 AM     5902.0          5916.0          -14.0
MAR 18, 2009  2:02 PM     5901.0          5900.0            1.0

TOTALS                   11803.0         11816.0          -13.0

PERCENT VARIANCE OF SALES     -13.0=-0.1%
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i226TTYYMMDDHHmmTTpPPdddYYMMDDHHmmNNFFFFFFFF...
            TTpPPdddYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Numbers (Decimal, 00=all tanks)
3.   p - Product Number (Decimal)
4.   PP - Probe type (Decimal)
5.   ddd - Number of deliveries to follow (decimal) if 0, no more data
                       for this tank will follow
6.   YYMMDDHHmm - Delivery Time
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE float:
                       1. Ticketed volume
                       2. Gauged volume
                       3. Delivery variance
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: 227   Version 2
Function Type: Daily Delivery Variance Report

Command Format:
Display: <SOH>I227TTMMDD
Computer: <SOH>i227TTMMDD

Notes:
1.   TT – Tank number
2.   MMDD – Month and day for Daily Report, if left blank will report
                    current date

Typical Response Message, Display Format:

```
<SOH>
I227TT
MAR 20, 2009  3:26 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

DAILY DELIVERY VARIANCE REPORT
VOLUMES ARE STANDARD

T 1:REGULAR UNLEADED


                          TICKET          GAUGE           VARIANCE
                          VOLUME          VOLUME
MAR 16, 2009 11:39 AM      5902.0          5916.0           -14.0
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i227TTYYMMDDHHmmTTpPPdddYYMMDDHHmmNNFFFFFFFF...
               TTpPPdddYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   p – Product Code (one ASCII character [20h-7Eh])
4.   PP – Probe Type (Decimal)
5.   ddd – Number of deliveries to follow (decimal) if 000, no more
                    data for this tank will follow
6.   YYMMDDHHmm – Delivery Time
7.   NN – Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF – ASCII Hex IEEE float:
                    1. Ticketed volume
                    2. Gauged volume
                    3. Delivery variance
9.   && – Data Termination Flag
10.   CCCC – Message Checksum

```
        Function Code: 228                                    Version 6
        Function Type: Exception Report for Timed Sudden Loss Detection

        Command Format:
            Display: <SOH>I228TTYYMMDDyymmddnnn
           Computer: <SOH>i228TTYYMMDDyymmddnnn
```

Notes:
```
    1.           TT - Tank Number (Decimal, 00=All)
    2.       YYMMDD - Starting Date (000000 = no starting date)
    3.       yymmdd - Ending Date   (000000 = no ending date)
    4.          nnn - Maximum Records [001…999] (100 = default) (decimal)
```

Typical Response Message, Display Format:

```
    <SOH>
    I228TT
    MAY 21, 2014  3:26 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    EXCEPTION REPORT FOR TIMED SUDDEN LOSS DETECTION

    T 1: Regular
                                      START     START     START
    START DATE          REPORT DATE         TC VOLUME  HEIGHT  WATER THRESHOLD
    May 21, 2014 12:00  MAY 21, 2014 12:16       4742  143.11   0.01        20

    T 2: Kerosene
                                      START     START     START
    START DATE          REPORT DATE         TC VOLUME  HEIGHT  WATER THRESHOLD
    May 21, 2014 12:00  MAY 21, 2014 12:16       4342  143.11   0.01        20
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i228TTYYMMDDHHmmnnTTrrrrYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                            YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                  nnTTrrrrYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                                    ...FFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.   YYMMDDHHmm - Current Date and Time
    2.           nn - Number of Tanks to follow (01-32, decimal)
    3.           TT - Tank Number (Decimal, 00=all)
    4.         rrrr - Number of records to follow (Decimal)
    5.   YYMMDDHHmm - Record Start Date/Time
    6.   YYMMDDHHmm - Record End Date/Time
    7.           NN - Number of eight character Data Fields to follow (Hex)
    8.     FFFFFFFF - ASCII Hex IEEE float:
                         1. Start volume
                         2. Start TC volume
                         3. Start product height
                         4. Start water height
                         5. Start temperature
                         6. Threshold used in the detection
                         7. Observed inventory loss
    9.           && - Data Termination Flag
    10.        CCCC - Message Checksum
```

Function Code: 229   Version 6
Function Type: Period Report for Timed Sudden Loss Detection

    Command Format:
        Display: <SOH>I229TTYYMMDDyymmddnnn
      Computer: <SOH>i229TTYYMMDDyymmddnnn

Notes:
  1.   TT – Tank Number (Decimal, 00=All)
  2.   YYMMDD – Starting Date (000000 = no starting date)
  3.   yymmdd – Ending Date   (000000 = no ending date)
  4.   nnn – Maximum Records [001…999] (100 = default) (decimal)

Typical Response Message, Display Format:

```
<SOH>
I229TT
MAY 21, 2014  3:26 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PERIOD REPORT FOR TIMED SUDDEN LOSS DETECTION

T 1: Regular
                              FUEL TC      FUEL    WATER
                 DATE/TIME     VOLUME    HEIGHT   HEIGHT
START: MAY 21, 2014 12:01 AM     3000     36.74     0.00
  END: MAY 22, 2014  5:00 AM     3000     36.74     0.00
                  FUEL LOSS:        0
                 INDICATORS: DAILY SCHEDULED

                              FUEL TC      FUEL    WATER
                 DATE/TIME     VOLUME    HEIGHT   HEIGHT
START: MAY 21, 2014 12:01 AM     5000     45.48     0.00
  END: MAY 22, 2014  5:00 AM     3445     42.61     0.00
                  FUEL LOSS:     -555
                 INDICATORS: DAILY SCHEDULED
                             TSL RESTARTED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i229TTYYMMDDHHmmnnTTrrrrYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                      YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
            nnTTrrrrYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                                  ...FFFFFFFF&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm – Current Date and Time
  2.   nn – Number of Tanks to follow (01-32, decimal)
  3.   TT – Tank Number (Decimal, 00=all)
  4.   rrrr – Number of records to follow (Decimal)
  5.   YYMMDDHHmm – Record Start Date/Time
  6.   YYMMDDHHmm – Record End Date/Time
  7.   NN – Number of eight character Data Fields to follow (Hex)

Function Code 229: (Continued)

```
     8.          FFFFFFFF - ASCII Hex IEEE float:
                            1. Start volume, IEEE float
                            2. Start TC volume, IEEE float
                            3. Start product height, IEEE float
                            4. Start water height, IEEE float
                            5. Start temperature, IEEE float
                            6. End volume, IEEE float
                            7. End TC volume, IEEE float
                            8. End product height, IEEE float
                            9. End water height, IEEE float
                           10. End temperature, IEEE float
                           11. Observed inventory loss, IEEE float
                           12. Error flag, unsigned long
                                  Bit 1=Timed Sudden Loss Schedule Daily
                                  Bit 2=Timed Sudden Loss Schedule Individual
                                  Bit 3=Timed Sudden Loss Schedule Manual
                                  Bit 4=Timed Sudden Loss Schedule (future)
                                  Bit 5=Power Outage/Reboot during detection period
                                  Bit 6=Date/Time changed
                                  Bit 7=Probe Out during detection period
                                  Bit 8=Operator restart Timed Sudden Loss Detection
                                  Bit 9=Period disabled
                                  Bit 10=Delivery occurred
                                  Bit 11=Tank Chart changed
     9.              && - Data Termination Flag
    10.          CCCC - Message Checksum
```

Function Code: 22I   Version 2
Function Type: Ticketed Delivery Daily Report

Command Format:
    Display: <SOH>I22ITTyymmddYYMMDDnnn
  Computer: <SOH>i22ITTyymmddYYMMDDnnn

Notes:
1.   TT - Tank Number (Decimal, 00=All)
2.   yymmdd - Starting Date (000000 = no starting date = first of the month)
3.   YYMMDD - Ending Date   (000000 = no ending date = current date)
4.   nnn - Maximum Records [001…366] (100 = default) (decimal)

Typical Response Message, Display Format:

```
<SOH>
I22ITT
MAR 20, 2009  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

TICKETED DELIVERY DAILY REPORT
VOLUMES ARE STANDARD

T 1:REGULAR UNLEADED

                      TICKET   GAUGE    DLVY   BEFORE AFTER EST DLVY
DELIVERY END DATE     VOLUME   VOLUME   VAR    TMP    TMP   TMP
MAR  7, 2009  8:26 AM 5901.4   5905.2   -4.0   44.8   42.4  41.0
MAR  9, 2009 11:37 AM 5901.2   5905.6   -4.0   44.6   43.2  42.4
MAR 10, 2009 11:34 PM 4099.8   4094.9    5.0   44.6   42.6  40.5
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i22ITTYYMMDDHHmmTTpPPddddYYMMDDHHmmNNFFFFFFFF...
               TTpPPddddYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=All)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   PP - Probe type (Decimal)
5.   dddd - Number of deliveries to follow (decimal) if 0, no more data
              for this tank will follow
6.   YYMMDDHHmm - Ending date/ time
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE floats:
                1. ticket volume
                2. gauged volume
                3. delivery variance
                4. start fuel temperature
                5. end fuel temperature
                6. estimated delivery temperature
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: 22J   Version 2
Function Type: Delivery Ticket History Report

Command Format:
    Display: <SOH>I22JTTyymmddYYMMDDnnn
    Computer: not supported

Notes:
```
   1.             TT - Tank Number (Decimal, 00=All)
   2.        yymmdd - Starting Date (000000 = no starting date = first of the month)
   3.        YYMMDD - Ending Date   (000000 = no ending date = current date)
   4.           nnn - Maximum Records [001…366] (100 = default) (decimal)
```

Typical Response Message, Display Format:

```
<SOH>
I22JTT
MAR 20, 2009  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

DELIVERY TICKET HISTORY REPORT
VOLUMES ARE STANDARD

T 1:REGULAR UNLEADED


                                              EST
                      GAUGE   TICKET    ST    END   DLY   BILL OF LADING /
DELIVERY END DATE     VOLUME  VOLUME    TMP   TMP   TMP   DELIVERY ID
MAR  7, 2009  8:26 AM   5901    5905   44.0  48.0  47.0  This would be 20 cha
                                                         This would be 20 cha
MAR 29, 2009 11:37 AM   5901    5905   65.0  70.0  68.0  TRUCK 7
                                                         1010
<ETX>
```

```
        Function Code: 231                                     Version 1
        Function Type: In-Tank Full Inventory Report

        Command Format:
             Display: <SOH>I231TT
            Computer: <SOH>I231TT
```

Typical Response Message, Display Format:

```
<SOH>
I23100
 16-06-11 07:35

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

FULL INVENTORY REPORT

TANK            :        1        2        3
FULL VOLUME     :    10000    10000    10000
VOLUME          :      247     7433     1828
ULLAGE          :     9753     2567     8172
HEIGHT          :      5.8     16.7     11.4
WATER HEIGHT    :      2.0      2.5      4.8
WATER VOLUME    :       51      560      528
NET VOLUME      :      196     6873     1300
TC VOLUME       :      246     7366     1819
TC NET VOLUME   :      195     6811     1294
TEMP            :     64.5     72.0     66.1
MASS            :        -    45481        -
DENSITY         :        -    45.77        -
TC DENSITY      :        -    46.18        -
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i231TTYYMMDDHHmmTTpssssNNFFFFFFFF...
                 TTpssssNNFFFFFFFF&&CCCC<ETX>
```
Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.               p - Product Code (single ASCII character [20h-7Eh])
    4.            ssss - Tank Status Bits:
                        Bit 1=(LSB) Delivery in Progress
                        Bit 2=Leak Test in Progress
                        Bit 3=Invalid Fuel Height Alarm (MAG Probes Only)
                        Bit 4-16 - Unused
    5.              NN - Number of eight character Data Fields to follow (Hex)
    6.        FFFFFFFF - ASCII Hex IEEE float:
                            1. Volume
                            2. TC Volume
                            3. Ullage
                            4. Height
                            5. Water
                            6. Temperature
                            7. Water Volume
                            8. Full Volume
                            9. Net Volume
                           10. TC Net Volume
                           11. Mass
                           12. Density
                           13. TC Density
    7.              && - Data Termination Flag
    8.            CCCC - Message Checksum
```

```
        Function Code: 233                                    Version 3
        Function Type: Density Offset History Report

      Command Format:
           Display: <SOH>I233PP
          Computer: <SOH>i233PP
```

Typical Response Message, Display Format:

```
<SOH>
I233PP
28-07-11 10:51

DENSITY OFFSET HISTORY REPORT

T 1:REGULAR UNLEADED
DATE / TIME              DENSITY   TEMP   TC DENSITY  TC REF TEMP  TC OFFSET
28-07-11 10:51     TLS:  45.062   71.50    45.459       59.00       0.000
                 FIELD:  45.060   71.70    45.464       59.00       0.005
                 TOTAL:                                              0.005
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i233PPYYMMDDHHmmPPNNYYMMDDHHmmnnFFFFFFFF...FFFFFFFF
                     YYMMDDHHmmnnFFFFFFFF...FFFFFFFF...
                PPNNYYMMDDHHmmnnFFFFFFFF...FFFFFFFF
                     YYMMDDHHmmnnFFFFFFFF...FFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.                PP - Probe Number (Decimal, 00=All)
    3.                NN - Number of records to follow (Hex):
    4.        YYMMDDHHmm - Date/Time
    5.                nn - Number of eight character Data Fields to follow (Hex)
    6.          FFFFFFFF - ASCII Hex IEEE floats:
                          1. TLS Density
                          2. TLS Temp
                          3. TLS TC Density
                          4. Previous TC Ref Temp
                          5. Previous Total TC Density Offset
                          6. Field Density
                          7. Field Temp
                          8. Field TC Density
                          9. TC Ref Temp
                          10. TC Density Offset
                          11. Total TC Density Offset
    7.                && - Data Termination Flag
    8.              CCCC - Message Checksum
```

Function Code: 234   Version 3
Function Type: In-Tank Mass/Density Inventory Report

   Command Format:
       Display: <SOH>I234TT
     Computer: <SOH>i234TT

Typical Response Message, Display Format:

```
<SOH>
I234TT
MAR 20, 2010  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

IN_TANK MASS INVENTORY
```

TANK	PRODUCT	VOLUME	MASS	TC DENSITY	HEIGHT	WATER	TEMP
1	PRODUCT 1	7343	44521	45.35	16.5	0.0	78.8

```
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i234TTYYMMDDHHmmTTpssssNNFFFFFFFF...
                TTpssssNNFFFFFFFF...&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=All)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   ssss - Tank Status Bits:
                      Bit 1=(LSB) Delivery in Progress
                      Bit 2=Leak Test in Progress
                      Bit 3=Invalid Fuel Height Alarm (MAG Probes Only)
                      Bit 4-16 - Unused
5.   NN - Number of eight character Data Fields to follow (Hex)
6.   FFFFFFFF - ASCII Hex IEEE floats:
                      1. Volume
                      2. Mass
                      3. Density
                      4. Height
                      5. Water
                      6. Temperature
                      7. TC Density
7.   && - Data Termination Flag
8.   CCCC - Message Checksum

Function Code: 235   Version 3
Function Type: In-Tank Mass/Density Delivery Report

Command Format:
       Display: <SOH>I235TT
      Computer: <SOH>i235TT

Typical Response Message, Display Format:

```
<SOH>
I235TT
APR 30, 2010  3:25 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....


                                                      Volume=GALLONS
                                                       Height=INCHES
    IN-TANK MASS/DENSITY DELIVERY REPORT              Temp=FAHRENHEIT


TANK  1:PRODUCT 1
                              Fuel              TC    Water    Fuel    Fuel
         Date / Time         Volume    Mass Density  Height    Temp  Height
    END: MAY 26, 2010  1:28 PM  5000      0    0.00    0.00   60.00   48.00
  START: MAY 26, 2010 11:56 AM  3000      0    0.00    0.00   60.00   32.65
AMOUNT:                         2000


TANK  3:PRODUCT 3
                              Fuel              TC    Water    Fuel    Fuel
         Date / Time         Volume    Mass Density  Height    Temp  Height
    END: MAY 26, 2010  1:28 PM  5877      0    0.00    0.00   60.00   54.63
  START: MAY 26, 2010 11:56 AM  3877      0    0.00    0.00   60.00   39.49
AMOUNT:                         2000
<ETX>
```

Function Code 235: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i235TTYYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFFf...
                  TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFFf...&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=All)
    3.               p - Product Code (one ASCII character [20h-7Eh])
    4.              dd - Number of Deliveries to follow (Decimal, 00=no data)
    5.      YYMMDDHHmm - Starting Date/Time
    6.      YYMMDDHHmm - Ending Date/Time
    7.              NN - Number of eight character Data Fields to follow (Hex)
    8.        FFFFFFFF - ASCII Hex IEEE floats:
                         1. Starting Volume
                         2. Starting Mass
                         3. Starting Density
                         4. Starting Water
                         5. Starting Temp
                         6. Ending Volume
                         7. Ending Mass
                         8. Ending Density
                         9. Ending Water
                        10. Ending Temp
                        11. Starting Height
                        12. Ending Height
                        13. Starting TC Density
                        14. Ending TC Density
    9.               f - Default Density Flag (0=new value, 1=default)
   10.              && - Data Termination Flag
   11.            CCCC - Message Checksum
```

Function Code: 237   Version 1
Function Type: In-Tank Product Inventory Report

Command Format:
        Display: <SOH>I237TT
       Computer: <SOH>i237TT

Typical Response Message, Display Format:

```
<SOH>
I237TT
JAN 22, 2012  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRODUCT INVENTORY REPORT

TANK PRODUCT LABEL              VOLUME     TC VOLUME
  1  REGULAR 1                    5265          5224
  2  REGULAR 2                    5265          5220
  3  REGULAR 3                    5265          5217
  4  REGULAR 4                    5265          5231
                     TOTAL:      21060         20892


  5  DIESEL                       3287          3276
                     TOTAL:       3287          3276
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i237TTYYMMDDHHmmNNTTpnnaaaaaaaaAAAAAAAA...
                TTpnnaaaaaaaaAAAAAAAAbbccccccccCCCCCCCC&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   NN - Number of tanks to follow (Hex)
    3.   TT - Tank Number (Decimal, 00=all)
    4.   p - Product Code (one ASCII character [20h-7Eh])
    5.   nn - Number of eight byte ASCII Hex floats to follow
    6.   aaaaaaaa - Tank Volume
    7.   AAAAAAAA - Tank TC Volume
    8.   bb - Number of eight byte ASCII Hex floats to follow
    9.   cccccccc - Product Volume
   10.   CCCCCCCC - Product TC Volume
   11.   && - Data Termination Flag
   12.   CCCC - Message Checksum

Function Code: 238   Version 1
Function Type: In-Tank Siphon Manifolded Inventory Report

Command Format:
        Display: <SOH>I238TT
       Computer: <SOH>i238TT

Typical Response Message, Display Format:

```
<SOH>
I238TT
JAN 22, 2012  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

SIPHON MANIFOLDED INVENTORY REPORT

TANK PRODUCT LABEL                 VOLUME        TC VOLUME
   1   REGULAR 1                     5265             5224
   2   REGULAR 2                     5265             5220
                         TOTAL:     10530            10448


   3   PREMIUM 1                     5265             5217
   4   PREMIUM 2                     5265             5231
                         TOTAL:     10530            10448


   5   DIESEL                        3287             3276
                         TOTAL:      3287             3276
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i238TTYYMMDDHHmmNNTTpnnaaaaaaaaAAAAAAAA...
                  TTpnnaaaaaaaaAAAAAAAAbbccccccccCCCCCCCC&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   NN - Number of tanks to follow (Hex)
   3.   TT - Tank Number (Decimal, 00=all)
   4.   p - Product Code (one ASCII character [20h-7Eh])
   5.   nn - Number of eight byte ASCII Hex floats to follow
   6.   aaaaaaaa - Tank Volume
   7.   AAAAAAAA - Tank TC Volume
   8.   bb - Number of eight byte ASCII Hex floats to follow
   9.   cccccccc - Product Volume
  10.   CCCCCCCC - Product TC Volume
  11.   && - Data Termination Flag
  12.   CCCC - Message Checksum

```
        Function Code: 239                                   Version 4
        Function Type: In-Tank Manifolded Delivery Report
                       With Sales Adjustment if BIR available

        Command Format:
              Display: <SOH>I239TT
             Computer: <SOH>i239TT
```

Typical Response Message, Display Format:

```
<SOH>
I239TT
JUL 29, 2012  9:02 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

MANIFOLDED DELIVERY REPORT

TANK    PRODUCT LABEL
  1     REGULAR A
  2     REGULAR B
  3     REGULAR C
DATE / TIME             GALLONS TC GALLONS
OCT 10, 2012  1:01 AM     25857      25857
OCT  9, 2012  1:01 AM     25854      25854
OCT  8, 2012  1:01 AM     25851      25851
OCT  7, 2012  1:01 AM     25848      25848
OCT  6, 2012  1:01 AM     25845      25845
OCT  5, 2012  1:01 AM     25842      25842
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i239TTYYMMDDHHmmnnTTp...TTpddYYMMDDHHmmNNFFFFFFFF...
              nnTTp...TTpddYYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.                nn - Number of Tanks to follow
    3.                TT - Tank Number (Decimal, 00=all)
    4.                 p - Product Code (single ASCII character [20h-7Eh])
    5.                dd - Number of Deliveries to follow (Decimal, 00 if no data
                          available)
    6.        YYMMDDHHmm - Starting Date/Time
    7.                NN - Number of eight character Data Fields to follow (Hex)
    8.          FFFFFFFF - ASCII Hex IEEE float:
                          1. Unadjusted Delivery Volume, IEEE float
                          2. Unadjusted TC Delivery Volume, IEEE float
                          3. Estimated Sales, IEEE float
                          4. Manifolded tanks bit mask, unsigned long
                          5. Probe Out bit mask, unsigned long
    9.                && - Data Termination Flag
   10.              CCCC - Message Checksum
```

```
          Function Code: 23A                                    Version 4
          Function Type: In-Tank Manifolded Delivery Report
                         with Sales Adjustment if BIR available


          Command Format:
                Display: <SOH>I23ATT
               Computer: <SOH>i23ATT
```

Typical Response Message, Display Format:

```
   <SOH>
   I23ATT
   JAN 22, 2009  3:08 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   MANIFOLDED DELIVERY REPORT

   TANK    PRODUCT LABEL
     1     REGULAR A
     2     REGULAR B
     3     REGULAR C
   START DATE / TIME        END DATE / TIME        GALLONS TC GALLONS
   OCT 10, 2012  1:01 AM   OCT 10, 2012  1:21 AM     25857      25857
   OCT  9, 2012  1:01 AM   OCT  9, 2012  1:21 AM     25854      25854
   OCT  8, 2012  1:01 AM   OCT  8, 2012  1:21 AM     25851      25851
   OCT  7, 2012  1:01 AM   OCT  7, 2012  1:21 AM     25848      25848
   OCT  6, 2012  1:01 AM   OCT  6, 2012  1:21 AM     25845      25845
   OCT  5, 2012  1:01 AM   OCT  5, 2012  1:21 AM     25842      25842
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i23ATTYYMMDDHHmmnnTTp...TTpddYYMMDDHHmm YYMMDDHHmmNNFFFFFFFF...
                   nnTTp...TTpddYYMMDDHHmm YYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              nn - Number of Tanks to follow
    3.              TT - Tank Number (Decimal, 00=all)
    4.               p - Product Code (single ASCII character [20h-7Eh])
    5.              dd - Number of Deliveries to follow (Decimal, 00 if no data
                        available)
    6.      YYMMDDHHmm - Starting Date/Time
    7.      YYMMDDHHmm - Ending Date/Time
    8.              NN - Number of eight character Data Fields to follow (Hex)
    9.        FFFFFFFF - ASCII Hex IEEE float:
                        1. Unadjusted Delivery Volume, IEEE float
                        2. Unadjusted TC Delivery Volume, IEEE float
                        3. Estimated Sales, IEEE float
                        4. Manifolded tanks bit mask, unsigned long
                        5. Probe Out bit mask, unsigned long
   10.              && - Data Termination Flag
   11.            CCCC - Message Checksum
```

```
        Function Code: 23B                              Version 3
        Function Type: BIR Adjusted Mass/Density Delivery Report

        Command Format:
            Display: <SOH>I23BTT
           Computer: <SOH>i23BTT
```

Typical Response Message, Display Format:

```
<SOH>
I23BTT
JAN 22, 2009  3:08 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

BIR ADJUSTED MASS/DENSITY DELIVERY REPORT

T 1:REGULAR UNLEADED
                                            TC          START TC   END TC
START DATE          END DATE        VOLUME  VOLUME  MASS  DENSITY  DENSITY
01/21/09  2:52 AM  01/21/09  3:12 AM   3193    9197  24452    45.73    45.73
01/19/09  3:22 AM  01/19/09  3:40 AM   4193    8602  24409    45.73    45.73
01/17/09  3:13 AM  01/17/09  3:40 AM   2739    8749  26010    45.73    45.73
<ETX>
```

Function Code 23B: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i23BTTYYMMDDHHmmTTddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
              TTddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=All)
3.   dd – Number of Deliveries to follow
4.   YYMMDDHHmm – Starting Date/Time
5.   YYMMDDHHmm – Ending Date/Time
6.   NN – Number of eight character Data Fields to follow (Hex)
7.   FFFFFFFF – ASCII Hex IEEE floats:
                    1. Starting Volume
                    2. Ending Volume
                    3. Adjusted Delivery Volume
                    4. Adjusted Delivery Temperature Compensated Volume
                    5. Starting Fuel Height
                    6. Starting Fuel Temperature 1
                    7. Starting Fuel Temperature 2
                    8. Starting Fuel Temperature 3
                    9. Starting Fuel Temperature 4
                   10. Starting Fuel Temperature 5
                   11. Starting Fuel Temperature 6
                   12. Ending Fuel Height
                   13. Ending Fuel Temperature 1
                   14. Ending Fuel Temperature 2
                   15. Ending Fuel Temperature 3
                   16. Ending Fuel Temperature 4
                   17. Ending Fuel Temperature 5
                   18. Ending Fuel Temperature 6
                   19. Total Dispensed During Delivery
                   20. Starting Fuel Temperature Average
                   21. Ending Fuel Temperature Average
                   22. Adjusted Delivery Mass
                   23. Starting Mass
                   24. Ending Mass
                   25. Starting Density
                   26. Ending Density
                   27. Starting TC Density
                   28. Ending TC Density
8.   && – Data Termination Flag
9.   CCCC – Message Checksum

```
        Function Code: 251                                      Version 1
        Function Type: CSLD Results Report

     Command Format:
          Display: <SOH>I251TT
         Computer: <SOH>i251TT
```

Typical Response Message, Display Format:

```
<SOH>
I251TT
JAN 22, 1996  3:09 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CSLD TEST RESULTS
TANK PRODUCT                    RESULT
  1  REGULAR UNLEADED           PER: JAN 22, 1996 Pass
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i251TTYYMMDDHHmmTTrr...
                TTrr&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             TT - Tank Number (Decimal, 00=all)
    3.             rr - Tank CSLD Results:
                        01=Pass
                        02=Fail
                        03=No Results Available
                        04=Invalid
                        08=Increase
                        09=Warning
    4.             && - Data Termination Flag
    5.           CCCC - Message Checksum
```

```
        Function Code: 2E3                                  Version 1
        Function Type: In-Tank Inventory History Report

        Command Format:
            Display: <SOH>I2E3TTyymmddYYMMDDnnn
           Computer: <SOH>i2E3TTyymmddYYMMDDnnn
```

Notes:
```
    1.      YYMMDDHHmm -  Starting Date (000000 = no starting date)
    2.          YYMMDD -  Ending Date   (000000 = no ending date)
    3.             nnn -  Maximum Records [001…999] (100 = default) (decimal)
```

Typical Response Message, Display Format:

```
    <SOH>
    I2E3TT
    JAN 22, 1996  3:06 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

                                                     Volume=GALLONS
                                                      Height=INCHES
    INVENTORY HISTORY REPORT                       Temp=FAHRENHEIT

    TANK 1: REGULAR UNLEADED

                        FUEL      FUEL TC      FUEL     WATER      WATER     FUEL
    DATE/TIME         VOLUME      VOLUME     HEIGHT    HEIGHT     VOLUME     TEMP
    07/01/31 03:00      5329        5413      48.97      1.30        100    37.39
    07/02/01 02:00      5329        5413      48.97      1.30        100    37.39
    07/02/02 01:00      5329        5413      48.97      1.30        100    37.39
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i2E3TTYYMMDDHHmmTTpnnnnssssYYMMDDHHmmNNFFFFFFFF...
                         ssssYYMMDDHHmmNNFFFFFFFF...
                  TTpnnnnssssYYMMDDHHmmNNFFFFFFFF...
                         ssssYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1. YYMMDDHHmm - Current Date and Time
    2.         TT - Tank Number (Decimal, 00=all)
    3.          p - Product Code (one ASCII character [20h-7Eh])
    4.       nnnn - Number of TimeStamped Records to follow (hex)
    5.       ssss - Tank Status Bits:
                    Bit 1 - (LSB) Delivery in Progress
                    Bit 2 - Leak Test in Progress
                    Bit 3 - Invalid Fuel Height Alarm (MAG Probes Only)
                    Bit 4-16 - Unused
    6. YYMMDDHHmm - Timestamp
    7.         NN - Number of eight character Data Fields (hex)
    8.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Volume
                    2. TC Volume
                    3. Fuel Height
                    4. Water Height
                    5. Avg Fuel Temperature
                    6. Water Volume
                    7. Mass
                    8. Density
                    9. TC Density
    9.         && - Data Termination Flag
    10.      CCCC - Message Checksum
```

```
         Function Code: 2E4                                      Version 1
         Function Type: Extended In-Tank Inventory Report – Date/Time Based
        Command Format:
              Display: <SOH>I2E4TTRRyymmddhhmmYYMMDDHHMMnnn
             Computer: <SOH>i2E4TTRRyymmddhhmmYYMMDDHHMMnnn
```

Notes:
1.   TT – Device Number (Decimal, 00=all)
2.   RR – Report Type (Report Type should always be given. The rest of the parameters are optional following the rules below.)
       00=Inventory History Report (Inventory Information for the specified Time Period)
3.   yyyymmddhhmm – Starting Date/Time (If a start date/time is not provided or either Year, Month or Day are zeroes, it assumes request is for most recent records. If a start date/time is not provided, then the request is limited by the Maximum Records (below). Ranges are as follows:
       yy=Year   (01-99, for Years 2001-2099)
       mm=Month (01-12, for Months January to December)
       dd=Day   (01-31, however, validity depends on Month)
       hh=Hour   (00-23)
       mm=Minute (00-59)
4.   YYMMDDHHMM – Ending Date/Time (If an end date/time is not given or either Year, Month or Day are zeroes, it assumes request is for records starting from start date/time as evaluated above, limited by the Maximum Records (below). Ranges are the same as the Start Date/Time fields.
5.   nnn – Maximum Records (1-999, Absolute Maximum) (Decimal). (If Maximum records is not given or it is zeroes, it assumes request is for records from start date/time, ending by end date start/time, and limited by Maximum Records default of 100)

Typical Response Message, Display Format:

```
<SOH>
I2E40001
JAN 22, 1996  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

                                             Volume=LITERS
                                             Height=MM
INVENTORY HISTORY REPORT                     Temp=DEG C

Selected Range:
Date Range: JAN  1, 2009 12:00 AM – NOV  1, 2009 12:00 AM

TANK 1: Regular Unleaded

                Fuel    Fuel TC   Fuel    Water   Water   Fuel
Date/Time       Volume  Volume    Height  Height  Volume  Temp

07-01-31 03:00  5329    5413      48.97   0.00    0.00    37.39
07-02-01 02:00  5329    5413      48.97   0.00    0.00    37.39
07-02-02 01:00  5329    5413      48.97   0.00    0.00    37.39

TANK 2: Regular Unleaded

                Fuel    Fuel TC   Fuel    Water   Water   Fuel
Date/Time       Volume  Volume    Height  Height  Volume  Temp

07-01-31 03:00  5329    5413      48.97   0.00    0.00    37.39
07-02-01 02:00  5329    5413      48.97   0.00    0.00    37.39
07-02-02 01:00  5329    5413      48.97   0.00    0.00    37.39
<ETX>
```

Function Code 2E4: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i2E4TTYYMMDDHHmmTTpnnnnnssssYYMMDDHHmmNNFFFFFFFF...
                         ssssYYMMDDHHmmNNFFFFFFFF...
                TTpnnnnnssssYYMMDDHHmmNNFFFFFFFF...
                         ssssYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   nnnn - Number of TimeStamped Records to follow (hex)
5.   ssss - Tank Status Bits:
                 Bit 1 - (LSB) Delivery in Progress
                 Bit 2 - Leak Test in Progress
                 Bit 3 - Invalid Fuel Height Alarm (MAG Probes Only)
                 Bit 4-16 – Unused
6. YYMMDDHHmm - Timestamp
7.   NN - Number of eight character Data Fields (hex)
8. FFFFFFFF - ASCII Hex IEEE floats:
                 1. Volume
                 2. TC Volume
                 3. Fuel Height
                 4. Water Height
                 5. Avg Fuel Temperature
                 6. Water Volume
                 7. Mass
                 8. Density
                 9. TC Density
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

7.2.3 SENSOR REPORTS

Function Code: 301   Version 1
Function Type: Liquid Sensor Status Report

Command Format:
Display: <SOH>I301SS
Computer: <SOH>i301SS

Typical Response Message, Display Format:

```
<SOH>
I301SS
JAN 28, 1995 10:10 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

LIQUID STATUS REPORT

SENSOR  LOCATION                STATUS
     1  LIQUID # 1              SENSOR NORMAL
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i301SSYYMMDDHHmmSSssss...
               SSssss&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   SS – Sensor Number (Decimal, 00=all)
3.   ssss – Sensor Status Value:
                  0000=Sensor Normal
                  0001=Sensor Setup Data Warning
                  0002=Sensor Fuel Alarm
                  0003=Sensor Out Alarm
                  0004=Sensor Short Alarm
                  0005=Sensor Water Alarm
                  0006=Sensor Water Out Alarm
                  0007=Sensor High Liquid Alarm
                  0008=Sensor Low Liquid Alarm
                  0009=Sensor Liquid Warning
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
        Function Code: 302                                    Version 1
        Function Type: Liquid Sensor Alarm History Report

        Command Format:
            Display: <SOH>I302SS
           Computer: <SOH>i302SS
```

Typical Response Message, Display Format:

```
<SOH>
I302SS
JAN 28, 1995 10:10 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

LIQUID ALARM HISTORY REPORT

SENSOR  LOCATION
     1  LIQUID # 1
        JAN  6, 1995  8:02 AM           FUEL ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i302SSYYMMDDHHmmSSNNYYMMDDHHmmaaaa...
                 SSNNYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               SS - Sensor Number (Decimal, 00=all)
    3.               NN - Number of Alarm Incidents to follow
    4.       YYMMDDHHmm - Date and Time of Alarm
    5.             aaaa - Alarm type number:
                         0001=Sensor Setup Data Warning
                         0002=Sensor Fuel Alarm
                         0003=Sensor Out Alarm
                         0004=Sensor Short Alarm
                         0005=Sensor Water Alarm
                         0006=Sensor Water Out Alarm
                         0007=Sensor High Liquid Alarm
                         0008=Sensor Low Liquid Alarm
                         0009=Sensor Liquid Warning
    6.               && - Data Termination Flag
    7.             CCCC - Message Checksum
```

      Function Code: 306   Version 1
      Function Type: Vapor Sensor Status Report

    Command Format:
        Display: <SOH>I306SS
       Computer: <SOH>i306SS

Typical Response Message, Display Format:

```
<SOH>
I306SS
JAN 28, 1995 10:11 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

VAPOR STATUS REPORT

SENSOR   LOCATION                 STATUS
     1   VAPOR # 1                NORMAL
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i306SSYYMMDDHHmmSSsssss...
                 SSsssss&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   SS – Sensor Number (Decimal, 00=all)
3.   ssss – Sensor Status Value:
               0000=Sensor Normal
               0001=Sensor Setup Data Warning
               0002=Sensor Fuel Alarm
               0003=Sensor Out Alarm
               0004=Sensor Short Alarm
               0005=Sensor Water Alarm
               0006=Sensor Water Out Alarm
               0007=Sensor High Liquid Alarm
               0008=Sensor Low Liquid Alarm
               0009=Sensor Liquid Warning
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: 307   Version 1
Function Type: Vapor Sensor Alarm History Report

Command Format:
    Display: <SOH>I307SS
    Computer: <SOH>i307SS

Typical Response Message, Display Format:

```
<SOH>
I307SS
JAN 28, 1995 10:11 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

VAPOR ALARM HISTORY REPORT

SENSOR   LOCATION
     1   VAPOR # 1
         JAN  6, 1995  8:02 AM          WATER ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i307SSYYMMDDHHmmSSNNYYMMDDHHmmaaaa...
                   SSNNYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   SS – Sensor Number (Decimal, 00=all)
3.   NN – Number of Alarm Incidents to follow
4.   YYMMDDHHmm – Date and Time of Alarm
5.   aaaa – Alarm type number:
                0001=Sensor Setup Data Warning
                0002=Sensor Fuel Alarm
                0003=Sensor Out Alarm
                0004=Sensor Short Alarm
                0005=Sensor Water Alarm
                0006=Sensor Water Out Alarm
                0007=Sensor High Liquid Alarm
                0008=Sensor Low Liquid Alarm
                0009=Sensor Liquid Warning
6.   && – Data Termination Flag
7.   CCCC – Message Checksum

```
        Function Code: 311                                        Version 1
        Function Type: Groundwater Sensor Status Report

      Command Format:
          Display: <SOH>I311SS
         Computer: <SOH>i311SS
```

Typical Response Message, Display Format:

```
<SOH>
I311SS
JAN 28, 1995 10:11 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

GROUNDWATER STATUS REPORT

SENSOR   LOCATION                STATUS
     1   GROUND WATER # 1        NORMAL
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i311SSYYMMDDHHmmSSsssss...
                    SSsssss&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             SS - Sensor Number (Decimal, 00=all)
    3.           ssss - Sensor Status Value:
                      0000=Sensor Normal
                      0001=Sensor Setup Data Warning
                      0002=Sensor Fuel Alarm
                      0003=Sensor Out Alarm
                      0004=Sensor Short Alarm
                      0005=Sensor Water Alarm
                      0006=Sensor Water Out Alarm
                      0007=Sensor High Liquid Alarm
                      0008=Sensor Low Liquid Alarm
                      0009=Sensor Liquid Warning
    4.             && - Data Termination Flag
    5.           CCCC - Message Checksum
```

      Function Code: 312   Version 1
      Function Type: Groundwater Sensor Alarm History Report

     Command Format:
          Display: <SOH>I312SS
       Computer: <SOH>i312SS

Typical Response Message, Display Format:

```
<SOH>
I312SS
JAN 28, 1995 10:11 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

GROUNDWATER ALARM HISTORY REPORT

SENSOR  LOCATION
     1  GROUND WATER # 1
        JAN  6, 1995  8:02 AM          OPEN ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i312SSYYMMDDHHmmSSNNYYMMDDHHmmaaaa...
                  SSNNYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
```
1.      YYMMDDHHmm - Current Date and Time
2.             SS - Sensor Number (Decimal, 00=all)
3.             NN - Number of Alarm Incidents to follow
4.      YYMMDDHHmm - Date and Time of Alarm
5.           aaaa - Alarm type number:
                    0001=Sensor Setup Data Warning
                    0002=Sensor Fuel Alarm
                    0003=Sensor Out Alarm
                    0004=Sensor Short Alarm
                    0005=Sensor Water Alarm
                    0006=Sensor Water Out Alarm
                    0007=Sensor High Liquid Alarm
                    0008=Sensor Low Liquid Alarm
                    0009=Sensor Liquid Warning
6.             && - Data Termination Flag
7.           CCCC - Message Checksum
```

Function Code: 31B   Version 1
Function Type: MAG Sensor Status Report

Command Format:
Display: <SOH>I31BSS
Computer: <SOH>i31BSS

Typical Response Message, Display Format:

```
<SOH>
I31BSS
JAN 22, 2003  3:07 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

MAG SENSOR STATUS REPORT

SENSOR   LOCATION       STATUS

    1  SUMP 1       SENSOR NORMAL
    2  SUMP 2       FUEL ALARM
                    WATER ALARM
                    INSTALL ALARM
    3  SUMP 3       SENSOR NORMAL
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i31BSSYYMMDDHHmmSSNNaaaa...zzzz
                SSNNaaaa...zzzz&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - MAG Sensor Number (Decimal, 00=all)
3.   NN - Number of alarm states to follow
4.   aaaa..zzzz - Sensor status values:
                    0000=MAG Sensor Normal
                    0001=MAG Sensor Setup Data Warning
                    0002=MAG Sensor Communication Alarm
                    0003=MAG Sensor Fault Alarm
                    0004=MAG Sensor Fuel Warning
                    0005=MAG Sensor Fuel Alarm
                    0006=MAG Sensor Water Warning
                    0007=MAG Sensor Water Alarm
                    0008=MAG Sensor High Liquid Warning
                    0009=MAG Sensor High Liquid Alarm
                    0010=MAG Sensor Low Liquid Warning
                    0011=MAG Sensor Low Liquid Alarm
                    0012=MAG Sensor Temperature Warning
                    0013=MAG Sensor Relay Active
                    0014=MAG Sensor Install Alarm
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: 31C   Version 1
Function Type: MAG Sensor Alarm History Report

Command Format:
        Display: <SOH>I31CSS
        Computer: <SOH>i31CSS

Typical Response Message, Display Format:

```
<SOH>
I31CSS
JAN 22, 2003  3:07 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

MAG SENSOR ALARM HISTORY REPORT

SENSOR  LOCATION
     1  T1 SUMP
        JUN 23, 2003  2:12 PM          WATER WARNING
        JUN 23, 2003  2:12 PM          WATER ALARM
        JUN 23, 2003  2:12 PM          FUEL ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i31CSSYYMMDDHHmmSSnnYYMMDDHHmmaaaa...
                SSnnYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   SS – MAG Sensor Number (Decimal, 00=all)
    3.   nn – Number of alarms incidents to follow (Decimal, 00=none)
    4.   YYMMDDHHmm – Date and time alarm occurred
    5.   aaaa – Alarm type number:
                0001=MAG Sensor Setup Data Warning
                0002=MAG Sensor Communication Alarm
                0003=MAG Sensor Fault Alarm
                0004=MAG Sensor Fuel Warning
                0005=MAG Sensor Fuel Alarm
                0006=MAG Sensor Water Warning
                0007=MAG Sensor Water Alarm
                0008=MAG Sensor High Liquid Warning
                0009=MAG Sensor High Liquid Alarm
                0010=MAG Sensor Low Liquid Warning
                0011=MAG Sensor Low Liquid Alarm
                0012=MAG Sensor Temperature Warning
                0013=MAG Sensor Relay Active
                0014=MAG Sensor Install Alarm
    6.   && – Data Termination Flag
    7.   CCCC – Message Checksum

Function Code: 322   Version 5
Function Type: Pump Relay Monitor Status Report

Command Format:
    Display: <SOH>I322QQ
    Computer: <SOH>i322QQ

Typical Response Message, Display Format:

```
<SOH>
I322QQ
JUN 22, 2014  3:12 PM

PUMP RELAY MONITOR STATUS REPORT


                              PUMP    PUMP RELAY
DEVICE  LABEL                 (OUT)     (IN)        STATUS
     1  PUMP RELAY UNLEADED    OFF    Q 1: OFF      NORMAL
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i322QQYYMMDDHHmmQQabssss...
                QQabssss&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   QQ – Pump Relay Monitor Number (Decimal, 00=all)
   3.   a – Pump Status (ASCII Hex)
                    0=Off
                    1=On
   4.   b – Relay Status (ASCII Hex)
                    0=Off (or N/A – no Pump Relay assigned)
                    1=On
   5.   ssss – Pump Relay Monitor Status Value (ASCII Hex)
                    0000=Normal
                    0003=Pump Relay Alarm
   6.   && – Data Termination Flag
   7.   CCCC – Message Checksum

Function Code: 323   Version 5
Function Type: Pump Relay Monitor Alarm History Report

Command Format:
    Display: <SOH>I323QQ
    Computer: <SOH>i323QQ

Typical Response Message, Display Format:

    <SOH>
    I323QQ
    JUN 22, 2014 3:12 PM

    PUMP RELAY MONITOR ALARM HISTORY REPORT

    DEVICE LABEL
        1 PUMP RELAY UNLEADED
           JUN 1, 2014   8:02 AM   PUMP RELAY ALARM
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i323QQYYMMDDHHmmQQNNYYMMDDHHmmaaaa...
                    QQNNYYMMDDHHmmaaaa&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   QQ – Pump Relay Monitor Number (Decimal, 00=all)
    3.   NN – Number of Alarm Incidents to follow (ASCII Hex)
    4.   YYMMDDHHmm – Date and Time of Alarm
    5.   aaaa – Alarm Type number (ASCII Hex):
                    0003=Pump Relay Alarm
    6.   && – Data Termination Flag
    7.   CCCC – Message Checksum

Function Code: 341   Version 1
Function Type: Type A (2 Wire CL) Sensor Status Report

Command Format:
  Display: <SOH>I341SS
  Computer: <SOH>i341SS

Typical Response Message, Display Format:

```
<SOH>
I341SS
FEB 18, 1990  10:53 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

2 WIRE CL STATUS REPORT

SENSOR  LOCATION                STATUS
     1  2 WIRE CL SENSOR #1     FUEL ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i341SSYYMMDDHHmmSSssss...
                 SSssss&&CCCC<ETX>
```

Notes:
 1. YYMMDDHHmm – Current Date and Time
 2.   SS – Sensor Number (Decimal, 00=all)
 3.   ssss – Sensor Status Value:
       0000=Sensor Normal
       0001=Sensor Setup Data Warning
       0002=Sensor Fuel Alarm
       0003=Sensor Out Alarm
       0004=Sensor Short Alarm
       0005=Sensor Water Alarm
       0006=Sensor Water Out Alarm
       0007=Sensor High Liquid Alarm
       0008=Sensor Low Liquid Alarm
       0009=Sensor Liquid Warning
 4.   && – Data Termination Flag
 5.   CCCC – Message Checksum

```
        Function Code: 342                                    Version 1
        Function Type: Type A (2 Wire CL) Sensor Alarm History Report

     Command Format:
          Display: <SOH>I342SS
         Computer: <SOH>i342SS
```

Typical Response Message, Display Format:

```
<SOH>
I342SS
FEB 18, 1990  10:53 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

2 WIRE CL ALARM HISTORY REPORT

SENSOR  LOCATION
     1  2 WIRE CL SENSOR #1
        FEB 12, 1990  11:32 AM            FUEL ALARM
        FEB 10, 1990  10:09 AM            OPEN ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i342SSYYMMDDHHmmSSNNYYMMDDHHmmaaaa...
               SSNNYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
```
   1.      YYMMDDHHmm - Current Date and Time
   2.             SS - Sensor Number (Decimal, 00=all)
   3.             NN - Number of Alarm Incidents to follow
   4.     YYMMDDHHmm - Date and Time of Alarm
   5.           aaaa - Alarm type number:
                       0001=Sensor Setup Data Warning
                       0002=Sensor Fuel Alarm
                       0003=Sensor Out Alarm
                       0004=Sensor Short Alarm
                       0005=Sensor Water Alarm
                       0006=Sensor Water Out Alarm
                       0007=Sensor High Liquid Alarm
                       0008=Sensor Low Liquid Alarm
                       0009=Sensor Liquid Warning
   6.             && - Data Termination Flag
   7.           CCCC - Message Checksum
```

        Function Code: 346   Version 1
        Function Type: Type B (3 Wire CL) Sensor Status Report

      Command Format:
            Display: <SOH>I346SS
          Computer: <SOH>i346SS

Typical Response Message, Display Format:

```
<SOH>
I346SS
FEB 18, 1990  10:53 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

3 WIRE CL STATUS REPORT

SENSOR  LOCATION              STATUS
     1  3 WIRE CL SENSOR #1    FUEL ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i346SSYYMMDDHHmmSSssss...
                 SSssss&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   SS – Sensor Number (Decimal, 00=all)
    3.   ssss – Sensor Status Value:
                    0000=Sensor Normal
                    0001=Sensor Setup Data Warning
                    0002=Sensor Fuel Alarm
                    0003=Sensor Out Alarm
                    0004=Sensor Short Alarm
                    0005=Sensor Water Alarm
                    0006=Sensor Water Out Alarm
                    0007=Sensor High Liquid Alarm
                    0008=Sensor Low Liquid Alarm
                    0009=Sensor Liquid Warning
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

```
       Function Code: 347                                          Version 1
       Function Type: Type B (3 Wire CL) Sensor Alarm History Report

   Command Format:
        Display: <SOH>I347SS
       Computer: <SOH>i347SS
```

Typical Response Message, Display Format:

```
<SOH>
I347SS
FEB 18, 1990  10:53 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

3 WIRE CL ALARM HISTORY REPORT

SENSOR  LOCATION
     1  3 WIRE CL SENSOR #1
        FEB 12, 1990  11:32 AM             FUEL ALARM
        FEB 10, 1990  10:09 AM             OPEN ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i347SSYYMMDDHHmmSSNNYYMMDDHHmmaaaa...
                SSNNYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               SS - Sensor Number (Decimal, 00=all)
    3.               NN - Number of Alarm Incidents to follow
    4.       YYMMDDHHmm - Date and Time of Alarm
    5.             aaaa - Alarm type number:
                         0001=Sensor Setup Data Warning
                         0002=Sensor Fuel Alarm
                         0003=Sensor Out Alarm
                         0004=Sensor Short Alarm
                         0005=Sensor Water Alarm
                         0006=Sensor Water Out Alarm
                         0007=Sensor High Liquid Alarm
                         0008=Sensor Low Liquid Alarm
                         0009=Sensor Liquid Warning
    6.               && - Data Termination Flag
    7.             CCCC - Message Checksum
```

7.2.4 LINE LEAK REPORTS

Function Code: 373   Version 1
Function Type: Pressure Line Leak Test Results (with 0.20 test data)

Command Format:
        Display: <SOH>I373QQ
        Computer: <SOH>i373QQ

Typical Response Message, Display Format:

```
<SOH>
I373QQ
JAN 24, 1996  2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK TEST RESULTS

Ln 1:REGULAR UNLEADED

 3.0 GAL/HR RESULTS:

LAST TEST:
 JAN 24, 1996  2:49 PM PASS

NUMBER OF TESTS PASSED
  PREV 24 HOURS :   149
 SINCE MIDNIGHT :    76

0.20 GAL/HR RESULTS:
 JAN 22, 1996  1:32 AM PASS

0.10 GAL/HR RESULTS:
 JAN 23, 1996 11:59 PM PASS

0.20 GAL/HR RESULTS:
 JAN 22, 1996  1:32 AM PASS

NO-VENT TEST ABORTS:
 3 OUT OF 10 TESTS
<ETX>
```

Function Code 373: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i373QQYYMMDDHHmmQQyymmddhhmmrrTTPPPPMMMMNNYYMMDDHHmmRRtt...
                                   nnYYMMDDHHmmRRtt...
              QQyymmddhhmmrrTTPPPPMMMMNNYYMMDDHHmmRRtt...
                                   nnYYMMDDHHmmRRtt&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   yymmddhhmm - Last 3.00 gal/hr test time
4.   rr - 3.00 gal/hr test result (Hex)
5.   TT - 3.00 gal/hr test type (unused, always 00)
6.   PPPP - Number of 3.00 gal/hr tests passed in previous 24 hours (Hex)
7.   MMMM - Number of 3.00 gal/hr tests passed since midnight (Hex)
8.   NN - Number of 0.10 gal/hr test results (14 character groups) to follow (Hex)
9.   YYMMDDHHmm - Date and time of 0.10 gal/hr test
10.   RR - Test result
        01=PASS
        02=FAIL
11.   tt - 0.10 gal/hr test type (unused, always 00)
12.   nn - Number of 0.20 gal/hr test results (14 character groups) to follow (Hex)
13.   YYMMDDHHmm - Date and time of 0.20 gal/hr test
14.   RR - Test result
        01=PASS
        02=FAIL
15.   tt - 0.20 gal/hr test type (unused, always 00)
16.   && - Data Termination Flag
17.   CCCC - Message Checksum

Function Code: 374   Version 1
Function Type: Pressure Line Leak Test History (with 0.20 test data)

Command Format:
Display: <SOH>I374QQ
Computer: <SOH>i374QQ

Typical Response Message, Display Format:

```
<SOH>
I374QQ
JAN 24, 1996  2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK TEST HISTORY

Ln 1:REGULAR UNLEADED

LAST  3.0 PASS:               JAN 24, 1996  2:49 PM

FIRST 0.10 PASS EACH MONTH:
                              JAN 16, 1996 12:38 AM

FIRST 0.20 PASS EACH MONTH:
                              JAN 14, 1996 10:21 PM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i374QQYYMMDDHHmmQQyymmddhhmmTTNNYYMMDDHHmmttnnYYMMDDHHmmtt...
                QQyymmddhhmmTTNNYYMMDDHHmmttnnYYMMDDHHmmtt&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   QQ – Pressure Line Leak sensor number (Decimal, 00=All)
3.   yymmddhhmm – Last 3.00 gal/hr test pass time ("0000000000" if no test yet)
4.   TT – 3.00 gal/hr test type (unused, always 00)
5.   NN – Number of 0.10 gal/hr test results (12 character groups) to follow (Hex)
6.   YYMMDDHHmm – Date and time of 0.10 gal/hr test
7.   tt – 0.10 gal/hr test type (unused, always 00)
8.   nn – Number of 0.20 gal/hr test results (12 character groups) to follow (Hex)
9.   YYMMDDHHmm – Date and time of 0.20 gal/hr test
10.   tt – 0.20 gal/hr test type (unused, always 00)
11.   && – Data Termination Flag
12.   CCCC – Message Checksum

```
        Function Code:375                                          Version 1
         Function Type: Pressure Line Leak Test Results II (with 0.20 test data)


        Command Format:
            Display: <SOH>I375QQ
            Computer: <SOH>i375QQ
```

Typical Response Message, Display Format:

```
<SOH>
I375QQ
JAN 24, 1996  2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK TEST RESULTS

Ln 1:REGULAR UNLEADED

 3.0 GAL/HR RESULTS:

LAST TEST:
 JAN 24, 1996  2:49 PM PASSED

NUMBER OF TESTS PASSED
     PREV 24 HOURS :    149
     SINCE MIDNIGHT :    76

0.10 GAL/HR RESULTS:
 JAN 23, 1996 11:59 PM PASS

0.20 GAL/HR RESULTS:
 JAN 22, 1996  1:32 AM PASS

NO-VENT TEST ABORTS:
 3 OUT OF 10 TESTS
<ETX>
```

Function Code 375: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i375QQYYMMDDHHmmQQyymmddhhmmrrTTPPPPMMMMNNYYMMDDHHmmRRtt
                              nnYYMMDDHHmmRRttaabb...
              QQyymmddhhmmrrTTPPPPMMMMNNYYMMDDHHmmRRtt
                              nnYYMMDDHHmmRRttaabb&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   yymmddhhmm - Last 3.0 gal/hr test time
4.   rr - 3.0 gal/hr test result (Hex)
5.   TT - 3.0 gal/hr test type (unused, always 00)
6.   PPPP - Number of 3.0 gal/hr tests passed in previous 24 hours (Hex)
7.   MMMM - Number of 3.0 gal/hr tests passed since midnight (Hex)
8.   NN - Number of 0.10 gal/hr test results (14 character groups) to follow (Hex)
9.   YYMMDDHHmm - Date and time of 0.10 gal/hr test
10.   RR - Test result
                    00 = FAIL
                    01 = PASS
11.   tt - 0.1 gal/hr test type (unused, always 00)
12.   nn - Number of 0.20 gal/hr test results (12 character groups) to follow (Hex)
13.   YYMMDDHHmm - Date and time of 0.20 gal/hr test
14.   RR - Test result
                    00 = FAIL
                    01 = PASS
15.   tt - 0.20 gal/hr test type (unused, always 00)
16.   aa - Number of no-vent test aborts
17.   bb - Number of no-vent tests
18.   && - Data Termination Flag
19.   CCCC - Message Checksum

Function Code: 376   Version 1
Function Type: Pressure Line Leak Passed Tests Results

Command Format:
    Display: <SOH>I376QQ
    Computer: <SOH>i376QQ

Typical Response Message, Display Format:

```
<SOH>
I376QQ
JAN 24, 1996 2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....


PRESSURE LINE LEAK REPORTS - PASSED TESTS RESULT

Ln 1: PRESSURE LLD #1

  Test Type                     Date & Time

  3.0 GAL/HR.                   JAN 24, 1996 2:49 PM
  0.2 GAL/HR.                   JAN 24, 1996 2:49 PM
  0.1 GAL/HR.                   JAN 24, 1996 2:49 PM
<ETX>
```

Typical Response Message, Computer Format:
    <SOH>i376QQYYMMDDHHmmQQYYMMDDHHmmRR...
                    QQYYMMDDHHmmRR&&CCCC<ETX>

Notes:
    1. YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3. YYMMDDHHmm - Date/Time Test
    4.   RR - Test Type
    5.   && - Data Termination Flag
    6.   CCCC - Message Checksum

Function Code: 377   Version 1
Function Type: Extended Pressure Line Leak Test History (with 0.20 test
                   data)

Command Format:
       Display: <SOH>I377QQRRyymmddhhmmYYMMDDHHMMnn
      Computer: <SOH>i377QQRRyymmddhhmmYYMMDDHHMMnn

Notes:

1.   QQ - Device Number (Decimal, 00=all)
2.   RR - Report Type (Report Type should always be given. The rest of
                      the parameters are optional following the rules below.)
                         00=Passed Test History
3.   yyyymmddhhmm - Starting Date/Time (If a start date/time is not provided or
                      either Year, Month or Day are zeroes, it assumes request is
                      for most recent records and is limited by the Maximum
                      Records (below). Ranges are as follows:
                         yy=Year   (01-99, for Years 2001-2099)
                         mm=Month   (01-12, for Months January to December)
                         dd=Day   (01-31, however, validity depends on Month)
                         hh=Hour   (00-23)
                         mm=Minute (00-59)
4.   YYMMDDHHMM - Ending Date/Time (If an end date/time is not given or either
                      Year, Month or Day are zeroes, it assumes request is for
                      records starting from start date/time as evaluated above,
                      limited by the Maximum Records (below). Ranges are the same
                      as the Start Date/Time fields.
5.   nn - Maximum Records (00-36, Absolute Maximum) (Decimal). (If
                      Maximum records is not given or it is zeroes, and no End
                      Date/Time is given, limited by the Maximum Records Default
                      of 12)

Function Code 377: (Continued)

Typical Response Message, Display Format:

```
<SOH>
I377QQ
NOV  6, 2008 10:35 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK REPORTS - PASSED TESTS HISTORY

Ln 1: PRESSURE LLD #1

                                          Test    Gross Test      Gross Test
    Test Type        Date & Time          Method  Prev 24 Hours   Since Midnight

    Gross                                 PLLD         10               5

    Last Gross      NOV  6, 2008  9:38 AM  PLLD
    Last Periodic   NOV  6, 2008  9:43 AM  PLLD
    Last Annual     NOV  6, 2008  9:45 AM  PLLD

    First Periodic  NOV  6, 2008  9:43 AM  PLLD
    First Periodic  OCT 24, 2008  2:20 PM  PLLD

    First Annual    NOV  6, 2008  9:45 AM  PLLD
    First Annual    OCT 24, 2008  2:23 PM  PLLD


Ln 2: PRESSURE LLD #2

                                          Test    Gross Test      Gross Test
    Test Type        Date & Time          Method  Prev 24 Hours   Since Midnight

    Gross                                 PLLD          9               4

    Last Gross      NOV  6, 2008  8:17 AM  PLLD
    Last Periodic   NOV  6, 2008  8:23 AM  PLLD
    Last Annual     NOV  6, 2008  8:26 AM  PLLD

    First Periodic  NOV  6, 2008  8:23 AM  PLLD

    First Annual    NOV  6, 2008  8:26 AM  PLLD
<ETX>
```

Function Code 377: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i377QQYYMMDDHHmmQQPPPPMMMMyymmddhhmmTTyymmddhhmmTTyymmddhhmmTT
        NNYYMMDDHHmmtt...YYMMDDHHmmttnnYYMMDDHHmmtt...YYMMDDHHmmtt...
                QQPPPPMMMMyymmddhhmmTTyymmddhhmmTTyymmddhhmmTT
        NNYYMMDDHHmmtt...YYMMDDHHmmttnnYYMMDDHHmmtt...YYMMDDHHmmtt&&CCCC<ETX>
```

```
Notes:
    1.      YYMMDDHHmm - Current Date and Time
    2.             QQ - Pressure Line Leak sensor number (Decimal, 00 = All)
    3.           PPPP - Number of 3.0 gal/hr tests passed in previous 24 hours (Hex)
    4.           MMMM - Number of 3.0 gal/hr tests passed since midnight (Hex)
    5.      yymmddhhmm - Last 3.0 gal/hr test time (0000000000 if no test)
    6.             TT - 3.0 gal/hr test type (unused, always 00)
    7.      yymmddhhmm - Last 0.2 gal/hr test time (0000000000 if no test)
    8.             TT - 0.2 gal/hr test type (unused, always 00)
    9.      yymmddhhmm - Last 0.1 gal/hr test time (0000000000 if no test)
   10.             TT - 0.1 gal/hr test type (unused, always 00)
   11.             NN - Number of 0.20 gal/hr test results (14 character groups) to
                        follow (Hex)
   12.      YYMMDDHHmm - Date and time of 0.2 gal/hr test
   13.             tt - 0.2 gal/hr test type (unused, always 00)
   14.             nn - Number of 0.10 gal/hr test results (14 character groups) to
                        follow (Hex)
   15.      YYMMDDHHmm - Date and time of 0.1 gal/hr test
   16.             tt - 0.1 gal/hr test type (unused, always 00)
   17.             && - Data Termination Flag
   18.           CCCC - Message Checksum
```

Function Code: 381   Version 1
Function Type: Pressure Line Leak Status

Command Format:
    Display: <SOH>I381QQ
    Computer: <SOH>i381QQ

Typical Response Message, Display Format:

```
<SOH>
I381QQ
JAN 24, 1996  2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK STATUS


LINE                          DISPENSING   TEST STATUS           PUMP      HANDLE
Ln 1:REGULAR UNLEADED          ENABLED      TESTING 0.10 GAL/HR   OFF       OFF

ACTIVE ALARMS:
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i381QQYYMMDDHHmmQQSSSSttNNaaaa...
                QQSSSSttNNaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.   SSSS - Status Bits:
        Bit 1 - (LSB) Dispensing enabled flag
          (0=Disabled, 1=Enabled)
        Bit 2 - Pump power
          (0=Pump Off, 1=Pump On)
        Bit 3 - Dispenser Handle
          (0=Handle Off, 1=Handle On)
        Bit 4-16 - Unused
    4.   tt - Test status
        00=test complete
        01=dispensing
        02=testing at 3.00 gal/hr
        03=testing at 0.10 gal/hr
        04=test aborted
        05=running pump (manual test starting)
        06=line lockout
        07=disable alarm
        08=test pending
        09=test delay
        0A=pressure check
        0B=testing at 0.20 gal/hr

Function Code 381 Notes: (Continued)

```
    5.                 NN - number of active alarms to follow (Hex)
    6.                 aaaa - type of alarm:
                            0001=PLLD Setup Data Warning
                            0002=PLLD Gross Test Fail Alarm
                            0003=PLLD Annual Test Fail Alarm
                            0004=PLLD Periodic Test Needed Warning
                            0005=PLLD Periodic Test Needed Alarm
                            0006=PLLD Sensor Open Alarm
                            0007=PLLD High Pressure Alarm            (Obsolete)
                            0008=PLLD Shutdown Alarm
                            0009=PLLD High Pressure Warning          (Obsolete)
                            000A=PLLD Continuous Handle On Warning   (Obsolete)
                            000B=PLLD Periodic Test Fail Alarm
                            000C=PLLD Annual Test Needed Warning
                            000D=PLLD Annual Test Needed Alarm
                            000E=PLLD Low Pressure Alarm
                            000F=PLLD Sensor Short Alarm             (Obsolete)
                            0010=PLLD Continuous Handle On Alarm
                            0011=PLLD Fuel Out Alarm
                            0012=PLLD Line Equipment Alarm
    7.                 && - Data Termination Flag
    8.                 CCCC - Message Checksum
```

```
     Function Code: 382                                    Version 1
     Function Type: Pressure Line Leak Alarm History Report
```

```
        Command Format:
           Display: <SOH>I382QQ
          Computer: <SOH>i382QQ
```

Typical Response Message, Display Format:

```
<SOH>
I382QQ
JAN 24, 1996  2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK ALARM HISTORY REPORT

Ln 1:REGULAR UNLEADED
     GROSS LINE FAIL          JAN  9, 1995  6:12 AM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i382QQYYMMDDHHmmQQNNyymmddhhmmaaaa...
                 QQNNyymmddhhmmaaaa&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.              NN - number of alarms to follow (Hex)
    4.      yymmddhhmm - Date and time that the alarm occurred
    5.            aaaa - type of alarm:
                        0001=PLLD Setup Data Warning
                        0002=PLLD Gross Test Fail Alarm
                        0003=PLLD Annual Test Fail Alarm
                        0004=PLLD Periodic Test Needed Warning
                        0005=PLLD Periodic Test Needed Alarm
                        0006=PLLD Sensor Open Alarm
                        0007=PLLD High Pressure Alarm              (Obsolete)
                        0008=PLLD Shutdown Alarm
                        0009=PLLD High Pressure Warning            (Obsolete)
                        000A=PLLD Continuous Handle On Warning     (Obsolete)
                        000B=PLLD Periodic Test Fail Alarm
                        000C=PLLD Annual Test Needed Warning
                        000D=PLLD Annual Test Needed Alarm
                        000E=PLLD Low Pressure Alarm
                        000F=PLLD Sensor Short Alarm               (Obsolete)
                        0010=PLLD Continuous Handle On Alarm
                        0011=PLLD Fuel Out Alarm
                        0012=PLLD Line Equipment Alarm
    6.              && - Data Termination Flag
    7.            CCCC - Message Checksum
```

```
        Function Code: 383                                        Version 1
        Function Type: Pressure Line Leak Test Results (0.10 test data only)

     Command Format:
          Display: <SOH>I383QQ
         Computer: <SOH>i383QQ
```

Typical Response Message, Display Format:

```
<SOH>
I383QQ
JAN 24, 1996  2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK TEST RESULTS

Ln 1:REGULAR UNLEADED

 3.0 GAL/HR RESULTS:

LAST TEST:
 JAN 24, 1996  2:49 PM PASS

NUMBER OF TESTS PASSED
  PREV 24 HOURS :    149
 SINCE MIDNIGHT :     76

0.10 GAL/HR RESULTS:
 JAN 23, 1996 11:59 PM PASS
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i383QQYYMMDDHHmmQQyymmddhhmmrrTTPPPPMMMMNNYYMMDDHHmmRRtt...
                QQyymmddhhmmrrTTPPPPMMMMNNYYMMDDHHmmRRtt&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.                QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.        yymmddhhmm - Last 3.00 gal/hr test time
    4.                rr - 3.00 gal/hr test result (Hex)
    5.                TT - 3.00 gal/hr test type (unused, always 00)
    6.              PPPP - Number of 3.00 gal/hr tests passed in previous 24 hours
                          (Hex)
    7.              MMMM - Number of 3.00 gal/hr tests passed since midnight (Hex)
    8.                NN - Number of 0.10 gal/hr test results (14 character groups) to
                          follow (Hex)
    9.        YYMMDDHHmm - Date and time of 0.10 gal/hr test
   10.                RR - Test result
                               01=PASS
                               02=FAIL
   11.                tt - 0.10 gal/hr test type (unused, always 00)
   12.                && - Data Termination Flag
   13.              CCCC - Message Checksum
```

```
    Function Code: 384                                          Version 1
    Function Type: Pressure Line Leak Test History (0.10 test data only)

    Command Format:
          Display: <SOH>I384QQ
         Computer: <SOH>i384QQ
```

Typical Response Message, Display Format:

```
<SOH>
I384QQ
JAN 24, 1996  2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK TEST HISTORY

Ln 1:REGULAR UNLEADED

LAST  3.0 PASS:                 JAN 24, 1996  2:49 PM

FIRST 0.10 PASS EACH MONTH:
                                JAN 16, 1996 12:38 AM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i384QQYYMMDDHHmmQQyymmddhhmmTTNNYYMMDDHHmmtt...
               QQyymmddhhmmTTNNYYMMDDHHmmtt&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.       yymmddhhmm - Last 3.00 gal/hr test pass time ("0000000000" if no test
                          yet)
    4.               TT - 3.00 gal/hr test type (unused, always 00)
    5.               NN - Number of 0.10 gal/hr test results (12 character groups) to
                          follow (Hex)
    6.       YYMMDDHHmm - Date and time of 0.10 gal/hr test
    7.               tt - 0.10 gal/hr test type (unused, always 00)
    8.               && - Data Termination Flag
    9.             CCCC - Message Checksum
```

Function Code: 385   Version 1
Function Type: Pressure Line Leak Test Results (with 0.20 test data listed
                   before 0.10 test data)

Command Format:
         Display: <SOH>I385QQ
        Computer: <SOH>i385QQ

Typical Response Message, Display Format:

```
<SOH>
I385QQ
JAN 24, 1996  2:52 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRESSURE LINE LEAK TEST RESULTS

Ln 1:REGULAR UNLEADED

 3.0 GAL/HR RESULTS:

LAST TEST:
 JAN 24, 1996  2:49 PM PASS

NUMBER OF TESTS PASSED
  PREV 24 HOURS :    149
 SINCE MIDNIGHT :     76

0.20 GAL/HR RESULTS:
 JAN 22, 1996  1:32 AM PASS

0.10 GAL/HR RESULTS:
 JAN 23, 1996 11:59 PM PASS
<ETX>
```

Function Code 385: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i385QQYYMMDDHHmmQQyymmddhhmmrrTTPPPPMMMMNNYYMMDDHHmmRRtt...
                                 nnYYMMDDHHmmRRtt...
                QQyymmddhhmmrrTTPPPPMMMMNNYYMMDDHHmmRRtt...
                                 nnYYMMDDHHmmRRtt&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   yymmddhhmm - Last 3.00 gal/hr test time
4.   rr - 3.00 gal/hr test result (Hex)
5.   TT - 3.00 gal/hr test type (unused, always 00)
6.   PPPP - Number of 3.00 gal/hr tests passed in previous 24 hours
                     (Hex)
7.   MMMM - Number of 3.00 gal/hr tests passed since midnight (Hex)
8.   NN - Number of 0.20 gal/hr test results (14 character groups) to
                     follow (Hex)
9.   YYMMDDHHmm - Date and time of 0.20 gal/hr test
10.   RR - Test result
                        01=PASS
                        02=FAIL
11.   tt - 0.20 gal/hr test type (unused, always 00)
12.   nn - Number of 0.10 gal/hr test results (14 character groups) to
                     follow (Hex)
13.   YYMMDDHHmm - Date and time of 0.10 gal/hr test
14.   RR - Test result
                        01=PASS
                        02=FAIL
15.   tt - 0.10 gal/hr test type (unused, always 00)
16.   && - Data Termination Flag
17.   CCCC - Message Checksum

7.2.5 I/O DEVICE REPORTS

  Function Code: 401   Version 1
  Function Type: Input Status Report

   Command Format:
     Display: `<SOH>I401II`
    Computer: `<SOH>i401II`

Typical Response Message, Display Format:

```
<SOH>
I401II
MAR 27, 1996  5:44 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

INPUT   LOCATION              STATUS
   1    * EXTERNAL INPUT 1 *   OFF
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i401IIYYMMDDHHmmIIssss...
             IIssss&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   II - Input Number (Decimal, 00=all)
  3.   ssss - Input Status:
          0001=Input Setup Data Warning
          0002=Input Normal
          0003=Input Alarm
          0006=Input Out Alarm
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 402   Version 1
Function Type: Input Alarm History Report

Command Format:
    Display: <SOH>I402II
  Computer: <SOH>i402II

Typical Response Message, Display Format:

```
<SOH>
I402II
MAR 27, 1996  5:45 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

INPUT ALARM HISTORY REPORT

INPUT   LOCATION
   1    * EXTERNAL INPUT 1 *
        JAN 15, 1996  8:04 AM          SETUP DATA WARNING
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i402IIYYMMDDHHmmIINNYYMMDDHHmmaaaa...
              IINNYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   II – Input Number (Decimal, 00=all)
    3.   NN – Number of Alarm Incidents to follow (Hex)
    4.   YYMMDDHHmm – Date and Time of alarm
    5.   aaaa – Alarm type number:
                    0001=Input Setup Data Warning
                    0002=Input Normal
                    0003=Input Alarm
                    0006=Input Out Alarm
    6.   && – Data Termination Flag
    7.   CCCC – Message Checksum

Function Code: 403   Version 1
Function Type: Input/Generator Alarm History Report
                           (Setup parameters determine whether an input is from a
                           generator.)

        Command Format:
             Display: <SOH>I403II
            Computer: <SOH>i403II

Typical Response Message, Display Format:

    <SOH>
    I403II
    MAR 27, 1996 5:47 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    INPUT / GENERATOR ALARM HISTORY REPORT

    INPUT   LOCATION
       1   * EXTERNAL INPUT 1 *
             AUG 19, 1995   2:03 PM EXTERN INPUT ALARM
             AUG 20, 1995   6:15 AM EXTERN INPUT ALARM
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i403IIYYMMDDHHmmIINNYYMMDDHHmmaaaa...
                      IINNYYMMDDHHmmaaaa&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   II – Input Number (Decimal, 00=all)
    3.   NN – Number of Alarm Incidents to follow (Hex)
    4.   YYMMDDHHmm – Date and Time of alarm
    5.   aaaa – Alarm type number:
                        0001=Input Setup Data Warning
                        0002=Input Normal
                        0003=Input Alarm
                        0004=Generator Off
                        0005=Generator On
                        0006=Input Out Alarm
    6.   && – Data Termination Flag
    7.   CCCC – Message Checksum

```
        Function Code: 406                                    Version 1
        Function Type: Relay Status Report

     Command Format:
          Display: <SOH>I406RR
         Computer: <SOH>i406RR
```

Typical Response Message, Display Format:

```
    <SOH>
    I406RR
    MAR 27, 1996  5:47 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    RELAY   LOCATION              STATUS
       1    * RELAY 1  *          ACTIVE / CLOSED
       2    * RELAY 2  *          INACTIVE / OPEN
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i406RRYYMMDDHHmmRRssss...
                    RRssss&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             RR - Relay Number (Decimal, 00=all)
    3.           ssss - Relay Status:
                       0001=Relay Inactive
                       0002=Relay Active
    4.             && - Data Termination Flag
    5.           CCCC - Message Checksum
```

Function Code: 407   Version 1
Function Type: Input Diagnostics

Command Format:
 Display: <SOH>I407II
 Computer: <SOH>i407II

Typical Response Message, Display Format:

```
<SOH>
I407II
MAR 27, 1996  5:47 PM


INPUT DIAGNOSTIC REPORT

#      ADDRESS    STATUS       DURATION            TYPE

I 1    B1.S4.1    Active       0000 01:01:28       Standard
I 2    B1.S4.2    Inactive     0000 02:01:28       Standard
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i407IIYYMMDDHHmmIINNaaa...
            IINNaaa..Sdddddddddf&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   II - Input Number (Decimal, 00=all)
  3.   NN - Number of characters in address (hex)
  4.   a - Address (len<200) (All ASCII 20h-7Eh)
  5.   S - Status
                         0 - Inactive
                         1 - Active
  6.   dddddddd - Duration
  7.   f - Type
                         1=Standard
                         2=Generator
                         3=Pump Sense
                         4=Standard ACK
                         5=Vapor Processor (future)
  8.   && - Data Termination Flag
  9.   CCCC - Message Checksum

```
       Function Code: 408                                    Version 1
       Function Type: Relay Diagnostics

     Command Format:
         Display: <SOH>I408RR
         Computer: <SOH>i408RR
```

Typical Response Message, Display Format:

```
<SOH>
I408RR
MAR 27, 1996  5:47 PM


RELAY DIAGNOSTIC REPORT

#      ADDRESS    STATUS       DURATION          TYPE

R 1    B1.S4.1    Active       0000 01:01:28     Standard
R 2    B1.S4.2    Inactive     0000 02:01:28     Standard
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i408RRYYMMDDHHmmRRNNaaa...
                RRNNaaa..Sdddddddddf&&CCCC<ETX>
```

Notes:
```
   1.      YYMMDDHHmm - Current Date and Time
   2.             RR - Relay Number (Decimal, 00=all)
   3.             NN - Number of characters in address (hex)
   4.              a - Address (len<200) (All ASCII 20h-7Eh)
   5.              S - Status
                       0 - Inactive
                       1 - Active
   6.       dddddddd - Duration
   7.              f - Type
                       1=Standard
                       2=Momentary
                       3=Pump Control Output
                       4=Pump Comm Control
                       5=Vapor Processor (future)
   8.             && - Data Termination Flag
   9.           CCCC - Message Checksum
```

7.3 SETUP FUNCTIONS & REPORTS

7.3.1 SYSTEM SETUP

```
        Function Code: 501                                    Version 1
        Function Type: Set Time of day

        Command Format:                                        Inquire:
             Display: <SOH>S50100YYMMDDHHmm              <SOH>I50100
            Computer: <SOH>s50100YYMMDDHHmm              <SOH>i50100
```

Typical Response Message, Display Format:

```
    <SOH>
    I50100
    JAN 22, 1996  3:11 PM

    SYSTEM DATE AND TIME
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i50100YYMMDDHHmmYYMMDDHHmm&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.      YYMMDDHHmm - Year, Month, Day, Hour and Minute
    3.            && - Data Termination Flag
    4.          CCCC - Message Checksum
```

```
        Function Code: 502                                    Version 1
        Function Type: Set Shift Close Time

     Command Format:                                          Inquire:
          Display: <SOH>S502SSHHmm                      <SOH>I502SS
         Computer: <SOH>s502SSHHmm                      <SOH>i502SS
```

Notes:
1.   SS – Shift 01-08
2. **All Shifts (SS=00) not available for Set or Inquiry Mode**

Typical Response Message, Display Format:

```
<SOH>
I50201
JAN 22, 1996  3:12 PM

SHIFT TIME 1 : DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i502SSYYMMDDHHmmHHmm&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   HHmm – Hour and Minute (EE00=Disabled)
3.   && – Data Termination Flag
4.   CCCC – Message Checksum

```
      Function Code: 503                                        Version 1
      Function Type: Set Print Header Line 1, 2, 3, 4

      Command Format:                                              Inquire:
         Display: <SOH>S503LLaaaaaaaaaaaaaaaaaaaa              <SOH>I503LL
        Computer: <SOH>s503LLaaaaaaaaaaaaaaaaaaaa              <SOH>i503LL
```

Typical Response Message, Display Format:

```
<SOH>
I503LL
JAN 22, 1996  3:12 PM

# 1:STATION HEADER 1....
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i503LLYYMMDDHHmmaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
```
   1.        YYMMDDHHmm - Current Date and Time
   2.               LL - Header line number 1, 2, 3, 4
   3.                a - Header Line (20 ASCII characters [20h-7Eh])
   4.               && - Data Termination Flag
   5.             CCCC - Message Checksum
```

Function Code: **50D**   Version 1
Function Type: Set Print Temperature Compensation Flag

Command Format: **Inquire:**
    Display: <SOH>S50D00f   <SOH>I50D00
   Computer: <SOH>s50D00f   <SOH>i50D00

Typical Response Message, Display Format:

```
<SOH>
I50D00
JAN 22, 1996  3:13 PM

PRINT TC VOLUMES
ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i50D00YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   f - Print Temperature Compensation Flag
                          0=Disable
                          1=Enable
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 50E   Version 1
Function Type: Set Temperature Compensation Value

Command Format: **Inquire:**
    Display: <SOH>S50E00DDD.hh   <SOH>I50E00
    Computer: <SOH>s50E00FFFFFFFF   <SOH>i50E00

Notes:
    1.   DDD.hh - Compensation Temperature, Degrees and hundredths (Decimal)
    2.   FFFFFFFF - Compensation Temperature, Degrees (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I50E00
    JAN 22, 1996 3:13 PM

    TEMP COMPENSATION
    VALUE (DEG F):   60.0
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i50E00YYMMDDHHmmFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   FFFFFFFF - Compensation Temperature, Degrees (ASCII Hex IEEE float)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 50G   Version 1
Function Type: Set Header - Fax Sender Name

Command Format: **Inquire:**
      Display: <SOH>S50G00aaaaaaaaaaaaaaaaaaaaaa   <SOH>I50G00
    Computer: <SOH>s50G00aaaaaaaaaaaaaaaaaaaaaa   <SOH>i50G00

Notes: Enter ONLY S50G00 to remove Fax Sender Name

Typical Response Message, Display Format:

   <SOH>
   I50G00
   JAN 22, 2008 3:12 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   FAX SENDER NAME: Veeder-Root
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i50G00YYMMDDHHmmnnaaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   nn - Number of characters in Fax Sender Name (00-30)
    3.   a - Fax Name   (30 ASCII characters [20h-7Eh])
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 50H   Version 1
Function Type: Set Header - Fax Number

Command Format: **Inquire:**
    Display: <SOH>S50H00aaaa……aaaa   <SOH>I50H00
    Computer: <SOH>s50H00aaaa……aaaa   <SOH>i50H00

Notes: Enter ONLY S50H00 to remove Fax Number

Typical Response Message, Display Format:

```
<SOH>
I50H00
JAN 22, 2008  3:12 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

FAX NUMBER:      1-888-561-7942
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i50H00YYMMDDHHmmNNaaaaaaaaaaaaaaaaaaaaCCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   NN – Number of digits in Fax Number(00-40)
    3.   a - Fax Number (40 ASCII characters [20h-7Eh])
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 50I   Version 1
Function Type: Set Display Setup - Number Format

Command Format: **Inquire:**
   Display: <SOH>S50I00ab   <SOH>I50I00
   Computer: <SOH>s50I00ab   <SOH>i50I00

Typical Response Message, Display Format:

```
<SOH>
I50I00
JAN 22, 2007  3:16 PM

DISPLAY SETUP – NUMBER FORMAT

Decimal Separator  : ,
Thousands Separator: .
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i50I00YYMMDDHHmmab&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   a - Decimal Separator   (decimal)
                  1= ",",
                  2= "."
3.   b – Thousands Separator (decimal)
                  0= "None"
                  1= ","
                  2= "."
                  3= "sp"
4.   && – Data Termination Flag
5.   CCCC - Message Checksum

```
        Function Code: 50J                                      Version 1
        Function Type: Set Display Setup – Date & Time Format

      Command Format:                                            Inquire:
          Display: <SOH>S50J00FFc                        <SOH>I50J00FF
         Computer: <SOH>s50J00FFc                        <SOH>i50J00FF
```

Notes:
```
    1.              FF - Field, 00=all Fields, but only valid for Inquiry
                        01=Date Format
                        02=Date Separator
                        03=Time Format
    2.              c - Configuration (see entry based on field below)
```

Typical Response Message, Display Format:

```
    <SOH>
    I50J0000
    JAN 22, 1996  3:06 PM

    Display Setup – Date & Time Format

    Field Name                Configuration

    Date Format              : mm_dd_yyyy
    Date Separator           : /
    Time Format              : 12-hour xM
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i50J00YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.            NN - Number of Fields To Follow
    3.            FF - Field
    4.             c - Configuration

                    - If FF=01 (Date Format)
                        0=mon_dd_yyyy
                        1=yyyy_mm_dd
                        2=mm_dd_yyyy
                        3=dd_mm_yyyy

                    - If FF=02 (Date Separator)
                        0=-
                        1=/
                        2=.

                    - If FF=03 (Time Format)
                        0=24-hour
                        1=12-hour xM
    5.            && - Data Termination Flag
    6.          CCCC - Message Checksum
```

Function Code: 50K   Version 2
Function Type: Set Inventory Maximum Number of Shifts per Day

Command Format: **Inquire:**
    Display: <SOH>S50K00N   <SOH>I50K00
   Computer: <SOH>s50K00N   <SOH>i50K00

Typical Response Message, Display Format:

```
<SOH>
I50K00
JAN 22, 2009  3:06 PM

INVENTORY MAXIMUM NUMBER OF SHIFTS PER DAY

MAX. NUMBER OF SHIFTS/DAY: 3
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i50K00YYMMDDHHmmNc&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   N - Number of Shifts (Decimal, [min,max]=[1-8] default is 3)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

```
      Function Code: 50L                                    Version 2
      Function Type: Inventory Setup


  Command Format:
       Display: <SOH>I50L00
      Computer: not supported
```

Typical Response Message, Display Format:

```
<SOH>
I50L00
JAN 16, 2009  3:15 PM

INVENTORY SETUP - SHIFT CLOSE METHOD
       CLOSE METHOD:             SNAPSHOT
       CLOSE TIMEOUT:            30
       NUMBER OF SHIFT PER DAY: 4

INVENTORY SETUP - SHIFT TIMES
       SHIFT #1 OPENING TIME:   8:00 AM
       SHIFT #2 OPENING TIME:  10:00 AM

INVENTORY SETUP - INVENTORY REPORT TIMES
       INVENTORY LOG TIME:       12:00 AM
       INVENTORY LOG INTERVAL:  2 Hour
       STORAGE LENGTH:          2000
       WEEK CLOSE DAY:          Sunday
<ETX>
```

```
     Function Code: 50M                                          Version 2
     Function Type: Delivery Setup


  Command Format:
        Display: <SOH>I50M00
       Computer: not supported
```

Typical Response Message, Display Format:

```
<SOH>
I50M00
JAN 16, 2009  3:15 PM

DELIVERY SETUP

DELIVERY METHOD:         STANDARD AUTOMATIC
TICKETED DELIVERY:       ENABLED
TC TICKETED DELIVERY:    TC VOLUME
<ETX>
```

      Function Code: 50N   Version 2
      Function Type: Reconciliation Setup

    Command Format:
        Display: <SOH>I50N00
      Computer: not supported

Typical Response Message, Display Format:

```
<SOH>
I50N00
JAN 16, 2009  3:15 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

RECONCILIATION GENERAL SETUP
      PRODUCT THRESHOLD ALARM:        ENABLED
      DAILY CLOSE TIME:               2:00 AM
      WEEK CLOSE DAY:                 SUNDAY
      ALARM THRESHOLD DELIVERY TYPE:  STANDARD
      TEMPERATURE COMPENSATION:       DISABLED
      METER CALIBRATION OFFSET%:      0.25
      BIR STATUS WARNING ENABLE:      DISABLED
      BIR DAILY CLOSE WARNING ENABLE: DISABLED
      BIR SHIFT CLOSE WARNING ENABLE: DISABLED

RECONCILIATION THRESHOLD ALARMS
TEST    TEST         THRESHOLD                               OFFSET
NUMBER  TYPE         TYPE            CONFIG     PERCENT  VALUE
------  -----------  --------------  ---------  -------  ------
 1      MONTHLY      1-THROUGHPUT    ENABLED       1.00     130
                     2-CAPACITY      DISABLED      1.00     110

                     3-DELIVERY      ENABLED       1.00     100
                     4-FIXED         DISABLED
 2      ROLLING DAY  1-THROUGHPUT    ENABLED       1.00      99
                     2-CAPACITY      ENABLED       1.00      50
                     3-DELIVERY      ENABLED       1.00      75
                     4-FIXED ENABLE                1500
 3      DISABLED
 4      DISABLED
```

Function Code 50N: (Continued)

```
BIR MULTIPLE THRESHOLD SETUP REPORT
```

TEST NUMBER	TEST TYPE	THRESHOLD TYPE	CONFIG	PERCENT	OFFSET VALUE
1	Monthly	1-Throughput	Enabled	1.00	130
		2-Capacity	Disabled	1.00	130
		3-Delivery	Disabled	1.00	130
		4-Fixed	Disabled		130
2	Disabled	1-Throughput	Disabled	1.00	130
		2-Capacity	Disabled	1.00	130
		3-Delivery	Disabled	1.00	130
		4-Fixed	Disabled		130
3	Disabled	1-Throughput	Disabled	1.00	130
		2-Capacity	Disabled	1.00	130
		3-Delivery	Disabled	1.00	130
		4-Fixed	Disabled		130
4	Disabled	1-Throughput	Disabled	1.00	130
		2-Capacity	Disabled	1.00	130
		3-Delivery	Disabled	1.00	130
		4-Fixed	Disabled		130

```
TANK THRESHOLD ALARMS
TANK   THRESHOLD
 1     1.00%
 2     1.00%
 3     1.00%
 <ETX>
```

Function Code: 511   Version 2
Function Type: Set BIR Shift Close Warning

Command Format: **Inquire:**
    Display: <SOH>S51100f   <SOH>I51100
    Computer: <SOH>s51100f   <SOH>i51100

Typical Response Message, Display Format:

```
<SOH>
I51100
JAN 22, 2009  3:06 PM

BIR SHIFT CLOSE PENDING
ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51100YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   f - Shift Close Warning Flag
                  0=Disable
                  1=Enable
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

```
Function Code:   512                                          Version 2
Function Type:Set BIR Daily Close Warning

        Command Format:                                        Inquire:
          Display: <SOH>S51200f                              <SOH>I51200
          Computer: <SOH>s51200f                             <SOH>i51200
```

Typical Response Message, Display Format:

```
<SOH>
I51200
JAN 22, 2009  3:06 PM

BIR DAILY CLOSE PENDING
ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51200YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.               f - Daily Close Warning Flag
                        0=Disable
                        1=Enable
    3.              && - Data Termination Flag
    4.          CCCC - Message Checksum
```

Function Code: 514   Version 1
Function Type: Set H-Protocol Height/Volume Format

Command Format: **Inquire:**
    Display: <SOH>S51400f   <SOH>I51400
    Computer: <SOH>s51400f   <SOH>i51400

Typical Response Message, Display Format:

```
<SOH>
I51400
JAN 24, 1996  2:53 PM

H-PROTOCOL DATA FORMAT
HEIGHT
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51400YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   f - Data Format
                           0=Height
                           1=Volume
    3.   &&& - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 517   Version 1
Function Type: Set System Type & Language Flags

Command Format: **Inquire:**
    Display: <SOH>S51700ULL   <SOH>I51700
   Computer: <SOH>s51700ULL   <SOH>i51700

Typical Response Message, Display Format:

```
<SOH>
I51700
JUL 29, 1997  9:03 AM

DISPLAY SETUP - LANGUAGE & UNITS

SYSTEM LANGUAGE ENGLISH
SYSTEM UNITS     US
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51700YYMMDDHHmmULL&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   U - System Units:
                  1=U.S.
                  2=Metric
                  3=Imperial Gallons
    3.   LL - System Language:
                  01=English
                  02=French
                  03=Spanish
                  04=German
                  05=Portuguese
                  06=Polish
                  07=Swedish
                  08=Japanese
                  09=Finnish
                  10=Greek
                  11=Russian
                  12=Turkish
                  13=Dutch
                  14=Italian
                  15=Chinese
                  16=Arabic
                  17=Hebrew
                  18=Portuguese-Brazil
                  19=Hindi
                  20=Korean
                  21=Chinese Traditional
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

      Function Code: 519   Version 1
      Function Type: Set PLLD Duration Before Precision Retest

      Command Format: **Inquire:**
            Display: <SOH>S51900DDD   <SOH>I51900
          Computer: <SOH>s51900DDD   <SOH>i51900

Typical Response Message, Display Format:

```
<SOH>
I51900
JUL 29, 1997  9:04 AM

PRECISION TEST DURATION
HOURS: 12
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51900YYMMDDHHmmDDD&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   DDD - Retest Duration in hours (Decimal, 012-744)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 51A   Version 1
Function Type: Set Enable/Disable Auto Daylight Saving Time

Command Format: **Inquire:**
　　　Display: <SOH>S51A00f   <SOH>I51A00
　　　Computer: <SOH>s51A00f   <SOH>i51A00

Typical Response Message, Display Format:

```
<SOH>
I51A00
JUL 29, 1997  9:04 AM

DAYLIGHT SAVING TIME
ENABLED ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51A00YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
　　1.　　　YYMMDDHHmm - Current Date and Time
　　2.　　　　　　　f - Daylight Saving Time Flag
　　　　　　　　　　　0=Disabled
　　　　　　　　　　　1=Enabled
　　3.　　　　　　　&& - Data Termination Flag
　　4.　　　　　CCCC - Message Checksum

```
        Function Code: 51B                                          Version 1
        Function Type: Set Start/End Daylight Saving Date and Time

      Command Format:                                                Inquire:
          Display: <SOH>S51BttMMODHHmm                            <SOH>I51Btt
         Computer: <SOH>s51BttMMODHHmm                            <SOH>i51Btt
```

Notes:
```
    1.              tt - Start or End Time Indicator
                         01=Start Date & Time
                         02=End Date & Time
    2.              Display format returns both Start and End Date/Time
    3.              Computer Format only returns either Start or End Date/Time
```

Typical Response Message, Display Format:

```
    <SOH>
    I51B00
    JUL 29, 1997  9:04 AM
    DAYLIGHT SAVING TIME

    START DATE    APR   OCCURRENCE 1   SUN   2:00 AM
    END DATE      OCT   OCCURRENCE 4   SUN   2:00 AM
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i51B00YYMMDDHHmmttMMODHHmm&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.             tt - Start or End Time Indicator
                       01=Start Date & Time
                       02=End Date & Time
    3.       MMODHHmm - Date & Time
                   MM=Month (01-12)
                    O=Occurrence of Week-day in Month (1-5)
                    D=Day of Week (1=Monday, 2=Tuesday, .. 7=Sunday)
                   HH=Hour (00-23)
                   mm=Minute (00-59)
    4.             && - Data Termination Flag
    5.       CCCC - Message Checksum
```

Function Code: 51C   Version 2
Function Type: Set Ticketed Delivery Flag Enable

Command Format: **Inquire:**
    Display: `<SOH>S51C00f`   `<SOH>I51C00`
   Computer: `<SOH>s51C00f`   `<SOH>i51C00`

Typical Response Message, Display Format:

```
<SOH>
I51C00
JUL 29, 2009  9:04 AM

TICKETED DELIVERY
ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51C00YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   f - Ticketed Delivery flag
                            0=Disabled
                            1=Enabled
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

Function Code: 51D   Version 2
Function Type: Set Ticketed Delivery Temperature Compensation Flag

Command Format: **Inquire:**
    Display: <SOH>S51D00f   <SOH>I51D00
    Computer: <SOH>s51D00f   <SOH>i51D00

Typical Response Message, Display Format:

```
<SOH>
I51D00
JUL 29, 2009  9:04 AM

TICKETED DELIVERY TEMP COMPENSATION
STANDARD
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51D00YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   f - Ticketed Delivery Temperature Compensation flag
                     0=Standard
                     1=TC Volume
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

      Function Code: **51E**   Version 2
      Function Type: Set Ticketed Delivery Close Day of Week

    Command Format: **Inquire:**
        Display: <SOH>S51E00D   <SOH>I51E00
       Computer: <SOH>s51E00D   <SOH>i51E00

Typical Response Message, Display Format:

```
<SOH>
I51E00
AUG 28, 2009  4:29 PM

CLOSE DAY OF WEEK
SUN
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51E00YYMMDDHHmmD&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   D - Day of Week (1=Monday, 2=Tuesday, .. 7=Sunday)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

```
    Function Code: 51F                                          Version 1
    Function Type: Set Euro Protocol Prefix

  Command Format:                                                 Inquire:
      Display: <SOH>S51F00c                                  <SOH>I51F00
      Computer: <SOH>s51F00c                                 <SOH>i51F00
```

Typical Response Message, Display Format:

```
<SOH>
I51F00
AUG 28, 2009  4:29 PM

EURO PROTOCOL PREFIX
S
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51F00YYMMDDHHmmc&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             c - Prefix Character (invalid choice will be default to 'S')
                      0 = 'S'
                      1 = 'd'
    3.            && - Data Termination Flag
    4.          CCCC - Message Checksum
```

```
Function Code:    51G                                          Version 1
   Function Type: Set Enable/Disable Custom Help View and Custom Help Edit.

    Command Format:                                            Inquire:
        Display: <SOH>S51G00ve                          <SOH>I51G00
       Computer: <SOH>s51G00ve                          <SOH>i51G00
```

Typical Response Message, Display Format:

```
<SOH>
I51G00
JUN 22, 2001  3:15 PM

CUSTOM HELP VIEW AND EDIT

VIEW:ENABLED
EDIT:ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51G00YYMMDDHHmmve&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              v - Custom Help View Flag
                        0=Disabled
                        1=Enabled
    3.              e - Custom Help Edit  Flag
                        0=Disabled
                        1=Enabled
    4.             && - Data Termination Flag
    5.           CCCC - Message Checksum
```

```
         Function Code: 51H                                    Version 1
         Function Type: Set Front Panel Security
       Command Format:                                          Inquire:
            Display: <SOH>S51H00faaaaaaaaaa                 <SOH>I51H00
           Computer: <SOH>s51H00faaaaaaaaaa                 <SOH>i51H00
```

Notes:
```
    1.                f – Enable or Disable Status (if disabled no password is
                          required)
    2.        aaaaaaaaaa – Password (3 to 10 ASCII Characters from 21h – 7Eh)
```

Typical Response Message, Display Format:

```
    <SOH>
    I51H00
    JUN 22, 2001  3:15 PM

    Security - System Security

    Field Name               Configuration

    Front Panel Security   :  Enabled

    Password               :  **********
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i51H00YYMMDDHHmmfaaaaaaaaaa&&CCCC<ETX>
```

Notes:
```
    1.     YYMMDDHHmm – Current Date and Time
    2.              f – Front Panel Security Flag
                        0=Disabled
                        1=Enabled
    3.             nn – Length of Password (decimal)
    4.     aaaaaaaaaa – Password (3 to 10 ASCII Characters from 21h – 7Eh)
    5.             && – Data Termination Flag
    6.           CCCC – Message Checksum
```

```
        Function Code: 51M                                              Version 2
        Function Type: Set Delivery Method

        Command Format:                                                 Inquire:
            Display: <SOH>S51M00T                                       <SOH>I51M00
            Computer: <SOH>s51M00T                                      <SOH>i51M00
```

Typical Response Message, Display Format:

```
<SOH>
I51M00
JUN 22, 2009  3:12 PM

DELIVERY METHOD
STANDARD AUTOMATIC
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51M00YYMMDDHHmmT&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.            T - Delivery Method Type
                      0=Standard Automatic
                      1=Manual
                      2=Automatic Quiet Period Warning
    3.           && - Data Termination Flag
    4.        CCCC - Message Checksum
```

Function Code: 51R   Version 4
Function Type: Set HRM Feature Enable Flag

Command Format: **Inquire:**
    Display: <SOH>S51R00f   <SOH>I51R00
    Computer: <SOH>s51R00f   <SOH>i51R00

Typical Response Message, Display Format:

```
<SOH>
I51R00
JUN 22, 2011  3:12 PM

HRM FEATURE ENABLE FLAG
ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51R00YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   f - HRM Feature Flag
               0=Disabled
               1=Enabled
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 51S   Version 1
Function Type: Set Time Zone

Command Format: **Inquire:**
    Display: `<SOH>S51S00zzzz...zzzz`   `<SOH>I51S00`
    Computer: `<SOH>s51S00zzzz...zzzz`   `<SOH>i51S00`

Typical Response Message, Display Format:

```
<SOH>
I51S00
Feb 22, 2012  3:11 PM

Time Zone : America/New_York
Zone Info : EST EDT
Comment   :
UTC Offset: UTC-05:00

or

Time Zone : America/Kentucky/Lousville
Zone Info : EST EDT
Comment   : Eastern Time – Kentucky – Lousville Area
UTC Offset: UTC-05:00

or

Time Zone : EST
Zone Info : EST5
Comment   :
UTC Offset: UTC-05:00
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51S00YYMMDDHHmmnnZZzzzz...zzzzIIiiii...iiiiNNcccc...cccc
                UUuuuu...uuuu&&CCCC<ETX>
```

Notes:
```
1.       YYMMDDHHmm - Current Date and Time
2.             nn - Number of Pairs of Fields to follow (Decimal)
                    Where Each Pair of Fields is:
                    2 Chars – Number of ASCII characters to follow (Hex)
                    Up to 99 ASCII characters [20h-7E]
3.             ZZ - Number of Characters in Time Zone to follow (Hex)
4.     zzzz...zzzz - Time Zone (up to 99 ASCII characters [20h-7Eh])
5.             II - Number of Characters in Zone Info to follow (Hex)
6.     iiii...iiii - Zone Information (ASCII characters [20h-7Eh])
7.             NN - Number of Characters in Comment to follow (Hex)
8.     cccc...cccc - Comment (ASCII characters [20h-7Eh])
9.             UU - Number of Characters in UTC Offset to follow (Hex)
10.    uuuu...uuuu - UTC Offset (ASCII characters [20h-7Eh])
11.            && - Data Termination Flag
12.          CCCC - Message Checksum
```

      Function Code: 571   Version 1
      Function Type: Enable User Ullage

      Command Format: **Inquire:**
          Display: <SOH>S57100e   <SOH>I57100
        Computer: <SOH>s57100e   <SOH>i57100

Typical Response Message, Display Format:

    <SOH>
    I57100
    JUN 22, 2008 3:15 PM

    USER ULLAGE: ENABLED
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i57100YYMMDDHHmme&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   e – Disabled=0, Enabled=1
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 572   Version 1
Function Type: Set User Ullage Percent

Command Format: **Inquire:**
    Display: <SOH>S57200fff   <SOH>I57200
    Computer: <SOH>s57200fff   <SOH>i57200

Note: Valid Ullage Percent Range (Integer), 90-100%

Typical Response Message, Display Format:

```
<SOH>
I57200
JUN 22, 2008  3:15 PM

USER ULLAGE: 90%
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i57200YYMMDDHHmmfff&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   fff – Ullage Percent (Integer)
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

7.3.2 COMMUNICATIONS SETUP

```
       Function Code: 521(Obsolete V2 - See New Command 872)          Version 1
       Function Type: Set Receiver Configuration Flag

     Command Format:                                                     Inquire:
         Display: <SOH>S521RRf                                      <SOH>I521RR
        Computer: <SOH>s521RRf                                      <SOH>i521RR
```

Typical Response Message, Display Format:

```
   <SOH>
   S521RR
   MAR 29, 1996  6:27 PM

   RECEIVER CONFIGURATION

   DEVICE  LABEL                   CONFIGURED
      1  HOME OFFICE               ON
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i521RRYYMMDDHHmmRRf...
                     RRf&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.               RR - Receiver Number (Decimal)
   3.                f - Receiver Configuration Flag:
                          0=Disabled
                          1=Enabled
   4.               && - Data Termination Flag
   5.             CCCC - Message Checksum
```

Function Code: **522**(Obsolete V2 - See New Command 874)   Version 1
Function Type: Set Receiver Location Label

Command Format: **Inquire:**
    Display: <SOH>S522RRaaaaaaaaaaaaaaaaaaaa   <SOH>I522RR
    Computer: <SOH>s522RRaaaaaaaaaaaaaaaaaaaa   <SOH>i522RR

Typical Response Message, Display Format:

```
<SOH>
I522RR
JAN 22, 1996  3:14 PM

RECEIVER LABEL

DEVICE  LABEL
     1  aaaaaaaaaaaaaaaaaaaa
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i522RRYYMMDDHHmmRRaaaaaaaaaaaaaaaaaaaa...
               RRaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   RR - Receiver Number (Decimal)
    3.   a - Location Label (20 ASCII characters [20h-7Eh])
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

Function Code: 52D   Version 1
Function Type: Autodial Alarm Status

Command Format: **Inquire:**
    Display: <SOH>S52DRRf   <SOH>I52DRR
    Computer: <SOH>s52DRRf   <SOH>i52DRR

Notes:
```
    1.              RR - Receiver number (00=all)
    2.               f - Alarm clear flag
                         1=clear; all others ignored
```

Typical Response Message Display Format:

```
    <SOH>
    I52DRR
    JAN  1, 1996  8:06 AM

    RECEIVER AUTODIAL ALARM STATUS
    RCVR    STATUS
     1      CLEAR
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i52D00YYMMDDHHmmNNf&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              NN - Number of receiver alarm flags to follow
    3.               f - Alarm flags
                         0=clear
                         1=alarm
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 52G   Version 2
Function Type: COMM DIM Setup

Command Format:
    Display: <SOH>I52GDD
    Computer: not supported

Notes:
1.   DD - COMM number (00=all)

Typical Response Message, Display Format:

```
TLS-450
  <SOH>
  I52GDD
  JAN 16, 2009  8:06 AM

  GENERAL COMM SETUP
    COMM 1:
        CONFIGURED:             ENABLED
        SLOT:                   1
        PORT:                   1
        DEVICE:                 EDIM CARD
        LABEL:                  EDIM 1
        DIM PROTOCOL:           VRPROTOCOLDIM
        BAUD RATE:              9600
        DATA BITS:              7
        PARITY:                 ODD
        STOP BITS:              1
        HAND_SHAKING:           NO HANDSHAKING

  PROTOCOL COMM SETUP
    COMM 1:
        UNIT REPORTED:          GALLONS
        COLLECT CUMMULATIVE TOTALS:YES
        TRANSACTION PRECISION:  THOUSANDS
        CUMULATIVE PRECISION:   THOUSANDS
        BLENDER ONLY SITE:      NO
        USE PLUS ONE ALGORITHM: NO
        REPORT TANK VOLUMES:    NO
        SUPPRESS COMM ALARM:    NO

  ADVANCE COMM SETUP
    COMM 1:
        COMM PORT SECURITY:     DISABLED
        SECURITY CODE:          000000

  GENERAL COMM SETUP
    COMM 2:
        CONFIGURED:             DISABLED
        SLOT:                   NONE
        PORT:                   NONE
        DEVICE:                 NONE
        LABEL:
        DIM PROTOCOL:           UNKNOWN
        BAUD RATE:              9600
        DATA BITS:              7
        PARITY:                 ODD
        STOP BITS:              1
        HAND_SHAKING:           NO HANDSHAKING
  <ETX>
```

Function Code 52G: (Continued)

```
TLS-4
   <SOH>
   I52GDD
   JAN  16, 2009  8:06 AM

   GENERAL COMM SETUP
     COMM 1:
         CONFIGURED:              ENABLED
         DEVICE:                  EDIM CARD
         LABEL:                   EDIM 1
         DIM PROTOCOL:            VRPROTOCOLDIM
         BAUD RATE:               9600
         DATA BITS:               7
         PARITY:                  ODD
         STOP BITS:               1
         HAND_SHAKING:            NO HANDSHAKING

   PROTOCOL COMM SETUP
     COMM 1:
         UNIT REPORTED:           GALLONS
         COLLECT CUMMULATIVE TOTALS:YES
         TRANSACTION PRECISION:   THOUSANDS
         CUMULATIVE PRECISION:    THOUSANDS
         BLENDER ONLY SITE:       NO
         USE PLUS ONE ALGORITHM:  NO
         REPORT TANK VOLUMES:     NO
         SUPPRESS COMM ALARM:     NO

   ADVANCE COMM SETUP
     COMM 1:
         COMM PORT SECURITY:      DISABLED
         SECURITY CODE:           000000
   <ETX>
```

```
        Function Code: 52H                                          Version 2
        Function Type: Set Comm DIM Protocol

      Command Format:                                               Inquire:
          Display: <SOH>S52HPPdd                               <SOH>I52HPP
         Computer: <SOH>s52HPPdd                               <SOH>i52HPP
```

Notes:
```
    1.              PP - Communication Port Number
    2.              dd - DIM Protocol
                        00=Unknown DIM
                        01=Gilbarco EDIM          (V2)
                        02=Gilbarco CL            (V2)
                        03=Tokheim 67AB
                        04=Tokheim DHC
                        05=Wayne CL               (V2)
                        06=Schumberger
                        07=Schumberger SAM
                        08=Gasboy RS-422
                        09=Gasboy CFN
                        10=VR Protocol DIM        (V2)
                        11=Mechanical             (V2)
                        12=Low Volt Mechanical (V2)
                        13=Wayne ID POS           (V4)
                        14=Smart Crind
                        15=Tominaga
                        16=Bennett
                        17=UK Block
                        18=Scheidt Bach
```

Typical Response Message, Display Format:

```
    <SOH>
    I52H00
    JAN 22, 2009  3:12 PM

    DIM PROTOCOL

    COMM    LOCATION        PROTOCOL
      1     OFFICE          Veeder-Root
    <ETX>
```

Function Code 52H: (Continued)

Typical Response Message, Computer Format:

> `<SOH>i52HPPYYMMDDHHmmPPdd&&CCCC<ETX>`

Notes:
```
   1.        YYMMDDHHmm - Current Date and Time
   2.              PP - Comm Number (Decimal)
   3.              dd - DIM Protocol
                        00=Unknown DIM
                        01=Gilbarco EDIM       (V2)
                        02=Gilbarco CL         (V2)
                        03=Tokheim 67AB
                        04=Tokheim DHC
                        05=Wayne CL            (V2)
                        06=Schumberger
                        07=Schumberger SAM
                        08=Gasboy RS-422
                        09=Gasboy CFN
                        10=VR Protocol DIM     (V2)
                        11=Mechanical          (V2)
                        12=Low Volt Mechanical (V2)
                        13=Wayne ID POS
                        14=Smart Crind
                        15=Tominaga
                        16=Bennett
                        17=UK Block
                        18=Scheidt Bach
   4.              && - Data Termination Flag
   5.            CCCC - Message Checksum
```

```
        Function Code: 530                                          Version 1
        Function Type: Beeper Enable/Disable

     Command Format:                                              Inquire:
        Display: <SOH>S53000x149                            <SOH>I53000
       Computer: <SOH>s53000x149                            <SOH>i53000
```

Notes:
   1.   149 - This verification code must be sent to confirm the command

Typical Response Message, Display Format:

```
   <SOH>
   I53000
   JAN 22, 1996  3:12 PM

   BEEPER: ENABLED
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i53000YYMMDDHHmmx&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   x - Beeper Enable/Disable Flag
                    0=Disable
                    1=Enable
   3.   && - Data Termination Flag
   4.   CCCC - Message Checksum

             Function Code: 531   Version 1
             Function Type: Set RS-232 End of Message

          Command Format: **Inquire:**
             Display: <SOH>S531PPf   <SOH>I531PP
             Computer: <SOH>s531PPf   <SOH>i531PP

Typical Response Message, Display Format:

   <SOH>
   I531PP
   JAN 22, 1996 3:16 PM

   RS-232 END OF MESSAGE

   COMM   LABEL   END OF MESSAGE
    1   DISABLED
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i53100YYMMDDHHmmPPf...
                   PPf&&CCCC<ETX>

Notes:
      1.   YYMMDDHHmm – Current Date and Time
      2.   PP – COMM Number (Decimal, 00=all)
      3.   f – End of Message flag
                        0=Disable
                        1=Enable
      4.   && – Data Termination Flag
      5.   CCCC – Message Checksum

7.3.3 WARNING, ALARM, & AUTO-PRINT SETUP

<pre>
     Function Code: 536   Version 1
     Function Type: Set RS-232 Security Code per Port

     Command Format: Inquire:
        Display: <SOH>S536PPsaaaaaa   <SOH>I536PP
       Computer: <SOH>s536PPsaaaaaa   <SOH>i536PP
</pre>

Notes:
1.   PP - Port number (Decimal, 01..03 [..06]; 99=this port)
2.   s - Enable or Disable Status (if disabled no password is
                           required)
3.   aaaaaa - Security code (6 ASCII characters from 20 Hex-7E Hex)

Typical Response Message, Display Format:

<pre>
  <SOH>
  I536PP
  JUN 1, 2009 8:05 AM

  232 SECURITY CODE

  PORT   SECURITY CODE   STATUS

   1   123456   ENABLED
  <ETX>
</pre>

Typical Response Message, Computer Format:

<pre>
  <SOH>i536PPYYMMDDHHmmsaaaaaa&&CCCC<ETX>
</pre>

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   s - disabled or enabled status
3.   aaaaaa - Security code (6 ASCII characters from 20 Hex-7E Hex)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 537   Version 1
Function Type: Set Display Format RS-232 ETX per Port

Command Format: Inquire:
      Display: <SOH>S537PPAB   <SOH>I537PP
    Computer: <SOH>s537PPAB   <SOH>i537PP

Notes:
    1.   PP - Port number (Decimal, 01..06]; 99=this port)
    2.   A - ETX CHAR 1 (value 0-255)
    3.   B - ETX CHAR 2 (value 0-255)
    4.   The default end of message character transmitted by the TLS
                  is an <ETX> (Decimal 003 or ^C). If desired, the TLS can be
                  programmed to transmit up to two other characters at the end
                  of each computer format response message.
    5.   The TLS accepts any ASCII character (000-255) in either of
                  the two positions. However, if the first "A" character is a
                  <NUL> (000), the TLS reverts to its default condition. If
                  the first character "A", is not a NULL but the second
                  character "B" is, only the first character is transmitted
                  as the response message. If neither character is a <NUL>,
                  both characters are transmitted, in sequence, at the end of
                  each computer format response message.
    6.   This command only sets the ETX characters. To enable the
                  use of the custom ETX, the 531 command must be used to
                  enable the user's custom ETX.

Typical Response Message, Display Format:

For printable ASCII characters

    <SOH>
    I537PP
    JUN 1, 2000 8:06 AM

    COMPUTER MODE RS-232 ETX CHARATERS

    PORT   ETX   ETX
     1   C   D
    <ETX>

For non-printable ASCII characters

    <SOH>
    I537PP
    JUN 1, 2000 8:06 AM

    COMPUTER MODE RS-232 ETX CHARATERS

    PORT   ETX   ETX
    1   0xCC   0xDD
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i537PPYYMMDDHHmmAB&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   A - 1st Character (value 0-255)
    3.   B - 2nd Character (value 0-255)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
          Function Code: 538                                Version 1
          Function Type: Set Computer Format RS-232 ETX per Port

          Command Format:                                     Inquire:
             Display: <SOH>S538PPAB                         <SOH>I538PP
            Computer: <SOH>s538PPAB                         <SOH>i538PP
```

Notes:
```
    1.              PP - Port number (Decimal, 01..06]; 99=this port)
    2.               A - ETX CHAR 1 (value 0-255)
    3.               B - ETX CHAR 2 (value 0-255)
```

```
    4.              The default end of message character transmitted by the TLS
                    is an <ETX> (Decimal 003 or ^C).  If desired, the TLS can be
                    programmed to transmit up to two other characters at the end
                    of each computer format response message.
```

```
    5.              The TLS accepts any ASCII character (000-255) in either of
                    the two positions.  However, if the first "A" character is a
                    <NUL> (000), the TLS reverts to its default condition.   If
                    the first character "A",  is not a NULL but the second
                    character  "B" is, only the first character is transmitted
                    as the response message.  If neither character is a <NUL>,
                    both characters are transmitted, in sequence, at the end of
                    each computer format response message.
```

```
    6.              This command only sets the ETX characters.  To enable the
                    use of the custom ETX, the 531 command must be used to
                    enable the user's custom ETX.
```

Typical Response Message, Display Format:

For printable ASCII characters

```
    <SOH>
    I538PP
    JUN  1, 2000  8:06 AM

    COMPUTER MODE RS-232 ETX CHARATERS

    PORT     ETX     ETX
     1        C       D
    <ETX>
```

For non-printable ASCII characters

```
    <SOH>
    I538PP
    JUN  1, 2000  8:06 AM

    COMPUTER MODE RS-232 ETX CHARATERS

    PORT     ETX     ETX
     1      0xCC    0xDD
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i538PPYYMMDDHHmmAB&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.                 A - 1st Character (value 0-255)
    3.                 B - 2nd Character (value 0-255)
    4.                && - Data Termination Flag
    5.              CCCC - Message Checksum
```

Function Code: 53A   Version 2
Function Type: Set Shift Close Method

Command Format: Inquire:
   Display: <SOH>S53A00M   <SOH>I53A00
  Computer: <SOH>s53A00M   <SOH>i53A00

Typical Response Message, Display Format:

```
<SOH>
I53A00
JUN  1, 2009  8:06 AM

SHIFT CLOSE METHOD:  MANUAL
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i53A00YYMMDDHHmmM&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   M – Shift Close Method (Decimal)
              0 = TIMED
              1 = MANUAL
   3.   && – Data Termination Flag
   4.   CCCC – Message Checksum

Function Code: 545   Version 3
Function Type: Set TC Density Enable

Command Format: Inquire:
    Display: <SOH>S54500f   <SOH>I54500
    Computer: <SOH>s54500f   <SOH>i54500

Typical Response Message, Display Format:

```
<SOH>
I54500
JUN  1, 2010  8:06 AM

TC DENSITY
ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i54500YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   f - TC Density Enable Flag (Decimal)
                0 = Disabled
                1 = Enabled
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

Function Code: 546   Version 1
Function Type: Set Tank Periodic Test Needed Warning

Command Format: **Inquire:**
    Display: <SOH>S54600f   <SOH>I54600
    Computer: <SOH>s54600f   <SOH>i54600

Typical Response Message, Display Format:

    <SOH>
    I54600
    JAN 22, 1996 3:12 PM

    TANK PER TEST NEEDED WRN: DISABLED
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i54600YYMMDDHHmmf&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   f - Tank Periodic Test Needed Warning Flag:
                    0=Disabled
                    1=Enabled
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: **547**   Version 1
Function Type: Set Days Before Tank Periodic Test Needed Warning

Command Format: **Inquire:**
    Display: <SOH>S54700dd   <SOH>I54700
   Computer: <SOH>s54700dd   <SOH>i54700

Typical Response Message, Display Format:

```
<SOH>
I54700
JAN 22, 1996  3:12 PM

TANK PER TEST NEEDED WRN: DAYS= 25
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i54700YYMMDDHHmmdd&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   dd – Days Before Tank Periodic Test Needed Warn (Decimal, 00-30)
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

Function Code: 548   Version 1
Function Type: Set Days Before Tank Periodic Test Needed Alarm

Command Format: **Inquire:**
   Display: <SOH>S54800dd   <SOH>I54800
   Computer: <SOH>s54800dd   <SOH>i54800

Typical Response Message, Display Format:

```
<SOH>
I54800
JAN 22, 1996  3:12 PM

TANK PER TEST NEEDED ALM: DAYS= 30
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i54800YYMMDDHHmmdd&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   dd - Days Before Tank Periodic Test Needed Alarm (Decimal, 00-30)
   3.   && - Data Termination Flag
   4.   CCCC - Message Checksum

Function Code: 549   Version 1
Function Type: Set Tank Annual Test Needed Warning

Command Format: **Inquire:**
      Display: `<SOH>S54900f`   `<SOH>I54900`
     Computer: `<SOH>s54900f`   `<SOH>i54900`

Typical Response Message, Display Format:

```
<SOH>
I54900
JAN 22, 1996  3:12 PM

TANK ANN TEST NEEDED WRN: DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i54900YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   f - Annual Test Needed Warning Flag:
                0=Disabled
                1=Enabled
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 54A   Version 1
Function Type: Set Days Before Tank Annual Test Needed Warning

Command Format: **Inquire:**
   Display: <SOH>S54A00ddd   <SOH>I54A00
   Computer: <SOH>s54A00ddd   <SOH>i54A00

Typical Response Message, Display Format:

```
<SOH>
I54A00
JAN 22, 1996  3:12 PM

TANK ANN TST NEEDED WRN: DAYS=355
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i54A00YYMMDDHHmmddd&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   ddd - Days Before Annual Test Needed Warning (Decimal, 000-365)
   3.   && - Data Termination Flag
   4.   CCCC - Message Checksum

      Function Code: **54B**   Version 1
      Function Type: Set Days Before Tank Annual Test Needed Alarm

      Command Format: **Inquire:**
           Display: <SOH>S54B00ddd   <SOH>I54B00
          Computer: <SOH>s54B00ddd   <SOH>i54B00

Typical Response Message, Display Format:

    <SOH>
    I54B00
    JAN 22, 1996 3:12 PM

    TANK ANN TEST NEEDED ALM: DAYS=365
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i54B00YYMMDDHHmmddd&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   ddd - Days Before annual Test Needed Alarm (Decimal, 000-365)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

```
   Function Code: 54C                                      Version 1
   Function Type: Set CSLD Evaporation Reid Vapor Pressure Chart

   Command Format:                                           Inquire:
      Display: <SOH>S54C00GG.G...                        <SOH>I54C00
     Computer: <SOH>s54C00FFFFFFFF...                    <SOH>i54C00
```

Notes:
```
    1.              GG.G - 12 Reid Vapor Pressures (Decimal)
    2.          FFFFFFFF - 12 Reid Vapor Pressures (ASCII Hex IEEE floats)
    3.                    The command will be rejected if any value is outside the
                         range 0.0 to 15.0, or all table values are zero.
```

Typical Response Message, Display Format:

```
    <SOH>
    I54COO
    JAN 22, 1996  3:27 PM

    CSLD EVAP CONSTANTS
    REID VAPOR PRESSURE:
    JAN            14.0
    FEB            14.0
    MAR            12.0
    APR            12.0
    MAY            11.0
    JUN            10.0
    JUL            08.0
    AUG            04.0
    SEP            05.0
    OCT            06.0
    NOV            09.0
    DEC            12.0
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i54C00YYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              NN - Number of eight character Data Fields to follow (Hex)
    3.        FFFFFFFF - 12 Reid Vapor Pressures (ASCII Hex IEEE floats)
                          1. Jan  RVP
                          2. Feb  RVP
                          3. Mar  RVP
                          4. Apr  RVP
                          5. May  RVP
                          6. Jun  RVP
                          7. Jul  RVP
                          8. Aug  RVP
                          9. Sep  RVP
                         10. Oct  RVP
                         11. Nov  RVP
                         12. Dec  RVP
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 553   Version 1
Function Type: Set Line Re-Enable Method

Command Format: **Inquire:**
    Display: <SOH>S55300f   <SOH>I55300
   Computer: <SOH>s55300f   <SOH>i55300

Typical Response Message, Display Format:

```
<SOH>
I55300
JAN 24, 2000  2:54 PM

LINE RE-ENABLE METHOD
PASS LINE TEST
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i55300YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   f - Line Re-Enable Method Flag
                0=Pass Line Test
                1=Alarm Acknowledge
   3.   && - Data Termination Flag
   4.   CCCC - Message Checksum

Function Code: 554   Version 1
Function Type: Set Periodic Line Leak Test Auto-Confirm

Command Format: **Inquire:**
    Display: <SOH>S55400f   <SOH>I55400
    Computer: <SOH>s55400f   <SOH>i55400

Typical Response Message, Display Format:

```
<SOH>
I55400
JUL 29, 1997  9:07 AM

0.20 GPH LINE TEST AUTO-CONFIRM: ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i55400YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   f - Periodic Line Leak Test Auto-Confirm:
               0=Disabled
               1=Enabled
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 555   Version 1
Function Type: Set Annual Line Leak Test Auto-Confirm

Command Format: **Inquire:**
    Display: <SOH>S55500f   <SOH>I55500
    Computer: <SOH>s55500f   <SOH>i55500

Typical Response Message, Display Format:

```
<SOH>
I55500
JUL 29, 1997  9:07 AM

0.10 GPH LINE TEST AUTO-CONFIRM: ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i55500YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   f – Annual Line Leak Test Auto-Confirm:
            0=Disabled
            1=Enabled
3.   && – Data Termination Flag
4.   CCCC – Message Checksum

Function Code: 556   Version 1
Function Type: Set Line Periodic Test Needed Warning

Command Format: **Inquire:**
    Display: <SOH>S55600f   <SOH>I55600
    Computer: <SOH>s55600f   <SOH>i55600

Typical Response Message, Display Format:

```
<SOH>
I55600
JAN 22, 1996  3:12 PM

LINE PER TST NEEDED WRN: DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i55600YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   f – Periodic Test Needed Warning Flag:
                  0=Disabled
                  1=Enabled
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

Function Code: 557   Version 1
Function Type: Set Days Before Line Periodic Test Needed Warning

Command Format: **Inquire:**
        Display: <SOH>S55700dd   <SOH>I55700
        Computer: <SOH>s55700dd   <SOH>i55700

Typical Response Message, Display Format:

    <SOH>
    I55700
    JAN 22, 1996 3:12 PM

    LINE PER TST NEEDED WRN: DAYS= 25
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i55700YYMMDDHHmmdd&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   dd - Days Before Periodic Test Needed Warning (Decimal, 00-30)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 558   Version 1
Function Type: Set Days Before Line Periodic Test Needed Alarm

Command Format: **Inquire:**
    Display: <SOH>S55800dd   <SOH>I55800
   Computer: <SOH>s55800dd   <SOH>i55800

Typical Response Message, Display Format:

```
<SOH>
I55800
JAN 22, 1996  3:12 PM

LINE PER TST NEEDED ALM: DAYS= 30
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i55800YYMMDDHHmmdd&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   dd - Days Before Periodic Test Needed Alarm (Decimal, 00-30)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 559   Version 1
Function Type: Set Line Annual Test Needed Warning

Command Format: **Inquire:**
    Display: <SOH>S55900f   <SOH>I55900
   Computer: <SOH>s55900f   <SOH>i55900

Typical Response Message, Display Format:

```
<SOH>
I55900
JAN 22, 1996  3:12 PM

LINE ANN TST NEEDED WRN: DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i55900YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   f – Annual Test Needed Warning Flag:
              0=Disabled
              1=Enabled
   3.   && – Data Termination Flag
   4.   CCCC – Message Checksum

Function Code: **55A**   Version 1
Function Type: Set Days Before Line Annual Test Needed Warning

Command Format: **Inquire:**
    Display: <SOH>S55A00ddd   <SOH>I55A00
    Computer: <SOH>s55A00ddd   <SOH>i55A00

Typical Response Message, Display Format:

    <SOH>
    I55A00
    JAN 22, 1996 3:12 PM

    LINE ANN TST NEEDED WRN: DAYS=355
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i55A00YYMMDDHHmmddd&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   ddd – Days Before Annual Test Needed Warning (Decimal, 000-365)
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

Function Code: 55B   Version 1
Function Type: Set Days Before Line Annual Test Needed Alarm

Command Format: **Inquire:**
    Display: <SOH>S55B00ddd   <SOH>I55B00
  Computer: <SOH>s55B00ddd   <SOH>i55B00

Typical Response Message, Display Format:

```
<SOH>
I55B00
JAN 22, 1996  3:12 PM

LINE ANN TST NEEDED ALM: DAYS=365
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i55B00YYMMDDHHmmddd&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   ddd – Days Before Annual Test Needed Alarm (Decimal, 000-365)
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

```
        Function Code: 564                                       Version 1
        Function Type: Set Ullage

        Command Format:                                          Inquire:
             Display: <SOH>S56400f                          <SOH>I56400
            Computer: <SOH>s56400f                          <SOH>i56400
```

Typical Response Message, Display Format:

```
<SOH>
I56400
JUN 22, 2006  3:15 PM

ULLAGE: 90%
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i56400YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              f - Ullage
                        0=90%
                        1=95%
                        2=Custom (see 572)
    3.             && - Data Termination Flag
    4.           CCCC - Message Checksum
```

Function Code: 56E   Version 2
Function Type: Set Manual Close Timeout in Minutes

Command Format: **Inquire:**
     Display: <SOH>S56E00NN   <SOH>I56E00
    Computer: <SOH>s56E00NN   <SOH>i56E00

Typical Response Message, Display Format:

```
<SOH>
I56E00
JUN 22, 2009  3:15 PM

MANUAL CLOSE TIMEOUT:  30
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i56E00YYMMDDHHmmNN&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   NN - Number of Minutes (Decimal,[min,max] = [30(default),60]
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 577   Version 2
Function Type: Set Inventory Close Start Time

Command Format: **Inquire:**
    Display: <SOH>S57700hhmm   <SOH>I57700
    Computer: <SOH>s57700hhmm   <SOH>i57700

Typical Response Message, Display Format:

```
<SOH>
I57700
JUN 22, 2009  3:15 PM

INVENTORY LOG TIME : 12:00
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i57700YYMMDDHHmmhhmm&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   hhmm - Start Time to Record Inventory [0000-2359] where
                    0000=midnight (Decimal)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 578   Version 2
Function Type: Set Inventory Reporting Interval

Command Format: **Inquire:**
    Display: `<SOH>S57800rr`   `<SOH>I57800`
    Computer: `<SOH>s57800rr`   `<SOH>i57800`

Typical Response Message, Display Format:

```
<SOH>
I57800
JAN 22, 2009  3:16 PM

INVENTORY LOG INTERVAL : 1 Hour
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i57800YYMMDDHHmmrr&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   rr - Repeat Time to Record Inventory (Decimal)
                  0=5 Minutes
                  1=10 Minutes
                  2=15 Minutes
                  3=20 Minutes
                  4=30 Minutes
                  5=1 hour
                  6=2 hours
                  7=3 hours
                  8=4 hours
                  9=6 hours
                  10=8 hours
                  11=12 hours
                  12=24 hours
                  13=1 Minute
                  99=Disabled
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

Function Code: 579   Version 2
Function Type: Tank Idle Delivery Enable/Disable

Command Format: **Inquire:**
    Display: <SOH>S57900f   <SOH>I57900
   Computer: <SOH>s57900f   <SOH>i57900

Typical Response Message, Display Format:

```
<SOH>
I57900
JAN 22, 2011  3:12 PM

TANK IDLE DELIVERY
ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i57900YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   f – Tank Idle Delivery Enable/Disable Flag
          0=Disable
          1=Enable
3.   && – Data Termination Flag
4.   CCCC – Message Checksum

```
        Function Code: 57B                                        Version 6
        Function Type: Set Timed Sudden Loss Monitoring Schedule

        Command Format:                                          Inquire:
            Display: <SOH>S57B00S            (if S=0)        <SOH>I57B00
                     <SOH>S57B00SHHmmHHmm    (if S=1)
                     <SOH>S57B00SNsHHmmeHHmm (if S=2)
                     <SOH>S57B00S            (if S=3)

            Computer: <SOH>s57B00S           (if S=0)        <SOH>i57B00
                      <SOH>s57B00SHHmmHHmm   (if S=1)
                      <SOH>s57B00SNsHHmmeHHmm (if S=2)
                      <SOH>s57B00S           (if S=3)
```

Typical Response Message, Display Format:
Daily

```
    <SOH>
    I57B00
    JAN 22, 2014  3:12 PM

    TIMED SUDDEN LOSS DETECTION SCHEDULE

    SCHEDULE TYPE: DAILY
    START TIME: 11:00 PM
    END TIME:    5:00 AM
    <ETX>
```

Individual

```
    <SOH>
    I57B00
    JAN 22, 2014  3:12 PM

    TIMED SUDDEN LOSS DETECTION SCHEDULE

    SCHEDULE TYPE: INDIVIDUAL
    PERIOD 1:
    START DAY: MONDAY
    START TIME: 11:00 PM
    END DAY:   TUESDAY
    END TIME:  6:00 AM

    SCHEDULE TYPE: INDIVIDUAL
    PERIOD 2: DISABLED

    SCHEDULE TYPE: INDIVIDUAL
    PERIOD 3:
    START DAY: FRIDAY
    START TIME: 11:00 PM
    END DAY:   SATURDAY
    END TIME:  6:00 AM

    SCHEDULE TYPE: INDIVIDUAL
    PERIOD 4: DISABLED

    SCHEDULE TYPE: INDIVIDUAL
    PERIOD 5: DISABLED

    SCHEDULE TYPE: INDIVIDUAL
    PERIOD 6: DISABLED

    SCHEDULE TYPE: INDIVIDUAL
    PERIOD 7: DISABLED
    <ETX>
```

Function Code 57B Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i57B00YYMMDDHHmmS&&CCCC<ETX>                                            (if S=0)
<SOH>i57B00YYMMDDHHmmSHHmmHHmm&&CCCC<ETX>                                    (if S=1)
<SOH>i57B00YYMMDDHHmmSNsHHmmeHHmmNsHHmmeHHmm…NsHHmmeHHmm&&CCCC<ETX>          (if S=2)
<SOH>i57B00YYMMDDHHmmS&&CCCC<ETX>                                            (if S=3)
```

Notes:
```
     1.      YYMMDDHHmm - Current Date and Time
     2.          S - Schedule Type
                     0=Disabled
                     1=Daily
                     2=Individual
                     3=Manual
     3.          HHmm - Time hour/minute (when S=1 or S=2)(EE00=Disabled)
     4.          N - Period Number (1-7, when S=2)
     5.          s - Start Day (when S=2)
                     0=Disabled
                     1=Sunday
                     2=Monday
                     3=Tuesday
                     4=Wednesday
                     5=Thursday
                     6=Friday
                     7=Saturday
     6.          e - End Day (when S=2)
                     0=Disabled
                     1=Sunday
                     2=Monday
                     3=Tuesday
                     4=Wednesday
                     5=Thursday
                     6=Friday
                     7=Saturday
     7.          && - Data Termination Flag
     8.          CCCC - Message Checksum
```

Function Code: 580   Version 2
Function Type: Get Inventory Storage Length

Command Format:
Display: <SOH>I58000
Computer: <SOH>i58000

Typical Response Message, Display Format:

```
<SOH>
I58000
JAN 22, 2009  3:16 PM

INVENTORY STORAGE LENGTH: 2000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i58000YYMMDDHHmmFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   FFFFFFFF - Inventory Storage Length (ASCII Hex IEEE integer)
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

Function Code: 581   Version 4
Function Type: Set Alarm Filter

Command Format: **Inquire:**
        Display: <SOH>S58100f   <SOH>I58100
        Computer: <SOH>s58100f   <SOH>i58100

Typical Response Message, Display Format:

    <SOH>
    I58100
    JUN 24, 2011 3:15 PM

    ALARM FILTERING FLAG: ENABLED
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i58100YYMMDDHHmmf&&CCCC<ETX>

Notes:
        1.   YYMMDDHHmm - Current Date and Time
        2.   f - Alarm Filter Flag
                        0=Disabled
                        1=Enabled
        3.   && - Data Termination Flag
        4.   CCCC - Message Checksum

Function Code: 5BD   Version 1
Function Type: Set Enable/Disable Custom Alarms

Command Format: **Inquire:**
    Display: <SOH>S5BD00f   <SOH>I5BD00
    Computer: <SOH>s5BD00f   <SOH>i5BD00

Typical Response Message, Display Format:

```
<SOH>
I5BD00
JUN 22, 2001  3:15 PM

CUSTOM ALARM LABELS
ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5BD00YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   f - Custom Alarm Labels Flag
        0=Disabled
        1=Enabled
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

Function Code: 5BF   Version 1
Function Type: Set Custom Alarm Label, device number, and indications

Command Format: **Inquire:**
    Display: `<SOH>S5BF00AANNTTflpbdaaaaaaaaaaaaaaaaaaa`   `<SOH>I5BF00`
   Computer: `<SOH>s5BF00AANNTTflpbdaaaaaaaaaaaaaaaaaaa`   `<SOH>i5BF00`

Notes:
1.   AA – Alarm/Warning Category:
                       See explanation for "AA" in Function i10100
2.   NN – Alarm Type Number:
                       See explanation for "NN" in Function i10100
3.   TT – Device (or Tank) Number (Decimal, 00=all)
4.   f – Custom Alarm Flag
                    0=Disabled
                    1=Enabled
                  Note: This flag is ignored in TLS-450. Custom Alarm setting
                     at alarm level is unsupported. This feature is supported
                     at system level only. (by using 5BD command)
5.   l – LCD Indication Flag
                 In TLS-350:
                    0=Disabled
                    1=Enabled
                 In TLS-450: *(future)*
                   0=None
                   1=Yellow
                   2=Red
                 Note: *TLS-450: Version 01 supports this setting as in*
                 TLS-350 only; i.e.0=Disabled 1=Enabled.
6.   p – PRINTOUT Indication Flag
                 In TLS-350:
                    0=Disabled
                    1=Enabled
                 In TLS-450:
                   PRINTOUT flag is ignored.
                   (In TLS-450, the alarm-print assignment will be part of
                   Automatic Events Setup – See 5P1, 5P4 & 5P6)
7.   b – BEEP Indication Flag
                    0=Disabled
                    1=Enabled
8.   d – LED Indication Flag
                    0=Disabled
                    1=Enabled
9.   a – Custom Alarm Label (19 ASCII characters [20h-7Eh])

Typical Response Message, Display Format:

```
<SOH>
I5BF00
JUN 22, 2001  3:15 PM

CUSTOM ALARM LABELS

 IN-TANK ALARMS
  OVERFILL ALARM
   T 1:(custom alarm label)
 LCD:   ENABLED
 PRINT: ENABLED
 BEEP:  DISABLED
 LED:   ENABLED
   T 2:(custom alarm label)
 LCD:   ENABLED
 PRINT: ENABLED
 BEEP:  DISABLED
 LED:   ENABLED
 <ETX>
```

Function Code 5BF Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i5BF00YYMMDDHHmmnnAANNTTlpbdaaaaaaaaaaaaaaaaaaa...
                    AANNTTlpbdaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   nn - Number of Custom Alarms to follow (Hex)
3.   AA - Alarm/Warning Category:
                    See explanation for "AA" in Function i10100
4.   NN - Alarm Type Number:
                    See explanation for "NN" in Function i10100
5.   TT - Device (or Tank) Number (Decimal, 00=all)
6.   l - LCD Indication Flag
                       0=Disabled
                       1=Enabled
7.   p - PRINTOUT Indication Flag
                       0=Disabled
                       1=Enabled
8.   b - BEEP Indication Flag
                       0=Disabled
                       1=Enabled
9.   d - LED Indication Flag
                       0=Disabled
                       1=Enabled
10.   a - Custom Alarm Label (19 ASCII characters [20h-7Eh])
11.   && - Data Termination Flag
12.   CCCC - Message Checksum

7.3.4. ADDRESS BOOK SETUP

```
        Function Code: 5G1                                    Version 1
        Function Type: Add Contact

     Command Format:                                          Inquire:
         Display: <SOH>S5G100aaa..............aaa          <SOH>I5G1RR
        Computer: <SOH>s5G100aaa..............aaa          <SOH>i5G1RR
```

Typical Response Message, Display Format:

```
   <SOH>
   I5G1RR
   JUL 26, 2007  1:36 PM

   CONTACT NAME

   CONTACT#   NAME
       1     Mrs. Lozier
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i5G1RRYYMMDDHHmmRRnnaaa...aaa ...
                    RRnnaaa...aaa&&CCCC<ETX>
```

Notes:
```
   1.        YYMMDDHHmm - Current Date and Time
   2.                RR - Contact Identification Number (Decimal)
   3.                nn - Number of characters to follow
   4. aaa........aaa - Contact Name (Max. 30 ASCII characters [20h-7Eh])
   5.                && - Data Termination Flag
   6.              CCCC - Message Checksum
```

```
    Function Code:5G2                                          Version 1
     Function Type: Delete Contact

    Command Format:                                              Inquire:
        Display: <SOH>S5G2RR                               <SOH>I5G2RR
        Computer: <SOH>s5G2RR                              <SOH>i5G2RR
```

Typical Response Message, Display Format:

```
<SOH>
I5G2RR
JUL 26, 2007  1:36 PM

DELETE CONTACT

CONTACT#  NAME                           DELETE STATUS
    5     Mrs. Lozier                    SUCCESS
<ETX>

       -OR-

<SOH>
I5G2RR
JUL 26, 2007  1:36 PM

DELETE CONTACT

CONTACT#  NAME                           DELETE STATUS
    5                                    NO CONTACT EXISTS
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5G2RRYYMMDDHHmmRRSSnnaaa...aaa ...
            RRSSnnaaa...aaa&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               RR - Contact Identification Number (Decimal)
    3.               SS - Contact delete status
                          00-Contact Deleted
                          01-No Contact exists
                          02-Failed to delete (internal error)
    4.               nn - Number of characters to follow
    5. aaa........aaa - Contact Name (Max. 30 ASCII characters [20h-7Eh])
    6.               && - Data Termination Flag
    7.             CCCC - Message Checksum
```

Function Code: **5G3**   Version 1
 Function Type: Set Contact Modem Number

Command Format: **Inquire:**
     Display: <SOH>S5G3RRaaaa...........aaaa   <SOH>I5G3RR
     Computer: <SOH>s5G3RRaaaa...........aaaa   <SOH>i5G3RR

Typical Response Message, Display Format:

    <SOH>
    I5G3RR
    JUL 26, 2007 1:36 PM

    CONTACT MODEM NUMBER

    CONTACT# CONTACT NAME   MODEM NUMBER
       1   Mrs. Lozier   675-5647
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i5G3RRYYMMDDHHmmRRnnaaa...aaa ...
               RRnnaaa...aaa&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   RR - Contact Identification Number (Decimal)
    3.   nn - Number of characters to follow
    4.   aaaa....aaaa - Modem Number (Max. 40 ASCII characters [20h-Eh])
    5.   && - Data Termination Flag
    6.   CCCC - Message Checksum

```
        Function Code: 5G4                                      Version 1
        Function Type: Set Contact Modem Dial-Out String

     Command Format:                                             Inquire:
        Display: <SOH>S5G4RRaaaaa.........aaaaa            <SOH>I5G4RR
        Computer: <SOH>s5G4RRaaaaa.........aaaaa           <SOH>i5G4RR
```

Typical Response Message, Display Format:

```
   <SOH>
   I5G4RR
   JUL 26, 2007  1:36 PM

   CONTACT MODEM DIAL-OUT STRING

   CONTACT#                 : 1
   NAME                     : Mrs. Lozier
   DIAL-OUT STRING          : V1E0X4&C1&D02Q057-90
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i5G4RRYYMMDDHHRRnnaaaaa...aaaaa .....
                RRnnaaaaa...aaaaa&&CCCC<ETX>
```

Notes:
```
   1.      YYMMDDHHmm - Current Date and Time
   2.             RR - Contact Identification Number (Decimal)
   3.             nn - Number of characters to follow
   4.aaaaa.....aaaaa - Modem Dial-Out String (Max. 50 ASCII characters)
   5.             && - Data Termination Flag
   6.           CCCC - Message Checksum
```

Function Code: **5G5**   Version 1
 Function Type: Set Contact Modem Communication Device Number

Command Format: **Inquire:**
  Display: <SOH>S5G5RRDD   <SOH>I5G5RR
  Computer: <SOH>s5G5RRDD   <SOH>i5G5RR

Typical Response Message, Display Format:

```
<SOH>
I5G5RR
JUL 26, 2007  1:36 PM

CONTACT MODEM COMMUNICATION DEVICE

CONTACT#  CONTACT NAME                    COMM DEVICE
   1    Mrs. Lozier                       Co 1: Modem 1 Label
<ETX>
```


Typical Response Message, Computer Format:

```
<SOH>i5G5RRYYMMDDHHRRDD...
              RRDD&&CCCC<ETX>
```

Notes:
```
     1.       YYMMDDHHmm - Current Date and Time
     2.            RR - Contact Identification Number (Decimal)
     3.            DD - Modem Communication device number (00-99)
     4.            && - Data Termination Flag
     5.          CCCC - Message Checksum
```

```
        Function Code:  5G6                                          Version 1
        Function Type:  Set Contact Modem Retry Count

        Command Format:                                                Inquire:
            Display:  <SOH>S5G6RRnn                              <SOH>I5G6RR
           Computer:  <SOH>s5G6RRnn                              <SOH>i5G6RR
```

Typical Response Message, Display Format:

```
<SOH>
I5G6RR
JUL 26, 2007  1:36 PM

CONTACT MODEM RETRY COUNT

CONTACT# CONTACT NAME                      RETRY COUNT
   1     Mrs. Lozier                           3
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5G6RRYYMMDDHHmmRRnn...
                  RRnn&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               RR - Contact Identification Number (Decimal)
    3.               nn - Modem Retry Count (03 through 99)
    4.               && - Data Termination Flag
    5.             CCCC - Message Checksum
```

Function Code: 5G7   Version 1
Function Type: Set Contact Modem Retry Delay Time

Command Format: **Inquire:**
    Display: <SOH>S5G7RRnnn   <SOH>I5G7RR
    Computer: <SOH>s5G7RRnnn   <SOH>i5G7RR

Typical Response Message, Display Format:

    <SOH>
    I5G7RR
    JUL 29, 1997 9:06 AM

    CONTACT MODEM RETRY DELAY TIME

    CONTACT# CONTACT NAME   RETRY DELAY
       1   Mrs. Lozier   30
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i5G7RRYYMMDDHHmmRRnnn...
                     RRnnn&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   RR – Receiver Number (Decimal)
    3.   nnn – Retry Delay Time (001 to 099 minutes) (one additional byte
                        for future use)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 5G8   Version 1
Function Type: View Full Contact Info

       Command Format:
          Display: <SOH>I5G8RR
         Computer: <SOH>i5G8RR

Typical Response Message, Display Format:

```
<SOH>
I5G8RR
JUL 26, 2007  1:36 PM

CONTACT NAME

CONTACT#                  1
NAME                      Mrs. Lozier

MODEM NUMBER              123-4567
MODEM SETUP STRING
MODEM DEVICE              COM1
MODEM NUM RETRIES         3
MODEM RETRY DELAY         5
MODEM IS HANGUP REQD      YES

FAX NUMBER                123-4567
FAX SETUP STRING
FAX DEVICE                COM1
FAX NUM RETRIES           3
FAX RETRY DELAY           5


SATELLITE CONNECT
SATELLITE DEVICE          COM3
SATELLITE NUM RETRIES     5
SATELLITE RETRY DELAY     15
SATELLITE IS HANGUP REQD  YES

TCP/IP ADDRESS            veeder.com
TCP/IP PORT               10000
TCP/IP DEVICE             COM5
TCP/IP NUM RETRIES        3
TCP/IP RETRY DELAY        30
TCP/IP IS HANGUP REQD     NO

EMAIL ADDRESS             johndoe@veeder.com
EMAIL SERVER              smtp@somecompany.com
EMAIL SERVER PORT         25
EMAIL NUM RETRIES         3
EMAIL RETRY DELAY         60
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5G8RRYYMMDDHHmmRRnnAAAAAAAAAA...GGggSSmmBBBBBBBBBB...nnDD...
                  RRnnAAAAAAAAAA...&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   RR - Contact Identification Number (Decimal)
    3.   nn - Number of characters to follow
    4. AAA.......AAA - Contact Name (Max. 30 ASCII characters [20h-7Eh])
    5.   GG - Number of Groups to follow
    6.   gg - Group ID
                  01 = Modem
                  02 = FAX
                  03 = Satellite
                  04 = TCP/IP
                  05 = Email
                  06 = SMS (future)

Function Code 5G8 Notes: (Continued)

```
    7.                 SS - Number of Strings to follow
    8.                 mm - Length of string
    9.   BBB......BBB - String
                       if gg = 01 (Modem)
                          string 1 = Modem Number
                          string 2 = Modem Setup String
                       if gg = 02 (FAX)
                          string 1 = FAX Number
                          string 2 = FAX Setup String
                       if gg = 03 (Satellite)
                          string 1 = Satellite Connect
                       if gg = 04 (TCP/IP)
                          string 1 = TCP/IP Address
                       if gg = 05 (Email)
                          string 1 = Email Address
                          string 2 = Email Server
   10.                 nn - Number of 2-digit decimal values to follow
   11.                 DD - Decimal Value (ASCII)
                       if gg = 01 (Modem)
                          value 1 = Modem Device
                          value 2 = Modem Num Retries
                          value 3 = Modem Retry Delay (minutes)
                          value 4 = Modem Is Hangup Required (00=no,01=yes)
                       if gg = 02 (FAX)
                          value 1 = FAX Device
                          value 2 = FAX Num Retries
                          value 3 = FAX Retry Delay (minutes)
                       if gg = 03 (Satellite)
                          value 1 = Satellite Device
                          value 2 = Satellite Num Retries
                          value 3 = Satellite Retry Delay (minutes)
                          value 4 = Satellite Is Hangup Required (00=no,01=yes)
                       if gg = 04 () TCP/IP
                          value 1 = TCP/IP Port
                          value 2 = TCP/IP Device
                          value 3 = TCP/IP Num Retries
                          value 4 = TCP/IP Retry Delay (minutes)
                          value 5 = TCP/IP Is Hangup Required (00=no,01=yes)
                       if gg = 05 (Email)
                          value 1 = Email Server Port
                          value 2 = Email Num Retries
                          value 3 = Email Retry Delay (minutes)
   12.               && - Data Termination Flag
   13.             CCCC - Message Checksum
```

```
            Function Code: 5H3                                    Version 1
            Function Type: Set Contact FAX Modem Number

      Command Format:                                                Inquire:
          Display: <SOH>S5H3RRaaaa...........aaaa              <SOH>I5H3RR
          Computer: <SOH>s5H3RRaaaa...........aaaa             <SOH>i5H3RR
```

Typical Response Message, Display Format:

```
<SOH>
I5H3RR
JUL 26, 2007  1:36 PM

CONTACT FAX NUMBER

CONTACT#  CONTACT NAME                    FAX NUMBER
   1     Mrs. Lozier                     458-5869
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5H3RRYYMMDDHHmmRRnnaaaa....aaaa ...
              RRnnaaaa....aaaa&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             RR - Contact Identification Number (Decimal)
    3.             nn - Number of characters to follow
    4.  aaaa.....aaaa - FAX modem Number (Max. 40 ASCII characters [20h-7Eh])
    5.             && - Data Termination Flag
    6.           CCCC - Message Checksum
```

```
        Function Code: 5H4                                      Version 1
        Function Type: Set Contact FAX Dial-Out String

     Command Format:                                            Inquire:
          Display: <SOH>S5H4RRaaaaa.........aaaaa          <SOH>I5H4RR
         Computer: <SOH>s5H4RRaaaaa.........aaaaa          <SOH>i5H4RR
```

Typical Response Message, Display Format:

```
   <SOH>
   I5H4RR
   JUL 26, 2007  1:36 PM

   CONTACT FAX DIAL-OUT STRING

   CONTACT#              : 1
   NAME                  : Mrs. Lozier
   DIAL-OUT STRING       : V1E0X4&C1&D02Q057-90

   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i5H4RRYYMMDDHHRRnnaaaaa...aaaaa ...
                 RRnnaaaaa...aaaaa &&CCCC<ETX>
```

Notes:
```
     1.      YYMMDDHHmm - Current Date and Time
     2.              RR - Contact Identification Number (Decimal)
     3.              nn - Number of characters to follow
     4.  aaaaa...aaaaa - FAX Dial-Out String (Max. 50 ASCII characters)
     5.              && - Data Termination Flag
     6.            CCCC - Message Checksum
```

```
    Function Code:  5H5                                        Version 1
    Function Type:  Set Contact FAX Communication Device Number

   Command Format:                                             Inquire:
       Display:  <SOH>S5H5RRDD                              <SOH>I5H5RR
      Computer:  <SOH>s5H5RRDD                              <SOH>i5H5RR
```

Typical Response Message, Display Format:

```
<SOH>
I5H5RR
JUL 26, 2007  1:36 PM

CONTACT FAX COMMUNICATION DEVICE DETAILS

CONTACT#  CONTACT NAME                 COMM DEVICE
   1    Mrs. Lozier                    Co 1: Fax 1 Label
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5H5RRYYMMDDHHRRDD...
                RRDD&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.           RR - Contact Identification Number (Decimal)
    3.           DD - FAX Communication Device Number (00-99)
    4.           && - Data Termination Flag
    5.         CCCC - Message Checksum
```

Function Code: 5H6   Version 1
 Function Type: Set Contact FAX Retry Count

Command Format: **Inquire:**
  Display: <SOH>S5H6RRnn   <SOH>I5H6RR
  Computer: <SOH>s5H6RRnn   <SOH>i5H6RR

Typical Response Message, Display Format:

```
<SOH>
I5H6RR
JUL 26, 2007  1:36 PM

CONTACT FAX RETRY COUNT

CONTACT# CONTACT NAME                    RETRY COUNT
   1     Mrs. Lozier                         3
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5H6RRYYMMDDHHmmRRnn...
              RRnn&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   RR - Contact Identification Number (Decimal)
3.   nn - FAX Retry Count (03 through 99)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 5H7   Version 1
Function Type: Set Contact FAX Retry Delay Time

Command Format: **Inquire:**
   Display: <SOH>S5H7RRnnn   <SOH>I5H7RR
  Computer: <SOH>s5H7RRnnn   <SOH>i5H7RR

Typical Response Message, Display Format:

```
<SOH>
I5H7RR
JUL 29, 1997  9:06 AM

CONTACT FAX RETRY DELAY TIME

CONTACT# CONTACT NAME                    RETRY DELAY
   1    Mrs. Lozier                          30
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5H7RRYYMMDDHHmmRRnnn...
              RRnnn&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   RR - Receiver Number (Decimal)
3.   nnn - FAX Retry Delay Time (001 to 099 minutes) (one additional
                       byte for future use)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
        Function Code:  5I3                                        Version 1
         Function Type: Set Contact Remote TCP/IP Address

        Command Format:                                             Inquire:
            Display:  <SOH>S5I3RRaaaa............aaaa            <SOH>I5I3RR
           Computer:  <SOH>s5I3RRaaaa............aaaa            <SOH>i5I3RR
```

Typical Response Message, Display Format:

```
   <SOH>
   I5I3RR
   JUL 26, 2007  1:36 PM

   CONTACT REMOTE TCP/IP ADDRESS

   CONTACT# CONTACT NAME                   REMOTE TCP/IP ADDRESS
      1    Mrs. Lozier                     remoteserver.gilbarco.com
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i5I3RRYYMMDDHHmmRRnnaaaa.....aaaa ...
                 RRnnaaaa.....aaaa&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              RR - Contact Identification Number (Decimal)
    3.              nn - Number of characters to follow
    4.  aaaa.....aaaa - Remote TCP/IP Address (Max. 40 ASCII characters)
    5.              && - Data Termination Flag
    6.            CCCC - Message Checksum
```

```
      Function Code: 5I4                                    Version 1
      Function Type: Set Contact Remote TCP/IP Port Number

   Command Format:                                           Inquire:
      Display: <SOH>S5I4RRppppp                            <SOH>I5I4RR
     Computer: <SOH>s5I4RRppppp                            <SOH>i5I4RR
```

Typical Response Message, Display Format:

```
   <SOH>
   I5I4RR
   JUL 26, 2007  1:36 PM

   CONTACT REMOTE TCP/IP PORT NUMBER

   CONTACT# CONTACT NAME                   REMOTE TCP/IP PORT
      1    Mrs. Lozier                          10001
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i5I4RRYYMMDDHHRRpppppRRppppp.....
                   RRppppp&&CCCC<ETX>
```

Notes:
```
      1.      YYMMDDHHmm - Current Date and Time
      2.            RR - Contact Identification Number (Decimal)
      3.         ppppp - Remote TCP/IP Port Number(00000-65535)
      4.            && - Data Termination Flag
      5.          CCCC - Message Checksum
```

Function Code: 5I5   Version 1
  Function Type: Set Contact Local TCP/IP Communication Device Number

Command Format: **Inquire:**
    Display: <SOH>S5I5RRDD   <SOH>I5I5RR
    Computer: <SOH>s5I5RRDD   <SOH>i5I5RR

Typical Response Message, Display Format:

```
<SOH>
I5I5RR
JUL 26, 2007  1:36 PM

CONTACT LOCAL TCP/IP COMMUNICATION DEVICE

CONTACT# CONTACT NAME                   LOCAL TCP/IP DEVICE
   1    Mrs. Lozier                     TCP-IP_DEV 1
<ETX>
```


Typical Response Message, Computer Format:

```
<SOH>i5I5RRYYMMDDHHRRDD...
                RRDD&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   RR – Contact Identification Number (Decimal)
    3.   DD – TCP/IP Comm Device Number (00-99??)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: **5I6**   Version 1
Function Type: Set Contact TCP/IP Retry Count

Command Format: **Inquire:**
    Display: <SOH>S5I6RRnn   <SOH>I5I6RR
   Computer: <SOH>s5I6RRnn   <SOH>i5I6RR

Typical Response Message, Display Format:

```
<SOH>
I5I6RR
JUL 26, 2007  1:36 PM

CONTACT TCP/IP RETRY COUNT

CONTACT# CONTACT NAME                    RETRY COUNT
   1    Mrs. Lozier                          3
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5I6RRYYMMDDHHmmRRnn...
              RRnn&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   RR – Contact Identification Number (Decimal)
    3.   nn – TCP/IP Retry Count (03 through 99)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: **5I7**   Version 1
  Function Type: Set Contact TCP/IP Retry Delay Time

   Command Format: Inquire:
       Display: <SOH>S5I7RRnnn   <SOH>I5I7RR
       Computer: <SOH>s5I7RRnnn   <SOH>i5I7RR

Typical Response Message, Display Format:

    <SOH>
    I5I7RR
    JUL 29, 1997 9:06 AM

    CONTACT TCP/IP RETRY DELAY TIME

    CONTACT# CONTACT NAME   RETRY DELAY
       1   Mrs. Lozier   30
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i5I7RRYYMMDDHHmmRRnnn...
                    RRnnn&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   RR - Receiver Number (Decimal)
    3.   nnn - TCP/IP Retry Delay Time (001 to 099 minutes; (one additional
                     byte for future use)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
       Function Code: 5J4                                           Version 1
       Function Type: Set Contact Satellite Connection String

    Command Format:                                                  Inquire:
        Display: <SOH>S5J4RRaaa.............aaa              <SOH>I5J4RR
       Computer: <SOH>s5J4RRaaa.............aaa              <SOH>i5J4RR
```

Typical Response Message, Display Format:

```
<SOH>
I5J4RR
JUL 26, 2007  1:36 PM

CONTACT SATELLITE CONNECTION STRING

CONTACT# CONTACT NAME                 CONNECTION STRING
   1    Mrs. Lozier                   x258JB87
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5J4RRYYMMDDHHRRnnaaa...aaa ...
              RRnnaaa...aaa&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.            RR - Contact Identification Number (Decimal)
    3.            nn - Number of characters to follow
    4.     aaa...aaa - Remote Satellite Connection String (Max. 30 ASCII
                       characters)
    5.            && - Data Termination Flag
    6.          CCCC - Message Checksum
```

```
    Function Code:  5J5                                        Version 1
     Function Type: Set Contact Satellite Communication Device Number

    Command Format:                                              Inquire:
        Display: <SOH>S5J5RRDD                                <SOH>I5J5RR
       Computer: <SOH>s5J5RRDD                                <SOH>i5J5RR
```

Typical Response Message, Display Format:

```
    <SOH>
    I5J5RR
    JUL 26, 2007  1:36 PM

    CONTACT SATELLITE COMMUNICATION DEVICE

    CONTACT#  CONTACT NAME               COMM DEVICE
       1    Mrs. Lozier                 CO 4 : Satellite 1 Label
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i5J5RRYYMMDDHHRRDD...
                    RRDD&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.            RR - Contact Identification Number (Decimal)
    3.            DD - FAX Communication Device Number(00-99)
    4.            && - Data Termination Flag
    5.          CCCC - Message Checksum
```

```
        Function Code: 5J6                                      Version 1
         Function Type: Set Contact Satellite Mode Retry Count

        Command Format:                                           Inquire:
            Display: <SOH>S5J6RRnn                            <SOH>I5J6RR
           Computer: <SOH>s5J6RRnn                            <SOH>i5J6RR
```

Typical Response Message, Display Format:

```
<SOH>
I5J6RR
JUL 26, 2007  1:36 PM

CONTACT SATELLITE MODE RETRY COUNT

CONTACT# CONTACT NAME                    RETRY COUNT
   1    Mrs. Lozier                          3
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5J6RRYYMMDDHHmmRRnn...
                RRnn&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              RR - Contact Identification Number (Decimal)
    3.              nn - TCP/IP Retry Count (03 through 99)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

```
    Function Code: 5J7                                    Version 1
     Function Type: Set Contact Satellite Retry Delay Time

    Command Format:                                        Inquire:
        Display: <SOH>S5J7RRnnn                        <SOH>I5J7RR
       Computer: <SOH>s5J7RRnnn                        <SOH>i5J7RR
```

Typical Response Message, Display Format:

```
<SOH>
I5J7RR
JUL 26, 2007  1:36 PM

CONTACT SATELLITE RETRY DELAY TIME

CONTACT# CONTACT NAME                  RETRY DELAY
   1    Mrs. Lozier                        30
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5J7RRYYMMDDHHmmRRnnn...
                RRnnn&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.            RR - Receiver Number (Decimal)
    3.           nnn - Satellite Retry Delay Time (001 to 099 minutes) (one
                       additional byte for future use)
    4.            && - Data Termination Flag
    5.          CCCC - Message Checksum
```

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

```
        Function Code: 5K3                                      Version 1
        Function Type: Set Contact E-Mail Address

        Command Format:                                         Inquire:
            Display: <SOH>S5K3RRaaaaa.........aaaaa       <SOH>I5K3RR
           Computer: <SOH>s5K3RRaaaaa.........aaaaa       <SOH>i5K3RR
```

Typical Response Message, Display Format:

```
<SOH>
I5K3RR
JUL 26, 2007  1:36 PM

CONTACT E-MAIL ADDRESS

CONTACT#        : 1
CONTACT NAME    : John Doe
E-MAIL ADDRESS : johndoe@veeder.com
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5K3RRYYMMDDHHmmRRnnaaaaa.....aaaaa ...
              RRnnaaaaa.....aaaaa&&CCCC<ETX>
```

Notes:
```
1.      YYMMDDHHmm - Current Date and Time
2.            RR - Contact Identification Number (Decimal)
3.            nn - Number of characters to follow
4.aaaaa.....aaaaa - Contact E-Mail Address (Max. 50 ASCII characters)
5.            && - Data Termination Flag
6.          CCCC - Message Checksum
```

Function Code: **5K6**   Version 1
 Function Type: Set Contact E-Mail Mode Retry Count

Command Format: **Inquire:**
   Display: <SOH>S5K6RRnn   <SOH>I5K6RR
   Computer: <SOH>s5K6RRnn   <SOH>i5K6RR

Typical Response Message, Display Format:

```
<SOH>
I5K6RR
JUL 26, 2007  1:36 PM

CONTACT E-MAIL MODE RETRY COUNT

CONTACT# CONTACT NAME                     RETRY COUNT
   1    Mr. John Doe                          3
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5K6RRYYMMDDHHmmRRnn...
                RRnn&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   RR – Contact Identification Number (Decimal)
3.   nn – E-Mail Retry Count (03 through 99)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

            Function Code: **5K7**   Version 1
             Function Type: Set Contact E-Mail Retry Delay Time

            Command Format: **Inquire:**
                Display: <SOH>S5K7RRnnn   <SOH>I5K7RR
                Computer: <SOH>s5K7RRnnn   <SOH>i5K7RR

Typical Response Message, Display Format:

    <SOH>
    I5K7RR
    JUL 26, 2007 1:36 PM

    CONTACT E-MAIL RETRY DELAY TIME

    CONTACT# CONTACT NAME   RETRY DELAY
       1   Mrs. Lozier   30
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i5K7RRYYMMDDHHmmRRnnn...
                    RRnnn&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   RR - Receiver Number (Decimal)
    3.   nnn - E-Mail Retry Delay Time (001 to 099 minutes) (one additional
                        byte for future use)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

7.3.5. AUTOMATIC EVENTS SETUP

<pre>
      Function Code: 5P1   Version 1
      Function Type: Add/Delete AutoEvent

      Command Format: Inquire:
        Display: <SOH>S5P100IIIICTA (C=1)   <SOH>I5P100IIII
                 <SOH>S5P100IIIIC   (C=3,9)

       Computer:<SOH>s5P100IIIICTA (C=1)   <SOH>i5P100IIII
                 <SOH>s5P100IIIIC   (C=3,9)
</pre>

Notes:
<pre>
   1.   IIII - AutoEventID
                     For Inquire, 0000 means "all"
                     For Add, only 0000 is valid
                     For Delete, only 0001-9999 is valid
                     For DeleteAll, 0000 should be used
   2.   C – Command (decimal)
                     1=Add
                     2=Delete
                     3=DeleteAll
   3.   T – Trigger Type
                     0=Trigger Not Set
                     1=Trigger on Time
                     2=Trigger on Event
   4.   A – Action Type
                     0=Action Not Set
                     1=Action on Device
                     2=Action Print Report
                     3=Action Auto Connect
</pre>

Typical Response Message, Display Format:

<pre>
   <SOH>
   I5P100
   JUL 26, 2007 1:36 PM

   AUTOMATIC EVENTS – ALL TASKS REPORT

   EVENT-ID - 0001
   EVENT   - Day Close
   REPORT   - BIR Daily Report
   CONTACT   - FMS
   CON. MODE - FAX – Co 1 : Modem 1 Label

   EVENT-ID - 0002
   EVENT   - Delivery End: T 1: REGULAR, T 2: UNLEADED
   REPORT   - Delivery Report
   DEVICE   - Front Desk Printer

   EVENT-ID - 0003
   TIME   - Weekly, Monday, 6:00 AM
   REPORT   - Inventory Report
   CONTACT   - Mrs. Lozier
   CON. MODE - FAX – Co 1 : Modem 1 Label

   EVENT-ID - 0004
   EVENT   - Gross Test Fail Alarm: T 1: REGULAR, T 2: UNLEADED
   EVENT   - Sudden Loss Alarm: T 1: REGULAR, T 2: UNLEADED, T3: DIESEL
   ACTION   -
   DEVICE   - R 1: Relay 1 Sump

</pre>

Function Code 5P1: (Continued)

```
EVENT-ID  - 0005
EVENT     - Gross Test Fail Alarm: T 1: REGULAR, T 2: UNLEADED

EVENT     - Sudden Loss Alarm: T 1: REGULAR, T 2: UNLEADED, T3: DIESEL
REPORT    - Alarm History Report, Tank Leak History Report
CONTACT   - FMS, Sheetz Maintenance
CON. MODE - FAX - Co 1 : Modem 1 Label
------
EVENT-ID  - 0006
EVENT     - Gross Test Fail Alarm: T 1: REGULAR, T 2: UNLEADED
EVENT     - Sudden Loss Alarm: T 1: REGULAR, T 2: UNLEADED, T3: DIESEL
ACTION    - Auto Connect
CONTACT   - Sheetz Mgmt.
CON. MODE - Computer - Co 3 : TCP/IP 1 Label
------
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5P100YYMMDDHHmmIIIIT                 (if T=0)
<SOH>i5P100YYMMDDHHmmIIIITttnnMMWWwwDDhhmmss (if T=1)
<SOH>i5P100YYMMDDHHmmIIIITGGTTEAANNnnDD...  (if T=2 and E=0)
                           nnDD...          (if T=2 and E=1)
                           OOnnDD...        (if T=2 and E=2)


                          A<ETX>                       (if A=0)
                          ALLDD&&CCCC<ETX>             (if A=1)
                          APPnnRRR...&&CCCC<ETX>       (if A=2)
                          AWWnnRRR...nnCC...&&CCCC<ETX> (if A=3)
```

Notes:

```
 1.     YYMMDDHHmm - Current Date and Time
 2.        IIII - AutoEventID
              For Inquire, 0000 means "all".
              For Add only 0000 is valid.
              For Delete, only 0001-9999 is valid.
              For DeleteAll, 0000 should be used.
 3.        T - Trigger Type
              0=Trigger Not Set
              1=Trigger on Time
              2=Trigger on Event
              3=Trigger AutoXmit
 4.        A - Action Type
              0=Action Not Set
              1=Action on Device
              2=Action Print Report
              3=Action Auto Connect
              4=Action AutoXmit
 5.        tt - Task Period (see command 5P3)
 6.        nn - Number of 2-digit entries to follow
              See explanation for "nn" in function i5P300
 7.        MM - Month (see command 5P3)
 8.        WW -    Occurrence of day-of-week in month (see command 5P3)
 9.        ww - Day of Week                (see command 5P3)
10.        DD - Day of Month               (see command 5P3)
11.        hh -    Hour of day             (see command 5P3)
12.        mm - Minute of hour             (see command 5P3)
13.        GG - Number of Triggers to follow (see command 5P4)
14.        TT - Trigger Number             (see command 5P4)
15.         E - Trigger Event Group        (see command 5P4)
16.        AA - Alarm/Warning Category:    (see command 5P4)
```
Function Code 5P1 Notes: (Continued)

```
17.                NN  -    Alarm Type Number:              (see command 5P4)
18.                OO  - Notification Type                 (see command 5P4)
19.                nn  -    Number of Devices to follow     (see command 5P4)

20.                DD  -    Device Number                  (see command 5P4)
21.                LL  -    Action Device Type
                           See explanation for "AA" in Function i5P500
22.                PP  - Printer Device Number             (see command 5P6)
23.                nn  -    Number of Reports to follow     (see command 5P6)
24.               RRR  - Report Type ID                    (see command 5P6)
25.                WW  - Connection Mode                    (see command 5P7)
26.                nn  -    Number of Reports to follow     (see command 5P7)
27.               RRR  - Report Type ID                    (see command 5P7)
28.                nn  -    Number of Contacts to follow    (see command 5P7)
29.                CC  - Contact ID
30.                &&  - Data Termination Flag
31.              CCCC  - Message Checksum
```

Function Code: **5P2**   Version 1
Function Type: Get Number of Auto Events

Command Format:
    Display: <SOH>I5P200
    Computer: <SOH>i5P200

Typical Response Message, Display Format:

    <SOH>
    I5P200
    JUL 26, 2007 1:36 PM

    AUTOMATIC EVENTS – NUMBER OF AUTO EVENTS REPORT

    Number of Automatic Events = 1234
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i5P200NNNN

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   NNNN – Number of Auto Events
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

<pre>
      Function Code: 5P3   Version 1
      Function Type: Set Auto Event Trigger: Time Based
</pre>

<pre>
   Command Format: Inquire:
     Display: <SOH>S5P300IIIIITTnnMMWWwwDDhhmmss   <SOH>I5P300IIII
     Computer:<SOH>s5P300IIIIITTnnMMWWwwDDhhmmss   <SOH>i5P300IIII
</pre>

Typical Response Message, Display Format:

<pre>
   <SOH>
   I5P1RR
   JUL 26, 2007 1:36 PM

   AUTOMATIC EVENTS – TIME BASED TRIGGER REPORT

   EVENT-ID - 0001
   TIME   - Weekly, Monday, 6:00 AM
   REPORT   - Inventory Report
   DEVICE   - Front Desk Printer

   <ETX>
</pre>

Typical Response Message, Computer Format:

<pre>
   <SOH>i5P300YYMMDDHHmmIIIIITTnnMMWWwwDDhhmmss&&CCCC
</pre>

Notes:

1.   YYMMDDHHmm - Current Date and Time
2.   IIII - AutoEventID
                See explanation for "IIII" in Function i5P1PP .
3.   TT - Task Period
                02 – Annually by Day of Month, once per year, on given
                     month + day + hour + minute (Jan 31, 12:00 PM)
                03 – Annually by Day of Week, once per year, on given
                     month + occurrence of day in month + day of week +
                     hour + minute (Jan, 1st Monday, 12:00 PM)
                04 – Monthly by Day of Month, once per month, on given
                     day + hour + minute (15th Day of Month, at 12:00
                     PM)
                05 – Monthly by Day of Week, once per month, on given
                     occurrence of day in month + day of week + hour +
                     minute (2nd Sunday of every Month, 12:00 PM)
                06 – Weekly, once per week, on given day of week + hour +
                     minute (Sunday, 12:00 PM)
                07 – Daily, once per day, on given hour + minute (12:00
                     PM)
                08 – Interval: once per period specified in HH:MM:SS
                     (Interval must be 2 minutes or longer)
4.   nn – Number of 2-digit entries to follow.
                Note – For 450: Version 1, this value is fixed to 7 (i.e.
                nn=07). This entry is added for supporting any future
                enhancements. E.g. for "on time" based tasks, command
                needs to includes "year" entry.
5.   MM - Month (01-12; 01-Jan, 12-Dec; if Task Period choice is
                Annually by Day of Month [TT=02], Annually by Day of Week
                [TT=03])
                Note: Set this value to "01" when TT=01,05,06, 07 or 08

Function Code 5P3 Notes: (Continued)

```
    6.              WW - Occurrence of day-of-week in month, (01-05, if Task Period
                         choice is Annually by Day of Week [TT=03], Monthly by Day of
                         Week [TT=05])
                            a. 5 = Last occurrence
                            b. Example: WW=3, ww=02 means third Tuesday in month
                         Note: Set this value to "01" when TT=01,02,04, 06, 07 or 08
    7.              ww - Day of Week (00-06, 00-Sunday, 06-Saturday; Weekly, if Task
                         Period choice is Annually by Day of Week [TT=03], Monthly by
                         Day of Week [TT=05])
                            00-Sunday
                            01-Monday
                            02-Tuesday
                            03-Wednesday
                            04-Thursday
                            05-Friday
                            06-Saturday
                         Note: Set this value to "00" when TT=01,02,04, 06, 07 or 08
    8.              DD - Day of Month (01-31, depends on month, if Period choice is
                         Annually by Day of Month [TT=02], Monthly by Day of Month
                         [TT=04])
                         Note: Set this value to "01" when TT=01,05,06, 07 or 08
    9.              hh - Hour of day (00-23)
   10.              mm - Minute of hour (00-59)
   11.              ss - Second of Minute (00-59)
   12.              && - Data Termination Flag
   13.            CCCC - Message Checksum
```

```
      Function Code: 5P4                                    Version 1
      Function Type: Set Auto Event Trigger: Event Based

    Command Format:                                          Inquire:
      Display: <SOH>S5P400IIIICTTEAANNnnDD...<CR> (if E=0) <SOH>I5P400IIII
                                  VVnnDD...<CR> (if E=1)
                                  OOnnDD...<CR> (if E=2)


     Computer: <SOH>s5P400IIIICTTEAANNnnDD...<CR> (if E=0) <SOH>i5P400IIII
                                  VVnnDD...<CR> (if E=1)
                                  OOnnDD...<CR> (if E=2)
```

Typical Response Message, Display Format:

```
<SOH>
I5P400
JUL 26, 2007  1:36 PM

AUTOMATIC EVENTS – EVENT BASED TRIGGER REPORT


------
EVENT-ID  - 0006
EVENT     - Gross Test Fail Alarm: T 1: REGULAR, T 2: UNLEADED
EVENT     - Sudden Loss Alarm: T 1: REGULAR, T 2: UNLEADED, T3: DIESEL
ACTION    - Auto Connect
CONTACT   - Sheetz Mgmt.
CON. MODE - Computer – Co 3 : TCP/IP 1 Label
------
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5P400YYMMDDHHmmIIIIGGTTEAANNnnDD...&&CCCC<ETX> (if E=0)
                            VVnnDD...&&CCCC<ETX>   (if E=1)
                            OOnnDD...&&CCCC<ETX>   (if E=2)
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.            IIII - AutoEventID
                      See explanation for "IIII" in Function i5P1PP
    3.              C - Command (decimal)
                      1=Add
                      2=Change
                      3=Delete
                      9=Delete All
    4.             GG - Number of Triggers to follow (This field is used in computer
                      format response message only.)
    5.             TT - Trigger Number
                      00 = for Add and Delete All
                      01-99 = for Change and Delete
    6.              E - Trigger Event Group
                      0-Alarms
                      1-External Inputs
                      2-Notifications
    7.             AA - Alarm/Warning Category: (Valid only when E=0 [Alarms])
                      See explanation for "AA" in Function i10100
    8.             NN - Alarm Type Number: (Valid only when E=0 [Alarms])
                      See explanation for "NN" in Function i10100
    9.             nn - Number of Devices to follow
   10.             DD - Device Number (all devices uses NN=01 DD=00)
   11.             VV - External Input eVent
                      01=Input Normal
                      02=Input Off
                      03=Generator On
                      04=Generator Off
```

Function Code 5P4 Notes: (Continued)

```
    12.                 OO - Notification Type (Valid only when E=2)
                            01=Delivery Start
                            02=Delivery Complete
                            03=BIR Daily Close
                            04=Inventory Shift Close
                            05=BOL Pending            (not in V1 or V2)
                            06=SLD Test Start
                            07=SLD Test Complete
                            08=CSLD Test Complete
                            09=PLLD Test Start        (obsolete)
                            10=PLLD Test Complete
                            11=Fuel Level Set Point   (not in V1 or V2)
                            12=Tank Test Shutdown     (not in V1 or V2)
                            13=BIR Monthly Close
                            14=Delivery Ticket Entered
                            15=BIR Shift Close
                            16=Startup                (not in V1 or V2)
                            17=Accuchart Calibration Complete
                            18=Accuchart New Chart Applied
                            19=Accuchart Calibration Error
    13.             && - Data Termination Flag
    14.             CCCC - Message Checksum
```

Function Code: 5P5   Version 1
Function Type: Set Auto Event Action: Device Task

Command Format: **Inquire:**
Display: <SOH>S5P500IIIIAADD   <SOH>I5P500IIII
Computer: <SOH>s5P500IIIIAADD   <SOH>i5P500IIII

Typical Response Message, Display Format:

```
<SOH>
I5P500
JUL 26, 2007  1:36 PM

AUTOMATIC EVENTS - DEVICE TASKS REPORT


------
EVENT-ID  - 0004
EVENT     - Gross Test Fail Alarm: T 1: REGULAR, T 2: UNLEADED
EVENT     - Sudden Loss Alarm: T 1: REGULAR, T 2: UNLEADED, T3: DIESEL
ACTION    -
DEVICE    - R 1: Relay 1 Sump
------
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5P500YYMMDDHHmmIIIIAADD&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   IIII - AutoEventID
                    See explanation for "IIII" in Function i5P100
3.   AA - Alarm/Warning Category:
                    See explanation for "AA" in Function i10100

   Note: Relay [AA=11], Line [AA=66] & Pump [AA=65] are the only valid
   choices for "AA" entry. Also, 'Device Task' actions should always be
   configured with "Event Based" (using 5P4) triggers only. "Time Based"
   trigger (5P3) is not valid for "Device Task".

4.   DD -   Device Number (DD=00 is invalid)

   Note: Auto Events will not handle pump control relays. Hence,
   Pump Control Output relay types can not be assigned for device tasks.

5.   && - Data Termination Flag
6.   CCCC - Message Checksum

```
        Function Code: 5P6                                    Version 1
        Function Type: Set Auto Event Action: Print Task
```

```
    Command Format:                                           Inquire:
        Display: <SOH>S5P600IIIIPPnnRRR...          <SOH>I5P600IIII
       Computer: <SOH>s5P600IIIIPPnnRRR...          <SOH>i5P600IIII
```

Typical Response Message, Display Format:

```
   <SOH>
   I5P600
   JUL 26, 2007  1:36 PM

   AUTOMATIC EVENTS - PRINT TASKS REPORT


   ------
   EVENT-ID  - 0002
   EVENT     - Delivery End: T 1: REGULAR, T 2: UNLEADED
   REPORT    - Delivery Report
   DEVICE    - Front Desk Printer
   ------
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i5P600YYMMDDHHmmIIIIPPnnRRR...&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.           IIII - AutoEventID
                       See explanation for "IIII" in Function i5P100
    3.             PP - Printer Device Number (00 if not set - inquire only)
                       Note: In Release 1 & 2, for Set command, this value
                    should always be set  be to "01"
    4.             nn -   Number of Reports to follow
```

Function Code 5P6 Notes: (Continued)

```
    5.                RRR - Report Type ID
                          001 - Current Inventory Report
                          002 - Inventory History Report
                          003 - Shift Inventory Report
                          004 - Delivery Report            (for FAX/EMAIL only)
                          005 - Most Recent Delivery Report
                          006 - Combined Tank Test Results    (for FAX/EMAIL only)
                          007 - SLD Last Test Results
                          008 - CSLD Monthly Report
                          009 - CSLD Daily Test Results
                          010 - CSLD State Change Results        (for Print only)
                          011 - PLLD Passed Test Results    (for FAX/EMAIL only)
                          012 - PLLD Passed Test History    (for FAX/EMAIL only)
                          013 - PLLD Last Test Results
                          014 - Liquid Sensor Status Report
                          015 - Vapor Sensor Status Report
                          016 - Type A (2 Wire CL) Sensor Status Report
                          017 - Type B (3 Wire CL) Sensor Status Report
                          018 - Ground Water Sensor Status Report
                          019 - MAG Sensor Status Report
                          020 - Tank Status Report
                          021 - Tank Alarm History Report
                          022 - Active Alarm Report           (for FAX/EMAIL only)
                          023 - Combined Alarm History report (for FAX/EMAIL only)
                          024 - Priority Alarm History Report (for FAX/EMAIL only)
                          025 - Non-Priority Alarm History Report (FAX/EMAIL only)
                          026 - Last Alarm Post Report           (for Print only)
                          027 - Sensor Status Report
                          028 - Sensor Status History Report  (for FAX/EMAIL only)
                          029 - BIR Daily Report
                          030 - BIR Previous Week Report
                          031 - BIR Previous Month Report
                          032 - BIR Periodic Report
                          033 - Unused
                          034 - Unused
                          035 - AccuChart Anomaly Report
                          036 - AccuChart Delivery Instructions
                          037 - AccuChart Completion Status
                          038 - AccuChart Event Log
                          039 - Ticketed Delivery Report
                          040 - Adjusted Delivery Report
                          041 - BIR Last Shift Report
                          042 - BIR Last Day Shift Report
                          043 - BIR Current Week Report
                          044 - BIR Current Month Report
                          045 - BIR Daily Book Variance Report
                          046 - BIR Previous Week Book Variance Report
                          047 - BIR Previous Month Book Variance Report
                          048 - BIR Periodic Book Variance Report
                          049 - BIR Current Week Book Variance Report
                          050 - BIR Current Month Book Variance Report
                          051 - HRM Adjusted Delivery Report
                          052 - HRM Diagnostic Report
                          053 - HRM Daily History Report
    6.                && - Data Termination Flag
    7.                CCCC - Message Checksum
```

```
        Function Code: 5P7                                          Version 1
        Function Type: Set Auto Event Action: Auto Connect Task
                  (FAX/E-MAIL/COMPUTER)


        Command Format:                                               Inquire:
           Display: <SOH>S5P700IIIIWWnnRRR...NNCC...         <SOH>I5P700IIII
          Computer: <SOH>s5P700IIIIWWnnRRR...NNCC...         <SOH>i5P700IIII
```

Typical Response Message, Display Format:

```
   <SOH>
   I5P700
   JUL 26, 2007  1:36 PM

   AUTOMATIC EVENTS – AUTO CONNECT TASKS REPORT


   ------
   EVENT-ID  – 0006
   EVENT     – Gross Test Fail Alarm: T 1: REGULAR, T 2: UNLEADED
   EVENT     – Sudden Loss Alarm: T 1: REGULAR, T 2: UNLEADED, T3: DIESEL
   ACTION    - Auto Connect
   CONTACT   – Sheetz Mgmt.
   CON. MODE – Computer – Co 3 : TCP/IP 1 Label
   ------
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i5P700YYMMDDHHmmIIIIWWnnRRR...NNCC...&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.          IIII - Auto Event-ID
                      See explanation for "IIII" in Function i5P100
    3.            WW - Connection Mode
                      00 = Not Set (Inquire Only)
                      01 = Modem (Computer mode connection)
                      02 = FAX
                      03 = Satellite (Computer mode connection)
                      04 = TCP/IP (Computer mode connection)
                      05 = Email
    4.            nn - Number of Reports to follow
                      For computer mode connections; "nn" should be "00"
                      i.e. for WW = 01, 04
    5.           RRR - Report Type ID:
                      See explanation for "RRR" in Function i5P600
                   Note: RRR is valid only for non-computer mode connections
                   (FAX[WW=02] / Email[WW=05] / Satellite[WW=03] / SMS [WW=06])
    6.            NN - Number of Contacts to follow
                   Note: For TLS-450 Release 1, this is always 00 or 01.
    7.            CC - Contact ID
    8.            && - Data Termination Flag
    9.          CCCC - Message Checksum
```

Function Code: 5Q1   Version 1
Function Type: Automatic Events: Task Log

Command Format:
   Display: `<SOH>I5Q100IIIIAARRRCCTTMMSSnnn  (when MM= 00,01,02 or 03)`
               `<SOH>I5Q100IIIIAARRRCCTTMMLLDDSSnnn (when MM=04)`
               `<SOH>I5Q100IIIIAARRRCCTTMMPPSSnnn   (when MM=05)`
               `<SOH>I5Q100IIIIAARRRCCTTMMWWSSnnn   (when MM=06)`

     Computer: `<SOH>i5Q100IIIIAARRRCCTTMMSSnnn`

Command Notes:
  Note: All parameters mentioned below are optional following the rules below.

1.   IIII - AutoEventID
                     0000 – Task Log for All Auto Events based on the
                         parameters specified below
                   0001-9999 – Task Log for Specific Auto Event
2.   AA - Report / Action Type
                     00 - All Reports and Actions
                     01 - All Reports
                     02 – All Actions
                     03 – Specific Report
                 Note: This should be set to "00" when IIII is 0001-9999
3.   RRR - Report type ID (Always set to "000" when AA != 03)
                     See explanation for "RRR" in Function i5P600
4.   CC - Contact (If no Contact Type is given, it assumes the
              request is for "All Contacts")
                     00 – All Contacts
                     XX – Specific Contact ID
                       See explanation for "RR" in i5G1RR
                 Note: This should be set to "00" when IIII is 0001-9999
5.   TT - Select Time Interval (If no Select Time Interval is
              given, it assumes the time interval request as
              "Unrestricted")
                     00 – Unrestricted
                     01 – Current Day
                     02 – Current Week
                     03 – Current Month
                     04 – Current Year
6.   MM – Device Connection Mode (If this entry is not given, then
              it assumes the request is for "All Device Connection
              Modes")
                     00 – All Devices And Connection Modes
                     01 – All Devices
                     02 – All Printers
                     03 – All Connection Modes
                     04 – Specific Device
                     05 – Specific Printer
                     06 – Specific Connection Mode
                 Note: This should be set to "00" when IIII is 0001-9999
7.   LL - Action Device Type (when MM=04 i.e. Specific Device)
                     See explanation for "AA" in Function i5P500
8.   DD – Action Device Number
                     Set DD=00 for all devices uses of above device type (LL)
9.   PP - Printer Device Number (when MM=05 i.e. Specific Printer)
                     See explanation for "PP" in Function i5P600

Function Code 5Q1 Notes: (Continued)

<pre>
     10.   WW - Connection Mode (when MM=06 i.e. Specific Connection Mode)
                            01 = Modem (Computer mode connection)
                            02 = FAX
                            03 = Satellite (Computer mode connection)
                            04 = TCP/IP (Computer mode connection)
                            05 = Email
     11.   SS - Status (If no Status is given, it assumes request is for
                           "Any Status")
                            00 - Any Status
                            01 - Successful
                            02 - Pending
                            03 - Failed
     12.   nnn - Maximum Records - 001 - 999 (Absolute Maximum) (Decimal).
                           (If no Maximum Records is given or it's zeroes, it assumes
                           request is for records matching above criteria and limited
                           by the Maximum Records Default of 100)
</pre>

Typical Response Message, Display Format:

<pre>
   <SOH>
   I5Q100
   SEP 2, 2008 1:36 PM

   Automatic Events - Tasks Log Report

   EVENT TIME   - 9/12/05 4:32 PM
   EVENT ID   - 3
   REPORT   - BIR Daily Report
   CONTACT   - FMS
   LAST TIME ATTEMPTED - 9/12/05 4:37 PM
   ATTEMPTS   - 1
   CON. MODE   - FAX - Co 1: Modem 1 Label
   STATUS   - Success
   MESSAGE   - Successfully Sent

   EVENT TIME   - 8/10/05 7:11 AM
   EVENT ID   - 1
   REPORT   - Delivery Report
   LAST TIME ATTEMPTED - 8/10/05 7:16 AM
   ATTEMPTS   - 3
   DEVICE   - Front Desk Printer
   STATUS   - Failed
   MESSAGE   - Printer not Responding

   EVENT TIME   - 7/12/05 4:32 PM
   EVENT ID   - 3
   REPORT   - BIR Daily Report
   CONTACT   - FMS
   LAST TIME ATTEMPTED - 7/12/05 4:37 PM
   ATTEMPTS   - 1
   CON. MODE   - FAX - Co 1: Modem 1 Label
   STATUS   - Success
   MESSAGE   - Successfully Sent

</pre>

Function Code 5Q1: (Continued)

```
EVENT TIME           - 4/15/05 1:23 PM
EVENT ID             - 5
ACTION               -
LAST TIME ATTEMPTED  - 4/15/05 1:28 PM
RETRIES              - 5
DEVICE               - R 1:Relay Tank 1 Sump
STATUS               - Success
MESSAGE              - Shutdown Signal Sent
------
EVENT TIME           - 2/24/05 2:38 PM
EVENT ID             - 2
ACTION               - Auto Connect
CONTACT              - Sheetz Mgmt.
LAST TIME ATTEMPTED  - 2/24/05 2:58 PM
ATTEMPTS             - 7
CON. MODE            - Computer – Co 2: Modem 2 Label
STATUS               - Pending
MESSAGE              - Modem Busy
------
EVENT TIME           - 2/23/05 9:00 AM
EVENT ID             - 4
REPORT               - Inventory Report
CONTACT              - Mrs. Lozier
LAST TIME ATTEMPTED  - 2/23/05 11:00 AM
ATTEMPTS             - 4
CON. MODE            - FAX – Co 1: Modem 1 Label
STATUS               - Pending
MESSAGE              - Connection Dropped
------
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i5Q100YYMMDDHHmmNNNYYMMDDHHmmIIIITADDVVnnRRR...MMCCOOYYMMDDHHmmSSEE...
                YYMMDDHHmmIIIITADDVVnnRRR...MMCCOOYYMMDDHHmmSSEE
                &&CCCC<ETX>
```

Notes:
```
    1.    YYMMDDHHmm - Current Date and Time
    2.           NN - Number of Task Log Records to follow
    3.    YYMMDDHHmm - Event Date and Time
    4.         IIII - Auto Event ID
                    See explanation for "IIII" in Function i5P100
    5.            T - Trigger Type
                    See explanation for "T" in Function i5P100
    6.            A - Action Type
                    See explanation for "A" in function i5P100
    7.           DD - Action Device Type
                    1) DD=11 when action is on Relay Device (A=1)
                    2) DD=65 when action is on Pump Device  (A=1)
                    3) DD=66 when action is on Line Device   (A=1)
                    3) DD=64 when action is on Printer Device (A=2)
                    4) DD=73 when action is Auto Connect Action (A=3)
                            (FAX/Email/Modem/TCPIP/Satellite)
    8.           VV - Action Device ID
                    See explanation for "TT" in function i10100
                Note: VV=00 when MM=05 (Email)
    9.           nn - Number of Reports to follow
```

Function Code 5Q1: (Continued)

```
    10.              RRR – Report Type ID
                         See explanation for "RRR" in i5P600
    11.               MM – Connection Mode
                         See explanation for "WW" in i5P700
                     Note: This entry is valid only when A=3
    12.             CC – Contact Identification Number (Decimal)
                         See explanation for "RR" in i5G1RR
                     Note: This entry is valid only when A=3

    13.              OO – Number of Attempts made
    14.     YYMMDDHHmm – Last Attempt Date And Time
    15.              SS – Status
                          01 – Successful
                          02 – Pending
                          03 – Failed
    16.              EE – Extended Status Message
                          00 – No Extended Status Available
                          01 – Successful
                          02 – Printer Not Found
                          03 – Printer Not Responding
                          04 – Printer Out Of Paper
                          05 – Printer Error
                          06 – Action Device Not Found (Relay/Line/Pump)
                          07 – Shut Down Signal Sent
                          08 – Modem Port Busy
                          09 – Dialed Modem Busy
                          10 – Modem No Answer
                          11 – Modem No Carrier
                          12 – No Dialtone
                          13 – Modem Internal Error
                          14 – Waiting For Connection
                          15 – Connection Dropped
                          16 – Connection Idle Time Expired
                          17 – Connection Closed On Command
                          18 – Connection In-Progress
    17.            && – Data Termination Flag
    18.          CCCC – Message Checksum
```

7.3.6 IN-TANK SETUP

Function Code: **601**   Version 1
Function Type: Set Tank Configuration

Command Format: **Inquire:**
    Display: <SOH>S601TTf   <SOH>I601TT
  Computer: <SOH>s601TTf   <SOH>i601TT

Typical Response Message, Display Format:

```
<SOH>
I601TT
JAN 22, 1996  3:16 PM

TANK CONFIGURATION

DEVICE  LABEL                   CONFIGURED
    1   REGULAR UNLEADED        ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i601TTYYMMDDHHmmTTf...
                TTf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   f – Tank Configuration Flag:
                   0=Off
                   1=On
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 602   Version 1
Function Type: Set Tank Label

Command Format: **Inquire:**
    Display: <SOH>S602TTaaaaaaaaaaaaaaaaaaaa   <SOH>I602TT
   Computer: <SOH>s602TTaaaaaaaaaaaaaaaaaaaa   <SOH>i602TT

Typical Response Message, Display Format:

```
<SOH>
I602TT
JAN 22, 1996  3:16 PM

TANK LABEL

TANK    LABEL
 1      REGULAR UNLEADED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i602TTYYMMDDHHmmTTaaaaaaaaaaaaaaaaaaaa...
                TTaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   a...a – Label (20 ASCII characters [20h-7Eh])
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 603   Version 1
Function Type: Set Tank Product Code

Command Format: **Inquire:**
    Display: <SOH>S603TTa   <SOH>I603TT
  Computer: <SOH>s603TTa   <SOH>i603TT

Typical Response Message, Display Format:

```
<SOH>
I603TT
JAN 22, 1996  3:16 PM

TANK PRODUCT CODE

TANK    LABEL
 1      REGULAR UNLEADED          1
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i603TTYYMMDDHHmmTTa...
              TTa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   a – Product Code (one ASCII character [20h-7Eh])
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: 604   Version 1
Function Type: Set Tank 1 Point Full Height Volume

Command Format: **Inquire:**
  Display: <SOH>S604TTGGGGGG   <SOH>I604TT
  Computer: <SOH>s604TTFFFFFFFF   <SOH>i604TT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   GGGGGG - Full Height Volume, Gallons (Decimal)
    3.   FFFFFFFF - Full Height Volume, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I604TT
    JAN 22, 1996 3:16 PM

    TANK FULL VOLUME

    TANK   LABEL   GALLONS
     1   REGULAR UNLEADED   9728
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i604TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - Full Height Volume, Gallons (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 605                                        Version 1
        Function Type: Set Tank 4 Point Full, 3/4, 1/2, 1/4 Volumes

        Command Format:                                              Inquire:
           Display: <SOH>S605TTGGGGGGgggggggGGGGGGggggggg          <SOH>I605TT
                or: <SOH>S605TTGGGG,gggg,GGGG,ggg
          Computer: <SOH>s605TTFFFFFFFFffffffffFFFFFFFFffffffff     <SOH>i605TT
```

Notes:
```
    1.             TT -  Tank Number (Decimal, 00=all)
    2.        GGGGGG -  Full Height Volume, Gallons (Decimal)
    3.        gggggg -  3/4 Height Volume, Gallons (Decimal)
    4.        GGGGGG -  1/2 Height Volume, Gallons (Decimal)
    5.        gggggg -  1/4 Height Volume, Gallons (Decimal)
    6.      FFFFFFFF -  Full Height Volume, Gallons (ASCII Hex IEEE float)
    7.      ffffffff -  3/4 Height Volume, Gallons (ASCII Hex IEEE float)
    8.      FFFFFFFF -  1/2 Height Volume, Gallons (ASCII Hex IEEE float)
    9.      ffffffff -  1/4 Height Volume, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I605TT
    JAN 22, 1996  3:16 PM

    TANK 4 POINT VOLUMES

    TANK   LABEL                      GALLONS
    1      REGULAR UNLEADED              9728     7296     4864     2432
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i605TTYYMMDDHHmmTTFFFFFFFFffffffffFFFFFFFFffffffff...
                    TTFFFFFFFFffffffffFFFFFFFFffffffff&&CCCC<ETX>
```

Notes:
```
    1.    YYMMDDHHmm - Current Date and Time
    2.            TT -  Tank Number (Decimal, 00=all)
    3.      FFFFFFFF -  Full Height Volume, Gallons (ASCII Hex IEEE float)
    4.      ffffffff -  3/4 Height Volume, Gallons (ASCII Hex IEEE float)
    5.      FFFFFFFF -  1/2 Height Volume, Gallons (ASCII Hex IEEE float)
    6.      ffffffff -  1/4 Height Volume, Gallons (ASCII Hex IEEE float)
    7.            && - Data Termination Flag
    8.          CCCC - Message Checksum
```

Function Code: 606   Version 1
Function Type: Set Tank 20 Point Full, 95%, 90%,...Volumes

Command Format: **Inquire:**
  Display: <SOH>S606TTGGGGGGgggggg...   <SOH>I606TT
       or: <SOH>S606TTGGGG,gggg,GGGG,...
 Computer: <SOH>s606TTFFFFFFFF...   <SOH>i606TT

Notes:
   1.   TT - Tank Number (Decimal, 00=all)
   2.   GGGGGGgggggg - Series of 20 Volumes, Gallons (Decimal)
   3.   FFFFFFFF - Series of 20 Volumes, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

   <SOH>
   I606TT
   JAN 22, 1996 3:16 PM

   TANK 20 POINT VOLUMES

   TANK   LABEL   GALLONS
    1   REGULAR UNLEADED   9720   9234   8748   8262
                                       7776   7290   6804   6318
                                       5832   5346   4860   4372
                                       3888   3402   2916   2430
                                       1944   1458   972   486
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i606TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   TT - Tank Number (Decimal, 00=all)
   3.   FFFFFFFF - Series of 20 Volumes, Gallons (ASCII Hex IEEE float)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

Function Code: **607**   Version 1
Function Type: Set Tank Diameter

Command Format: **Inquire:**
      Display: <SOH>S607TTIII.hh   <SOH>I607TT
    Computer: <SOH>s607TTFFFFFFFF   <SOH>i607TT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   III.hh - Tank Diameter, Inches and hundredths (Decimal)
    3.   FFFFFFFF - Tank Diameter, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I607TT
JAN 22, 1996  3:16 PM

TANK DIAMETER

TANK    LABEL                    INCHES
 1      REGULAR UNLEADED          96.00
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i607TTYYMMDDHHmmTTFFFFFFFF...
              TTFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - Tank Diameter, Inches (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 608   Version 1
Function Type: Set Tank Tilt

Command Format: **Inquire:**
    Display: `<SOH>S608TTIIII.hh`   `<SOH>I608TT`
   Computer: `<SOH>s608TTFFFFFFFF`   `<SOH>i608TT`

Notes:
1.   TT – Tank Number (Decimal, 00=all)
2.   IIII.hh – Tank Tilt, Inches and hundredths (Decimal, +/– III.hh)
3.   FFFFFFFF – Tank Tilt, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I608TT
JAN 22, 1996  3:16 PM

TANK TILT

TANK    LABEL                   INCHES
 1      REGULAR UNLEADED          2.40
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i608TTYYMMDDHHmmTTFFFFFFFF...
                TTFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   FFFFFFFF – Tank Tilt, Inches (ASCII Hex IEEE float)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: **609**   Version 1
Function Type: Set Tank Thermal Expansion Coefficient

Command Format: **Inquire:**
        Display: <SOH>S609TTc.cccccc   <SOH>I609TT
       Computer: <SOH>s609TTFFFFFFFF   <SOH>i609TT

Notes:
1.   TT – Tank Number (Decimal, 00=all)
2.   c.cccccc – Thermal Expansion Coefficient (decimal)
3.   FFFFFFFF – Thermal Expansion Coefficient (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I609TT
JAN 22, 1996  3:17 PM

TANK THERMAL COEFFICIENT

TANK   LABEL
 1     REGULAR UNLEADED          0.000700
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i609TTYYMMDDHHmmTTFFFFFFFF...
             TTFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   FFFFFFFF – Thermal Expansion Coefficient (ASCII Hex IEEE float)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
        Function Code: 60A                                      Version 1
        Function Type: Set Tank Linear Calculated Full Volume

        Command Format:                                           Inquire:
           Display: <SOH>S60ATTGGGGGG                        <SOH>I60ATT
          Computer: <SOH>s60ATTFFFFFFFF                       <SOH>i60ATT
```

Notes:
```
    1.              TT - Tank Number (Decimal, 00=all)
    2.         GGGGGG - Full Height Volume, Gallons (Decimal)
    3.       FFFFFFFF - Full Height Volume, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I60ATT
    JAN 22, 1996  3:17 PM

    TANK FULL VOLUME

    TANK    LABEL                   TANK PROFILE      GALLONS
     1      REGULAR UNLEADED            1 PT            10000
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i60ATTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - Full height volume (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: **60B**   Version 5
Function Type: Set Tank Stick Height Function Enable

Command Format: **Inquire:**
     Display: <SOH>S60B00f   <SOH>I60B00
   Computer: <SOH>s60B00f   <SOH>i60B00

Typical Response Message, Display Format:

```
<SOH>
I60B00
JUL 29, 2013  9:07 AM

STICK HEIGHT OFFSET ENABLE STATUS
DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i60B00YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   f – Stick Height Function:
                0=Disabled
                1=Enabled
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

Function Code: **60C**   Version 5
Function Type: Set Tank Stick Height Offset

Command Format: **Inquire:**
  Display: <SOH>S60CTTIII.hh   <SOH>I60CTT
  Computer: <SOH>s60CTTFFFFFFFF   <SOH>i60CTT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   III.hh - Stick Height Offset, Inches and hundredths (Decimal)
    3.   FFFFFFFF - Stick Height Offset, Inches (ASCII Hex IEEE float). Value
                    must be within the range of +144 to -144 inches. It is used
                    to calculate stick height=height (without tilt) + stick
                    offset

Typical Response Message, Display Format:

    <SOH>
    I60CTT
    JUL 29, 2013 9:07 AM

    TANK STICK HEIGHT OFFSET

    TANK   PRODUCT LABEL   INCHES
     1   REGULAR UNLEADED   0.00
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i60CTTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - Stick Height Offset, Inches (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 60E   Version 1
Function Type: Set Tank Programmable Float Parameters

Command Format: **Inquire:**
    Display: `<SOH>S60ETTIIII.tttIIII.tttIIII.tttIIII.ttt`   `<SOH>I60ETT`
       or: `<SOH>S60ETTIII.ttt,III.ttt,III.ttt,III.ttt`

    Computer: `<SOH>s60ETTFFFFFFFF...FFFFFFFF`   `<SOH>i60ETT`

Notes:
    1.   CUSTOM float size must be chosen (Function Code 62F) for these parameters to be set and used.
    2.   TT - Tank Number (Decimal, 00=all)
    3.   IIII.ttt - Float Parameters, Inches and thousandths (Decimal)
    4.   FFFFFFFF - Float Parameters, Inches (ASCII Hex IEEE floats)

Typical Response Message, Display Format:

```
<SOH>
I60ETT
JAN 22, 2001 10:02 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CUSTOM FLOAT PARAMETERS

TANK    WATER OFFSET      FUEL OFFSET      INVALID FUEL     WATER MINIMUM
 1        -3.160            0.270            8.000            0.750
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i60ETTYYMMDDHHmmTTNNFFFFFFFF...
              TTNNFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date
    2.   TT - Tank Number (Decimal, 00=all)
    3.   NN - Number of eight character Data Fields to follow (Hex)
    4.   FFFFFFFF - Float Parameters, Inches (ASCII Hex IEEE floats):
                    1.Water Offset
                    2.Fuel Offset
                    3.Invalid Fuel Level
                    4.Minimum Water Level
    5.   && - Data Termination Flag
    6.   CCCC - Message Checksum

Function Code: 60F   Version 1
Function Type: Set Tank Probe Offset

Command Format: **Inquire:**
     Display: <SOH>S60FTTIII.hh   <SOH>I60FTT
    Computer: <SOH>s60FTTFFFFFFFF   <SOH>i60FTT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   III.hh - Probe offset, Inches and hundredths (Decimal)
    3.   FFFFFFFF - Probe offset, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I60FTT
JAN 22, 1996  3:16 PM

PROBE OFFSET

TANK    LABEL                      INCHES
 1      REGULAR UNLEADED             2.40
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i60FTTYYMMDDHHmmTTFFFFFFFF...
              TTFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - Probe offset, Inches (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 60G   Version 1
Function Type: Set Manual Tank Leak Test

Command Format: **Inquire:**
    Display: <SOH>S60GTTRCDD   <SOH>I60GTT
   Computer: <SOH>s60GTTRCDD   <SOH>i60GTT

Typical Response Message, Display Format:

```
<SOH>
I60GTT
JUN  1, 2000  8:06 AM

MANUAL TANK LEAK TEST
----------------------------------------------------------------

                 TEST      TEST                   DURATION   TEST RATE
TANK             STATUS    CONTROL                HOURS      GAL/HR
T1: UNLEADED     ON        TIMED DURATION         10         0.10
T2: SUPER        ON        MANUAL STOP            24         0.20
T3: SUPER 2      OFF       TIMED DURATION         3          0.20
<ETX>
```


Typical Response Message, Computer Format:

```
<SOH>i60GTTYYMMDDHHmmTTNNSRCDD…
                 TTNNSRCDD&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   TT – Tank Number (Decimal, 00=all)
   3.   NN – Number of Data Fields to follow (Hex)
   4.   S – Test Status (0=OFF, 1=ON)
   5.   R – Leak test Rate (0=0.2, 1=0.1)
   6.   C – Test Control (0=Manual, 1=Timed Duration)
   7.   DD – Leak test Duration in hours
                  Note: Timed Control: 02 <= DD <= 24
                  Note: Manual Stop: DD=24.
   8.   && – Data Termination Flag
   9.   CCCC – Message Checksum

```
        Function Code: 60K                                          Version 1
        Function Type: Set Probe Number Installed in Tank

       Command Format:                                               Inquire:
          Display: <SOH>S60KTTpp                                <SOH>I60KTT
         Computer: <SOH>s60KTTpp                                <SOH>i60KTT
```

Notes:
```
   1.             pp - -1 if tank not assigned to probe
   2.                  00=all, inquiry only
```

Typical Response Message, Display Format:

```
   <SOH>
   I60KTT
   MAR 26, 2007  1:50 PM

   TANK INSTALLED PROBE NUMBER CONFIGURATION

   TANK    LABEL                 PROBE NUM
     1     REGULAR UNLEADED             1
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i60KTTYYMMDDHHmmTTpp...
                  TTpp&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.             TT - Tank Number (Decimal, 00=all)
   3.             pp - Probe Number to configure to tank (pp = -1 if not assigned)
   4.             && - Data Termination Flag
   5.           CCCC - Message Checksum
```

Function Code: 60L   Version 1
 Function Type: Get Tank Setup Warning Messages

Command Format:
         Display: <SOH>I60LTT
        Computer: <SOH>i60LTT

Typical Response Message, Display Format:

```
<SOH>
I60LTT
JUN  1, 2000  8:06 AM

TANK PARAMETER VALIDATION

T 1: ALL PARAMETERS VIABLE

T 2: DIAMETER OUT OF RANGE
     CAPACITY OUT OF RANGE
<ETX>
```


Typical Response Message, Computer Format:

```
<SOH>i60LTTYYMMDDHHmmTTffffffff…
                    TTffffffff&&CCCC<ETX>
```

Notes:
```
    1. YYMMDDHHmm - Current Date and Time
    2.         TT - Tank Number (Decimal, 00=all)
    3.   ffffffff - error flags (Hex)
                    0x0000001 = FULL_VOLUME_OUT_OF_RANGE
                    0x0000002 = DIAMETER_OUT_OF_RANGE
                    0x0000004 = MAX_VOLUME_OUT_OF_RANGE
                    0x0000008 = HI_VOLUME_LIMIT_OUT_OF_RANGE
                    0x0000010 = COEFFICIENT_OUT_OF_RANGE
                    0x0000020 = HIGH_WATER_LIMIT_OUT_OF_RANGE
                    0x0000040 = LO_VOLUME_LIMIT_OUT_OF_RANGE
                    0x0000080 = THEFT_ALARM_LIMIT_OUT_OF_RANGE
                    0x0000100 = TILT_OUT_OF_RANGE_
                    0x0000200 = OVERFILL_VOLUME_OUT_OF_RANGE
                    0x0000400 = CHART_VOLUMES_INVALID_ERR
                    0x0000800 = UNCONFIGURED_PROBE_ERR
    4.         && - Data Termination Flag
    5.       CCCC - Message Checksum
```

Function Code: 60M   Version 2
 Function Type: Set Product Label

Command Format: **Inquire:**
    Display: <SOH>S60MPPaaaaaaaaaaaaaaaaaaaa   <SOH>I60MPP
    Computer: <SOH>s60MPPaaaaaaaaaaaaaaaaaaaa   <SOH>i60MPP

Typical Response Message, Display Format:

    <SOH>
    I60M00
    JAN 22, 2009 3:17 PM

    PRODUCT LABEL
    1   REGULAR UNLEADED
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i60MPPYYMMDDHHmmPPaaaaaaaaaaaaaaaaaaaa…
                    PPaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP - Product Number (Decimal)
    3.   aaa...aaa - Product Label (20 ASCII characters [20h-7Eh])
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 60N   Version 2
 Function Type: Product Setup Report

    Command Format:
        Display: <SOH>I60NPP
      Computer: <SOH>i60NPP

Typical Response Message, Display Format:

```
<SOH>
I60N00
JAN 22, 2009  3:17 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

PRODUCT SETUP REPORT

PRODUCT LABEL              TANKS
      1 REGULAR            T 1: REGULAR SOUTH, T 2: REGULAR NORTH
                           T 4: TANK 4
      2 MIDGRADE           T 3: MID NORTH, T 4: MID SOUTH, T 7: TANK 7
      3 PREMIUM            T 5: PREM NORTH
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i60NPPYYMMDDHHmmPPnnTT..TT
                 PPnnTT..TT&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   PP – Product Number (Decimal, 00=all)
3.   nn – Number of tanks to follow. (decimal) (Tanks assigned to this
               product)
4.   TT – Tank Number (Decimal)
5.   && – Data Termination Flag
6.   CCCC – Message Checksum

Function Code: 60O   Version 2
Function Type: Set Product Available in Tank

Command Format: **Inquire:**
    Display: <SOH>S60OTTPP   <SOH>I60OTT
    Computer: <SOH>s60OTTPP   <SOH>i60OTT

Notes:
1.   PP - Set to -1 to remove Product assignment

Typical Response Message, Display Format:

```
<SOH>
I60O00
JAN 22, 2009  3:17 PM

TANK PRODUCT MAPPING

TANK                    PRODUCT
T 1, T 2, T 4           F 1: REGULAR UNLEADED
T 3                     F 2: UNLEADED
T 5                     F 3: DIESEL
T 6, T 7                F 2: UNLEADED
T 8                     NOT ASSIGNED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i60OTTPPYYMMDDHHmmnnTT..TTPP
              nnTT..TTPP&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   nn - Number of tanks to follow. (decimal)(Tanks assigned to this
               product. If nn > 01 then they are manifold tanks)
3.   TT - Tank Number (Decimal)
4.   PP - Product Number (Decimal)
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

```
    Function Code: 610                                              Version 1
     Function Type: Set Tank Delivery Delay

    Command Format:                                                  Inquire:
        Display: <SOH>S610TTdd                                  <SOH>I610TT
        Computer: <SOH>s610TTdd                                 <SOH>i610TT
```

Typical Response Message, Display Format:

```
<SOH>
I610TT
JAN 22, 1996  3:17 PM

TANK DELIVERY DELAY

TANK   LABEL
 1     REGULAR UNLEADED           5
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i610TTYYMMDDHHmmTTdd...
              TTdd&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             TT - Tank Number (Decimal, 00=all)
    3.             dd - Indicates the length of time in minutes (01-99)
    4.             && - Data Termination Flag
    5.           CCCC - Message Checksum
```

```
              Function Code: 611                                       Version 1
              Function Type:  Set Tank Leak Test Type & Start Time

          Command Format:                                              Inquire:
              Display: <SOH>S611TTDDRMYYMMDDHHmm<CR>  (if M=1)      <SOH>I611TT
                                   MMODHHmm<CR>        (if M=2)
                                   ODHHmm<CR>          (if M=3)
                                   DHHmm<CR>           (if M=4)
                                   HHmm<CR>            (if M=5)
                                   <CR>                (if M=6)
                                   <CR>                (if M=7)
                                   MMDDHHmm<CR>        (if M=8)
                                   DDHHmm<CR>          (if M=9)
              Computer: (same as display format)                  <SOH>i611TT
```

Notes:
1.   TT - Tank Number (00=all tanks, Decimal)
2.   DD - Test Duration in hours [2-24]
3.   R - Leak test Rate (0=0.2, 1=0.1)
                 0=0.2 gallons/hour Periodic
                 1=0.1 gallons/hour Annual
4.   M - Leak test Method
                 1=On Date
                 2=Annually Day-of-Week
                 3=Monthly Day-of-Week
                 4=Weekly Day-of-Week
                 5=Daily
                 6=Automatic
                 7=CSLD
                 8=Annually Day-of-Month
                 9=Monthly Day-of-Month
5.   D - Day-of-Week
                 1=Monday
                 2=Tuesday
                 3=Wednesday
                 4=Thursday
                 5=Friday
                 6=Saturday
                 7=Sunday
6.   O - Occurrence [1-5] of day-of-week in month
                 5=last occurrance
                 Example: 0=3, D=2 means third Tuesday in month
7.   YYMM - Year (last 2 digits), Month [01…12]
8.   HHmm - Hour, Minute (if EE00, set Leak Test Method to NONE)

Typical Response Message, Display Format:

```
   <SOH>
   I611TT
   JUN  1, 2000  8:06 AM

           LEAK                       TEST      |<---- TEST START TIME ----->|
           TEST     TEST      TEST     START
   TANK    METHOD   TYPE      HOURS    METHOD    YEAR  MONTH  DAY  OCCUR  HH:MM
   ----    ------   --------  -----    ------------  ----  -----  ---  -----  -----
    1      SLD      ANNUAL      2      ON DATE   YYYY  MON    DD          HH:MM
                                      ANNUALLY DoW    MON    DD    N     HH:MM
                                      ANNUALLY DoM    MON    DD          HH:MM
                                      MONTHLY  DoW           DD    N     HH:MM
                                      MONTHLY  DoM           DD          HH:MM
                                      WEEKLY                 DD          HH:MM
                                      DAILY                              HH:MM
                                      AUTOMATIC

    2      CSLD     PERIODIC   AUTO    CSLD
    3      CSLD     GROSS       24     AUTOMATIC
   <ETX>
```

Function Code 611: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i611TTYYMMDDHHmmTTDDRMYYMMDDHHmm            (if M=1)
                            MMODHHmm              (if M=2)
                            ODHHmm                (if M=3)
                            DHHmm                 (if M=4)
                            HHmm                  (if M=5)
                            (none)                (if M=6)
                            (none)                (if M=7)
                            MMDDHHmm              (if M=8)
                            DDHHmm                (if M=9)
                 TTDDRMYYMMDDHHmm&&CCCC<ETX>      (if M=1)
                      MMODHHmm&&CCCC<ETX>         (if M=2)
                        ODHHmm&&CCCC<ETX>         (if M=3)
                        DHHmm&&CCCC<ETX>          (if M=4)
                        HHmm&&CCCC<ETX>           (if M=5)
                        &&CCCC<ETX>               (if M=6)
                        &&CCCC<ETX>               (if M=7)
                   MMDDHHmm&&CCCC<ETX>            (if M=8)
                     DDHHmm&&CCCC<ETX>            (if M=9)
```

Notes:
```
1.      YYMMDDHHmm - Current Date and Time
2.           TT - Tank Number (Decimal, 00=all)
3.           DD - Leak test Duration in hours (decimal) [2…24]
4.            R - Leak test Rate (0=0.2, 1=0.1)
5.            M - Leak test Method:

           - If M=1 ON DATE, YYMMDDHHmm:
                YY  =Year
                MM  =Month (01-12)
                DD  =Day
                HHmm=Hour, Minute (EE00=Disabled)

           - If M=2 ANNUALLY Day-of-Week, MMWDHHmm:
                MM  =Month (01-12)
                O   =Occurrence [1-5] of day-of-week in month
                D   =Day (1=Monday, 2=Tuesday, . . . 7=Sunday)
                HHmm=Hour, Minute (EE00=Disabled)

           - If M=3 MONTHLY Day-of-Week, WDHHmm:
                O   =Occurrence [1-5] of day-of-week in month
                D   =Day (1=Monday, 2=Tuesday, . . . 7=Sunday)
                HHmm=Hour, Minute (EE00=Disabled)

           - If M=4 WEEKLY Day-of-Week, DHHmm:
                D   =Day (1=Monday, 2=Tuesday, . . . 7=Sunday)
                HHmm=Hour, Minute (EE00=Disabled)

           - If M=5 DAILY, HHmm:
                HHmm=Hour, Minute (EE00=Disabled)

           - If M=8 ANNUALLY Day-of-Month, MMDDHHmm:
                MM  =Month (01-12)
                DD  =Day of month (1-31)
                HHmm=Hour, Minute (EE00=Disabled)

           - If M=9 MONTHLY Day-of-Month, WDHHmm:
                DD  =Day of month (1-31)
                HHmm=Hour, Minute (EE00=Disabled)

6.           && - Data Termination Flag
7.         CCCC - Message Checksum
```

Function Code: 612   Version 1
Function Type: Set Tank SIPHON Manifolded Partners

Command Format: **Inquire:**
   Display: <SOH>S612TTtt…TTtt   <SOH>I612TT
   Computer: <SOH>s612TTtt…TTtt   <SOH>i612TT

Typical Response Message, Display Format:

```
<SOH>
I612TT
JAN 22, 2002  3:17 PM

TANK MANIFOLDED PARTNERS

TANK   LABEL                    SIPHON MANIFOLDED TANKS     LINE MANIFOLDED TANKS
 2     REGULAR UNLEADED               1                            3
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i612TTYYMMDDHHmmTTNNtt...
              TTNNtt&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   TT - Number of the first tank to be SIPHON manifolded
   3.   NN - Number of tanks that are SIPHON manifolded together
   4.   tt - Tank numbers of other tanks to be SIPHON manifolded to first
                       tank
   5.   && - Data Termination Flag
   6.   CCCC - Message Checksum

Function Code: 613   Version 1
Function Type: Set CSLD Probability of Detection

Command Format: **Inquire:**
    Display: <SOH>S613TTf   <SOH>I613TT
  Computer: <SOH>s613TTf   <SOH>i613TT

Typical Response Message, Display Format:

```
<SOH>
I613TT
JAN 22, 1996  3:17 PM
CSLD PROBABLITY OF DETECTION

T 1:REGULAR UNLEADED      : Pd=95%
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i613TTYYMMDDHHmmTTf...
             TTf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number
    3.   f - Probability of Detection
                 1=95%
                 2=99%
                 3=CUSTOM (Inquiry Command Only)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 614                                              Version 1
        Function Type: Set CSLD Climate Factor

    Command Format:                                                      Inquire:
        Display: <SOH>S614TTf                                      <SOH>I614TT
       Computer: <SOH>s614TTf                                      <SOH>i614TT
```

Typical Response Message, Display Format:

```
    <SOH>
    I614TT
    JAN 22, 1996  3:17 PM
    CSLD CLIMATE FACTOR

    T 1:REGULAR UNLEADED      : MODERATE
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i614TTYYMMDDHHmmTTf...
                    TTf&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.           TT - Tank Number
    3.            f - Climate Factor
                    1=Moderate
                    2=Extreme
    4.           && - Data Termination Flag
    5.         CCCC - Message Checksum
```

Function Code: 615   Version 2
Function Type: Set BIR Meter Data Present

Command Format: **Inquire:**
    Display: \<SOH\>S615TTf   \<SOH\>I615TT
    Computer: \<SOH\>s615TTf   \<SOH\>i615TT

Typical Response Message, Display Format:

```
<SOH>
I615TT
JAN 22, 1996  3:17 PM

TANK    LABEL                   METER DATA
 1      REGULAR UNLEADED            YES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i615TTYYMMDDHHmmTTf...
               TTf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=All)
    3.   f – Meter Data Availablity:
              0=No Meter Data Available
              1=Meter Data Present
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

    Function Code: 616   Version 2
    Function Type: Set Accuchart Update Scheduling

    Command Format: **Inquire:**
        Display: <SOH>S616TTf   <SOH>I616TT
        Computer: <SOH>s616TTf   <SOH>i616TT

Typical Response Message, Display Format:

```
<SOH>
I616TT
JAN 22, 1996  3:17 PM

TANK   LABEL               CAL UPDATE
 1     REGULAR UNLEADED       IMMEDIATE
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i616TTYYMMDDHHmmTTf...
                TTf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=All)
    3.   f – Accuchart Update Scheduling
                    1=Immediate
                    2=Periodic
                    3=Complete
                    4=Never
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 618   Version 1
Function Type: Set Tank CSLD Evaporation Compensation

Command Format: **Inquire:**
    Display: <SOH>S618TTf   <SOH>I618TT
   Computer: <SOH>s618TTf   <SOH>i618TT

Notes:
   1. Only accepted if both conditions are true for the addressed tank:
      a. CSLD has been selected as the leak test method (S611TT).
      b. Climate Factor has been set to Extreme (S614TT).

Typical Response Message, Display Format:

```
<SOH>
I618TT
JAN 22, 1996  3:16 PM

CSLD EVAPORATION COMPENSATION

DEVICE  LABEL                   ENABLED
T 1:UNLEADED GASOLINE           YES
T 2:SUPER UNLEADED              YES
T 3:PREMIUM UNLEADED            NO
T 4:REGULAR GASOLINE            YES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i618TTYYMMDDHHmmTTf...
             TTf&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   TT – Tank Number (Decimal, 00=all)
   3.   f – CSLD Evaporation Compensation flag:
                0=NO
                1=YES
   4.   && – Data Termination Flag
   5.   CCCC – Message Checksum

```
          Function Code: 619                                Version 1
          Function Type: Set Tank Stage II Vapor Recovery

       Command Format:                                       Inquire:
          Display: <SOH>S619TTf                           <SOH>I619TT
         Computer: <SOH>s619TTf                           <SOH>i619TT
```

Notes:
    1. Only allowed if CSLD Evaporation Compensation is enabled

Typical Response Message, Display Format:

```
   <SOH>
   I619TT
   JAN 22, 1996  3:16 PM

   STAGE II VAPOR RECOVERY

   DEVICE  LABEL                  ENABLED
   T 1:UNLEADED GASOLINE          YES
   T 2:SUPER UNLEADED             YES
   T 3:PREMIUM UNLEADED           YES
   T 4:REGULAR GASOLINE           YES
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i619TTYYMMDDHHmmTTf...
                 TTf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   f - Stage II Vapor Recovery flag:
                           0=NO
                           1=YES
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 61A   Version 1
Function Type: Set In-Tank Leak Test Early Stop

Command Format: **Inquire:**
    Display: <SOH>S61ATTf   <SOH>I61ATT
    Computer: <SOH>s61ATTf   <SOH>i61ATT

Typical Response Message, Display Format:

```
<SOH>
I61ATT
JUN  1, 2000  8:06 AM

IN-TANK LEAK TEST EARLY STOP

TANK    LABEL                    TST EARLY STOP:
1       * PRODUCT 1 *                DISABLED
2       * PRODUCT 2 *                DISABLED
3       * PRODUCT 3 *                DISABLED
4       * PRODUCT 4 *                DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i6A000YYMMDDHHmmTTf...
               TTf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   f - In-Tank Leak Test Early Stop Flag:
                 0=DISABLED
                 1=ENABLED
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 61B                                              Version 1
        Function Type: Set In-Tank Static Gross Test Auto-Confirm

    Command Format:                                                       Inquire:
        Display: <SOH>S61BTTf                                        <SOH>I61BTT
       Computer: <SOH>s61BTTf                                        <SOH>i61BTT
```

Typical Response Message, Display Format:

```
<SOH>
I61BTT
OCT 10, 2000  3:11 PM

IN-TANK STATIC GROSS TEST AUTO-CONFIRM:

TANK   LABEL                   AUTO-CONFIRM
 1     REGULAR UNLEADED           DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i61BTTYYMMDDHHmmTTf...
                TTf&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             TT - Tank Number (Decimal, 00=all)
    3.              f - In-Tank Static Gross Test Auto-Confirm flag
                        0=Disabled
                        1=Enabled
    4.             && - Data Termination Flag
    5.           CCCC - Message Checksum
```

Function Code: 61H   Version 2
Function Type: Set Update Apply Accuchart Chart Dates

Command Format: **Inquire:**
        Display: <SOH>S61HTTDF[data]   <SOH>I61HTT
       Computer: <SOH>s61HTTDF[data]   <SOH>i61HTT

Notes:
   1.   TT – Tank Number [01..32], (Decimal, 00=all)
   2.   D – Date Number [1..4], (Decimal)
   3.   F – 1. [data] NNN = Number of Days From Start of Calibration
                          [01-120](Decimal)
                        2. [data] yyyymmdd = apply chart data using current date as
                        start
                            yyyy = Year (Decimal)
                            mm   = Month [01…12] (Decimal)
                            dd   = Day [01…31] (Decimal)

Typical Response Message, Display Format:

    <SOH>
    I61HTT
    JAN 24, 2009 2:52 PM

    APPLY ACCUCHART CHART DATES

    TANK START DATE   NNN   APPLY DATE   D#
    ---- ----------   ---   ----------   ---
    T 1: 2009-01-25 +   20 = 2009-02-14   1
         2009-01-25 +   25 = 2009-02-19   2
         2009-01-25 +   35 = 2009-03-01   3
         2009-01-25 +   40 = 2009-03-06   4

    T 2: 2009-01-25 +   32 = 2009-02-26   1

    T 3: 2009-01-25 +   34 = 2009-02-28   1

    T16: ****-**-** +   36 = ****-**-**   1
    <ETX>

    *(Note: ****-**-** is displayed when there is no viable date)*

Typical Response Message, Computer Format:

    <SOH>i61HTTYYMMDDHHmmTTDNNNyyyymmdd
                         DNNNyyyymmdd
                         DNNNyyyymmdd
                         DNNNyyyymmdd
                       TTDNNNyyyymmdd
                         DNNNyyyymmdd
                         DNNNyyyymmdd
                         DNNNyyyymmdd&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   TT – Tank Number [01..32], (Decimal, 00=all)
   3.   D – Date Number [1…4] (Decimal)
   4.   NNN – Number of Days From Start of Calibration [01-120](Decimal)
   5.   yyyymmdd – Apply Date (Note: This is all zeros when NNN = 00)(Decimal)
   6.   && – Data Termination Flag
   7.   CCCC – Message Checksum

Function Code: 61I   Version 2
Function Type: Set Maximum Accuchart Calibration Period Days

Command Format: **Inquire:**
    Display: <SOH>S61ITTDDD   <SOH>I61ITT
   Computer: <SOH>s61ITTDDD   <SOH>i61ITT

Notes:
1.   TT - Tank Number [01..32], (Decimal, 00=all)
2.   DDD - Max Duration in Days [014..120], (Decimal)

Typical Response Message, Display Format:

```
<SOH>
I61ITT
JAN 24, 2009  2:52 PM

MAXIMUM ACCUCHART CALIBRATION PERIOD DAYS

T 1:  30 DAYS     10 DAYS REMAINING
T 2:  60 DAYS     40 DAYS REMAINING
T 3:  90 DAYS     70 DAYS REMAINING
T16: 120 DAYS    100 DAYS REMAINING
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i61ITTYYMMDDHHmmTTDDDRRR...
                TTDDDRRR&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number [01..32], (Decimal, 00=all)
3.   DDD - Max Duration in Days [014-120] (Decimal)
4.   RRR - Days Remaining (Decimal)
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

```
            Function Code: 61J                                    Version 2
            Function Type: Set Exclude Calibration Dates

        Command Format:                                          Inquire:
            Display: <SOH>S61JTTFyyyymmdd                      <SOH>I61JTT
           Computer: <SOH>s61JTTFyyyymmdd                      <SOH>i61JTT
```

Notes:
```
    1.              TT - Tank Number [01..32], (Decimal, 00=all)
    2.               F - 1=Exclude Records on this Date,
                         2=Include Records on this Date
    3.             yyy - Year (decimal)
    4.              mm - Month [01..12] (Decimal)
    5.              dd - Day [01..31] (Decimal)
```

Typical Response Message, Display Format:

```
    <SOH>
    I61JTT
    JAN 24, 2009  2:52 PM

    DATES EXCLUDED FROM ACCUCHART CALIBRATION

    T 1:  2009-01-15
          2009-01-17
          2009-01-19

    T 2:  2009-01-15

    T 3:  2009-01-15

    T16:  2009-01-15
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i61JTTYYMMDDHHmmTTNNyyyymmdd...yyyymmdd
                    TTNNyyyymmdd...yyyymmdd&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number [01..32], (Decimal, 00=all)
    3.              NN - Number of Excluded Dates (Hex)
    4.            yyyy - Year (Decimal)
    5.              mm - Month [01…12] (Decimal)
    6.              dd - Day [01…31] (Decimal)
    7.              && - Data Termination Flag
    8.            CCCC - Message Checksum
```

```
        Function Code: 61K                                       Version 2
        Function Type: Set Enable Accuchart Warnings

      Command Format:                                            Inquire:
         Display: <SOH>S61KTTF                                <SOH>I61KTT
        Computer: <SOH>s61KTTF                                <SOH>i61KTT
```

Notes:
```
    1.              TT - Tank Number [01..32], (Decimal, 00=all)
    2.               F - Accuchart Warning (Decimal)
                         0=Disabled
                         1=Enabled
```

Typical Response Message, Display Format:

```
    <SOH>
    I61KTT
    JAN 24, 2009  2:52 PM

    ACCUCHART WARNINGS

    T 1: ENABLED
    T 2: DISABLED
    T 3: DISABLED
    T16: ENABLED
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i61KTTYYMMDDHHmmTTF...
                  TTF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.               F - Accuchart Warning (Decimal)
                         0=Disabled
                         1=Enabled
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 61L   Version 2
Function Type: Set Accuchart Chart Management

Command Format: **Inquire:**
    Display: <SOH>S61LTT149IIP[*data*]   <SOH>I61LTTii
    Computer: <SOH>s61LTT149IIP[*data*]   <SOH>i61LTTii

Notes:
1.   TT - Tank Number [01..32], (Decimal, 00=all)
2.   II - Chart ID number [01…99]
3.   P - Operation
4.   ii - Chart ID number [01…99] 00 = all charts for this tank (Decimal)
5.   Chart ID=1 always exists. It cannot have a different source.
6.   All set operations require AccuChart to be installed.

P	Operation	[*data*]	Description
1	Set Label	s...s	Name (Max 20 Ascii Chars)
2	*Set Volume Entry	V	0 = Absolute Volume, 1 = Delta Volume
3	*Add Height-Vol Pair	Hhhh.hh vvvvv.vv	Height- Volume Pair (Decimal)
4	*Add Height-Vol Pair	vvvvv.vv	Height = current height in tank Volume (Decimal)
5	*Remove Height-Vol Pair	nnnn	Pair # [0001…9999] (Decimal)
6	Set Active Chart		
7	*Set Chart Type	T	0 = One Point 1 = Four Point 2 = Twenty Point 3 = Linear 4 = Multi Point (User Entered)
8	*Set Chart Source	C	0 = User Initial Chart 1 = Metered Drop Chart 2 = Metered Dispense Chart 3 = Automatic Chart 4 = Remote Chart
9	*Make Manual Chart		This analyzes all height-volume pairs looking for bad points. If one or more bad points are suspected, they are flagged and the chart status is set to BAD POINTS. If no bad points are found, the chart status is set to READY.

  * This operation cannot be performed on an ACTIVE chart.

Function Code 61L: (Continued)

Typical Response Message, Display Format:

```
<SOH>
I61LTT
JAN 24, 2009  2:52 PM

TANK CHARTS


--------------------------------------------------------------------------------
TANK:         1                              DIAMETER: 96.0
CHART ID:     2                              CAPACITY: 10000
LABEL:        SUMMER 2008                    ENDSHAPE: 0.000
TYPE:         ONE_POINT                      OFFSET:   -1.50
SOURCE:       AUTO DIM METERED CHART         TILT:     1.00
LAST CHANGE: yyyy-mm-dd                      DAYS:     60
MSSE:         123.45                         QUALITY:  678
STATUS:       ACTIVE CHART

SUFFICIENCY HISTOGRAM

HEIGHT%  COUNTS
-------  ------   ---------+---------+---------+---------+---------+---------+--
 95 -100     1   |                                                              |
 90 - 95     6   |***                                                           |
 85 - 90    18   |*********                                                     |
 80 - 85     9   |****                                                          |
 75 - 80    32   |****************                                              |
 70 - 75     8   |****                                                          |
 65 - 70    25   |************                                                  |
 60 - 65     4   |**                                                            |
 55 - 60     0   |                                                              |
 50 - 55     1   |                                                              |
 45 - 50     4   |**                                                            |
 40 - 45     6   |***                                                           |
 35 - 40    23   |***********                                                   |
 30 - 35    12   |******                                                        |
 25 - 30   100   |**************************************************            |
 20 - 25    22   |***********                                                   |
 15 - 20     8   |****                                                          |
 10 - 15     7   |***                                                           |
  5 - 10     0   |                                                              |
  0 -  5     0   |                                                              |
                 ---------+---------+---------+---------+---------+---------+--


--------------------------------------------------------------------------------
TANK:         1
CHART ID:     1
LABEL:        WINTER 2008
TYPE:         MULTI POINT
SOURCE:       {USER ENTERED, METERED DROP CHART, METERED DISPENSE CHART}
LAST CHANGE: yyyy-mm-dd
MSSE:         123.45
STATUS:       INCOMPLETE CHART              VOLUME: ABSOLUTE VOLUME

 #   HEIGHT   VOLUME    F      #   HEIGHT   VOLUME    F      #   HEIGHT   VOLUME    F
--- ------- --------- -     --- ------- --------- -     --- ------- --------- -
001 hhhh.hh vvvvvv.vv 0     003 hhhh.hh vvvvvv.vv 0     005 hhhh.hh vvvvvv.vv 0
002 hhhh.hh vvvvvv.vv 0     004 hhhh.hh vvvvvv.vv 0     006 hhhh.hh vvvvvv.vv 0
<ETX>
```

Function Code 61L: (Continued)

Notes:
- *height-volume pairs will be listed in descending height order.*
- *Metric values will show one digit to the right of the decimal point.*
- *English values will show two digits to the right of the decimal point.*

Typical Response Message, Computer Format:

```
<SOH>i61LTTYYMMDDHHmmTTIIss...sstcyyyymmddEEEEEEEEESVN[]JJ[]KKKK[]...
                   TTIIss...sstcyyyymmddEEEEEEEEESVN[]JJ[]KKKK[]&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number [01..32], (Decimal, 00=all)
3.   II - Chart ID Number [01…99] (Decimal)
4.   ss...ss - Label (20 ASCII characters [20h-7Eh])
5.   t - Type
                        0=One Point
                        1=Four Point
                        2=Twenty Point
                        3=Linear
                        4=Multi Point
6.   c - Source
                        0=User/Initial Chart
                        1=Metered Drop Chart
                        2=Metered Dispense Chart
                        3=Automatic Chart
                        4=Remote Chart
7.   yyyymmdd - Last Change Date
8.   EEEEEEEE - MSSE (ASCII Hex IEEE float)
9.   S - Type
                        0=Active
                        1=Ready
                        2=Incomplete
                        3=Bad Point
                        4=Calculating
10.   V - Volume Entry
                        0=Absolute Volume
                        1=Delta Volume
11.   N - Number of IEEE Ascii Float Values to follow
12.   dddddddd - Diameter (ASCII Hex IEEE float)
13.   cccccccc - Capacity (ASCII Hex IEEE float)
14.   eeeeeeee - End Shape (ASCII Hex IEEE float)
15.   oooooooo - Offset (ASCII Hex IEEE float)
16.   tttttttt - Tilt (ASCII Hex IEEE float)
17.   JJ - Number of Histogram Bins to follow (Hex)
18.   bbbb...bbbb - Histogram Bins (ASCII Hex short)
19.   KKKK - Number of Height-Volume Pairs to follow (Hex)
20.   kkkk - Pair ID Number (Hex)
21.   hhhhhhhh - Height (ASCII Hex IEEE float)
22.   vvvvvvvv - Volume (ASCII Hex IEEE float)
23.   ff - Status (Hex)
                        0=Unknown
                        1=Good
                        2=Bad
24.   && - Data Termination Flag
25.   CCCC - Message Checksum

Function Code: 621   Version 1
Function Type: Set Tank Low Level Limit

Command Format: **Inquire:**
   Display: <SOH>S621TTGGGGGG   <SOH>I621TT
   Computer: <SOH>s621TTFFFFFFFF   <SOH>i621TT

Notes:
1.   TT – Tank Number (Decimal, 00=all)
2.   GGGGGG – Low Level Limit, Gallons (Decimal)
3.   FFFFFFFF – Low Level Limit, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I621TT
JAN 22, 1996  3:18 PM

TANK LOW PRODUCT LIMIT

TANK   LABEL                    GALLONS
 1     REGULAR UNLEADED            1000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i621TTYYMMDDHHmmTTFFFFFFFF...
             TTFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   FFFFFFFF – Low Level Limit, Gallons (ASCII Hex IEEE float)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
        Function Code: 622                                        Version 1
        Function Type: Set Tank High Level Limit

        Command Format:                                            Inquire:
          Display: <SOH>S622TTGGGGGG                          <SOH>I622TT
         Computer: <SOH>s622TTFFFFFFFF                         <SOH>i622TT
```

Notes:
```
     1.              TT - Tank Number (Decimal, 00=all)
     2.         GGGGGG - High Level Limit, Gallons (Decimal)
     3.       FFFFFFFF - High Level Limit, Gallons (ASCII Hex IEEE float)
```

* Set Tank Maximum Volume Limit (628 cmd) must be set before the High Level Limit.

Typical Response Message, Display Format:

```
<SOH>
I622TT
JAN 22, 1996  3:18 PM

TANK HIGH PRODUCT LIMIT

TANK   LABEL                      GALLONS   PERCENT
  1    REGULAR UNLEADED             77000        77
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i622TTYYMMDDHHmmTTFFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
     1.     YYMMDDHHmm - Current Date and Time
     2.             TT - Tank Number (Decimal, 00=all)
     3.       FFFFFFFF - High Level Limit, Gallons (ASCII Hex IEEE float)
     4.             && - Data Termination Flag
     5.           CCCC - Message Checksum
```

```
        Function Code: 623                                    Version 1
        Function Type: Set Tank Overfill Level Limit

      Command Format:                                         Inquire:
         Display: <SOH>S623TTGGGGGG                         <SOH>I623TT
        Computer: <SOH>s623TTFFFFFFFF                        <SOH>i623TT
```

Notes:
```
    1.             TT - Tank Number (Decimal, 00=all)
    2.         GGGGGG - Overfill Level Limit, Gallons (Decimal)
    3.       FFFFFFFF - Overfill Level Limit, Gallons (ASCII Hex IEEE float)
```

* Set Tank Maximum Volume Limit (628 cmd) must be set before the Overfill Level
  Limit.

Typical Response Message, Display Format:

```
    <SOH>
    I623TT
    JAN 22, 1996  3:18 PM

    TANK OVERFILL LEVEL LIMIT

    TANK   LABEL                    GALLONS    PERCENT
      1    REGULAR UNLEADED            9300          0
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i623TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - Overfill Level Limit, Gallons (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 624   Version 1
Function Type: Set Tank High Water Level Limit

Command Format: **Inquire:**
    Display: `<SOH>S624TTII.tt`   `<SOH>I624TT`
    Computer: `<SOH>s624TTFFFFFFFF`   `<SOH>i624TT`

Notes:
1.   TT - Tank Number (Decimal, 00=all)
2.   II.t - High Water Level Limit, Inches and tenths (Decimal, Min=0.75, Max=05.00, NotSet=0)
3.   FFFFFFFF - High Water Level Limit, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I624TT
JAN 22, 1996  3:18 PM

TANK HIGH WATER LEVEL LIMIT

TANK   LABEL                   INCHES
 1     REGULAR UNLEADED          4.50
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i624TTYYMMDDHHmmTTFFFFFFFF...
              TTFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   FFFFFFFF - High Water Level Limit, Inches (ASCII Hex IEEE float)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
          Function Code: 625                                          Version 1
          Function Type: Set Tank Sudden Loss Limit

        Command Format:                                               Inquire:
            Display: <SOH>S625TTGGGGGG                             <SOH>I625TT
           Computer: <SOH>s625TTFFFFFFFF                           <SOH>i625TT
```

Notes:
```
    1.              TT - Tank Number (Decimal, 00=all)
    2.          GGGGGG - Sudden Loss Limit, Gallons (Decimal)
    3.        FFFFFFFF - Sudden Loss Limit, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I625TT
    JAN 22, 1996  3:18 PM

    TANK SUDDEN LOSS LIMIT

    TANK   LABEL                    GALLONS
     1     REGULAR UNLEADED             100
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i625TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - Sudden Loss Limit, Gallons (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 626   Version 1
Function Type: Set Tank Leak Alarm Limit

Command Format: **Inquire:**
    Display: <SOH>S626TTGGGGGG   <SOH>I626TT
    Computer: <SOH>s626TTFFFFFFFF   <SOH>i626TT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   GGGGGG - Leak Alarm Limit, Gallons (Decimal)
    3.   FFFFFFFF - Leak Alarm Limit, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I626TT
JAN 22, 1996  3:18 PM

TANK LEAK ALARM LIMIT

TANK    LABEL                 GALLONS
 1      REGULAR UNLEADED           50
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i626TTYYMMDDHHmmTTFFFFFFFF...
              TTFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - Leak Alarm Limit, Gallons (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

     Function Code: 627   Version 1
     Function Type: Set Tank High Water Warning Limit

     Command Format: **Inquire:**
        Display: <SOH>S627TTII.tt   <SOH>I627TT
       Computer: <SOH>s627TTFFFFFFFF   <SOH>i627TT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   II.t - High Water Warning Limit, Inches and tenths (Decimal,
                     Min=0.75, Max=05.00, NotSet=0)
    3.   FFFFFFFF - High Water Warning Limit, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I627TT
    JAN 22, 1996 3:18 PM

    TANK HIGH WATER WARNING LIMIT

    TANK   LABEL   INCHES
    1   REGULAR UNLEADED   3.50
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i627TTYYMMDDHHmmTTFFFFFFFF...
                       TTFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - High Water Warning Limit, Inches (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 628   Version 1
Function Type: Set Tank Maximum Volume Limit

Command Format: **Inquire:**
    Display: <SOH>S628TTGGGGGG   <SOH>I628TT
    Computer: <SOH>s628TTFFFFFFFF   <SOH>i628TT

Notes:
1.   TT – Tank Number (Decimal, 00=all)
2.   GGGGGG – Maximum Volume Limit, Gallons (Decimal)
3.   FFFFFFFF – Maximum Volume Limit, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I628TT
JAN 22, 1996  3:19 PM

TANK MAXIMUM VOLUME LIMIT

TANK    LABEL                      GALLONS
 1      REGULAR UNLEADED              9600
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i628TTYYMMDDHHmmTTFFFFFFFF...
              TTFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   FFFFFFFF – Maximum Volume Limit, Gallons (ASCII Hex IEEE float)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
          Function Code: 629                                              Version 1
          Function Type: Set Tank Delivery Required Limit

          Command Format:                                                  Inquire:
             Display: <SOH>S629TTGGGGGG                                <SOH>I629TT
            Computer: <SOH>s629TTFFFFFFFF                               <SOH>i629TT
```

Notes:
```
    1.              TT - Tank Number (Decimal, 00=all)
    2.          GGGGGG - Delivery Required Limit, Gallons (Decimal)
    3.        FFFFFFFF - Delivery Required Limit, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I629TT
    JAN 22, 1996  3:19 PM

    TANK DELIVERY REQUIRED LIMIT

    TANK   LABEL                        GALLONS   PERCENT
     1     TANK 1                        200000        20
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i629TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - Delivery Required Limit, Gallons (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: **62A**   Version 1
Function Type: Set Tank Annual Leak Test Minimum Volume

Command Format: **Inquire:**
    Display: <SOH>S62ATTGGGGGG   <SOH>I62ATT
    Computer: <SOH>s62ATTFFFFFFFF   <SOH>i62ATT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   GGGGGG - Annual Test Minimum Volume, Gallons (Decimal)
    3.   FFFFFFFF - Annual Test Minimum Volume, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I62ATT
JAN 22, 1996  3:19 PM

ANNUAL LEAK TEST MIN VOLUME

TANK    LABEL                   GALLONS
 1      REGULAR UNLEADED           6000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i62ATTYYMMDDHHmmTTFFFFFFFF...
                TTFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - Annual Test Minimum Volume, Gallons (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 62C   Version 1
Function Type: Set Tank Periodic Test Type

Command Format: **Inquire:**
    Display: <SOH>S62CTTp   <SOH>I62CTT
  Computer: <SOH>s62CTTp   <SOH>i62CTT

Typical Response Message, Display Format:

```
<SOH>
I62CTT
JAN 22, 1996  3:19 PM

TANK PERIODIC TEST TYPE

TANK    LABEL                       PERIODIC TEST TYPE
 1      REGULAR UNLEADED               QUICK
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i62CTTYYMMDDHHmmTTp...
              TTp&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Periodic Test Type:
                    0=Standard Test
                    1=Quick Test (only MAG Probes may be set to QUICK)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

    Function Code: 62D   Version 1
    Function Type: Set Enable/Disable Tank Leak Test Fail Alarms

    Command Format: **Inquire:**
        Display: <SOH>S62DTTgpa   <SOH>I62DTT
      Computer: <SOH>s62DTTgpa   <SOH>i62DTT

Typical Response Message, Display Format:

```
<SOH>
I62DTT
JAN 22, 1996  3:19 PM

TANK LEAK TEST FAIL ALARMS

TANK    LABEL
 1      REGULAR UNLEADED            GROSS TEST FAIL        ALARM DISABLED
                                    PERIODIC TEST FAIL     ALARM DISABLED
                                    ANNUAL TEST FAIL       ALARM DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i62DTTYYMMDDHHmmTTgpa...
               TTgpa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   g – Gross Test Fail Alarm
                  0=Disabled
                  1=Enabled
    4.   p – Periodic Test Fail Alarm
                  0=Disabled
                  1=Enabled
    5.   a – Annual Test Fail Alarm
                  0=Disabled
                  1=Enabled
    6.   && – Data Termination Flag
    7.   CCCC – Message Checksum

Function Code: 62F   Version 1
Function Type: Set MAG Probe Float Size

Command Format: **Inquire:**
    Display: <SOH>S62FTTf   <SOH>I62FTT
  Computer: <SOH>s62FTTf   <SOH>i62FTT

Typical Response Message, Display Format:

```
<SOH>
I62FTT
JAN 22, 1996  3:19 PM

MAG PROBE FLOAT SIZE

TANK   LABEL                      FLOAT SIZE:
 1     REGULAR UNLEADED           4.0 IN. PHASE SEPARATION
 2     PREMIUM                    4.0 IN.
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i62FTTYYMMDDHHmmTTf...
              TTf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   f - MAG Probe Float Size
                          0=4.0"
                          1=2.0"
                          2=3.0"
                          3=1.0"
                          4=4.0" – Phase Separation   (Version 2)
                          9=CUSTOM
4.   && – Data Termination Flag
5.   CCCC - Message Checksum

```
         Function Code: 62G                                    Version 2
         Function Type: Set Create Chart

        Command Format:                                          Inquire:
            Display: <SOH>S62GTT149                         <SOH>I62GTT
           Computer: <SOH>s62GTT149                         <SOH>i62GTT
```

Notes:
```
    1.              TT – Tank Number [01..32], (Decimal, 00=all, inquire only)
    2.              Set operation requires Accuchart to be installed
```

Typical Response Message, Display Format:

```
    <SOH>
    I62GTT
    JAN 24, 2009  2:52 PM

    TANK CHARTS

    TANK   CHART ID     STATUS
    ----   --------   ------------
     01       01       ACTIVE
              02       READY
              03       BAD POINT
              04       INCOMPLETE
              05       CALCULATING


     02       01       ACTIVE
              02       READY
              03       BAD POINT
              04       INCOMPLETE
              05       CALCULATING
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i62GTTYYMMDDHHmmTTNNIIs...IIs
                TTNNIIs...IIs&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm – Current Date and Time
    2.             TT – Tank Number [01..32], (Decimal, 00=all)
    3.             NN – Number of charts [00…99] (Decimal)
    4.             II – Chart ID Number [01…99] (Decimal)
    5.              s – Status
                        0=Active Chart
                        1=Ready Chart
                        2=Incomplete Chart
                        3=Bad Point Chart
                        4=Calculating Chart
    6.             && – Data Termination Flag
    7.           CCCC – Message Checksum
```

```
     Function Code: 630                                          Version 1
     Function Type: Set Tank Leak Test Notify
```

```
   Command Format:                                                Inquire:
       Display: <SOH>S630TTf                               <SOH>I630TT
      Computer: <SOH>s630TTf                               <SOH>i630TT
```

Typical Response Message, Display Format:

```
<SOH>
I630TT
JAN 22, 1996  3:20 PM

IN-TANK LEAK TEST NOTIFY

TANK    LABEL                    TANK TEST NOTIFY:
 1      REGULAR UNLEADED                OFF
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i630TTYYMMDDHHmmTTf...
                TTf&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.               TT - Tank Number (Decimal, 00=all)
   3.                f - Tank Leak Test Notify
                        0=OFF
                        1=ON
   4.               && - Data Termination Flag
   5.             CCCC - Message Checksum
```

Function Code: 632   Version 1
Function Type: Set Tank Test Siphon Break

Command Format: **Inquire:**
    Display: <SOH>S632TTf   <SOH>I632TT
    Computer: <SOH>s632TTf   <SOH>i632TT

Typical Response Message, Display Format:

```
<SOH>
I632TT
JAN 22, 1996  3:20 PM

TANK TEST SIPHON BREAK

TANK    LABEL                    SIPHON BREAK
 1      REGULAR UNLEADED              OFF
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i632TTYYMMDDHHmmTTf...
                 TTf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   f - Tank Test Siphon Break
          0=OFF
          1=ON
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
        Function Code: 634                                    Version 4
        Function Type: Set Tank HRM Reconciliation Warning Limit

        Command Format:                                         Inquire:
          Display: <SOH>S634TTGGGGGG                         <SOH>I634TT
         Computer: <SOH>s634TTFFFFFFFF                       <SOH>i634TT
```

Notes:
```
    1.           TT - Tank Number (Decimal, 00=all)
    2.       GGGGGG - HRM Reconciliation Warning Limit, Gallons (Decimal)
    3.     FFFFFFFF - HRM Reconciliation Warning Limit, Gallons (ASCII Hex IEEE
                      float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I634TT
    JAN 22, 2011  3:20 PM

    RECONCILIATION WARNING LIMIT

    TANK    PRODUCT LABEL             GALLONS
     1      REGULAR UNLEADED               50
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i634TTYYMMDDHHmmTTFFFFFFFF...
                  TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - HRM Reconciliation Warning Limit, Gallons (ASII Hex IEEE
                         Float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 635   Version 4
Function Type: Set Tank HRM Reconciliation Alarm Limit

Command Format: **Inquire:**
Display: <SOH>S635TTGGGGGG   <SOH>I635TT
Computer: <SOH>s635TTFFFFFFFF   <SOH>i635TT

Notes:
1.   TT - Tank Number (Decimal, 00=all)
2.   GGGGGG - HRM Reconciliation Alarm Limit, Gallons (Decimal)
3.   FFFFFFFF - HRM Reconciliation Alarm Limit, Gallons (ASCII Hex IEEE
                float)

Typical Response Message, Display Format:

```
<SOH>
I635TT
JAN 22, 2011  3:20 PM

RECONCILIATION ALARM LIMIT

TANK    PRODUCT LABEL              GALLONS
 1      REGULAR UNLEADED                90
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i635TTYYMMDDHHmmTTFFFFFFFF...
               TTFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   FFFFFFFF - HRM Reconciliation Alarm Limit, Gallons (ASII Hex IEEE
                Float)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 636   Version 1
Function Type: Set Tank Periodic Leak Test Minimum Volume

Command Format: **Inquire:**
   Display: <SOH>S636TTGGGGGG   <SOH>I636TT
  Computer: <SOH>s636TTFFFFFFFF   <SOH>i636TT

Notes:
   1.   TT - Tank Number (Decimal, 00=all)
   2.   GGGGGG - Periodic Test Minimum Volume, Gallons (Decimal)
   3.   FFFFFFFF - Periodic Test Minimum Volume, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

   <SOH>
   I636TT
   JAN 22, 1996 3:19 PM

   PERIODIC LEAK TEST MIN VOLUME

   TANK   LABEL   GALLONS
   1   REGULAR UNLEADED   3000
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i636TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   TT - Tank Number (Decimal, 00=all)
   3.   FFFFFFFF - Periodic Test Minimum Volume, Gallons (ASCII Hex IEEE float)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

```
    Function Code: 639                                          Version 2
    Function Type: Set Tank AccuChart End Shape Type and Factor

       Command Format:                                            Inquire:
          Display: <SOH>S639TTSU.t                             <SOH>I639TT
         Computer: <SOH>s639TTSFFFFFFFF                        <SOH>i639TT
```

Notes:
```
    1.               TT - Tank Number (Decimal, 00=all)
    2.                S - End Shape Type
                             0=None
                             1=Flat
                             2=Hemispheric
                             3=Other (requires factor)
    3.            U.t - End Shape Factor, Units and tenths (Decimal, 0.0-1.0)
    4.       FFFFFFFF - End Shape Factor (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I639TT
    09/23/2013  9:08 AM

    TANK   TANK LABEL            END FACTOR   END VALUE
    ----   --------------------  -----------  ---------
      1    REGULAR UNLEADED      NONE
      2    ULTRA                 OTHER           0.2
      3    DIESEL                NONE
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i639TTYYMMDDHHmmTTSFFFFFFFFF...
                    TTSFFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.     YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.               S - End Shape Type
                            0=None
                            1=Flat
                            2=Hemispheric
                            3=Other (requires factor)
    4.       FFFFFFFF - End Shape Factor (ASCII Hex IEEE float)
    5.              && - Data Termination Flag
    6.            CCCC - Message Checksum
```

```
         Function Code: 63A                                    Version 1
         Function Type: Set Tank Low Level Threshold for Sequential Line Manifold

       Command Format:                                          Inquire:
          Display: <SOH>S63ATTPP.hh                         <SOH>I63ATT
         Computer: <SOH>s63ATTFFFFFFFF                       <SOH>i63ATT
```

Notes:
```
    1.              TT - Tank Number (Decimal, set for primary tank)
    2.         PP.hh - Low Level Pump Threshold, Percent and hundredths (Decimal)
    3.      FFFFFFFF - Low Level Pump Threshold, Percent (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I63A00
    JUN  1, 2001  8:07 AM

    LOW LEVEL PUMP THRESHOLD FOR SEQUENTIAL LINE MANIFOLD

    TANK    LABEL                  PUMP THRESHOLD
     1     REGULAR UNLEADED           10.00%
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i63A00YYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, set for primary tank)
    3.      FFFFFFFF - Low Level Pump Threshold, Percent (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCC - Message Checksum
```

```
        Function Code: 63C                                          Version 3
        Function Type: Set Tank Multi Point Full Volume

        Command Format:                                              Inquire:
          Display: <SOH>S63CTTGGGGGG                            <SOH>I63CTT
         Computer: <SOH>s63CTTVVVVVVVV                           <SOH>i63CTT
```

Notes:
```
    1.              TT - Tank Number (Decimal, 00=All)
    2.          GGGGGG - Volume, Gallons (Decimal)
    3.        VVVVVVVV - Volume, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I63C00
    SEP 16, 2011 3:15 PM

    TANK MULTI POINT FULL VOLUME

    TANK    PRODUCT              LABEL VOLUME
     1      REGULAR UNLEADED      100000
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i63CTTYYMMDDHHmmTTVVVVVVVV...
                     TTVVVVVVVV&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - Volume, Gallons (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.             CCC - Message Checksum
```

Function Code: 63D   Version 5
Function Type: Set Tank Vapor Loss Factor

Command Format: **Inquire:**
   Display: <SOH>S63DTTo.oo   <SOH>I63DTT
   Computer: <SOH>s63DTTooooooooo   <SOH>i63DTT

Notes:
   1.   TT - Tank Number (Decimal, 00=all)
   2.   o.oo - Vapor Loss Factor, Percent(Decimal, 0.00 B 0.20)
   3.   ooooooooo - Vapor Loss Factor, Percent(ASCII Hex IEEE Float 0.00B0.20)

Typical Response Message, Display Format:

   <SOH>
   I63D00
   APR 10, 2007 10:15 AM

   VAPOR LOSS FACTOR

   TANK   TANK LABEL   FACTOR
   1   REGULAR   0.14%
   2   PREMIUM   0.15%
   3   DIESEL   0.00%
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i63DTTYYMMDDHHmmNNTTooooooooo...
                     TToooooooo&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   NN - Number of tank entries to follow(Decimal)
   3.   TT - Tank Number (Decimal, 00=all)
   4.   ooooooooo - Vapor Loss Factor, Percent(ASCII Hex IEEE Float)
   5.   && - Data Termination Flag
   6.   CCCC - Message Checksum

Function Code: 63E   Version 3
Function Type: Set Tank Multi-Point Heights and Volumes

Command Format: **Inquire:**
Display: <SOH>S63ETTfnnIII.tttGGGGGGGGG..III.tttGGGGGGGGG <SOH>I63ATT
or: <SOH>S63ETTfnnII.ttt,GGGGGGGG,..II.ttt,GGGGGGGG
or: <SOH>S63ETT9149

Computer: <SOH>s63ETTFnnHHHHHHHHHVVVVVVVV...HHH   <SOH>i63ATT

Notes:
1.   Set command is only valid if Tank Chart Sescurity is
                disabled   (Future)
2.   f - Command Flag (hex)
                a. 0=Return Height/Volume Pairs   (inquire mode only)
                b. 1=Add Height/Volume Pair(s)   (set mode only)
                c. 2=Remove Height/Volume Pair(s) (set mode only)
                d. 3=Return Number of Pairs   (inquire mode only)
                e. 9=Clear Chart   (set mode only, 149
                required)
3.   nn - Number of Height/Volume Pairs to follow (Decimal)
                A maximum of 10 pairs can be sent per command to avoid
                overflowing the buffer
4.   III.ttt - Height Inches   (mm in metric)   (Decimal)
5.   GGGGGGGGG - Volume, Gallons (liters in metric) (Decimal)
6.   HHHHHHHH - Height, Inches (mm in metric)   (ASCII Hex IEEE float)
7.   VVVVVVVV - Volume, Gallons (liters in metric) (ASCII Hex IEEE float))
8.   SSSSS - optional starting point number. Defaults to 1. (Decimal)
9.   EEEEE - optional ending point number. Defaults to last point.
                (Decimal)
10.   ssss - optional starting point number. Defaults to 1. (Hex)
11.   eeee - optional ending point number. Defaults to last point. (Hex)
12.   Adding a pair with a duplicate Height will be rejected.
13.   If errors occur when Adding or removing multiple pairs, no
                action will be done on any of the points.
14.   In Inquire mode f=0, if the end is omitted, the last point
                will be the end
15.   In Inquire mode f=0, if the start is omitted, 0 is used, all
                points will be returned
16.   In Inquire mode, if f is omitted, 0 is used, all points will
                be returned

Typical Response Message, Display Format:

<SOH>
I63ETT
SEP 16, 2004 3:15 PM

TANK MULTI-POINT HEIGHTS AND VOLUMES

T 1: REGULAR UNLEADED

TANK CAPACITY   :   10000
CONSOLE SERIAL NUMBER: xxxxxxxxxxxxxxxxxxxxx
PROBE S/N   : yyyyyy
WEIGHTS AND MEASURES: zzzzzzzzzzzzzzzzzzzzz

DIAMETER   96.000
FULL VOLUME   10000.000
NUMBER OF PAIRS   3000

PAIR	HEIGHT	VOLUME	PAIR	HEIGHT	VOLUME	PAIR	HEIGHT	VOLUME
1	94.080	9800.000	1001	63.080	7800.000	2001	32.000	2800.000
2	92.160	9600.000	1002	61.160	7600.00	2002	30.320	2700.000

Function Code 63E: (Continued)

```
    3    90.240    9400.000  1003  59.320    7200.00   2003  29.820    2500.000
  :
  :
  999    65.080    8000.000  1999  33.000    3100.000  2999  1.92      200.000
 1000    64.420    7900.000  2000  32.500    3000.000  3000  1.00      100.000
 <ETX>
```

Typical Response Message, Computer Format:

Inquire mode, f=0, if s=1 (includes extra fields)

```
<SOH>i63ETTYYMMDDHHmmfTTsccccccccxxxxxxxxxxxxxxxxxxxxxxyyyyyyzzzzzzzzzzzzzzzzzzzz...
                    ddddddddffffffffnnnnHHHHHHHHVVVVVVVV...
                                 HHHHHHHHVVVVVVVV...
                 TTsccccccccxxxxxxxxxxxxxxxxxxxxxxyyyyyyzzzzzzzzzzzzzzzzzzzz...
                    ddddddddffffffffnnnnHHHHHHHHVVVVVVVV...
                                 HHHHHHHHVVVVVVVV&&CCCC<ETX>
```

Inquire mode, f=0, if s=0

```
<SOH>i63ETTYYMMDDHHmmfTTsddddddddffffffffnnnnHHHHHHHHVVVVVVVV...
                                   HHHHHHHHVVVVVVVV...
                 TTsddddddddffffffffnnnnHHHHHHHHVVVVVVVV...
                                   HHHHHHHHVVVVVVVV&&CCCC<ETX>
```

Inquire mode, f=3

```
<SOH>i63ETTYYMMDDHHmmfTTnnnn...
                 TTnnnn... &&CCCC<ETX>
```

Set mode, f=1 is the same as Inquire mode, but contains only the points added.

if s=1 (includes extra fields)

```
<SOH>i63ETTYYMMDDHHmmfTTsccccccccxxxxxxxxxxxxxxxxxxxxxxyyyyyyzzzzzzzzzzzzzzzzzzzz...
                    ddddddddffffffffnnnnHHHHHHHHVVVVVVVV...
                                 HHHHHHHHVVVVVVVV...
                 TTsccccccccxxxxxxxxxxxxxxxxxxxxxxyyyyyyzzzzzzzzzzzzzzzzzzzz...
                    ddddddddffffffffnnnnHHHHHHHHVVVVVVVV...
                                 HHHHHHHHVVVVVVVV&&CCCC<ETX>
```

if s=0

```
<SOH>i63ETTYYMMDDHHmmfTTsddddddddffffffffnnnnHHHHHHHHVVVVVVVV...
                                   HHHHHHHHVVVVVVVV...
                 TTsddddddddffffffffnnnnHHHHHHHHVVVVVVVV...
                                   HHHHHHHHVVVVVVVV&&CCCC<ETX>
```

Set mode, if f=2

```
<SOH>i63ETTYYMMDDHHmmfTTnnnn
```

Set mode, if f=9

```
<SOH>s63ETTYYMMDDHHmmfTTnnnn
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   f – Command Flag (hex)
            a. 0=Return Height/Volume Pairs   (inquire mode only)
            b. 1=Add Height/Volume Pair(s)   (set mode only)
            c. 2=Remove Height/Volume Pair(s) (set mode only)
            d. 3=Return Number of Pairs   (inquire mode only)
            e. 9=Clear Chart   (set mode only, 149
               required)
4.   s – Tank Chart Security Flag
                    0=Disabled
                    1=Enabled

Function Code 63E Notes: (Continued)

The following 4 fields marked with an asterisk are only present if Tank Chart Security is enabled.
```
     5.     cccccccc - * Tank Capacity, Gallons (ASCII Hex IEEE float)
     6.          x…x - * Console Serial Number (20 ASCII characters [20h-7Eh])
     7.       yyyyyy - * Probe Serial Number (Decimal)
     8.          z…z - * Weights and Measures Office (20 ASCII characters [20h-
                        7Eh])

     9.     dddddddd - Tank Diameter, Inches (ASCII Hex IEEE float)
    10.     ffffffff - Full Volume, Gallons  (ASCII Hex IEEE float)
    11.         nnnn - Number of Height/Volume Pairs (Hex)
    12.     HHHHHHHH - Height, Inches  (ASCII Hex IEEE float)
    13.     VVVVVVVV - Volume, Gallons (ASCII Hex IEEE float)
    14.           && - Data Termination Flag
    15.          CCC - Message Checksum
```

Function Code: 63H   Version 2
Function Type: Set Accuchart Delete Chart

Command Format: **Inquire:**
    Display: <SOH>S63HTT149II   <SOH>I63HTT
  Computer: <SOH>s63HTT149II   <SOH>i63HTT

Notes:
1.   TT – Tank Number [01..32], (Decimal, set for primary tank)
2.   II – Chart ID number [02…99]
3.   Chart ID=1 always exists. It cannot be deleted.
4.   Set operation requires AccuChart to be installed.

Typical Response Message, Display Format:

```
<SOH>
I63HTT
JAN 24, 2009  2:52 PM

TANK CHARTS

TANK   CHART ID      STATUS
----   --------   ------------
 01       01      ACTIVE CHART
          02      READY CHART
          06      BAD POINT CHART
          07      INCOMPLETE CHART
          08      CALCULATING CHART


 02       01      ACTIVE CHART
          06      READY CHART
          07      BAD POINT CHART
          08      INCOMPLETE CHART
          09      CALCULATING CHART
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i63HTTYYMMDDHHmmTTNNIIs...IIs
             TTNNIIs...IIs&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number [01..32], (Decimal, 00=all)
3.   NN – Number of charts [00…99] (Decimal)
4.   II – Chart ID Number [01…99] (Decimal)
5.   s – Status
                      0=Active Chart
                      1=Ready Chart
                      2=Incomplete Chart
                      3=Bad Point Chart
                      4=Calculating Chart
6.   && – Data Termination Flag
7.   CCCC – Message Checksum

Function Code: **641**   Version 3
Function Type: Set Density Code

Command Format: **Inquire:**
    Display: <SOH>S641PPSSSSSSSSSSSSSSS   <SOH>I641PP
   Computer: <SOH>s641PPSSSSSSSSSSSSSSS   <SOH>i641PP

Notes:
   1. SSSSSSSSSSSSSS - Density Code (Entry is 14 characters or empty))

Typical Response Message, Display Format:

```
<SOH>
I641PP
JAN 22, 2010  3:16 PM

DENSITY FLOAT CODE

PROBE    CODE
 1       B7053686719512
 2
 3       A7058696729713
 4       B7056772719214
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i641PPYYMMDDHHmmPPNNSSSSSSSSSSSSSSS…&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP - Probe Number (Decimal, 00=all)
    3.   NN - Number of characters to follow
    4. SSSSSSSSSSSSSS - Density Code
    5.   && - Data Termination Flag
    6.   CCCC - Message Checksum

Function Code: 642   Version 3
Function Type: Set Tank Water Alarm Filter Level

Command Format: **Inquire:**
    Display: <SOH>S642TTf   <SOH>I642TT
    Computer: <SOH>s642TTf   <SOH>i642TT

Notes:
    1.   TT – Tank Number (Decimal, 00=all)
    2.   f – Water alarm filter level

Typical Response Message, Display Format:

    <SOH>
    I64200
    JAN 22, 2010 3:12 PM

    WATER ALARM FILTER LEVEL

    TANK   PRODUCT LABEL
      1   REGULAR   LOW
      2   MID GRADE   MEDIUM
      3   PREMIUM   HIGH
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i642TTYYMMDDHHmmTTf...
                    TTf&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   f – Tank Water Alarm Filter Level
                    1 = Low
                    2 = Medium
                    3 = High
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 644   Version 3
Function Type: Set Probe Density Float Serial Number

Command Format: **Inquire:**
    Display: <SOH>S644PPSSSSSSSS   <SOH>I644PP
    Computer: <SOH>s644PPSSSSSSSS   <SOH>i644PP

Notes:
    1.   PP - Probe Number   (Decimal, 00=all, inquiry only)

Typical Response Message, Display Format:

    <SOH>
    I64400
    JAN 22, 2011 3:12 PM

    PROBE DENSITY FLOAT SERIAL NUMBER

    PROBE   PRODUCT LABEL   DENSITY FLOAT S/N
      1   REGULAR UNLEADED   11100123
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i644PPYYMMDDHHmmPPSSSSSSSS...
                    PPSSSSSSSS&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP - Probe Number   (Decimal, 00=all, inquiry only)
    3.   SSSSSSSS - Density Float Serial Number (Decimal)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 645   Version 3
Function Type: Set Tank GOST Volume Coreection Enable

Command Format: **Inquire:**
    Display: <SOH>S645TTf   <SOH>I645TT
    Computer: <SOH>s645TTf   <SOH>i645TT

Typical Response Message, Display Format:

    <SOH>
    I64500
    JUN 29, 2011 3:16 PM

    TANK GOST VOLUME CORRECTION ENABLE

    TANK   PROCDUCT LABEL   GOST VOLUME CORRECTION
     1   REGULAR UNLEADED   DISABLED
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i645TTYYMMDDHHmmTTf...
                    TTf&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   f - GOST Volume Correction Enable Flag
                 0 = Disabled
                 1 = Enabled
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 648   Version 33
Function Type: Set Probe Water Minimum

Command Format: **Inquire:**
     Display: <SOH>S648TTI.hhh   <SOH>I648TT
  Computer: <SOH>s648TTFFFFFFFF   <SOH>i648TT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   I.hhh - Water Minimum, Inches and thousandths (Decimal)
    3.   FFFFFFFF - Tank Number (Decimal, 00=all)

Typical Response Message, Display Format:

```
<SOH>
I64800
JAN 22, 2012  3:12 PM

WATER MINIMUM

TANK    PRODUCT LABEL        INCHES
 1      REGULAR                0.633
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i648TTYYMMDDHHmmTTFFFFFFFF...TTFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - Probe Offset, Inches (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: **64B**   Version 33
Function Type: Set Tank Water Alarm Filter Delay

Command Format: **Inquire:**
  Display: <SOH>S64BTTf   <SOH>I64BTT
  Computer: <SOH>s64BTTf   <SOH>i64BTT

Notes:
  1.   TT - Tank Number (Decimal, 00=all)
  2.   f - Water alarm delay level
  3. The set command is only operational for the water alarm filter level OFF.
      For filter levels Low, Medium and High the delay time is fixed at 180
      seconds.

Typical Response Message, Display Format:

    <SOH>
    I64B00
    JAN 22, 2010 3:12 PM

    WATER ALARM FILTER DELAY

    TANK   PRODUCT LABEL
      1   REGULAR   30 S
      2   MID GRADE   120 S
      3   PREMIUM   180 S
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i64BTTYYMMDDHHmmTTf...
                  TTf&&CCCC<ETX>

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   TT - Tank Number (Decimal)
  3.   f - Tank Water Alarm Filter Delay
                  1 = 30 seconds
                  2 = 60 seconds
                  3 = 90 seconds
                  4 = 120 seconds
                  5 = 150 seconds
                  6 = 180 seconds
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 671   Version 3
Function Type: Set Tank Density High Limit

Command Format: **Inquire:**
    Display: <SOH>S671TTdd.ddd   <SOH>I671TT
    Computer: <SOH>s671TTFFFFFFFF   <SOH>i671TT

Notes:
    1.   TT – Tank Number (Decimal, 00=all)
    2.   dd.ddd – Density High Limit (Decimal)
                        Value Range = [42.139, 56.185] [US]
                        Value Range = [675.00, 900.00] [Metric]
    3.   FFFFFFFF – Density High Limit (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I671TT
    JAN 22, 2010   3:16 PM

    TANK DENSITY HIGH LIMIT

    TANK   PRODUCT LABEL   LBS/FT^3
    1   REGULAR UNLEADED   56.185
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i671TTYYMMDDHHmmTTFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   FFFFFFFF – Density High Limit (ASCII Hex IEEE float)
                        Value Range = [41.139, 56.185]
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 672   Version 3
Function Type: Set Tank Density Low Limit

Command Format: **Inquire:**
    Display: <SOH>S672TTdd.ddd   <SOH>I672TT
    Computer: <SOH>s672TTFFFFFFFF   <SOH>i672TT

Notes:
    1.   TT – Tank Number (Decimal, 00=all)
    2.   dd.ddd – Density Low Limit (Decimal)
                  Value Range = [42.139, 56.185] [US]
                  Value Range = [675.00, 900.00] [Metric]
    3.   FFFFFFFF – Density Low Limit (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I672TT
JAN 22, 2010  3:16 PM

TANK DENSITY LOW LIMIT

TANK    PRODUCT LABEL           LBS/FT^3
 1      REGULAR UNLEADED            42.139
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i672TTYYMMDDHHmmTTFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   FFFFFFFF – Density Low Limit (ASCII Hex IEEE float)
                  Value Range = [41.139, 56.185]
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 6A4   Version 1
Function Type: Set Tank 1 Point Full Height Volume for Tall Tanks

Command Format: **Inquire:**
    Display: <SOH>S6A4TTGGGGGGGGGGGGG   <SOH>I6A4TT
   Computer: <SOH>s6A4TTFFFFFFFF   <SOH>i6A4TT

Notes:
    1.   TT – Tank Number (Decimal, 00=all)
    2.   GGGGGGGGGGGGG – Full Height Volume, Gallons (Decimal)
    3.   FFFFFFFF – Full Height Volume, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I6A4TT
JAN 22, 1996  3:16 PM

TANK FULL VOLUME

TANK    LABEL                  GALLONS
 1      REGULAR UNLEADED          9728
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i6A4TTYYMMDDHHmmTTFFFFFFFF...
              TTFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   FFFFFFFF – Full Height Volume, Gallons (ASCII Hex IEEE float)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

```
        Function Code: 6A5                                          Version 1
        Function Type: Set Tank 4 Point Full, 3/4, 1/2, 1/4 Volumes for Tall Tanks

        Command Format:                                              Inquire:
          Display: <SOH>S6A5TTGGGGGGGGGGGGGGgggggggggggggg...      <SOH>I6A5TT
               or: <SOH>S6A5TTGGGGG,gggg,GGGG,ggg
         Computer: <SOH>s6A5TTFFFFFFFFffffffffFFFFFFFFffffffff      <SOH>i6A5TT
```

Notes:
```
    1.              TT - Tank Number (Decimal, 00=all)
    2.    GGGGGGGGGGGG - Full Height Volume, Gallons (Decimal)
    3.    gggggggggggg -  3/4 Height Volume, Gallons (Decimal)
    4.    GGGGGGGGGGGG -  1/2 Height Volume, Gallons (Decimal)
    5.    gggggggggggg -  1/4 Height Volume, Gallons (Decimal)
    6.        FFFFFFFF - Full Height Volume, Gallons (ASCII Hex IEEE float)
    7.        ffffffff -  3/4 Height Volume, Gallons (ASCII Hex IEEE float)
    8.        FFFFFFFF -  1/2 Height Volume, Gallons (ASCII Hex IEEE float)
    9.        ffffffff -  1/4 Height Volume, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I6A5TT
    JAN 22, 1996  3:16 PM

    TANK 4 POINT VOLUMES

    TANK  LABEL                 GALLONS
      1   REGULAR UNLEADED          9728      7296      4864      2432
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i6A5TTYYMMDDHHmmTTFFFFFFFFffffffffFFFFFFFFffffffff...
                        TTFFFFFFFFffffffffFFFFFFFFffffffff&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - Full Height Volume, Gallons (ASCII Hex IEEE float)
    4.        ffffffff -  3/4 Height Volume, Gallons (ASCII Hex IEEE float)
    5.        FFFFFFFF -  1/2 Height Volume, Gallons (ASCII Hex IEEE float)
    6.        ffffffff -  1/4 Height Volume, Gallons (ASCII Hex IEEE float)
    7.              && - Data Termination Flag
    8.            CCCC - Message Checksum
```

```
       Function Code: 6A6                                      Version 1
       Function Type: Set Tank 20 Point Full, 95%, 90%,...Volumes for Tall Tanks

       Command Format:                                           Inquire:
           Display: <SOH>S6A6TTGGGGGGGGGGGGGggggggggggggg...    <SOH>I6A6TT
                or: <SOH>S6A6TTGGGG,gggg,GGGG,...
          Computer: <SOH>s6A6TTFFFFFFFF...                      <SOH>i6A6TT
```

Notes:
```
    1.                        TT - Tank Number (Decimal, 00=all)
    2.GGGGGGGGGGGGGgggggggggggg - Series of 20 Volumes, Gallons (Decimal)
    3.              FFFFFFFF - Series of 20 Volumes, Gallons (ASCII Hex IEEE
                              float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I6A6TT
    JAN 22, 1996  3:16 PM

    TANK 20 POINT VOLUMES

    TANK  LABEL                   GALLONS
      1   REGULAR UNLEADED           9720     9234     8748     8262
                                     7776     7290     6804     6318
                                     5832     5346     4860     4372
                                     3888     3402     2916     2430
                                     1944     1458      972      486
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i6A6TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - Series of 20 Volumes, Gallons (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 6A7   Version 1
Function Type: Set Tank Diameter for Tall Tanks

Command Format: **Inquire:**
  Display: <SOH>S6A7TTIIII.hh   <SOH>I6A7TT
  Computer: <SOH>s6A7TTFFFFFFFF   <SOH>i6A7TT

Notes:
1.   TT – Tank Number (Decimal, 00=all)
2.   IIII.hh – Tank Diameter, Inches and hundredths (Decimal)
3.   FFFFFFFF – Tank Diameter, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I6A7TT
JAN 22, 1996  3:16 PM

TANK DIAMETER

TANK    LABEL                   INCHES
  1     REGULAR UNLEADED          96.00
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i6A7TTYYMMDDHHmmTTFFFFFFFF...
            TTFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   FFFFFFFF – Tank Diameter, Inches (ASCII Hex IEEE float)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: 6AA   Version 1
Function Type: Set Tank Linear Calculated Full Volume for Tall Tanks

Command Format: **Inquire:**
  Display: <SOH>S6AATTGGGGGGGGGGGGG   <SOH>I6AATT
  Computer: <SOH>s6AATTFFFFFFFF   <SOH>i6AATT

Notes:
    1.   TT – Tank Number (Decimal, 00=all)
    2.   GGGGGGGGGGGGG – Full Height Volume, Gallons (Decimal)
    3.   FFFFFFFF – Full Height Volume, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I6AATT
    JAN 22, 1996 3:17 PM

    TANK FULL VOLUME

    TANK   LABEL   TANK PROFILE   GALLONS
     1   REGULAR UNLEADED   1 PT   10000

    <ETX>

Typical Response Message, Computer Format:

    <SOH>i6AATTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   FFFFFFFF – Full height volume (ASCII Hex IEEE float)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: **6AF**   Version 1
Function Type: Set Tank Probe Offset for Tall Tanks

Command Format: **Inquire:**
    Display: <SOH>S6AFTTIIII.hh   <SOH>I6AFTT
    Computer: <SOH>s6AFTTFFFFFFFF   <SOH>i6AFTT

Notes:
    1.   TT – Tank Number (Decimal, 00=all)
    2.   IIII.hh – Probe offset, Inches and hundredths (Decimal)
    3.   FFFFFFFF – Probe offset, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I6AFTT
JAN 22, 1996  3:16 PM

PROBE OFFSET

TANK   LABEL                    INCHES
  1    TANK 1                     2.80
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i6AFTTYYMMDDHHmmTTFFFFFFFF...
              TTFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number (Decimal, 00=all)
    3.   FFFFFFFF – Probe offset, Inches (ASCII Hex IEEE float)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

```
      Function Code: 6C1                                          Version 1
      Function Type: Set Tank Low Level Limit for Tall Tanks

    Command Format:                                                 Inquire:
      Display: <SOH>S6C1TTGGGGGGGGGGGG                       <SOH>I6C1TT
      Computer: <SOH>s6C1TTFFFFFFFF                          <SOH>i6C1TT
```

Notes:
```
    1.              TT - Tank Number (Decimal, 00=all)
    2.     GGGGGGGGGGGG - Low Level Limit, Gallons (Decimal)
    3.         FFFFFFFF - Low Level Limit, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I6C1TT
    JAN 22, 1996  3:18 PM

    TANK LOW PRODUCT LIMIT

    TANK    LABEL                    GALLONS
     1      REGULAR UNLEADED            1000
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i6C1TTYYMMDDHHmmTTFFFFFFFF...
                     TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               TT - Tank Number (Decimal, 00=all)
    3.         FFFFFFFF - Low Level Limit, Gallons (ASCII Hex IEEE float)
    4.               && - Data Termination Flag
    5.             CCCC - Message Checksum
```

Function Code: 6C2   Version 1
Function Type: Set Tank High Level Limit for Tall Tanks

Command Format: **Inquire:**
   Display: <SOH>S6C2TTGGGGGGGGGGGG   <SOH>I6C2TT
   Computer: <SOH>s6C2TTFFFFFFFF   <SOH>i6C2TT

Notes:
   1.   TT - Tank Number (Decimal, 00=all)
   2.   GGGGGGGGGGGG - High Level Limit, Gallons (Decimal)
   3.   FFFFFFFF - High Level Limit, Gallons (ASCII Hex IEEE float)

* Set Tank Maximum Volume Limit (628 or 6C8 cmd) must be set before the High Level
Limit.

Typical Response Message, Display Format:

   <SOH>
   I6C2TT
   JAN 22, 1996 3:18 PM

   TANK HIGH PRODUCT LIMIT

   TANK   LABEL   GALLONS   PERCENT
    1   REGULAR UNLEADED   770000   77
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i6C2TTYYMMDDHHmmTTFFFFFFFF...
                     TTFFFFFFFF&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   TT - Tank Number (Decimal, 00=all)
   3.   FFFFFFFF - High Level Limit, Gallons (ASCII Hex IEEE float)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

```
        Function Code: 6C3                                              Version 1
        Function Type: Set Tank Overfill Level Limit for Tall Tanks

        Command Format:                                                 Inquire:
          Display: <SOH>S6C3TTGGGGGGGGGGGGG                        <SOH>I6C3TT
          Computer: <SOH>s6C3TTFFFFFFFF                            <SOH>i6C3TT
```

Notes:
```
    1.            TT - Tank Number (Decimal, 00=all)
    2.    GGGGGGGGGGGGG - Overfill Level Limit, Gallons (Decimal)
    3.         FFFFFFFF - Overfill Level Limit, Gallons (ASCII Hex IEEE float)
```

* Set Tank Maximum Volume Limit (628 cmd) must be set before the Overfill Level Limit.

Typical Response Message, Display Format:

```
    <SOH>
    I6C3TT
    JAN 22, 1996  3:18 PM

    TANK OVERFILL LEVEL LIMIT

    TANK    LABEL                    GALLONS    PERCENT
     1      REGULAR UNLEADED            9300          0
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i6C3TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.    YYMMDDHHmm - Current Date and Time
    2.            TT - Tank Number (Decimal, 00=all)
    3.      FFFFFFFF - Overfill Level Limit, Gallons (ASCII Hex IEEE float)
    4.            && - Data Termination Flag
    5.          CCCC - Message Checksum
```

Function Code: 6C5   Version 1
Function Type: Set Tank Sudden Loss Limit for Tall Tanks

Command Format: **Inquire:**
  Display: <SOH>S6C5TTGGGGGGGGGGGGG   <SOH>I6C5TT
  Computer: <SOH>s6C5TTFFFFFFFF   <SOH>i6C5TT

Notes:
1.   TT - Tank Number (Decimal, 00=all)
2.   GGGGGGGGGGGGG - Sudden Loss Limit, Gallons (Decimal)
3.   FFFFFFFF - Sudden Loss Limit, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I6C5TT
    JAN 22, 1996 3:18 PM

    TANK SUDDEN LOSS LIMIT

    TANK   LABEL   GALLONS
     1   REGULAR UNLEADED   5556
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i6C5TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   FFFFFFFF - Sudden Loss Limit, Gallons (ASCII Hex IEEE float)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
        Function Code: 6C8                                              Version 1
        Function Type: Set Tank Maximum Volume Limit for Tall Tanks

        Command Format:                                                  Inquire:
           Display: <SOH>S6C8TTGGGGGGGGGGGG                          <SOH>I6C8TT
          Computer: <SOH>s6C8TTFFFFFFFF                              <SOH>i6C8TT
```

Notes:
```
    1.            TT - Tank Number (Decimal, 00=all)
    2.   GGGGGGGGGGGG - Maximum Volume Limit, Gallons (Decimal)
    3.       FFFFFFFF - Maximum Volume Limit, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I6C8TT
    JAN 22, 1996  3:19 PM

    TANK MAXIMUM VOLUME LIMIT

    TANK   LABEL                      GALLONS
     1     REGULAR UNLEADED              9600
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i6C8TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - Maximum Volume Limit, Gallons (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 6C9   Version 1
Function Type: Set Tank Delivery Required Limit for Tall Tanks

Command Format: **Inquire:**
Display: <SOH>S6C9TTGGGGGGGGGGGGG   <SOH>I6C9TT
Computer: <SOH>s6C9TTFFFFFFFF   <SOH>i6C9TT

Notes:
    1.   TT - Tank Number (Decimal, 00=all)
    2.   GGGGGGGGGGGGG - Delivery Required Limit, Gallons (Decimal)
    3.   FFFFFFFF - Delivery Required Limit, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I6C9TT
    JAN 22, 1996 3:19 PM

    TANK DELIVERY REQUIRED LIMIT

    TANK   LABEL   GALLONS   PERCENT
     1   TANK 1   2000000   20
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i6C9TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=all)
    3.   FFFFFFFF - Delivery Required Limit, Gallons (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
          Function Code: 6SU                              Version 2
          Function Type: Printout Tank Setup Tabs

       Command Format:
          Display: <SOH>I6SUttTT
          Computer: not supported
```

Notes:
```
   1.              tt - Tank Number (Decimal, [01..32] 00=all tanks)
   2.              TT - tab number
                        00=All tabs
                        01=General
                        02=Limits
                        03=Environmental Tests
                        04=All Tanks
                        05=Product
                        06=Chart
                        07=Manual Calibration
                        08=Tank Charts
                        09=Siphon Sets
                        10=Accuchart
```

Typical Response Message, Display Format:

```
   <SOH>
   I6SU01
   JAN 22, 2009  3:19 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   ============= SETUP FOR ALL TANKS ==============

   USER ULLAGE:                    ENABLED - 95%
   PRINT TC VOLUMES:               ENABLED
   TC REFERENCE TEMPERATURE:       60.0 DEG F

   PERIODIC TEST NEEDED WARNINGS: ENABLED
   DAYS BEFORE PERIODIC WARNING:  30
   DAYS BEFORE PERIODIC ALARM:    60

   ANNUAL TEST NEEDED WARNINGS:    ENABLED
   DAYS BEFORE ANNUAL WARNING:     30
   DAYS BEFORE ANNUAL ALARM:       60
   - - - - - - - - - - - - - - - - - - - - - - - - - -
   CSLD REID VAPOR PRESSURES

   JAN:  1.0       MAY:  5.0           SEP:  9.0
   FEB:  2.0       JUN:  6.0           OCT: 10.0
   MAR:  3.0       JUL:  7.0           NOV: 11.0
   APR:  4.0       AUG:  8.0           DEC: 12.0
   - - - - - - - - - - - - - - - - - - - - - - - - - -
   F# PRODUCT LABEL        T# TANK LABEL
   -- -------------------- -- --------------------
   01 SUPER                01 SUPER
   02 DIESEL               02 DIESEL
   03 REGULAR              03 NORTH REGULAR 1
                           04 NORTH REGULAR 2
                           05 REGULAR


   =============== SETUP FOR TANK  3 ==============
   CONFIGURED:                     YES
   LABEL:                          NORTH REGULAR 1
   PRODUCT CODE:                   3
   PROBE NUMBER:                   3
   PROBE OFFSET:                   0.0
   FULL VOLUME:                    10000 GALLONS
```

Function Code 6SU: (Continued)

```
DIAMETER:                  96.0 INCHES
TILT:                      0.0 INCHES
THERMAL COEFFICIENT:       0.0007
METER DATA PRESENT:        NO
PUMP THRESHOLD:            200 GALLONS
STICK OFFSET FUEL:         0.0 INCHES
STICK OFFSET WATER:        0.0 INCHES
DELIVERY DELAY:            5.0 MINUTES
GROSS TEST FAIL:           ALARMS ENABLED
PERIODIC TEST FAIL:        ALARMS ENABLED
ANNUAL TEST FAIL:          ALARMS ENABLED
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
MAX VOLUME:                9900 GALLONS
HIGH PRODUCT:              98%
DELIVERY OVERFILL:         95%
DELIVERY LIMIT:            90%
LOW PRODUCT:               500 GALLONS
HIGH WATER WARNING:        2.0 INCHES
HIGH WATER ALARM:          3.0 INCHES
LEAK ALARM LIMIT:          99 GALLONS
SUDDEN LOSS LIMIT:         75 GALLONS
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
TANK TEST METHOD:          CSLD
GROSS TEST AUTO CONFIRM:   ENABLED
PROBABILITY OF DETECTION:  99%
CLIMATE FACTOR:            MODERATE
EVAPORATION COMPENSATION:  DISABLED
STAGE II VAPOR RECOVERY:   DISABLED
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
TANK TEST METHOD:          SLD
LEAK TEST RATE:            0.2 GPH
PERIODIC TEST TYPE:        STANDARD
TEST FREQUENCY:            mm/dd/yyyy hh:mm
GROSS TEST AUTO CONFIRM:   N/A
TANK TEST SIPHON BREAK:    OFF
DURATION:                  2 HOURS
MINIMUM PERIODIC VOLUME:   50%
MINIMUM ANNUAL VOLUME:     40%
EARLY STOP:                DISABLED
TANK TEST NOTIFY:          ON
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
TANK PROFILE:              TWENTY POINT
 #  HEIGHT_ VOLUME          #  HEIGHT  VOLUME
-- ------- --------        -- ------- --------
20   96.0   10000          10   48.0    5000
19   92.2    9600           9   44.4    4650
 :     :       :            :
 :     :       :            :
12    9.6     900           2    9.6     900
11    4.8     400           1    4.8     450
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
T3 SIPHON MANIFOLDED TO TANKS: 4,5
T3 LINE MANIFOLDED TO TANKS: NONE
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
CHART ID:                  1
LABEL:                     SUMMER 2008
TYPE:                      ONE_POINT
SOURCE:                    USER ENTERED
LAST CHANGE:               yyyy-mm-dd
STATUS:                    ACTIVE
CAPACITY:                  10000 GALLONS
ENDSHAPE:                  0.000
OFFSET:                    -1.50 INCHES
TILT:                      1.00 INCHES
DIAMETER:                  96.1 INCHES
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
CHART ID:                  2
LABEL:                     WINTER 2008
```

Function Code 6SU: (Continued)

```
TYPE:                   MULTI POINT

SOURCE:                 METERED DROP CHART
LAST CHANGE:            yyyy-mm-dd
STATUS:                 INCOMPLETE CHART
VOLUME ENTRY:           ABSOLUTE VOLUME

 #  HEIGHT   VOLUME      #  HEIGHT   VOLUME
--- ------- ---------  --- ------- ---------
001 hhhh.hh vvvvvv.vv  003 hhhh.hh vvvvvv.vv
002 hhhh.hh vvvvvv.vv  004 hhhh.hh vvvvvv.vv
- - - - - - - - - - - - - - - - - - - - - - -
ACCUCHART

UPDATE SCHEDULE:        PERIODIC
APPLY DATE 1:           yyyy/mm/dd
APPLY DATE 2:           yyyy/mm/dd
APPLY DATE 3:           yyyy/mm/dd
APPLY DATE 4:           yyyy/mm/dd
CALIBRATION PERIOD:     120 DAYS
WARNINGS:               ENABLED
<ETX>
```

7.3.7 SENSOR SETUP

Function Code: **701**   Version 1
Function Type: Set Liquid Sensor Configuration

Command Format: **Inquire:**
  Display: <SOH>S701SSf   <SOH>I701SS
  Computer: <SOH>s701SSf   <SOH>i701SS

Typical Response Message, Display Format:

```
<SOH>
I701SS
JAN 28, 1995 10:39 AM

LIQUID CONFIGURATION

DEVICE  LABEL                 CONFIGURED
   1  LIQUID SENSOR #1        ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i701SSYYMMDDHHmmSSf...
              SSf&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   SS - Liquid Sensor Number (Decimal, 00=all)
  3.   f - Configuration Flag
                        0=Off
                        1=On
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 702   Version 1
Function Type: Set Liquid Sensor Location Label

Command Format: **Inquire:**
    Display: <SOH>S702SSaaaaaaaaaaaaaaaaaaaa   <SOH>I702SS
   Computer: <SOH>s702SSaaaaaaaaaaaaaaaaaaaa   <SOH>i702SS

Typical Response Message, Display Format:

```
<SOH>
I702SS
JAN 28, 1995 10:39 AM

LIQUID LABEL

DEVICE   LABEL
     1   LIQUID SENSOR #1
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i702SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaa...
                    SSaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   SS - Liquid Sensor Number (Decimal, 00=all)
    3.   a - Location Label (20 ASCII characters [20h-7Eh])
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 703   Version 1
Function Type: Set Liquid Sensor Type

Command Format: **Inquire:**
    Display: <SOH>S703SSt   <SOH>I703SS
   Computer: <SOH>s703SSt   <SOH>i703SS

Typical Response Message, Display Format:

```
<SOH>
I703SS
JAN 28, 1995 10:40 AM

LIQUID TYPE

SENSOR  LOCATION             TYPE
    1  LIQUID SENSOR #1      TRI-STATE (SINGLE FLOAT)
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i703SSYYMMDDHHmmSSt...
                SSt&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   SS - Liquid Sensor Number (Decimal, 00=all)
    3.   t - Liquid Sensor Type:
                    1=Tri-State
                    2=Normally Closed
                    3=Dual Float Hydrostatic
                    4=Dual Float Discriminating
                    5=Dual Float High Vapor
                    6=Interceptor Sensor
                    7=DW Sump 2-1 Sensor
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 704                                    Version 1
        Function Type: Set Liquid Sensor Category

      Command Format:                                         Inquire:
          Display: <SOH>S704SSc                           <SOH>I704SS
         Computer: <SOH>s704SSc                           <SOH>i704SS
```

Typical Response Message, Display Format:

```
<SOH>
I704SS
JAN 28, 1995 10:40 AM

LIQUID CATEGORY

SENSOR  LOCATION              TYPE
    1   LIQUID SENSOR #1      OTHER
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i704SSYYMMDDHHmmSSc...
              SSc&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.               SS - Liquid Sensor Number (Decimal, 00=all)
    3.                c - Liquid Sensor Category:
                            1=Other
                            2=Annular
                            3=Dispenser Pan
                            4=Monitoring Well
                            5=STP Sump
                            6=Containment Sump
    4.               && - Data Termination Flag
    5.             CCCC - Message Checksum
```

Function Code: 706   Version 1
Function Type: Set Vapor Sensor Configuration

Command Format: **Inquire:**
    Display: <SOH>S706SSf   <SOH>I706SS
   Computer: <SOH>s706SSf   <SOH>i706SS

Typical Response Message, Display Format:

```
<SOH>
I706SS
JAN 28, 1995 10:40 AM

VAPOR CONFIGURATION

DEVICE  LABEL                 CONFIGURED
   1  VAPOR SENSOR #1         ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i706SSYYMMDDHHmmSSf...
            SSf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   SS – Vapor Sensor Number (Decimal, 00=all)
3.   f – Configuration Flag
                    0=Off
                    1=On
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: 707   Version 1
Function Type: Set Vapor Sensor Location Label

Command Format: **Inquire:**
   Display: <SOH>S707SSaaaaaaaaaaaaaaaaaaaa   <SOH>I707SS
   Computer: <SOH>s707SSaaaaaaaaaaaaaaaaaaaa   <SOH>i707SS

Typical Response Message, Display Format:

```
<SOH>
I707SS
JAN 28, 1995 10:40 AM

VAPOR LABEL

DEVICE   LABEL
     1   VAPOR SENSOR #1
<ETX>
```

Typical Response Message, Computer Format:

```
SOH>i707SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaa...
                SSaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   SS - Vapor Sensor Number (Decimal, 00=all)
   3.   a - Location Label (20 ASCII characters [20h-7Eh])
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

      Function Code: 708   Version 1
      Function Type: Set Vapor Sensor Alarm Threshold

     Command Format: **Inquire:**
         Display: <SOH>S708SSVVVVVV   <SOH>I708SS
       Computer: <SOH>s708SSFFFFFFFF   <SOH>i708SS

Notes:
    1.   SS – Vapor Sensor Number (Decimal, 00=all)
    2.   VVVVVV – Vapor alarm threshold (Decimal)
    3.   FFFFFFFF – Vapor alarm threshold (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I708SS
JAN 28, 1995 10:41 AM

VAPOR ALARM THRESHOLD

SENSOR   LOCATION              THRESHOLD
     1   VAPOR SENSOR #1       100000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i708SSYYMMDDHHmmSSFFFFFFFF...
                SSFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   SS – Vapor Sensor Number (Decimal, 00=all)
    3.   FFFFFFFF – Vapor alarm threshold (ASCII Hex IEEE float)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: **709**   Version 1
Function Type: Set Vapor Sensor Category

Command Format: **Inquire:**
    Display: <SOH>S709SSt   <SOH>I709SS
   Computer: <SOH>s709SSt   <SOH>i709SS

Typical Response Message, Display Format:

```
<SOH>
I709SS
JAN 28, 1995 10:40 AM

VAPOR CATEGORY

SENSOR   LOCATION                 CATEGORY
   1  VAPOR SENSOR #1             OTHER
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i709SSYYMMDDHHmmSSc...
              SSc&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Vapor Sensor Number (Decimal, 00=all)
3.   c - Vapor Sensor Category:
                1=Other
                2=Annular
                3=Dispenser Pan
                4=Monitoring Well
                5=STP Sump
                6=Containment Sump
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 711   Version 1
Function Type: Set Groundwater Sensor Configuration

Command Format: **Inquire:**
    Display: <SOH>S711SSf   <SOH>I711SS
   Computer: <SOH>s711SSf   <SOH>i711SS

Typical Response Message, Display Format:

```
<SOH>
I711SS
JAN 28, 1995 10:41 AM

GROUNDWATER CONFIGURATION

DEVICE  LABEL                CONFIGURED
    1   GROUNDWATER #1       ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i711SSYYMMDDHHmmSSf...
              SSf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Groundwater Sensor Number (Decimal, 00=all)
3.   f - Configuration Flag
                       0=Off
                       1=On
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 712   Version 1
Function Type: Set Groundwater Sensor Location Label

Command Format: **Inquire:**
    Display: <SOH>S712SSaaaaaaaaaaaaaaaaaaaa   <SOH>I712SS
   Computer: <SOH>s712SSaaaaaaaaaaaaaaaaaaaa   <SOH>i712SS

Typical Response Message, Display Format:

```
<SOH>
I712SS
JAN 28, 1995 10:41 AM

GROUNDWATER LABEL

DEVICE  LABEL
    1   GROUNDWATER #1
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i712SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaa...
                SSaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Groundwater Sensor Number (Decimal, 00=all)
3.   a - Location Label (20 ASCII characters [20h-7Eh])
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
     Function Code: 713                                        Version 1
     Function Type: Set Groundwater Sensor Category
```

```
   Command Format:                                              Inquire:
       Display: <SOH>S713SSt                              <SOH>I713SS
      Computer: <SOH>s713SSt                              <SOH>i713SS
```

Typical Response Message, Display Format:

```
<SOH>
I713SS
JAN 28, 1995 10:41 AM

GROUNDWATER CATEGORY

SENSOR   LOCATION                  CATEGORY
     1   GROUNDWATER #1            OTHER
<ETX>
```

Typical Response Message, Computer Format:

```
SOH>i713SSYYMMDDHHmmSSc...
                SSc&&CCCC<ETX>
```

Notes:
```
   1.      YYMMDDHHmm - Current Date and Time
   2.             SS - Groundwater Sensor Number (Decimal, 00=all)
   3.              c - Groundwater Sensor Category:
                      1=Other
                      2=Annular
                      3=Dispenser Pan
                      4=Monitoring Well
                      5=STP Sump
                      6=Containment Sump
   4.             && - Data Termination Flag
   5.           CCCC - Message Checksum
```

Function Code: 727   Version 1
Function Type: Set MAG Sensor Alarm Upgrade Delay

Command Format: **Inquire:**
   Display: <SOH>S727SSHHHH   <SOH>I727SS
  Computer: <SOH>s727SSHHHH   <SOH>i727SS

Notes:
   1. Only responds to Smart Sensors that are of type MAG Sensor.
   2.   SS - Smart Sensor Number (Decimal, 00=all)
   3.   HHHH - MAG Sensor Alarm Upgrade Delay, Hours (ASCII Decimal)

Typical Response Message, Display Format:

```
<SOH>
I727SS
JAN 22, 2003  3:18 PM

MAG SENSOR ALM UPGRADE DELAY

SENSOR LABEL              DELAY
 1    STP SUMP 1            120
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i727SSYYMMDDHHmmSSFFFF...
                SSFFFF&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   SS - Smart Sensor Number (Decimal, 00=all)
   3.   FFFF - Alarm Upgrade Delay (Hex)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

Function Code: 728   Version 1
Function Type: Set MAG Sensor Alarm Threshold

Command Format: **Inquire:**
   Display: <SOH>S728SSAAxxx.xx   <SOH>I728SS
  Computer: <SOH>s728SSAAFFFFFFFF   <SOH>i728SS

Notes:
1. Only responds when the Smart Sensor is a MAG Sensor type.
2.   SS - Smart Sensor Number (ASCII Decimal, 00=all)
3.   AA - Alarm Definition Record ID, (ASCII Decimal)
4.   xxx.xx - Alarm Threshold, Inches or Deg. F (ASCII Decimal)
5.   FFFFFFFF - Alarm Threshold, Inches or Deg. F (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I728SSAA
JAN 22, 2003  3:18 PM

MAG SENSOR ALARM THRESHOLD

s 1:SS-01
ID VALUE          THRESHOLD  ALARM                PROGRAMMABLE  UPGRADE
1 FUEL HT      >    2.0      FUEL ALARM               YES        NO
2 WATER HT     >    5.0      WATER WARNING            YES        YES
3 WATER HT     >   10.0      WATER ALARM              YES        NO
4 INSTALL POS  >    5.0      INSTALL ALARM            NO         NO
5 FLUID TEMP   <  -40.0      TEMPERATURE WARNING      YES        NO
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i728SSYYMMDDHHmmSSrrPPAAFFppUUnnFFFFFFFFPPAAFFppUUnnFFFFFFFF...
              SSrrPPAAFFppUUnnFFFFFFFFPPAAFFppUUnnFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Smart Sensor Number (ASCII Decimal)
3.   rr - Number of alarm definition records to follow (ASCII Decimal)
4.   PP - Value for comparison (Hex)
   - 01=Total Height
   - 02=Fuel Height
   - 03=Water Height
   - 04=Install Position
   - 05=Fluid Temperature
   - 06=Board Temperature
5.   AA - Alarm to monitor (Hex)
   - 01=Setup Data Warning
   - 02=Communication Alarm
   - 03=Sensor Fault Alarm
   - 04=Fuel Warning
   - 05=Fuel Alarm
   - 06=Water Warning
   - 07=Water Alarm
   - 08=High Liquid Warning
   - 09=High Liquid Alarm
   - 0A=Low Liquid Warning
   - 0B=Low Liquid Alarm
   - 0C=Temperature Warning
   - 0D=Relay Active
   - 0E=Install Alarm
6.   FF - Compare Direction, 00="<", 01=">"
7.   pp - Programmable Threshold, 00="No", 01="Yes"
8.   UU - Alarm Upgrade, 00="No", 01="Yes"
9.   nn - Number of 8-character ASCII Hex Characters to follow
10. FFFFFFFF - Alarm Threshold, Inches or Deg F (ASCII Hex IEEE float)
11.   && - Data Termination Flag
12.   CCCC - Message Checksum

```
      Function Code: 72E                                          Version 1
      Function Type: Set MAG Sensor Label

      Command Format:                                              Inquire:
          Display: <SOH>S72ESSaaaaaaaaaaaaaaaaaaaa           <SOH>I72ESS
         Computer: <SOH>s72ESSaaaaaaaaaaaaaaaaaaaa           <SOH>i72ESS
```

Notes:
    1. MAG Sensor card must be installed
    2. If SS=00, only configured sensors are used
    3.   SS - MAG Sensor number, 00=all sensors
    4.   a - 20 ASCII characters [20h-7Eh]

Typical Response Message, Display Format:

```
    <SOH>
    I72E00
    JUN  1, 2002  8:07 AM

    MAG SENSOR LABEL

    DEVICE    LABEL
    01        MAG-1
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i72ESSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaa...
                    SSaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   SS - MAG Sensor number
    3.   a - 20 ASCII characters [20h-7Eh]
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 72F   Version 1
Function Type: Set MAG Sensor Configuration

Command Format: **Inquire:**
    Display: <SOH>S72FSSc   <SOH>I72FSS
    Computer: <SOH>s72FSSc   <SOH>i72FSS

Notes:
  1. MAG Sensor card must be installed
  2.   SS - MAG Sensor number, 00=all sensors
  3.   c - configured
                0=off
                1=on

Typical Response Message, Display Format:

```
<SOH>
I72FSS
JUN  1, 2002  8:07 AM

MAG SENSOR CONFIGURATION

DEVICE   LABEL                CONFIGURED
01       MAG-1                ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i72FSSYYMMDDHHmmSSc...SSc&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   SS - MAG Sensor number
  3.   c - Configured
                0=off
                1=on
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 741   Version 1
Function Type: Set Type A (2 Wire CL) Sensor Configuration

Command Format: **Inquire:**
    Display: <SOH>S741SSf   <SOH>I741SS
    Computer: <SOH>s741SSf   <SOH>i741SS

Typical Response Message, Display Format:

```
<SOH>
I741SS
JAN 28, 1995 10:41 AM

2 WIRE CL CONFIGURATION

DEVICE  LABEL                 CONFIGURED
    1  2 WIRE CL SENSOR #1    ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i741SSYYMMDDHHmmSSf...
              SSf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Type A Sensor Number (Decimal, 00=all)
3.   f - Configuration Flag
                      0=Off
                      1=On
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 742   Version 1
Function Type: Set Type A (2 Wire CL) Sensor Location Label

Command Format: **Inquire:**
    Display: <SOH>S742SSaaaaaaaaaaaaaaaaaaaa   <SOH>I742SS
   Computer: <SOH>s742SSaaaaaaaaaaaaaaaaaaaa   <SOH>i742SS

Typical Response Message, Display Format:

```
<SOH>
I742SS
JAN 28, 1995 10:41 AM

2 WIRE CL LABEL

DEVICE  LABEL
    1  2 WIRE CL SENSOR #1
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i742SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaa...
                 SSaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Type A Sensor Number (Decimal, 00=all)
3.   a - Location Label (20 ASCII characters [20h-7Eh])
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 743   Version 1
Function Type: Set Type A (2 Wire CL) Sensor Type

Command Format: **Inquire:**
    Display: <SOH>S743SSt   <SOH>I743SS
    Computer: <SOH>s743SSt   <SOH>i743SS

Typical Response Message, Display Format:

```
<SOH>
I743SS
JAN 28, 1995 10:41 AM

2 WIRE CL TYPE

SENSOR  LOCATION            TYPE
   1  2 WIRE CL SENSOR #1    ULTRA 2
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i743SSYYMMDDHHmmSSt...
            SSt&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   SS – Type A Sensor Number (Decimal, 00=all)
3.   t – Type A Sensor Type:
                   1=ULTRA 2
                   2=DISCRIM. INTERSTITIAL
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
        Function Code: 744                                        Version 1
        Function Type: Set Type A (2 Wire CL) Sensor Category

        Command Format:                                            Inquire:
            Display: <SOH>S744SSa                              <SOH>I744SS
           Computer: <SOH>s744SSa                              <SOH>i744SS
```

Typical Response Message, Display Format:

```
<SOH>
I743SS
JAN 28, 1995 10:41 AM

2 WIRE CL CATEGORY

SENSOR  LOCATION              CATEGORY
     1  2 WIRE CL SENSOR #1    ANNULAR
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i744SSYYMMDDHHmmSSc...
              SSc&&CCCC<ETX>
```

Notes:
```
   1.      YYMMDDHHmm - Current Date and Time
   2.             SS - Type A Sensor Number (Decimal, 00=all)
   3.              c - Type A Sensor Category:
                      1=Other
                      2=Annular
                      3=Dispenser Pan
                      4=Monitoring Well
                      5=STP Sump
                      6=Containment Sump
   4.             && - Data Termination Flag
   5.           CCCC - Message Checksum
```

Function Code: 746   Version 1
Function Type: Set Type B (3 Wire CL) Sensor Configuration

Command Format: **Inquire:**
     Display: <SOH>S746SSf   <SOH>I746SS
     Computer: <SOH>s746SSf   <SOH>i746SS

Typical Response Message, Display Format:

```
<SOH>
I746SS
JAN 28, 1995 10:41 AM

3 WIRE CL CONFIGURATION

DEVICE  LABEL                 CONFIGURED
    1  3 WIRE CL SENSOR #1    ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i746SSYYMMDDHHmmSSf...
              SSf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Type B Sensor Number (Decimal, 00=all)
3.   f - Configuration Flag
                      0=Off
                      1=On
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: **747**   Version 1
Function Type: Set Type B (3 Wire CL) Sensor Location Label

Command Format: **Inquire:**
    Display: <SOH>S747SSaaaaaaaaaaaaaaaaaaaa   <SOH>I742SS
    Computer: <SOH>s747SSaaaaaaaaaaaaaaaaaaaa   <SOH>i742SS

Typical Response Message, Display Format:

    <SOH>
    I747SS
    JAN 28, 1995 10:41 AM

    3 WIRE CL LABEL

    DEVICE   LABEL
         1   3 WIRE CL SENSOR #1
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i747SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaa...
                        SSaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   SS - Type B Sensor Number (Decimal, 00=all)
    3.   a - Location Label (20 ASCII characters [20h-7Eh])
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 748   Version 1
Function Type: Set Type B (3 Wire CL) Sensor Type

Command Format: **Inquire:**
    Display: <SOH>S748SSt   <SOH>I748SS
   Computer: <SOH>s748SSt   <SOH>i748SS

Typical Response Message, Display Format:

```
<SOH>
I748SS
JAN 28, 1995 10:41 AM

3 WIRE CL TYPE

SENSOR   LOCATION              TYPE
    1  3 WIRE CL SENSOR #1     ULTRA/Z-1
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i748SSYYMMDDHHmmSSt...
             SSt&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   SS - Sensor Number (Decimal)
    3.   t - Sensor Type
                    1=ULTRA/Z-1
                    2=ULTRA/Z-1 HV
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 749   Version 1
Function Type: Set Type B (3 Wire CL) Sensor Category

Command Format: **Inquire:**
    Display: <SOH>S749SSa   <SOH>I749SS
   Computer: <SOH>s749SSa   <SOH>i749SS

Typical Response Message, Display Format:

```
<SOH>
I749SS
JAN 28, 1995 10:41 AM

3 WIRE CL CATEGORY

SENSOR  LOCATION               CATEGORY
     1  3 WIRE CL SENSOR #1    ANNULAR
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i749SSYYMMDDHHmmSSc...
              SSc&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   SS - Type B Sensor Number (Decimal, 00=all)
    3.   t - Type B Sensor Category:
                    1=Other
                    2=Annular
                    3=Dispenser Pan
                    4=Monitoring Well
                    5=STP Sump
                    6=Containment Sump
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

7.3.8 PUMP SENSOR SETUP

```
        Function Code: P01                                    Version 1
        Function Type: Set Pump configured

      Command Format:                                          Inquire:
          Display: <SOH>SP01QQf                          <SOH>IP01QQ
         Computer: <SOH>sP01QQf                          <SOH>iP01QQ
```

Typical Response Message, Display Format:

```
   <SOH>
   IP01QQ
   JAN 24, 1996  2:54 PM

   PUMP CONFIGURATION

   DEVICE  LABEL                   CONFIGURED
       1   REGULAR UNLEADED        ON
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>iP01QQYYMMDDHHmmQQf...
                   QQf&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.             QQ - Pressure Pump number (Decimal)
    3.              f - Configuration flag
                           0=Off
                           1=On
    4.             && - Data Termination Flag
    5.           CCCC - Message Checksum
```

Function Code: P02   Version 1
Function Type: Set Pump Label

Command Format: **Inquire:**
    Display: \<SOH>SP02QQaaaaaaaaaaaaaaaaaaaa   \<SOH>IP02QQ
  Computer: \<SOH>sP02QQaaaaaaaaaaaaaaaaaaaa   \<SOH>iP02QQ

Typical Response Message, Display Format:

```
<SOH>
IP02QQ
JAN 24, 1996  2:54 PM

PUMP LABEL

DEVICE                  LABEL
  1  REGULAR UNLEADED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iP02QQYYMMDDHHmmQQaaaaaaaaaaaaaaaaaaaa...
                QQaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   QQ – Pump number (Decimal)
    3.   a – Indicates any printable ASCII character (max 20)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

     Function Code: P03   Version 1
     Function Type: Set Pump Mode

    Command Format: **Inquire:**
        Display: <SOH>SP03QQf   <SOH>IP03QQ
      Computer: <SOH>sP03QQf   <SOH>iP03QQ

Typical Response Message, Display Format:

```
<SOH>
IP03QQ
JAN 24, 1996  2:54 PM

PUMP MODE

PUMP                        MODE
Pm 1:REGULAR UNLEADED       TLS Pump Control
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iP03QQYYMMDDHHmmQQf...
            QQf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pump number (Decimal, 00=All)
3.   f - Mode
                  1= TLS Pump Control (for PLLD and line manifold)
                  2= Pump Sense   (pump sense only (as for CSLD 3 gph)
                  3= External Pump Control
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: P04   Version 1
 Function Type: Set Pump Tank Number

Command Format: **Inquire:**
     Display: <SOH>SP04QQtt   <SOH>IP04QQ
     Computer: <SOH>sP04QQtt   <SOH>iP04QQ

Typical Response Message, Display Format:

    <SOH>
    IP04QQ
    JAN 24, 1996 2:54 PM

    PUMP TANK NUMBER

    PUMP   TANK NUMBER
    Q 1:   3
    <ETX>

Typical Response Message, Computer Format:

    <SOH>iP04QQYYMMDDHHmmQQtt...
                  QQtt&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pump number (Decimal, 00=All)
    3.   tt - Tank number (Decimal) (00=no tank)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: P05                                      Version 1
        Function Type: Set Pump Control Devices

        Command Format:                                          Inquire:
           Display: <SOH>SP05QQttff                        <SOH>IP05QQ
          Computer: <SOH>sP05QQttff                        <SOH>iP05QQ
```

Notes:
   1.   Unassigned - To de-assign the Pump Control Device the user must set both
                        tt = 00 and ff = 00 for the operation to be valid.

Typical Response Message, Display Format:

```
   <SOH>
   IP05QQ
   JAN 24, 1996  2:54 PM

   PUMP CONTROL DEVICES

   PUMP  DEVICE TYPE        DEVICE ID
   Pm 1: RELAY_             1
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>iP04QQYYMMDDHHmmQQttff...
                   QQttff&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   QQ - Pump number (Decimal, 00=All)
   3.   tt - Device Type (Decimal)
                        00 - NULL_DEV_TYPE
                        11 - RELAY
                   ff - Device ID (Decimal)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

```

**Function Code: P06**                                                    Version 1
 **Function Type:** Set Pump – Pump Sense Device

**Command Format:**                                                        **Inquire:**
  **Display:** <SOH>SP06QQttff                                          <SOH>IP06QQ
 **Computer:** <SOH>sP06QQttff                                          <SOH>iP06QQ

**Notes:**
   1.       Unassigned - To de-assign the Pump Sense Device the user must set both tt
                    = 00 and ff = 00 for the operation to be valid.
   2.       Pump Mode - Assignment of a Pump Sense Device is not allowed for a Pump
                    with a Pump Mode of "External Pump Control".

**Typical Response Message, Display Format:**

   <SOH>
   IP06QQ
   JAN 24, 1996  2:54 PM

   PUMP SENSE DEVICES

   PUMP  DEVICE TYPE        DEVICE ID
   Pm 1: EXTERNAL INPUT        1
   <ETX>

**Typical Response Message, Computer Format:**

   <SOH>iP06QQYYMMDDHHmmQQttff...
                    QQttff&&CCCC<ETX>

**Notes:**
   1.      YYMMDDHHmm - Current Date and Time
   2.             QQ - Pump number (Decimal, 00=All)
   3.             tt - Device Type (Decimal)
                    00 – NULL_DEV_TYPE
                    05 - External Input – (see 80F Input type – pump sense)
                  ff – Device ID (Decimal)
   4.             && - Data Termination Flag
   5.           CCCC - Message Checksum

**Function Code: P07**                                                    Version 5
 **Function Type:** Set Pump – Pump Monitor Device

**Command Format:**                                                       **Inquire:**
   **Display:** <SOH>SP07QQttff                                           <SOH>IP07QQ
   **Computer:** <SOH>sP07QQttff                                          <SOH>iP07QQ

**Notes:**
   1.              QQ - Pump ID
   2.              tt - Device Type
   3.              ff - Device ID
   4.      Unassigned - To de-assign the Pump Sense Device the user must set both tt
                     = 00 and ff = 00 for the operation to be valid.

**Typical Response Message, Display Format:**

   <SOH>
   IP07QQ
   JAN 24, 2014  2:54 PM

   PUMP MONITOR DEVICES

   PUMP  DEVICE TYPE          DEVICE ID
   Pm 1: EXTERNAL INPUT       1
   <ETX>

**Typical Response Message, Computer Format:**

   <SOH>iP07QQYYMMDDHHmmQQttff...
                     QQttff&&CCCC<ETX>

**Notes:**
   1.      YYMMDDHHmm - Current Date and Time
   2.              QQ - Pump number (Decimal, 00=All)
   3.              tt - Device Type, Hours (ASCII Hex IEEE float)
                     00 – NULL_DEV_TYPE
                     05 - External Input – (see 80F Input type - pump monitor)
                   ff - Device ID (Decimal)
   4.              && - Data Termination Flag
   5.            CCCC - Message Checksum

## 7.3.9  PRESSURE LINE LEAK SETUP

```
     Function Code: 75A   Version 1
     Function Type: Set Line Leak Lockout Schedule (All Types)

     Command Format: Inquire:
        Display: <SOH>S75A00SHHmmHHmm<CR>   (if S=0)   <SOH>I75A00
                            NsHHmmeHHmm<CR>   (if S=1)
                            N<CR>   (if S=2)
       Computer: <SOH>s75A00SHHmmHHmm<CR>   (if S=0)   <SOH>i75A00
                            NsHHmmeHHmm<CR>   (if S=1)
                            N<CR>   (if S=2)
```

**Typical Response Message, Display Format:**

```
<SOH>
I75A00
MAR 26, 1996  1:54 PM

LINE LEAK LOCKOUT SETUP
- - - - - -  - - - - - -
LOCKOUT SCHEDULE
DAILY
START TIME: 10:45 PM
STOP TIME :  4:45 AM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i75A00YYMMDDHHmmSHHmmHHmm              (if S=0)
                  NsHHmmeHHmm               (if S=1, S=2)
                  SHHmmHHmm&&CCCC<ETX>      (if S=0)
                   NsHHmmeHHmm&&CCCC<ETX>   (if S=1, S=2)
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              S - Lockout Schedule Type:
    3.              - If S=0 (Daily):
                      HHmm=Start Lockout Time (Hours, minutes)
                      HHmm=End Lockout Time (Hours, minutes)
    4.              - If S=1 (Individual):
                      N   = Lockout Number (0=All Lockouts, 1..7)
                      s   = Start Lockout Day (1=Mon, 2=Tue, .., 7=Sun)
                      HHmm= Start Lockout Time (Hours, minutes)
                      e   = End Lockout Day (1=Mon, 2=Tue, .., 7=Sun)
                      HHmm= End Lockout Time (Hours, minutes)
    5.              - If S=2 (Disable):
                      N   = Lockout Number (0=All Lockouts, 1..7)
                          (0EE000EE00 is returned)
    6.            && - Data Termination Flag
    7.          CCCC - Message Checksum
```

```
        Function Code: 774                                      Version 1
        Function Type: Set Pressure Line Leak Continuous Handle Alarm Timeout

        Command Format:                                          Inquire:
            Display: <SOH>S774QQtt                          <SOH>I774QQ
           Computer: <SOH>s774QQtt                          <SOH>i774QQ
```

Notes:
```
    1.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    2.              tt - Continuous Handle Alarm Timeout (Decimal, in hours, 1-16)
```

Typical Response Message, Display Format:

```
    <SOH>
    I774QQ
    SEP 16, 2006  3:15 PM

    PLLD CONTINUOUS HANDLE ALARM TIMEOUT

    LINE                      TIMEOUT
    Q 1:REGULAR UNLEADED       16 HOURS
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i774QQYYMMDDHHmmQQttQQtt...
                  QQtt&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.              tt - Continuous Handle Alarm Timeout (Decimal, in hours, 1-16)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 775   Version 1
Function Type: Set Pressure Line Leak Profile Line Test Leak Rate

Command Format: **Inquire:**
    Display: `<SOH>S775QQrr.rr`   `<SOH>I775QQ`
   Computer: `<SOH>s775QQFFFFFFFF`   `<SOH>i775QQ`

Notes:
    1.   QQ – Pressure Line Leak Sensor Number (Decimal, 00 = all)
    2.   rr.rr – Profile Line Test Leak Rate, GPH (Decimal)
    3.   FFFFFFFF – Profile Line Test Leak Rate, GPH (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I775QQ
JAN 14, 1995  10:15 PM

PRESSURE LINE LEAK PROFILE LINE TEST LEAK RATE

LINE                      TEST LEAK RATE
Q 1:UNLEADED REGULAR           3.00 GPH
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s775QQYYMMDDHHmmQQFFFFFFFF
                QQFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   QQ – Pressure Line Leak Sensor Number (Decimal, 00 = all)
    3.   FFFFFFFF – Profile Line Test Leak Rate, GPH (ASCII Hex IEEE float)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 776   Version 1
Function Type: Set Pressure Line Leak Profile Line Test Reference Pressure

Command Format: **Inquire:**
    Display: <SOH>S776QQppp.pp   <SOH>I776QQ
    Computer: <SOH>s776QQFFFFFFFF   <SOH>i776QQ

Notes:
    1.   QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
    2.   ppp.pp - Profile Line Test Reference Pressure, PSI (Decimal)
    3.   FFFFFFFF - Profile Line Test Reference Pressure, PSI (ASCII Hex IEEE
                    float)

Typical Response Message, Display Format:

    <SOH>
    I776QQ
    JAN 14, 1995 10:15 PM

    PROFILE LINE TEST REFERENCE PRESSURE

    LINE   TEST REF PRESSURE
    Q 1:UNLEADED REGULAR   10.00 PSI
    <ETX>

Typical Response Message, Computer Format:

    <SOH>s776QQYYMMDDHHmmQQFFFFFFFF
                    QQFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
    3.   FFFFFFFF - Profile Line Test Reference Pressure, PSI (ASCII Hex IEEE
                        float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 777   Version 1
Function Type: Set Pressure Line Leak Primary Pipe Diameter

Command Format: **Inquire:**
    Display: `<SOH>S777QQI.hh`   `<SOH>I777QQ`
   Computer: `<SOH>s777QQFFFFFFFF`   `<SOH>i777QQ`

Notes:
  1.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
  2.   I.hh - Pipe Diameter, Inches and hundredths (Decimal)
  3.   FFFFFFFF - Pipe Diameter, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I777QQ
JAN 14, 1995  10:15 PM

PRESSURE LINE LEAK PRIMARY PIPE DIAMETER

LINE                          1ST LINE DIAMETER
Q 1:UNLEADED REGULAR             1.75 INCHES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s777QQYYMMDDHHmmQQFFFFFFFF...
                QQFFFFFFFF&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
  3.   FFFFFFFF - Pipe Diameter, Inches (ASCII Hex IEEE float)
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 778   Version 1
Function Type: Set Pressure Line Leak Secondary Pipe Diameter

Command Format: **Inquire:**
    Display: <SOH>S778QQI.hh   <SOH>I778QQ
  Computer: <SOH>s778QQFFFFFFFF   <SOH>i778QQ

Notes:
1.   QQ – Pressure Line Leak Sensor Number (Decimal, 00=all)
2.   I.hh – Pipe Diameter, Inches and hundredths (Decimal)
3.   FFFFFFFF – Pipe Diameter, Inches (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I778QQ
JAN 14, 1995  10:15 PM

PRESSURE LINE LEAK SECONDARY PIPE DIAMETER

LINE                          2ND LINE DIAMETER
Q 1:UNLEADED REGULAR               1.75 INCHES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s778QQYYMMDDHHmmQQFFFFFFFF...
                QQFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   QQ – Pressure Line Leak Sensor Number (Decimal, 00=all)
3.   FFFFFFFF – Pipe Diameter, Inches (ASCII Hex IEEE float)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
        Function Code: 779                                           Version 1
        Function Type: Set Pressure Line Leak Primary Pipe Bulk Modulus

        Command Format:                                                 Inquire:
            Display: <SOH>S779QQBBBBBB                                <SOH>I779QQ
           Computer: <SOH>s779QQFFFFFFFF                              <SOH>i779QQ
```

Notes:
```
    1.              QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    2.          BBBBBB - Pipe Bulk Modulus, PSI (Decimal)
    3.        FFFFFFFF - Pipe Bulk Modulus, PSI (ASCII Hex IEEE float)
    4. Set to Default - To set Bulk Modulus to default enter 0
```

Typical Response Message, Display Format:

```
    <SOH>
    I779QQ
    JAN 14, 1995  10:15 PM

    PRESSURE LINE LEAK PRIMARY PIPE BULK MODULUS

    LINE                          1ST BULK MOD
    Q 1:UNLEADED REGULAR             12000 PSI
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>s779QQYYMMDDHHmmQQFFFFFFFF...
                    QQFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    3.         FFFFFFFF - Pipe Bulk Modulus, PSI (ASCII Hex IEEE float)
    4.               && - Data Termination Flag
    5.             CCCC - Message Checksum
```

<pre>
        Function Code: 77A   Version 1
        Function Type: Set Pressure Line Leak Secondary Pipe Bulk Modulus

     Command Format: **Inquire:**
        Display: <SOH>S77AQQBBBBBB   <SOH>I77AQQ
       Computer: <SOH>s77AQQFFFFFFFF   <SOH>i77AQQ
</pre>

Notes:
<pre>
    1.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    2.   BBBBBB - Pipe Bulk Modulus, PSI (Decimal)
    3.   FFFFFFFF - Pipe Bulk Modulus, PSI (ASCII Hex IEEE float)
    4. Set to Default - To set Bulk Modulus to default enter 0
</pre>

Typical Response Message, Display Format:

<pre>
    <SOH>
    I77AQQ
    JAN 14, 1995 10:15 PM

    PRESSURE LINE LEAK SECONDARY PIPE BULK MODULUS

    LINE   2ND BULK MOD
    Q 1:UNLEADED REGULAR   12000 PSI
    <ETX>
</pre>

Typical Response Message, Computer Format:

<pre>
    <SOH>s77AQQYYMMDDHHmmQQFFFFFFFF...
                    QQFFFFFFFF&&CCCC<ETX>
</pre>

Notes:
<pre>
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    3.   FFFFFFFF - Pipe Bulk Modulus, PSI (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum
</pre>

```
       Function Code: 77B                                        Version 1
       Function Type: Set Pressure Line Leak Thermal Expansion Coefficient

       Command Format:                                          Inquire:
          Display: <SOH>S77BQQc.cccccc                        <SOH>I77BQQ
         Computer: <SOH>s77BQQFFFFFFFF                         <SOH>i77BQQ
```

Notes:
```
    1.              QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    2.        c.cccccc - Thermal Expansion Coefficient (Decimal)
    3.        FFFFFFFF - Thermal Expansion Coefficient (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I77BQQ
    JAN 14, 1995  10:15 PM

    PRESSURE LINE LEAK THERMAL COEFFICIENT

    LINE                        THERMAL COEFF
    Q 1:UNLEADED REGULAR             0.000700
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>s77BQQYYMMDDHHmmQQFFFFFFFF...
                    QQFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    3.         FFFFFFFF - Thermal Expansion Coefficient (ASCII Hex IEEE float)
    4.               && - Data Termination Flag
    5.             CCCC - Message Checksum
```

Function Code: 77C   Version 1
Function Type: Set Pressure Line Leak Low Pressure Shutoff

Command Format: **Inquire:**
    Display: \<SOH>S77CQQf   \<SOH>I77CQQ
  Computer: \<SOH>s77CQQf   \<SOH>i77CQQ

Typical Response Message, Display Format:

```
<SOH>
I77CQQ
JAN 24, 2000  2:54 PM

PRESSURE LINE LEAK LOW PRESSURE SHUTOFF

LINE                      LP SHUTOFF
Q 1:REGULAR UNLEADED      YES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i77CQQYYMMDDHHmmQQf...
               QQf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.   f - Enabled/disabled flag
                 0=disabled (no)
                 1=enabled (yes)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 77D                                          Version 1
        Function Type: Set Pressure Line Leak Altitude Pressure Offset

     Command Format:                                                 Inquire:
        Display: <SOH>S77DQQII.p                              <SOH>I77DQQ
       Computer: <SOH>s77DQQFFFFFFFF                          <SOH>i77DQQ
```

Notes:
```
    1.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    2.           II.p - Altitude Pressure Offset, PSI or KPA (Decimal)
    3.       FFFFFFFF - Altitude Pressure Offset, PSI or KPA (ASCII Hex IEEE float)
    4.                 Value must be within the range of +5.0 to -5.0 PSI or 34.4
                       to -34.4 KPA
```

Typical Response Message, Display Format:

```
    <SOH>
    I77DQQ
    JAN  1, 2000  1:44 AM

    ALTITUDE PRESSURE OFFSET ADJUSTMENT

    LINE                      OFFSET
    Q 1:REGULAR UNLEADED      0.0 PSI
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i77DQQYYMMDDHHmmQQFFFFFFFF...
                     QQFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.        FFFFFFFF - Altitude Pressure offset, PSI or KPA (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 77E   Version 1
Function Type: Set Pressure Line Leak Passive 0.10 GPH Test Enable Flag

Command Format: **Inquire:**
    Display: <SOH>S77EQQf   <SOH>I77EQQ
  Computer: <SOH>s77EQQf   <SOH>i77EQQ

Typical Response Message, Display Format:

```
<SOH>
I77EQQ
JUL 14, 2004  10:15 PM

PRESSURE LINE LEAK PASSIVE 0.10 GPH

LINE                       PASSIVE
Q 1:UNLEADED REGULAR       YES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i777QQYYMMDDHHmmQQf...
               QQf&&CCCC<ETX>
```

Notes:
```
1.       YYMMDDHHmm - Current Date and Time
2.              QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
3.               f - Passive 0.10 GPH Test Enable Flag (Decimal)
                      0=Disabled
                      1=Enabled
4.              && - Data Termination Flag
5.            CCCC - Message Checksum
```

Function Code: 77F   Version 1
Function Type: Set Pressure Line Leak Secondary Pipe Length

Only used for the larger diameter line in dual diameter
piping configurations

Command Format: **Inquire:**
  Display: <SOH>S77FQQLLLL   <SOH>I77FQQ
  Computer: <SOH>s77FQQFFFFFFFF   <SOH>i77FQQ

Notes:
  1.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
  2.   LLLL - Pipe Length, Feet (Decimal)
  3.   FFFFFFFF - Pipe Length, Feet (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I77FQQ
    JAN 14, 1995 10:15 PM

    PRESSURE LINE LEAK LINE LENGTH LARGE

    LINE   LINE LENGTH
    Q 1:UNLEADED REGULAR   200 FEET
    <ETX>

Typical Response Message, Computer Format:

    <SOH>s77FQQYYMMDDHHmmQQFFFFFFFF...
                  QQFFFFFFFF&&CCCC<ETX>

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
  3.   FFFFFFFF - Pipe Length, Feet (ASCII Hex IEEE float)
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 77G   Version 1
Function Type: Set Pressure Line Leak Fuel out limit

Command Format: **Inquire:**
    Display: <SOH>S77GQQI.hh   <SOH>I77GQQ
    Computer: <SOH>s77GQQFFFFFFFF   <SOH>i77GQQ

Typical Response Message, Display Format:

```
<SOH>
I77GQQ
JAN 24, 1996  2:54 PM

PRESSURE LINE LEAK FUEL OUT LIMIT

LINE                      LIMIT
Q 1:REGULAR UNLEADED      12.2 INCHES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i77GQQYYMMDDHHmmQQFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   FFFFFFFF – Fuel out limit (inches, IEEE float)
4.   && – Data Termination Flag
5.   CCCC -Message Checksum

Function Code: 780   Version 1
Function Type: Pressure Line Leak General Setup Inquiry

Command Format:
        Display: <SOH>I780QQ
        Computer: not supported

Typical Response Message, Display Format:

```
<SOH>
I780QQ
JAN 14, 1995 10:15 PM

PRESSURE LINE LEAK SETUP

Q 1:UNLEADED REGULAR
PIPE TYPE:    FIBERGLASS
0.10 GPH TEST: ENABLED
SHUTDOWN RATE:  3.0 GPH
T 3:REGULAR UNLEADED
DISPENSE MODE:
  STANDARD
<ETX>
```

Function Code: 781   Version 1
Function Type: Set Pressure Line Leak Configuration

Command Format: **Inquire:**
    Display: <SOH>S781QQf   <SOH>I781QQ
   Computer: <SOH>s781QQf   <SOH>i781QQ

Typical Response Message, Display Format:

```
<SOH>
I781QQ
JAN 24, 1996  2:54 PM

PRESSURE LLD CONFIGURATION

DEVICE  LABEL                 CONFIGURED
   1  REGULAR UNLEADED        ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i781QQYYMMDDHHmmQQf...
              QQf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   QQ – Pressure Line Leak sensor number (Decimal, 00=All)
3.   f – Configuration flag
         0=Off
         1=On
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
         Function Code: 782                                    Version 1
         Function Type: Set Pressure Line Leak Label

         Command Format:                                         Inquire:
            Display: <SOH>S782QQaaaaaaaaaaaaaaaaaaaaa         <SOH>I782QQ
           Computer: <SOH>s782QQaaaaaaaaaaaaaaaaaaaaa         <SOH>i782QQ
```

Typical Response Message, Display Format:

```
   <SOH>
   I782QQ
   JAN 24, 1996  2:54 PM

   PRESSURE LLD LABEL

   DEVICE  LABEL
        1  REGULAR UNLEADED
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i782QQYYMMDDHHmmQQaaaaaaaaaaaaaaaaaaaaa...
                    QQaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.               a - Indicates any printable ASCII character
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 783   Version 1
Function Type: Set Pressure Line Leak 0.10 GPH Test Schedule

Command Format: **Inquire:**
   Display: <SOH>S783QQf   <SOH>I783QQ
  Computer: <SOH>s783QQf   <SOH>i783QQ

Typical Response Message, Display Format:

```
<SOH>
I783QQ
JAN 24, 1996  2:54 PM

PRESSURE LINE LEAK 0.10 TEST SCHEDULE

LINE                    0.10 GPH TEST
Q 1:REGULAR UNLEADED        DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i783QQYYMMDDHHmmQQf...
                QQf&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm – Current Date and Time
  2.   QQ – Pressure Line Leak sensor number (Decimal, 00=All)
  3.   f – 0.10 GPH Test Schedule
                0=Disabled
                1=Repetitive
                2=Auto
                3=Manual
  4.   && – Data Termination Flag
  5.   CCCC – Message Checksum

Function Code: 784   Version 1
Function Type: Set Pressure Line Leak Shutdown Rate

Command Format: **Inquire:**
    Display: <SOH>S784QQrr   <SOH>I784QQ
   Computer: <SOH>s784QQrr   <SOH>i784QQ

Typical Response Message, Display Format:

```
<SOH>
I784QQ
JAN 24, 2000  2:54 PM

PRESSURE LINE LEAK SHUTDOWN RATE

LINE                        SHUTDOWN RATE
Q 1:REGULAR UNLEADED        3.0 GPH
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i784QQYYMMDDHHmmQQrr...
                QQrr&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
  3.   rr - Shutdown rate
                01=0.10 gal/hr
                02=3.00 gal/hr
                03=0.20 gal/hr
                04=None
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 786   Version 1
Function Type: Set Pressure Line Leak Dispense Mode

Command Format: **Inquire:**
    Display: <SOH>S786QQf   <SOH>I786QQ
    Computer: <SOH>s786QQf   <SOH>i786QQ

Note: See L06 if setting line leak dispensing mode to pump sense.

Typical Response Message, Display Format:

    <SOH>
    I786QQ
    JAN 24, 1996 2:54 PM

    PRESSURE LINE LEAK DISPENSE MODE

    LINE   DISPENSE MODE
    Q 1:REGULAR UNLEADED   STANDARD
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i786QQYYMMDDHHmmQQf...
                    QQf&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.   f - Dispensing Mode
                        1=Standard
                        2=Manifolded: Alternate
                        3=Manifolded: Sequential
                        4=Manifolded: All Pumps
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 788   Version 1
Function Type: Set Pressure Line Leak Piping Material

Command Format: **Inquire:**
    Display: <SOH>S788QQtt   <SOH>I788QQ
    Computer: <SOH>s788QQtt   <SOH>i788QQ

Typical Response Message, Display Format:

```
<SOH>
I788QQ
JUN 14, 2001  10:15 PM

PRESSURE LINE LEAK PIPE TYPE

LINE                        PIPE TYPE:
Q 1:UNLEADED REGULAR        USER DEFINED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i788QQYYMMDDHHmmQQtt
               QQtt&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    3.   tt - Pipe Type:
                    01=2/3 inch Fiberglass
                    02=2 inch Steel
                    03=White Enviroflex PP1501   (Obsolete)
                    04=1.5 inch Environ Geoflex II
                    05=Omniflex CP1501
                    06=Yellow Enviroflex PP1500   (Obsolete)
                    07=1.5"/2.5" Enviroflex PP1502/2502   (Obsolete)
                    08=OPW Pisces SP-15
                    09=OPW Pisces CP-15
                    10=WFG Coflex 2000 Ribbed
                    11=Enviroflex PP1503/2503
                    12=Omniflex CP1503
                    13=1.5/2.0 inch Environ Geoflex D
                    14=APT P175SC
                    15=OPW Pisces CP15DW
                    16=OPW Pisces CP20
                    17=OPW PISCES SP20
                    18=User Defined
                    19=PETROTECHNIK UPP EXTRA 63MM
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: **789**   Version 1
Function Type: Set Pressure Line Leak Primary Pipe Length

Also used for the smaller diameter line in dual diameter
piping configurations

Command Format: **Inquire:**
   Display: <SOH>S789QQLLLL   <SOH>I789QQ
   Computer: <SOH>s789QQFFFFFFFF   <SOH>i789QQ

Notes:
    1.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    2.   LLLL - Pipe Length, Feet (Decimal)
    3.   FFFFFFFF - Pipe Length, Feet (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I789QQ
    JAN 14, 1995 10:15 PM

    PRESSURE LINE LEAK PIPE LENGTH

    LINE   LINE LENGTH
    Q 1:UNLEADED REGULAR   250 FEET
    <ETX>

Typical Response Message, Computer Format:

    <SOH>s789QQYYMMDDHHmmQQFFFFFFFF...
                  QQFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
    3.   FFFFFFFF - Pipe Length, Feet (ASCII Hex IEEE float)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 78C   Version 1
Function Type: Set Pressure Line Leak 0.20 GPH Test Schedule

Command Format: **Inquire:**
    Display: <SOH>S78CQQf   <SOH>I78CQQ
    Computer: <SOH>s78CQQf   <SOH>i78CQQ

Typical Response Message, Display Format:

```
<SOH>
I78CQQ
JAN 24, 1996  2:54 PM

PRESSURE LINE LEAK 0.20 TEST SCHEDULE

LINE                      0.20 GPH TEST
Q 1:REGULAR UNLEADED         MONTHLY
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i78CQQYYMMDDHHmmQQf...
            QQf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.   f - 0.20 GPH Test Schedule
              0=Disabled
              1=Repetitive
              2=Monthly
              3=Manual
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 78E                                          Version 1
        Function Type: Set Pressure Line Leak 0.10 GPH Auto Test Enable

        Command Format:                                              Inquire:
           Display: <SOH>S78EQQf                               <SOH>I78EQQ
          Computer: <SOH>s78EQQf                               <SOH>i78EQQ
```

Typical Response Message, Display Format:

```
<SOH>
I78EQQ
JAN 24, 1996  2:54 PM

PRESSURE LINE LEAK 0.10 GPH AUTO ENABLE

LINE                      0.10 AUTO
Q 1:REGULAR UNLEADED      ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i78EQQYYMMDDHHmmQQf...
               QQf&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
   3.               f - 0.10 GPH Test
                       0=Disabled
                       1=Enabled
   4.              && - Data Termination Flag
   5.            CCCC - Message Checksum
```

Function Code: 78F   Version 1
Function Type: Set Pressure Line Leak Shutoff value
                   (in TLS350 this command was Pressure Line Leak dispense
                   threshold)

Command Format: **Inquire:**
   Display: <SOH>S78FQQppppp   <SOH>I78FQQ
  Computer: <SOH>s78FQQFFFFFFFF   <SOH>i78FQQ

Notes:
   1.   QQ - Pressure Line Leak Sensor Number (Decimal, 00=all)
   2.   ppppp - Shutoff Value, PSI or KPA (Decimal)
   3.   FFFFFFFF - Shutoff Value, PSI or KPA (ASCII Hex IEEE float) Value must
                     be within the range of 0.0 to 25.0 PSI or 0.0 to 172.0 KPA

Typical Response Message, Display Format:

   <SOH>
   I78FQQ
   JAN 24, 1996 2:54 PM

   PRESSURE LINE LEAK SHUTOFF VALUE

   LINE   SHUTOFF VALUE
   Q 1:REGULAR UNLEADED   15.0 PSI
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i78FQQYYMMDDHHmmQQFFFFFFFF&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
   3.   FFFFFFFF - Shutoff value, PSI (ASCII Hex IEEE float)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

```
        Function Code: 78G                                    Version 1
        Function Type: Set controlling pump

     Command Format:                                          Inquire:
        Display: <SOH>S78GQQnn                            <SOH>I78GQQ
       Computer: <SOH>s78GQQnn                            <SOH>i78GQQ
```

Typical Response Message, Display Format:

```
<SOH>
I78GQQ
JAN 24, 1996  2:54 PM

PRESSURE LINE LEAK CONTROLLING PUMP

LINE                           CONTROLLING PUMP
Q 1:REGULAR UNLEADED           5
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i78GQQYYMMDDHHmmQQnn&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.              nn – CONTROLLING PUMP
    4.              && – Data Termination Flag
    5.            CCCC - Message Checksum
```

<pre>
        Function Code: L01   Version 1
        Function Type: Set Line Configuration

      Command Format: **Inquire:**
          Display: <SOH>SL01QQf   <SOH>IL01QQ
          Computer: <SOH>sL01QQf   <SOH>iL01QQ
</pre>

Typical Response Message, Display Format:

<pre>
   <SOH>
   IL01QQ
   JAN 24, 1996 2:54 PM

   PRESSURE LLD CONFIGURATION

   DEVICE LABEL   CONFIGURED
       1   REGULAR UNLEADED   ON
   <ETX>
</pre>

Typical Response Message, Computer Format:

<pre>
   <SOH>iL01QQYYMMDDHHmmQQf...
                   QQf&&CCCC<ETX>
</pre>

Notes:
<pre>
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.   f - Configuration flag
                        0=Off
                        1=On
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum
</pre>

Function Code: **L03**   Version 1
 Function Type: Set Pressure Line Leak Monitoring

Command Format: **Inquire:**
    Display: <SOH>SL03QQf   <SOH>IL03QQ
    Computer: <SOH>sL03QQf   <SOH>iL03QQ

Typical Response Message, Display Format:

    <SOH>
    IL03QQ
    JAN 24, 1996 2:54 PM

    PRESSURE LINE LEAK MONITORING

    LINE   MONITORING
    Q 1:REGULAR UNLEADED   PLLD
    <ETX>

Typical Response Message, Computer Format:

    <SOH>iL03QQYYMMDDHHmmQQf...
                      QQf&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.   f - Leak Monitoring
                         0=None
                         1=PLLD
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

           Function Code: L04   Version 1
            Function Type: Set Pressure Line Sensor

           Command Format: **Inquire:**
               Display: <SOH>SL04QQff   <SOH>IL04QQ
              Computer: <SOH>sL04QQff   <SOH>iL04QQ

Typical Response Message, Display Format:

   <SOH>
   IL04QQ
   JAN 24, 1996 2:54 PM

   PRESSURE LINE LEAK

   LINE   LPR Sensor
   Q 1:REGULAR UNLEADED   1
   <ETX>

Typical Response Message, Computer Format:

   <SOH>iL04QQYYMMDDHHmmQQff...
                  QQff&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   QQ - Line number (Decimal)
   3.   ff - Sensor ID (Decimal, 00= clear assignment)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

Function Code: L05   Version 1
 Function Type: Set Line Manifolded

   Command Format: **Inquire:**
      Display: <SOH>SL05LLf   <SOH>IL05LL
     Computer: <SOH>sL05LLf   <SOH>iL05LL

Typical Response Message, Display Format:

   <SOH>
   IL05LL
   JAN 24, 1996 2:54 PM

   IS LINE MANIFOLDED

   DEVICE   MANIFOLDED
   Q 1:REGULAR UNLEADED   ON
   <ETX>

Typical Response Message, Computer Format:

   <SOH>iL05LLYYMMDDHHmmLLf...
                   LLf&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   LL - Line number (Decimal, 00=All)
   3.   f - Manifolded
                        0=NO
                        1=YES
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

    Function Code: L06   Version 1
     Function Type: Set Line Dispense Mode

    Command Format: **Inquire:**
        Display: <SOH>SL06QQf   <SOH>IL06QQ
      Computer: <SOH>sL06QQf   <SOH>iL06QQ

Typical Response Message, Display Format:

```
<SOH>
IL06QQ
JAN 24, 1996  2:54 PM

PRESSURE LINE LEAK DISPENSE MODE

LINE                        DISPENSE MODE
Q 1:REGULAR UNLEADED        STANDARD
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iL06QQYYMMDDHHmmQQf...
              QQf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   f - Dispensing Mode
                 1=Standard
                 2=Manifolded: Alternate
                 3=Manifolded: Sequential
                 4=Manifolded: All Pumps
                 5=PumpSense
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: L07   Version 1
 Function Type: Set Line Associated Pump Numbers

       Command Format: **Inquire:**
          Display: <SOH>SL07LLpppp…   <SOH>IL07LL
         Computer: <SOH>sL07LLpppp…   <SOH>iL07LL

Notes:
   1.   pp – A sequence of one or more 2-digit-wide zero-padded Pump
                        numbers. If a unique zero entry (00) is given for Pump
                        Numbers then all current Pump assignments for the Line will
                        be removed. Multiple Pump entries are only allowed for
                        Manifolded Lines.

Typical Response Message, Display Format:

   <SOH>
   IL07LL
   JAN 24, 1996 2:54 PM

   LINE-ASSOCIATED PUMPS

   LINE   PUMP
   Ln 1:REGULAR UNLEADED   1
   <ETX>

Typical Response Message, Computer Format:

   <SOH>iL07LLYYMMDDHHmmLLnnpppp...
                    LLnnpppp&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   LL – Line Number (Decimal, 00=All)
   3.   nn – number of pumps to follow
   4.   pp – Pump number (Decimal)
   5.   && – Data Termination Flag
   6.   CCCC – Message Checksum

Function Code: S51   Version 1
Function Type: Set LPR Sensor Configuration

Command Format: **Inquire:**
    Display: <SOH>SS51QQf   <SOH>IS51QQ
   Computer: <SOH>sS51QQf   <SOH>iS51QQ

Typical Response Message, Display Format:

```
<SOH>
IS51QQ
JAN 24, 1996  2:54 PM

LINE_PRESSURE_SENSOR CONFIGURATION
DEVICE  LABEL                   CONFIGURED
    1   REGULAR UNLEADED        ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iS51QQYYMMDDHHmmQQf...
               QQf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - sensor number (Decimal, 00=All)
3.   f - Configuration flag
                 0=Off
                 1=On
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
      Function Code:  S53                              Version 1
      Function Type: Set LPR Sensor Label

     Command Format:                                    Inquire:
        Display: <SOH>SS53QQaaaaaaaaaaaaaaaaaaaaa       <SOH>IS53QQ
       Computer: <SOH>sS53QQaaaaaaaaaaaaaaaaaaaaa       <SOH>iS53QQ
```

Typical Response Message, Display Format:

```
<SOH>
IS53QQ
JAN 24, 1996  2:54 PM

LINE_PRESSURE_SENSOR LABEL

DEVICE   LABEL
     1   REGULAR UNLEADED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iS53QQYYMMDDHHmmQQaaaaaaaaaaaaaaaaaaaaa...
                  QQaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
```
   1.        YYMMDDHHmm - Current Date and Time
   2.               QQ - sensor number (Decimal)
   3.                a - Indicates any printable ASCII character
   4.               && - Data Termination Flag
   5.             CCCC - Message Checksum
```

Function Code: S54   Version 1
 Function Type: Get LPR Sensor Serial Number

Command Format:
Display: <SOH>IS54QQ
Computer: <SOH>iS54QQ

Typical Response Message, Display Format:

```
<SOH>
IS54QQ
OCT 09, 2008 01:36 PM

LINE PRESSURE SENSOR

SENSOR   LABEL                   SERIAL NUMBER
    1    LINE LABEL 1              1179401887
    2    Line Label Two            0000000998
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iS54QQYYMMDDHHmmQQaaaaaaaa...
                QQaaaaaaaaCCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   QQ - sensor number (Decimal)
  3.   aaaaaaaaa - Serial number (IEEE ASCII HEX long)
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: S55   Version 1
Function Type: Line Pressure Sensor Alarm History Report

Command Format:
    Display: <SOH>IS55QQ
    Computer: <SOH>iS55QQ

Typical Response Message, Display Format:

```
<SOH>
IS55SS
JAN 22, 2003  3:07 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

LINE PRESSURE SENSOR ALARM HISTORY REPORT

SENSOR  LOCATION
     1  LPR # 1
        JUN 23, 2003  2:12 PM          DATA SETUP WARNING
        JUN 23, 2003  2:12 PM          COMMUNICATION ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iS55SSYYMMDDHHmmSSnnYYMMDDHHmmaaaa...
                 SSnnYYMMDDHHmmaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - LPR Sensor Number (Decimal, 00=all)
3.   nn - Number of alarms incidents to follow (Decimal, 00=none)
4.   YYMMDDHHmm - Date and time alarm occurred
5.   aaaa - Alarm type number:
           0001=LPR Sensor Setup Data Warning
           0002=LPR Sensor Communication Alarm
6.   && - Data Termination Flag
7.   CCCC - Message Checksum

Function Code: S56   Version 1
Function Type: Get Pressure LPR Sensor Sample Data

Command Format:
        Display: <SOH>IS56QQ
        Computer: <SOH>iS56QQ

Typical Response Message, Display Format:

    <SOH>
    IS56QQ
    JAN 24, 1996 2:54 PM

    LINE PRESSURE SENSOR SAMPLES
    DEVICE   TIME   SAMPLES
    1   JAN 24, 1996 2:54 PM 124.343
    <ETX>

Typical Response Message, Computer Format:

    <SOH>iS56QQYYMMDDHHmmQQNNFFFFFFFF...
                    QQNNFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - LPRSensor number (Decimal, 00=All)
    3.   NN - Number of samples followed (maximum 60 samples)
    4.   FFFFFFFF - sample readings (ASCII Hex IEEE floats)
    5.   && - Data Termination Flag
    6.   CCCC - Message Checksum

Function Code: SA1   Version 1
  Function Type: Get Line Pressure Sensor Status

        Command Format:
             Display: <SOH>ISA1SS
            Computer: <SOH>iSA1SS

Typical Response Message, Display Format:

```
<SOH>
ISA100
MAY 12, 2008  3:06 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

LINE PRESSURE SENSOR STATUS REPORT

SENSOR  LABEL                STATUS

   1    LPR SENSOR #1        NORMAL
   2    LPR SENSOR #2        Setup Data Warning
   3    LPR SENSOR #3        NORMAL
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iSA1QQYYMMDDHHmmSSnnNN...
                  SSnnNN&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   SS – LPRSensor number (Decimal, 00=All)
3.   nn – Number of alarms active for LPR Sensor (Decimal, 00=none)
4.   NN – Alarm Type Number (See explanation for NN when AA is 63 in
                  Function i10100)
5.   && – Data Termination Flag
6.   CCCC – Message Checksum

7.3.10   Reconciliation Setup

Function Code: 51N   Version 2
Function Type: Set LV/MDIM Configuration

Command Format: **Inquire:**
    Display: <SOH>S51NIIf   <SOH>I51NII
    Computer: <SOH>s51NIIf   <SOH>i51NII

Typical Response Message, Display Format:

```
<SOH>
I51NII
JUN 22, 2009  3:12 PM

MDIM CONFIGURATION

DEVICE  LABEL                   CONFIGURED
   1  MDIM #1                   ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51NIIYYMMDDHHmmIIf...
               IIf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   II - LV/MDIM Number (Decimal, 00-all)
3.   f - LV/MDIM Configuration Flag
                        0=Off
                        1=On
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 51P   Version 2
Function Type: Set LV/MDIM Setup Configuration

Command Format: **Inquire:**
    Display: <SOH>S51PNNUUppQQQQ   <SOH>I51P00
   Computer: <SOH>s51PNNUUppQQQQ   <SOH>i51P00

Notes:
1.   NN – DIM Device Number (Decimal)
2.   UU – Unit Conversion (Decimal)
3.   pp – Pulse Conversion (Decimal)
4.   QQQQ – Custom Pulse Conversion (Decimal)
                 QQQQ is optional when PP is not custom.

Typical Response Message, Display Format:

```
<SOH>
I51P00
JUN 22, 2009  3:12 PM

DIM CONFIGURATION SETUP
DEVICE     LABEL          PULSE CONVERSION     PULSE UNITS
    1      MDIM1          500                  US
    2      MDIM2          1000                 METRICS
    3      MDIM3          9999(CUSTOM)         US
    4      MDIM4          ½                    US
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51P00YYMMDDHHmmNNFFUUpp...
                NNFFUUpp&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   NN – DIM Device Number (Decimal)
3.   UU – Pulse Units
                01=US
                02=Metric
                03=Imperial
4.   pp – Pulse Conversion
                01 – ½ Pulse Conversion
                02 – 1 Pulse Conversion
                03 – 2.5 Pulse Conversion
                04 – 10 Pulse Conversion
                05 – 25 Pulse Conversion
                06 – 100 Pulse Conversion
                07 – 250 Pulse Conversion
                08 – 500 Pulse Conversion
                09 – 1000 Pulse Conversion
                10 – Custom Pulse Conversion
5.   QQQQ – Custom Conversion (0001 – 9999)
6.   && – Data Termination Flag
7.   CCCC – Message Checksum

Function Code: 51Q   Version 2
Function Type: Set LV/MDIM Label

Command Format: **Inquire:**
    Display: <SOH>S51QIIaaaaaaaaaaaaaaaaaaaa   <SOH>I51QII
    Computer: <SOH>s51QIIaaaaaaaaaaaaaaaaaaaa   <SOH>i51QII

Typical Response Message, Display Format:

```
<SOH>
I51QII
JUN 22, 2009  3:12 PM

LV/MDIM LABEL

DEVICE  LABEL
    1  MDIM #1
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i51QIIYYMMDDHHmmIIaaaaaaaaaaaaaaaaaaaa...
                 IIaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   II – LV/MDIM Number (Decimal, 00-all)
    3.   aaa...aaa – LV/MDIM Label (20 ASCII Characters [20h-7Eh])
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 790   Version 2
Function Type: DIM Software Revision

Command Format:
    Display: <SOH>I790PP
    Computer: <SOH>i790PP

Notes:
1.   PP - Communication Port Number (Decimal, 00=all)

Typical Response Message, Display Format:

```
<SOH>
I790PP
JAN  1, 2000  8:00 AM

EDIM: 7VR:GILBARCO 001.ATD:Jan  4 2010
<ETX>
```

Typical Response Message, Computer Format:

Notes:
1.   Response is the same as display format.

Function Code: 792   Version 2
Function Type: Set Electronic Dispenser Interface String

Command Format:
        Display: <SOH>I792NN
        Computer: <SOH>i792NN

Typical Response Message, Display Format:

```
<SOH>
I792NN
JUN 22, 2009  3:12 PM

DISP. MODULE DATA STRING
EDIM 1:  aaaaaaaaaaaa
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i792NNYYMMDDHHmmNNaaaaaaaaaaaa...
                NNaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   NN – EDIM Number (Decimal, 00=all)
    3.   aaaaaaaaaaaa – Data String (12 ASCII characters [20h-7Eh])
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

      Function Code: 793   Version 2
      Function Type: Set Reconciliation Auto Daily Closing Time

      Command Format: **Inquire:**
        Display: <SOH>S79300HHmm   <SOH>I79300
       Computer: <SOH>s79300HHmm   <SOH>i79300

Typical Response Message, Display Format:

    <SOH>
    I79300
    JAN 22, 2009 3:24 PM

    AUTOMATIC DAILY CLOSING
    TIME: 2:00 AM
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i79300YYMMDDHHmmHHmm&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   HHmm - Auto Daily Closing Time (hours & minutes)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 794   Version 2
Function Type: Set Auto Shift Closing Time 1, 2, 3, 4

Command Format: **Inquire:**
    Display: <SOH>S794SSHHmm   <SOH>I794SS
    Computer: <SOH>s794SSHHmm   <SOH>i794SS

Typical Response Message, Display Format:

    <SOH>
    I794SS
    JAN 22, 2009 3:24 PM

    AUTO SHIFT #1 CLOSING
    TIME: 8:00 AM
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i794SSYYMMDDHHmmSSHHmm&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   SS - Shift Close Number (01, 02, 03, 04)
    3.   HHmm - Hour and Minute (EE00=Disabled)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 795   Version 2
Function Type: Set Periodic Reconciliation Mode

Command Format: **Inquire:**
    Display: <SOH>S79500ss   <SOH>I79500
    Computer: <SOH>s79500ss   <SOH>i79500

Typical Response Message, Display Format:

```
<SOH>
I79500
JAN 22, 2009  3:24 PM

PERIODIC RECONCILIATION
MODE: MONTHLY
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i79500YYMMDDHHmmss&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   ss - Periodic Reconciliation Mode
                  1=Monthly
                  2=Rolling
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 796   Version 2
Function Type: Set Periodic Reconciliation Report Length

Command Format: **Inquire:**
   Display: <SOH>S79600dd   <SOH>I79600
   Computer: <SOH>s79560dd   <SOH>i79600

Typical Response Message, Display Format:

```
<SOH>
I79600
JAN 22, 2009  3:24 PM

PERIODIC RECONCILIATION
LENGTH: 31 DAYS
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i79600YYMMDDHHmmdd&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   dd - Number of days for Rolling Report (Decimal, 01-31)
3.   && - Data Termination Flag
4.   CCCC - Message Checksum

Function Code: 797   Version 2
Function Type: Set Periodic Reconciliation Alarm Flag

Command Format: **Inquire:**
    Display: <SOH>S79700ss   <SOH>I79700
   Computer: <SOH>s79700ss   <SOH>i79700

Typical Response Message, Display Format:

```
<SOH>
I79700
JAN 22, 2009  3:24 PM

PERIODIC RECONCILIATION
ALARM: DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i79700YYMMDDHHmmss&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   ss - Reconciliation Alarm Flag
                     01=Disable
                     02=Enable
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 798   Version 2
Function Type: Set Periodic Reconciliation Alarm Threshold

Command Format: **Inquire:**
   Display: <SOH>S79800PP.hh   <SOH>I79800
   Computer: <SOH>s79800FFFFFFFF   <SOH>i79800

Notes:
   1.   PP.hh - Alarm Threshold, Percent and hundredths (Decimal)
   2.   FFFFFFFF - Alarm Threshold, Percent (ASCII Hex IEEE float)

Typical Response Message, Display Format:

i) When per-tank alarm threshold is disabled (using 7C1 command)

   <SOH>
   I79800
   JUN 1, 2000 8:07 AM

   PERIODIC RECONCILIATION
   ALARM THRESHOLD: 1.00%
   <ETX>

ii) When per-tank alarm threshold is enabled (using 7C1 command)

   <SOH>
   I79800
   JAN 22, 2009 3:24 PM

   THE SYSTEM PERIODIC RECONCILIATION ALARM THRESHOLD CAN'T BE DISPLAYED
   IF TANK PERIODIC RECONCILIATION ALARM THRESHOLD IS ENABLED
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i79800YYMMDDHHmmFFFFFFFF&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   FFFFFFFF - Alarm Threshold, Percent (ASCII Hex IEEE float)
   3.   && - Data Termination Flag
   4.   CCCC - Message Checksum

Function Code: 799   Version 2
Function Type: Set Periodic Reconciliation Alarm Offset

Command Format: **Inquire:**
   Display: <SOH>S79900GGGGGG   <SOH>I79900
   Computer: <SOH>s79900FFFFFFFF   <SOH>i79900

Notes:
   1.   GGGGGG – Alarm Offset, Gallons (Decimal)
   2.   FFFFFFFF – Alarm Threshold, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

   <SOH>
   I79900
   JAN 22, 2009 3:24 PM

   PERIODIC RECONCILIATION
   ALARM OFFSET: 130
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i79900YYMMDDHHmmFFFFFFFF&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   FFFFFFFF – Alarm Offset, Gallons (ASCII Hex IEEE float)
   3.   && – Data Termination Flag
   4.   CCCC – Message Checksum

Function Code: 79B   Version 2
Function Type: Set Shift Manual Adjustment Value

Command Format: **Inquire:**
    Display: <SOH>S79BTTssGGGGGG   <SOH>I79BTTss
   Computer: <SOH>s79BTTssFFFFFFFF   <SOH>i79BTTss

Notes:
1.   TT – Tank Number
2.   ss – Shift Mode
             01=Current
             02=Previous
3.   GGGGGG – Adjustment Value, Gallons (Decimal)
4.   FFFFFFFF – Adjustment Value, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I79BTT
JAN 22, 2009  3:24 PM

T 1:REGULAR UNLEADED
CURRENT SHFT ADJ:     300
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i79BTTYYMMDDHHmmTTssFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number
3.   ss – Shift Mode
             0=Current
             1=Previous
4.   FFFFFFFF – Adjustmnent Value, Gallons (ASCII Hex IEEE float)
5.   && – Data Termination Flag
6.   CCCC – Message Checksum

Function Code: 79C   Version 2
Function Type: Set Daily Manual Adjustment Value

Command Format: **Inquire:**
  Display: <SOH>S79CTTMMDDGGGGGG   <SOH>I79CTTMMDD
  Computer: <SOH>s79CTTMMDDFFFFFFFF   <SOH>i79CTTMMDD

Notes:
    1.   TT – Tank Number
    2.   MMDD – Month and Day
    3.   GGGGGG – Adjustment Value, Gallons (Decimal)
    4.   FFFFFFFF – Adjustment Value, Gallons (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I79CTT
    JAN 22, 2009 3:24 PM

    T 1:REGULAR UNLEADED
    MAR 26   ADJ VOL: 300
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i79CTTYYMMDDHHmmTTMMDDFFFFFFFF&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – Tank Number
    3.   MMDD – Month and Day
    4.   FFFFFFFF – Adjustment Value, Gallons (ASCII Hex IEEE float)
    5.   && – Data Termination Flag
    6.   CCCC – Message Checksum

Function Code: 79D   Version 2
Function Type: Close Current Reconciliation Shift

Command Format: **Inquire:**
    Display: <SOH>S79D00ff   <SOH>I79D00
    Computer: <SOH>s79D00ff   <SOH>i79D00

Typical Response Message, Display Format:

```
<SOH>
I79D00
JAN 22, 1996  3:23 PM

MANUAL SHIFT CLOSE

RECONCILIATION SHIFT CLOSE STATUS:
  STATION IS BUSY
  *** CLOSE SHIFT PENDING ***
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i79D00YYMMDDHHmmff&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   ff - Close current shift flag
                       01=Close shift pending (for BIR)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 79E   Version 2
Function Type: Clear Tank Map Table

Command Format:
   Display: <SOH>S79E00149
   Computer: <SOH>s79E00149

Notes:
   1.   149 - This verification code must be sent to confirm the command

Typical Response Message, Display Format:

   <SOH>
   S79E00
   JAN 22, 2009 3:23 PM

   RECONCILIATION CLEAR MAPS
   MAPS TABLE CLEARED
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i79E00YYMMDDHHmmss&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   ss - Clear status
                   00=not clear
                   01=cleared
   3.   && - Data Termination Flag
   4.   CCCC - Message Checksum

Function Code: 79F   Version 2
Function Type: Set BIR Temperature Compensation Flag

Command Format: **Inquire:**
    Display: <SOH>S79F00f   <SOH>I79F00
    Computer: <SOH>s79F00f   <SOH>i79F00

Typical Response Message, Display Format:

    <SOH>
    I79F00
    JAN 22, 2009 3:24 PM

    TEMP COMPENSATION
    STANDARD
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i79F00YYMMDDHHmmf&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   f - Status
                        0=Standard
                        1=TC Volume
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

```
          Function Code: 79G                                        Version 2
          Function Type: Set Meter Tank Map

       Command Format:                                             Inquire:
          Display: <SOH>S79G00 Bxx.Sx FP MM F NN            <SOH>I79G00
                   <SOH>S79G00 Cxx FP MM F NN               <SOH>I79G00

         Computer: <SOH>s79G00 Bxx.Sx FP MM F NN            <SOH>i79G00
                   <SOH>s79G00 Cxx FP MM F NN               <SOH>i79G00
```

Notes:
```
   1.        Bxx.Sx - VR BUS and Slot
                Cxx - Comm Slot
   2.           FP - Real fueling position number (Decimal)
   3.           MM - Real meter number (Decimal)
   4.            F - Flag for Tank, Blend, Unassigned
                     T=Tank
                     B=Blend
                     X=Probeless
                     ?=Unmapped
   5.           NN - Tank or Blend Number (Decimal)
                     (00 if Flag is Probeless Tank or Unmapped)
```

Typical Response Message, Display Format:

```
   <SOH>
   I79G00
   JAN 22, 2009  3:24 PM

   SOURCE     REAL REAL   TANK /
   ADDRESS     FP  METER  BLEND
   B1.S2       00   00    T  1 REGULAR
   B1.S2       00   01    T  2 SILVER
   B1.S2       00   03    T  3 BLUE
   B1.S3       00   01    Bl 3 BLUE
   B1.S2       01   02    ?
   B1.S2       02   01    X
   COMM  1     01   00    T  4 E90
   COMM  1     01   01    R
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i79G00YYMMDDHHmm Bxx.Sx FP MM F NN...
                         Cxx FP MM F NN&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.          Bxx.Sx - VR BUS and Slot
                  Cxx - Comm Slot
   3.           FP - Real Fueling Position number (Decimal)
   4.           MM - Real meter number
   5.            F - Flag for Tank, Blend, Unmapped
                     T=Tank
                     B=Blend
                     X=Probeless
                     ?=Unmapped
                     R=Retired
   6.           NN - Tank or Blend Number (Decimal) (00 if Flag is Unmapped)
   7.           && - Data Termination Flag
   8.         CCCC - Message Checksum
```

```
        Function Code: 79H                                        Version 2
        Function Type: Set Meter Map Lock/Unlock by Position

    Command Format:                                              Inquire:
        Display: <SOH>S79H00 Bxx.Sx FP MM L               <SOH>I79H00
                 <SOH>S79H00 Cxx FP MM L                  <SOH>I79H00

       Computer: <SOH>s79H00 Bxx.Sx FP MM L               <SOH>i79H00
                 <SOH>s79H00 Cxx FP MM L                  <SOH>i79H00
```

Notes:
```
    1.        Bxx.Sx - VR BUS and Slot
                 Cxx - Comm Slot
    2.            FP - Real fueling position number (Decimal)
    3.            MM - Real meter number (Decimal)
    4.             L - Locked flag
                        0=Unlocked
                        1=Locked
```

Typical Response Message, Display Format:

```
    <SOH>
    I79H00
    JAN 22, 2009  3:24 PM

    SOURCE      REAL REAL
    ADDRESS     FP   METER LOCKED
    B1.S2       00   00    NO
    B1.S2       00   01    NO
    B1.S2       00   03    YES
    COMM  2     01   00    YES
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i79H00YYMMDDHHmm Bxx.Sx FP MM L...
                     Cxx FP MM L&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.          Bxx.Sx - VR BUS and Slot
                   Cxx - Comm Slot
    3.              FP - Real Fueling Position number (Decimal)
    4.              MM - Real meter number
    5.               L - Locked flag
                          0=Unlocked
                          1=Locked
    6.              && - Data Termination Flag
    7.            CCCC - Message Checksum
```

Function Code: 79I   Version 2
Function Type: Set Meter Map Lock/Unlock All Position

Command Format: **Inquire:**
    Display: <SOH>S79I00L   <SOH>I79I00
    Computer: <SOH>s79I00L   <SOH>i79I00

Typical Response Message, Display Format:

```
<SOH>
I79I00
JAN 22, 2009  3:24 PM

SOURCE     REAL REAL
ADDRESS     FP  METER LOCKED
B1.S2       00   00    NO
B1.S2       00   01    NO
B1.S2       00   03    YES
COMM  2     01   00    YES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i79I00YYMMDDHHmm Bxx.Sx FP MM L...
                      Cxx FP MM L&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   Bxx.Sx - VR BUS and Slot
              Cxx - Comm Slot
    3.   FP - Real Fueling Position number (Decimal)
    4.   MM - Real meter number
    5.   L - Locked flag
                 0=Unlocked
                 1=Locked
    6.   && - Data Termination Flag
    7.   CCCC - Message Checksum

```
          Function Code: 79J                                      Version 2
          Function Type: Set Daily Manual Adjustment Value (Date Range)

          Command Format:                                           Inquire:
             Display: <SOH>S79JTTYYMMDDGGGGGG              <SOH>I79JTTYYMMDD
            Computer: <SOH>s79JTTYYMMDDFFFFFFFF            <SOH>i79JYYTTMMDD
```

Notes:
```
     1.             TT - Tank Number
     2.         YYMMDD - Date
     3.         GGGGGG - Manual Adjustment Volume, Gallons (Decimal)
     4.       FFFFFFFF - Manual Adjustment Volume, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
   <SOH>
   I79JTT
   JAN 22, 2009  3:24 PM

   DAILY MANUAL ADJUSTMENT VALUE


   TANK  DATE/TIME           MANUAL ADJ.
    1   JAN  8, 2009            500
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i79JTTYYMMDDHHmmTTYYMMDDFFFFFFFF...
                    TTYYMMDDFFFFFFFF&&CCCC<ETX>
```

Notes:
```
     1.      YYMMDDHHmm - Current Date and Time
     2.              TT - Tank Number
     3.          YYMMDD - Date
     4.        FFFFFFFF - Manual Adjustment Volume, (ASCII Hex IEEE float)
     5.              && - Data Termination Flag
     6.            CCCC - Message Checksum
```

Function Code: 79K   Version 2
Function Type: Set BIR Status Warning Enable

Command Format: **Inquire:**
    Display: <SOH>S79K00s   <SOH>I79K00
    Computer: <SOH>s79K00s   <SOH>i79K00

Typical Response Message, Display Format:

    <SOH>
    I79K00
    JAN 22, 2009 3:24 PM

    BIR STATUS WARNING: ENABLED
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i79K00YYMMDDHHmms&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   s – Status Warning
                    0=Disabled
                    1=Enabled
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

      Function Code: 79L   Version 2
      Function Type: Set Reconciliation Report Close Day

      Command Format: **Inquire:**
           Display: <SOH>S79L00D   <SOH>I79L00
          Computer: <SOH>s79L00D   <SOH>i79L00

Typical Response Message, Display Format:

```
<SOH>
I79L00
JAN 22, 2009  3:24 PM

PERIODIC RECONCILIATION
CLOSE DAY: SUNDAY
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i79L00YYMMDDHHmmD&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   D - Day of Week (1=Monday, 2=Tuesday, .. 7=Sunday)
    3.   && - Data Termination Flag
    4.   CCCC - Message Checksum

Function Code: 79M   Version 2
Function Type: Set Alarm Threshold Delivery Type

Command Format: **Inquire:**
    Display: <SOH>S79M00d   <SOH>I79M00
    Computer: <SOH>s79M00d   <SOH>i79M00

Typical Response Message, Display Format:

<SOH>
I79M00
JAN 22, 2009 3:24 PM

ALARM THRESHOLD DELIVERY TYPE: STANDARD
<ETX>

Typical Response Message, Computer Format:

<SOH>i79M00YYMMDDHHmmd&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   d – Delivery Type
                    0=Standard
                    1=Ticketed
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

```
   Function Code: 79N                                         Version 2
   Function Type: Set Shift Manual Adjustment Value (Date Range/Shift Number)

   Command Format:                                              Inquire:
      Display: <SOH>S79NTTSSYYMMDDGGGGGG          <SOH>I79NTTSSYYMMDD
     Computer: <SOH>s79NTTSSYYMMDDFFFFFFFF        <SOH>i79NTTSSYYMMDD
```

Notes:
```
   1.              TT - Tank Number (Decimal, 00=all)
   2.              SS - Shift Number (Decimal, 00=all)
   3.          YYMMDD - Date
   4.          GGGGGG - Manual Adjustment Volume, Gallons (Decimal)
   5.        FFFFFFFF - Manual Adjustment Volume, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
   <SOH>
   I79NTT
   JAN 22, 2009  3:24 PM

   SHIFT MANUAL ADJUSTMENT VALUE

   SHIFT 1

   TANK  DATE/TIME          MANUAL ADJ.
    1   JAN  8, 2009           500
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i79NTTYYMMDDHHmmTTYYMMDDNNSSFFFFFFFFSSFFFFFFFF...
                    TTYYMMDDNNSSFFFFFFFFSSFFFFFFFF&&CCCC<ETX>
```

Notes:
```
   1.      YYMMDDHHmm - Current Date and Time
   2.              TT - Tank Number (Decimal)
   3.          YYMMDD - Date
   4.              NN - Number of shift, volume data fields to follow (Decimal)
   5.              SS - Shift Number (Decimal)
   6.        FFFFFFFF - Manual Adjustment Volume, (ASCII Hex IEEE float)
   7.              && - Data Termination Flag
   8.            CCCC - Message Checksum
```

```
          Function Code: 79P                                    Version 2
          Function Type: Set Meter Calibration Offset by Meter

      Command Format:                                             Inquire:
          Display: <SOH>S79P00 Bxx.Sx FP MM 0.0000           <SOH>I79P00
                   <SOH>S79P00 Cxx FP MM 0.0000              <SOH>I79P00

         Computer: <SOH>s79H00 Bxx.Sx FP MM FFFFFFFF          <SOH>i79P00
                   <SOH>s79H00 Cxx FP MM FFFFFFFF             <SOH>i79P00
```

Notes:
```
     1.         Bxx.Sx - VR BUS and Slot
                   Cxx - Comm Slot
     2.          FP - Real fueling position number (Decimal)
     3.          MM - Real meter number (Decimal)
```

Typical Response Message, Display Format:

```
   <SOH>
   I79P00
   JAN 22, 2009  3:24 PM

   SOURCE     REAL REAL  CALIBRATION
   ADDRESS     FP  METER OFFSET
   B1.S2       00   00   0.0000
   B1.S2       00   01   0.0000
   B1.S2       00   03   0.0000
   COMM   2    01   00   0.0000
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i79P00YYMMDDHHmm Bxx.Sx FP MM FFFF...
                    Cxx FP MM FFFFFFFF&&CCCC<ETX>
```

Notes:
```
     1.      YYMMDDHHmm - Current Date and Time
     2.          Bxx.Sx - VR BUS and Slot
                    Cxx - Comm Slot
     3.           FP - Real Fueling Position number (Decimal)
     4.           MM - Real meter number
     5.     FFFFFFFF - Calibration Offset (-9.99 thru 9.99) ASCII Hex IEEE float
     6.           && - Data Termination Flag
     7.         CCCC - Message Checksum
```

```
        Function Code: 79Q                                    Version 2
        Function Type: Set User Fueling Position

     Command Format:                                            Inquire:
        Display: <SOH>S79Q00 Bxx.Sx FF BB              <SOH>I79Q00
                 <SOH>S79Q00 Cxx FP BB                 <SOH>I79Q00

       Computer: <SOH>s79Q00 Bxx.Sx FF BB              <SOH>i79Q00
                 <SOH>s79Q00 Cxx FP BB                 <SOH>i79Q00
```

Notes:
```
    1.         Bxx.Sx - VR BUS and Slot
               Cxx - Comm Slot
    2.          FF - Real fueling position number (Decimal)
    3.          BB - User fueling position number (Decimal)
```

Typical Response Message, Display Format:

```
    <SOH>
    I79Q00
    JAN 22, 2009  3:16 PM

    SOURCE     REAL USER
    ADDRESS     FP  FP
    B1.S2       00   1
    B1.S2       00   1
    B1.S2       00   1
    B1.S2       01  12
    B1.S2       01  12
    B1.S2       01  12
    COMM  2     02  10
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i79Q00YYMMDDHHmm Bxx.Sx FF BB...
                     Cxx FF BB&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.        Bxx.Sx - VR BUS and Slot
              Cxx - Comm Slot
    3.          FF - Real fueling position number (Decimal)
    4.          BB - User fueling position number (Decimal)
    5.          && - Data Termination Flag
    6.        CCCC - Message Checksum
```

Function Code: 79S   Version 2
Function Type: Get Tank Map

Command Format:
       Display: <SOH>I79S00
       Computer: <SOH>i79S00

Typical Response Message, Display Format:

```
<SOH>
I79S00
JAN 22, 2009  3:16 PM

SOURCE      USER   REAL REAL   TANK /                                 LAST REPORT
ADDRESS     FP     FP   METER  BLEND                    LOCKED          TIME
B1.S2       1      00   00     T  1 REGULAR             NO       08/12/18 01:01
B1.S2       1      00   01     T  2 SILVER              NO       08/12/18 01:01
B1.S2       1      00   03     T  3 BLUE                NO       08/12/18 01:01
B1.S2       2      01   01     BL 3 BLUE                NO       08/12/18 01:01
B1.S2       2      01   02     ?                        NO       08/12/19 11:01
B1.S2       3      02   01     X                        NO       08/12/28 03:28
COMM  1     1      00   04     T  4 E90                 NO       08/12/18 01:01
COMM  1     1      00   01     R                        NO       08/12/18 01:01
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i79S00YYMMDDHHmm UU Bxx.Sx FP MM F NN L YYMMDDHHmm...
                      UU Cxx FP MM F NN L YYMMDDHHmm&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   UU - User fueling position number (Decimal)
    3.   Bxx.Sx - VR BUS and Slot
            Cxx - Comm Slot
    4.   FP - Real fueling position number (Decimal)
    5.   MM - Real meter number (Decimal)
    6.   F - Flag for Tank, Blend, Unmapped
                    T=Tank
                    B=Blend
                    X=Probeless
                    ?=Unmapped
                    R=Retired
    7.   NN - Tank or Blend Number (Decimal)
                    (00 if Flag is Probeless Tank or Unmapped)
    8.   L - Locked flag.
                    0=Unlocked
                    1=Locked
    9.   YYMMDDHHmm - Last Report Date and Time
    10.   && - Data Termination Flag
    11.   CCCC - Message Checksum

Function Code: 7B2   Version 2
Function Type: Set Meter Calibration Offset

Command Format: Inquire:
    Display: `<SOH>S7B200pp.ppp`   `<SOH>I7B200`
    Computer: `<SOH>s7B200FFFFFFFF`   `<SOH>i7B200`

Notes:
    1.   pp.ppp – Meter Calibration Offset, Percent (Decimal)
    2.   FFFFFFFF – Meter Calibration Offset, Percent (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I7B200
JUN  1, 2009  8:10 AM

METER CALIBRATION
OFFSET:  0.000%
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7B200YYMMDDHHmmFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   FFFFFFFF – Meter Calibration Offset, Percent (ASCII Hex IEEE float)
    3.   && – Data Termination Flag
    4.   CCCC – Message Checksum

Function Code: 7B4   Version 2
Function Type: Set Individual Meter Offset

Command Format: Inquire:
  Display: <SOH>S7B400 FF MM TT +0.00   <SOH>I7B400
  Computer: not supported   <SOH>i7B400

Notes:
1.   FF - Fueling Position (Decimal)
2.   MM - Meter Number (Decimal)
3.   TT - Tank Number (Decimal)
4.   o.oo - Meter Offset, percent (Decimal +/-9.99)

Typical Response Message, Display Format:

```
<SOH>
I7B400
JUN  1, 2013  8:10 AM

INDIVIDUAL METER OFFSET

FP   METER   TANK                    OFFSET
01   00      3 PREMIUM               +0.00%
     01      1 UNLEADED              +0.00%
02   00      3 PREMIUM               +0.00%
     01      1 UNLEADED              +0.00%
03   00      3 PREMIUM               +0.00%
     01      1 UNLEADED              +0.00%
04   00      3 PREMIUM               +0.00%
     01      1 UNLEADED              +0.00%
05   00      3 PREMIUM               +0.00%
     01      1 UNLEADED              +0.00%
     02      2 DIESEL                +0.00%
06   00      3 PREMIUM               +0.00%
     01      1 UNLEADED              +0.00%
     02      2 DIESEL                +0.00%
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7B400YYMMDDHHmmNNNNFFMMTTooooooooo…
                   FFMMTTooooooooo&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   NNNN - Number of entires to follow (ASCII Hex)
3.   FF - Fuel Position (Decimal)
4.   MM - Meter Position (Decimal)
5.   TT - Tank Number (Decimal)
         00=Tank not mapped
6.   oooooooo - Meter Offset, Percent (Decimal, +/-9.99)
7.   && - Data Termination Flag
8.   CCCC - Message Checksum

Function Code: 7B5   Version 2
Function Type: Set Ticketed Delivery

Command Format:
Display: <SOH>S7B5TTeeYYMMDDHHmmGGGGGG
Computer: <SOH>s7B5TTeeYYMMDDHHmmFFFFFFFF

Notes:
1. TT – Tank Number (Decimal, 00=all)
2. ee – edit function
   01=Edit Ticket (enter, modify)
   02=Insert Ticket Delivery
3. YYMMDDHHmm – Delivery Date/Time (End Time)
4. GGGGGG – Ticket Volume, Gallons (Decimal)
5. FFFFFFFF – Ticket Volume, Gallons (ASCII Hex IEEE float)
   Entering 0 volume will cancel ticketed delivery warning.
   VOL TC/STANDARD must match setup for ticketed delivery.

Typical Response Message, Display Format:

```
<SOH>
S7B5TT
JAN  9, 2009  8:08 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

SET TICKETED DELIVERY

VOLUMES ARE STANDARD

T 1:UNLEADED REGULAR
```

	TICKET VOLUME	GAUGE VOLUME	VARIANCE
JAN 8, 2009 2:10 AM	500.0	503.0	3.0

```
<ETX>
```

Function Code 7B5: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i7B5TTYYMMDDHHmmTTpPPRRYYMMDDHHmmNNFFFFFFFF...
                TTpPPRRYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             TT - Tank Number (Decimal)
    3.              p - Product Code (one ASCII character [20h-7Eh])
    4.             PP - Probe type (Decimal)
    5.             RR - Result code - if an error occurs, just error code will be
                        returned (Decimal)
                            00=OK and data will follow
                            01=BIR not enabled
                            02=Tank number is invalid
                            03=missing time/date
                            04=Time Date not numeric
                            05=invalid date
                            06=time is invalid
                            07=Date out of  range of period (curr & prev via BIR)
                            08=If there is no matching time/date for edit
                            09=Invalid volume
                            10=Try to insert when gauged exists
                            30=Reserved
                            31=Reserved
    6.      YYMMDDHHmm - Delivery Date/Time (End Time)
    7.             NN - Number of eight character Data Fields to follow (Hex)
    8.       FFFFFFFF - ASCII Hex IEEE floats:
                            1. Ticketed volume
                            2. Gauged volume
                            3. Delivery variance
    9.             && - Data Termination Flag
   10.           CCCC - Message Checksum
```

Function Code: 7B6   Version 2
Function Type: Set BOL number

Command Format: Inquire:
    Display: <SOH>S7B6TTeeYYMMDDHHmmaa..aa   <SOH>I7B6TT
   Computer: <SOH>s7B6TTeeYYMMDDHHmmaa..aa   <SOH>i7B6TT

Notes:
1.   TT – Tank Number (Decimal)
2.   ee – edit function
            01=Edit Ticket (enter, modify)
            02=Insert Ticketed Delivery
3.   YYMMDDHHmm – Delivery Date/Time (End Time)
4.   aa..aa – Bill of Lading Number

Typical Response Message, Display Format:

```
<SOH>
I7B60101
FEB 01, 2009  4:29 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

SET  TICKETED DELIVERY BOL NUMBER

                        BOL        TICKET       GAUGE    TC GAUGE
DELIVERY END DATE       NUMBER     VOLUME       VOLUME   VOLUME
DEC  2, 2009  2:00 AM   123456        0.0        502.0      0.0
```

Function Code 7B6 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i7B6TTYYMMDDHHmmTTpPPRRYYMMDDHHmmAAaa..aaNNFFFFFFFF...FFFFFFFF...
                    TTpPPRRYYMMDDHHmmAAaa..aaNNFFFFFFFF...FFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal)
3.   p - Product Code (Decimal)
4.   PP - Probe type (Decimal)
5.   RR - Result code (Decimal) - if error occurs, only error code is returned
   - 00=OK and data will follow
   - 01=BIR not enabled
   - 02=Tank number is invalid
   - 03=missing time/date
   - 04=Time Date not numeric
   - 05=invalid date
   - 06=time is invalid
   - 07=Date out of range of period (curr & prev via BIR)
   - 08=If there is no matching time/date for edit
   - 30=Reserved
   - 31=Reserved
6.   YYMMDDHHmm - Delivery Date/Time (End Time)
7.   AA - Number of ASCII characters to follow
8.   aa..aa - Bill of Lading Number (ASCII characters [20h-7Eh])
9.   NN - Number of eight character Data Fields to follow (Hex)
10.   FFFFFFFF - ASCII Hex IEEE floats - VOL TC/STANDARD must match setup for ticketed delivery
    1. Ticketed volume
    2. Gauged volume
    3. Gauged TC volume
11.   && - Data Termination Flag
12.   CCCC - Message Checksum

Function Code: **7BG**   Version 2
Function Type: Set Ticketed Delivery Info

Command Format:
Display: <SOH>S7BGTTeeYYMMDDHHmmGGGGGG,
                     gggggg,TTT.TT,
                     aa.aa,DD..DD
Computer: <SOH>s7BGTTeeYYMMDDHHmmFFFFFFFF
                     gggggg,TTT.TT,
                     aa.aa,DD..DD

Notes:
1.   TT - Tank Number (Decimal, 00=all)
2.   ee - edit function
                          01=Edit Ticket (enter, modify)
                          02=Insert Ticket Delivery
3.   YYMMDDHHmm - Delivery Date/Time (End Time)
4.   GGGGGG - Ticket Volume, Gallons (Decimal)
5.   gggggg - TC Ticket Volume, Gallons (Decimal)
6.   TTT.TT - Delivery Temperature (Float)
7.   aa..aa - Bill of Lading Number (20 ASCII characters [20h-7Eh])
8.   DD..DD - Delivery Id (20 ASCII characters [20h-7Eh])
9.   FFFFFFFF - Ticket Volume, Gallons (ASCII Hex IEEE float)
                          Entering 0 volume will cancel ticketed delivery warning.
                          VOL TC/STANDARD must match setup for ticketed delivery.

Typical Response Message, Display Format:

```
<SOH>
S7BGTT
JAN  9, 2009  8:08 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

SET TICKETED DELIVERY

VOLUMES ARE STANDARD

T 1:UNLEADED REGULAR
```

	TICKET VOLUME	GAUGE VOLUME	VARIANCE VOLUME	TC TICKET VOLUME	TEMP	BOL	DELIVERY ID
JAN 8, 2009 2:10 AM	500	503	3	501	80.2	0812	94

```
<ETX>
```

Function Code 7BG: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i7BGTTYYMMDDHHmmeeTTpPPRRYYMMDDHHmmNNFFFFFFFFaa.aaDD..DD...
                    TTpPPRRYYMMDDHHmmNNFFFFFFFFaa.aaDD..DD...&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   ee - edit function
                        01=Edit Ticket (enter, modify)
                        02=Insert Ticket Delivery
3.   TT - Tank Number (Decimal)
4.   p - Product Code (one ASCII character [20h-7Eh])
5.   PP - Probe type (Decimal)
6.   RR - Result code - if an error occurs, just error code will be
                   returned (Decimal)
                        00=OK and data will follow
                        01=BIR not enabled
                        02=Tank number is invalid
                        03=missing time/date
                        04=Time Date not numeric
                        05=invalid date
                        06=time is invalid
                        07=Date out of range of period (curr & prev via BIR)
                        08=If there is no matching time/date for edit
                        09=Invalid volume
                        10=Try to insert when gauged exists
                        30=Reserved
                        31=Reserved
7.   YYMMDDHHmm - Delivery Date/Time (End Time)
8.   NN - Number of eight character Data Fields to follow (Hex)
9.   FFFFFFFF - ASCII Hex IEEE floats:
                        1. Ticketed volume
                        2. Gauged volume
                        3. Delivery variance
                        4. TC Ticketed volume
                        5. Temperature
10.   aa..aa - Bill of Lading Number (20 ASCII characters [20h-7Eh])
11.   DD..DD - Delivery Id (20 ASCII characters [20h-7Eh])
12.   && - Data Termination Flag
13.   CCCC - Message Checksum

Function Code: **7C1**   Version 2
Function Type: Set Tank Periodic Reconciliation Alarm Threshold Enable

Command Format: **Inquire:**
    Display: <SOH>S7C100f   <SOH>I7C100
    Computer: <SOH>s7C100f   <SOH>i7C100

Typical Response Message, Display Format:

```
<SOH>
I7C100
JUN 22, 2009  3:12 PM

TANK PERIODIC RECONCILIATION ALARM THRESHOLD: DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7C100YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   rr – Pump Relay Monitor Number (Decimal, 00=all)
    3.   f – Configuration Flag (ASCII Hex)
                           0=Disabled
                           1=Enabled
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: **7C2**   Version 2
Function Type: Set Tank Periodic Reconciliation Alarm Threshold

Command Format: **Inquire:**
Display: <SOH>S7C2TTPP.hh   <SOH>I7C2TT
Computer: <SOH>s7C2TTFFFFFFFF   <SOH>i7C2TT

Notes:
1.   TT – Tank Number (Decimal, 00 = all)
2.   PP.hh – Tank Alarm Threshold, Percent and hundredths (Decimal)
3.   FFFFFFFF – Tank Alarm Threshold, Percent (ASCII Hex IEEE float)

Typical Response Message, Display Format:

    <SOH>
    I7C2TT
    JUN 22, 2009 3:12 PM

    TANK PERIODIC RECONCILIATION ALARM THRESHOLD
    TANK   LABEL   THRESHOLD
     1   REGULAR UNLEADED   1.00%
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i7C2TTYYMMDDHHmmTTFFFFFFFF&&CCCC<ETX>

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=all)
3.   FFFFFFFF – Tank Alarm Threshold, Percent(ASCII Hex IEEE float)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
        Function Code: 7C3                                          Version 4
        Function Type: Set HRM Maximum Volume Limit

      Command Format:                                               Inquire:
          Display: <SOH>S7C3TTGGGGGG                              <SOH>I7C3TT
         Computer: <SOH>s7C3TTFFFFFFFF                            <SOH>i7C3TT
```

Notes:
```
    1.              TT - Tank Number (Decimal, 00 = all)
    2.         GGGGGG - HRM Maximum Volume Limit, Gallons (Decimal)
    3.       FFFFFFFF - HRM Maximum Volume Limit, Gallons (ASCII Hex IEEE float)
```

Typical Response Message, Display Format:

```
    <SOH>
    I7C3TT
    JUN 22, 2011  3:12 PM

    HRM MAXIMUM VOLUME LIMIT
    TANK    PRODUCT LABEL            GALLONS
     1      REGULAR UNLEADED              132
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i7C3TTYYMMDDHHmmTTFFFFFFFF...
                    TTFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal, 00=all)
    3.        FFFFFFFF - HRM Maximum Alarm Limit, Galloms (ASCII Hex IEEE float)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: **7D6**   Version 3
Function Type: Accuchart Operating Height Span

Command Format: **Inquire:**
    Display: <SOH>S7D6TTaabb   <SOH>I7D6TT
   Computer: <SOH>s7D6TTaabb   <SOH>i7D6TT

Notes:
   1.   TT - Tank Number [01..32] (Decimal, 00 = all)
   2.   aa - Max operating level in percent of diameter [50-99] (Decimal)
   3.   bb - Min operating level in percent of diameter [00-45] (Decimal)

Typical Response Message, Display Format:

```
<SOH>
I7D6TT
JUN 22, 2010   3:12 PM

ACCUCHART OPERATING SPAN

TANK        LABEL           MIN   MAX
----  --------------------  ---   ---
  1   UNLEADED               5%   95%
  2   MIDGRADE               1%   99%
  3   PREMIUM                2%   50%
 16   DIESEL                 5%   45%
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7D6TTYYMMDDHHmmTTaabb...
              TTaabb&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   TT - Tank Number [01..32] (Decimal, 00=all)
   3.   aa - Max operating level in percent of diameter [50-99] (Decimal)
   4.   bb - Min operating level in percent of diameter [00-45] (Decimal)
   5.   && - Data Termination Flag
   6.   CCCC - Message Checksum

Function Code: 7H0   Version 2
Function Type: BIR Multiple Threshold Setup Report

    Command Format:
        Display: <SOH>I7H0TT
        Computer: not supported

Typical Response Message, Display Format:

```
<SOH>
I7H0TT
JUN 22, 2009  3:12 PM

BIR MULTIPLLE THRESHOLD SETUP REPORT
```

TEST NUMBER	TEST TYPE	THRESHOLD TYPE	CONFIG	PERCENT	OFFSET VALUE
1	MONTHLY	1-THROUGHPUT	ENABLE	1.00	130
		2-CAPACITY	DISABLED	1.00	110
		3-DELIVERY	ENABLE	1.00	100
		4-FIXED	DISABLED		130
2	ROLLING – 10 DAYS	1-THROUGHPUT	ENABLE	1.00	99
		2-CAPACITY	ENABLE	1.00	50
		3-DELIVERY	ENABLE	1.00	75
		4-FIXED	ENABLE		1500
3	DISABLED				
4	DISABLED				

```
<ETX>
```

Function Code: 7H1   Version 2
Function Type: Set BIR Multiple Threshold Test Type

Command Format: **Inquire:**
  Display: <SOH>S7H1TTff   <SOH>I7H1TT
  Computer: <SOH>s7H1TTff   <SOH>i7H1TT

Typical Response Message, Display Format:

```
<SOH>
I7H1TT
JUN 22, 2009  3:12 PM

TEST   TYPE
 1     MONTHLY
 2     ROLLING DAYS
 3     DISABLED
 4     DISABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7H1TTYYMMDDHHmmTTff...
             TTff&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Test Number (Decimal, 00=all, inquire only, else 01-04)
3.   ff - Test Type Value
                    00=Disabled
                    01=Monthly
                    02=Rolling Days
                    03=Daily
                    04=Rolling Consecutive Days
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
        Function Code: 7H2                                          Version 2
        Function Type: Set BIR Multiple Threshold Rolling Days

        Command Format:                                              Inquire:
            Display: <SOH>S7H2TTdd                               <SOH>I7H2TT
           Computer: <SOH>s7H2TTdd                               <SOH>i7H2TT
```

Notes:
1.   dd – Only valid when Test Type is 02 – Rolling or 03 – Rolling
                Consecutive

Typical Response Message, Display Format:

```
    <SOH>
    I7H2TT
    JUN 22, 2009  3:12 PM

    BIR MULTIPLE THRESHOLD ROLLING DAYS

    TEST    TYPE                            NUMBER OF DAYS
     1      MONTHLY
     2      ROLLING – 10 DAYS                  10
     3      ROLLING CONSECUTIVE – 10 DAYS       3
     4      DISABLED
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i7H2TTYYMMDDHHmmTTdd...
                     TTdd&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Test Number (Decimal, 00=all, inquire only, else 01-04)
3.   dd – Number of Rolling Days (Decimal)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: 7H3   Version 2
Function Type: Set BIR Multiple Threshold Type Enable

Command Format: **Inquire:**
    Display: <SOH>S7H3TTttf   <SOH>I7H3TT
    Computer: <SOH>s7H3TTttf   <SOH>i7H3TT

Typical Response Message, Display Format:

```
<SOH>
I7H3TT
JUN 22, 2009  3:12 PM

BIR MULTIPLE THRESHOLD TYPE ENABLE
```

TEST NUMBER	TEST TYPE	THRESHOLD TYPE	CONFIGURED
1	MONTHLY	1-THROUGHPUT	ENABLE
		2-CAPACITY	DISABLED
		3-DELIVERY	ENABLE
		4-FIXED	DISABLED
2	ROLLING - 10 DAYS	1-THROUGHPUT	ENABLE
		2-CAPACITY	DISABLED
		3-DELIVERY	ENABLE
		4-FIXED	DISABLED

```
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7H3TTYYMMDDHHmmTTttf...
               TTttf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Test Number (Decimal, 00=all, inquire only, else 01-04)
3.   tt - Number of Rolling Days (Decimal)
                01-Percent of Throughput
                02-Percent of Capacity
                03-Percent of Deliveries
                04-Fixed Value
4.   f - Enable/Disable Flag
                0=Disable
                1=Enable
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

```
        Function Code: 7H4                                          Version 2
        Function Type: Set BIR Multiple Threshold Percentage

        Command Format:                                              Inquire:
            Display: <SOH>S7H4TTttxx.xx                          <SOH>I7H4TT
           Computer: <SOH>s7H4TTttxx.xx                          <SOH>i7H4TT
```

Typical Response Message, Display Format:

```
  <SOH>
  I7H4TT
  JUN 22, 2009  3:12 PM

  BIR MULTIPLE THRESHOLD PERCENTAGE
```

TEST NUMBER	TEST TYPE	THRESHOLD TYPE	PERCENT
1	MONTHLY	1-THROUGHPUT	1.00
		2-CAPACITY	1.00
		3-DELIVERY	1.00
2	ROLLING - 10 DAYS	1-THROUGHPUT	1.00
		2-CAPACITY	1.00
		3-DELIVERY	1.00

```
  <ETX>
```

Typical Response Message, Computer Format:

```
  <SOH>i7H4TTYYMMDDHHmmTTttEEEEEEEE...
                  TTttEEEEEEEE&&CCCC<ETX>
```

Notes:
```
    1.    YYMMDDHHmm - Current Date and Time
    2.          TT - Test Number (Decimal, 00=all, inquire only, else 01-04)
    3.          tt - Number of Rolling Days (Decimal)
                        01-Percent of Throughput
                        02-Percent of Capacity
                        03-Percent of Deliveries
    4.      EEEEEEEE - Percentage value (IEEE format)
    5.          && - Data Termination Flag
    6.        CCCC - Message Checksum
```

Function Code: 7H5   Version 2
Function Type: Set BIR Multiple Threshold Offset Value

Command Format: **Inquire:**
    Display: `<SOH>S7H5TTttxxxxxx`   `<SOH>I7H5TT`
    Computer: `<SOH>s7H5TTttEEEEEEEE`   `<SOH>i7H5TT`

Typical Response Message, Display Format:

```
<SOH>
I7H5TT
JUN 22, 2009  3:12 PM

BIR MULTIPLE THRESHOLD OFFSET VALUE
```

TEST NUMBER	TEST TYPE	THRESHOLD TYPE	OFFSET VALUE
1	MONTHLY	1-THROUGHPUT	130
		2-CAPACITY	110
		3-DELIVERY	100
		4-FIXED	1500
2	ROLLING - 10 DAYS	1-THROUGHPUT	99
		2-CAPACITY	50
		3-DELIVERY	75
		4-FIXED	350
3	DISABLED		

```
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7H5TTYYMMDDHHmmTTttEEEEEEEE...
              TTttEEEEEEEE&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Test Number (Decimal, 00=all, inquire only, else 01-04)
3.   tt - Threshold Type
             01-Percent of Throughput
             02-Percent of Capacity
             03-Percent of Deliveries
             04-Fixed Value
4.   EEEEEEEE - Offset value (IEEE format)
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

7.3.11 PUMP MONITOR RELAY SETUP

    Function Code: **7C7**   Version 5
    Function Type: Set Pump Relay Monitor Stuck Relay

    Command Format: **Inquire:**
        Display: `<SOH>S7C7QQSSS`   `<SOH>I7C7QQ`
     Computer: `<SOH>s7C7QQFFFFFFFF`   `<SOH>i7C7QQ`

Notes:
    1.   SSS – Stuck Relay, Seconds (Decimal, 5 – 600 seconds)
    2.   FFFFFFFF – Stuck Relay, Seconds (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I7C7QQ
JUN 22, 2014  3:12 PM

PUMP RELAY MONITOR STUCK RELAY

DEVICE  LABEL                  STUCK RELAY
    1  PUMP RELAY UNLEADED        60 SEC
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7C7QQYYMMDDHHmmQQFFFFFFFF...
                QQFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   QQ – Pump Relay Monitor Number (Decimal, 00=all)
    3.   FFFFFFFF – Stuck Relay, Seconds (ASCII Hex IEEE float)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: **7C8**   Version 5
Function Type: Set Pump Relay Monitor Max Run Time

Command Format: **Inquire:**
    Display: <SOH>S7C8QQhh   <SOH>I7C8QQ
    Computer: <SOH>s78CQQFFFFFFFF   <SOH>i7C8QQ

Notes:
1.   hh - Max Run Time, Hours (Decimal, 1 - 8 hours)
2.   FFFFFFFF - Max Run Time, Hours (ASCII Hex IEEE float)

Typical Response Message, Display Format:

```
<SOH>
I7C8QQ
JUN 22, 2014  3:12 PM

PUMP RELAY MONITOR MAX RUN TIME

DEVICE  LABEL                  MAX RUN TIME
    1   PUMP RELAY UNLEADED        8 HR
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i7C8QQYYMMDDHHmmQQFFFFFFFF...
                QQFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pump Relay Monitor Number (Decimal, 00=all)
3.   FFFFFFFF - Max Run Time, Hours (ASCII Hex IEEE float)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

7.3.12 I/O DEVICE SETUP

     Function Code: 801   Version 1
     Function Type: Set Input Configuration

     Command Format: **Inquire:**
          Display: <SOH>S801IIf   <SOH>I801II
        Computer: <SOH>s801IIf   <SOH>i801II

Typical Response Message, Display Format:

```
<SOH>
I801II
MAR 26, 1996  1:50 PM

EXTERNAL INPUT CONFIGURATION

DEVICE  LABEL                CONFIGURED
    1   EXTERNAL INPUT #1     OFF
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i801IIYYMMDDHHmmIIf...
             IIf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   II – Input Number (Decimal, 00=all)
    3.   f – Configuration Flag
                         0=Off
                         1=On
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 802   Version 1
Function Type: Set Input Location Label

Command Format: **Inquire:**
    Display: <SOH>S802IIaaaaaaaaaaaaaaaaaaaa   <SOH>I802II
   Computer: <SOH>s802IIaaaaaaaaaaaaaaaaaaaa   <SOH>i802II

Typical Response Message, Display Format:

```
<SOH>
I802II
MAR 26, 1996  1:50 PM

EXTERNAL INPUT LABEL

DEVICE  LABEL
     1  aaaaaaaaaaaaaaaaaaaa
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i802IIYYMMDDHHmmIIaaaaaaaaaaaaaaaaaaaa...
               IIaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   II – Input Number (Decimal, 00=all)
3.   a – Location Label (20 ASCII characters [20h-7Eh])
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: 806   Version 1
Function Type: Set Relay Configuration

Command Format: **Inquire:**
  Display: <SOH>S806RRf   <SOH>I806RR
  Computer: <SOH>s806RRf   <SOH>i806RR

Typical Response Message, Display Format:

```
<SOH>
I806RR
MAR 26, 1996  1:51 PM

RELAY CONFIGURATION

DEVICE  LABEL                  CONFIGURED
    1   OUTPUT RELAY #1        ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i806RRYYMMDDHHmmRRf...
               RRf&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm – Current Date and Time
  2.   RR – Relay Number (Decimal, 00=all)
  3.   f – Configuration Flag
                        0=Off
                        1=On
  4.   && – Data Termination Flag
  5.   CCCC – Message Checksum

Function Code: 807   Version 1
Function Type: Set Relay Location Label

Command Format: **Inquire:**
    Display: `<SOH>S807RRaaaaaaaaaaaaaaaaaaaa`   `<SOH>I807RR`
    Computer: `<SOH>s807RRaaaaaaaaaaaaaaaaaaaa`   `<SOH>i807RR`

Typical Response Message, Display Format:

```
<SOH>
I807RR
MAR 26, 1996  1:51 PM

RELAY LABEL

DEVICE  LABEL
     1  aaaaaaaaaaaaaaaaaaaa
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i807RRYYMMDDHHmmRRaaaaaaaaaaaaaaaaaaaa...
                RRaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   RR – Relay Number (Decimal, 00=all)
3.   a – Location Label (20 ASCII characters [20h-7Eh])
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: 809   Version 1
Function Type: Set Relay Orientation

Command Format: **Inquire:**
    Display: <SOH>S809RRs   <SOH>I809RR
    Computer: <SOH>s809RRs   <SOH>i809RR

Typical Response Message, Display Format:

    <SOH>
    I809RR
    MAR 26, 1996 1:51 PM

    RELAY ORIENTATION

    RELAY DESIGNATION   ORIENTATION
       1 EXTERNAL RELAY #1   NORMALLY OPEN
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i809RRYYMMDDHHmmRRs...
                    RRs&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   RR - Relay Number (Decimal, 00=all)
    3.   s - Orientation:
                        1=Normally Open
                        2=Normally Closed
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
       Function Code: 80A                                    Version 1
       Function Type: Set Relay Type

    Command Format:                                          Inquire:
       Display: <SOH>S80ARRt                            <SOH>I80ARR
      Computer: <SOH>s80ARRt                            <SOH>i80ARR
```

Notes:
```
    1.              RR - Relay number (Decimal, 00=all relays)
    2.               t - type
                         1=Standard
                         2=Pump Control Output
                         3=Momentary
                         4=Pump Comm Control
                         5=Vapor Processor (only one relay can be of this type)
                            (future)
```

Typical Response Message, Display Format:

```
    <SOH>
    I80ARR
    JUN  1, 2002  8:07 AM

    RELAY TYPE

    RELAY DESIGNATION        TYPE
        1 EXTERNAL RELAY #1   STANDARD
        2 TANK 1              PUMP CONTROL
        3 VAPOR PROCESSOR     VAPOR PROCESSOR
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i80ARRYYMMDDHHRRt&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              RR - Relay number (Decimal, 00=all relays)
    3.               t - type
                         1=Standard
                         2=Pump Control Output
                         3=Momentary
                         4=Pump Comm Control
                         5=Vapor Processor (only one relay can be of this type)
                            (future)
    4.              && - Data Termination Flag
    5.           CCCC - Message Checksum
```

Function Code: 80D   Version 1
Function Type: Set External Input Orientation

Command Format: **Inquire:**
    Display: <SOH>S80DQQf   <SOH>I80DQQ
   Computer: <SOH>s80DQQf   <SOH>i80DQQ

Typical Response Message, Display Format:

```
<SOH>
I80DQQ
JAN 24, 1996  2:54 PM

EXTERNAL INPUT ORIENTATION

INPUT  NAME                    ORIENTATION
    1  REGULAR UNLEADED        Normally Open
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i80DQQYYMMDDHHmmQQf...
              QQf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - external input number (Decimal, 00=All)
3.   f - Type
                   1=Normally Open
                   2=Normally Closed
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
    Function Code: 80F                                          Version 1
    Function Type: Set Input Type

  Command Format:                                              Inquire:
      Display: <SOH>S80FIIt                                <SOH>I80FII
     Computer: <SOH>s80FIIt                                <SOH>i80FII
```

Typical Response Message, Display Format:

```
<SOH>
I80FII
MAR 26, 1996  1:51 PM

EXTERNAL INPUT TYPE

INPUT  NAME                      TYPE
    1  EXTERNAL INPUT #1         Generator
    2  DCD INPUT                 Acknowledge Alarm
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i80FIIYYMMDDHHmmIIt..
                IIt&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.              II - Input Number (Decimal, 00=all)
   3.               t - Input type:
                        1=Standard
                        2=Generator
                        3=Pump Sense
                        4=Acknowledge Alarm
                        5=Vapor Processor                    (future)
                        6=Pump Monitor
   4.              && - Data Termination Flag
   5.            CCCC - Message Checksum
```

```
    Function Code: 821                                          Version 1
    Function Type: Set Probe Configuration

    Command Format:                                              Inquire:
        Display: <SOH>S821PPf                              <SOH>I821PP
       Computer: <SOH>s821PPf                              <SOH>i821PP
```

Typical Response Message, Display Format:

```
<SOH>
I821PP
MAR 26, 2007  1:50 PM

PROBE CONFIGURATION

PROBE    LABEL          CONFIGURED
   1    PROBE #1        ON
   2    PROBE #2        OFF
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i821PPYYMMDDHHmmPPf...
               PPf&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              PP - Probe Number (Decimal, 00=all)
    3.               f - Configuration Flag
                          0=OFF
                          1=ON
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

```
       Function Code: 822                                    Version 1
        Function Type: Set Probe Label

       Command Format:                                          Inquire:
          Display: <SOH>S822PPaaaaaaaaaaaaaaaaaaaa         <SOH>I822PP
          Computer: <SOH>s822PPaaaaaaaaaaaaaaaaaaaa         <SOH>i822PP
```

Typical Response Message, Display Format:

```
<SOH>
I822PP
MAR 26, 2007  1:50 PM

PROBE LABEL

PROBE    LABEL
    1    MAG PROBE 1
    2    MAG PROBE 2
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i822PPYYMMDDHHmmPPaaaaaaaaaaaaaaaaaaaa...
                  PPaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.            PP - Probe Number (Decimal, 00=all)
    3.             a - Probe Label (20 ASCII characters [20h-7Eh])
    4.            && - Data Termination Flag
    5.          CCCC - Message Checksum
```

7.3.13 MISCELLANEOUS SETUP

```
        Function Code: 871                                          Version 1
        Function Type: Setup Communication Card

     Command Format:                                              Inquire:
         Display: <SOH>S871PPMMSSQQ                           <SOH>I871PP
         Computer: <SOH>s871PPMMSSQQ                          <SOH>i871PP
```

Typical Response Message, Display Format:

```
   <SOH>
   I871PP
   NOV 5, 2007 12:00 AM

   COMMUNICATION CARD SETUP

   COMM #        SLOT #        PORT #       CARD TYPE
     1             1             1          RS232
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i871PPYYMMDDHHmmppMMSSQQ&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.             pp - Comm Number (decimal)
   3.             MM - Comm Card Type:
                     00=No Card
                     01=RS232
                     02=RS485
                     03=Internal Modem
                     04=Dim                        (Version 2)
                     05=IFSF                        (Not supported)
                     06=Ethernet
                     07=Satellite - Jbox
                     08=Satellite - Ssat
                     09=USB
                     10=CDIM                        (Version 2)
   4.             SS - Slot Number (decimal)
   5.             QQ - Port Number (decimal)
   6.             && - Data Termination Flag
   7.           CCCC - Message Checksum
```

```
        Function Code: 872                                    Version 2
        Function Type: Set Communication Card Configuration Flag

        Command Format:                                       Inquire:
           Display: <SOH>S872ppf                          <SOH>I872pp
          Computer: <SOH>s872ppf                          <SOH>i872pp
```

Typical Response Message, Display Format:

```
<SOH>
I872pp
JUN  1, 2007  8:10 AM

COMMUNICATION CARD CONFIGURATION

COMM #    SLOT #    PORT #    LABEL                CONFIGURED
  1         1         1       HOME OFFICE               ON
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i872ppYYMMDDHHmmppSSQQf...
                  ppSSQQf&&CCCC<ETX>
```

Notes:
```
  1.       YYMMDDHHmm - Current Date and Time
  2.               pp - Comm Number (Decimal)
  3.               SS - Slot Number (Decimal)
  4.               QQ - Port Number (Decimal)
  5.                f - Communication Card Configuration Flag (Decimal)
                         0=Disabled
                         1=Enabled
  6.               && - Data Termination Flag
  7.             CCCC - Message Checksum
```

Function Code: 873   Version 1
Function Type: Set Communication Port Data

Command Format: Inquire:
    Display: <SOH>S873PPBBDPSH   <SOH>I873PP
    Computer: <SOH>s873PPBBDPSH   <SOH>i873PP

Notes:
  1.   PP - Communication Port Number (Decimal)

Typical Response Message, Display Format:

```
<SOH>
I873PP
JUN  1, 2007  8:10 AM
PORT SETTINGS:

COMM PORT   : 1
 COMM BOARD : RS-232
 BAUD RATE  : 9600
 DATA LENGTH: 7 DATA
 PARITY     : ODD
 STOP BIT   : 1 STOP
 HANDSHAKING: No Handshaking
<ETX>
```

Function Code 873 Notes: (Continued)

Typical Response Message, Computer Format:

   `<SOH>i873PPYYMMDDHHmmppBBDPSH&&CCCC<ETX>`

Notes:
```
1.        YYMMDDHHmm - Current Date and Time
2.              pp - Comm Number (Decimal)
3.              BB - Baud Rate   (Decimal)
                    00=Unknown
                    01=Proprietary
                    02=300
                    03=600
                    04=1200
                    05=2400
                    06=4800
                    07=9600
                    08=19200
                    09=38400
                    10=57600
                    11=115200
4.               D - Data Bit (Decimal)
                    0=Unknown
                    1=Proprietary
                    2=7
                    3=8
5.               P - Parity (Decimal)
                    0=Unknown
                    1=Proprietary
                    2=None
                    3=Odd
                    4=Even
                    5=Mark
                    6=Space
6.               S - Stop Bit (Decimal)
                    0=Unknown
                    1=Proprietary
                    2=1
                    3=2
7.               H - Handshaking (Decimal)
                    0=No Handshaking
                    1=RTS/CTS
                    2=Xon/Xoff
                    3=DTRDSR
8.              && - Data Termination Flag
9.            CCCC - Message Checksum
```

Function Code: 874   Version 2
Function Type: Set Communication Card Location Label

Command Format: Inquire:
   Display: `<SOH>S874ppaaaaaaaaaaaaaaaaaaaa`   `<SOH>I874pp`
  Computer: `<SOH>s874ppaaaaaaaaaaaaaaaaaaaa`   `<SOH>i874pp`

Notes:
1.   pp - Communication Number (Decimal)

Typical Response Message, Display Format:

```
<SOH>
I874pp
JUN  1, 2007  8:10 AM

COMMUNICATION CARD LABEL

COMM #    SLOT #    PORT #    LABEL
  1         1         1       HOME OFFICE
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i874ppYMMDDHHmmppSSQQaaaaaaaaaaaaaaaaaaaa...
              ppSSQQaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   pp – Comm Number (Decimal)
3.   SS – Slot Number (Decimal)
4.   QQ – Port Number (Decimal)
5.   aaa...aaa - Location Label (20 ASCII characters [20h-7Eh])
6.   && - Data Termination Flag
7.   CCCC - Message Checksum

Function Code: 877   Version 1
Function Type: Set Communication Device Type

Command Format: Inquire:
    Display: <SOH>S877ppdd   <SOH>I877pp
    Computer: <SOH>s877ppdd   <SOH>i877pp

Typical Response Message, Display Format:

```
<SOH>
I87701
JAN 22, 2007  3:16 PM

COMM    LABEL          COMM DEVICE TYPE
  1     OFFICE         USB MODEM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i87700YYMMDDHHmmppdd…
                 ppdd&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   pp – Comm Number (Decimal)
    3.   dd – Comm Device Type Flag
          00= Unknown Device
          01= Terminal Device
          02= ExtModem Device
          03= DIM Device
          04= USB ThumbDrive Device
          05= USB Printer Device
          06= USB Modem Device
          07= TCP/IP DIM
          08= GSM Modem Device
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 87B   Version 1
Function Type: Set Modem Dial Type

Command Format: **Inquire:**
     Display: <SOH>S87B00f   <SOH>I87B00
    Computer: <SOH>s87B00f   <SOH>i87B00

Typical Response Message, Display Format:

```
<SOH>
I87B00
JAN 22, 2007  3:16 PM

COMM    LABEL          DIAL TYPE
  1     OFFICE         TONE
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i87B00YYMMDDHHmmppf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   pp - Comm Number (Decimal)
    3.   f - Dial Tone Flag
                0=Tone
                1=Pulse
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: **87D**   Version 1
Function Type: Set Modem Answer-On Interval

Command Format: **Inquire:**
   Display: <SOH>S87D00f   <SOH>I87D00
  Computer: <SOH>s87D00f   <SOH>i87D00

Typical Response Message, Display Format:

```
<SOH>
I87D00
JAN 22, 2007  3:16 PM

COMM    LABEL           ANSWER-ON
 1      OFFICE          4 RINGS
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i87D00YYMMDDHHmmppf&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   pp – Comm Number   (Decimal)
    3.   f - Number of Rings (Decimal: 0-9)
    4.   && – Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: 87E   Version 1
Function Type: Set Modem Dial-In String

Command Format: **Inquire:**
    Display: <SOH>S87ERRaaaaaaaaaaaaaaaaaaaaa…   <SOH>I87ERR
    Computer: <SOH>s87ERRaaaaaaaaaaaaaaaaaaaaa…   <SOH>i87ERR

Typical Response Message, Display Format:

```
<SOH>
I87ERR
JAN 22, 2007  3:14 PM

MODEM DIAL-IN STRING

RCVR    LABEL                    DIAL-IN STRING
 1      HOME OFFICE              aaaaaaaaaaaaaaaaaaaa
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i87ERRYYMMDDHHmmppaaaaaaaaaaaaaaaaaaaaa...
                 ppaaaaaaaaaaaaaaaaaaaaa…..&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   pp – Comm Number   (Decimal)
    3.   a - Dial-in string (50 ASCII characters [20h-7Eh])
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: **87F**   Version 1
Function Type: Set Modem Dial-Out String

Command Format: **Inquire:**
    Display: <SOH>S87FRRaaaaaaaaaaaaaaaaaaaaa…   <SOH>I87FRR
    Computer: <SOH>s87FRRaaaaaaaaaaaaaaaaaaaaa…   <SOH>i87FRR

Typical Response Message, Display Format:

```
<SOH>
I87FRR
JAN 22, 2007  3:14 PM

MODEM DIAL-OUT STRING

RCVR    LABEL                    DIAL-OUT STRING
 1      HOME OFFICE              aaaaaaaaaaaaaaaaaaaa
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i87FRRYYMMDDHHmmppaaaaaaaaaaaaaaaaaaaaa...
                ppaaaaaaaaaaaaaaaaaaaaa…..&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   pp – Comm Number   (Decimal)
3.   a - Dial-out string (50 ASCII characters [20h-7Eh])
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
        Function Code: 87J                                    Version 2
        Function Type: Set DIM Units Reported

        Command Format:                                        Inquire:
            Display: <SOH>S87JppU                          <SOH>I87Jpp
           Computer: <SOH>s87JppU                          <SOH>i87Jpp
```

Typical Response Message, Display Format:

```
<SOH>
I87Jpp
JAN 22, 2007  3:14 PM

DIM UNITS REPORTED

COMM #    LOCATION              UNITS
  1       ISLAND 3              U.S.
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i87JppYYMMDDHHmmppU...ppU&&CCCC<ETX>
```

Notes:
```
  1.      YYMMDDHHmm - Current Date and Time
  2.             pp - Comm Number     (Decimal)
  3.              U - Units (Decimal)
                     1=U.S.
                     2=Metric
                     3=Imperial Gallons
  4.             && - Data Termination Flag
  5.           CCCC - Message Checksum
```

Function Code: 87Q   Version 2
Function Type: Suppress DIM Comm Alarms

Command Format: **Inquire:**
    Display: <SOH>S87QPPf   <SOH>I87QPP
    Computer: <SOH>s87QPPf   <SOH>i87QPP

Notes:
1.   PP – Port number (Decimal, 00 = All ports)
                        Port is a BIR DIM.
2.   f – Alarms Suppression Setting Flag (Decimal)
                    0 = Disable Alarm Suppression
                    1 = Enable Alarm Suppression

Typical Response Message, Display Format:

```
<SOH>
I87Q00
JAN 22, 2009  3:14 PM

  SUPPRESS DIM COMM ALARMS


  COMM LOCATION              SUPPRESS ALARMS
    1                        NO
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i87QPPYYMMDDHHmmPPf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   PP – Port Number (Decimal, 00=All Products)
                    Port is a BIR DIM.
3.   f – Alarm suppression Status (Decimal)
                    0 = Disable Alarm Suppression
                    1 = Enable Alarm Suppression
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

```
      Function Code: 887                                          Version 1
      Function Type: Set Dial Tone Validation Interval

   Command Format:                                                  Inquire:
        Display: S887PPHHHH                                          I887PP
       Computer: s887PPHHHH                                          i887PP
```

Notes:
   1.   PP – Modem or SiteLink Board Number (Port #) (Decimal 01..06)

Typical Response Message, Display Format:

```
   <SOH>
   I887PP
   JUN  1, 2000  8:15 AM

   COMM BOARD  : 3 (FXMOD)
   DIAL TONE VALIDATION INTERVAL:   32 HOURS
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i887PPYYMMDDHHmmHHHH&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   HHHH – Number of Idle Hours Before Receiver board checks for dial
                  tone (Decimal 0001–9999)
   3.   && – Data Termination Flag
   4.   CCCC – Message Checksum

Function Code: 889   Version 1
Function Type: DTR Normal State for Serial Satellite Boards

Command Format: **Inquire:**
     Display: <SOH>S889PPs   <SOH>I889PP
     Computer: <SOH>s889PPs   <SOH>i889PP

Notes:
   1.   PP - Communication Port Number

Typical Response Message, Display Format:

   <SOH>
   I889PP
   AUG 22, 2000 4:49 PM

   S-SAT : DTR NORMAL STATE

   COMM   LABEL   DTR STATE
     1   LOCATION 1   NORMALLY HIGH
   <ETX>

Typical Response Message, Computer Format:

   <SOH>i889PPYYMMDDHHmms&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   s - DTR Normal State for Serial Satellite Board
                       0=Normally Low
                       1=Normally High (Default)
   3.   && - Data Termination Flag
   4.   CCCC - Message Checksum

Function Code: **88E**   Version 1
Function Type: Set Satellite Connection String

Command Format: **Inquire:**
    Display: <SOH>S88ERRaaaaaaaaaaaaaaaaaaaaaa…   <SOH>I88ERR
   Computer: <SOH>s88ERRaaaaaaaaaaaaaaaaaaaaaa…   <SOH>i88ERR

Typical Response Message, Display Format:

```
<SOH>
I88ERR
JAN 22, 2007  3:14 PM

SATELLITE CONNECTION STRING

RCVR    LOCATION LABEL       CONNECTION STR
 1      HOME OFFICE          aaaaaaaaaaaaaaaaaaaa
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i88ERRYYMMDDHHmmppaaaaaaaaaaaaaaaaaaaaaa...
              ppaaaaaaaaaaaaaaaaaaaaaa…..&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   pp – Comm Number (Decimal)
3.   a – Conn. string (30 ASCII characters [20h-7Eh])
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: 88G   Version 1
Function Type: Set IP Assignment

Command Format: **Inquire:**
    Display: <SOH>S88GPPf   <SOH>I88GPP
   Computer: <SOH>s88GPPf   <SOH>i88GPP

Notes:
1.   PP - Communication Port Number
               For Setup Changes to take effect this command must be
               followed by 88Y

Typical Response Message, Display Format:

```
<SOH>
I88G00
JAN 22, 2007  3:16 PM

IP ASSIGNMENT

COMM   LOCATION      IP ASSIGNMENT
  1    OFFICE        STATIC
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i88GPPYYMMDDHHmmPPf&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   PP - Comm Number (Decimal)
3.   f - IP Assignment
                  0=Static
                  1=Dynamic
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

```
     Function Code: 88H                                    Version 1
     Function Type: Get IP Address

     Command Format:
          Display: <SOH>I88HPP
         Computer: <SOH>i88HPP
```

Notes:
```
   1.              PP - Communication Port Number
```

Typical Response Message, Display Format:

```
   <SOH>
   I88H00
   JAN 22, 2007  3:16 PM

   IP ADDRESS

   COMM   LOCATION      IP ADDRESS
     1    OFFICE        000.000.000.000
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i88HPPYYMMDDHHmmPPxxxxxxxxxxxxx&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.              PP - Comm Number (Decimal)
   3.xxxxxxxxxxxxxxx - IP Address (15 characters [0-9,.] dotted-decimal notation)
   4.              && - Data Termination Flag
   5.            CCCC - Message Checksum
```

```
        Function Code: 88I                                    Version 1
        Function Type: Set Static IP Address

      Command Format:                                          Inquire:
         Display: <SOH>S88IPPxxxxxxxxxxxxxxx               <SOH>I88IPP
        Computer: <SOH>s88IPPxxxxxxxxxxxxxxx               <SOH>i88IPP
```

Notes:
```
    1.            PP - Communication Port Number
    2.xxxxxxxxxxxxxxx - IP Address with dotted-decimal notation
    3.                  For Setup Changes to take effect this command must be
                        followed by 88Y
```

Typical Response Message, Display Format:

```
    <SOH>
    I88I00
    JAN 22, 2007  3:16 PM

    STATIC IP ADDRESS

    COMM   LOCATION        STATIC IP ADDRESS
       1   OFFICE          000.000.000.000
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i88IPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              PP - Comm Number (Decimal)
    3.xxxxxxxxxxxxxxx - Static IP Address (15 characters [0-9,.] dotted-decimal
                        notation)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

```
        Function Code: 88J                                          Version 1
        Function Type: Set Serial Command Port

     Command Format:                                                Inquire:
        Display: <SOH>S88JPPxxxxx                               <SOH>I88JPP
        Computer: <SOH>s88JPPxxxxx                              <SOH>i88JPP
```

Notes:
```
   1.              PP - Communication Port Number
```

Typical Response Message, Display Format:

```
   <SOH>
   I88J00
   JAN 22, 2007  3:16 PM

   SERIAL COMMAND PORT

   COMM    LOCATION          PORT
     1   OFFICE             10001
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>i88JPPYYMMDDHHmmPPxxxxx&&CCCC<ETX>
```

Notes:
```
   1.        YYMMDDHHmm - Current Date and Time
   2.              PP - Comm Number   (Decimal)
   3.           xxxxx - Port (Decimal, 0-65535)
   4.              && - Data Termination Flag
   5.            CCCC - Message Checksum
```

Function Code: 88K   Version 1
Function Type: Set Static Subnet Mask

Command Format: **Inquire:**
    Display: <SOH>S88KPPxxxxxxxxxxxxxxx   <SOH>I88KPP
    Computer: <SOH>s88KPPxxxxxxxxxxxxxxx   <SOH>i88KPP

Notes:
    1.   PP – Communication Port Number
    2.xxxxxxxxxxxxxxx – IP Address with dotted-decimal notation
    3.   For Setup Changes to take effect this command must be
                          followed by 88Y

Typical Response Message, Display Format:

    <SOH>
    I88K00
    JAN 22, 2007 3:16 PM

    STATIC SUBNET MASK

    COMM   LOCATION   STATIC SUBNET MASK
      1   OFFICE   000.000.000.000
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i88KPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   PP – Comm Number (Decimal)
    3.xxxxxxxxxxxxxxx – Static Subnet Mask (15 characters [0-9,.] dotted-decimal
                          notation)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: 88L   Version 1
Function Type: Set Static Gateway IP

Command Format: **Inquire:**
    Display: <SOH>S88LPPxxxxxxxxxxxxxxx   <SOH>I88LPP
    Computer: <SOH>s88LPPxxxxxxxxxxxxxxx   <SOH>i88LPP

Notes:
1.   PP – Communication Port Number
2. xxxxxxxxxxxxxxx - IP Address with dotted-decimal notation
3.   For Setup Changes to take effect this command must be
                followed by 88Y

Typical Response Message, Display Format:

```
<SOH>
I88L00
JAN 22, 2007  3:16 PM

STATIC GATEWAY IP

COMM   LOCATION        STATIC GATEWAY IP
  1    OFFICE          000.000.000.000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i88LPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   PP – Comm Number (Decimal)
3. xxxxxxxxxxxxxxx - Static Gateway IP (15 characters [0-9,.] dotted-decimal
                notation)
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: 88M   Version 1
Function Type: Set SSH Port

Command Format: **Inquire:**
     Display: \<SOH\>S88MPPxxxxx   \<SOH\>I88MPP
    Computer: \<SOH\>s88MPPxxxxx   \<SOH\>i88MPP

Notes:
  1.   PP - Communication Port Number

Typical Response Message, Display Format:

```
<SOH>
I88M00
JAN 22, 2007  3:16 PM

SSH PORT

COMM    LOCATION        PORT
   1    OFFICE          10001
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i88MPPYYMMDDHHmmPPxxxxx&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   PP - Comm Number   (Decimal)
  3.   xxxxx - Port (Decimal, 0-65535)
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

```
        Function Code: 88N                                          Version 1
        Function Type: Set HTTP Port

      Command Format:                                               Inquire:
          Display: <SOH>S88NPPxxxxx                            <SOH>I88NPP
         Computer: <SOH>s88NPPxxxxx                            <SOH>i88NPP
```

Notes:
```
    1.              PP - Communication Port Number
```

Typical Response Message, Display Format:

```
    <SOH>
    I88N00
    JAN 22, 2007  3:16 PM

    HTTP PORT

    COMM    LOCATION        PORT
      1     OFFICE         10001
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i88NPPYYMMDDHHmmPPxxxxx&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.                PP - Comm Number    (Decimal)
    3.             xxxxx - Port (Decimal, 0-65535)
    4.                && - Data Termination Flag
    5.              CCCC - Message Checksum
```

Function Code: 88O   Version 1
Function Type: Set HTTPS Port

Command Format: **Inquire:**
    Display: <SOH>S88OPPxxxxx   <SOH>I88OPP
   Computer: <SOH>s88OPPxxxxx   <SOH>i88OPP

Notes:
  1.   PP - Communication Port Number

Typical Response Message, Display Format:

```
<SOH>
I88O00
JAN 22, 2007  3:16 PM

HTTPS PORT

COMM    LOCATION        PORT
  1    OFFICE          10001
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i88OPPYYMMDDHHmmPPxxxxx&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP – Comm Number   (Decimal)
    3.   xxxxx - Port (Decimal, 0-65535)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 88P                                      Version 1
        Function Type: Set Host Name

        Command Format:                                          Inquire:
            Display: <SOH>S88Pppxxxxxxxxxxxxxxx              <SOH>I88Ppp
           Computer: <SOH>s88Pppxxxxxxxxxxxxxxx              <SOH>i88Ppp
```

Notes:
```
    1.              pp - Communication Port Number
    2.xxxxxxxxxxxxxxx - Host Name (30 Chars Max).  The Host Name is not a Fully
                        Qualified Domain Name.  (i.e. The display of the Host
                        Name does not include the display of the domain name)
```

Typical Response Message, Display Format:

```
    <SOH>
    I88P00
    JAN 22, 2007  3:16 PM

    HOST NAME

    COMM    LOCATION        HOST NAME
      1     OFFICE          Tls450
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i88PppYYMMDDHHmmppxxxxxxxxxxxxxxx&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               pp - Comm Number (Decimal)
    3.xxxxxxxxxxxxxxx - Host Name (30 Chars Max)
    4.               && - Data Termination Flag
    5.             CCCC - Message Checksum
```

Function Code: 88Q   Version 1
Function Type: Set Static Primary DNS Server

Command Format: **Inquire:**
    Display: <SOH>S88QPPxxxxxxxxxxxxxxx   <SOH>I88QPP
    Computer: <SOH>s88QPPxxxxxxxxxxxxxxx   <SOH>i88QPP

Notes:
    1.   PP – Communication Port Number
    2.xxxxxxxxxxxxxxx - IP Address with dotted-decimal notation
    3.   For Setup Changes to take effect this command must be
                     followed by 88Y

Typical Response Message, Display Format:

    <SOH>
    I88Q00
    JAN 22, 2007 3:16 PM

    STATIC PRIMARY DNS SERVER

    COMM   LOCATION   STATIC PRIMARY DNS SERVER
      1   OFFICE   000.000.000.000
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i88QPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP – Comm Number (Decimal)
    3.xxxxxxxxxxxxxxx - Static Primary DNS Server IP Address (15 characters [0-9,.]
                     dotted-decimal notation)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 88R                                        Version 1
        Function Type: Set Static Secondary DNS Server

        Command Format:                                            Inquire:
            Display: <SOH>S88RPPxxxxxxxxxxxxxxx              <SOH>I88RPP
            Computer: <SOH>s88RPPxxxxxxxxxxxxxxx             <SOH>i88RPP
```

Notes:
```
    1.              PP – Communication Port Number
    2.xxxxxxxxxxxxxxx - IP Address with dotted-decimal notation
    3.                   For Setup Changes to take effect this command must be
                     followed by 88Y
```

Typical Response Message, Display Format:

```
    <SOH>
    I88R00
    JAN 22, 2007  3:16 PM

    STATIC SECONDARY DNS SERVER

    COMM   LOCATION        STATIC SECONDARY DNS SERVER
      1    OFFICE          000.000.000.000
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i88RPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              PP – Comm Number (Decimal)
    3.xxxxxxxxxxxxxxx - Static Secondary DNS Server IP Address (15 characters [0-
                     9,.] dotted-decimal notation)
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

Function Code: 88S   Version 1
Function Type: Get MAC Address

Command Format:
    Display: <SOH>I88SPP
    Computer: <SOH>i88SPP

Notes:
    1.   PP - Communication Port Number

Typical Response Message, Display Format:

    <SOH>
    I88S00
    JAN 22, 2007 3:16 PM

    MAC ADDRESS

    COMM   LOCATION   MAC ADDRESS
      1   OFFICE   00:18:8B:C0:25:77
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i88SPPYYMMDDHHmmPPxxxxxxxxxxxxxxxxx&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP - Comm Number (Decimal)
    3.xxxxxxxxxxxxxxxxx - MAC Address (17 characters [0-F,:] the Format of six groups
                         of two hexadecimal digits, separated by colons)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

```
        Function Code: 88T                                        Version 1
        Function Type: Set Default Gateway

     Command Format:                                              Inquire:
          Display: <SOH>S88TPPf                                <SOH>I88TPP
         Computer: <SOH>s88TPPf                                <SOH>i88TPP
```

Notes:
```
    1.              PP - Communication Port Number
    2.               f - Default Gateway
                          0=No
                          1=Yes
    3.                 - For Setup Changes to take effect, this command must be
                         followed by 88Y
```

Typical Response Message, Display Format:

```
    <SOH>
    I88T00
    JAN 22, 2007  3:16 PM

    DEFAULT GATEWAY

    COMM   LOCATION      DEFAULT GATEWAY
      1    OFFICE        YES
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>i88TPPYYMMDDHHmmPPf&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               PP - Comm Number (Decimal)
    3.                f - Default Gateway
                          0=No
                          1=Yes
    4.               && - Data Termination Flag
    5.             CCCC - Message Checksum
```

Function Code: 88U   Version 1
Function Type: Get Subnet Mask

Command Format:
          Display: <SOH>I88UPP
         Computer: <SOH>i88UPP

Notes:
    1.   PP - Communication Port Number

Typical Response Message, Display Format:

    <SOH>
    I88U00
    JAN 22, 2007 3:16 PM

    SUBNET MASK

    COMM   LOCATION   SUBNET MASK
      1   OFFICE   000.000.000.000
    <ETX>

Typical Response Message, Computer Format:

    <SOH>i88UPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP – Comm Number (Decimal)
    3.xxxxxxxxxxxxxxx - Subnet Mask (15 characters [0-9,.] dotted-decimal notation)
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: **88V**   Version 1
Function Type: Get Gateway IP

Command Format:
    Display: `<SOH>I88VPP`
    Computer: `<SOH>i88VPP`

Notes:
   1.   PP - Communication Port Number

Typical Response Message, Display Format:

```
<SOH>
I88V00
JAN 22, 2007  3:16 PM

GATEWAY IP

COMM    LOCATION       GATEWAY IP
  1     OFFICE         000.000.000.000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i88VPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   PP – Comm Number (Decimal)
   3. xxxxxxxxxxxxxxx - Gateway IP (15 characters [0-9,.] dotted-decimal notation)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

        Function Code: 88W   Version 1
        Function Type: Get Primary DNS Server

      Command Format:
          Display: <SOH>I88WPP
        Computer: <SOH>i88WPP

Notes:
   1.   PP - Communication Port Number

Typical Response Message, Display Format:

```
<SOH>
I88W00
JAN 22, 2007  3:16 PM

PRIMARY DNS SERVER

COMM    LOCATION        PRIMARY DNS SERVER
   1    OFFICE          000.000.000.000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i88WPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   PP - Comm Number (Decimal)
   3.xxxxxxxxxxxxxxx - Primary DNS Server IP Address (15 characters [0-9,.] dotted-
                        decimal notation)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

Function Code: 88X   Version 1
Function Type: Get Secondary DNS Server

Command Format:
      Display: <SOH>I88XPP
   Computer: <SOH>i88XPP

Notes:
   1.   PP - Communication Port Number

Typical Response Message, Display Format:

```
<SOH>
I88X00
JAN 22, 2007  3:16 PM

SECONDARY DNS SERVER

COMM   LOCATION        SECONDARY DNS SERVER
  1    OFFICE          000.000.000.000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i88XPPYYMMDDHHmmPPxxxxxxxxxxxxxxx&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   PP – Comm Number (Decimal)
   3.xxxxxxxxxxxxxxx - Secondary DNS Server IP Address (15 characters [0-9,.]
                      dotted-decimal notation)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

Function Code: 88Y   Version 1
Function Type: TCP/IP Commit Setup

Command Format:
    Display: `<SOH>S88YPP149`
    Computer: `<SOH>S88YPP149`

Notes:
  1.   PP - Communication Port Number
  2.   149 - code must be sent to confirm the command

Typical Response Message, Display Format:

```
<SOH>
S88Y00
JAN 22, 2007  3:16 PM

Co  1: Ethernet 1 Label    TCP/IP SETUP COMMITTED SUCCESSFULLY
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s88YPPYYMMDDHHmmPPf&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   PP – Comm Number (Decimal)
  3.   f - Status Flag
                    0=TCP/IP Setup not committed
                    1=TCP/IP Setup committed successfully
  4.   && - Data Termination Flag
  5.   CCCC - Message Checksum

Function Code: 88Z   Version 1
Function Type: Set TCP/IP DIM Port

Command Format: **Inquire:**
    Display: \<SOH\>S88ZPPxxxxx   \<SOH\>I88ZPP
   Computer: \<SOH\>s88ZPPxxxxx   \<SOH\>i88ZPP

Notes:
   1.   PP - Communication Port Number

Typical Response Message, Display Format:

   \<SOH\>
   S88Z00
   JAN 22, 2007 3:16 PM

   TCP/IP DIM PORT

   COMM   LOCATION   PORT
     3   OFFICE   35555
   \<ETX\>

Typical Response Message, Computer Format:

   \<SOH\>s88ZPPYYMMDDHHmmPPxxxxx…
                     PPxxxxx&&CCCC\<ETX\>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   PP – Comm Number (Decimal)
   3.   xxxxx - Port (Decimal, 0-65535)
   4.   && - Data Termination Flag
   5.   CCCC - Message Checksum

Function Code: 891   Version 2
Function Type: Set Accuchart Calibration Restart

Command Format: **Inquire:**
  Display: <SOH>S891TT149   <SOH>I891TT
  Computer: <SOH>s891TT149   <SOH>i891TT

Notes:
  1.   TT – Tank Number (valid only for single tank)
  2.   149 – Verification code must be sent to confirm the command

Typical Response Message, Display Format:

```
<SOH>
S89100
MAR 29, 1996  6:27 PM

T 1:REGULAR UNLEADED ACCU_CHART RESTART
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s891TTYYMMDDHHmmTTSS&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm – Current Date and Time
  2.   TT – Tank Number (Decimal)
  3.   SS – Status
                       00=AccuChart stopped
                       01=AccuChart restarted
  4.   && – Data Termination Flag
  5.   CCCC – Message Checksum

```
      Function Code: 893                                          Version 3
      Function Type: Acknowledge Tank Event Ready Status

      Command Format:                                              Inquire:
          Display: <SOH>S893TT149                              <SOH>I893TT
         Computer: <SOH>s893TT149                              <SOH>i893TT
```

Notes:
```
    1.                TT - Tank Number (decimal)
    2.                149 - Verification code must be sent to confirm the command
```

Typical Response Message, Display Format:

```
    <SOH>
    S89300
    MAR 29, 2011  6:27 PM

    Tank    Delivery Ready     Shift Ready    Alarm Notice
    =====================================================
     1         Yes                No              No
     2         No                 No              No
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>s893TTYYMMDDHHmmNNTTnndsa
                    TTnndsa..&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.              NN - Number of Tanks to follow (Decimal)
    3.              TT - Tank Number (Decimal)
    4.              nn - Number of Events to follow (Decimal)
    5.               d - Delivery Ready Status
                        0=Not Ready
                        1=Ready
    6.               s - Shift Ready Status
                        0=Not Ready
                        1-4 (Shift Number)=Ready
    7.               a - Alarm Notice Status
                        0=Not Ready
                        1=Ready
    8.              && - Data Termination Flag
    9.            CCCC - Message Checksum
```

```
        Function Code: 894                                        Version 2
        Function Type: Set Accuchart Calibration Stop

        Command Format:                                             Inquire:
           Display: <SOH>S894TT149                              <SOH>I894TT
          Computer: <SOH>s894TT149                              <SOH>i894TT
```

Notes:
```
    1.              TT - Tank Number (valid only for single tank)
    2.              149 - Verification code must be sent to confirm the command
```

Typical Response Message, Display Format:

```
    <SOH>
    S89400
    MAR 29, 1996  6:27 PM

    T 1:REGULAR UNLEADED ACCU_CHART STOP
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>s894TTYYMMDDHHmmTTSS&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              TT - Tank Number (Decimal)
    3.              SS - Status
                        00=AccuChart stopped
                        01=AccuChart running
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

```
        Function Code: 89A                                         Version 4
        Function Type: Set Email Relay

    Command Format:                                                 Inquire:
        Display: <SOH>S89A00f                                    <SOH>I89A00
       Computer: <SOH>s89A00f                                    <SOH>i89A00
```

Typical Response Message, Display Format:

```
<SOH>
S89A00
MAR 29, 2011  6:27 PM

EMAIL RELAY:ENABLED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>s89A00YYMMDDHHmmf&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             f - Email Relay
                        0=Disabled
                        1=Enabled
    3.            && - Data Termination Flag
    4.          CCCC - Message Checksum
```

```
        Function Code: 89B                                      Version 4
        Function Type: Set Email Sender Address

     Command Format:                                            Inquire:
        Display: <SOH>S89B00aaaaa..........aaaaa            <SOH>I89B00
       Computer: <SOH>s89B00aaaaa..........aaaaa            <SOH>i89B00
```

Typical Response Message, Display Format:

```
<SOH>
I89B00
MAR 29, 2011  6:27 PM

EMAIL SENDER ADDRESS
johndoe@veeder.com
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i89B00YYMMDDHHmmnnnaaaaa...aaaaa&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.             nnn - Number of characters to follow
    3.  aaaaa...aaaaa - Email Sender Address (Max. 256 ASCII Characters)
    4.             && - Data Termination Flag
    5.           CCCC - Message Checksum
```

Function Code: 89C   Version 4
Function Type: Set Relayhost/Smarthost

Command Format: **Inquire:**
    Display: <SOH>S89C00aaaaa..........aaaaa   <SOH>I89C00
   Computer: <SOH>s89C00aaaaa..........aaaaa   <SOH>i89C00

Typical Response Message, Display Format:

```
<SOH>
I89C00
MAR 29, 2011  6:27 PM

Relayhost/Smarthost
anywhere.com
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i89C00YYMMDDHHmmnnnaaaaa...aaaaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   nnn – Number of characters to follow
    3. aaaaa...aaaaa – Relayhost/Smarthost (Max. 256 ASCII Characters)
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

```
        Function Code: 89D                                    Version 4
        Function Type: Set Sender Hostname

      Command Format:                                           Inquire:
         Display: <SOH>S89D00aaaaa..........aaaaa            <SOH>I89D00
        Computer: <SOH>s89D00aaaaa..........aaaaa            <SOH>i89D00
```

Typical Response Message, Display Format:

```
<SOH>
I89D00
MAR 29, 2011  6:27 PM

Sender Hostname
Tls450@veeder.com
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i89D00YYMMDDHHmmnnnaaaaa...aaaaa&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              nnn - Number of characters to follow (Hex)
    3.  aaaaa...aaaaa - Sender Hostname (Max. 256 ASCII Characters)
    4.               && - Data Termination Flag
    5.             CCCC - Message Checksum
```

Function Code: 8CG   Version 3
Function Type: Get Printer Setup and Status

Command Format:
    Display: <SOH>I8CG00
    Computer: <SOH>i8CG00

Typical Response Message, Display Format:

```
<SOH>
I8CG00
MAR 26, 2011  1:54 PM

PRINTER SETUP - STATUS
- - - - - - -  - - - - - -
NAME: TLSIntegralPrinter
CONFIGURED: True
IS DEFAULT: True
MODEL: APS CP324HRS,0.11.1
TYPE: Internal
STATE: Idle
STATE REASONS:
STATE MESSAGE:
<ETX>
```

Function Code 8CG Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>i8CG00YYMMDDHHmmNNaaa...aaafEMMmmm...mmmTNPHGNJDCSSsss...sss...
                  NNaaa...aaafEMMmmm...mmmTNPHGNJDCSSsss...sss&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               NN - Number of characters to follow for Name (Hex)
    3.            a...a - Name (ASCII characters [20h-7Eh])
    4.                f - Configured
                            0=False
                            1=True
    5.                E - Is Default
                            0=False
                            1=True
    6.               MM - Number of characters to follow for Model (Hex)
    7.            m...m - Model (ASCII characters [20h-7Eh])
    8.                T - Type
                            0=Unknown
                            1=Internal
                            2=Local(USB printer)
                            3=Network printer
    9.                N - State
                            3=Idle
                            4=Processing
                            5=Stopped
   10.                P - Paper Out
                            0=False
                            1=True
   11.                H - Head Up
                            0=False
                            1=True
   12.                G - Generic Error
                            0=False
                            1=True
   13.                N - Near End of Paper
                            0=False
                            1=True
   14.                J - Paper Jam
                            0=False
                            1=True
   15.                D - Disconnected
                            0=False
                            1=True
   16.                C - Cutter Error
                            0=False
                            1=True
   17.               SS - Number of characters to follow for State Message (Hex)
   18.            s...s - State Message (ASCII characters [20h-7Eh])
   19.               && - Data Termination Flag
   20.             CCCC - Message Checksum
```

Function Code: D01   Version 3
Function Type: Push Site ID

Command Format:
   Display: This command is sent out by the TLS-450
   Computer:

Typical Response Message, Display Format:

Computer format only

Typical Response Message, Computer Format:

<SOH>iD0100YYMMDDHHmmDDDDDD000000&&CCCC<ETX>

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   DDDDDD - Site ID (Decimal)
3.   000000 - 6 Zeros
4.   && - Data Termination Flag
5.   CCCC - Message checksum

Function Code: D02   Version 3
Function Type: Server Heartbeat

Command Format:
 Display:
 Computer: <SOH>iD0200cccc

Typical Response Message, Display Format:

Computer format only

Typical Response Message, Computer Format:

<SOH>iD0200YYMMDDHHmmcccc&&CCCC<ETX>

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   cccc – Heartbeat Characters (ASCII characters [20h-7Eh])
3.   && – Data Termination Flag
4.   CCCC – Message checksum

7.4 DIAGNOSTIC REPORTS

7.4.1 SYSTEM DIAGNOSTIC REPORTS

Function Code: **902** (Obsolete V2)   Version 1
Function Type: System Revision Level Report

Command Format:
 Display: <SOH>I90200 (Obsolete for Display Format)
 Computer: <SOH>i90200 (CONTAINS HARDCODED STRING FOR INFORM)

Typical Response Message, Display Format:

```
<SOH>
I90200
JAN 22, 1996  3:24 PM
SOFTWARE REVISION LEVEL
VERSION 110.01
SOFTWARE# 346110-101-B
CREATED - 95.11.20.13.28

S-MODULE# 330160-115-A
SYSTEM FEATURES:
  PERIODIC IN-TANK TESTS
  ANNUAL IN-TANK TESTS
  CSLD
  BIR
  FUEL MANAGER
PLLD
  0.10 REPETITIV
  0.20 REPETITIV
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i90200YYMMDDHHmmSOFTWARE# nnnnnn-vvv-rrrCREATED - YY.MM.DD.HH.mm&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   nnnnnn-vvv - Software version number (ASCII text string)
3.   rrr - Software revision level (ASCII text string)
4. YY.MM.DD.HH.mm - Date and time of software creation
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: 905   Version 1
Function Type: System Revision Level Report II

Command Format:
      Display: <SOH>I90500 (Obsolete for Display Format)
    Computer: <SOH>i90500 (CONTAINS HARDCODED STRING FOR INFORM)

Typical Response Message, Display Format:

```
<SOH>
I90500
JUL 29, 1997  9:08 AM
SOFTWARE REVISION LEVEL
VERSION 115.00 TEST #05
SOFTWARE# 346115-199-AX5
CREATED - 97.07.10.20.21

S-MODULE# 330160-115-A
SYSTEM FEATURES:
   PERIODIC IN-TANK TESTS
   ANNUAL IN-TANK TESTS
   CSLD
   BIR
   FUEL MANAGER
PLLD
   0.10 REPETITIV
   0.20 REPETITIV
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i90500YYMMDDHHmmSOFTWARE# 346abb-Tvv-rrrCREATED - YY.MM.DD.HH.mm
                nnAABBCCDDEEFFGGHHIIJJS-MODULE# nnnnnn-vvv-r&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   346 - Software Base number (fixed)
3.   a - Platform
                0=Standard CPU, PLLD only
                1=Enhanced CPU
                2=(Unused)
                3=Enhanced CPU 16 Tank
                4=Standard CPU without PLLD & WPLLD
                5=Standard CPU, WPLLD only
4.   bb - Version level (eg version "15")
5.   T - Software Type
                1="Real"
                2="Demo"
                3="IFSF"

Function Code 905 Notes: (Continued)

```
     6.                vv - Language
                            00=English/Spanish
                            01=English/French
                            02=English/German
                            03=English/Swedish
                            04=English/Portuguese
                            05=English/Polish
                            06=English/Finnish
                            07=English/Japanese
                            08=English/Greek
                            09=English/Russian
                            10=English/Turkish
                            11=English/Dutch
                            12=English/Italian
                            99=English only
     7.           rrr - Revision level (eg revision "AX1")
     8. YY.MM.DD.HH.mm - Date and time of software creation
     9.            nn - number of 2 byte values to follow (Hex)
    10.            AA - PERIODIC IN-TANK TESTS (00=DISABLE, 01=ENABLE)
    11.            BB - ANNUAL IN-TANK TESTS (00=DISABLE, 01=ENABLE)
    12.            CC - CSLD (00=DISABLE, 01=ENABLE)
    13.            DD - BIR (00=DISABLE, 01=ENABLE)
    14.            EE - FUEL MANAGER (00=DISABLE, 01=ENABLE)
    15.            FF - PRECISION PLLD (00=DISABLE, 01=ENABLE)
    16.            GG - TANKER LOAD (00=DISABLE, 01=ENABLE)
    17.            HH - 0.2 GPH PLLD (00=DISABLE, 01=ENABLE)
    18.            II - PRECISION PLLD ON DEMAND (00=DISABLE, 01=ENABLE)
    19.            JJ - SPECIAL 3-TANK/LINE CONSOLE (00=DISABLE, 01=ENABLE)
    20.            KK - ISD (00=DISABLE, 01=ENABLE)
    21.            LL - PMC (00=DISABLE, 01=ENABLE)

    22.   nnnnnn-vvv-r - SEM Info 3 parts, if none "NO SOFTWARE MODULE"
    23.         nnnnnn - SEM number (ASCII text string)
    24.            vvv - SEM Software version number (ASCII text string)
    25.             r - SEM Software revision level (ASCII text string)

    26.            && - Data Termination Flag
    27.          CCCC - Message Checksum
```

```
        Function Code: 907                                    Version 1
        Function Type: Get "About Screen" Information

      Command Format:
           Display: <SOH>I90700
          Computer: <SOH>i90700
```

Typical Response Message, Display Format:

```
<SOH>
I90700
JAN 22, 2007  3:24 PM

Software: Part# 342002.A.121.2  CREATED: Feb 21 2010 15:58:17

                             Serial
     Hardware Description     Numbers
----------------------------  --------
CPU                           08320252
iButton                       000000f4099b0b
UNIVERSAL SENS MODULE (B1.S1) 9071013
INPUT/OUTPUT MODULE   (B1.S3) 9071012
INPUT/OUTPUT MODULE   (B8.S5) 4278190081


Installed Features
------------------
Total Control
     * Email Notification
     * Custom On-Board Help
     * Custom Alarms
     * Custom Dashboard
TLS-450 Direct AccessTM Software/Web Browser
Extended Storage L2
Business Inventory Reconciliation
AccuChart II
Continuous Statistical Leak Detection
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>i90700YYMMDDHHmmPPpp..ppCCcc..ccnnccLLss…ss
                              ccLLss…ss
                              MMff…ff&&CCCC<ETX>
```

Notes:
```
  1.      YYMMDDHHmm – Time and Date
  2.           PP – Number of Software Part # characters to follow (ASCII hex)
  3.        pp..pp – Software Part # (String)
  4.           CC – Number of Created Date characters to follow (ASCII hex)
  5.        cc..cc – Created Date Text
  6.           nn – Number of hardware components (ASCII hex)
  7. Component type – cc  (ASCII Hex char)
                           01=CPU
                           02=iButton
                           50=USM card
                           51=IOM card
                           52=MUX card
  8.           LL – length of serial number string (ASCII hex)
  9.        ss…ss – Component serial number string
  10.          MM – Number of installed features (ASCII Hex char)
  11.          ff – feature identification number (ASCII Hex char)
                           0=TotalAccessBundle,       //!< Do not use for now
                           1=BIRAccuchartII,
                           2=TotalControl,
                           3=DirectAccessOrWebBrowser,
                           4=EmailNotification,
```

Function Code 907 Notes: (Continued)
```
                        5=CustomOnBoardHelp,
                        6=CustomAlarms,
                        7=CustomDashboard,
                        8=ContinuousStatisticalLeakDetection,
                        9=UltimateTestingLeakDetectionForDPLLD,
                       0A=RiskManagementLeakDetectionForDPLLD,
                       0B=BaseComplianceLineLeakDetectionForDPLLD,
                       0C=Business Inventory Reconciliation
                       0D=AccuChartII,
                       0E=ExtendedStorageL1,
                       0F=ExtendedStorageL2,
                       10=3.0 GPH Testing
                       11=ATG Functionality
                       12=DataLogger Functionality
                       13=Statistical Leak Detection
                       16=Timed Sudden Loss Detection
     12.            && - Data Termination Flag
     13.          CCCC - Message Checksum
```

7.4.2 IN-TANK DIAGNOSTIC REPORTS

Function Code: A01   Version 1
Function Type: Probe Type and Serial Number

Command Format:
    Display: <SOH>IA01TT
   Computer: <SOH>iA01TT

Typical Response Message, Display Format:

```
<SOH>
IA01TT
JAN 22, 2009  3:25 PM

                           TYPE      CODE      LENGTH      SERIAL NO.   D/CODE
TANK   1   REGULAR UNLEADED   MAG6    D003      96.00       000418       091A
TANK   2   SUPER UNLEADED     MAG1    C000      96.00       278147       082B
TANK   3   PREMIUM UNLEADED    CAP0    0001      96.00       200100       0000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA01TTYYMMDDHHmmTTpPPKKKKFFFFFFFFSSSSSScccc...
                TTpPPKKKKFFFFFFFFSSSSSScccc&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   PP - Probe Type: (TLS450- only MAG supported)
                  01=CAP0
                  02=CAP1
                  03=MAG1
5.   KKKK - Circuit Code (Hex)
6.   FFFFFFFF - Probe Length (ASCII Hex IEEE float)
7.   SSSSSS - Probe Serial Number (Decimal)
8.   cccc - Probe Date Code (Hex)
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

```
      Function Code: A07                                    Version 1
      Function Type: Probe Reference Distance Diagnostic
```

```
Command Format:
      Display: <SOH>IA07TT
     Computer: <SOH>iA07TT
```

Typical Response Message, Display Format:

```
<SOH>
IA07TT
JAN 22, 1996  3:25 PM

PROBE 1  REGULAR
TANK  1  REGULAR UNLEADED        MAG7
PROBE SERIAL NUMBER  0000123456
ORIG REF DISTANCE   JUN 29, 2007   XXXXX.XX
CURR REF DISTANCE   JUL  2, 2007   XXXXX.XX
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA07TTYYMMDDHHmmTTpPPYYMMDDFFFFFFFFYYMMDDFFFFFFFF...
                  TTpPPYYMMDDFFFFFFFFYYMMDDFFFFFFFF&&CCCC<ETX>
```

Notes:
```
 1.       YYMMDDHHmm - Current Date and Time
 2.               TT - Tank Number (Decimal, 00=all)
 3.                p - Product Code (one ASCII character [20h-7Eh])
 4.               PP - Probe Type: (Probe types 01=CAP0 and 02=CAP1 are not
                       supported by this command)
                          03=MAG1
 5.           YYMMDD - Date of reading
 6.         FFFFFFFF - Original Ref distance reading (ASCII Hex IEEE float)
 7.           YYMMDD - Date of reading
 8.         FFFFFFFF - Current Reference distance reading (ASCII Hex IEEE float)
 9.               && - Data Termination Flag
10.             CCCC - Message Checksum
```

```
        Function Code: A0X                                    Version 1
        Function Type: Probe Diagnostics - General

     Command Format:
         Display: <SOH>IA0XPP
        Computer: <SOH>iA0XPP
```

Typical Response Message, Display Format:

```
<SOH>
IA0XTT
JAN 22, 2007  3:25 PM

PROBE 1:                          - TANK    1
                           Serial      Date
Type   Code    Length       No      Yr/Wk   Rev    Gradient
MAG3   C000     96.00      107611    x2/07    1     178.1400
MAG3   C000     96.00      107611    x2/07    1     178.1400
MAG3   C000     96.00      107611    x2/07    1     178.1400
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA0XTTYYMMDDHHmmPPTTrrCCCCyymmlllllllllggggggggssssssssnn....
                PPTTrrCCCCyymmlllllllllgggggggggssssssssnn....&&CCCC<ETX>
```

Notes:
```
     1.      YYMMDDHHmm - Current Date and Time
     2.            PP - Probe Number (Deciamal - 00=all)
     3.            TT - Tank Number
     4.            rr - Revision     (hex)
     5.          CCCC - Probe Code   (hex)
     6.          YYMM - Year and Month Built   (decimal)
     7.      llllllll - Probe Length        (ASCII Hex IEEE float)
     8.      gggggggg - Gradient            (ASCII Hex IEEE float)
     9.      ssssssss - Serial Number       (ASCII Hex IEEE long)
    10.            && - Data Termination Flag
    11.          CCCC - Message Checksum
```

Function Code: A10   Version 1
Function Type: Probe Last Sample Buffers

Command Format:
Display: <SOH>IA10TT
Computer: <SOH>iA10TT

Typical Response Message, Display Format:

```
<SOH>
IA10TT
JAN 22, 1996  3:25 PM
TANK  1  REGULAR UNLEADED       MAG    NUMBER OF SAMPLES=44520
  694.000   8587.000   8587.000   8587.000   8587.000   8587.000   8589.000   8589.000
 8586.000   8587.000   8587.000 38250.000 31771.000 30813.000 30617.000 30251.000
30253.000 30261.000 38262.000
TANK  2  SUPER UNLEADED         CAP1   NUMBER OF SAMPLES= 1081
 6852.000   6930.000 12054.000 11946.000 11963.000 11922.000 11984.000 12029.000
 9026.000   8705.000   8779.000   8290.000   3733.000   4150.000   4144.000   4137.000
 4132.000   4126.000   4120.000   2954.000      0.000      0.000      0.000      0.000
    0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
    0.000
TANK  3  PREMIUM UNLEADED       CAP0   NUMBER OF SAMPLES= 1082
  234.000    439.000   1317.000   1319.000   1307.000   1321.000   1104.000    761.000
  104.000   1686.000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA10TTYYMMDDHHmmTTpPPSSSSNNFFFFFFFF...
               TTpPPSSSSNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   PP - Probe Type: (TLS450- only MAG supported)
                         01=CAP0
                         02=CAP1
                         03=MAG1
5.   SSSS - Sample Number (Hex)
6.   NN - Number of eight character Data Fields to follow (Hex)
7.   FFFFFFFF - Probe Data (ASCII Hex IEEE float)
8.   && - Data Termination Flag
9.   CCCC - Message Checksum

Function Code: A14   Version 1
Function Type: MAG Probe Option Table

Command Format:
    Display: <SOH>IA14PP
   Computer: <SOH>iA14PP

Typical Response Message, Display Format:

```
<SOH>
IA14PP
JUN  1, 2000  8:15 AM

MAG PROBE OPTIONS TABLE

TNK    LOW              LEAK    LEAK    LEAK
NUM    TEMP    WATER    0.1     0.2     3.0
------------------------------------------
  1    YES     YES      YES     YES     YES
  2    YES     YES      NO      NO      NO
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA14PPYYMMDDHHmmPPNNLWABC...
                PPNNLWABC&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP - Probe Number (Decimal, 00=all)
    3.   NN - Number of option flags to follow
    4.   L - Low temperature capability
                         0=NO
                         1=YES
    5.   W - Water Float
                         0=NO
                         1=YES
    6.   A - 0.10 GPH leak detection capability
                         0=NO
                         1=YES
    7.   B - 0.20 GPH leak detection capability
                         0=NO
                         1=YES
    8.   C - 3.0 GPH leak detection capability
                         0=NO
                         1=YES
    9.   && - Data Termination Flag
   10.   CCCC - Message Checksum

```
        Function Code: A15                                      Version 1
        Function Type: In-Tank Diagnostic Printout

        Command Format:
             Display: <SOH>IA1500
            Computer: <SOH>iA1500
```

Typical Response Message, Display Format:

```
<SOH>
IA1500
JUN  3, 2002  8:07 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

IN-TANK DIAGNOSTIC
------------------
PROBE DIAGNOSTICS
T1:PROBE TYPE MAG 1
SERIAL NUMBER 064924
LENGTH: 2489.2
DATE CODE 2774
ID CHAN=D004
GRADIENT= 350.0000
PROBE INIT:
   AUG  1,2004 12:25PM

NUM SAMPLES=   20

C00 811.0     C01 7196.8
C02 7196.5    C03 7196.7
C04 7196.3    C05 7196.8
C06 7196.8    C07 7196.2
C08 7196.6    C09 7196.1
C10 7196.8    C11 42511.1
C12 18534.4   C13 18615.1
C14 18496.6   C15 18518.9
C16 18456.4   C17 18505.8
C18 18534.4

SAMPLES READ=      2
SAMPLES USED=      2
LAST ERROR  =      0
LAST SAMPLE ERROR TIME:
   AUG  2,2004 11:12PM

TEMP SENSOR DATA
T6:      72.6 F
T5:      72.1 F
T4:      70.9 F
T3:      69.4 F
T2:      68.3 F
T1:      67.6 F

REF DISTANCE
12/01/00 XXXXX.XX    - (Original Reference Time/Distance)
12/01/01 XXXXX.XX    - (Current Reference Time/Distance)
<ETX>
```

Function Code A15 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iA15TTYYMMDDHHmmTTppppsssssslllllllldddddYYMMDDHHmm
                  ggggggggzzzzoonnnnNNcccccccc...cccccccc
                  rrrrrrruuuuuuuueeeeeeeeYYMMDDHHmm
                  AAaaaaaaaa...aaaaaaaa
                  YYMMDDhhhhhhhhYYMMDDkkkkkkkk...
              TTppppsssssslllllllldddddYYMMDDHHmm
                  ggggggggzzzzoonnnnNNcccccccc...cccccccc
                  rrrrrrruuuuuuuueeeeeeeeYYMMDDHHmm
                  AAaaaaaaaa...aaaaaaaa
                  YYMMDDhhhhhhhhYYMMDDkkkkkkkk&&CCCC<ETX>
```

Notes:

#	Field	Description
1.	YYMMDDHHmm	Current Date and Time
2.	TT	Tank Number (Decimal, 00=all)
3.	pppp	Probe Type (Hex)
4.	ssssss	Serial Number (Decimal)
5.	llllllll	Probe Length (ASCII Hex IEEE float)
6.	dddd	Date Code (Hex)
7.	YYMMDDHHmm	Probe Initialized (Date and Time)
8.	gggggggg	Gradient (ASCII Hex IEEE float)
9.	zzzz	Id Code (Hex)
10.	oo	Probe Options (Hex)
		00=Not Low Temperature Probe
		01=Low Temperature Probe
11.	nnnn	Number of Samples (Hex)
12.	NN	# of 8-Byte Channel Count Values to Follow (Hex)
13.	cccccccc	Channel Count Values (ASCII Hex IEEE float)
14.	rrrrrrrr	Samples Read (Hex)
15.	uuuuuuuu	Samples Used (Hex)
16.	eeeeeeee	Last Error Sample Number (Hex)
17.	YYMMDDHHmm	Last Sample Error Time (Date and Time)
18.	AA	# of 8-Byte Temperature Sensor Values Follow (Hex)
19.	aaaaaaaa	Temperature Sensor Values (ASCII Hex IEEE float)
20.	YYMMDD	Original Reference Distance Date
21.	hhhhhhhh	Original Reference Distance Value (ASCII Hex IEEE float)
22.	YYMMDD	Current Reference Distance Date
23.	kkkkkkkk	Current Reference Distance Value (ASCII Hex IEEE float)
24.	&&	Data Termination Flag
25.	CCCC	Message Checksum

   Function Code: A17   Version 1
   Function Type: Probe Communication

   Command Format:
     Display: <SOH>IA17PP
     Computer: <SOH>iA17PP

Typical Response Message, Display Format:

```
<SOH>
IA17PP
MAR 26, 2007  1:50 PM

PROBE DIAGNOSTIC - COMMUNICATION REPORT
----------------------------------------------------------------

PROBE  1   Probe Label (PROBE 1)     TANK  1
                    Samples  Samples                        Comm
Type       Status      Read     Used    Parity    Partial  Errors
MAG 1      OK       1450532  1450305         0          1      72


PROBE  2                               TANK  2
                    Samples  Samples                        Comm
Type       Status      Read     Used    Parity    Partial  Errors
MAG 12     FAIL     1450532  1450305         0          1      72
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA17PPYYMMDDHHmmPPTTTTssNNFFFFFFFFGGGGGGGGHHHHHHHHIIIIIIII
                        JJJJJJJJ...
                 PPTTTTssNNFFFFFFFFGGGGGGGGHHHHHHHHIIIIIIII
                        JJJJJJJJ&&CCCC<ETX>
```

Notes:
```
1.      YYMMDDHHmm - Current Date and Time
2.              PP - Probe Number (Decimal, 00=all)
3.            TTTT - Circuit Code (Hex)
4.              ss - Status Flag  (Hex)
                        00=OK
                        01=FAIL
5.              NN - Number of 8-byte fields to follow (hex)
6.        FFFFFFFF - Samples Read   (Hex)
7.        GGGGGGGG - Samples Used   (Hex)
8.        HHHHHHHH - Parity Errors  (Hex)
9.        IIIIIIII - Partial Errors (Hex)
10.       JJJJJJJJ - Comm Errors    (Hex)
11.             && - Data Termination Flag
12.           CCCC - Message Checksum
```

Function Code: A18   Version 3
Function Type: Probe Diagnostic Printout

Command Format:
     Display: <SOH>IA1800
   Computer: <SOH>iA1800

Typical Response Message, Display Format:

```
<SOH>
IA1800
08-28-08 14:13
Diagnostics

SOFTWARE REVISION

TANK              :   1
PROBE TYPE        :   MAG1
SERIAL NUMBER     :   168809
PROBE ID          :   0XC000
PROBE LENGTH      :   30.00
GRADIENT          :   354.520
NUMBER SAMPLES    :   20
SAMPLES READ      :   47357
SAMPLES USED      :   47348
REF DISTANCE      :   08-21-08 102.00
                      08-27-08 102.00
TEMP 6            :   72.6
TEMP 5            :   72.1
TEMP 4            :   70.9
TEMP 3            :   69.4
TEMP 2            :   68.3
TEMP 1            :   67.6
TEMP 6 – TEMP 5  :   0.5
TEMP 5 – TEMP 4  :   1.3
TEMP 4 – TEMP 3  :   1.5
TEMP 3 – TEMP 2  :   1.1
TEMP 2 – TEMP 1  :   0.7
COUNTS 00         :   001319
COUNTS 01         :   007412
COUNTS 02         :   007412
COUNTS 03         :   007412
COUNTS 04         :   007412
COUNTS 05         :   007412
COUNTS 06         :   007412
COUNTS 07         :   007412
COUNTS 08         :   007412
COUNTS 09         :   007412
COUNTS 10         :   007412
COUNTS 11         :   044368
COUNTS 12         :   016952
COUNTS 13         :   017295
COUNTS 14         :   017435
COUNTS 15         :   017389
COUNTS 16         :   017468
```
Function Code A18 Notes: (Continued)

```
COUNTS 17        :   017460
COUNTS 18        :   044370
OPTIONS CODE     :   0X0000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA18TTYYMMDDHHmmTTppppssssssssszzzzlllllllllgggggggggSSSSSSSS
                      rrrrrrruuuuuuuuYYMMDDhhhhhhhhYYMMDDkkkkkkkk
                      AAaaaaaaaaa...aaaaaaaaBBbbbbbbbbb...bbbbbbbb
                      NNcccccccc...ccccccccKKKKKKKK
                   TTppppssssssssszzzzlllllllllgggggggggSSSSSSSS
                      rrrrrrruuuuuuuuYYMMDDhhhhhhhhYYMMDDkkkkkkkk
                      AAaaaaaaaaa...aaaaaaaaBBbbbbbbbbb...bbbbbbbb
                      NNcccccccc...ccccccccKKKKKK&&CCCC<ETX>
```

Notes:
```
 1.      YYMMDDHHmm - Current Date and Time
 2.              TT - Tank Number (Decimal, 00=all)
 3.            pppp - Probe Type (Hex)
 4.          ssssss - Serial Number (Decimal)
 5.            zzzz - Probe ID (Hex)
 6.       lllllllll - Probe Length (ASCII Hex IEEE float)
 7.       ggggggggg - Gradient (ASCII Hex IEEE float)
 8.        SSSSSSSS - Number of Samples (Hex)
 9.        rrrrrrrr - Samples Read (Hex)
10.        uuuuuuuu - Samples Used (Hex)
11.          YYMMDD - Original Reference Distance Date
12.        hhhhhhhh - Original Reference Distance Value (ASCII Hex IEEE float)
13.          YYMMDD - Current Reference Distance Date
14.        kkkkkkkk - Current Reference Distance Value (ASCII Hex IEEE float)
15.              AA - # of 8-Byte Temperature Sensor Values to Follow (Hex)
16.        aaaaaaaa - Temperature Sensor Values (ASCII Hex IEEE float)
17.              BB - # of 8-Byte Temperature Sensor Difference Values to Follow
                      (Hex)
18.        bbbbbbbb - Temperature Sensor Difference Values (ASCII Hex IEEE float)
19.              NN - # of 8-Byte Channel Count Values to Follow (Hex)
20.        cccccccc - Channel Count Values (ASCII Hex IEEE float)
21.        KKKKKKKK - Probe Options Code (ASCII-Hex unsigned long)
                         0=Standard Temperature Probe
                         1=Low Temperature Probe
22.              && - Data Termination Flag
23.            CCCC - Message Checksum
```

Function Code: A20   Version 1
Function Type: Probe Leak Test Flags - Present Test

Command Format:
      Display: `<SOH>IA20TT`
    Computer: `<SOH>iA20TT`

Typical Response Message, Display Format:

```
<SOH>
IA20TT
JAN 28, 1995 10:15 AM
TANK  1  REGULAR UNLEADED       MAG   PRESENT LEAK TEST ANALYSIS REPORT
0.1 GAL/HR FLAGS:
0.2 GAL/HR FLAGS:
TANK  2  SUPER UNLEADED         CAP1  PRESENT LEAK TEST ANALYSIS REPORT
0.1 GAL/HR FLAGS:
0.2 GAL/HR FLAGS:
TANK  3  PREMIUM UNLEADED       CAP0  PRESENT LEAK TEST ANALYSIS REPORT
0.2 GAL/HR FLAGS:
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA20TTYYMMDDHHmmTTpPPNNFFFF...
                TTpPPNNFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   PP - Probe Type: (TLS450- only MAG supported)
                    01=CAP0
                    02=CAP1
                    03=MAG1
5.   NN - Number of 4-character Flag sequences to follow (Hex)
6.   FFFF - Flag sequence characters indicating which Flag bits are set
7.   && - Data Termination Flag
8.   CCCC - Message Checksum

Function Code: A21   Version 1
Function Type: Probe Leak Test Flags - Stored Test

Command Format:
Display: <SOH>IA21TT
Computer: <SOH>iA21TT

Typical Response Message, Display Format:

```
<SOH>
IA21TT
JAN 28, 1995 10:15 AM
TANK  1  REGULAR UNLEADED        MAG    STORED LEAK TEST ANALYSIS REPORT
0.1 GAL/HR FLAGS:
0.2 GAL/HR FLAGS:
TANK  2  SUPER UNLEADED          CAP1   STORED LEAK TEST ANALYSIS REPORT
0.1 GAL/HR FLAGS:
0.2 GAL/HR FLAGS:
TANK  3  PREMIUM UNLEADED        CAP0   STORED LEAK TEST ANALYSIS REPORT
0.2 GAL/HR FLAGS:
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA21TTYYMMDDHHmmTTpPPNNFFFF...
                TTpPPNNFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   PP - Probe Type: (TLS450- only MAG supported)
                 01=CAP0
                 02=CAP1
                 03=MAG1
5.   NN - Number of 4-character Flag sequences to follow (Hex)
6.   FFFF - Flag sequence characters indicating which Flag bits are set
7.   && - Data Termination Flag
8.   CCCC - Message Checksum

Function Code: A22   Version 1
Function Type: Probe Leak Test Flags - Gross Test

Command Format:
    Display: <SOH>IA22TT
    Computer: <SOH>iA22TT

Typical Response Message, Display Format:

```
<SOH>
IA22TT
APR 14, 1995 9:05 AM
TANK  1  REGULAR UNLEADED       MAG   GROSS LEAK TEST ANALYSIS REPORT
GROSS LEAK TEST FLAGS:
TANK  2  SUPER UNLEADED         CAP1  GROSS LEAK TEST ANALYSIS REPORT
GROSS LEAK TEST FLAGS:
TANK  3  PREMIUM UNLEADED       CAP0  GROSS LEAK TEST ANALYSIS REPORT
GROSS LEAK TEST FLAGS:
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA22TTYYMMDDHHmmTTpPPNNFFFF...
                 TTpPPNNFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   p - Product Code (one ASCII character [20h-7Eh])
4.   PP - Probe Type: (TLS450- only MAG supported)
                    01=CAP0
                    02=CAP1
                    03=MAG1
5.   NN - Number of 4-character Flag sequences to follow (Hex)
6.   FFFF - Flag sequence characters indicating which Flag bits are set
7.   && - Data Termination Flag
8.   CCCC - Message Checksum

      Function Code: A51   Version 1
      Function Type: CSLD Diagnostics: Rate Table

    Command Format:
        Display: <SOH>IA51TT
      Computer: <SOH>iA51TT

Typical Response Message, Display Format:

```
<SOH>
IA51TT
JAN 22, 1996  3:26 PM

CSLD DIAGNOSTICS: RATE TABLE
T 1:REGULAR UNLEADED
        TIME ST    LRT AVTMP TPTMP BDTMP  TMRT DSPNS   VOL INTVL   DEL ULLG EVAP

9601210514  2 -0.194  35.9  35.6  33.1  0.06   853  9324  53.5   1.4  188  7.8
9601220056  3 -0.028  36.9  35.7  33.3  0.02  1528  6829 134.0  21.1  320  7.8
9601220417  1 -0.007  37.0  35.8  33.3  0.02  1470  6825  25.0  24.5  320  7.8
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA51TTYYMMDDHHmmTTRRssNNttttttttFFFFFFFF...
                TTRRssNNttttttttFFFFFFFF&&ACF7<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   TT - Tank Number (Decimal, 00=All Tanks)
  3.   RR - Number of records to follow
  4.   ss - Test acceptability:
                    00=Acceptable
                    01=Rejected - less than minimum duration requirement
                    02=Rejected - within delivery threshold
                    03=Rejected - excessive dispensing
                    04=Rejected - excessive temperature change
                    06=Rejected - outside weighted STD
  5.   NN - Number of eight character Data Fields to follow (decimal)
  6.   tttttttt - Test starting time (seconds since 1/1/70, unsigned long)
  7.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Leak rate
                    2. Accept
                    3. 0.0 (obsolete)
                    4. Rate of change of temperature
                    5. Dispense factor
                    6. Volume
                    7. Test interval (minutes)
                    8. Hours since last delivery
                    9. Average temperature
                   10. Top temperature
                   11. Board temperature
                   12. Ullage area
                   13. Throughput
                   14. Evaporation rate
  8.   && - Data Termination Flag
  9.   CCCC - Message Checksum

Function Code: A52   Version 1
Function Type: CSLD Diagnostics: Rate Test

Command Format:
 Display: <SOH>IA52TT
 Computer: <SOH>iA52TT

Typical Response Message, Display Format:

```
<SOH>
IA52TT
JAN 22, 1996  3:27 PM

CSLD DIAGNOSTICS: RATE TEST

TK        DATE  LRATE INTVL ST  AVLRTE     VOL  C1  C3 FDBK ACPT THPUT EVAP  RJT
 1  9601220417 -0.024  22.6  1  -0.030    5436  67  22 30.4 36.8   7.8 0.100   0
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA52TTYYMMDDHHmmTTYYMMDDHHmmSSCCccNNFFFFFFFF...
                 TTYYMMDDHHmmSSCCccNNFFFFFFFF&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date
  2.   TT - Tank Number (Decimal, 00=All Tanks)
  3.   YYMMDDHHmm - Date of last tank evaluation
  4.   SS - Status code:
                       01=PASS
                       02=FAIL
                       05=NO RESULTS - Insufficient number of records
                       06=NO RESULTS - Insufficient test time interval
                       07=NO RESULTS - Insufficient test date range
                       08=INVALID - excessive positive leak rate
                       09=INVALID - negative leak waiting period
  5.   CC - Total count of records
  6.   cc - Total count of acceptable records
  7.   NN - Number of eight character Data Fields to follow (Hex)
  8.   FFFFFFFF - ASCII Hex IEEE floats:
                       1. Compensated leak rate
                       2. Total test time (hours)
                       3. Uncompensated leak rate
                       4. Average volume during tests
                       5. Feedback factor (minutes)
                       6. Acceptance factor (minutes)
                       7. Last throughput * tank capacity/1000
                       8. DF multiplier
                       9. Positive rejects
                       10. Average evaporation rate
  9.   && - Data Termination Flag
 10.   CCCC - Message Checksum

Function Code: A53   Version 1
Function Type: CSLD Diagnostics: Volume History Table

Command Format:
      Display: <SOH>IA53TT
     Computer: <SOH>iA53TT

Typical Response Message, Display Format:

```
<SOH>
IA53TT
MAR 26, 1996  1:48 PM

CSLD DIAGNOSTICS: VOLUME TABLE
T 1:REGULAR UNLEADED
LAST HOUR=229957
  3141.9  3297.9  3476.7  3625.4  3742.9  3932.8  4085.4  4156.5
  4218.2  4242.4  4242.5  4242.4  4242.0  4247.0  4265.9  4281.5
  4307.5  4339.7  4405.7  4456.5  4573.2  4701.3  4854.2  5022.6
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA53TTYYMMDDHHmmTTNNhhhhhhhhFFFFFFFF...
                TTNNhhhhhhhhFFFFFFFF&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date
   2.   TT - Tank Number (Decimal, 00=All Tanks)
   3.   NN - Number of eight character Data Fields to follow (Hex)
   4.   hhhhhhhh - Last hour recorded (seconds since 1/1/70, unsigned long)
   5.   FFFFFFFF - ASCII Hex IEEE floats:
                       1. Latest recorded hourly volume
                       2. Intermediate hourly recorded volumes
                       3. Oldest recorded hourly volume
   6.   && - Data Termination Flag
   7.   CCCC - Message Checksum

Function Code: A54   Version 1
Function Type: 30-Second Inventory Samples

Command Format:
     Display: <SOH>IA54TT
     Computer: <SOH>iA54TT

Typical Response Message, Display Format:

```
<SOH>
IA54TT
MAR 26, 1996  1:48 PM

30-SECOND INVENTORY SAMPLES

T 1:REGULAR UNLEADED
     TIME      SMPLS      TCVOL      HEIGHT    AVGTEMP    TOPTEMP    BDTEMP
960326132554     31     3074.65     32.279     45.86      45.49     48.19
960326132624     30     3072.62     32.263     45.86      45.49     48.19
960326132654     31     3072.46     32.262     45.86      45.49     48.20
960326132724     30     3072.54     32.263     45.86      45.49     48.20
960326132754     31     3073.13     32.267     45.86      45.49     48.21
960326132824     31     3072.97     32.266     45.86      45.49     48.21
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA5401YYMMDDHHmmTTSSRRssNNFFFFFFFF…FFFFFFFF
                    ssNNFFFFFFFF…FFFFFFFF
                 TTSSRRssNNFFFFFFFF…FFFFFFFF
                    ssNNFFFFFFFF…FFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date
2.   TT - Tank Number (Decimal, 00=All Tanks)
3.   SS - Current Test State:
                    0=No test
                    1=Test pre-start
                    2=Test in-progress
                    3=Test complete
                    4=Abort test
                    5=Pre-delay
                    6=End delay
4.   RR - Number of records to follow
5.   ss - Number of samples averaged into this record
6.   NN - Number of eight character Data Fields to follow (Hex)
7.   FFFFFFFF - ASCII Hex IEEE floats (except where noted):
                    1. Time (seconds since 1/1/70, unsigned long)
                    2. Temperature compensated volume
                    3. Height
                    4. Fuel temperature
                    5. 0.0
                    6. 0.0
                    7. Top temperature
                    8. Board temperature
8.   && - Data Termination Flag
9.   CCCC - Message Checksum

Function Code: A55   Version 1
Function Type: CSLD Diagnostics: Leak Test Status

Command Format:
     Display: <SOH>IA55TT
    Computer: <SOH>iA55TT

Typical Response Message, Display Format:

```
<SOH>
IA55TT
MAR 26, 1996  1:49 PM

CSLD DIAGNOSTICS: LEAK TEST STATUS

TANK    LABEL       TEST STATUS   DURATION
  1     Regular     NO TEST            0.0
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA55TTYYMMDDhhmmTTSSFFFFFFFF...
                TTSSFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date
2.   TT - Tank Number (Decimal, 00=All Tanks)
3.   SS – Status:
                  00=NO TEST
                  01=TEST PRE-START
                  02=TEST IN PROGRESS
                  03=TEST COMPLETE
                  04=TEST ABORT
                  05=TEST PRE-DELAY
                  06=TEST END DELAY
4.   FFFFFFFF - Elapsed time in minutes (ASCII Hex IEEE float)
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

  Function Code: A56   Version 1
  Function Type: CSLD Monthly Report

  Command Format:
    Display: <SOH>IA56TTt
    Computer: <SOH>iA56TTt

NOTE: The most current record from the previous month (if available) will be
returned if a record doesn't exist for the current month.

Typical Response Message, Display Format:

```
<SOH>
IA56TT
OCT 25, 2000 10:00 AM

CSLD MONTHLY REPORT

CURRENT MONTH
0.2 GAL/HR TEST

T 1:UNLEADED GASOLINE
PROBE SERIAL NUM 627020

OCT 25, 2000  7:15 AM   RESULT: No Results Available
OCT 24, 2000  3:22 PM   RESULT: Pass
OCT 23, 2000  6:26 AM   RESULT: Fail
OCT 20, 2000 12:44 PM   RESULT: Increase
OCT 20, 2000  5:23 AM   RESULT: Warning
OCT 19, 2000  8:23 AM   RESULT: Invalid
OCT 18, 2000  9:53 PM   STATUS: No Idle Data
OCT 16, 2000  6:14 AM   STATUS: Active
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA56TTYYMMDDHHmmtTTNNYYMMDDHHmmrr...
                TTNNYYMMDDHHmmrr&&CCCC<ETX>
```

Notes:
 1.   YYMMDDHHmm – Current Date and Time
 2.   t – Report Type
         0=Current Month
         1=Previous Month
 3.   TT – Tank Number (Decimal, 00=all)
 4.   NN – Number of CSLD State Changes (12 char) to follow (Hex)
 5. YYMMDDHHmm – Date and Time of CSLD State Change
 6.   rr – CSLD State Change:
         01=RESULT: Pass
         02=RESULT: Fail
         03=RESULT: No Results Available
         04=RESULT: Invalid
         08=RESULT: Increase
         09=RESULT: Warning
         98=STATUS: No Idle Data
         99=STATUS: Active
 7.   && – Data Termination Flag
 8.   CCCC – Message Checksum

Function Code: A57   Version 1
Function Type: Tank Test Diagnostics - CSLD Monthly Report

Command Format:
Display: `<SOH>IA57TTRRyymmddhhmmYYMMDDHHMMnnn`
Computer: `<SOH>iA57TTRRyymmddhhmmYYMMDDHHMMnnn`

Notes:
1.   TT - Device Number (Decimal, 00=all)
2.   RR - Report Type (Report Type should always be given. The rest of
           the parameters are optional following the rules below.)
               00=CSLD Monthly Report (for CSLD information for
                  specified time period)
3.   nnn - Maximum Records [000-999 Absolute Maximum] (Decimal). (If no
           Maximum Rrecords is given or it is zeroes and no End
           Date/Time is given, limited by the Maximum Records, Default
           of 100)
4.   yymmddhhmm - Starting Date/Time (If no start date/time is given or either
           Year, Month or Day are zeroes, it assumes request is for
           most recent records and is limited by the Maximum records
           below. Ranges are as follows:
               yy=Year (01-99, for Years 2001-2099)
               mm=Month (01-12, for Months January to December)
               dd=Day (01-31, however, validity depends on Month)
               hh=Hour (00-23)
               mm=Minute (00-59)
5.   YYMMDDHHMM - Ending Date/Time (If no end date/time is given or either
           Year, Month or Day are zeroes, it assumes request is for
           records starting from start date/time as evaluated above,
           limited by the Maximum Records (above)).

Valid Combinations:

If Max Records = 000, and Starting Date/Time = 0's or blank, (End Date/Time
not used for this combination).
Returns up to 100 of the most recent records.

If Max Records = 000, and Starting Date/Time is valid, and End Date/Time = 0's
or blank.
Returns up to 100 records starting from the Start Date/Time.

If Max Records = 000, and Starting Date/Time is valid, and End Date/Time is
valid
Returns all records between the Start Date/Time and the End Date/Time.

If Max Records = 1 – 999, and Starting Date/Time = 0's or blank, (End
Date/Time not used for this combination).
Returns up to the Max Records starting with the most recent records.

If Max Records = 1 – 999, and Starting Date/Time is valid, and End Date/Time =
0's or blank.
Returns up to the Max Records starting from the Start Date/Time.

If Max Records = 1 – 999, and Starting Date/Time is valid and End Date/Time is
valid.
Returns up to the Max Records starting with the Start Date/Time and ending
with the End Date/Time.

Function Code A57: (Continued)

NOTE: The most current record from a previous date (if available) will be returned
if a record doesn't exist for the selected date range.

Typical Response Message, Display Format:

```
<SOH>
IA57TT
OCT 25, 2000 10:00 AM

Selected Range:
     Date Range: 10/15/2000 04:00 PM – 10/26/2000 04:00 PM

Tank Test Diagnostics - CSLD Monthly Report

Tank 1: Regular Unleaded
Probe Serial Number: 627020

Date/Time                 CSLD State Change

Oct 25, 2000  7:15 AM  No Results Available
Oct 24, 2000  3:22 PM  Pass
Oct 23, 2000  6:26 AM  Fail
Oct 20, 2000 12:44 PM  Increase
Oct 20, 2000  5:23 AM  Warning
Oct 19, 2000  8:23 AM  Invalid
Oct 18, 2000  9:53 PM  No Idle Data
Oct 16, 2000  6:14 AM  Active
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA57TTYYMMDDHHmmTTNNNYYMMDDHHmmrr...
                  TTNNNYYMMDDHHmmrr&&CCCC<ETX>
```
Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all)
3.   NNN - Number of CSLD State Changes to follow (Hex)
4.   YYMMDDHHmm - Date and Time of CSLD State Change
5.   rr - CSLD State Change:
                       01=Pass
                       02=Fail
                       03=No Results Available
                       04=Invalid
                       08=Increase
                       09=Warning
                       98=No Idle Data
                       99=Active
6.   && - Data Termination Flag
7.   CCCC - Message Checksum

Function Code: A58   Version 1
Function Type: CSLD Diagnostics: Moving Average Table

Command Format:
    Display: <SOH>IA58TT
  Computer: <SOH>iA58TT

Typical Response Message, Display Format:

```
<SOH>
IA58TT
MAR 26, 1996  1:48 PM

CSLD DIAGNOSTICS: AGGREGATE ATG DATA QUEUE

T 1:REGULAR UNLEADED

                SMPL    AGGREG     MOVING                                    ERROR
    DATE/TIME   CNT     TCVOL     AVERAGE   VARIANCE  IDLE     STATE         FLAGS
  ------------  ----   --------   --------  --------  ----  -----------     -----
  960326132554   31    3074.65    3074.65     45.86   NO    NO TEST          0000
  960326132624   30    3072.62    3072.62     45.86   NO    PRE START        0000
  960326132654   31    3072.46    3072.46     45.86   YES   IN PROGRESS      0000
  960326132724   30    3072.54    3072.54     45.86   YES   COMPLETE         0000
  960326132754   31    3073.13    3073.13     45.86   YES   ABORT TEST       0000
  960326132824   31    3072.97    3072.97     45.86   YES   PRE DELAY        0000
  960326132854   31    3072.97    3072.97     45.86   YES   END DELAY        0000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA5801YYMMDDHHmmTTNNsssssssssnnccccccccmmmmmmmmvvvvvvvvISEEEE
                    sssssssssnnccccccccmmmmmmmmvvvvvvvvISEEEE
              TTNNsssssssssnnccccccccmmmmmmmmvvvvvvvvISEEEE&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm – Current Date and Time
2. TT – Tank Number (Decimal, 00=All Tanks)
3. NN – Number of samples in queue (hex)
4. sssssssss – time stamp in seconds since 1970 (ascii hex long)
5. nn – number of probe readings (ascii hex)
6. cccccccc – tc volume in gallons/liters (ascii hex float)
7. mmmmmmmm – moving average in gallons/liters (ascii hex float)
8. vvvvvvvv – variance (ascii hex float)
9. I – 1=idle, 0=busy
10. S – state
          0=No test
          1=Test pre-start
          2=Test in-progress
          3=Test complete
          4=Abort test
          5=Pre-delay
          6=End delay
11. EEEE – Error flags (ascii hex short)
12. && – Data Termination Flag
13. CCCC – Message Checksum

Function Code: A61   Version 4
Function Type: HRM Diagnostic Report

Command Format:
Display: <SOH>IA61TT
Computer: <SOH>iA61TT

Typical Response Message, Display Format:

```
<SOH>
IA61TT
MAR 26, 2011  1:48 PM

T 1:REGULAR UNLEADED

TIME STAMP     ENDTEMP   ENDVOL      SALES STAT    HR VAR
9707240757      70.61    2633.02     118.2   0    -0.037
9707240918      70.79    2547.48     204.0   0    -0.099
9707240948      70.82    2531.58     220.0   0     0.056
9707241114      70.93    2464.84     275.1   0   -11.729
9707241224      71.09    2420.87     331.2   0    11.767
9707241310      71.25    2347.41     404.2   0    -0.754
9707241412      71.38    2298.75     453.0   0    -0.019
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA61TTYYMMDDHHmmTTpRRYYMMDDHHmmFFEEEEEEEEESSSSSSSSSVVVVVVVV...
                 TTpRRYYMMDDHHmmFFEEEEEEEEESSSSSSSSSVVVVVVVV&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=All Tanks)
3.   p – Product Code
4.   RR – Number of Records to follow (ASCII hex)
5.   YYMMDDHHmm – Record Date and Time stamp
6.   FF – Status Flag (Hex)
                        00=Data Used
                        01=Not mapped
                        02=Time Set Back
                        03=Gap Too Long
                        04=Delivery
                        05=Temp Low
                        06=Temp High
                        07=Temp Increase
                        08=Volume High
                        09=Volume Low
                        0A=Volume Change
                        0B=Not Calibrated
                        0C=Cal Time Filter
                        0D=No Sales Data
                        0E=Temp Decrease
                        0F=Reset Filter
                        10=Therm Flag
                        11=DIM Reset
                        12=BDIM Transaction
7.   EEEEEEEE – Ending Volume (ASCII Hex IEEE float)
8.   SSSSSSSS – Sales (ASCII Hex IEEE float)
9.   VVVVVVVV – Hourly Variance (ASCII Hex IEEE float)
10.   && – Data Termination Flag
11.   CCCC – Message Checksum

Function Code: A62   Version 4
Function Type: HRM Daily History Report

Command Format:
    Display: <SOH>IA62TT
    Computer: <SOH>iA62TT

Typical Response Message, Display Format:

```
<SOH>
IA62TT
MAR 26, 2011  1:48 PM

DAILY HRM HISTORY

T 1:REGULAR UNLEADED

DATE/TIME          RECORDS      MIN        MAX        AVE      STATUS
9510010200         24        -0.562      0.000     -0.230      PASS
9510020200         21        -0.385      0.650     -0.057      PASS
9510030200         24        -0.402      0.092     -0.135      PASS
9510040300         24        -0.436      0.150     -0.147      PASS
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA62TTYYMMDDHHmmTTpRRYYMMDDHHmmhhaaaaaaaabbbbbbbbccccccccSS...
              TTpRRYYMMDDHHmmhhaaaaaaaabbbbbbbbccccccccSS&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number (Decimal, 00=All Tanks)
    3.   p - Product Code (ASCII character [20h-7Eh])
    4.   RR - Number of Records to follow (ASCII hex)
    5.   YYMMDDHHmm - Record Date and Time stamp
    6.   hh - Number of hours in record (decimal)
    7.   aaaaaaaa - Minimum Volume (ASCII Hex IEEE float)
    8.   bbbbbbbb - Maximum Value (ASCII Hex IEEE float)
    9.   cccccccc - Average Value (ASCII Hex IEEE float)
    10.   SS - Status
                      00=No Data Available
                      01=Pass
                      02=Warning
                      03=Fail
    11.   && - Data Termination Flag
    12.   CCCC - Message Checksum

Function Code: A63   Version 4
Function Type: Extended HRM Diagnostic Report

Command Format:
Display: <SOH>IA63TT
Computer: <SOH>iA63TT

Typical Response Message, Display Format:

```
<SOH>
IA63TT
MAR 26, 2011  1:48 PM

T 1:REGULAR UNLEADED

TIME STAMP      ENDTEMP   ENDVOL      SALES STAT    HR VAR
9707240757       70.61   2633.02      118.2   0    -0.037
9707240918       70.79   2547.48      204.0   0    -0.099
9707240948       70.82   2531.58      220.0   0     0.056
9707241114       70.93   2464.84      275.1   0   -11.729
9707241224       71.09   2420.87      331.2   0    11.767
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA63TTYYMMDDHHmmTTpRRYYMMDDHHmmFFNNEEEEEEEEESSSSSSSSVVVVVVVVTTTTTTTT...
                TTpRRYYMMDDHHmmFFNNEEEEEEEEESSSSSSSSVVVVVVVV
                   TTTTTTTT&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   TT – Tank Number (Decimal, 00=All Tanks)
3.   p – Product Code (ASCII character [20h-7Eh])
4.   RR – Number of Records to follow (ASCII hex)
5.   YYMMDDHHmm – Record Date and Time stamp
6.   FF – Status Flag (Hex)
                           00=Data Used
                           01=Not mapped
                           02=Time Set Back
                           03=Gap Too Long
                           04=Delivery
                           05=Temp Low
                           06=Temp High
                           07=Temp Increase
                           08=Volume High
                           09=Volume Low
                           0A=Volume Change
                           0B=Not Calibrated
                           0C=Cal Time Filter
                           0D=No Sales Data
                           0E=Temp Decrease
                           0F=Reset Filter
                           10=Therm Flag
                           11=DIM Reset
                           12=BDIM Transaction
7.   NN – Number of eight character data fields to follow (Hex
8.   EEEEEEEE – Ending Volume (ASCII Hex IEEE float)
9.   SSSSSSSS – Sales (ASCII Hex IEEE float)
10.   VVVVVVVV – Hourly Variance (ASCII Hex IEEE float)
11.   TTTTTTTT – Ending Temperature (ASCII Hex IEEE float)
12.   && – Data Termination Flag
13.   CCCC – Message Checksum

Function Code: A64   Version 4
Function Type: HRM Diagnostic Report with Date Range

Command Format:
  Display: <SOH>IA64TTyymmddYYMMDDnnn
  Computer: <SOH>iA64TTyymmddYYMMDDnnn

Notes:
  1.   yymmdd - Starting Date (000000 = no starting date)
  2.   YYMMDD - Ending Date   (000000 = no ending date)
  3.   nnn - Maximum Records [001…999] (240 = default) (decimal)

  4.   If no data is entered or zeros are entered for the starting
                      date, ending date and maximum records, the last 240 records
                      will be returned.

Typical Response Message, Display Format:

```
<SOH>
IA64TT
APR 20, 2011  1:48 PM

TLS_450 UST
VEEDER-ROOT TEST LAB
125 POWDER FOREST DR
SIMSBURY, CT 06070

                                        Volume=GALLONS
                                        Height=INCHES
HRM Diagnostic Report                   Temp=FAHRENHEIT

Selected Range:
 Date Range: APR 19, 2011 12:00 AM - APR 19, 2011 11:59 PM

T 1:REGULAR UNLEADED
DATE/TIME             ENDTEMP   ENDVOL     SALES  STAT    HR VAR
APR 19, 2011 01:00    70.61    2633.02    118.2    0     -0.037
APR 19, 2011 02:00    70.79    2547.48    204.0    0     -0.099
APR 19, 2011 03:00    70.82    2531.58    220.0    0      0.056
APR 19, 2011 04:00    70.93    2464.84    275.1    0    -11.729
APR 19, 2011 05:00    71.09    2420.87    331.2    0     11.767
APR 19, 2011 06:00    71.25    2347.41    404.2    0     -0.754
APR 19, 2011 07:00    71.38    2298.75    453.0    0     -0.019
<ETX>
```

Function Code A64 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iA64TTYYMMDDHHmmTTpRRRRYYMMDDHHmmFFEEEEEEEEESSSSSSSSSVVVVVVVV...
                 TTpRRRRYYMMDDHHmmFFEEEEEEEEESSSSSSSSSVVVVVVVV&&CCCC<ETX>
```

Notes:
```
   1.       YYMMDDHHmm - Current Date and Time
   2.               TT - Tank Number (Decimal, 00=All Tanks)
   3.                p - Product Code (ASCII character [20h-7Eh])
   4.             RRRR - Number of Records to follow (ASCII hex)
   5.   YYYYMMDDHHmm - Record Date and Time stamp
   6.               FF - Status Flag (Hex)
                        00=Data Used
                        01=Not mapped
                        02=Time Set Back
                        03=Gap Too Long
                        04=Delivery
                        05=Temp Low
                        06=Temp High
                        07=Temp Increase
                        08=Volume High
                        09=Volume Low
                        0A=Volume Change
                        0B=Not Calibrated
                        0C=Cal Time Filter
                        0D=No Sales Data
                        0E=Temp Decrease
                        0F=Reset Filter
                        10=Therm Flag
                        11=DIM Reset
                        12=BDIM Transaction
   7.       EEEEEEEE - Ending Volume (ASCII Hex IEEE float)
   8.       SSSSSSSS - Sales (ASCII Hex IEEE float)
   9.        VVVVVVVV - Hourly Variance (ASCII Hex IEEE float)
  10.             && - Data Termination Flag
  11.           CCCC - Message Checksum
```

<table>
<tr><td>**Function Code: A65**</td><td>Version 4</td></tr>
<tr><td>**Function Type:** HRM Daily History Report with Date Range</td><td></td></tr>
</table>

Command Format:
Display: <SOH>IA65TTyymmddYYMMDDnnn
Computer: <SOH>iA65TTyymmddYYMMDDnnn

Notes:
1. yymmdd - Starting Date (000000 = no starting date)
2. YYMMDD - Ending Date   (000000 = no ending date)
3. nnn - Maximum Records [001…999] (31 = default) (decimal)

4. If no data is entered or zeros are entered for the starting date, ending date and maximum records, the last 31 records will be returned.

Typical Response Message, Display Format:

```
<SOH>
IA65TT
MAR 26, 2011  1:48 PM

TLS_450 UST
VEEDER-ROOT TEST LAB
125 POWDER FOREST DR
SIMSBURY, CT 06070

                                            Volume=GALLONS
                                            Height=INCHES
DAILY HRM HISTORY                           Temp=FAHRENHEIT

T 1:REGULAR UNLEADED

Selected Range:
 Date Range: APR 19, 2011 12:00 AM - APR 19, 2011 11:59 PM

TIME/DATE             RECORDS     MIN       MAX       AVE     STATUS
APR 19, 2011 01:00    24        -0.562    0.000    -0.230    PASS
APR 19, 2011 02:00    21        -0.385    0.650    -0.057    PASS
APR 19, 2011 03:00    24        -0.402    0.092    -0.135    PASS
APR 19, 2011 04:00    24        -0.436    0.150    -0.147    PASS
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA65TTYYMMDDHHmmTTpRRRRYYMMDDHHmmhhaaaaaaaabbbbbbbbccccccccSS...
                 TTpRRRRYYMMDDHHmmhhaaaaaaaabbbbbbbbccccccccSS&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00=All Tanks)
3. p - Product Code (ASCII character [20h-7Eh])
4. RRRR - Number of Records to follow (ASCII hex)
5. YYMMDDHHmm - Record Date and Time stamp
6. hh - Number of hours in record (decimal)
7. aaaaaaaa - Minimum Volume (ASCII Hex IEEE float)
8. bbbbbbbb - Maximum Value (ASCII Hex IEEE float)
9. cccccccc - Average Value (ASCII Hex IEEE float)
10. SS - Status
    00=No Data Available
    01=Pass
    02=Warning
    03=Fail
11. && - Data Termination Flag
12. CCCC - Message Checksum

Function Code: A66   Version 4
Function Type: Extended HRM Diagnostic Report with Date Range

Command Format:
  Display: <SOH>IA66TTyymmddYYMMDDnnn
  Computer: <SOH>iA66TTyymmddYYMMDDnnn

Notes:
  1.   yymmdd - Starting Date (000000 = no starting date)
  2.   YYMMDD - Ending Date   (000000 = no ending date)
  3.   nnn - Maximum Records [001…999] (240 = default) (decimal)

  4.   If no data is entered or zeros are entered for the starting
                      date, ending date and maximum records, the last 240 records
                      will be returned.

Typical Response Message, Display Format:

```
<SOH>
IA66TT
APR 20, 2011  1:48 PM

TLS_450 UST
VEEDER-ROOT TEST LAB
125 POWDER FOREST DR
SIMSBURY, CT 06070


                                                Volume=GALLONS
                                                Height=INCHES
Extended HRM Diagnostic Report                  Temp=FAHRENHEIT


Selected Range:
 Date Range: APR 19, 2011 12:00 AM - APR 19, 2011 11:59 PM

T 1:REGULAR UNLEADED
DATE/TIME            ENDTEMP  ENDVOL     SALES   STAT    HR VAR
APR 19, 2011 01:00    70.61  2633.02    118.2     0    -0.037
APR 19, 2011 02:00    70.79  2547.48    204.0     0    -0.099
APR 19, 2011 03:00    70.82  2531.58    220.0     0     0.056
APR 19, 2011 04:00    70.93  2464.84    275.1     0   -11.729
APR 19, 2011 05:00    71.09  2420.87    331.2     0    11.767
<ETX>
```

Function Code A66 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iA66TTYYMMDDHHmmTTpRRRRYYMMDDHHmmFFNNEEEEEEEESSSSSSSSVVVVVVVVTTTTTTTT...
                  TTpRRRRYYMMDDHHmmFFNNEEEEEEEESSSSSSSSVVVVVVVV
                      TTTTTTTT&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00=All Tanks)
3. p - Product Code (ASCII character [20h-7Eh])
4. RRRR - Number of Records to follow (ASCII hex)
5. YYMMDDHHmm - Record Date and Time stamp
6. FF - Status Flag (Hex)
   - 00=Data Used
   - 01=Not mapped
   - 02=Time Set Back
   - 03=Gap Too Long
   - 04=Delivery
   - 05=Temp Low
   - 06=Temp High
   - 07=Temp Increase
   - 08=Volume High
   - 09=Volume Low
   - 0A=Volume Change
   - 0B=Not Calibrated
   - 0C=Cal Time Filter
   - 0D=No Sales Data
   - 0E=Temp Decrease
   - 0F=Reset Filter
   - 10=Therm Flag
   - 11=DIM Reset
   - 12=BDIM Transaction
7. NN - Number of eight character data fields to follow (Hex
8. EEEEEEEE - Ending Volume (ASCII Hex IEEE float)
9. SSSSSSSS - Sales (ASCII Hex IEEE float)
10. VVVVVVVV - Hourly Variance (ASCII Hex IEEE float)
11. TTTTTTTT - Ending Temperature (ASCII Hex IEEE float)
12. && - Data Termination Flag
13. CCCC - Message Checksum

Function Code: A71   Version 2
Function Type: Accuchart Data Sufficiency

Command Format:
    Display: <SOH>IA71TT
    Computer: <SOH>iA71TT

Notes:
    1.   TT - Tank Number [01..32], (Decimal, 00=all)

Typical Response Message, Display Format:

```
<SOH>
IA71TT
JAN 24, 2009  2:52 PM

ACCUCHART DATA SUFFICIENCY

        |--SUFFICIENCY--|  DAYS
TANK   CURRENT  REQUIRED  LEFT  SUFFICIENCY IMPROVEMENT ACTION
----   -------  --------  ----  ---------------------------------------------
  1     45.0      60.0      10  POSTPONE UNTIL TANK VOLUME LOWERED TO 1234567
  2     45.0      60.0      20  START DISPENSING
  3     45.0      60.0      30  STOP DISPENSING
 16     45.0      60.0     101  SCHEDULE NOW TO FILL TO 1234567
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA71TTYYMMDDHHmmTTssssssssSSSSSSSSddaa...
                TTssssssssSSSSSSSSddaa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number [01..32], (Decimal, 00=all)
    3.   ssssssss - Current Sufficiency (ASCII Hex IEEE float)
    4.   SSSSSSSS - Required Sufficiency (ASCII Hex IEEE float))
    5.   dd - Days Left (Hex)
    6.   aa - Sufficiency improvement action
                       0=No change
                       1=Schedule delivery now to fill tank
                       2=Postpone delivery until tank volume lowered
                       3=Start dispensing
                       4=Stop dispensing
                       5=Continue dispensing
    7.   && - Data Termination Flag
    8.   CCCC - Message Checksum

Function Code: A72   Version 2
Function Type: Accuchart Data Sufficiency Histogram

Command Format:
    Display: <SOH>IA72TT
    Computer: <SOH>iA72TT

Notes:
1.   TT - Tank Number [01..32], (Decimal, 00=all)

Typical Response Message, Display Format:

```
<SOH>
IA72TT
JAN 24, 2009  2:52 PM

TANK nn ACCUCHART DATA SUFFICIENCY HISTOGRAM

HEIGHT%  COUNTS
-------  ------  ---------+---------+---------+---------+---------+---------+--
95 -100   AAAA  |                                                             |
90 - 95   AAAA  |***
85 - 90   AAAA  |*********
80 - 85   AAAA  |****
75 - 80   AAAA  |****************
70 - 75   AAAA  |****
65 - 70   AAAA  |************
60 - 65   AAAA  |**
55 - 60   AAAA  |
50 - 55   AAAA  |
45 - 50   AAAA  |**
40 - 45   AAAA  |***
35 - 40   AAAA  |***********
30 - 35   AAAA  |******
25 - 30   AAAA  |******************************
20 - 25   AAAA  |***********
15 - 20   AAAA  |****
10 - 15   AAAA  |***
 5 - 10   AAAA  |                                                             |
 0 -  5   AAAA  |                                                             |
                 ---------+---------+---------+---------+---------+---------+--
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA72TTYYMMDDHHmmTTNNaaaaaaaabbbbbbbbAAAA...aaaaaaaabbbbbbbbAAAA
                TTNNaaaaaaaabbbbbbbbAAAA...aaaaaaaabbbbbbbbAAAA&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number [01..32], (Decimal)
3.   NN - Number of histogram bins to follow (Decimal)
4.   aaaaaaaa - min height of bin in Percent (ASCII Hex IEEE float)
5.   bbbbbbbb - max height of bin in Percent (ASCII Hex IEEE float)
6.   AAAA - Number of counts in bin (ASCII Hex short)
7.   && - Data Termination Flag
8.   CCCC - Message Checksum

    Function Code: A73   Version 2
    Function Type: Force Accuchart Calibration

    Command Format: **Inquire:**
        Display: `<SOH>SA73TT149`   `<SOH>IA73TT`
        Computer: `<SOH>sA73TT149`   `<SOH>iA73TT`

Notes:
    1.   TT - Tank Number [01..32], (Decimal, 00=all)
    2.   Set command forces Accuchart to attempt to calibrate

Typical Response Message, Display Format:

```
<SOH>
IA73TT
JAN 24, 2009  2:52 PM

ACCUCHART CALIBRATION STATUS

TANK    STATUS
----    -----------
  1    CALCULATING
  2    SUSPENDED
  3    COLLECTING
 16    STOPPED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA73TTYYMMDDHHmmTTs...
            TTs&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   TT - Tank Number [01..32], (Decimal, 00=all)
    3.   s - Current Status (Decimal)
                   1=Calculating
                   2=Suspended
                   3=Collecting
                   4=Stopped
    4.   && - Data Termination Flag
    5.   CCCC - Message Checksum

Function Code: A74   Version 2
Function Type: Accuchart Calibration Feedback Report

Command Format:
      Display: `<SOH>IA74TT`
   Computer: `<SOH>iA74TT`

Notes:
1.   TT - Tank Number [01..32], (Decimal, 00=all)

Typical Response Message, Display Format:

```
<SOH>
IA74TT
JAN 24, 2009  2:52 PM

ACCUCHART FEEDBACK REPORT

TANK    DATE                        STATUS
----   ----------   ----------------------------------------
  1    yyyy-mm-dd   INSUFFICIENT DATA COLLECTION RATE

  2    yyyy-mm-dd   NOISY DATA

  3    yyyy-mm-dd   DATA TOO REGIONALLY CONCENTRATED
       yyyy-mm-dd   INITIAL TANK PARAMETERS SUSPICIOUS
       yyyy-mm-dd   STATION TOO BUSY

 10    yyyy-mm-dd   STATION TOO BUSY
       yyyy-mm-dd   DATA TOO REGIONALLY CONCENTRATED

 12    yyyy-mm-dd   INSUFFICIENT DATA COLLECTION RATE
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA74TTYYMMDDHHmmTTNNNNyymmddS...yymmddS
                TTNNNNyymmddS...yymmddS&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number [01..32], (Decimal, 00=all)
3.   NNNN - Number of Records to follow (Decimal)
4.   yymmdd - Time Stamp
5.   S - Status Code (Decimal)
                       1=Insufficient Data Collection Rate
                       2=Noisy Data
                       3=Data Too Regionally Concentrated
                       4=Initial Tank Parameters Suspicious
                       5=Station Too Busy
6.   && - Data Termination Flag
7.   CCCC - Message Checksum

Function Code: A75   Version 2
Function Type: Accuchart Delivery Instructions

Command Format:
      Display: <SOH>IA75TT
    Computer: <SOH>iA75TT

Notes:
1.   TT - Tank Number [01..32], (Decimal, 00=all)

Typical Response Message, Display Format:

```
<SOH>
IA75TT
JAN 24, 2009  2:52 PM

ACCUCHART DELIVERY INSTRUCTIONS

TANK    DATE                        DELIVERY INSTRUCTIONS
----  ----------  ---------------------------------------------------------
  1   yyyy-mm-dd  SCHEDULE NOW TO FILL TANK TO XXXXX (GALLONS/LITERS)
  2   yyyy-mm-dd  POSTPONE UNTIL TANK VOLUME LOWERED TO XXXXX (GALLONS/LITERS)
 16   yyyy-mm-dd  SCHEDULE NOW TO FILL TANK TO XXXXX (GALLONS/LITERS)
<ETX>
```

(Note: Only show tanks with actionable delivery instructions)

Typical Response Message, Computer Format:

```
<SOH>iA75TTYYMMDDHHmmTTyymmddsvvvvvvvv...
                TTyymmddsvvvvvvvv&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number [01..32], (Decimal, 00=all)
3.   yymmdd - Time Stamp
4.   s - Status Code (Decimal)
            1=Schedule Delivery Now
            2=Postpone Delivery
5.   vvvvvvvv - Final Volume in Gallons/Liters (ASCII Hex IEEE float)
6.   && - Data Termination Flag
7.   CCCC - Message Checksum

Function Code: A76   Version 2
Function Type: Get Application Log Information

Command Format:
    Display: `<SOH>IA76TTYYMMDDyymmdd`
   Computer: `<SOH>iA76TTYYMMDDyymmdd`

Notes:
1.   TT - Tank Number [01..32], (Decimal, 00=all)
2.   YYMMDD - Start Date (optional)
3.   yymmdd - End date (optional)

Typical Response Message, Display Format:

```
<SOH>
IA76TT
JAN 22, 2007  3:24 PM

ACCUCHART APPLICATION LOG

     DATE/TIME       TANK  MESSAGE
----------------    ----  -------------------------------------------------
09-01-02 12:34:56    1    NEW CHART CREATED
09-01-03 12:34:56    2    CALIBRATION STARTED
09-01-04 12:34:56    1    CHART ACTIVATED ID=5
09-01-05 12:34:56    11   CALIBRATION STOPPED
09-01-03 12:34:56    12   CALIBRATION SUSPENDED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA76TTYYMMDDHHmmTTSSSSSSSScc...
               TTSSSSSSSScc&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number [01..32], (Decimal, 00=all)
3.   SSSSSSSS - Time stamp of log entry (ASCII Hex Long)
4.   cc - Message Code (Decimal)
                              01=New Chart Created
                              02=Chart Activated
                              03=Calibration Started
                              04=Calibration Stopped
                              05=Calibration Suspended
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: A91   Version 1
Function Type: Power Outage Report

Command Format:
          Display: <SOH>IA91TT
          Computer: <SOH>iA91TT

Typical Response Message, Display Format:

```
<SOH>
IA91TT
JAN 24, 1996  2:56 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....


                                                       Volume=GALLONS
                                                        Height=INCHES
POWER OUTAGE REPORT                                   Temp=FAHRENHEIT

T 1:REGULAR UNLEADED
INCREASE   DATE / TIME                       FUEL       WATER        TEMP
                                             VOLUME     VOLUME

POWER REMOVED:  JAN 16, 1996  7:46:23 AM     3367         0         43.1
POWER RESTORED: JAN 16, 1996  8:00:15 AM     3367         0         43.1
GROSS VOLUME CHANGE:                           0
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iA91TTYYMMDDHHmmTTnnYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                TTnnYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - Tank Number (Decimal, 00=all).
3.   nn - Number of History Records to follow (Decimal)
4.   YYMMDDHHmm - Power Restored Date/Time
5.   YYMMDDHHmm - Power Removed Date/Time
6.   NN - Number of eight character Data Fields to follow (Hex)
7.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Power Removed Fuel Volume
                    2. Power Removed Water Volume
                    3. Power Removed Temperature
                    4. Power Restored Fuel Volume
                    5. Power Restored Water Volume
                    6. Power Restored Temperature
                    7. Gross Change
8.   && - Data Termination Flag
9.   CCCC - Message Checksum

```
          Function Code: A9G                                        Version 1
          Function Type: Power Outage Inventory Report Date/Time Based

          Command Format:
            Display: <SOH>IA9GTTyymmddYYMMDDnnn
           Computer: <SOH>iA9GTTyymmddYYMMDDnnn
```

Notes:
```
    1.         yymmdd - Starting date (000000 = no starting date)
    2.         YYMMDD - Ending Date   (000000 = no ending date))
    3.            nnn - Maximum Records [001…999] (10 = default) (decimal)

    4.                 If no data is entered or zeros are entered for the starting
                       date, ending date and maximum records, the last 10 records
                       will be returned.
```

Typical Response Message, Display Format:

```
   <SOH>
   IA9GTT
   JAN 22, 2007  3:24 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....


                                                          Volume=GALLONS
                                                           Height=INCHES
   POWER OUTAGE REPORT                                    Temp=FAHRENHEIT

   Selected Range:
    All Records:

   Tank  1:UNLEADED                                FUEL       WATER      TEMP
   INCREASE   DATE / TIME                          VOLUME     VOLUME

   POWER REMOVED:  AUG 15, 2013 15:53:38            9086         0       74.4
   POWER RESTORED: AUG 15, 2013 15:54:55            9026         0       74.4
   GROSS VOLUME CHANGE:                              -60
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>iA9GTTYYMMDDHHmmTTnnnnYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                   YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                   TTnnnnYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                       YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               TT - Tank Number (Decimal, 00=all)
    3.             nnnn - Number of History Records to follow (Decimal)
    4.       YYMMDDHHmm - Power Removed Date/Time
    5.       YYMMDDHHmm - Power Restore Date/Time
    6.               NN - Number of eight character Data Fields to follow (Hex)
    7.         FFFFFFFF - ASCII Hex IEEE floats:
                         1. Power Removed Fuel Volume
                         2. Power Remove Water Volume
                         3. Power Removed Temperature
                         4. Power Restored Fuel Volume
                         5. Power Restored Water Volume
                         6. Power Restored Temperature
                         7. Gross Change
    8.               && - Data Termination Flag
    9.             CCCC - Message Checksum
```

```
            Function Code: A9H                                      Version 1
            Function Type: Power Outage Delivery Diagnostic Report Date/Time Based

            Command Format:
               Display: <SOH>IA9HTTyymmddYYMMDDnnn
               Computer: <SOH>iA9HTTyymmddYYMMDDnnn
```

Notes:
```
   1.         yymmdd - Starting date (000000 = no starting date)
   2.         YYMMDD - Ending Date   (000000 = no ending date))
   3.            nnn - Maximum Records [001…999] (10 = default) (decimal)

   4.                 If no data is entered or zeros are entered for the starting
                      date, ending date and maximum records, the last 10 records
                      will be returned.
```

Typical Response Message, Display Format:

```
   <SOH>
   IA9HTT
   JAN 22, 2007  3:24 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....


                                        Volume=GALLONS
                                        Height=INCHES
   POWER OUTAGE DELIVERY REPORT         Temp=FAHRENHEIT

   Selected Range:
   All Records:

   TANK    1 PRODUCT 1
   INCREASE    DATE       TIME             VOLUME   HEIGHT
        END: 28-07-08 15:14               3231     32.21
      START: 28-07-08 15:05               1244     12.22
     AMOUNT:                              1987

        END: 25-07-08 14:48               4460     44.60
      START: 25-07-08 14:37               1157     11.57
     AMOUNT:                              3303
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>iA9HTTYYMMDDHHmmTTpddddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                       YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                       TTpddddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                       YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
   1.     YYMMDDHHmm - Current Date and Time
   2.             TT - Tank Number (Decimal, 00=all)
   3.              p - Product Code (one ASCII character [20h-7Eh])
   4.           dddd - Number of Deliveries to follow (Decimal, 0000 if no
                       deliveries available for this tank)
   5.     YYMMDDHHmm - Starting Date/Time
   6.     YYMMDDHHmm - Ending Date/Time
   7.             NN - Number of eight character Data Fields to follow (Hex)
   8.       FFFFFFFF - ASCII Hex IEEE floats:
                          1. Starting Volume
                          2. Ending Volume
                          3. Starting Height
                          4. Ending Height
   9.             && - Data Termination Flag
   10.          CCCC - Message Checksum
```

Function Code: A9J   Version 1
Function Type: Power Reset History Report Date/Time Based

Command Format:
   Display: <SOH>IA9J00yymmddYYMMDDnnn
   Computer: <SOH>iA9J00yymmddYYMMDDnnn

Notes:
   1.   yymmdd - Starting date (000000 = no starting date)
   2.   YYMMDD - Ending Date   (000000 = no ending date))
   3.   nnn - Maximum Records [001…999] (10 = default) (decimal)

   4.   If no data is entered or zeros are entered for the starting
                 date, ending date and maximum records, the last 10 records
                 will be returned.

Typical Response Message, Display Format:

   <SOH>
   IA9J00
   JAN 22, 2007 3:24 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   POWER RESET HISTORY REPORT

   Selected Range:
    All Records:

   POWER DOWN DATE/TIME   POWER UP DATE/TIME
   MAY 20, 2011 3:52:22 PM   MAY 20, 2011 4:43:15 PM
   MAY 15, 2011 10:33:38 AM   MAY 15, 2011 1:31:18 PM
   MAY 12, 2011 7:33:32 PM   MAY 12, 2011 7:36:33 PM
   MAY 6, 2011 3:31:22 AM   MAY 6, 2011 3:33:14 AM
   <ETX>

Typical Response Message, Computer Format:

   <SOH>iA9J00YYMMDDHHmmnnnYYMMDDHHmmssYYMMDDHHmmss...
                    YYMMDDHHmmssYYMMDDHHmmss&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   nnn - Number of Power Reset records to follow (Decimal, 000 if no
                     data available)
   3.   YYMMDDHHmmss - Power Down Date/Time
   4.   YYMMDDHHmmss - Power Up Date/Time
   5.   && - Data Termination Flag
   6.   CCCC - Message Checksum

7.4.3 SENSOR DIAGNOSTIC REPORTS

Function Code: **B01**   Version 1
Function Type: Liquid Sensor Diagnostic Report

Command Format:
     Display: <SOH>IB01SS
     Computer: <SOH>iB01SS

Typical Response Message, Display Format:

   <SOH>
   IB01SS

   JAN 24, 1996 2:56 PM

   SENSOR DIAGNOSTIC – LIQUID SENSOR INFORMATION REPORT

   SINGLE SENSOR
                          SAMPLE
   SENSOR   CATEGORY   COUNTER   VALUE   STATUS
   1   NO_CATEGORY   5   145727   Out Alarm
   <ETX>

Typical Response Message, Computer Format:

   <SOH>iB01SSYYMMDDHHmmSSNNFFFFFFFF...
                     SSNNFFFFFFFF&&CCCC<ETX>

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   SS - Sensor Number (Decimal, 00=all)
   3.   NN - Number of eight character Data Fields to follow (Hex)
   4.   FFFFFFFF - ASCII Hex IEEE floats:
                       1. Sample counter
                       2. High Reference Channel
                       3. Low Reference Channel
                       4. Liquid Channel Last Reading
                       5. Liquid Channel Average Reading
   5.   && - Data Termination Flag
   6.   CCCC - Message Checksum

Function Code: B06   Version 1
Function Type: Vapor Sensor Diagnostic Report

Command Format:
    Display: `<SOH>IB06SS`
    Computer: `<SOH>iB06SS`

Typical Response Message, Display Format:

```
<SOH>
IB06SS

JAN 24, 1996  2:56 PM

SENSOR DIAGNOSTIC - VAPOR SENSOR INFORMATION REPORT

SINGLE SENSOR

            SAMPLE                              VAPOR
SENSOR      COUNTER       VALUE 1     VALUE 2   CONCENTRATION     STATUS
1           5             322         175355    322               Out Alarm
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB06SSYYMMDDHHmmSSNNFFFFFFFF...
                SSNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Sensor Number (Decimal, 00=all)
3.   NN - Number of eight character Data Fields to follow (Hex)
4.   FFFFFFFF - ASCII Hex IEEE floats:
        1. Sample counter
        2. High Reference Channel
        3. Low Reference Channel
        4. Vapor Channel Last Reading
        5. Vapor Channel Average Reading
        6. Water Channel Last Reading
        7. Water Channel Average Reading
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: B07   Version 1
Function Type: Vapor Sensor Concentration (PPM) Report

        Command Format:
           Display: <SOH>IB07SS
        Computer: <SOH>iB07SS

Typical Response Message, Display Format:

```
<SOH>
IB07SS
JAN 24, 1996  2:56 PM

VAPOR DIAGNOSTIC REPORT - VAPOR CONCENTRATION

SENSOR        PPM
    1          0
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB07SSYYMMDDHHmmSSNNFFFFFFFF...
                SSNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Sensor number (Decimal, 00=All)
3.   NN - Number of eight character Data Fields to follow (Hex)
4.   FFFFFFFF - ASCII Hex IEEE float:
                1. Vapor concentration (ppm)
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: B11   Version 1
Function Type: Groundwater Sensor Diagnostic Report

Command Format:
    Display: <SOH>IB11SS
   Computer: <SOH>iB11SS

Typical Response Message, Display Format:

```
<SOH>
IB11SS

JAN 28, 1995 10:16 AM

SENSOR DIAGNOSTIC - GROUNDWATER SENSOR INFORMATION REPORT

SINGLE SENSOR
                    SAMPLE
SENSOR              COUNTER      VALUE 1        VALUE 2           STATUS
1                      5          49875          90972         OUT ALARM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB11SSYYMMDDHHmmSSNNFFFFFFFF...
                 SSNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   SS - Sensor Number (Decimal, 00=all)
3.   NN - Number of eight character Data Fields to follow (Hex)
4.   FFFFFFFF - ASCII Hex IEEE float:
               1. Sample counter
               2. High Reference Channel
               3. Low Reference Channel
               4. Hydrocarbon Channel Last Reading
               5. Hydrocarbon Channel Average Reading
               6. Water Channel Last Reading
               7. Water Channel Average Reading
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: B21   Version 1
Function Type: Ground Temperature Sensor Diagnostic Report

Command Format:
          Display: <SOH>IB21SS
          Computer: <SOH>iB21SS

Typical Response Message, Display Format:

```
<SOH>
IB21SS
JAN 24, 1996  2:56 PM

GROUNDTEMP DIAGNOSTIC REPORT

          SAMPLE      HIGH        LOW
SENSOR  COUNTER       REF         REF         VALUE
   1        50        1086        215         28393
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB21SSYYMMDDHHmmSSNNFFFFFFFF...
                  SSNNFFFFFFFF&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   SS – Sensor Number (Decimal, 00=all)
   3.   NN – Number of eight character Data Fields to follow (Hex)
   4.   FFFFFFFF – ASCII Hex IEEE floats:
                          1. Sample counter
                          2. High Reference Channel
                          3. Low Reference Channel
                          4. Temperature Channel Last Reading
                          5. Temperature Channel Average Reading
   5.   && – Data Termination Flag
   6.   CCCC – Message Checksum

Function Code: B33   Version 1
Function Type: MAG Sensor Diagnostic Report

Command Format:
         Display: <SOH>IB33SS
        Computer: <SOH>iB33SS

Typical Response Message, Display Format:

```
<SOH>
IB33SS
JAN 22, 2003  3:06 PM

MAG SENSOR DIAGNOSTIC REPORT

Sensor 1: T1 SUMP

 TOTAL HT        15.0 IN.
 FUEL HT          5.0 IN.
 WATER HT        10.0 IN.
 INSTALL POS      5.0 IN.
 FLUID TEMP      67.3 F
 BOARD TEMP      70.3 F
<ETX>
```

Notes:
   1. Only parameters that are enabled to be displayed are shown.

Typical Response Message, Computer Format:

```
<SOH>iB33SSYYMMDDHHmmSSNNFFFFFFFF...
                SSNNFFFFFFFF&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   SS - MAG SENSOR NUMBER (Decimal, 00=all)
   3.   NN - Number of eight character Data Fields to follow (Hex)
   4.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Total Height
                    2. Fuel Height
                    3. Water Height
                    4. Install Position
                    5. Board Temperature
                    6. Fuel Temperature
                    (-99.9 indicates a value is not enabled for display)
   5.   && - Data Termination Flag
   6.   CCCC - Message Checksum

Function Code: B3A   Version 1
Function Type: MAG Sensor Comm Data

Command Format:
        Display: <SOH>IB3AQQ
        Computer: <SOH>iB3AQQ

Typical Response Message, Display Format:

```
<SOH>
IB3AQQ
MAR 26, 1996  1:47 PM

MAG Sensor Diagnostic Report - Communication
```

Samples Read	Samples Used	Parity Errors	Partial Read	Comm Errors	Restarts
Sensor 1: sensor1label					
100	96	1	2	0	0
Sensor 2: sensor2label					
100	96	1	2	0	0
Sensor 3: sensor3label					
100	96	1	2	0	0

```
<ETX>
```

Notes:

Display Format:
    1.   All Communication Data – (Decimal Format)

Typical Response Message, Computer Format:

```
<SOH>iB3AQQYYMMDDHHmmQQaaaabbbbccccddddeeeeffff...
                  QQaaaabbbbccccddddeeeeffff...&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   QQ – MAG Sensor number (Decimal, 00=All)
    3.   aaaa – sample read (ASCII Hex IEEE format)
    4.   bbbb – sample used (ASCII Hex IEEE format)
    5.   cccc – Parity errors (ASCII Hex IEEE format)
    6.   dddd – Partial Sensor Response (ASCII Hex IEEE format)
    7.   eeee – comm errors (ASCII Hex IEEE format)
    8.   ffff – restarts (ASCII Hex IEEE format)
    9.   && – Data Termination Flag
    10.   CCCC – Message Checksum

Function Code:B3B   Version 1
Function Type: MAG Sensor Type and Serial Number

    Command Format:
       Display: \<SOH\>IB3BSS
     Computer: \<SOH\>iB3BSS

Typical Response Message, Display Format:

```
<SOH>
IB3B01
MAY 11, 2007  5:36 PM

MAG SENSOR TYPE AND SERIAL NUMBER

  SENSOR          LABEL            TYPE       SERIAL NUMBER  DATE CODE
       1  MAG Sensor 1 Label    MAG Sensor            5617       9951

<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB3BSSYYMMDDHHmmSSnnMMMMMMMMNNNNNNNNDDDDDDDDPPPPPPPP...
                    SSnnMMMMMMMMNNNNNNNNDDDDDDDDPPPPPPPP&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   SS - MAG Sensor Number (Decimal, 00=all)
    3.   nn - Number of 8-byte values to follow.
    4.   MMMMMMMM - MAG Sensor Model (Hex)
    5.   NNNNNNNN - MAG Sensor Serial Number (Hex)
    6.   DDDDDDDD - MAG Sensor Date Code (Hex)
    7.   PPPPPPPP - MAG Sensor firmware version (Hex)
    8.   && - Data Termination Flag
    9.   CCCC - Message Checksum

Function Code: B3C   Version 1
Function Type: MAG Sensor Constant Data

Command Format:
        Display: <SOH>IB3CSS
       Computer: <SOH>IB3CSS

Typical Response Message, Display Format:

```
<SOH>
IB3CSS
JUN  1, 2000  8:15 AM

MAG SENSOR DIAGNOSTIC REPORT - CONSTANTS

Sensor 1: SUMP UNLEADED

MAG SENSOR
SERIAL NUMBER     123456
MODEL                101
LENGTH              24.0
GRADIENT         360.000
MIN THRESHOLD        0.0
MAX THRESHOLD       24.0
NUM FLOATS             2
TEMPERATURE          YES
INSTALL POS          YES
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>IB3CYYMMDDHHmmSSNNVVVVVVVVvvvvvvvv...
                VVVVVVVVvvvvvvvv&&CCCC<ETX>
```

Notes:
```
1.      YYMMDDHHmm - Current Date and Time
2.              SS - MAG Sensor Number (Decimal, 00=all)
3.              NN - Number of eight character data fields to follow
                    NN=08 for MAG Sensors
4.      VVVVVVVV - Model Number (Hex)
5.      vvvvvvvv - Sensor Length (ASCII Hex IEEE float)
6.      VVVVVVVV - Gradient (ASCII Hex IEEE float)
7.      vvvvvvvv - Min Threshold (ASCII Hex IEEE float)
8.      VVVVVVVV - Max Threshold (ASCII Hex IEEE float)
9.      vvvvvvvv - Number of Floats (1 or 2) (Hex)
10.     VVVVVVVV - Temperature enabled (0 or 1) (Hex)
11.     vvvvvvvv - Install Position enabled (0 or 1) (Hex)
12.           && - Data Termination Flag
13.         CCCC - Message Checksum
```

Function Code: B3D   Version 1
Function Type: MAG Sensor Last Sample Diagnostic (Hex Format)

Command Format:
           Display: <SOH>IB3DSS
          Computer: <SOH>IB3DSS

Typical Response Message, Display Format:

```
<SOH>
IB3DSS
JAN 22, 2003  3:25 PM

MAG Sensor Diagnostic Report - Channel Data

Sensor 1:
Serial Number: 3534
Time: DEC 30, 2007  4:40 PM


          0    1    2    3    4    5    6    7    8    9
00   B610 067F 0856 108C 18E3 0857 0DCE 0000 0008 8851
10   0001 50DC B40A 4B53 4AB3 B40F 00A1 80C4 0081 80C4
20   83A4 83B2 0000 0030 735F 4187 63E3 0258 01F4 02BC
30   0228 18B1 03E8 00AA 07FC 00DD 04B0 0004 0924 3FCC
40   CCCD 0D45 3FD9 999A 0946 4040 0000 016D 4080 0000
50   52EF
<ETX>
```

Notes:
 1: Values are in ASCII Hex IEEE float format.

Typical Response Message, Computer Format:

```
<SOH>iB3DSSYYMMDDHHmmSSnnVVVV...VVVV&&CCCC<ETX>
```

Notes:
      1.   YYMMDDHHmm - Current Date and Time
      2.   SS - MAG Sensor Number (Decimal, 00=all)
      3.   nn - Number of channels to follow (Hex)
      4.   VVVV - Channel Value (Hex)
      5.   && - Data Termination Flag
      6.   CCCC - Message Checksum

Function Code: B3E   Version 1
Function Type: MAG Sensor Last Sample Diagnostic (Decimal Format)

Command Format:
       Display: <SOH>IB3ESS
       Computer: <SOH>IB3ESS

Typical Response Message, Display Format:

```
<SOH>
IB3ESS
JAN 22, 2003  3:25 PM


MAG Sensor Diagnostic Report - Channel Data

Sensor 1:
Serial Number: 3534
Time: DEC 30, 2007  4:40 PM

           0      1      2      3      4      5      6      7      8      9
00     46608   1662   2134   4237   6370   2134   3534      0      8  34897
10         1  20700  46090  19283  19123  46095    161  32964    129  32964
20     33700  33714      0     48  29535  16775  25571    600    500    700
30       552   6321   1000    170   2044    221   1200      4   2340  16332
40     52429   3397  16345  39322   2374  16448      0    365  16512      0
50     21231
<ETX>
```

```
        Function Code: B41                                      Version 1
        Function Type: Type A Sensor (2 Wire CL) Diagnostic Report

      Command Format:
          Display: <SOH>IB41SS
         Computer: <SOH>iB41SS
```

Typical Response Message, Display Format:

```
<SOH>
IB41SS

MAR 26, 1996  1:45 PM

SENSOR DIAGNOSTIC – 2-WIRE CL SENSOR INFORMATION REPORT

SINGLE SENSOR

                                      SAMPLE
SENSOR        CATEGORY       COUNTER  VALUE          STATUS
1             NO_CATEGORY    5        4193           Out Alarm
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB41SSYYMMDDHHmmSSNNFFFFFFFF...
                 SSNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
   1.        YYMMDDHHmm - Current Date and Time
   2.                SS - Sensor Number (Decimal, 00=all)
   3.                NN - Number of eight character Data Fields to follow (Hex)
   4.          FFFFFFFF - ASCII Hex IEEE floats:
                          1. Sample Counter Value
                          2. High Reference Value
                          3. Low Reference Value
                          4. Last Reading
                          5. Current Average Value
   5.                && - Data Termination Flag
   6.              CCCC - Message Checksum
```

```
        Function Code: B46                                    Version 1
        Function Type: Type B Sensor (3 Wire CL) Diagnostic Report

     Command Format:
          Display: <SOH>IB46SS
         Computer: <SOH>iB46SS
```

Typical Response Message, Display Format:

```
   <SOH>
   IB46SS

   JAN 28, 1995 10:16 AM

   SENSOR DIAGNOSTIC – 3-WIRE CL SENSOR INFORMATION REPORT

   SINGLE SENSOR


                                  SAMPLE

   SENSOR     CATEGORY             COUNTER    VALUE 1    VALUE 2    STATUS
    1          PAN/SUMP:STANDARD   5          5200       100000     Normal

   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>iB46SSYYMMDDHHmmSSNNFFFFFFFF...
                   SSNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.           SS - Sensor Number (Decimal, 00=all)
    3.           NN - Number of eight character Data Fields to follow (Hex)
    4.       FFFFFFFF - ASCII Hex IEEE floats:
                       1. Sample Counter Value
                       2. High Reference Value 1
                       3. Low Reference Value 1
                       4. Last Reading 1
                       5. Current Average Value 1
                       6. High Reference Value 2
                       7. Low Reference Value 2
                       8. Last Reading 2
                       9. Current Average Value 2
    5.           && - Data Termination Flag
    6.           CCCC - Message Checksum
```

7.4.4 LINE LEAK DIAGNOSTIC REPORTS

              Function Code: **B61 (obsolete V3E use B6G)**   Version 1
              Function Type: LPR Sensor General Report

        Command Format:
              Display: <SOH>IB61QQ
           Computer: <SOH>iB61QQ

Typical Response Message, Display Format:

```
<SOH>
IB61QQ
MAR 26, 1996  1:47 PM

LPR Sensor Diagnostic Report - General


                                            Serial
    Type                    Status          Number    Date    Pressure

Sensor 1: Line P Sensor 1
   063-LINE P SENSOR        Normal          0000900014  00/02    10.062
<ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>iB61QQYYMMDDHHmmQQaaabcccccccddddeeeeeeee...
                    QQaaabcccccccddddeeeeeeee&&CCCC<ETX>
```

Notes:
```
    1.         YYMMDDHHmm - Current Date and Time
    2.             QQ - LPR Sensor number   (Decimal, 00=All)
    3.            aaa - LPR Sensor type     (Decimal)
    4.              b - LPR Sensor status
                        0=Inactive
                        1=Normal
    5.        cccccccc - LPR Sensor serial number (ASCII Hex IEEE Long)
    6.           dddd - LPR Sensor Date Code     (ASCII Hex IEEE Short)
    7.       eeeeeeee - LPR Sensor pressure      (ASCII Hex IEEE Float)
    8.             && - Data Termination Flag
```

Function Code: B62 (obsolete V3E use B6H)   Version 1
Function Type: LPR Sensor Constants Report

Command Format:
    Display: <SOH>IB62QQ
    Computer: <SOH>iB62QQ

Typical Response Message, Display Format:

```
<SOH>
IB62QQ
MAR 26, 1996  1:47 PM

LPR Sensor Diagnostic Report - Constants

     Serial              Firmware                          Date
     Number      Model    Version      Slope    Offset    Code

Sensor 1: Line P Sensor 1
 0000900015        1         1          500      10000   1103
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB62QQYYMMDDHHmmQQaaaaaaaabbbbccccddddffff...
                 QQaaaaaaaabbbbccccddddffff&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - LPR Sensor number (Decimal, 00=All)
3.   aaaaaaaa - Serial Number (ASCII Hex IEEE format)
4.   bbbb - Model Number (ASCII Hex IEEE format)
5.   cccc - Firmware version (ASCII Hex IEEE format)
6.   dddd - Offset (ASCII Hex IEEE format)
7.   eeee - Slope (ASCII Hex IEEE format)
8.   ffff - Date Code (ASCII Hex IEEE format)
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: B63   Version 1
Function Type: LPR Sensor Comm Data

Command Format:
  Display: <SOH>IB63QQ
  Computer: <SOH>iB63QQ

Typical Response Message, Display Format:

```
<SOH>
IB63QQ
MAR 26, 1996  1:47 PM

LPR Sensor Diagnostic Report - Communication

          Samples  Samples   Parity  Partial    Comm
           Read     Used     Errors    Read    Errors   Restart
Sensor 1: sensor1label
             47       46       0        0        0        0
Sensor 2: sensor2label
             47       46       0        0        0        0
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB63QQYYMMDDHHmmQQaaaabbbbccccddddeeeeeffff...
                QQaaaabbbbccccddddeeeeeffff&&CCCC<ETX>
```

Notes:
1.	YYMMDDHHmm	- Current Date and Time
2.	QQ	- LPR Sensor number (Decimal, 00=All)
3.	aaaa	- Samples Read (ASCII Hex IEEE format)
4.	bbbb	- Samples Used (ASCII Hex IEEE format)
5.	cccc	- Parity Errors (ASCII Hex IEEE format)
6.	dddd	- Partial Read (ASCII Hex IEEE format)
7.	eeee	- Comm Errors (ASCII Hex IEEE format)
8.	ffff	- Restarts (ASCII Hex IEEE format)
9.	&&	- Data Termination Flag
10.	CCCC	- Message Checksum

Function Code: B64   Version 1
Function Type: LPR Sensor Channel Data

Command Format:
    Display: <SOH>IB64QQ
    Computer: <SOH>iB64QQ

Typical Response Message, Display Format:

```
<SOH>
IB64QQ
MAR 26, 1996  1:47 PM

LPR Sensor Diagnostic Report - Channel Data

Sensor 1: Line P Sensor 1
Serial Number: 000114
Time: Jun 24, 2008 12:20 PM


            0    1    2    3    4    5    6    7    8    9
   00    XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX
   10    XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX
   20    XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX

   XX    XXXX
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB64QQYYMMDDHHmmQQnnVVVV...VVVV&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - LPR Sensor number (Decimal, 00=All)
3.   nn - Number of channels to follow (Hex)
4.   VVVV - Channel Value (Hex)
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: B65   Version 1
Function Type: LPR Sensor Channel Data (Decimal Format)

Command Format:
Display: <SOH>IB65QQ
Computer: <SOH>iB65QQ

Typical Response Message, Display Format:

```
<SOH>
IB64QQ
MAR 26, 1996  1:47 PM

LPR Sensor Diagnostic Report - Channel Data

Sensor 1: Line P Sensor 1
Serial Number: 000114
Time: Jun 24, 2008 12:20 PM

            0     1     2     3     4     5     6     7     8     9
    00    XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX
    10    XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX
    20    XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX
    30    XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB65QQYYMMDDHHmmQQnnVVVV...VVVV&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - LPR Sensor number (Decimal, 00=All)
3.   nn - Number of channels to follow (Hex)
4.   VVVV - Channel Value (Hex)
5.   && - Data Termination Flag
6.   CCCC - Message Checksum

Function Code: B6G Version 3
Function Type: LPR Sensor General Report

Command Format:
Display: <SOH>IB6GQQ
Computer: <SOH>iB6GQQ

Typical Response Message, Display Format:

```
<SOH>
IB6GQQ
MAR 26, 1996  1:47 PM

LPR Sensor Diagnostic Report - General

                                            Serial
    Type                    Status          Number      Date     Pressure

Sensor 1: Line P Sensor 1
    063-LINE P SENSOR       Normal          0000900014   00/02    10.062

<ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iB6GQQYYMMDDHHmmQQaaabcccccccccddddeeeeeeee...
                    QQaaabcccccccccddddeeeeeeee&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - LPR Sensor number   (Decimal, 00=All)
3.   aaa - LPR Sensor type   (Decimal)
4.   b - LPR Sensor status
                    0=Inactive
                    1=Normal
5.   cccccccc - LPR Sensor serial number (ASCII Hex IEEE Long)
6.   dddd - LPR Sensor Date Code   (ASCII Hex IEEE Short)
7.   eeeeeeee - LPR Sensor pressure   (ASCII Hex IEEE Float)
8.   && - Data Termination Flag

```

**Function Code: B6H**                                                   Version 3
**Function Type:** LPR Sensor Constants Report

**Command Format:**
    **Display:** <SOH>IB6HQQ
   **Computer:** <SOH>iB6HQQ

**Typical Response Message, Display Format:**

```
<SOH>
IB6HQQ
MAR 26, 1996 1:47 PM

LPR Sensor Diagnostic Report - Constants

     Serial   Firmware   Date
     Number   Model   Version   Slope   Offset   Code

Sensor 1: Line P Sensor 1
  0000900015   1   1   500   10000   1103

<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB6HQQYYMMDDHHmmQQaaaaaaaabbbbccccddddffff...
                  QQaaaaaaaabbbbccccddddffff&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - LPR Sensor number (Decimal, 00=All)
3.   aaaaaaaa - Serial Number (ASCII Hex IEEE format)
4.   bbbb - Model Number (ASCII Hex IEEE format)
5.   cccc - Firmware version (ASCII Hex IEEE format)
6.   dddd - Offset (ASCII Hex IEEE format)
7.   eeee - Slope (ASCII Hex IEEE format)
8.   ffff - Date Code (ASCII Hex IEEE format)
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: B72   Version 5
Function Type: Pump Relay Monitor Diagnostic

Command Format:
        Display: <SOH>IB72QQ
        Computer: <SOH>iB72QQ

Typical Response Message, Display Format:

```
<SOH>
IB72QQ
JUN 22, 2014  3:12 PM

PUMP RELAY MONITOR DIAGNOSTIC

                            PUMP     PUMP RELAY    STUCK     RUN
DEVICE  LABEL               (OUT)      (IN)        RELAY     TIME
     1  PUMP RELAY UNLEADED   OFF     Q 1: OFF     0 SEC     00:00
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB72QQYYMMDDHHmmQQabNNccccccccdddddddd...
                QQabNNccccccccdddddddd&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pump Number (Decimal, 00=all)
    3.   a - Pump Status (ASCII Hex)
                    0=Off
                    1=On
    4.   b - Relay Status (ASCII Hex)
                    0=Off (or N/A - no Pump Relay assigned)
                    1=On
    5.   NN - Number of 8-character data fields to follow (ASCII Hex)
    6.   cccccccc - Stuck Relay, Seconds (ASCII Hex IEEE float)
                    0 if N/A B no Pump Relay assigned
    7.   dddddddd B Run Time, Hours (ASCII Hex IEEE float)
    8.   && - Data Termination Flag
    9.   CCCC - Message Checksum

Function Code: B7B   Version 1
Function Type: Pressure Line Leak Profile Line Test

Command Format:
    Display: <SOH>IB7BQQ
    Computer: <SOH>iB7BQQ

Typical Response Message, Display Format:

```
<SOH>
IB7BQQ
JUL 15, 2001  1:27 PM

PRESSURE LINE LEAK PROFILE LINE TEST

Q 1:REGULAR UNLEADED
LAST PROFILE LINE TEST: NOV 15, 2001 10:15 AM
BULK MODULUS:  12000 PSI
TEST LEAK RATE: 1.50 GPH
REF PRESSURE:  30.00 PSI

TYP:USER DEFINED
1ST LINE LEN :100 FEET
2ND LINE LEN :200 FEET
1ST LINE DIAM: 1.50 IN.
2ND LINE DIAM: 2.50 IN.
<ETX>
```

Function Code B7B Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iB7BQQYYMMDDHHmmQQaYYMMDDHHmmttNNFFFFFFFF...FFFFFFFF...
                QQaYYMMDDHHmmttNNFFFFFFFF...FFFFFFFF&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   a - Valid profile line test flag
                0=profile line test invalid
                1=profile line test valid
4.   YYMMDDHHmm - Date and Time of Last Profile Line Test
5.   tt - Pipe Type:
                01=2/3 inch Fiberglass
                02=2 inch Steel
                03=White Enviroflex PP1501   (Obsolete)
                04=1.5 inch Environ Geoflex II   (Added in V11)
                05=Omniflex CP1501   (Added in V15)
                06=Yellow Enviroflex PP1500   (Obsolete)
                07=1.5"/2.5" Enviroflex PP1502/2502   (Obsolete)
                08=OPW Pisces SP-15   (Added in V18)
                09=OPW Pisces CP-15   (Added in V18)
                10=WFG Coflex 2000 Ribbed   (Added in V19)
                11=Enviroflex PP1503/2503   (Added in V19)
                12=Omniflex CP1503   (Added in V19)
                13=1.5/2.0 inch Environ Geoflex D   (Added in V19)
                14=APT P175SC   (Addedin V121)
                15=OPW Pisces CP15DW   (Added in V19)
                16=OPW Pisces CP20   (Added in V19)
                17=OPW PISCES SP20   (Added in V26)
                18=User Defined   (Added in V22)
                19=PETROTECHNIK UPP EXTRA 63MM   (Added in V26)
6.   NN - Number of eight character Data Fields to follow (Hex)
7.   FFFFFFFF - ASCII Hex IEEE float:
                1. Bulk Modulus
                2. Test Leak Rate (GPH)
                3. Test Reference Pressure (PSI)
                4. 1st Line Length (FEET)
                5. 1st Line Diameter (INCHES)
                6. 2nd Line Length (FEET)
                7. 2nd Line Diameter (INCHES)
8.   && - Data Termination Flag
9.   CCCC - Message Checksum

Function Code: B7C   Version 1
Function Type: Pressure Line Leak Pressure Offset Test

Command Format:
Display: <SOH>IB7CQQ
Computer: <SOH>iB7CQQ

Typical Response Message, Display Format:

```
<SOH>
IB7CQQ
JAN  1, 2000  6:27 PM

PRESSURE LINE LEAK PRESSURE OFFSET TEST

Q 1:REGULAR UNLEADED
LAST PRESSURE OFFSET TEST: +2.5 PSI   DEC  1, 1999  5:20 PM
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB7CQQYYMMDDHHmmQQaFFFFFFFFYYMMDDHHmm...
                 QQaFFFFFFFFYYMMDDHHmm&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   a - Valid pressure flag
                        0=pressure invalid
                        1=pressure valid
4.   FFFFFFFF - Last Pressure Offset Test Pressure in PSI (ASCII Hex IEEE
                        float)
5.   YYMMDDHHmm - Date and Time of last Pressure Offset Test
6.   && - Data Termination Flag
7.   CCCC - Message Checksum

```
        Function Code: B7E                              Version 1
        Function Type: Pressure Line Leak Pressure Offset Monitor Report

     Command Format:
          Display: <SOH>IB7EQQ
         Computer: <SOH>iB7EQQ
```

Typical Response Message, Display Format:

```
<SOH>
IB7EQQ
JAN  1, 2000  2:56 PM

PRESSURE LINE LEAK PRESSURE OFFSET MONITORS REPORT

Q 1:REGULAR UNLEADED
  P0: PASS
    LAST UPDATE:   21 DAYS
  Pd: FAIL
    LAST UPDATE:   44 DAYS
    Pd=     40.1 PSI
    Pd Ref=32.3 PSI
  Pv: PASS
    Pv =28.1 PSI
    Pon=44.1 PSI
    Pd =40.1 PSI
  Pf: PASS
    MIN =  22.5 PSI
    MAX =  37.9 PSI
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>IB7EQQYYMMDDHHmmQQAABBBBCCDDDDEEEEEEEEFFFFFFFF
                         GGHHHHHHHHIIIIIIIIJJJJJJJJ...
            QQAABBBBCCDDDDEEEEEEEEFFFFFFFF
                         GGHHHHHHHHIIIIIIIIJJJJJJJJ&&CCCC<ETX>
```

Notes:
```
    1.     YYMMDDHHmm - Current Date and Time
    2.           QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.           AA - P0 pass/fail status
                     00=fail
                     01=pass
    4.         BBBB - P0 last update in days
    5.           CC - Pd pass/fail status
                     00=fail
                     01=pass
    6.         DDDD - Pd last update in days
    7.     EEEEEEEE - Pd in PSI (ASCII Hex IEEE float)
    8.     FFFFFFFF - Pd Ref in PSI (ASCII Hex IEEE float)
    9.           GG - Pd pass/fail status
                     00=fail
                     01=pass
    10.    HHHHHHHH - Pv in PSI (ASCII Hex IEEE float)
    11.    IIIIIIII - Pon in PSI (ASCII Hex IEEE float)
    12.    JJJJJJJJ - Pd in PSI (ASCII Hex IEEE float)
    13.           && - Data Termination Flag
    14.         CCCC - Message Checksum
```

Function Code: B81   Version 1
Function Type: Pressure Line Leak Diagnostic Report

Command Format:
    Display: <SOH>IB81QQ
  Computer: <SOH>iB81QQ

Typical Response Message, Display Format:

```
<SOH>
IB81QQ
JAN 24, 1996  2:56 PM

PRESSURE LINE LEAK DIAGNOSTIC REPORT

LINE                         DISPENSING  TEST STATUS          PUMP    HANDLE
Ln 1:REGULAR UNLEADED        ENABLED     TESTING 0.10 GAL/HR  OFF     OFF
14.397 PSI
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB81QQYYMMDDHHmmQQSSSSttNNFFFFFFFF...
              QQSSSSttNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   QQ – Pressure Line Leak sensor number (Decimal, 00=All)
3.   SSSS – Status Bits:
          Bit 1 – (LSB) Dispensing enabled flag
            (0=Disabled, 1=Enabled)
          Bit 2 – Pump power
            (0=Pump Off, 1=Pump On)
          Bit 3 – Dispenser Handle
            (0=Handle Off, 1=Handle On)
          Bit 4-16 – Unused
4.   tt – Test status
          00=test complete
          01=dispensing
          02=testing at 3.00 gal/hr
          03=testing at 0.10 gal/hr
          04=test aborted
          05=running pump (manual test starting)
          06=line lockout
          07=disable alarm
          08=test pending
          09=test delay
          0A=pressure check
          0B=testing at 0.20 gal/hr
5.   NN – Number of eight character Data Fields to follow (Hex)
          (always returns 01)
6.   FFFFFFFF – ASCII Hex IEEE floats:
          1. Pressure sensor reading
          2. A/D low reference counts (obsolete)
          3. A/D high reference counts (obsolete)
          4. A/D sensor counts (obsolete)
7.   && – Data Termination Flag
8.   CCCC – Message Checksum

Function Code: B87   Version 1
Function Type: Pressure Line Leak 3.00 GPH Test Diagnostic

Command Format:
Display: <SOH>IB87QQ
Computer: <SOH>iB87QQ

Typical Response Message, Display Format:

```
<SOH>
IB87QQ
OCT 15, 1996 4:29 PM

PRESSURE LINE LEAK DIAGNOSTIC REPORT

Ln 1:PLLD NUMBER 1

 3.0 TEST PASSES
DATE/TIME                     PUMP ON        FIRST READ      SECOND READ
JAN  1, 1970 12:00 AM         0.0 PSI        0.0 PSI         0.0 PSI

 3.0 TEST FAILS
DATE/TIME                     PUMP ON        FIRST READ      SECOND READ
JAN  1, 1970 12:00 AM         0.0 PSI        0.0 PSI         0.0 PSI

 3.0 HI PRESSURE EVENTS
DATE/TIME                     PUMP ON        FIRST READ      SECOND READ
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>IB87QQYYMMDDHHmmQQRRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc...
             RRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc...
             RRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc...
             QQRRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc...
             RRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc...
             RRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc&&CCCC<ETX>
```

Notes:
1.	YYMMDDHHmm	– Current Date and Time
2.	QQ	– Pressure Line Leak sensor number (Decimal, 00=All)
3.	RR	– Test result type
		00=Pass
		01=Fail
		02=Hi-pressure events
4.	LL	– Total Events to follow (Max=5 each)
5.	YYMMDDHHmm	– Date/Time Test Passed
6.	aaaaaaaa	– Pump on pressure read (ASCII Hex IEEE float)
7.	bbbbbbbb	– First pressure read (ASCII Hex IEEE float)
8.	cccccccc	– Second pressure read (ASCII Hex IEEE float)
9.	&&	– Data Termination Flag
10.	CCCC	– Message Checksum

Function Code: B88   Version 1
Function Type: Pressure Line Leak Mid-range Test Diagnostic

Command Format:
Display: <SOH>IB88QQ
Computer: <SOH>iB88QQ

Typical Response Message, Display Format:

```
<SOH>
IB88QQ
JAN  1, 1996  8:24 AM

PRESSURE LINE LEAK DIAGNOSTIC REPORT

Q 1:PLLD NUMBER 1

MID TEST PASSES
DATE/TIME                    PUMP ON        FIRST READ      SECOND READ
JAN  1, 1970 12:00 AM        0.0 PSI        0.0 PSI         0.0 PSI

MID TEST FAILS
DATE/TIME                    PUMP ON        FIRST READ      SECOND READ
JAN  1, 1970 12:00 AM        0.0 PSI        0.0 PSI         0.0 PSI
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>IB88QQYYMMDDHHmmQQRRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc...
                  RRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc...
                  QQRRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc...
                  RRLLYYMMDDHHmmaaaaaaaabbbbbbbbcccccccc&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
3.   RR - Test result type
                    00=Pass
                    01=Fail
4.   LL - Total Events to follow (Max=5 each)
5.   YYMMDDHHmm - Date/Time Test Passed
6.   aaaaaaaa - Pump on pressure read (ASCII Hex IEEE float)
7.   bbbbbbbb - First pressure read (ASCII Hex IEEE float)
8.   cccccccc - Second pressure read (ASCII Hex IEEE float)
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: B89   Version 1
Function Type: Pressure Line Leak 0.20 GPH Test Diagnostic

Command Format:
      Display: `<SOH>IB89QQ`
   Computer: `<SOH>iB89QQ`

Notes:
  1.   For User Defined Pipe Types PUMP ON will be PMID

Typical Response Message, Display Format:

```
<SOH>
IB89QQ
JAN  1, 1996  8:26 AM

PRESSURE LINE LEAK DIAGNOSTIC REPORT

Q 1:PLLD NUMBER 1
0.20 TEST RESULTS
DATE/TIME                 PUMP ON    RATIO     DURATION   RESULTS
APR  9, 2008   9:57 AM   37.6 PSI   0.71          5      PASSED
APR  9, 2008   9:22 AM   40.0 PSI   0.00          5      FAILED
APR  9, 2008   9:02 AM   39.0 PSI   0.29          5      PASSED
APR  9, 2008   8:36 AM   38.5 PSI   0.43          5      PASSED
APR  9, 2008   8:17 AM   39.0 PSI   0.28          5      PASSED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB89QQYYMMDDHHmmQQLLYYMMDDHHmmRRaaaaaaaabbbbbbbbcccccccc...
                 YYMMDDHHmmRRaaaaaaaabbbbbbbbcccccccc...
                 QQLLYYMMDDHHmmRRaaaaaaaabbbbbbbbcccccccc...
                 YYMMDDHHmmRRaaaaaaaabbbbbbbbcccccccc&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm - Current Date and Time
  2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
  3.   LL - Total Tests to follow (Max=10)
  4.   YYMMDDHHmm - Date/Time Test
  5.   RR - Test Result
                   00=Invalid
                   01=Pass
                   02=Fail
                   03=Error
  6.   aaaaaaaa - Pump on pressure read, PSI (ASCII Hex IEEE float)
  7.   bbbbbbbb - Fail ratio (ASCII Hex IEEE float)
  8.   cccccccc - Duration (in minutes) (ASCII Hex IEEE float)
  9.   && - Data Termination Flag
  10.   CCCC - Message Checksum

```
        Function Code: B8A                                    Version 1
        Function Type: Pressure Line Leak 0.10 GPH Test Diagnostic

        Command Format:
            Display: <SOH>IB8AQQ
           Computer: <SOH>iB8AQQ
```

Notes:
    1.   For User Defined Pipe Types PUMP ON will be PMID(Version 23)

Typical Response Message, Display Format:

```
   <SOH>
   IB8AQQ
   JAN  1, 1996  8:30 AM

   PRESSURE LINE LEAK DIAGNOSTIC REPORT

   Q 1:PLLD NUMBER 1
   0.10 TEST RESULTS
   DATE/TIME                PUMP ON    RATIO    DURATION   RESULTS
   APR  9, 2008 10:05 AM  39.0 PSI    0.72          3     PASSED
   APR  9, 2008  9:21 AM  39.0 PSI    0.72          3     PASSED
   APR  9, 2008  6:29 AM  39.0 PSI    0.72          3     PASSED
   APR  9, 2008  5:44 AM  39.2 PSI    0.72          3     PASSED
   APR  9, 2008  2:51 AM  39.0 PSI    0.72          3     PASSED

   APR  9, 2008  9:41 AM  38.5 PSI    1.10          5     FAILED
   APR  9, 2008  6:05 AM  38.5 PSI    1.10          5     FAILED
   APR  9, 2008  2:28 AM  38.5 PSI    1.09          5     FAILED
   APR  8, 2008 10:50 PM  38.5 PSI    1.10          5     FAILED
   APR  8, 2008  7:15 PM  38.5 PSI    1.10          5     FAILED
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>iB8AQQYYMMDDHHmmQQLLYYMMDDHHmmRRaaaaaaaabbbbbbbbcccccccc...
                   QQLLYYMMDDHHmmRRaaaaaaaabbbbbbbbcccccccc&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.   LL - Total Tests to follow (Max=20; Max 10 Passed & 10 Failed)
    4.   YYMMDDHHmm - Date/Time Test
    5.   RR - Test Result
                         00=Pass
                         01=Fail
    6.   aaaaaaaa - Pump on pressure read, PSI (ASCII Hex IEEE float)
    7.   bbbbbbbb - Fail ratio (ASCII Hex IEEE float)
    8.   cccccccc - Duration (in min) (ASCII Hex IEEE float)
    9.   && - Data Termination Flag
   10.   CCCC - Message Checksum

```

```
        Function Code: B8F   Version 1
        Function Type: No-Vent (No_Spike) Test Reports

     Command Format:
          Display: <SOH>IB8FQQ
         Computer: <SOH>iB8FQQ
```

**Typical Response Message, Display Format:**

```
<SOH>
IB8FQQ
JAN 24, 1996 2:52 PM

PRESSURE LINE NO-VENT TEST REPORT

LINE                      TEST ABORTS   TOTAL TESTS
Q 1:REGULAR UNLEADED              4            10
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB8FQQYYMMDDHHmmQQLLRR...
                 QQLLRR&&CCCC<ETX>
```

Notes:
```
  1.      YYMMDDHHmm - Current Date and Time
  2.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
  3.              LL - No Spike Tests aborts
  4.              RR - Total Tests
  5.              && - Data Termination Flag
  6.            CCCC - Message Checksum
```

```
        Function Code: B8I                                          Version 1
        Function Type: PLLD Last Test Result

    Command Format:
          Display: <SOH>IB8IQQ
         Computer: <SOH>iB8IQQ
```

Typical Response Message, Display Format:

```
<SOH>
IB8IQQ
JAN  1, 2007  8:26 AM

PRESSURE LINE LEAK DIAGNOSTIC LAST TEST RESULT

Q 1:PLLD NUMBER 1
0.20 GAL/HR RESULT : JUL 10, 2007  9:33 AM       PASSED

Q 2:PLLD NUMBER 2
0.20 GAL/HR RESULT : JUL 09, 2007  9:55 AM       PASSED
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB8IQQYYMMDDHHmmQQYYMMDDHHmmTRR...
                  QQYYMMDDHHmmTRR&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.             QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.      YYMMDDHHmm - Date/Time Test
    4.              T - Test Type
                        0=0.2
                        1=0.1
                        9=No Test Result
    5.             RR - Test Result
                        00=Pass
                        01=Fail
                        99=No Test Result
    6.             && - Data Termination Flag
```

```
     Function Code: B8J                                    Version 1
     Function Type: PLLD Diagnostic - Manual Test

  Command Format:
        Display: <SOH>IB8JQQ
       Computer: <SOH>iB8JQQ
```

Typical Response Message, Display Format:

```
<SOH>
IB8JQQ
JAN  1, 2007  8:26 AM

PLLD DIAGNOSTIC - MANUAL TEST

LINE:LINE LABEL                 TEST STATUS
   1:PRESSURE LLD #1            test aborted
   2:PRESSURE LLD #2            test aborted
   3:PRESSURE LLD #3            test aborted
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iB8JQQYYMMDDHHmmQQtt&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.              QQ - Pressure Line Leak sensor number (Decimal, 00=All)
    3.              tt - Test status
                          00=test complete
                          01=dispensing
                          02=testing at 3.00 gal/hr
                          03=testing at 0.10 gal/hr
                          04=test aborted
                          05=running pump (manual test starting)
                          06=line lockout
                          07=disable alarm
                          08=test pending
                          09=testing delay
                          0A=pressure check
                          0B=testing at 0.20 gal/hr
    4.              && - Data Termination Flag
    5.            CCCC - Message Checksum
```

7.4.5 RECONCILIATION DIAGNOSTIC REPORTS

Function Code: **BA0**   Version 2
Function Type: MDIM Totalizer Report

Command Format:
      Display: `<SOH>IBA000`
    Computer: `<SOH>iBA000`

Typical Response Message, Display Format:

```
<SOH>
IBA000
FEB  4, 1995  6:25 AM

MDIM   TOTALIZER
  1      0.000
  2      0.000
  3      0.000
  4      0.000
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iBA000YYMMDDHHmmddddFFFFFFFF...
             ddddFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   dddd – Dim identifier
3.   FFFFFFFF – Totalizer value (ASCII Hex IEEE float)
4.   && – Data Termination Flag
5.   CCCC – Message Checksum

Function Code: CA1   Version 2
Function Type: Get Reconciliation Status

Command Format:
Display: <SOH>ICA100
Computer: <SOH>iCA100

Typical Response Message, Display Format:

```
<SOH>
ICA100
JAN  1, 2009  8:26 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

RECONCILIATION STATUS

REASONS
XXXXXXXXXXXXXX
<ETX>
```


Typical Response Message, Computer Format:

```
<SOH>iCA100YYMMDDHHmmNNRR...
                  RR&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   NN - User Number of decimal Data Fields to follow (Hex)
3.   RR - Reasons (Decimal)
                     00 = DIM Out
                     01 = DIM missing starts or stops
                     02 = DIM missing meter events
                     03 = DIM data from phantom meters
                     04 = Meter map not complete
                     05 = Meter map unstable
                     06 = Invalid fuel height
                     07 = Probe out
                     08 = Water removed
                     09 = Tank siphon setup error
                     10 = Power outage
                     11 = Tank chart changed
4.   && - Data Termination Flag
5.   CCCC - Message Checksum

Function Code: CA2   Version 2
Function Type: Reconciliation Diagnostics Report

Command Format:
Display: <SOH>ICA2PPyymmddYYMMDD
Computer: <SOH>ICA2PPyymmddYYMMDD

Notes:
1.   PP - Product Number (Decimal, 00=all)
2.   yymmdd - Starting Date (000000 = no starting date=first of the month)
3.   YYMMDD - Ending Date   (000000 = no ending date=current date)

Typical Response Message, Display Format:

```
<SOH>
ICA2PP
MAY  16, 2009  8:26 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

RECONCILIATION DIAGNOSTICS REPORT

F 1:REGULAR
T 1:REGULAR
T 3:REGULAR EAST

DATE/TIME                  METER      VARIANCE    REASONS
                           SALES
MAY 15, 2009  6:20 AM  2               3          Meter Map Not Complete
                                                  Meter Map Unstable
                                                  DIM Missing Starts/Stops
F 2:SUPER

DATE/TIME                  METER      VARIANCE    REASONS
                           SALES
MAY 15, 2009  6:20 AM  8               9          Power Outage
                                                  Tank Chart Changed
                                                  DIM Missing Starts/Stops
F 5:DIESEL

DATE/TIME                  METER      VARIANCE    REASONS
                           SALES
MAY 15, 2009  6:20 AM  14             15          DIM Data From Phantom Meters
                                                  Meter Map Not Complete
                                                  DIM Missing Meter Events
                                                  DIM Missing Starts/Stops

<ETX>
```

Function Code CA2 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iCA2PPYYMMDDHHmmPPYYMMDDHHmmMMMMMMMMVVVVVVVVNNRR...
                 PPYYMMDDHHmmMMMMMMMMVVVVVVVVNNRR&&CCCC<ETX>
```

Notes:

1.   YYMMDDHHmm - Current Date and Time
2.   PP - Product Number (Decimal, 00=All)
3.   YYMMDDHHmm - Date and Time
4.   MMMMMMMM - Meter Sales (ASCII Hex IEEE float)
5.   VVVVVVVV - Variance (ASCII Hex IEEE float)
6.   NN - Number of decimal Data Fields to follow (Hex)
7.   RR - Reasons (Decimal)
                    00 = DIM Out
                    01 = DIM missing starts or stops
                    02 = DIM missing meter events
                    03 = DIM data from phantom meters
                    04 = Meter map not complete
                    05 = Meter map unstable
                    06 = Invalid fuel height
                    07 = Probe out
                    08 = Water removed
                    09 = Tank siphon setup error
                    10 = Power outage
                    11 = Tank chart changed
8.   && - Data Termination Flag
9.   CCCC - Message Checksum

7.5 RECONCILIATION REPORTS

Function Code: C01   Version 2
Function Type: Basic Inventory Reconciliation Daily "Row" Report

Command Format:
    Display: <SOH>IC01PPMMDD
    Computer: <SOH>iC01PPMMDD

Notes:
    1.   MMDD - Month and Day for Daily Report

Typical Response Message, Display Format:

```
<SOH>
IC01PP
MAR 26, 2009  1:43 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

MAR 26, 2009  1:43 PM

DAILY RECONCILIATION REPORT

F 1:REGULAR
T 1:REGULAR UNLEADED
T 3:REGULAR UNLEAD EAST

DATE     TIME     OPENING          METERED  MANUAL   CALC'D PHYSICAL WATER
MAR 25  2:00 AM   VOLUME DLVRIES    SALES   ADJUST  INVNTRY  INVNTRY HEIGHT VARIANCE
MAR 26  2:00 AM    6081        0     1888        0     4193     4199   0.00        6

SIGNATURE _____
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iC01PPYYMMDDHHmmPPnnTTYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
               PPnnTTYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   PP - Product Number (Decimal, 00=All Products)
    3.   nn - Number of tanks that are mapped to the product (Decimal)
    4.   TT - Tank numbers mapped to product
    5.   YYMMDDHHmm - Opening Date and Time
    6.   YYMMDDHHmm - Closing Date and Time
    7.   NN - Number of eight character Data Fields to follow (Hex)
    8.   FFFFFFFF - ASCII Hex IEEE floats:
                        1. Probe measured inventory at previous period close
                        2. Sum total of adjusted deliveries during period
                        3. Sum total of all metered sales during period
                        4. Manually entered adjustments for period
                        5. Calculated Inventory Volume at period close
                        6. Probe measured inventory at period close
                        7. Water Height at period close
                        8. Variance over period
    9.   && - Data Termination Flag
    10.   CCCC - Message Checksum

Function Code: C02   Version 2
Function Type: Basic Inventory Reconciliation Daily "Column" Report

Command Format:
    Display: <SOH>IC0200MMDD
    Computer: <SOH>iC0200MMDD

Notes:
   1.   MMDD - Month and Day for Daily Report

Typical Response Message, Display Format:

```
<SOH>
IC0200
MAR 26, 2009  1:43 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

MAR 26, 2009  1:43 PM

DAILY RECONCILIATION REPORT

PRODUCT              UNLEADED

OPENING DATE    MAR 25, 2009
OPENING TIME          2:00 AM

OPENING VOLUME          6081
DELIVERIES                 0
METERED SALES           1888
MANUAL ADJUST              0
CALC'D INVNTRY          4193
PHYSICAL INVNTRY        4199
WATER  HEIGHT           0.00
VARIANCE                   6

CLOSING DATE    MAR 26, 2009
CLOSING TIME          2:00 AM

SIGNATURE _____
<ETX>
```

Function Code C02: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC02PPYYMMDDHHmmGGPPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                 PPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
 1.   YYMMDDHHmm - Current Date and Time
 2.   GG - Number of product Groupings to follow (Hex)
 3.   PP - Product Number (Decimal, 00=All Products)
 4.   nn - Number of tanks that are mapped to the product (Decimal)
 5.   TT - Tank numbers mapped to product
 6.   YYMMDDHHmm - Opening Date and Time
 7.   YYMMDDHHmm - Closing Date and Time
 8.   NN - Number of eight character Data Fields to follow (Hex)
 9.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Probe measured inventory at previous period close
                    2. Sum total of adjusted deliveries during period
                    3. Sum total of all metered sales during period
                    4. Manually entered adjustments for period
                    5. Calculated Inventory Volume at period close
                    6. Probe measured inventory at period close
                    7. Water Height at period close
                    8. Variance over period
10.   && - Data Termination Flag
11.   CCCC - Message Checksum

Function Code: C03   Version 2
Function Type: Basic Inventory Reconciliation Shift "Row" Report

Command Format:
         Display: <SOH>IC03PPtt
        Computer: <SOH>iC03PPtt

Notes:
   1.   tt - Shift Type (01=Current, 02=Previous)

Typical Response Message, Display Format:

```
<SOH>
IC03PP
MAR 26, 2009  1:44 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

MAR 26, 2009  1:44 PM

CURRENT SHIFT RECONCILIATION REPORT

F 1:REGULAR
T 1:REGULAR UNLEADED

DATE    TIME    OPENING           METERED  MANUAL   CALC'D PHYSICAL WATER
MAR 26  6:00 AM VOLUME DLVRIES     SALES   ADJUST INVNTRY INVNTRY HEIGHT VARIANCE
MAR 26  1:42 PM   4114       0      1083        0    3031    3026   0.00       -5

SIGNATURE _____
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iC03PPYYMMDDHHmmPPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                PPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm - Current Date and Time
   2.   PP - Product Number (Decimal, 00=All Products)
   3.   nn - Number of tanks that are mapped to the product (Decimal)
   4.   TT - Tank numbers mapped to product
   5.   YYMMDDHHmm - Opening Date and Time
   6.   YYMMDDHHmm - Closing Date and Time
   7.   NN - Number of eight character Data Fields to follow (Hex)
   8.   FFFFFFFF - ASCII Hex IEEE float:
                       1. Probe measured inventory at previous period close
                       2. Sum total of adjusted deliveries during period
                       3. Sum total of all metered sales during period
                       4. Manually entered adjustments for period
                       5. Calculated Inventory Volume at period close
                       6. Probe measured inventory at period close
                       7. Water Height at period close
                       8. Variance over period
   9.   && - Data Termination Flag
  10.   CCCC - Message Checksum

```

```
          Function Code: C04   Version 2
          Function Type: Basic Inventory Reconciliation Shift "Column" Report

          Command Format:
              Display: <SOH>IC0400tt
             Computer: <SOH>iC0400tt
```

Notes:
```
    1.              tt - Shift Type (01=Current, 02=Previous)
```

Typical Response Message, Display Format:

```
    <SOH>
    IC0400
    MAR 26, 2009  1:44 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    MAR 26, 2009  1:44 PM

    PREVIOUS SHIFT RECONCILIATION REPORT

    PRODUCT               UNLEADED

    OPENING DATE     MAR 26, 1996
    OPENING TIME          6:00 AM

    OPENING VOLUME           4114
    DELIVERIES                  0
    METERED SALES            1083
    MANUAL ADJUST               0
    CALC'D INVNTRY           3031
    PHYSICAL INVNTRY         3026
    WATER  HEIGHT            0.00
    VARIANCE                   -5

    CLOSING DATE     MAR 26, 2009
    CLOSING TIME          1:42 PM

    SIGNATURE _____
    <ETX>
```

Function Code C04: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC04PPYYMMDDHHmmGGPPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
               PPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   GG - Number of product Groupings to follow (Hex)
3.   PP - Product Number (Decimal, 00=All Products)
4.   nn - Number of tanks that are mapped to the product (Decimal)
5.   TT - Tank numbers mapped to product
6.   YYMMDDHHmm - Opening Date and Time
7.   YYMMDDHHmm - Closing Date and Time
8.   NN - Number of eight character Data Fields to follow (Hex)
9.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Probe measured inventory at previous period close
                    2. Sum total of adjusted deliveries during period
                    3. Sum total of all metered sales during period
                    4. Manually entered adjustments for period
                    5. Calculated Inventory Volume at period close
                    6. Probe measured inventory at period close
                    7. Water Height at period close
                    8. Variance over period
10.   && - Data Termination Flag
11.   CCCC - Message Checksum

```
        Function Code: C05                                         Version 2
        Function Type: Basic Inventory Reconciliation Periodic "Row" Report

       Command Format:
           Display: <SOH>IC05PP
          Computer: <SOH>iC05PP
```

Typical Response Message, Display Format:

```
    <SOH>
    IC05PP
    MAR 26, 2009  1:42 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    MAR 26, 2009  1:42 PM

    CURRENT PERIODIC RECONCILIATION REPORT

    F 1:REGULAR
    T 1:REGULAR UNLEADED
```

DATE		TIME		OPENING VOLUME	DLVRIES	METERED SALES	MANUAL ADJUST	CALC'D INVNTRY	PHYSICAL INVNTRY	WATER HEIGHT	VARIANCE
MAR	1	2:00	AM								
MAR	2	2:00	AM	5429	0	3341	0	2088	2092	0.00	4
MAR	3	2:00	AM	2092	5409	1876	0	5625	5625	0.00	0
MAR	4	2:00	AM	5625	3336	3065	0	5896	5862	0.00	-34
MAR	5	2:00	AM	5874	2009	2207	0	5676	5672	0.00	-4
MAR	6	2:00	AM	5672	0	1568	0	4104	4108	0.00	4
MAR	7	2:00	AM	4108	6503	2170	0	8441	8443	0.00	2
MAR	8	2:00	AM	8444	0	1574	0	6870	6872	0.00	2
MAR	9	2:00	AM	6872	0	2295	0	4577	4581	0.00	4
MAR	10	2:00	AM	4581	5405	2881	0	7105	7099	0.00	-6
MAR	11	2:00	AM	7099	0	3312	0	3787	3793	0.00	6
MAR	12	2:00	AM	3793	3898	2436	0	5255	5253	0.00	-2
MAR	13	2:00	AM	5253	0	1745	0	3508	3497	0.00	-11
MAR	13	2:21	AM	3497	4811	1599	0	6709	6718	0.00	9
MAR	14	2:00	AM	6718	0	2111	0	4607	4612	0.00	5
MAR	16	2:00	AM	4612	6213	3896	0	6929	6931	0.00	2
MAR	17	2:00	AM	6896	0	2807	0	4089	4096	0.00	7
MAR	18	2:00	AM	4096	3302	3440	0	3958	3969	0.00	11
MAR	19	2:00	AM	3969	4802	1930	0	6841	6839	0.00	-2
MAR	20	2:00	AM	6839	0	2079	0	4760	4775	0.00	15
MAR	21	2:00	AM	4775	5407	2242	0	7940	7947	0.00	7
MAR	22	2:00	AM	7947	0	2552	0	5395	5398	0.00	3
MAR	23	2:00	AM	5398	5410	3309	0	7499	7510	0.00	11
MAR	24	2:00	AM	7510	0	3055	0	4455	4465	0.00	10
MAR	25	2:00	AM	4465	4812	3200	0	6077	6081	0.00	4
MAR	26	2:00	AM	6081	0	1888	0	4193	4199	0.00	6
TOTALS				5407	61317	62578	0	4146	4199	0.00	53

```
    THRESHOLD:                                                         755

    SIGNATURE _____
    <ETX>
```

Function Code C05: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC05PPYYMMDDHHmmPPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                PPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              PP - Product Number (Decimal, 00=All Products)
    3.              nn - Number of tanks that are mapped to the product (Decimal)
    4.              TT - Tank numbers mapped to product
    5.              dd - Number of reconciliation days to follow (Hex)
    6.      YYMMDDHHmm - Opening Date and Time
    7.      YYMMDDHHmm - Closing Date and Time
    8.              NN - Number of eight character Data Fields to follow (Hex)
    9.        FFFFFFFF - ASCII Hex IEEE floats:
                        1. Probe measured inventory at previous period close
                        2. Sum total of adjusted deliveries during period
                        3. Sum total of all metered sales during period
                        4. Manually entered adjustments for period
                        5. Calculated Inventory Volume at period close
                        6. Probe measured inventory at period close
                        7. Water Height at period close
                        8. Variance over period
   10.              && - Data Termination Flag
   11.            CCCC - Message Checksum
```

Function Code: C06   Version 2
Function Type: Basic Inventory Reconciliation Periodic "Column" Report

> **Command Format:**
> **Display:** <SOH>IC0600
> **Computer:** <SOH>iC0600

Typical Response Message, Display Format:

```
<SOH>
IC0600
MAR 26, 2009  1:42 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

MAR 26, 1996  1:42 PM

CURRENT PERIODIC RECONCILIATION REPORT

PRODUCT              UNLEADED

OPENING DATE    MAR  1, 2009
OPENING TIME         2:00 AM

OPENING VOLUME        5407
DELIVERIES           61317
METERED SALES        62578
MANUAL ADJUST            0
CALC'D INVNTRY        4146
PHYSICAL INVNTRY     4199
WATER   HEIGHT        0.00
VARIANCE               53
THRESHOLD             755

CLOSING DATE    MAR 20, 2009
CLOSING TIME         2:00 AM

SIGNATURE _____
<ETX>
```

Function Code C06: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC06PPYYMMDDHHmmGGPPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                PPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   GG - Number of product Groupings to follow (Hex)
3.   PP - Product Number (Decimal, 00=All Products)
4.   nn - Number of tanks that are mapped to the product (Decimal)
5.   TT - Tank numbers mapped to product
6.   YYMMDDHHmm - Opening Date and Time
7.   YYMMDDHHmm - Closing Date and Time
8.   NN - Number of eight character Data Fields to follow (Hex)
9.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Probe measured inventory at previous period close
                    2. Sum total of adjusted deliveries during period
                    3. Sum total of all metered sales during period
                    4. Manually entered adjustments for period
                    5. Calculated Inventory Volume at period close
                    6. Probe measured inventory at period close
                    7. Water Height at period close
                    8. Variance over period
10.   && - Data Termination Flag
11.   CCCC - Message Checksum

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

```
         Function Code: C07                                    Version 2
         Function Type: Basic Inventory Reconciliation Periodic "Row" Report
                        (Current/Previous)

       Command Format:
            Display: <SOH>IC07PPtt
           Computer: <SOH>iC07PPtt
```

Notes:
```
   1.              PP - Product Number (00=all products)
   2.              tt - Report type
                        00=Current Period
                        01=Previous Period
```

Typical Response Message, Display Format:

```
<SOH>
IC07PP
MAR 26, 1996  1:42 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

APR 11, 1996  1:42 PM

PREVIOUS PERIODIC RECONCILIATION REPORT

F 1:REGULAR
T 1:REGULAR UNLEADED

DATE     TIME     OPENING          METERED  MANUAL   CALC'D PHYSICAL WATER
MAR  1  2:00 AM  VOLUME DLVRIES     SALES   ADJUST  INVNTRY  INVNTRY HEIGHT VARIANCE
MAR  2  2:00 AM    5429       0      3341       0     2088     2092   0.00        4
MAR  3  2:00 AM    2092    5409      1876       0     5625     5625   0.00        0
MAR  4  2:00 AM    5625    3336      3065       0     5896     5862   0.00      -34
MAR  5  2:00 AM    5874    2009      2207       0     5676     5672   0.00       -4
MAR  6  2:00 AM    5672       0      1568       0     4104     4108   0.00        4
MAR  7  2:00 AM    4108    6503      2170       0     8441     8443   0.00        2
MAR  8  2:00 AM    8444       0      1574       0     6870     6872   0.00        2
MAR  9  2:00 AM    6872       0      2295       0     4577     4581   0.00        4
MAR 10  2:00 AM    4581    5405      2881       0     7105     7099   0.00       -6
MAR 11  2:00 AM    7099       0      3312       0     3787     3793   0.00        6
MAR 12  2:00 AM    3793    3898      2436       0     5255     5253   0.00       -2
MAR 13  2:00 AM    5253       0      1745       0     3508     3497   0.00      -11
MAR 13  2:21 AM    3497    4811      1599       0     6709     6718   0.00        9
MAR 14  2:00 AM    6718       0      2111       0     4607     4612   0.00        5
MAR 16  2:00 AM    4612    6213      3896       0     6929     6931   0.00        2
MAR 17  2:00 AM    6896       0      2807       0     4089     4096   0.00        7
MAR 18  2:00 AM    4096    3302      3440       0     3958     3969   0.00       11
MAR 19  2:00 AM    3969    4802      1930       0     6841     6839   0.00       -2
MAR 20  2:00 AM    6839       0      2079       0     4760     4775   0.00       15

TOTALS             5407   45688     46332       0     4763     4775   0.00       12

THRESHOLD:                                                                      755

SIGNATURE _____
<ETX>
```

Function Code C07: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC07PPYYMMDDHHmmPPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                  PPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   PP - Product Number (Decimal, 00=All Products)
3.   nn - Number of tanks that are mapped to the product (Decimal)
4.   TT - Tank numbers mapped to product
5.   dd - Number of reconciliation days to follow (Hex)
6.   YYMMDDHHmm - Opening Date and Time
7.   YYMMDDHHmm - Closing Date and Time
8.   NN - Number of eight character Data Fields to follow (Hex)
9.   FFFFFFFF - ASCII Hex IEEE floats:
                    1. Probe measured inventory at previous period close
                    2. Sum total of adjusted deliveries during period
                    3. Sum total of all metered sales during period
                    4. Manually entered adjustments for period
                    5. Calculated Inventory Volume at period close
                    6. Probe measured inventory at period close
                    7. Water Height at period close
                    8. Variance over period
10.   && - Data Termination Flag
11.   CCCC - Message Checksum

```
        Function Code: C08                                  Version 2
        Function Type: Basic Inventory Reconciliation Periodic "Column" Report
                       (Current/Previous)

        Command Format:
            Display: <SOH>IC0800tt
           Computer: <SOH>iC0800tt
```

Notes:
```
   1.                 tt - Report type
                           00=Current Period
                           01=Previous Period
```

Typical Response Message, Display Format:

```
   <SOH>
   IC0800
   MAR 26, 2009  1:42 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   MAR 26, 1996  1:42 PM

   PREVIOUS PERIODIC RECONCILIATION REPORT

   PRODUCT              UNLEADED

   OPENING DATE    MAR  1, 2009
   OPENING TIME         2:00 AM

   OPENING VOLUME          5407
   DELIVERIES             61317
   METERED SALES          62578
   MANUAL ADJUST              0
   CALC'D INVNTRY          4146
   PHYSICAL INVNTRY        4199
   WATER  HEIGHT           0.00
   VARIANCE                  53
   THRESHOLD                755

   CLOSING DATE    MAR 20, 2009
   CLOSING TIME         2:00 AM

   SIGNATURE _____
   <ETX>
```

Function Code C08: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC08PPYYMMDDHHmmGGPPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                    PPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm - Current Date and Time
2. GG - Number of product Groupings to follow (Hex)
3. PP - Product Number (Decimal, 00=All Products)
4. nn - Number of tanks that are mapped to the product (Decimal)
5. TT - Tank numbers mapped to product
6. YYMMDDHHmm - Opening Date and Time
7. YYMMDDHHmm - Closing Date and Time
8. NN - Number of eight character Data Fields to follow (Hex)
9. FFFFFFFF - ASCII Hex IEEE floats:
   1. Probe measured inventory at previous period close
   2. Sum total of adjusted deliveries during period
   3. Sum total of all metered sales during period
   4. Manually entered adjustments for period
   5. Calculated Inventory Volume at period close
   6. Probe measured inventory at period close
   7. Water Height at period close
   8. Variance over period
10. && - Data Termination Flag
11. CCCC - Message Checksum

Function Code: C09   Version 2
Function Type: Individual Basic Reconciliation Daily History Diagnostic

Command Format:
   Display: <SOH>IC09TTD
   Computer: <SOH>iC09TTD

Notes:
1.   TT - Tank Number (Decimal; 00=all)
2.   D - If 1, will use ticketed delivery else if not entered,
                         default will use gauged delivery

Typical Response Message, Display Format:

```
<SOH>
IC09TT1
JAN  1, 2009  3:30 PM

INDIVIDUAL BASIC RECONCILIATION HISTORY DIAGNOSTIC

F 1:REGULAR
T 1:REGULAR
STRT TIME   END TIME    STRT HT  END HT  STRT VL  END_VL   SALES   DELIV OFFSET VARIN
9310310200 9311010200     0.0     0.0 10592.0  9323.0  1268.0     0.0    0.0  -1.0

9311010200 9311020200     0.0     0.0  9323.0  8101.0  1220.0     0.0    0.0  -2.0

9311020200 9311030200     0.0     0.0  8101.0  6759.0  1338.0     0.0    0.0  -4.0

F 2:MIDGRADE
T 2:MIDGRADE
STRT_TIME   END_TIME    STRT_HT  END_HT  STRT_VL  END_VL   SALES   DELIV OFFSET VARIN
9310310200 9311010200     0.0     0.0 10592.0  9323.0  1268.0     0.0    0.0  -1.0

9311010200 9311020200     0.0     0.0  9323.0  8101.0  1220.0     0.0    0.0  -2.0

9311020200 9311030200     0.0     0.0  8101.0  6759.0  1338.0     0.0    0.0  -4.0
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iC0900YYMMDDHHmmTTrrYYMMDDHHmmYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                 TTrrYYMMDDHHmmYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Time of Day.
2.   TT - Tank Number (Decimal, 00=all)
3.   rr - Number of records to follow (Hex)
4.   YYMMDDHHmm - Requested start time
5.   YYMMDDHHmm - Actual start time
6.   YYMMDDHHmm - End time
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE floats:
                         1. Start height
                         2. End height
                         3. Start Volume
                         4. End Volume
                         5. Metered sales (dispensed volume)
                         6. Ticket Delivery
                         7. Gauged Delivery
                         8. Offset volume
                         9. Variance (calculated with ticketed volume)
                         10. Variance (calculated with gauged volume)
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: C10   Version 2
Function Type: Periodic Book Variance

Command Format:
Display: <SOH>IC10PPtt
Computer: <SOH>iC10PPtt

Notes:
1.   PP - Product Number (Decimal, 00=all)
2.   tt - Report Type (if not entered will default to current)
                  01=current
                  02=previous

Typical Response Message, Display Format:

```
<SOH>
IC10PP
MAR 20, 2009  3:29 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CURRENT PERIOD BOOK VARIANCE

T 1:REGULAR UNLEADED
DATE      TIME       OPENING METERED  TICKET  MAN CLS BOOK  GAUGED      DAILY
MAR  5  9:18 PM      VOLUME   SALES    DLVY   ADJ INVNTRY INVNTRY     VARIANCE
MAR  6 12:00 AM       6279      151       0     0    6128    6128      0= 0.00%
MAR  7 12:00 AM       6128     3069       0     0    3059    3063     -4= 0.13%
MAR  8 12:00 AM       3063     2775    5901     0    6189    6196     -7= 0.25%
MAR  9 12:00 AM       6196     2674       0     0    3522    3526     -4= 0.15%
MAR 10 12:00 AM       3526     2427    5901     0    7000    7007     -7= 0.29%
MAR 11 12:00 AM       7007     2763    4099     0    8343    8344     -1= 0.04%
MAR 12 12:00 AM       8344     3091       0     0    5253    5256     -3= 0.10%
MAR 13 12:00 AM       5256     3085    3800     0    5971    5972     -1= 0.03%
MAR 14 12:00 AM       5972     2818       0     0    3154    3160     -6= 0.21%
MAR 15 12:00 AM       3160     3041    5900     0    6019    6023     -4= 0.13%
MAR 16 12:00 AM       6023     2986       0     0    3037    3030      7= 0.23%
MAR 17 12:01 AM       3030     2539    5902     0    6393    6404    -11= 0.43%
MAR 18 12:00 AM       6404     3061       0     0    3343    3346     -3= 0.10%
MAR 19 12:00 AM       3346     3069    5901     0    6178    6179     -1= 0.03%
MAR 20 12:00 AM       6179     2565       0     0    3614    3617     -3= 0.12%

TOTALS                6279    40114   37404     0    3569    3617    -48= 0.12%

THRESHOLD:                                                           531

SIGNATURE _____
<ETX>
```

Function Code C10: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC10PPYYMMDDHHmmPPnnTT...rrYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                 PPnnTT...rrYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```
Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.              PP - Product Number (Decimal, 00=all)
    3.              nn - Number of tanks mapped to product (Decimal)
    4.              TT - Tank Number(s) (Decimal)
    5.              rr - Number of records to follow (decimal) if 0, no more data for
                        this tank will follow
    6.       YYMMDDHHmm - Opening Date and Time
    7.       YYMMDDHHmm - Closing  Date and Time
    8.              NN - Number of eight character Data Fields to follow (Hex)
    9.         FFFFFFFF - ASCII Hex IEEE floats:
                        1. open volume
                        2. metered sales
                        3. ticketed delivery
                        4. manual adjust
                        5. close book inventory
                        6. gauged inventory
                        7. water height
                        8. daily variance
                        9. percent
   10.              && - Data Termination Flag
   11.            CCCC - Message Checksum
```

```
      Function Code: C11                                    Version 2
      Function Type: Weekly Book Variance

         Command Format:
            Display: <SOH>IC11PPtt
           Computer: <SOH>iC11PPtt
```

Notes:
```
   1.              PP - Product Number (Decimal, 00=all)
   2.              tt - Report Type (if not entered will default to current)
                        01=current
                        02=previous
```

Typical Response Message, Display Format:

```
   <SOH>
   IC11PP
   MAR 20, 2009  3:30 PM

   STATION HEADER 1....
   STATION HEADER 2....
   STATION HEADER 3....
   STATION HEADER 4....

   CURRENT WEEK BOOK VARIANCE

   T 1:REGULAR UNLEADED
   DATE      TIME      OPENING METERED  TICKET  MAN CLS BOOK  GAUGED        DAILY
   MAR 16 12:00 AM     VOLUME   SALES    DLVY   ADJ INVNTRY INVNTRY      VARIANCE
   MAR 17 12:01 AM       3030    2539    5902     0   6393    6404    -11= 0.43%
   MAR 18 12:00 AM       6404    3061       0     0   3343    3346     -3= 0.10%
   MAR 19 12:00 AM       3346    3069    5901     0   6178    6179     -1= 0.03%

   TOTALS                3030    8669   11803     0   6164    6179    -15= 0.17%

   THRESHOLD:                                                             216

   SIGNATURE _____
   <ETX>
```

Function Code C11 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC11PPYYMMDDHHmmPPnnTT...rrYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                  PPnnTT...rrYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```
Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.                PP - Product Number (Decimal), 00=all)
    3.                nn - Number of tanks mapped to product (Decimal)
    4.                TT - Tank Number(s) mapped to product  (Decimal)
    5.                rr - Number of records to follow
    6.        YYMMDDHHmm - Open date and time
    7.        YYMMDDHHmm - Close date and  time
    8.                NN - Number of eight character Data Fields to follow (Hex)
    9.          FFFFFFFF - ASCII Hex IEEE floats:
                          1. open volume
                          2. metered sales
                          3. ticketed delivery
                          4. manual adjust
                          5. close book inventory
                          6. gauged inventory
                          7. water height
                          8. daily variance
                          9. percent
   10.                && - Data Termination Flag
   11.              CCCC - Message Checksum
```

Function Code: C12   Version 2
Function Type: Daily Book Variance

Command Format:
Display: <SOH>IC12PPMMDD
Computer: <SOH>iC12PPMMDD

Notes:
1.   PP - Product Number (Decimal, 00=all)
2.   MMDD - Month and day for report (if not entered, will default to
                 current day)

Typical Response Message, Display Format:

```
<SOH>
IC12PP
MAR 20, 2009  3:30 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

DAILY BOOK VARIANCE

T 1:REGULAR UNLEADED
DATE     TIME      OPENING METERED  TICKET   MAN CLS BOOK  GAUGED       DAILY
MAR 18 12:00 AM    VOLUME   SALES    DLVY    ADJ INVNTRY INVNTRY      VARIANCE
MAR 19 12:00 AM     3346     3069    5901     0   6178    6179       -1= 0.03%

THRESHOLD:                                                              148

SIGNATURE _____
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iC12PPYYMMDDHHmmPPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
               PPnnTT...YYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   PP - Product Number (Decimal, 00=all)
3.   nn - Number of tanks mapped to product (Decimal)
4.   TT - Tank Number(s) (Decimal)
5.   YYMMDDHHmm - Open date and time
6.   YYMMDDHHmm - Close date and time
7.   NN - Number of eight character Data Fields to follow (Hex)
8.   FFFFFFFF - ASCII Hex IEEE floats:
                   1. open volume
                   2. metered sales
                   3. ticketed delivery
                   4. manual adjust
                   5. close book inventory
                   6. gauged inventory
                   7. water height
                   8. daily variance
                   9. percent
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Serial Interface Manual
TLS4/TLS-450/TLS-450Plus Monitoring Systems

```
        Function Code: C15                              Version 2
        Function Type: Book Variance Daily Report

      Command Format:
          Display: <SOH>IC15PPSyymmddYYMMDDnnn
         Computer: <SOH>IC15PPSyymmddYYMMDDnnn
```

Notes:
```
    1.            PP - Product
    2.             S - Show Records by Type
                        0=Records and Summaries (default)
                        1=Records Only
                        2=Summaries Only
    3.        yymmdd - Starting Date (000000=no starting date = first of the month)
    4.        YYMMDD - Ending Date   (000000=no ending date = current date)
    5.           nnn - Maximum Records [001...366] (100=default) (decimal)
```

Typical Response Message, Display Format:

```
    <SOH>
    IC15PP
    JAN  1, 2009  8:26 AM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    BOOK VARIANCE DAILY REPORT

    F 1:REGULAR UNLEADED
    T 1:REGULAR UNLEADED
    T 3:REGULAR UNLEAD EAST
```

CLOSE DATE-TIME MON DD YY HH:MM	OPENING VOLUME	METERED SALES	TICKET DLVY	MAN ADJ	CLS BOOK INVNTRY	GAUGED INVNTRY	DAILY VARIANCE
MAR 19 10 2:00	3346	3069	5901	0	6178	6179	-1= 0.03%
MAR 18 10 2:00	4205	3020	2000	0	3215	3220	-5= 0.02%
MAR 17 10 2:00	3388	1234	1890	5	3990	4000	15= 0.05%
MAR 16 10 2:00	4411	2345	1700	6	3997	4111	-13= 0.05%
MAR 15 10 2:00	3210	3456	1600	0	2167	2467	4= 0.05%
MAR 14 10 2:00	1267	3210	0	0	3890	3999	-10= 0.05%
MAR 13 10 2:00	7893	1569	1440	0	4567	4566	6= 0.05%
MAR 12 10 2:00	2345	2468	0	0	5432	5433	-19= 0.05%
MAR 11 10 2:00	5678	3690	1531	0	6789	6780	16= 0.05%
MAR 10 10 2:00	4560	2378	2345	1	7890	7899	-11= 0.05%
MAR 9 10 2:00	3456	1000	1800	9	3990	4000	-7= 0.05%
TOTALS	3456	61317	62578	21	6178	6179	-16= 1.23%

```
    THRESHOLD:                                          148

    SIGNATURE _____
    <ETX>
```

Function Code C15 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC15PPYYMMDDHHmmPPnnTT...TTRRRRYYMMHHmmYYMMHHmmNNFFFFFFFF...
                    PPnnTT...TTRRRRYYMMHHmmYYMMHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               PP - Product Number (Decimal, 00=All Products)
    3.               nn - Number of tanks that are mapped to the product (Decimal)
    4.               TT - Tank Numbers mapped to product
    5.             RRRR - Number of Records to Follow (Decimal – based on TT above)
    6.               SS - Shift Number (Decimal)
    7.       YYMMDDHHmm - Opening Date and Time
    8.       YYMMDDHHmm - Closing Date and Time
    9.               NN - Number of eight character Data Fields to follow (Hex)
   10.        FFFFFFFF - ASCII Hex IEEE floats
                        1=Probe measured inventory at previous period close
                        2=Sum total of adjusted deliveries during period
                        3=Sum total of all metered sales during period
                        4=Manually entered adjustments for period
                        5=Calculated Inventory Volume at period close
                        6=Probe measured inventory at period close
                        7=Water Height at period close
                        8=Variance over period
   11.              && - Data Termination Flag
   12.            CCCC - Message Checksum
```

Function Code: C20   Version 5
Function Type: Periodic Variance Analysis Report

Command Format:
    Display: <SOH>IC20PPtt
    Computer: <SOH>iC20PPtt

Notes:
1.   PP - Product Number (Decimal, 00=all)
2.   tt - Report Type (if not entered will default to current)
        01=current
        02=previous

Typical Response Message, Display Format:

```
<SOH>
IC20PP
MAR 20, 2014  3:30 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CURRENT PERIOD VARIANCE ANALYSIS

F 1:REGULAR UNLEADED
T 1:REGULAR UNLEADED
DATE     TIME          BOOK    DLVY    SALES  BK_VAR   MTR   TEMP   VAP   WATER  UNEX
MAR 19  2:00 AM        VAR     VAR     VAR      %      VAR   VAR    VAR    CHG   VAR
MAR 20 12:00 AM        -48     -13     -35     0.12     -1    -16     0     0    -18

SIGNATURE _____

CHART ALM : T 1
CALIB FAIL: T 1

CORRECTIVE ACTIONS
- - - - - - -  - - - - - -
CHECK TANK FOR LEAK
T 1: REGULAR UNLEADED

CHECK LINE FOR LEAK
Q 1: PLLD NUMBER 1

INSPECT METERS
T 1

INSPECT METERS/CALIBRATE
T 1

IN-TANK TEST RESULTS

TANK  1   REGULAR UNLEADED
TEST TYPE  START TIME              RESULT
 GROSS     03/20/14 06:11 AM       PASSED
 PERIODIC  03/19/14 10:09 AM       PASSED
 ANNUAL    03/18/14 08:07 AM       PASSED

PASSED 0.20 TANK TESTS

TANK  1   REGULAR UNLEADED
TEST TYPE  START TIME              RESULT
 CSLD      03/20/14 06:11 AM       PASSED
PERCENT VOLUME  =   64.0
```

Function Code C20 Notes: (Continued)

```
    CSLD TEST RESULTS


    TANK  1    REGULAR UNLEADED
    TEST TYPE   START TIME                  RESULT
     PERIODIC  03/20/14 06:11 AM            Pass


    PRESSURE LINE LEAK TEST RESULTS


    Q 1: PLLD NUMBER 1
    TEST TYPE   START TIME                  RESULT
     GROSS      03/20/14 03:23 PM           PASSED
     PERIODIC   03/18/14 07:08 AM           PASSED
     ANNUAL     03/16/14 05:05 AM           FAILED
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iC20PPYYMMDDHHmmPPnnTTddYYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllll
                                          NNFFFFFFFF...
                   PPnnTTddYYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllll
                                          NNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.               PP - Product Number (Decimal)
    3.               nn - Number of tanks that are mapped to the product (Decimal)
    4.               TT - Tank Number (Decimal, 00=all)
    5.               dd - Number of reconciliation records to follow
    6.       YYMMDDHHmm - Opening Date and Time for period
    7.       YYMMDDHHmm - Closing  Date and Time for period
    8.         LLLLLLLL - failure to calibrate in 56 days (bit encoded long integer
                          with tank 1=lsb)
    9.         llllllll - tank chart alarm (bit encoded long integer with tank 1=lsb)
   10.               NN - Number of eight character Data Fields to follow (Hex)
   11.       FFFFFFFF - ASCII Hex IEEE floats:
                          1. book variance
                          2. delivery variance
                          3. sales variance
                          4. book variance percent
                          5. temperature variance
                          6. water change
                          7. unexplained variance
                          8. Meter variance
                          9. Vapor variance
   12.               && - Data Termination Flag
   13.             CCCC - Message Checksum
```

Function Code: C21   Version 5
Function Type: Weekly Variance Analysis Report

Command Format:
    Display: `<SOH>IC21PPtt`
    Computer: `<SOH>iC21PPtt`

Notes:
1.   PP - Product Number (Decimal, 00=all)
2.   tt - Report Type (if not entered will default to current)
                 01=current
                 02=previous

Typical Response Message, Display Format:

```
<SOH>
IC21PP
MAR 20, 1998  3:30 PM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CURRENT WEEK VARIANCE ANALYSIS

F 1:REGULAR UNLEADED
T 1:REGULAR UNLEADED
DATE    TIME       BOOK    DLVY   SALES BK_VAR  MTR   TEMP   VAP   WATER  UNEX
MAR 18  2:00 AM    VAR     VAR    VAR     %     VAR   VAR    VAR    CHG   VAR
MAR 19 12:00 AM    -15     -13    -2    0.17    -2    -2     0      0     0

SIGNATURE _____

CHART ALM : T 1
CALIB FAIL: T 1

CORRECTIVE ACTIONS
- - - - - - - - - - - - -
CHECK TANK FOR LEAK
T 1: REGULAR UNLEADED

CHECK LINE FOR LEAK
Q 1: PLLD NUMBER 1

INSPECT METERS
T 1

INSPECT METERS/CALIBRATE
T 1

IN-TANK TEST RESULTS

TANK  1    REGULAR UNLEADED
TEST TYPE  START TIME              RESULT
 GROSS     03/20/14 06:11 AM       PASSED
 PERIODIC  03/19/14 10:09 AM       PASSED
 ANNUAL    03/18/14 08:07 AM       PASSED

PASSED 0.20 TANK TESTS

TANK  1    REGULAR UNLEADED
TEST TYPE  START TIME              RESULT
 CSLD      03/20/14 06:11 AM       PASSED
PERCENT VOLUME  =   64.0
```

Function Code C21 Notes: (Continued)

```
    CSLD TEST RESULTS


    TANK   1    REGULAR UNLEADED
    TEST TYPE   START TIME                  RESULT
     PERIODIC   03/20/14 06:11 AM           Pass


    PRESSURE LINE LEAK TEST RESULTS


    Q 1: PLLD NUMBER 1
    TEST TYPE   START TIME                  RESULT
     GROSS       03/20/14 03:23 PM          PASSED
     PERIODIC    03/18/14 07:08 AM          PASSED
     ANNUAL      03/16/14 05:05 AM          FAILED
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iC21PPYYMMDDHHmmPPnnTTddYYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllllll
                                           NNFFFFFFFF...
                   PPnnTTddYYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllllll
                                           NNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.               PP - Product Number (Decimal, 00=all products)
    3.               nn - Number of tanks that are mapped to the product (Decimal)
    4.               TT - Tank Number (Decimal, 00=all)
    5.               dd - Number of reconciliation records to follow
    6.        YYMMDDHHmm - Open date and time
    7.        YYMMDDHHmm - Close date and  time
    8.         LLLLLLLL - failure to calibrate in 56 days (bit encoded long integer
                          with tank 1=lsb)
    9.         llllllll - tank chart alarm (bit encoded long integer with tank 1=lsb)
    10.              NN - Number of eight character Data Fields to follow (Hex)
    11.        FFFFFFFF - ASCII Hex IEEE floats:
                           1. book variance
                           2. delivery variance
                           3. sales variance
                           4. book variance percent
                           5. temperature variance
                           6. water change
                           7. unexplained variance
                           8. Meter variance
                           9. Vapor variance
    12.              && - Data Termination Flag
    13.            CCCC - Message Checksum
```

Function Code: C22   Version 5
Function Type: Daily Variance Analysis Report

Command Format:
        Display: <SOH>IC22PPMMDD
       Computer: <SOH>iC22PPMMDD

Notes:
   1.   PP - Product Number (Decimal, 00=all)
   2.   MMDD - Month and day for report (if not entered, will default to
                    current day)

Typical Response Message, Display Format:

    <SOH>
    IC22PP
    MAR 20, 2014 3:31 PM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    DAILY VARIANCE ANALYSIS

    F 1:REGULAR UNLEADED
    T 1:REGULAR UNLEADED
    DATE   TIME   BOOK   DLVY   SALES BK_VAR   MTR   TEMP   VAP   WATER   UNEX
    MAR 18 2:00 AM   VAR   VAR   VAR   %   VAR   VAR   VAR   CHG   VAR
    MAR 19 12:00 AM   -15   -13   -2   0.17   -1   -2   0   0   0

    SIGNATURE _____

    CHART ALM : T 1
    CALIB FAIL: T 1

    CORRECTIVE ACTIONS
    - - - - - - - - - - - -
    CHECK TANK FOR LEAK
    T 1: REGULAR UNLEADED

    CHECK LINE FOR LEAK
    Q 1: PLLD NUMBER 1

    INSPECT METERS
    T 1

    INSPECT METERS/CALIBRATE
    T 1

    IN-TANK TEST RESULTS

    TANK 1   REGULAR UNLEADED
    TEST TYPE START TIME   RESULT
     GROSS   03/20/14 06:11 AM   PASSED
     PERIODIC 03/19/14 10:09 AM   PASSED
     ANNUAL   03/18/14 08:07 AM   PASSED

    PASSED 0.20 TANK TESTS

    TANK 1   REGULAR UNLEADED
    TEST TYPE START TIME   RESULT
     CSLD   03/20/14 06:11 AM   PASSED
    PERCENT VOLUME =   64.0

Function Code C22 Notes: (Continued)

```
    CSLD TEST RESULTS


    TANK   1    REGULAR UNLEADED
    TEST TYPE   START TIME                    RESULT
     PERIODIC   03/20/14 06:11 AM             Pass


    PRESSURE LINE LEAK TEST RESULTS


    Q 1: PLLD NUMBER 1
    TEST TYPE   START TIME                    RESULT
     GROSS      03/20/14 03:23 PM             PASSED
     PERIODIC   03/18/14 07:08 AM             PASSED
     ANNUAL     03/16/14 05:05 AM             FAILED
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iC22PPYYMMDDHHmmPPnnTTYYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllllll
                                          NNFFFFFFFF...
                PPnnTTYYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllllll
                                          NNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.               PP - Product Number (Decimal, 00=all products)
    3.               nn - Number of tanks that are mapped to the product (Decimal)
    4.               TT - Tank Number (Decimal, 00=all)
    5.        YYMMDDHHmm - Open date and time
    6.        YYMMDDHHmm - Close date and  time
    7.         LLLLLLLL - failure to calibrate in 56 days (bit encoded long integer
                          with tank 1=lsb)
    8.         llllllll - tank chart alarm (bit encoded long integer with tank 1=lsb)
    9.               NN - Number of eight character Data Fields to follow (Hex)
    10.        FFFFFFFF - ASCII Hex IEEE floats:
                                  1. book variance
                                  2. delivery variance
                                  3. sales variance
                                  4. book variance percent
                                  5. temperature variance
                                  6. water change
                                  7. unexplained variance
                                  8. Meter variance
                                  9. Vapor variance
    11.              && - Data Termination Flag
    12.            CCCC - Message Checksum
```

Function Code: C25   Version 5
Function Type: Periodic Variance Analysis Daily Report

Command Format:
    Display: \<SOH>IC25PPtt
    Computer: \<SOH>iC25PPtt

Notes:
  1.   PP - Product Number (Decimal, 00=all Products)
  2.   tt - Report Type
                        01=current
                        02=previous

Typical Response Message, Display Format:

```
<SOH>
IC25PP
JAN  1, 2014  8:05 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

CURRENT PERIOD VARIANCE ANALYSIS

F 1:UNLEADED GASOLINE
T 1:UNLEADED GASOLINE
DATE    TIME        BOOK   DLVY  SALES BK_VAR  MTR  TEMP  VAP  WATER  UNEX
DEC 10  2:00 AM     VAR    VAR    VAR    %     VAR   VAR  VAR   CHG   VAR
DEC 10  2:00 AM      7      9     -2   0.54   -1     6    -2    4    -8
DEC 11  2:00 AM     -1      0     -1   0.07    0     0     0    4    -1
DEC 12  2:00 AM      0      0      0   0.00    0     0     0    4     0
DEC 13  2:00 AM     -2      0     -2   0.15    0     0     0    4    -2
DEC 14  2:00 AM     -3      0     -3   0.30   -1     0    -1    4    -3
DEC 15  2:00 AM    -15    -10     -5   1.04    0     0     0    4    -5
DEC 16  2:00 AM     -2      0     -2   0.14    0     0    -2    4    -2
DEC 17  2:00 AM      0      0      0   0.00    0     0     0    4     0
DEC 18  2:00 AM     -2     -5      3   0.13    0    -9     0    4    12
DEC 19  2:00 AM      2      0      2   0.13    0     0     0    4     2
DEC 20  2:00 AM      1      0      1   0.08   -2     0     0    4     1
DEC 21  2:00 AM     -1      0     -1   0.14    0     0    -1    4    -1
DEC 22  2:00 AM      5      0      5   0.36    0     0    -1    4     5
DEC 23  2:00 AM      1      0      1   0.09    0     0    -1    4     1
DEC 24  2:00 AM     -3      0     -3   0.24    0     0     0    4    -3
DEC 25  2:00 AM      7     10     -3   0.51    0   -11     0    4     8
DEC 26  2:00 AM      0      0      0   0.00    0     0     0    4     0
DEC 27  2:00 AM      5      0      5   0.40   -1     0     0    4     5
DEC 28  2:00 AM      0      0      0   0.00    0     0     0    0     0
DEC 29  2:00 AM      0      0      0   0.00    0     0     0    0     0
DEC 30  2:00 AM     -2      0     -2   0.17    0     0    -2    0    -2
DEC 31  2:00 AM     13     10      3   0.98    0   -20    -2    0    23
JAN  1  2:00 AM   -503   -503      0  33.83   -4    31    -2    0   -31
<ETX>
```

Function Code C25 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC25PPYYMMDDHHmm...
        PPnnTTYddYYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllllNNFFFFFFFF...
        PpnnTTYddYYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllllNNFFFFFFFF...&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   PP - Product Code (Decimal)
3.   nn - Number of tanks that are mapped to the product (Decimal)
4.   TT - Tank Number (Decimal, 0=all)
5.   dd - Number of reconciliation records to follow
6.   YYMMDDHHmm - Opening Date and Time for period
7.   YYMMDDHHmm - Closing Date and Time for period
8.   LLLLLLLL - failure to calibrate in 56 days (bit encoded long integer with tank 1=lsb)
9.   llllllll - tank chart alarm (bit encoded long integer with tank 1=lsb)
10.   NN - Number of eight character Data Fields to follow (Hex)
11.   FFFFFFFF - ASCII Hex IEEE floats:
    1. Book variance
    2. Delivery variance
    3. Sales variance
    4. Book variance percent
    5. Temperature variance
    6. Water change
    7. Unexplained variance
    8. Meter variance
    9. Vapor variance
12.   && - Data Termination Flag
13.   CCCC - Message Checksum

```
          Function Code: C0G                                    Version 2
          Function Type: Reconciliation Daily Report

      Command Format:
         Display: <SOH>IC0GPPSyymmddYYMMDDnnn
        Computer: <SOH>iC0GPPSyymmddYYMMDDnnn
```

Notes:
```
   1.                PP - Product
   2.                 S - Show Records by Type
                          0=Records and Summaries (default)
                          1=Records Only
                          2=Summaries Only
   3.          yymmdd - Starting Date (000000=no starting date = first of the month)
   4.          YYMMDD - Ending Date (000000=no ending date = current date)
   5.             nnn - Maximum Records [001...366] (100=default) (decimal)
```

Typical Response Message, Display Format:

```
<SOH>
IC0GPP
JAN  1, 2009  8:26 AM

STATION HEADER 1....
STATION HEADER 2....
STATION HEADER 3....
STATION HEADER 4....

RECONCILIATION DAILY REPORT

F 1:REGULAR UNLEADED
T 1:REGULAR UNLEADED

CLOSE DATE-TIME OPENING          METERED MANUAL   CALC'D PHYSICAL WATER
MON DD YY HH:MM  VOLUME DLVRIES    SALES ADJUST  INVNTRY  INVNTRY HEIGHT VARIANCE
--------------- ------- ------- ------- ------ ------- ------- ------ --------
AUG  7 09  2:00    6081       0    1888      0    4193     4199   1.00        6
AUG  8 09  2:00    4465    4812    3200      0    6077     6081   0.00        4
AUG  5 09  2:00    7510       0    3055      0    4455     4465   0.00       10
AUG  4 09  2:00    5398    5410    3309      0    7499     7510   0.00       11
AUG  3 09  2:00    7947       0    2552      3    5395     5398   0.00        3
AUG  2 09  2:00    4775    5407    2242      2    7940     7947   0.00        7
AUG  1 09  2:00    6839       0    2079      1    4760     4775   1.50       15
JUL 31 09  2:00    3969    4802    1930      0    6841     6839   0.00       -2
JUL 30 09  2:00    4096    3302    3440      0    3958     3969   0.00       11
JUL 29 09  2:00    1234    3210    2345      0    4567     4560   0.00       -7

TOTALS             1234   61317   62578      6    4193     4199   1.00       53

THRESHOLD:                                                                  216

SIGNATURE _____
<ETX>
```

Function Code C0G Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iC0GPPYYMMDDHHmmPPnnTT...TTRRRRYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
                PPnnTT...TTRRRRYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   PP - Product Number (Decimal, 00=All Products)
3.   nn - Number of tanks that are mapped to the product (Decimal)
4.   TT - Tank Numbers mapped to product
5.   RRRR - Number of Records to Follow (Decimal)
6.   YYMMDDHHmm - Opening Date and Time
7.   YYMMDDHHmm - Closing Date and Time
8.   NN - Number of eight character Data Fields to follow (Hex)
9.   FFFFFFFF - ASCII Hex IEEE floats
                        1=Probe measured inventory at previous period close
                        2=Sum total of adjusted deliveries during period
                        3=Sum total of all metered sales during period
                        4=Manually entered adjustments for period
                        5=Calculated Inventory Volume at period close
                        6=Probe measured inventory at period close
                        7=Water Height at period close
                        8=Variance over period
10.   && - Data Termination Flag
11.   CCCC - Message Checksum

```
              Function Code: C0J                              Version 2
              Function Type: Reconciliation Shift Report

          Command Format:
              Display: <SOH>IC0JPPSSyymmddYYMMDDnnn
              Computer: <SOH>iC0JPPSSyymmddYYMMDDnnn
```

Notes:
```
    1.              PP - Product
    2.               S - Shift Number (00=All, Decimal)
    3.          yymmdd - Starting Date (000000=no starting date = first of the month)
    4.          YYMMDD - Ending Date   (000000=no ending date = current date)
    5.             nnn - Maximum Records [001...366] (100=default) (decimal)
```

Typical Response Message, Display Format:

```
    <SOH>
    IC0JPP
    JAN  1, 2009  8:26 AM

    STATION HEADER 1....
    STATION HEADER 2....
    STATION HEADER 3....
    STATION HEADER 4....

    RECONCILIATION SHIFT REPORT

    F 1:REGULAR UNLEADED
    T 1:REGULAR UNLEADED

    SHIFT 1:

    CLOSE DATE-TIME OPENING          METERED MANUAL  CALC'D PHYSICAL WATER
    MON DD YY HH:MM  VOLUME DLVRIES    SALES ADJUST INVNTRY INVNTRY HEIGHT VARIANCE
    --------------- ------- ------- ------- ------ ------- ------- ------ --------
    MAR 03 10  8:00    6081       0    1888      0    4193    4199   0.00        6
    MAR 03 10 16:00    3000       0    1000      0    2000    2000   0.00        0
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iC0JPPYYMMDDHHmmPPnnTT...TTRRRRSSYYMMHHmmYYMMHHmmNNFFFFFFFF...
                      PPnnTT...TTRRRRSSYYMMHHmmYYMMHHmmNNFFFFFFFF&&CCCC<ETX>
```

Notes:
```
    1.    YYMMDDHHmm - Current Date and Time
    2.            PP - Product Number (Decimal, 00=All Products)
    3.            nn - Number of tanks that are mapped to the product (Decimal)
    4.            TT - Tank Numbers mapped to product
    5.          RRRR - Number of Records to Follow (Decimal - based on TT above)
    6.            SS - Shift Number (Decimal)
    7.    YYMMDDHHmm - Opening Date and Time
    8.    YYMMDDHHmm - Closing Date and Time
    9.            NN - Number of eight character Data Fields to follow (Hex)
   10.      FFFFFFFF - ASCII Hex IEEE floats
                       1=Probe measured inventory at previous period close
                       2=Sum total of adjusted deliveries during period
                       3=Sum total of all metered sales during period
                       4=Manually entered adjustments for period
                       5=Calculated Inventory Volume at period close
                       6=Probe measured inventory at period close
                       7=Water Height at period close
                       8=Variance over period
   11.            && - Data Termination Flag
   12.          CCCC - Message Checksum
```

Function Code: CA3   Version 2
Function Type: Reconciliation Test Result Report

Command Format:
  Display: <SOH>ICA3PPyymmddYYMMDDnnn
 Computer: <SOH>ICA3PPyymmddYYMMDDnnn

Notes:
  1.   PP – Product
  2.   yymmdd – Starting Date (000000=no starting date = first of the month)
  3.   YYMMDD – Ending Date   (000000=no ending date = current date)
  4.   nnn – Maximum Records [001...366] (100=default) (decimal)

Typical Response Message, Display Format:

```
<SOH>
ICA3PP
JAN  1, 2009  8:26 AM

RECONCILIATION TEST RESULT REPORT

F 1:REGULAR UNLEADED
T 1:REGULAR UNLEADED
T 3:REGULAR UNLEADED EAST

END      START    TEST                                 THRES  THRES      TEST
DATE     DATE     #/TYPE      SALES DELIV   VARIAN  LIMIT TYPE       RESULT
01/31/09 01/01/09 1 - Monthly xxxxxxx xxxxxxx xxxxxx  xxxxxx Throughput Pass
01/31/09 01/22/09 1 - Roll 10 xxxxxxx xxxxxxx xxxxxx  xxxxxx Capacity   Pass
01/31/09 01/31/09 1 - RollC 7 xxxxxxx xxxxxxx xxxxxx  xxxxxx Delivery   Pass
01/31/09 01/31/09 1 - Daily   xxxxxxx xxxxxxx xxxxxx  xxxxxx Fixed      Pass
<ETX>
```

Function Code CA3: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iCA3PPYYMMDDHHmmPPnnnnYYMMDDyymmDDssttRRvvNNFFFFFFFF...
                        YYMMDDyymmddssttRRvvNNFFFFFFFF&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   PP - Product Number (Decimal, 00=All Products)
3.   nnnn - Number of Records to follow (Decimal)
4.   YYMMDD - End Date
5.   yymmdd - Start Date
6.   SS - Test Number (Decimal)
7.   tt - Test Type
                    01-Monthly
                    02-Rolling Days
                    03-Daily
                    04-Rolling Consecutive Days
8.   RR - Test Result
                    00=Fail
                    01=Pass
9.   vv - Threshold Type (Decimal)
                    01-Percent of Throughput
                    02-Percent of Capacity
                    03-Percent of Deliveries
                    04-Fixed Value
10.   NN - Number of eight character Data Fields to follow (Hex)
11.   FFFFFFFF - ASCII Hex IEEE floats:
                    1=Total Sales
                    2=Total Deliveries
                    3=Total Variance
                    4=Threshold Limit
12.   && - Data Termination Flag
13.   CCCC - Message Checksum

7.6 GUI DISPLAY SETUP

Function Code: G01   Version 1
Function Type: Set Display Setup - System Status Configuration

Command Format: **Inquire:**
    Display: <SOH>SG0100TTc   <SOH>IG0100TT
  Computer: <SOH>sG0100TTc   <SOH>iG0100TT

Notes:
```
    1.              TT - Tab, 00=all Tabs
                        01=All Tanks Tab
                        02=All Sensors Tab
                        03='User Defined 1' Tab
                        04='User Defined 2' Tab
                        05='User Defined 3' Tab
    2.         c - Configuration
                        0=Disabled
                        1=Enabled
```

Typical Response Message, Display Format:

```
    <SOH>
    IG010000
    JAN 22, 1996  3:06 PM

    Display Setup - System Status

    Tab Name                Configuration

    All Tanks             : Enabled
    All Sensors           : Disabled
    'Sump Devices' Tab    : Enabled
    'Prem Tank&Sens' Tab  : Disabled
    'User Defined 3' Tab  : Disabled
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iG0100YYMMDDHHmmNNTTc...TTc&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm - Current Date and Time
    2.             NN - Number of Fields To Follow
    3.             TT - Tab
    4.              c - Configuration
                        0=Disabled
                        1=Enabled
    5.             && - Data Termination Flag
    6.           CCCC - Message Checksum
```

Function Code: G02   Version 1
Function Type: Set Display Setup – All Tanks Configuration

Command Format: **Inquire:**
    Display: <SOH>SG0200FFc   <SOH>IG0200FF
   Computer: <SOH>sG0200FFc   <SOH>iG0200FF

Notes:
  1.   FF – Field, 00=all Fields, but only valid for Inquiry
                  01=Icon Shape
                  02=Product Label
                  03=Fuel Volume
                  04=Ullage 100%
                  05=Ullage 90%
                  06=Fuel Volume TC
                  07=Temperature
                  08=Fuel Height
                  09=Water Height
                  10=Alarm Condition Icon
                  11=Delivery Indicator
                  12=Water Volume (on icon)
                  13=Tank Ribbon Label
                  14=Density
  2.   c – Configuration (see entry based on field below)

Typical Response Message, Display Format:

```
<SOH>
IG020000
JAN 22, 1996  3:06 PM

Display Setup – All Tanks

Field Name                 Configuration

Icon Shape               : Circle
Product Label            : Disabled
Fuel Volume              : Bottom Text
Ullage 100%              : Disabled
Ullage 90%               : Disabled
Fuel Volume TC           : Disabled
Temperature              : Disabled
Fuel Height              : Disabled
Water Height             : Disabled
Alarm Condition Icon     : Disabled
Delivery Indicator       : Disabled
Water Volume ( on icon ) : Disabled
Tank Ribbon Label        : Tank Number
Density                  : Disabled
<ETX>
```

Function Code G02 Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iG0200YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
```
    1.        YYMMDDHHmm - Current Date and Time
    2.              NN - Number of Fields To Follow
    3.              FF - Field
    4.               c - Configuration
                    - If FF=01 (Icon Shape)
                        0=Circle
                        1=Rectangle
                    - If FF=02 (Product Label)
                        0=Disabled
                        1=Enabled
                    - If FF=03 (Fuel Volume)
                        0=Disabled
                        1=Bottom Text
                        2=On Tank
                    - If FF=04 (Ullage 100%)
                        0=Disabled
                        1=Enabled
                    - If FF=05 (Ullage 90%)
                        0=Disabled
                        1=Enabled
                    - If FF=06 (Fuel Volume TC)
                        0=Disabled
                        1=Enabled
                    - If FF=07 (Temperature)
                        0=Disabled
                        1=Bottom Text
                        2=On Tank
                    - If FF=08 (Fuel Height)
                        0=Disabled
                        1=Enabled
                    - If FF=09 (Water Height)
                        0=Disabled
                        1=Enabled
                    - If FF=10 (Alarm Condition Icon)
                        0=Disabled
                        1=Enabled
                    - If FF=11 (Delivery Indicator)
                        0=Disabled
                        1=Enabled
                    - If FF=12 (Water Volume)
                        0=Disabled
                        1=Bottom Text
                        2=On Tank
                    - If FF=13 (Tank Ribbon Label)
                        0=Tank Number
                        1=Product Label
                    - If FF=14 (Density)
                        0=Disabled
                        1=Enabled
    5.              && - Data Termination Flag
    6.            CCCC - Message Checksum
```

Function Code: G03   Version 1
Function Type: Set Display Setup – Tank Fuel Fill Configuration

Command Format: **Inquire:**
    Display: <SOH>SG03TTff   <SOH>IG03TT
   Computer: <SOH>sG03TTff   <SOH>iG03TT

Notes:
   1.   TT – Tank Number
   2.   ff – Fuel Fill Configuration (see available entries below)

Typical Response Message, Display Format:

```
<SOH>
IG03TT
JAN 22, 1996  3:06 PM

Display Setup – Fuel Fill Selection

Tank  Label                   Fuel Fill Selection
   1  Regular Unleaded        Horizontal Crosshatch
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iG03TTYYMMDDHHmmTTff...TTff&&CCCC<ETX>
```

Notes:
   1.   YYMMDDHHmm – Current Date and Time
   2.   TT – Tank Number (Decimal, 00=all)
   3.   ff – Fuel Fill Configuration
                   01=Horizontal Crosshatch (Standard Grid)
                   02=Horizontal Stripe
                   03=Vertical Stripe
                   04=Diagonal Crosshatch
                   05=Diagonal Stripe
                   06=Reverse Diagonal Stripe
                   07=12.5 % gray
                   08=25 % gray
                   09=37.5 % gray
                   10=50 % gray
                   11=62.5 % gray
                   12=75 % gray
                   13=87.5 % gray
                   14=Black
   4.   && – Data Termination Flag
   5.   CCCC – Message Checksum

```
        Function Code: G04                                    Version 1
        Function Type: Set Display Setup - All Liquid Sensors Configuration

        Command Format:                                        Inquire:
            Display: <SOH>SG0400FFc                        <SOH>IG0400FF
           Computer: <SOH>sG0400FFc                        <SOH>iG0400FF
```

Notes:
```
    1.              FF - Field, 00=all Fields
                        01=Sensor Label
                        02=Alarm Condition Icon
                        03=Model
                        04=Category
    2.          c - Configuration
                        0=Disabled
                        1=Enabled
```

Typical Response Message, Display Format:

```
    <SOH>
    IG040000
    JAN 22, 1996  3:06 PM

    Display Setup - All Sensors - Liquid

    Field Name                Configuration

    Sensor Label            : Enabled
    Alarm Condition Icon    : Disabled
    Model                   : Enabled
    Category                : Disabled
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iG0400YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.          NN - Number of Fields To Follow
    3.          FF - Field
    4.           c - Configuration
                        0=Disabled
                        1=Enabled
    5.          && - Data Termination Flag
    6.        CCCC - Message Checksum
```

```
        Function Code: G05                                       Version 1
        Function Type: Set Display Setup – All Type-A (2-Wire CL) Sensors
                       Configuration

        Command Format:                                           Inquire:
           Display: <SOH>SG0500FFc                          <SOH>IG0500FF
          Computer: <SOH>sG0500FFc                          <SOH>iG0500FF
```

Notes:
```
   1.            FF – Field, 00=all Fields
                        01=Sensor Label
                        02=Alarm Condition Icon
                        03=Model
                        04=Category
   2.          c – Configuration
                        0=Disabled
                        1=Enabled
```

Typical Response Message, Display Format:

```
   <SOH>
   IG050000
   JAN 22, 1996  3:06 PM

   Display Setup – All Sensors – Type-A (2-Wire CL)

   Field Name              Configuration

   Sensor Label          : Enabled
   Alarm Condition Icon  : Disabled
   Model                 : Enabled
   Category              : Disabled
   <ETX>
```

Typical Response Message, Computer Format:

```
   <SOH>iG0500YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
```
   1.        YYMMDDHHmm – Current Date and Time
   2.              NN – Number of Fields To Follow
   3.              FF – Field
   4.               c – Configuration
                        0=Disabled
                        1=Enabled
   5.              && – Data Termination Flag
   6.            CCCC – Message Checksum
```

```
         Function Code: G06                                        Version 1
         Function Type: Set Display Setup – All Type-B (3-Wire CL) Sensors
                        Configuration

       Command Format:                                              Inquire:
            Display: <SOH>SG0600FFc                         <SOH>IG0600FF
           Computer: <SOH>sG0600FFc                         <SOH>iG0600FF
```

Notes:
```
    1.              FF – Field, 00=all Fields
                        01=Sensor Label
                        02=Alarm Condition Icon
                        03=Model
                        04=Category
    2.           c – Configuration
                        0=Disabled
                        1=Enabled
```

Typical Response Message, Display Format:

```
    <SOH>
    IG060000
    JAN 22, 1996  3:06 PM

    Display Setup – All Sensors – Type-B (3-Wire CL)

    Field Name              Configuration

    Sensor Label          : Enabled
    Alarm Condition Icon  : Disabled
    Model                 : Enabled
    Category              : Disabled
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iG0600YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
```
    1.       YYMMDDHHmm – Current Date and Time
    2.            NN – Number of Fields To Follow
    3.            FF – Field
    4.             c – Configuration
                        0=Disabled
                        1=Enabled
    5.            && – Data Termination Flag
    6.          CCCC – Message Checksum
```

Function Code: G07   Version 1
Function Type: Set Display Setup – All MAG Sensors Configuration

Command Format: **Inquire:**
    Display: `<SOH>SG0700FFc`   `<SOH>IG0700FF`
    Computer: `<SOH>sG0700FFc`   `<SOH>iG0700FF`

Notes:
```
    1.              FF – Field, 00=all Fields
                        01=Sensor Label
                        02=Alarm Condition Icon
                        03=Fuel Height
                        04=Water Height
                        05=Temperature
    2.          c – Configuration
                        0=Disabled
                        1=Enabled
```

Typical Response Message, Display Format:

```
    <SOH>
    IG070000
    JAN 22, 1996  3:06 PM

    Display Setup – All Sensors – MAG

    Field Name              Configuration

    Sensor Label          : Enabled
    Alarm Condition Icon   : Disabled
    Fuel Height           : Enabled
    Water Height          : Disabled
    Temperature           : Enabled
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iG0700YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm – Current Date and Time
    2.              NN – Number of Fields To Follow
    3.              FF – Field
    4.               c – Configuration
                        0=Disabled
                        1=Enabled
    5.              && – Data Termination Flag
    6.            CCCC – Message Checksum
```

```
         Function Code: G08                                              Version 1
         Function Type: Set Display Setup – All Ground Water Sensors Configuration

      Command Format:                                                       Inquire:
         Display: <SOH>SG0800FFc                                   <SOH>IG0800FF
        Computer: <SOH>sG0800FFc                                   <SOH>iG0800FF
```

Notes:
```
    1.              FF - Field, 00=all Fields
                            01=Sensor Label
                            02=Alarm Condition Icon
                            03=Category
    2.              c - Configuration
                            0=Disabled
                            1=Enabled
```

Typical Response Message, Display Format:

```
    <SOH>
    IG080000
    JAN 22, 1996  3:06 PM

    Display Setup – All Sensors – Ground Water

    Field Name                 Configuration

    Sensor Label              : Enabled
    Alarm Condition Icon      : Disabled
    Category                  : Enabled
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iG0800YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm - Current Date and Time
    2.              NN - Number of Fields To Follow
    3.              FF - Field
    4.              c - Configuration
                            0=Disabled
                            1=Enabled
    5.              && - Data Termination Flag
    6.            CCCC - Message Checksum
```

Function Code: G09   Version 1
Function Type: Set Display Setup – All Vapor Sensors Configuration

Command Format: **Inquire:**
    Display: <SOH>SG0900FFc   <SOH>IG0900FF
    Computer: <SOH>sG0900FFc   <SOH>iG0900FF

Notes:
  1.   FF – Field, 00=all Fields
               01=Sensor Label
               02=Alarm Condition Icon
               03=Category
  2.   c – Configuration
               0=Disabled
               1=Enabled

Typical Response Message, Display Format:

```
<SOH>
IG090000
JAN 22, 1996  3:06 PM

Display Setup – All Sensors – Vapor

Field Name                Configuration

Sensor Label            : Enabled
Alarm Condition Icon    : Disabled
Category                : Enabled
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iG0900YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
  1.   YYMMDDHHmm – Current Date and Time
  2.   NN – Number of Fields To Follow
  3.   FF – Field
  4.   c – Configuration
               0=Disabled
               1=Enabled
  5.   && – Data Termination Flag
  6.   CCCC – Message Checksum

```
        Function Code: G0A                                        Version 1
        Function Type: Set Display Setup – All Line Pressure Sensors Configuration

        Command Format:                                            Inquire:
           Display: <SOH>SG0A00FFc                           <SOH>IG0A00FF
          Computer: <SOH>sG0A00FFc                           <SOH>iG0A00FF
```

Notes:
```
    1.              FF – Field, 00=all Fields
                          01=Sensor Label
                          02=Alarm Condition Icon
                          03=Pressure
    2.            c – Configuration
                          0=Disabled
                          1=Enabled
```

Typical Response Message, Display Format:

```
    <SOH>
    IG0A0000
    JAN 22, 1996  3:06 PM

    Display Setup – All Sensors – Line Pressure

    Field Name                 Configuration

    Sensor Label            : Enabled
    Alarm Condition Icon    : Disabled
    Pressure                : Enabled
    <ETX>
```

Typical Response Message, Computer Format:

```
    <SOH>iG0A00YYMMDDHHmmNNFFc...FFc&&CCCC<ETX>
```

Notes:
```
    1.      YYMMDDHHmm – Current Date and Time
    2.            NN – Number of Fields To Follow
    3.            FF – Field
    4.           c – Configuration
                      0=Disabled
                      1=Enabled
    5.            && – Data Termination Flag
    6.          CCCC – Message Checksum
```

        Function Code: G0B   Version 1
        Function Type: Set Display Setup – User Defined Tab Label

      Command Format: **Inquire:**
        Display: <SOH>SG0B00TTaaaaaaaaaaaaaaa   <SOH>IG0B00TT
      Computer: <SOH>sG0B00TTaaaaaaaaaaaaaaa   <SOH>iG0B00TT

Notes:
    1.   TT – User Defined Tab Number (01 – 03)
    2.   a – 15 ASCII characters [20h-7Eh]

Typical Response Message, Display Format:

  <SOH>
  IG0B0001
  JAN 22, 1996 3:06 PM

  Display Setup – User Defined Tab Label

  # Tab Label
  1 User Defined 1
  <ETX>

Typical Response Message, Computer Format:

  <SOH>iG0B00YYMMDDHHmmTTaaaaaaaaaaaaaaa&&CCCC<ETX>

Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT – User Defined Tab Number
    3.   a – 15 ASCII characters [20h-7Eh]
    4.   && – Data Termination Flag
    5.   CCCC – Message Checksum

Function Code: G0C   Version 1
Function Type: Set Display Setup – User Defined Tab Configuration

Command Format: **Inquire:**
    Display: <SOH>SG0C00TTpiDDdd   <SOH>IG0C00TT
    Computer: <SOH>sG0C00TTpiDDdd   <SOH>iG0C00TT

Notes:
1.   TT – User Defined Tab Number (01 – 03)
2.   p – Page Number (from 1 – 3, following the specified fill rules for User Defined Tabs)
3.   i – Index Position of Widget on Page (1 – 6 (7.4 LCD) or 8 (10.4 LCD)). Position on a Page is calculated from Left-to-Right and then Top-to-Bottom.
4.   DD – Device Type (decimal), from the following list:
            00=No Device (cell de-assignment)
            02=Tank
            03=Liquid Sensor
            04=Vapor Sensor
            07=Ground Water Sensor
            08=Type-A (2-Wire CL) Sensor
            12=Type-B (3-Wire CL) Sensor
            59=MAG Sensor
            63=Line Pressure Sensor
5.   dd – Device Number (decimal, 00 is 'no device' (cell de-assignment))

Typical Response Message, Display Format:

```
<SOH>
IG0C0001
JAN 22, 1996  3:06 PM

Display Setup – User Defined Tab Configuration

User Defined Tab 1: User Defined 1

Page 1

Index    #     Device Type            Device Label
------ -----  --------------------   --------------------
   1   T  1   Tank                   Premium
   2         No Device
   3   T  2   Tank                   Regular Unleaded
   4   L  1   Liquid Sensor          Liq Sens 1 Lbl
   5   Ms 1   MAG Sensor             MAG Sensor 1
   6         No Device
<ETX>
```

Notes:
1.   Index – Index Position of Widget on Page (defined above)

Function Code G0C Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iG0C00YYMMDDHHmmTTPpWiDDdd...iDDdd
                    pWiDDdd...iDDdd&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - User Defined Tab Number (01 – 03)
3.   P - Number of Pages to Follow
4.   p - Page Number (from 1 – 3)
5.   W - Number of Widget Definitions to Follow (6 (7.4 LCD) or 8 (10.4 LCD))
6.   i - Index Position of Widget on Page (1 – 6 (7.4 LCD) or 8 (10.4 LCD)).
7.   DD - Device Type (decimal), from the following list:
   - 00=No Device (empty or de-assigned cell)
   - 02=Tank
   - 03=Liquid Sensor
   - 04=Vapor Sensor
   - 07=Ground Water Sensor
   - 08=Type-A (2-Wire CL) Sensor
   - 12=Type-B (3-Wire CL) Sensor
   - 59=MAG Sensor
   - 63=Line Pressure Sensor
8.   dd - Device Number (decimal, 00 is 'no device' (empty or de-assigned cell))
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

Function Code: G0D   Version 1
Function Type: Set System Status – User Defined Tab Status Report

Command Format:
      Display: <SOH>SG0D00TT
   Computer: <SOH>sG0D00TT

Notes:
   1.   TT - User Defined Tab Number (01 – 03)

Typical Response Message, Display Format:
```
<SOH>
IG0D0001
JAN 22, 1996  3:06 PM

Display Setup – User Defined Tab Configuration

User Defined Tab 1: User Defined 1

Current Inventory Report - Configured Tanks:

Fuel       Fuel TC    Ullage    Ullage      Fuel     Water     Water     Fuel
Volume     Volume     100%       xx%       Height    Height    Volume    Temp

Index 11 - Tank 2: Regular Unleaded
5329       5413       4699      3699       48.97     0.00      0.00      37.39

Index 13 - Tank 12: Supreme Unleaded
11375      5413       11413     2697       52.36     0.00      0.00      43.39


Sensor Status Report - Configured Sensors:

Index    #      Device Type      Status
------ -----   -------------   --------
   2   Ms  1   Mag             Normal
   4   Ms  3   Mag             Water Alarm
   8   L   2   Liquid          Setup Data Warning
  16   L   1   Liquid          Normal
<ETX>
```

Notes:
   1.Index -Index Position of Widget on Page (defined above)

Function Code G0D Notes: (Continued)

Typical Response Message, Computer Format:

```
<SOH>iG0D00TTYYMMDDHHmmPpWiDDdd...iDDdd
                  pWiDDdd...iDDdd&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   TT - User Defined Tab Number (01 – 03)
3.   P - Number of Pages to Follow
4.   p - Page Number (from 1 – 3)
5.   W - Number of Widget Definitions to Follow (6 (7.4 LCD) or 8 (10.4 LCD))
6.   i - Index Position of Widget on Page (1 – 6 (7.4 LCD) or 8 (10.4 LCD)).
7.   DD - Device Type (decimal), from the following list:
                  00=No Device (empty or de-assigned cell)
                  02=Tank
                  03=Liquid Sensor
                  04=Vapor Sensor
                  07=Ground Water Sensor
                  08=Type-A (2-Wire CL) Sensor
                  12=Type-B (3-Wire CL) Sensor
                  59=MAG Sensor
                  63=Line Pressure Sensor
8.   dd - Device Number (decimal, 00 is 'no device' (empty or de-assigned cell))
9.   && - Data Termination Flag
10.   CCCC - Message Checksum

7.7 DEVICE VR-BUS CONFIGURATION

Function Code: N01   Version 1
Function Type: Set Device VR-BUS Address

Command Format: **Inquire:**
    Display: <SOH>SN01TTDDaaaaaaaaaaaaaaaaaaaa...   <SOH>IN01TTDD
   Computer: <SOH>sN01TTDDaaaaaaaaaaaaaaaaaaaa...   <SOH>iN01TTDD

Notes:
1.   TT - Device Number (Decimal)
                        Set command 00=clear all devices
                        Inquire command 00=read all devices
2.   DD - Device Type (Decimal)
                        Set command valid for single device type only
                        Inquire command 00= all device types (see table below)
3.   TTDD - Not supported – TTDD=0000 (Decimal)
                        For all devices (TT=00), a device type must be given
                        For all device types (DD=00), a device number must be
                        given.
4.   aaa...aaa - Device Address (All ASCII 20h-7Eh) ("0" clears the address)

Typical Response Messages, Display Format:

```
<SOH>
IN0100
JAN 22, 2009  3:16 PM

GRND_H2O_DEVICE_TYPE ADDRESSES

         PRIMARY          SECONDARY
DEVICE   ADDRESS           ADDRESS
 1       B2.S1.1           B2.S1.2
 2       B2.S1.3           B2.S1.4
 3       B2.S1.5           B2.S1.6
 4       (not assigned)


MAG PROBE DEVICE TYPE ADDRESSES

         PRIMARY
DEVICE   ADDRESS
 1       B1.S1.1
 2       B1.S1.2
 3       B1.S1.3
 4       (not assigned)
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iN01TTYYMMDDHHmmDDTTMMaaaaaaaaaaaaaaaaNNbbbbbbbbb...
                  DDTTMMaaaaaaaaaaaaaaaaNNbbbbbbbbb&&CCCC<ETX>
```

Notes:
1. YYMMDDHHmm - Current Date and Time
2.   TT - Device Number (hex, 00=all)
3.   DD - Device Type (hex)
4.   MM - Number of characters in primary address (hex)
5.   aaa…aaa - VR-BUS primary Address (All ASCII 20h-7Eh)
6.   NN - Number of characters in secondary address (hex)
7.   bbb…bbb - VR-BUS secondary address (All ASCII 20h-7Eh)
8.   && - Data Termination Flag
9.   CCCC - Message Checksum

Function Code N01 Notes: (Continued)

```
Device   Secondary
 Type    Address                              Description
------   ---------   -------------------------------------------------------------
  00                 All Device Types
  03                 LIQUID_DEV_TYPE,            Legacy Liquid Sensor
  04        Yes      VAPOR_DEV_TYPE,             Legacy Vapor Sensor
  05                 INPUT_DEV_TYPE,             Power Side Input - External
  07        Yes      GRND_H2O_DEV_TYPE,          3 WIRE RESISTANCE
  08                 COSENS_DEV_TYPE,            2 WIRE CURRENT LOOP
  11                 RELAY_DEV_TYPE,             RELAY
  12        Yes      CL3_DEV_TYPE,               3 WIRE CURRENT LOOP and RESISTANCE
  56                 MAG_PROBE_DEV_TYPE,         Magnetostrictive Probe
  57                 AIR_FLOWMETER_DEV_TYPE,     ISD Air/Vapor Flow Meter
  58                 ULLAGE_PRESSURE_DEV_TYPE,   ISD Ullage Pressure Sensor
  59                 MAG_SENSOR_DEV_TYPE,        MAG Sensor
  60                 VAC_SENSOR_DEV_TYPE,        INTERSTITIAL VACUUM SENSOR
  61                 ATMP_SENSOR_DEV_TYPE,       ATMOSPHERIC PRESSURE SENSOR
  62                 HC_SENSOR_DEV_TYPE,         ISD HYDROCARBON SENSOR
  63                 LINE_PRESSURE_SENSOR_DEV_TYPE, Line Pressure Sensor for PLLD
  78                 MDIM_DEV_TYPE,              MDIM
```

Function Code: N02   Version 1
Function Type: Get Available VR-BUS Addresses

Command Format:
        Display: <SOH>IN02TTDD
       Computer: <SOH>iN02TTDD

Notes:
1. TT – Device Number (00=all devices)
2. DD – Device Type (decimal – Must enter Device Type)

Typical Response Messages, Display Format:

    <SOH>
    IN0201
    JAN 22, 2007 3:16 PM

    MAG_PROBE_DEV_TYPE DEVICE TYPE ADDRESSES

    AVAILABLE ADDRESSES
    B1.S1.1
    B1.S1.5
    B1.S1.6
    <ETX>

Typical Response Message, Computer Format:

    <SOH>iN02TTYYMMDDHHmmDDNNmmaaaaaaaaaaaaaaaaaaaaa...
                       mmaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   NN – Number of Devices (hex)
3.   DD – Device Type (hex)
4.   mm – Number of characters in Device Address (hex)
5.   a – VR-BUS Address (All ASCII 20h-7Eh)
6.   && – Data Termination Flag
7.   CCCC – Message Checksum

Function Code: N03   Version 1
Function Type: Get All Device Directory

Command Format:
Display: <SOH>IN0300
Computer: <SOH>iN0300

Typical Response Messages, Display Format:

```
<SOH>
IN0300
SEP 26, 2008 09:45 AM

All Device Directory

ADDRESS          DEVICE TYPE                               SN           ENABLED
B1.S1            INPUT/OUTPUT MODULE   - 14                0000485758   YES
B1.S1.2          EXTERNAL INPUT - Low Voltage              0000000005   YES
B1.S2            UNIVERSAL SENS MODULE  - 16               0000462153   YES
B1.S2.1          MAG PROBE                                 0000176011   NO
B8.S5            INPUT/OUTPUT MODULE - 0                   4278190081   YES
B8.S5.1          RELAY                                     3435973836   NO
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iN0300YYMMDDHHmmNNDDccccSSSSSSSSSSennaaaaaaaaaaaaaaaaaaaaa...
                   DDccccSSSSSSSSSSennaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   NN – Number of Devices (hex)
3.   DD – Device Type (hex)
                   See explanation for "AA" in Function i10100
4.   cccc – Circuit Code (hex)
5.   SSSSSSSSSS – 10 character serial number string
6.   e – Enabled/Disabled (1/0)
7.   nn – Number of characters in Device Address (hex)
8.   aaaaa... – VR-BUS Address (All ASCII [20h-7Eh])
9.   && – Data Termination Flag
10.   CCCC – Message Checksum

Function Code: N04   Version 2
Function Type: Get Hardware Configuration

Command Format:
    Display: <SOH>IN0400
    Computer: <SOH>iN0400

Typical Response Messages, Display Format:

```
<SOH>
IN0400
SEP 26, 2008 09:45 AM

HARDWARE CONFIGURATION

                       BOARD        SERIAL       HW     FIRMWARE    SW
ADDRESS  MODULE TYPE   PART NUMBER  NUMBER    BUILD DATE VERSION  BUILD DATE
-------  ------------- -----------  --------- ---------- -------- ----------
B1.S1    USC - 16      332812-001   0000656641 2006/05/12 001-AYC 2006/01/01
B1.S2    USC - 16      332812-001   0000656642 2006/05/12 001-AYC 2006/01/01
B1.S3    USC - 16      332812-001   0000656643 2006/05/12 001-AYC 2006/01/01
B1.S4    I/O - 8       332813-001   0000656804 2006/05/12 001-AYC 2006/01/01
B1.S5    I/O - 4       332813-001   0000656805 2006/05/12 001-AYC 2006/01/01
B8.S5    I/O - 1       332813-001   4278190081 2006/01/01
Slot 1   Dual RS-232   0332913-001  0007121234 2012/07/01
Slot 2   Fax Modem-alt 0332913-001  0007121234 2012/07/01
Slot 5   USB Ethernet  0332913-001  0009140197 2004/09/01
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iN0400YYMMDDHHmmNNDDSSSSSSSSjjaa...aakkbb...bbnncc...cc
                  DDSSSSSSSSjjaa...aakkbb...bbnncc...cc
                  &&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   NN - Number of Devices (hex)
3.   DD - Module Type (ASCII hex)
        See explanation for "AA" in Function i10100
4.   SSSSSSSS - Serial Number (ASCII hex long)
5.   jj - Number of character in firmware version string (hex)
6.   aa...aa - Firmware version (All ASCII [20h-7Eh])
7.   kk - Number of characters in HW Build Date string (hex)
8.   bb...bb - Hardware Build Date string (All ASCII [20h-7Eh])
9.   nn - Number of characters in Device Address (hex)
10.   cc...cc - VR-BUS Address (All ASCII [20h-7Eh])
11.   && - Data Termination Flag
12.   CCCC - Message Checksum

Function Code: N05   Version 2
Function Type: Get Extended Device Directory

Command Format:
    Display: `<SOH>IN0500`
    Computer: `<SOH>iN0500`

Typical Response Messages, Display Format:

```
<SOH>
IN0500
SEP 26, 2008 09:45 AM

EXTENDED DEVICE DIRECTORY

                                  SERIAL      DATE
ADDRESS    MODULE/DEVICE TYPE     NUMBER      CODE       STATE
-------    ------------------     ----------  --------   ---------------
B1.S1      UNIVERSAL SENS MODULE  0011111111             IN SERVICE
B1.S2      INPUT/OUTPUT MODULE     0022222222             IN SERVICE
B1.S3      UNIVERSAL SENS CMUX    0033333333             IN SERVICE
B1.S1.1    MAG PROBE              0011110001  09/34-01   IN SERVICE
B1.S1.2    MAG PROBE              0011110002  09/34-01   IN SERVICE
B1.S1.3    MAG PROBE              0011110003  09/34-01   IN SERVICE
B1.S2.1    EXTERNAL INPUT         0022220001  09/34-01   OUT OF SERVICE
B1.S2.2    EXTERNAL INPUT         0022220002  09/34-01   OUT OF SERVICE
B1.S2.3    EXTERNAL INPUT         0022220003  09/34-01   OUT OF SERVICE
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iN0500YYMMDDHHmmNNDDccccSSSSSSSSSSyywwrrennaa...aa
                  DDccccSSSSSSSSSSyywwrrennaa...aa
                  &&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm - Current Date and Time
2.   NN - Number of Devices (hex)
3.   DD - Module/Device Type (hex)
        See explanation for "AA" in Function i10100
4.   cccc - Circuit Code (hex)
5.   SSSSSSSSSS - 10 character Serial Number (string)
6.   yywwrr - Date Code (decimal)
        yy = year
        ww = week
        rr = revision
7.   e - Module Device State
        0=Out of Service
        1=In Service
8.   nn - Number of characters in Device Address (hex)
9.   aa...aa - VR-BUS Address (All ASCII [20h-7Eh])
10.   ee...ee - VR-BUS Address (All ASCII [20h-7Eh])
11.   && - Data Termination Flag
12.   CCCC - Message Checksum

Function Code: N06   Version 2
Function Type: Get Device Assignments

Command Format:
    Display: <SOH>IN0600
    Computer: <SOH>iN0600

Typical Response Messages, Display Format:

```
<SOH>
IN0600
SEP 26, 2008 09:45 AM

DEVICE ASSIGNMENTS

                MOD/DEV          PRIMARY                 SECONDARY
M/ER ADDRESS     TYPE          ASSIGNMENT                ASSIGNMENT
M    B0.S1       USM
     B0.S1.1     Probe    Pb 1:Probe 1 Label      T  1:Regular
! 2  B0.S1.2     Probe    Pb 2:Probe 2 Label      !
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iN0600YYMMDDHHmmNNDDcccceePPSSnnaa...aa
                DDcccceePPSSnnaa...aa&&CCCC<ETX>
```

Notes:
    1.   YYMMDDHHmm - Current Date and Time
    2.   NN - Number of Devices (hex)
    3.   DD - Module/Device Type (hex)
                    See explanation for "AA" in Function i10100
    4.   cccc - Circuit Code (hex)
    5.   ee - Error Code
    6.   PP - Primary Assignment Device Type
    7.   SS - Secondary Assignment Device Type
    8.   nn - Number of characters in Device Address (hex)
    9.   aa...aa - VR-BUS Address (All ASCII [20h-7Eh])
    10.   && - Data Termination Flag
    11.   CCCC - Message Checksum

```
        Function Code: N07                                        Version 2
        Function Type: Comm Diagnostics Counters

     Command Format:                                               Inquire:
        Display: <SOH>SN07PP149                              <SOH>IN07PP
       Computer: <SOH>sN07PP149                              <SOH>iN07PP
```

Notes:
1. The Inquiry portion of the command returns all counter information. The Set portion will reset the counters.
2. PP – Comm Port Number (Decimal, 00=all)

Typical Response Messages, Display Format:

```
<SOH>
IN0700
SEP 26, 2008 09:45 AM

COMM DIAGNOSTICS

COMM      BYTES     BYTES    PARITY    OVERRUN   FRAMING     BREAK       RESET
TYPE     RECEIVED    SENT    ERRORS    ERRORS    ERRORS      INTS     DATE AND TIME

Co 1: RS232 Card: DIM 1 Label
          123456    123456    123456    123456    123456    123456  12/18/08 09:45

Co 2: CDIM Card: DIM 2 Label
          123456    123456    123456    123456    123456    123456  12/18/08 13:50
<ETX>
```

Typical Response Message, Computer Format:

```
<SOH>iN07PPYYMMDDHHmmPPDDNNFFFFFFFF...FFFFFFFFyymmddhhmm
                    DDNNFFFFFFFF...FFFFFFFFyymmddhhmm&&CCCC<ETX>
```

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   PP – Comm Port Number (Decimal, 00=All)
3.   DD – Comm Device Type (hex)
4.   NN – Number of eight character Data Fields to follow (hex)
5.   FFFFFFFF – ASCII Hex Long
   1. Bytes Received
   2. Bytes Sent
   3. Parity Errors
   4. Overrrun Errors
   5. Framing Errors
   6. Break Interrupts
6.   yywmmddhhmm – Reset Date and Time
7.   && – Data Termination Flag
8.   CCCC – Message Checksum

8.0 FUNCTION CODE SUMMARY

CONTROL FUNCTIONS (7.1)

Code	Version			Feature	Function
	450	4	450Plus		
001	N/A	1	5		System Reset
002	N/A	N/A	N/A		Clear Power Reset Flag (obsolete)
003	2	1	5		Remote Alarm Reset
010	1	1	5		Cancel Autodial Computer Mode Session
031	N/A	N/A	N/A		Confirm Clear Function (obsolete)
051	N/A	N/A	N/A		Clear In-Tank Delivery Reports (obsolete)
052	1	1	5	SLD	Start In-Tank Leak Detect Test
053	1	1	5	SLD	Stop In-Tank Leak Detect Test
054	1	1	5	CSLD	Delete CSLD Rate Table
081	1	N/A	5	PLLD	Start Pressure Line Leak Test (3.00 GPH)
082	1	N/A	5	PLLD	Stop Pressure Line Leak Test
087	1	N/A	5	PLLD	Start Pressure Line Leak Test by Type
089	1	N/A	5	PLLD	Pressure Line Leak Pressure Offset Reset
091	1	1	5		Close Current Shift
092	1	N/A	5	PLLD	Start Pressure Line Leak Profile Line Test
093	1	N/A	5	PLLD	Stop Pressure Line Leak Profile Line Test
094	1	N/A	5	PLLD	Recalculate Press Line Leak Profile Bulk Modulus
09C	N/A	6	6		Manually Start/Stop Timed Sudden Loss Detection
09D	N/A	6	6		Restart Timed Sudden Loss Detection

OPERATIONAL REPORTS (7.2)

SYSTEM REPORTS (7.2.1)

Code	Version			Feature	Function
	450	4	450Plus		
101	1	1	5		System Status Report
102	N/A	N/A	N/A		System Configuration Report (obsolete use **N03**)
110	1	1	5		Combined Alarm History Report
111	1	1	5		Priority Alarm History Report
112	1	1	5		Non-Priority Alarm History Report
113	1	1	5		Active Alarm Report

Code	Version			Feature	Function
	450	4	450Plus		
114	1	1	5		Cleared Alarm Report
11C	1	1	5		Extended Alarm Reports – Date Based
11D	1	1	5		Extended Alarm Reports – Date/Time Based
11E	1	1	5		Extended Alarm Reports II – Date/Time Based
11F	1	1	5		Extended Sensor Status Report – Date/Time Based
122	N/A	5	5		Setup Warning Detailed Information

IN-TANK REPORTS (7.2.2)

Code	Version			Feature	Function
	450	4	450Plus		
201	1	1	5		In-Tank Inventory Report
202	1	1	5		In-Tank Delivery Report
203	1	1	5	SLD/ CSLD	In-Tank Leak Detect Report
204	1	1	5		In-Tank Shift Inventory Report
205	1	1	5		In-Tank Status Report
206	1	1	5		In-Tank Alarm History Report
207	1	1	5	SLD/ CSLD	In-Tank Leak Test History Report
208	1	1	5	SLD/ CSLD	In-Tank Leak Test Results Report
209	1	1	5	SLD/ CSLD	Enhanced In-Tank Leak Detect Report
20A	4	1	5	BIR	HRM Adjusted Delivery Report
20B	2	1	5	BIR	BIR Adjusted Delivery Report
20C	1	1	5		In-Tank Most Recent Delivery Report
20D	N/A	5	5		In-Tank Stick Height Report
20F	1	1	5		Extended Delivery Report – Date/Time Based
20G	1	1	5	SLD	Static Leak Test Passed Report
20H	1	1	5	SLD	Static Leak Test History
20I	1	1	5		Enhanced In-Tank Inventory Report
20L	2	1	5	BIR	BIR Adjusted Delivery Report – Date/Time Based
20M	2	1	5		In-Tank Shift Inventory History Report – Date/Time Based
20N	3	1	5		In-Tank Mass/Density Shift Inventory Report
20P	4	1	5	BIR	HRM Adjusted Delivery Report – Date/Time Based
211	1	1	5		Tank Chart Report
212	1	1	5	SLD/	In-Tank Leak Test History Report 2

Code	Version			Feature	Function
	450	4	450Plus		
				CSLD	
213	1	1	5		In-Tank Extended Standard Delivery Report
214	3	1	5		In-Tank Mass/Density Inventory Report
215	3	1	5		In-Tank Mass/Density Delivery Report
217	1	1	5		Tank Profile
21A	1	1	5		In-Tank Inventory Report With 90/95% Ullage
21B	2	1	5	BIR	BIR Extended Adjusted Delivery Report
21C	1	1	5		In-Tank Most Recent Delivery Report with Manifolded Results
21D	1	1	5		In-Tank Current Siphon Manifolded Total Volumes
21E	2	1	5		Hourly Inventory Volume
21F	2	1	5		Manual Shift Inventory Snapshot Volume
21G	2	1	5		Tank Height Status
21H	2	1	5	Accuchart	Time Ordered Chart Sales Comparison
21I	2	1	5	Accuchart	Time Ordered Chart Delivery Comparison
21J	2	1	5	Accuchart	Histogram Comparison of Tank Charts
21K	2	1	5	Accuchart	Error Plot Comparison of Tank Charts
21L	2	1	5		Manual Delivery Report
21M	N/A	1	5		Regulator Tank Chart Report
21N	N/A	1	5		Tank Chart Report with Chart ID Number
221	2	1	5	BIR	Ticketed Delivery Report
222	2	1	5	BIR	Bill of Lading Report
225	2	1	5	BIR	Periodic Delivery Variance Report
226	2	1	5	BIR	Weekly Delivery Variance Report
227	2	1	5	BIR	Daily Delivery Variance Report
228	N/A	6	6		Exception Report for Timed Sudden Loss Detection
229	N/A	6	6		Period Report for Timed Sudden Loss Detection
22I	2	1	5	BIR	Ticketed Delivery Daily Report
22J	2	1	5	BIR	Delivery Ticket History Report
231	N/A	1	5		In-Tank Full Inventory Report
233	3	1	5		Density Offset History Report
234	3	1	5		In-Tank Mass/Density Inventory Report 2
235	3	1	5		In-Tank Mass/Density Delivery Report 2
237	4	1	5		In-Tank Product Inventory Report
238	4	1	5		In-Tank Siphon Manifolded Inventory Report
239	4	1	5	BIR	Manifolded Delivery Report with Sales Adjustment if BIR

Code	Version			Feature	Function
	450	4	450Plus		
					available
23A	4	2	5	BIR	Manifolded Delivery Report with Sales Adjustment if BIR available
23B	3	1	5	BIR	BIR Adjusted Mass/Density Delivery Report
251	1	1	5	CSLD	CSLD Results Report
2E3	1	1	5		In-Tank Inventory History Report
2E4	1	1	5		Extended In-Tank Inventory Report – Date/Time Based

SENSOR REPORTS (7.2.3)

Code	Version			Feature	Function
	450	4	450Plus		
301	1	1	5		Liquid Sensor Status Report
302	1	1	5		Liquid Sensor Alarm History Report
306	1	1	5		Vapor Sensor Status Report
307	1	1	5		Vapor Sensor Alarm History Report
311	1	1	5		Groundwater Sensor Status Report
312	1	1	5		Groundwater Sensor Alarm History Report
315	N/A	N/A	N/A		Smart Sensor Status Report (obsolete use **31B**)
316	N/A	N/A	N/A		Smart Sensor Alarm History Report (obsolete **31C**)
31B	1	1	5		MAG Sensor Status Report
31C	1	1	5		MAG Sensor Alarm History
322	N/A	5	5		Pump Relay Monitor Status Report
323	N/A	5	5		Pump Relay Monitor Alarm History Report
333	N/A	N/A	N/A		Smart Sensor Install Log (obsolete)
341	1	1	5		Type A (2 Wire CL) Sensor Status Report
342	1	1	5		Type A (2 Wire CL) Sensor Alarm History Report
346	1	1	5		Type B (3 Wire CL) Sensor Status Report
347	1	1	5		Type B (3 Wire CL) Sensor Alarm History Report
34B	N/A	N/A	N/A		Universal Sensor Status Report (obsolete)
34C	N/A	N/A	N/A		Universal Sensor Alarm History Report (obsolete)

LINE LEAK REPORTS (7.2.4)

Code	Version			Feature	Function
	450	4	450Plus		
373	1	N/A	5	PLLD	Pressure Line Leak Test Results (with 0.20 test data)

Code	Version			Feature	Function
	450	4	450Plus		
374	1	N/A	5	PLLD	Pressure Line Leak Test History (with 0.20 test data)
375	1	N/A	5	PLLD	Pressure Line Leak Test Results II (with 0.20 test data)
376	1	N/A	5	PLLD	Pressure Line Leak Passed Test Results
377	1	N/A	5	PLLD	Enhanced Pressure Line Leak Test History (with 0.20 test data)
381	1	N/A	5	PLLD	Pressure Line Leak Status
382	1	N/A	5	PLLD	Pressure Line Leak Alarm History Report
383	1	N/A	5	PLLD	Pressure Line Leak Test Results (0.10 test data only)
384	1	N/A	5	PLLD	Pressure Line Leak Test History (0.10 test data only)
385	1	N/A	5	PLLD	Pressure Line Leak Test Results (0.20 test data listed before 0.10 test data)

I/O DEVICE REPORTS (7.2.5)

Code	Version			Feature	Function
	450	4	450Plus		
401	1	1	5		Input Status Report
402	1	1	5		Input Alarm History Report
403	1	1	5		Input/Generator Alarm History Report
406	1	1	5		Relay Status Report
407	1	1	5		Input Diagnostics
408	1	1	5		Relay Diagnostics

SETUP FUNCTIONS & REPORTS (7.3)

SYSTEM SETUP (7.3.1)

Code	Version			Feature	Function
	450	4	450Plus		
501	1	1	5		Set Time of day
502	1	1	5		Set Shift Close Time 1, 2, 3, 4, 5, 6, 7, 8
503	1	1	5		Set Print Header Line 1, 2, 3, 4
504	N/A	N/A	N/A		Set System RS-232 Security Code (obsolete use **536**)
505	N/A	N/A	N/A		Set System Type & Language Flags (obsolete use **517**)
506	N/A	N/A	N/A		Set Periodic Test Needed Warning (obsolete use **546**)
507	N/A	N/A	N/A		Set Days Before Periodic Test Needed Warning (obsolete use **547**)
508	N/A	N/A	N/A		Set Days Before Periodic Test Needed Alarm (obsolete use **548**)
509	N/A	N/A	N/A		Set Annual Test Needed Warning (obsolete use **549**)
50A	N/A	N/A	N/A		Set Days Before Annual Test Needed Warning (obsolete use **54A**)

Code	Version			Feature	Function
	450	4	450Plus		
50B	N/A	N/A	N/A		Set Days Before Annual Test Needed Alarm (obsolete use **54B**)
50D	1	1	5		Set Print Temperature Compensation Flag
50E	1	1	5		Set Temperature Compensation Value
50F	N/A	N/A	N/A		Set System Date/Time Display Format (obsolete use **50J**)
50G	1	1	5		Set Header – Fax Sender Name
50H	1	1	5		Set Header – Fax Number
50I	1	1	5		Set Display Setup - Number Format
50J	1	1	5		Set Display Setup – Date & Time Format
50K	2	1	5		Set Inventory Maximum Number of Shifts per Day
50L	2	1	5		Inventory Shift Close Setup Report
50M	2	1	5		Delivery Setup Report
50N	2	1	5	BIR	Reconciliation Setup Report
511	2	1	5	BIR	Set BIR Shift Close Warning
512	2	1	5	BIR	Set BIR Daily Close Warning
514	1	1	5		Set H-Protocol Height/Volume Format
515	N/A	N/A	N/A	BIR	Set HRM/QPLD Monthly Printout (obsolete)
517	1	1	5		Set System Type & Language Flags
519	1	1	5	PLLD	Set PLLD & WPLLD Duration Before Precision Retest
51A	1	N/A	N/A		Set Enable/Disable Auto Daylight Saving Time
51B	1	N/A	N/A		Set Start/End Daylight Saving Date and Time (obsolete use **51S**)
51C	2	1	5	BIR	Set Ticketed Delivery Flag Enabled
51D	2	1	5	BIR	Set Ticketed Delivery Temperature Compensation Flag
51E	2	1	5	BIR	Set Ticketed Dellivery Close Day of Week
51F	1	1	5		Set Euro Protocol Prefix
51G	1	1	5		Set Enable/Disable System Setup Custom Help Flag
51H	1	N/A	N/A		Set Front Panel Security
51M	2	1	5		Set Delivery Method
51R	4	1	5	BIR	Set HRM Feature Enable Flag
51S	N/A	1	5		Set Time Zone
571	1	1	5		Set Enable/Disable User Ullage
572	1	1	5		Set User Ullage Percentage

COMMUNICATION SETUP (7.3.2)

Code	Version			Feature	Function
	450	4	450Plus		
520	N/A	N/A	N/A		Set Receiver Auto Dial Type and Start Time II (obsolete use **5P1** – **5P7**)
521	1	N/A	N/A		Set Receiver Configuration Flag (obsolete V2 use **872**)
522	1	N/A	N/A		Set Receiver Location Label (obsolete V2 use **874**)
523	N/A	N/A	N/A		Set Receiver Telephone Number (obsolete use **5G1** & **5G3** or **5H3**)
524	N/A	N/A	N/A		Set Receiver Dialing Destination Type (obsolete)
525	N/A	N/A	N/A		Set Receiver Port Number to Dial (obsolete use **5G5**, **5H5**, **5I5**, or **5J5**)
526	N/A	N/A	N/A		Set Receiver Retry Number (obsolete use **5G6**, **5H6**, **5I6**, **5J6**, or **5K6**)
527	N/A	N/A	N/A		Set Receiver Retry Delay Time (obsolete use **5G7**, **5H7**, **5I7**, **5J7**, or **5K7**)
528	N/A	N/A	N/A		Set Receiver Confirmation Report Flag (obsolete)
529	N/A	N/A	N/A		Set Fax Auto Dial Method (obsolete)
52A	N/A	N/A	N/A		Set Receiver Report List (obsolete)
52B	N/A	N/A	N/A		Set Receiver Auto Dial Type and Start Time (obsolete)
52C	N/A	N/A	N/A		Set Receiver Auto Dial On Alarms (obsolete)
52D	1	1	5		Autodial Alarm Status
52E	N/A	N/A	N/A		Set Delay for Autodial on Alarm Clear (obsolete)
52G	2	1	5	DIM	COMM DIM Setup Report
52H	2	1	5	DIM	Set COMM DIM Protocol
530	1	1	5		Beeper Enable/Disable
531	1	1	5		Set RS-232 End of Message

WARNING, ALARM, & AUTO-PRINT SETUP (7.3.3)

Code	Version			Feature	Function
	450	4	450Plus		
536	1	1	5		Set RS-232 Security Code per Port
537	1	1	5		Set Display Format RS-232 ETX per Port
538	1	1	5		Set Computer Format RS-232 ETX per Port
53A	2	1	5		Set Shift Close Method
545	3	1	5		Set TC Density Enable
546	1	1	5		Set Tank Periodic Test Needed Warning
547	1	1	5		Set Days Before Tank Periodic Test Needed Warning
548	1	1	5		Set Days Before Tank Periodic Test Needed Alarm
549	1	1	5		Set Tank Annual Test Needed Warning
54A	1	1	5		Set Days Before Tank Annual Test Needed Warning

Code	Version			Feature	Function
	450	4	450Plus		
54B	1	1	5		Set Days Before Tank Annual Test Needed Alarm
54C	1	1	5	CSLD	Set CSLD Evaporation Reid Vapor Pressure Chart
553	1	N/A	5	PLLD	Set Line Re-Enable Method
554	1	N/A	5	PLLD	Set Periodic Line Leak Test Auto-Confirm
555	1	N/A	5	PLLD	Set Annual Line Leak Test Auto-Confirm
556	1	N/A	5	PLLD	Set Line Periodic Test Needed Warning
557	1	N/A	5	PLLD	Set Days Before Line Periodic Test Needed Warning
558	1	N/A	5	PLLD	Set Days Before Line Periodic Test Needed Alarm
559	1	N/A	5	PLLD	Set Line Annual Test Needed Warning
55A	1	N/A	5	PLLD	Set Days Before Line Annual Test Needed Warning
55B	1	N/A	5	PLLD	Set Days Before Line Annual Test Needed Alarm
564	1	1	5		Set Ullage
56E	2	1	5		Set Manual Close Timeout in Minutes
577	2	1	5		Set Inventory Close Start Time
578	2	1	5		Set Inventory Reporting Interval
579	2	1	5		Set Tank Idle Delivery Enable/Disable
57B	N/A	6	6		Set Timed Sudden Loss Monitoring Schedule
580	2	1	5		Get Inventory Storage Length
581	4	1	5		Set Alarm Filter
5BC	N/A	N/A	N/A		Set Receiver Auto Dial on Alarm II (obsolete use **5P1**, **5P4**, & **5P7**)
5BD	1	1	5		Set Enable/Disable Custom Alarms
5BE	N/A	N/A	N/A		Set Custom Alarm Labels (obsolete use **5BF**)
5BF	1	1	5		Set Custom Alarm Label, device number, and indications
5E2	N/A	N/A	N/A		Set Inventory Record Time 1, 2, 3, 4 (obsolete)

ADDRESS BOOK SETUP (7.3.4)

Code	Version			Feature	Function
	450	4	450Plus		
5G1	1	1	5		Add Contact
5G2	1	1	5		Delete Contact
5G3	1	1	5		Set Contact Modem Number
5G4	1	1	5		Set Contact Modem Dial-Out String
5G5	1	1	5		Set Contact Modem Communication Device Number
5G6	1	1	5		Set Contact Modem Retry Count

Code	Version			Feature	Function
	450	4	450Plus		
5G7	1	1	5		Set Contact Modem Retry Delay Time
5G8	1	1	5		View Full Contact Info
5H3	1	1	5		Set Contact FAX Modem Number
5H4	1	1	5		Set Contact FAX Dial-Out String
5H5	1	1	5		Set Contact FAX Communication Device Number
5H6	1	1	5		Set Contact FAX Retry Count
5H7	1	1	5		Set Contact Modem Retry Delay Time
5I3	1	1	5		Set Contact Remote TCP/IP Address
5I4	1	1	5		Set Contact Remote TCP/IP Port Number
5I5	1	1	5		Set Contact Local TCP/IP Communication Device Number
5I6	1	1	5		Set Contact TCP/IP Retry Count
5I7	1	1	5		Set Contact TCP/IP Retry Delay Time
5J4	1	1	5		Set Contact Satellite Connection String
5J5	1	1	5		Set Contact Satellite Communication Device Number
5J6	1	1	5		Set Contact Satellite Mode Retry Count
5J7	1	1	5		Set Contact Satellite Retry Delay Time
5K3	1	1	5		Set Contact E-Mail Address
5K6	1	1	5		Set Contact E-Mail Mode Retry Count
5K7	1	1	5		Set Contact E-Mail Retry Delay Time

AUTOMATIC EVENTS SETUP (7.3.5)

Code	Version			Feature	Function
	450	4	450Plus		
5P1	1	1	5		Add/Delete AutoEvent
5P2	1	1	5		Get Number of Auto Events
5P3	1	1	5		Set Auto Event Trigger: Time Based
5P4	1	1	5		Set Auto Event Trigger: Event Based
5P5	1	1	5		Set Auto Event Action: Device Task
5P6	1	1	5		Set Auto Event Action: Print Task
5P7	1	1	5		Set Auto Event Action: Auto Connect Task
5Q1	1	1	5		Automatic Events : Task Log

IN-TANK SETUP (7.3.6)

Code	Version			Feature	Function
	450	4	450Plus		
601	1	1	5		Set Tank Configuration
602	1	1	5		Set Tank Product Label
603	1	1	5		Set Tank Product Code
604	1	1	5		Set Tank 1 Point Full Height Volume

Code	Version			Feature	Function
	450	4	450Plus		
605	1	1	5		Set Tank 4 Point Full, 3/4, 1/2, 1/4 Volumes
606	1	1	5		Set Tank 20 Point Full, 95%, 90%,...Volumes
607	1	1	5		Set Tank Diameter
608	1	1	5		Set Tank Tilt
609	1	1	5		Set Tank Thermal Expansion Coefficient
60A	1	1	5		Set Tank Linear Calculated Full Volume
60B	N/A	5	5		Set Tank Stick Height Function Enable
60C	N/A	5	5		Set Tank Stick Height Offset
60E	1	1	5		Set Tank Programmable Float Parameters
60F	1	1	5		Set Tank Probe Offset
60G	1	1	5	SLD	Set Manual Tank Leak Test
60K	1	1	5		Set Probe Number Installed in Tank
60L	1	1	5		Get Tank Setup Warning Messages
60M	2	1	5		Set Product Label
60N	2	1	5		Product Setup
60O	2	1	5		Set Product Available in Tank
610	1	1	5		Set Tank Delivery Delay
611	1	1	5	SLD/ CSLD	Set Tank Leak Test Type & Start Time
612	1	1	5		Set Tank SIPHON Manifolded Partners
613	1	1	5	CSLD	Set CSLD Probability of Detection
614	1	1	5	CSLD	Set CSLD Climate Factor
615	2	1	5	BIR	Set BIR Meter Data Present
616	2	1	5	Accuchart	Set Accuchart Update Scheduling
618	1	1	5	CSLD	Set Tank CSLD Evaporation Compensation
619	1	1	5	CSLD	Set Tank Stage II Vapor Recovery
61A	1	1	5	SLD	Set In-Tank Leak Test Early Stop
61B	1	1	5	SLD	Set In-Tank Static Gross Test Auto-Confirm
61C	N/A	N/A	N/A	CSLD	Set CSLD Report Only Mode (obsolete)
61D	N/A	N/A	N/A		Set Tank LINE Manifolded Partners (obsolete)
61H	2	1	5	Accuchart	Set Update Apply Accuchart Chart Dates
61I	2	1	5	Accuchart	Set Maximum Accuchart Calibration Period Days
61J	2	1	5	Accuchart	Set Exclude Calibration Dates
61K	2	1	5	Accuchart	Set Enable Accuchart Warnings
61L	2	1	5	Accuchart	Set Accuchart Chart Management
621	1	1	5		Set Tank Low Level Limit
622	1	1	5		Set Tank High Level Limit

Code	Version			Feature	Function
	450	4	450Plus		
623	1	1	5		Set Tank Overfill Level Limit
624	1	1	5		Set Tank High Water Level Limit
625	1	1	5		Set Tank Sudden Loss Limit
626	1	1	5		Set Tank Leak Alarm Limit
627	1	1	5		Set Tank High Water Warning Limit
628	1	1	5		Set Tank Maximum Volume Limit
629	1	1	5		Set Tank Delivery Required Limit
62A	1	1	5	SLD	Set Tank Annual Leak Test Minimum Volume
62B	N/A	N/A	N/A		Set Tank Last Annual Test (obsolete)
62C	1	1	5	SLD	Set Tank Periodic Test Type
62D	1	1	5	SLD/ CSLD	Set Enable/Disable Tank Leak Test Fail Alarms
62F	1	1	5		Set MAG Probe Float Size
62G	2	1	5		Create Tank Chart
630	1	1	5	SLD	Set Tank Leak Test Notify
631	N/A	N/A	N/A	SLD	Set Tank Leak Test Averaging (obsolete)
632	1	1	5	SLD	Set Tank Test Siphon Break
633	N/A	N/A	N/A		Set Leak Test Report Type (obsolete)
634	4	1	5	BIR	Set Tank HRM Reconciliation Warning Limit
635	4	1	5	BIR	Set Tank HRM Reconciliation Alarm Limit
636	1	1	5	SLD	Set Tank Periodic Leak Test Minimum Volume
639	2	1	5	Accuchart	Set Tank AccuChart End Shape Type and Factor
63A	1	1	5		Set Tank Low Level Threshold for Sequential Line Manifold
63C	3	1	5		Set Tank Multi Point Full Volume
63D	N/A	5	5		Set Tank Vapor Loss Factor
63E	3	1	5		Set Tank Multi Point Heights and Volumes
63H	2	1	5	Accuchart	Set Accuchart Delete Chart
641	3	1	5		Set Density Code
642	3	1	5		Set Tank Water Alarm Filter Level
644	3	1	5		Set Probe Density Float Serial Number
645	3	1	5		Set Tank GOST Volume Correction Enable
648	4	1	5		Set Probe Water Minimum
64B	4	1	5		Set Tank Water Alarm Filter Delay
671	3	1	5		Set Tank Density High Limit
672	3	1	5		Set Tank Density Low Limit
6A4	1	1	5		Set Tank 1 Point Full Height Volume for Tall Tank
6A5	1	1	5		Set Tank 4 Point Full, 3/4, 1/2, 1/4 Volumes for Tall Tank

Code	Version			Feature	Function
	450	4	450Plus		
6A6	1	1	5		Set Tank 20 Point Full, 95%, 90%,...Volumes for Tall Tank
6A7	1	1	5		Set Tank Diameter for Tall Tank
6AA	1	1	5		Set Tank Linear Calculated Full Volume for Tall Tank
6AF	1	1	5		Set Tank Probe Offset for Tall Tank
6C1	1	1	5		Set Tank Low Level Limit for Tall Tank
6C2	1	1	5		Set Tank High Level Limit for Tall Tank
6C3	1	1	5		Set Tank Overfill Level Limit for Tall Tank
6C5	1	1	5		Set Tank Sudden Loss Limit for Tall Tank
6C8	1	1	5		Set Tank Maximum Volume Limit for Tall Tank
6C9	1	1	5		Set Tank Delivery Required Limit for Tall Tank
6SU	2	1	5		Printout Tank Setup Tabs

SENSOR SETUP (7.3.7)

Code	Version			Feature	Function
	450	4	450Plus		
701	1	1	5		Set Liquid Sensor Configuration
702	1	1	5		Set Liquid Sensor Location Label
703	1	1	5		Set Liquid Sensor Type
704	1	1	5		Set Liquid Sensor Category
706	1	1	5		Set Vapor Sensor Configuration
707	1	1	5		Set Vapor Sensor Location Label
708	1	1	5		Set Vapor Sensor Alarm Threshold
709	1	1	5		Set Vapor Sensor Category
711	1	1	5		Set Groundwater Sensor Configuration
712	1	1	5		Set Groundwater Sensor Location Label
713	1	1	5		Set Groundwater Sensor Category
721	N/A	N/A	N/A		Set Smart Sensor Configuration (obsolete use **72F** or **S51**)
722	N/A	N/A	N/A		Set Smart Sensor Label (obsolete use **72E** or **S53**)
723	N/A	N/A	N/A		Set Smart Sensor Category (obsolete)
727	1	1	5		Set MAG Sensor Alarm Upgrade Delay
728	1	1	5		Set MAG Sensor Alarm Threshold
72E	1	1	5		Set MAG Sensor Label
72F	1	1	5		Set MAG Sensor Configuration

Code	Version			Feature	Function
	450	4	450Plus		
741	1	1	5		Set Type A (2 Wire CL) Sensor Configuration
742	1	1	5		Set Type A (2 Wire CL) Sensor Location Label
743	1	1	5		Set Type A (2 Wire CL) Sensor Type
744	1	1	5		Set Type A (2 Wire CL) Sensor Category
746	1	1	5		Set Type B (3 Wire CL) Sensor Configuration
747	1	1	5		Set Type B (3 Wire CL) Sensor Location Label
748	1	1	5		Set Type B (3 Wire CL) Sensor Type
749	1	1	5		Set Type B (3 Wire CL) Sensor Category
74B	N/A	N/A	N/A		Set Universal Sensor Configuration (obsolete)
74C	N/A	N/A	N/A		Set Universal Sensor Location Label (obsolete)
74D	N/A	N/A	N/A		Set Universal Sensor Type (obsolete)
74E	N/A	N/A	N/A		Set Universal Sensor Category (obsolete)

PUMP SENSOR SETUP (7.3.8)

Code	Version			Feature	Function
	450	4	450Plus		
771	N/A	N/A	N/A		Set Pump Sensor Configuration (obsolete use **P06**)
772	N/A	N/A	N/A		Set Pump Sensor Tank Number (obsolete use **P04**)
773	N/A	N/A	N/A		Set Pump Sensor Dispense Mode (obsolete use **L06**)
P01	1	N/A	5		Set Pump Configured
P02	1	N/A	5		Set Pump Label
P03	1	N/A	5		Set Pump Mode
P04	1	N/A	5		Set Pump Associated Tank
P05	1	N/A	5		Set Pump Control
P06	1	N/A	5		Set Pump Sense
P07	N/A	5	5		Set Pump - Pump Monitor Device

PRESSURE LINE LEAK SETUP (7.3.9)

Code	Version			Feature	Function
	450	4	450Plus		
75A	1	N/A	5	PLLD	Set Line Leak Lockout Schedule (All Types)
75B	N/A	N/A	N/A	PLLD	Set Line Disable Alarm Assignments (obsolete)
774	1	N/A	5	PLLD	Set Pressure Line Leak Continuous Handle Alarm Timeout
775	1	N/A	5	PLLD	Set Pressure Line Leak Profile Line Test Leak Rate
776	1	N/A	5	PLLD	Set Pressure Line Leak Profile Line Test Reference Pressure
777	1	N/A	5	PLLD	Set Pressure Line Leak Primary Pipe Diameter
778	1	N/A	5	PLLD	Set Pressure Line Leak Secondary Pipe Diameter
779	1	N/A	5	PLLD	Set Pressure Line Leak Primary Pipe Bulk Modulus
77A	1	N/A	5	PLLD	Set Pressure Line Leak Secondary Pipe Bulk Modulus

Code	Version			Feature	Function
	450	4	450Plus		
77B	1	N/A	5	PLLD	Set Pressure Line Leak Thermal Expansion Coefficient
77C	1	N/A	5	PLLD	Set Pressure Line Leak Low Pressure Shutoff
77D	1	N/A	5	PLLD	Set Pressure Line Leak Altitude Pressure Offset
77E	1	N/A	5	PLLD	Set Pressure Line Leak Passive 0.10 GPH Test Enable Flag
77F	1	N/A	5	PLLD	Set Pressure Line Leak Secondary Pipe Length
77G	1	N/A	5	PLLD	Set Pressure Line Leak Fuel Out Limit
780	1	N/A	5	PLLD	Pressure Line Leak General Setup Inquiry
781	1	N/A	5	PLLD	Set Pressure Line Leak Configuration
782	1	N/A	5	PLLD	Set Pressure Line Leak Label
783	1	N/A	5	PLLD	Set Pressure Line Leak 0.10 GPH Test Schedule
784	1	N/A	5	PLLD	Set Pressure Line Leak Shutdown Rate
785	N/A	N/A	N/A	PLLD	Set Pressure Line Leak Tank Number (obsolete use **P04**)
786	1	N/A	5	PLLD	Set Pressure Line Leak Dispense Mode (use **L06** for pump sense)
787	N/A	N/A	N/A	PLLD	Set Pressure Line Leak Disable Alarm Assignments (obsolete)
788	1	N/A	5	PLLD	Set Pressure Line Leak Piping Material
789	1	N/A	5	PLLD	Set Pressure Line Leak Primary Pipe Length
78A	N/A	N/A	N/A	PLLD	Set Pressure Line Leak Sensor Type (obsolete use **L04**)
78B	N/A	N/A	N/A	PLLD	Set Pressure Line Leak 0.10 GPH Test Schedule (obsolete use **78E**)
78C	1	N/A	5	PLLD	Set Pressure Line Leak 0.20 GPH Test Schedule
78E	1	N/A	5	PLLD	Set Pressure Line Leak 0.10 GPH Auto Test Enable
78F	1	N/A	5	PLLD	Set Pressure Line Leak Low Pressure Shutoff Value
78G	1	N/A	5	PLLD	Set Controlling Pump
L01	1	N/A	5	PLLD	Set Line Configuration
L03	1	N/A	5	PLLD	Set Line Leak Monitoring
L04	1	N/A	5	PLLD	Set Line Pressure Sensor
L05	1	N/A	5	PLLD	Set Line Manifolding
L06	1	N/A	5	PLLD	Set Line Dispense Mode
L07	1	N/A	5	PLLD	Set Line Associated Pumps
S51	1	N/A	5	PLLD	Set LPR Sensor Configured
S53	1	N/A	5	PLLD	Set LPR Sensor Label

Code	Version			Feature	Function
	450	4	450Plus		
S54	1	N/A	5	PLLD	Set LPR Sensor Serial Number
S55	1	N/A	5	PLLD	Line Pressure Sensor Alarm History Report
S56	1	N/A	5	PLLD	LPR Sensor Samplings
SA1	1	N/A	5	PLLD	Get Line Pressure Sensor Status

RECONCILIATION SETUP (7.3.10)

Code	Version			Feature	Function
	450	4	450Plus		
51N	2	1	5	DIM	Set LV/MDIM Configuration
51P	2	1	5	DIM	Set LV/MDIM Setup Configuration
51Q	2	1	5	DIM	Set LV/MDIM Label
51R	4	1	5	BIR	Set HRM Enable Flag
790	2	1	5	DIM	DIM Software Revision
791	N/A	N/A	N/A	DIM	Set Mechanical Dispenser Interface String
792	2	1	5	DIM	Set Electronic Dispenser Interface String
793	2	1	5	BIR	Set Reconciliation Auto Daily Closing Time
794	2	1	5		Set Auto Shift Closing Time 1, 2, 3, 4
795	2	1	5	BIR	Set Periodic Reconciliation Mode
796	2	1	5	BIR	Set Periodic Reconciliation Report Length
797	2	1	5	BIR	Set Periodic Reconciliation Alarm Flag
798	2	1	5	BIR	Set Periodic Reconciliation Alarm Threshold
799	2	1	5	BIR	Set Periodic Reconciliation Alarm Offset
79A	N/A	N/A	N/A	BIR	Set Remote Printer Reconciliation Report Format
79B	2	1	5	BIR	Set Shift Manual Adjustment Value
79C	2	1	5	BIR	Set Daily Manual Adjustment Value
79D	2	1	5	BIR	Close Current Reconciliation Shift
79E	2	1	5	DIM	Clear Tank Map Table
79F	2	1	5	BIR	Set BIR Temperature Compensation Flag
79G	2	1	5	DIM	Set Tank Meter Map
79H	2	1	5	DIM	Set Meter Map Lock/Unlock by Position
79I	2	1	5	DIM	Set Meter Map Lock/Unlock All Positions
79J	2	1	5	BIR	Set Daily Manual Adjustment Value Date Range
79K	2	1	5	BIR	Set BIR Status Warning Enable

Code	Version			Feature	Function
	450	4	450Plus		
79L	2	1	5	BIR	Set Reconciliation Report Close Day
79M	2	1	5	BIR	Set Alarm Threshold Delivery Type
79N	2	1	5	BIR	Set Shift Manual Adjustment Value Date Range/Shift Number
79P	2	1	5	BIR	Set Meter Calibration Offset By Meter
79Q	2	1	5	BIR	Set User Fueling Position
79S	2	1	5	BIR	Get Tank Map
7B2	2	1	5	BIR	Set Meter Calibration Offset
7B4	2	1	5	DIM	Set Individual Meter Offset
7B5	2	1	5	BIR	Set Ticketed Delivery
7B6	2	1	5	BIR	Set BOL number
7BG	2	1	5	BIR	Set Ticketed Delivery Information
7C1	2	1	5	BIR	Set Tank Periodic Reconcilaiton Alarm Threshold Enable
7C2	2	1	5	BIR	Set Tank Periodic Reconcilaition Alarm Threshold
7C3	4	1	5	BIR	Set HRM Maximum Volume Limit
7D6	3	1	5	Accuchart	Accuchart Operating Volume Span
7H0	2	1	5	BIR	BIR Multiple Threshold Setup Report
7H1	2	1	5	BIR	Set BIR Multiple Threshold Test Type
7H2	2	1	5	BIR	Set BIR Multiple Threshold Rolling Days
7H3	2	1	5	BIR	Set BIR Multiple Threshold Type Enable
7H4	2	1	5	BIR	Set BIR Multiple Threshold Percentage
7H5	2	1	5	BIR	Set BIR Multiple Threshold Offset Value

PUMP MONITOR RELAY SETUP (7.3.11)

Code	Version			Feature	Function
	450	4	450Plus		
7C4	N/A	N/A	N/A		Set Pump Relay Monitor Configuration (obsolete)
7C5	N/A	N/A	N/A		Set Pump Relay Monitor Label (obsolete)
7C6	N/A	N/A	N/A		Set Pump Relay Monitor Pump Relay (obsolete)
7C7	N/A	5	5		Set Pump Relay Monitor Stuck Delay
7C8	N/A	5	5		Set Pump Relay Monitor Max Run Time

I/O DEVICE SETUP (7.3.12)

Code	Version			Feature	Function
	450	4	450Plus		
801	1	1	5		Set Input Configuration
802	1	1	5		Set Input Location Label
803	N/A	N/A	N/A		Set Input Type (obsolete use **80F**)
804	N/A	N/A	N/A		Set Input Dispense Mode (obsolete)
806	1	1	5		Set Relay Configuration
807	1	1	5		Set Relay Location Label
808	N/A	N/A	N/A		Set Relay Alarm Assignments (obsolete use **5P1**, **5P4** & **5P5**)
809	1	1	5		Set Relay Orientation
80A	1	1	5		Set Relay Type
80B	N/A	N/A	N/A		Set Relay Tank Assignment (obsolete use **P04**)
80C	N/A	N/A	N/A		Set External Input Type (obsolete use **80F**)
80D	1	1	5		Set External Input Orientation
80E	N/A	N/A	N/A		Set External Input Tank Number (obsolete use **P04**)
80F	1	1	5		Set Input Type
821	1	1	5		Set Probe Configuration
822	1	1	5		Set Probe Label

MISCELLANEOUS SETUP (7.3.12)

Code	Version			Feature	Function
	450	4	450Plus		
871	1	1	5		Setup Communication Card
872	2	1	5		Setup Communication Card Configuration Flag
873	1	1	5		Set Communication Port Data
874	2	1	5		Setup Communication Card Location Label
877	4	1	5		Set Communciation Device Type
87B	1	1	5		Set Modem Dial Type
87D	1	1	5		Set Modem Answer-On Interval
87E	1	1	5		Set Modem Dial-In String
87F	1	1	5		Set Modem Dial-Out String
87J	2	1	5	DIM	Set DIM Units Reported
87Q	2	1	5	DIM	Suppress DIM COMM Alarms

Code	Version			Feature	Function
	450	4	450Plus		
881	N/A	N/A	N/A		Set Communication Port Data (obsolete use **873**)
882	N/A	N/A	N/A		Initialize Communication Port Data (obsolete)
885	N/A	N/A	N/A		Set SiteLink Modem Type (obsolete)
886	N/A	N/A	N/A		Set Modem Setup String (obsolete use **87F**)
887	1	1	5		Set Dial Tone Validation Interval
889	1	1	5		DTR Normal State for Serial Satellite Boards
88D	N/A	N/A	N/A		Communication Diagnostic for SiteLink (obsolete)
88E	1	1	5		Set Satellite Connection String
88G	1	1	5		Set IP Assignment
88H	1	1	5		Get IP Address
88I	1	1	5		Set Static IP Address
88J	1	1	5		Set Serial Command Port
88K	1	1	5		Set Static Subnet Mask
88L	1	1	5		Set Static Gateway IP
88M	1	1	5		Set SSH Port
88N	1	1	5		Set HTTP Port
88O	1	1	5		Set HTTPS Port
88P	1	1	5		Set Host Name
88Q	1	1	5		Set Static Primary DNS Server
88R	1	1	5		Set Static Secondary DNS Server
88S	1	1	5		Get MAC Address
88T	1	1	5		Set Default Gateway
88U	1	1	5		Get Subnet Mask
88V	1	1	5		Get Gateway IP
88W	1	1	5		Get Primary DNS Server
88X	1	1	5		Get Secondary DNS Server
88Y	1	1	5		TCP/IP Commit Setup
88Z	4	1	5	DIM	Set TCP/IP DIM Port
891	2	1	5	Accuchart	Set Accuchart Calibration Restart
893	3	1	5		Acknowledge Tank Event Ready Status
894	2	1	5	Accuchart	Set Accuchart Calibration Stop
89A	4	1	5		Set Email Relay
89B	4	1	5		Set Email Sender Address
89C	4	1	5		Set Relayhost/Smarthost
89D	4	1	5		Set Sender Hostname
8BC	N/A	N/A	N/A		Set Relay Alarm Assignments II (obsolete use **5P1**, **5P4** & **5P5**)
8CG	3	1	5		Get Printer Setup and Status

Code	Version			Feature	Function
	450	4	450Plus		
D01	3	1	5		Push Site ID
D02	3	1	5		Server Heartbeat

DIAGNOSTIC REPORTS (7.4)

SYSTEM DIAGNOSTIC REPORTS (7.4.1)

Code	Version			Feature	Function
	450	4	450Plus		
901	N/A	N/A	N/A		Self Test Results Report (obsolete)
902	1	N/A	N/A		System Revision Level Report (obsolete)
903	N/A	N/A	N/A		PC Diagnostic Report (obsolete)
905	1	N/A	N/A		System Revision Level Report II (obsolete)
907	1	1	5		Get "About" screen information

IN-TANK DIAGNOSTIC REPORTS (7.4.2)

Code	Version			Feature	Function
	450	4	450Plus		
A01	1	1	5		Probe Type and Serial Number
A07	1	1	5		Probe Reference Distance Diagnostic
A0X	1	1	5		Probe Diagnostics General
A10	1	1	5		Probe Last Sample Buffers
A14	1	1	5		MAG Probe Option Table
A15	1	1	5		In-Tank Diagnostic Printout
A17	1	1	5		Probe Communication
A18	3	1	5		Probe Diagnostic Printout
A20	1	1	5	SLD	Probe Leak Test Flags - Present Test
A21	1	1	5	SLD	Probe Leak Test Flags - Stored Test
A22	1	1	5	SLD	Probe Leak Test Flags - Gross Test
A51	1	1	5	CSLD	CSLD Diagnostics: Rate Table
A52	1	1	5	CSLD	CSLD Diagnostics: Rate Test
A53	1	1	5	CSLD	CSLD Diagnostics: Volume History Table
A54	1	1	5		30-Second Inventory Samples
A55	1	1	5	CSLD	CSLD Diagnostics: Leak Test Status
A56	1	1	5	CSLD	CSLD Monthly Report

Code	Version			Feature	Function
	450	4	450Plus		
A57	1	1	5	CSLD	CSLD Monthly Report Time Based
A58	1	1	5	CSLD	CSLD Moving Average Table
A61	4	1	5	BIR	HRM Diagnostic Report
A62	4	1	5	BIR	HRM Daliy History Report
A63	4	1	5	BIR	Extended HRM Diagnostic Report
A64	4	1	5	BIR	HRM Diagnostic Report with Date Range
A65	4	1	5	BIR	HRM Daily History Report with Date Range
A66	4	1	5	BIR	Extended HRM Diagnostic Report with Date Range
A71	2	1	5	Accuchart	Accuchart Data Sufficiency
A72	2	1	5	Accuchart	Accuchart Data Sufficiency Histogram
A73	2	1	5	Accuchart	Force Accuchart Calibration
A74	2	1	5	Accuchart	Accuchart Calibration Feedback Report
A75	2	1	5	Accuchart	Accuchart Delivery Instructions
A76	2	1	5	Accuchart	Accuchart Application Log
A91	N/A	1	5		Power Outage Diagnostic Report
A9G	N/A	1	5		Power Outage Diagnostic Report Date/Time Based
A9H	N/A	1	5		Power Outage Delivery Diagnostic Report Date/Time Based
A9J	N/A	1	5		Power Reset History Report

SENSOR DIAGNOSTIC REPORTS (7.4.3)

Code	Version			Feature	Function
	450	4	450Plus		
B01	1	1	5		Liquid Sensor Diagnostic Report
B06	1	1	5		Vapor Sensor Diagnostic Report
B07	1	1	5		Vapor Sensor Concentration (PPM) Report
B11	1	1	5		Groundwater Sensor Diagnostic Report
B21	1	1	5		Ground Temperature Sensor Diagnostic Report
B33	1	1	5		MAG Sensor Diagnostic Report
B34	N/A	N/A	N/A		Smart Sensor Last Sample Diagnostic (obsolete use **B3D** or **B64**)
B35	N/A	N/A	N/A		Smart Sensor Type and Serial Number (obsolete use **B3B** or **B61**)
B36	N/A	N/A	N/A		Smart Sensor Constant Data (obsolete use **B3C** or **B62**)
B3A	1	1	5		MAG Sensor Comm Data
B3B	1	1	5		MAG Sensor Type and Serial Number
B3C	1	1	5		MAG Sensor Constants

Code	Version			Feature	Function
	450	4	450Plus		
B3D	1	1	5		MAG Sensor Channel Data Diagnostic (Hex Format)
B3E	1	1	5		MAG Sensor Channel Data Diagnostic (Decimal Format)
B41	1	1	5		Type A Sensor (2 Wire CL) Diagnostic Report
B46	1	1	5		Type B Sensor (3 Wire CL) Diagnostic Report
B4B	N/A	N/A	N/A		Universal Sensor Diagnostic Report (obsolete)

LINE LEAK DIAGNOSTIC REPORTS (7.4.4)

Code	Version			Feature	Function
	450	4	450Plus		
B61	1	N/A	N/A	PLLD	LPR Sensor General Report (obsolete V3E use **B6G**)
B62	1	N/A	N/A	PLLD	LPR Sensor Constants Report (obsolete V3E use **B6H**)
B63	1	N/A	5	PLLD	LPR Sensor Comm Data
B64	1	N/A	5	PLLD	LPR Sensor Channel Data (Hex Format)
B65	1	N/A	5	PLLD	LPR Sensor Channel Data (Decimal Format)
B6G	3	N/A	5	PLLD	LPR Sensor General Report
B6H	3	N/A	5	PLLD	LPR Sensor Constants Report
B71	N/A	N/A	N/A	PLLD	Pump Sensor Diagnostic (obsolete)
B72	N/A	5	5	PLLD	Pump Relay Monitor Diagnostic
B7B	1	N/A	5	PLLD	Pressure Line Leak Profile Line Test
B7C	1	N/A	5	PLLD	Pressure Line Leak Pressure Offset Test
B7E	1	N/A	5	PLLD	Pressure Line Leak Pressure Offset Monitor Report
B81	1	N/A	5	PLLD	Pressure Line Leak Diagnostic Report
B87	1	N/A	5	PLLD	Pressure Line Leak 3.00 GPH Test Diagnostic
B88	1	N/A	5	PLLD	Pressure Line Leak Mid-range Test Diagnostic
B89	1	N/A	5	PLLD	Pressure Line Leak 0.20 GPH Test Diagnostic
B8A	1	N/A	5	PLLD	Pressure Line Leak 0.10 GPH Test Diagnostic
B8F	1	N/A	5	PLLD	PLLD No-Vent Report
B8I	1	N/A	5	PLLD	PLLD Last Test Result
B8J	1	N/A	5	PLLD	PLLD Diagnostic - Manual Test Report

RECONCILIATION DIAGNOSTIC REPORTS (7.4.4)

Code	Version			Feature	Function
	450	4	450Plus		
B91	N/A	N/A	N/A	Accuchart	AccuChart Diagnostics Report
B93	N/A	N/A	N/A	Accuchart	AccuChart Status Report
B94	N/A	N/A	N/A	Accuchart	AccuChart Calibration History Report
BA0	2	1	5	DIM	MDIM/LVDIM Totalizer Report
CA1	2	1	5	BIR	Get Reconciliation Status
CA2	2	1	5	BIR	Reconciliation Diagnostic Report

RECONCILIATION REPORTS (7.5)

Code	Version			Feature	Function
	450	4	450Plus		
C01	2	1	5	BIR	Basic Inventory Reconciliation Daily "Row" Report
C02	2	1	5	BIR	Basic Inventory Reconciliation Daily "Column" Report
C03	2	1	5	BIR	Basic Inventory Reconciliation Shift "Row" Report
C04	2	1	5	BIR	Basic Inventory Reconciliation Shift "Column" Report
C05	2	1	5	BIR	Basic Inventory Reconciliation Periodic "Row" Report
C06	2	1	5	BIR	Basic Inventory Reconciliation Periodic "Column" Report
C07	2	1	5	BIR	Basic Inventory Reconciliation Periodic "Row" Report
C08	2	1	5	BIR	Basic Inventory Reconciliation Periodic "Column" Report
C09	2	1	5	BIR	Individual Basic Reconciliation Daily History Diagnostic
C10	2	1	5	BIR	Periodic Book Variance
C11	2	1	5	BIR	Weekly Book Variance
C12	2	1	5	BIR	Daily Book Variance
C15	2	1	5	BIR	Book Variance Daily Report Date Based
C20	N/A	5	5	BIR	Periodic Variance Analysis Report
C21	N/A	5	5	BIR	Weekly Variance Analysis Report
C22	N/A	5	5	BIR	Daily Variance Analysis Report
C25	N/A	5	5	BIR	Periodic Variance Analysis Daily Report
C0G	2	1	5	BIR	Reconciliation Daily Report
C0J	2	1	5	BIR	Reconcilation Shift Report

Code	Version			Feature	Function
	450	4	450Plus		
CA3	2	1	5	BIR	Reconcilation Test Result Report

GUI DISPLAY SETUP (7.6)

Code	Version			Feature	Function
	450	4	450Plus		
G01	1	N/A	N/A		Set Display Setup - System Status Configuration
G02	1	N/A	N/A		Set Display Setup – All Tanks Configuration
G03	1	N/A	N/A		Set Display Setup – Tank Fuel Fill Configuration
G04	1	N/A	N/A		Set Display Setup – All Liquid Sensors Configuration
G05	1	N/A	N/A		Set Display Setup – All Type-A (2-Wire CL) Sensors Configuration
G06	1	N/A	N/A		Set Display Setup – All Type-B (3-Wire CL) Sensors Configuration
G07	1	N/A	N/A		Set Display Setup – All MAG Sensors Configuration
G08	1	N/A	N/A		Set Display Setup – All Ground Water Sensors Configuration
G09	1	N/A	N/A		Set Display Setup –All Vapor Sensors Configuration
G0A	1	N/A	N/A	PLLD	Set Display Setup –All Line Pressure Sensors Configuration
G0B	1	N/A	N/A		Set Display Setup – User Defined Tab Labels
G0C	1	N/A	N/A		Set Display Setup – User Defined Tab Configuration
G0D	1	N/A	N/A		Set Display Setup – User Defines Tab Status Report

DEVICE VR-BUS CONFIGURATION (7.7)

Code	Version			Feature	Function
	450	4	450Plus		
N01	1	1	5		Set Device VR-Bus Address
N02	1	1	5		Get Available VR-Bus Addresses
N03	1	1	5		Get All Device Directory
N04	2	1	5		Get Hardware Configuration
N05	2	1	5		Get Extended Device Directory
N06	2	1	5		Get Device Assignments
N07	2	1	5		Get COMM Diagnostics Counter

VEEDER-ROOT