

# **VEEDER - ROOT SERIAL INTERFACE MANUAL**

**for**

**TLS-300 and TLS-350  
UST Monitoring Systems**

**and**

**TLS-350R  
Environmental & Inventory  
Management System**

**through Software Versions 020/122/322/422/520**

Manual Number 576013-635  
Revision M

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

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### **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. Commands appearing in software versions greater than 100 are only active in systems equipped with an ECPU.

### **2.0 HARDWARE CONNECTIONS**

The RS-232 interface is a module accessed via a 25-pin D-connector located on the bottom-left of the console.

#### **2.1 RS-232**

The RS-232 D-connector is a panel mount, 25-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.

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

PIN	
2	Transmitted Data
3	Received Data
7	Signal Ground (common return) and Chassis

#### **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.

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#### **2.3 INTERNAL MODEM**

The optional internal modem operates at up to 2400 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 or 9600 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**

A four-position DIP switch is located on the CPU board, which is mounted in the right-back of the console printer compartment. The DIP switch is next to the battery switch. The DIP switch enables the security code and the switch positions are assigned as follows:

##### Switch

- |      |                                   |
|------|-----------------------------------|
| 1    | Front Panel Setup Security Enable |
| 2    | RS-232 Security Enable            |
| 3, 4 | Unused                            |

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#### 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.

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#### 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.

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#### 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  $5.8775 \times 10^{-39}$ .

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



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#### 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 =  $+1.0 \times 1.0 = 1.0$

**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 =  $-0.0000610352 \times 1.63840 = -0.0001$

**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 =  $-64 \times 1.56234 = -99.99$

**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 =  $+8,192 \times 1.22070 = 10,000$

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### 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:

Function Codes .....	Response Types
001 to 091 .....	Control Functions
101 to 116 .....	Operational Reports (System)
201 to 2E2 .....	Operational Reports (In-tank)
301 to 34C .....	Operational Reports (Sensor)
351 to 389 .....	Operational Reports (Line Leak)
391 .....	Operational Reports (Miscellaneous)
401 to 406 .....	Operational Reports (I/O Device)
501 to 51E .....	Setup Functions & Reports (System)
520 to 531 .....	Setup Functions & Reports (Communications)
532 to 5E2 .....	Setup Functions & Reports (Warning, Alarm, & Auto-print)
601 to 683 .....	Setup Functions & Reports (In-tank)
701 to 74E .....	Setup Functions & Reports (Sensor)
751 to 761 .....	Setup Functions & Reports (Volumetric Line Leak)
771 to 773 .....	Setup Functions & Reports (Pump Sensor)
77C to 78F .....	Setup Functions & Reports (Pressure Line Leak)
791 to 79F .....	Setup Functions & Reports (Reconciliation)
7A0 to 7AF .....	Setup Functions & Reports (Wireless PLLD)
7B1 to 7B5 .....	Setup Functions & Reports (Meter Map & Delivery Ticket)
7BC to 80B .....	Setup Functions & Reports (I/O Device)
851 to 853 .....	Setup Functions & Reports (EEPROM)
881 to 8BC .....	Setup Functions & Reports (Miscellaneous)
901 to 905 .....	Diagnostic Reports (System)
A01 to A91 .....	Diagnostic Reports (In-tank)
B01 to B4B .....	Diagnostic Reports (Sensor)
B50 to B8E .....	Diagnostic Reports (Line Leak)
B91 to BA0 .....	Diagnostic Reports (Reconciliation)
C01 to C09 .....	Reconciliation Reports
C10 to C25 .....	Variance Analysis Reports

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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.

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## TLS-300/350/350R Monitoring Systems

### 7.1 CONTROL FUNCTIONS

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

Version 1

**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

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**Function Code:** 002

Version 1

**Function Type:** Clear Power Reset Flag

**Command Format:**

**Display:** <SOH>S00200

**Computer:** <SOH>s00200

**Typical Response Message, Display Format:**

```
<SOH>
S00200
MAR 27, 1996  8:06 PM
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>s00200YYMMDDHHmm&&CCCC<ETX>
```

**Notes:**

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

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## TLS-300/350/350R Monitoring Systems

**Function Code:** 003  
**Function Type:** Remote Alarm Reset

Version 1

**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

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**Function Code:** 031  
**Function Type:** Confirm Clear Function

Version 10

**Command Format:**  
**Display:** <SOH>S03100832382  
**Computer:** <SOH>s03100832382

### Typical Response Message, Display Format:

```
<SOH>
S03100
MAR 29, 1996  6:27 PM

CONFIRM CLEAR COMPLETE
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>s03100YYMMDDHHmm&&CCCC<ETX>
```

### Notes:

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

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## TLS-300/350/350R Monitoring Systems

**Function Code:** 051

Version 1

**Function Type:** Clear In-Tank Delivery Reports

**Command Format:**

**Display:** <SOH>S051TT

**Computer:** <SOH>s051TT

**Typical Response Message, Display Format:**

<SOH>

S051TT

MAR 29, 1996 6:27 PM

DELIVERY REPORTS ERASED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>s051TTYMMDDHHmm&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. && - Data Termination Flag
4. CCCC - Message Checksum



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## TLS-300/350/350R Monitoring Systems

**Function Code:** 052

Version 1

**Function Type:** Start In-Tank Leak Detect Test

**Command Format:**

**Display:** <SOH>S052TT

**Computer:** <SOH>s052TT

**Typical Response Message, Display Format:**

<SOH>

S052TT

MAR 27, 1996 6:28 PM

TANK PRODUCT LABEL

1 UNLEADED REGULAR

LEAK TEST START

TEST BY EXTERN INTERFACE

<ETX>

**Typical Response Message, Computer Format:**

<SOH>s052TTYMMDDHHmmTTk&&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

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## TLS-300/350/350R Monitoring Systems

**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 PRODUCT LABEL

1 REGULAR UNLEADED LEAK TEST STOP

<ETX>

**Typical Response Message, Computer Format:**

<SOH>s053TTYMMDDHHmmTTk&&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

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### TLS-300/350/350R Monitoring Systems

**Function Code: 054**

Version 5

**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>s054TTYMMDDHHmm&&CCCC<ETX>

**Notes:**

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

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## TLS-300/350/350R Monitoring Systems

**Function Code:** 081

Version 7

**Function Type:** Start Pressure Line Leak Test (3.0 GPH only in V18)

**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 3.0 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

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## TLS-300/350/350R Monitoring Systems

**Function Code:** 082

Version 7

**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 3.0 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

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## TLS-300/350/350R Monitoring Systems

**Function Code:** 083

Version 10

**Function Type:** Start WPLLD Line Leak Test (3.0 GPH only in V18)

**Command Format:**

**Display:** <SOH>S083WW149

**Computer:** <SOH>s083WW149

**Notes:**

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

**Typical Response Message, Display Format:**

<SOH>  
S083WW  
MAR 27, 1996 3:47 PM

W 1:UNLEADED REGULAR  
STATUS: TEST PENDING  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>s083WWYYMMDDHHmmWWtt&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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 0.20 gal/hr
  - 04 = test aborted
  - 05 = line lockout
  - 06 = disable alarm
  - 07 = test pending
  - 08 = test delay
  - 09 = testing at 0.10 gal/hr
4. && - Data Termination Flag
5. CCCC - Message Checksum

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## TLS-300/350/350R Monitoring Systems

**Function Code:** 084

Version 10

**Function Type:** Stop WPLLD Line Leak Test

**Command Format:**

**Display:** <SOH>S084WW149

**Computer:** <SOH>s084WW149

**Notes:**

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

**Typical Response Message, Display Format:**

<SOH>  
S084WW  
MAR 27, 1996 3:48 PM

W 1:UNLEADED REGULAR  
STATUS: TEST ABORTED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>s084WWYYMMDDHHmmWWtt&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. tt - Test status
  - 00 = test complete
  - 01 = dispensing
  - 02 = testing at 3.0 gal/hr
  - 03 = testing at 0.20 gal/hr
  - 04 = test aborted
  - 05 = line lockout
  - 06 = disable alarm
  - 07 = test pending
  - 08 = test delay
  - 09 = testing at 0.10 gal/hr
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 087

Version 18

**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 = 0.1 GPH
  - 02 = 0.2 GPH
  - 03 = 3.0 GPH
4. tt - Test status
  - 00 = test complete
  - 01 = dispensing
  - 02 = testing at 3.0 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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 088

Version 18

**Function Type:** Start WPLLD Line Leak Test by Type

**Command Format:**

**Display:** <SOH>S088WW149rr

**Computer:** <SOH>s088WW149rr

**Notes:**

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

**Typical Response Message, Display Format:**

```
<SOH>
S088WW
MAR 29, 1999 6:27 PM

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

**Typical Response Message, Computer Format:**

```
<SOH>s088WWYYMMDDHHmmWWrrtt&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. rr - Test Type
  - 01 = 0.1 GPH
  - 02 = 0.2 GPH
  - 03 = 3.0 GPH
4. tt - Test status
  - 00 = test complete
  - 01 = dispensing
  - 02 = testing at 3.00 gal/hr
  - 03 = testing at 0.20 gal/hr
  - 04 = test aborted
  - 05 = line lockout
  - 06 = disable alarm
  - 07 = test pending
  - 08 = test delay
  - 09 = testing at 0.10 gal/hr
5. && - Data Termination Flag
6. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 089

Version 19

**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 sensor number (Decimal, 00 = All)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 090

Version 19

**Function Type:** WPLLD Line Leak Pressure Offset Reset

**Command Format:**

**Display:** <SOH>S090WW149

**Computer:** <SOH>s090WW149

**Notes:**

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

**Typical Response Message, Display Format:**

```
<SOH>
S090WW
JAN  1, 2000  6:27 PM

W 1:REGULAR UNLEADED
PRESSURE OFFSET RESET
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>s090WWYYMMDDHHmm&&CCCC<ETX>
```

**Notes:**

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 091  
**Function Type:** Close Current Shift

Version 15

**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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 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
  - 07 - Groundwater Sensor Alarm
  - 08 - Type A Sensor Alarm
  - 12 - Type B Sensor Alarm
  - 13 - Universal Sensor Alarm
  - 14 - Auto-Dial Fax Alarm
  - 18 - Mechanical Dispenser Interface Alarm
  - 19 - Electronic Dispenser Interface Alarm
  - 20 - Product Alarm
  - 21 - Pressure Line Leak Alarm
  - 26 - Wireless PLLD Alarm
  - 99 - Externally Detected Alarm (not reported by Console)

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 101 Notes: (Continued)

3.                    NN - Alarm Type Number:
- If AA is 01 and NN is:
    - 01 = Printer out of Paper
    - 02 = Printer Error
    - 03 = EEPROM Configuration Error
    - 04 = Battery Off
    - 05 = Too Many Tanks
    - 06 = System Security Warning
    - 07 = ROM Revision Warning
    - 08 = Remote Display Communications Error
    - 09 = Autodial Error
    - 10 = Software Module Warning
    - 11 = Tank Test Shutdown Warning
    - 12 = Protective Cover Alarm
    - 13 = BIR Shift Close Pending
    - 14 = BIR Daily Close Pending
    - 15 = PC(H8) Revision Warning
    - 16 = System Self Test Error
    - 17 = System Clock Incorrect Warning
    - 18 = System Device Poll Timeout
  - 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
    - 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
    - 25 = Tank HRM Reconciliation Warning
    - 26 = Tank HRM Reconciliation Alarm
    - 27 = Tank Cold Temperature Warning
    - 28 = Tank Missing Delivery Ticket Warning
    - 29 = Tank/Line Gross Leak Alarm

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 101 Notes: (Continued)

- If AA is 03, 04, 07, 08, 12, or 13 and NN is:
  - 02 = Sensor Setup Data Warning
  - 03 = Sensor Fuel Alarm
  - 04 = Sensor Out Alarm
  - 05 = Sensor Short Alarm
  - 06 = Sensor Water Alarm
  - 07 = Sensor Water Out Alarm
  - 08 = Sensor High Liquid Alarm
  - 09 = Sensor Low Liquid Alarm
  - 10 = Sensor Liquid Warning
- If AA is 05 and NN is:
  - 01 = Input Setup Data Warning
  - 02 = Input Normal
  - 03 = Input Alarm
- If AA is 06 and NN is:
  - 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
  - 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 14 and NN is:
  - 01 = Autodial Setup Data Warning
  - 02 = Autodial Failed Alarm
  - 03 = Autodial Service Report Warning (Added in V19)
  - 04 = Autodial Alarm Clear Warning (Added in V19)
  - 05 = Autodial Delivery Report Warning (Added in V19)
- If AA is 18, 19 and NN is:
  - 02 = DIM Disabled Alarm
  - 03 = DIM Communication Failure Alarm
  - 04 = DIM Transaction Alarm

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 101 Notes: (Continued)

- If AA is 20 and NN is:
  - 01 = BIR Setup Data Warning
  - 02 = BIR Threshold Alarm
  - 03 = BIR Close Shift Warning
  - 04 = BIR Close Daily Warning
  
- 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
  - 05 = PLLD Periodic Test Needed Alarm
  - 06 = PLLD Sensor Open Alarm
  - 07 = PLLD High Pressure Alarm (Obsolete V19)
  - 08 = PLLD Shutdown Alarm
  - 09 = PLLD High Pressure Warning (Obsolete V19)
  - 10 = PLLD Continuous Handle On Warning (Obsolete V19)
  - 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 V19)
  - 16 = PLLD Continuous Handle On Alarm
  - 17 = PLLD Fuel Out Alarm
  - 18 = PLLD Line Equipment Alarm
  
- If AA is 26 and NN is:
  - 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 V19)
  - 10 = WPLLD Annual Test Fail Alarm
  - 11 = WPLLD Annual Test Needed Warning
  - 12 = WPLLD Annual Test Needed Alarm
  - 13 = WPLLD High Pressure Warning (Obsolete V19)
  - 14 = WPLLD High Pressure Alarm (Obsolete V19)
  - 15 = WPLLD Sensor Short Alarm (Obsolete V19)
  - 16 = WPLLD Continuous Handle On Alarm
  - 17 = WPLLD Fuel Out Alarm
  - 18 = WPLLD Line Equipment Alarm



## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 101 Notes: (Continued)

- If AA is 99 and NN is:
  - 01 - Externally Detected 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 102  
**Function Type:** System Configuration Report

Version 1

**Command Format:**  
**Display:** <SOH>I10200  
**Computer:** <SOH>i10200

### Typical Response Message, Display Format:

<SOH>  
I10200  
JAN 22, 1996 3:05 PM

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

### SYSTEM CONFIGURATION

SLOT	BOARD TYPE	POWER ON RESET	CURRENT
1	4 PROBE / G.T.	164040	166912
2	UNUSED	10191362	10329900
3	UNUSED	10122894	10209602
4	UNUSED	10107912	10186864
5	UNUSED	10115504	10165331
6	UNUSED	10105807	10165451
7	UNUSED	10097749	10164467
8	UNUSED	10102487	10152837
9	UNUSED	15000000	15000000
10	UNUSED	15000000	15000000
11	UNUSED	15000000	15000000
12	UNUSED	15000000	15000000
13	UNUSED	15000000	15000000
14	UNUSED	15000000	15000000
15	UNUSED	15000000	15000000
16	UNUSED	15000000	15000000
	COMM 1 FAXMODEM BOARD	47008	47006
	COMM 2 RS232 SERIAL BD	14764	14753
	COMM 3 ELEC DISP INT.	100725	100748
	COMM 4 UNUSED	15000000	15000000
	COMM 5 UNUSED	15000000	15000000
	COMM 6 UNUSED	15000000	15000000

<ETX>

### Typical Response Message, Computer Format:

<SOH>i10200YYMMDDHHmmNNSSTTFFFFFFFFCCCCCCCC...  
SSTTFFFFFFFFCCCCCCCC&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. NN - Number of Modules to Follow (Hex)
3. SS - Slot Number (Hex)

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 102 Notes: (Continued)

4.                    TT - Type of Module (Hex):
  - 00 - Not used
  - 01 - Four Probe Module
  - 02 - Vapor Sensor Module
  - 03 - Liquid Sensor Module
  - 04 - Four Relay Module
  - 05 - I/O Combo Module
  - 06 - Printer Module
  - 07 - RS-232 Module
  - 08 - Modem Module
  - 09 - Volumetric Line Leak Module
  - 0A - Four Probe w/ Ground Temp Module
  - 0B - Groundwater Sensor Module
  - 0C - Type A Sensor Module
  - 0D - Remote Display Module
  - 10 - Type B Sensor Module
  - 11 - Universal Sensor Module
  - 12 - Fax/Modem (1785) Module
  - 13 - Remote/Local Printer Module
  - 14 - Pump Sensor Module
  - 15 - European RS-232 Module
  - 17 - Eight Probe Module
  - 18 - Mechanical Dispenser Interface Module
  - 19 - Electronic Dispenser Interface Module
  - 1A - Pressure Line Leak Sensor Module
  - 1B - Pressure Line Leak Controller Module
  - 1D - Remote Printer Module
  - 1E - External Fax/Modem Module
  - 1F - RS-485 Module
  - 20 - Wireless PLLD AC Interface Module
  - 21 - Wireless PLLD Communications Module
  - 22 - Wireless PLLD Controller Module
  - 23 - Hughes Satellite J-Box Module
  - 24 - Fax/Modem (1786) Module
  - 25 - Serial Satellite Module
  - 26 - Three Probe / Three Liquid Sensor Module
  - 27 - Three PLLD Sensor Module
5.                    FFFFFFFF - Power On Reset (ASCII Hex IEEE float)
6.                    CCCCCCCC - Current I/O Reading (ASCII Hex IEEE float)
7.                    && - Data Termination Flag
8.                    CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 111

Version 2

**Function Type:** Priority Alarm History Report

**Command Format:**

**Display:** <SOH>I11100

**Computer:** <SOH>i11100

### 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...
      AAaccNNTTSSYYMMDDHHmm&&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
  - 07 - Groundwater Sensor Alarm
  - 08 - Type A Sensor Alarm
  - 12 - Type B Sensor Alarm
  - 13 - Universal Sensor Alarm
  - 14 - Auto-Dial Fax Alarm
  - 18 - Mechanical Dispenser Interface Alarm
  - 19 - Electronic Dispenser Interface Alarm
  - 20 - Product Alarm
  - 21 - Pressure Line Leak Alarm
  - 26 - Wireless PLLD Alarm
  - 99 - Externally Detected Alarm (not reported by Console)

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 111 Notes: (Continued)

- 3. cc - Sensor Category
  - 00 = Other
  - 01 = Annular
  - 02 = Dispenser Pan
  - 03 = Monitoring Well
  - 04 = STP Sump
  - 05 = Piping Sump
  
- 4. NN - Alarm Type Number:
  - If AA is 01 and NN is:
    - 01 = Printer out of Paper
    - 02 = Printer Error
    - 03 = EEPROM Configuration Error
    - 04 = Battery Off
    - 05 = Too Many Tanks
    - 06 = System Security Warning
    - 07 = ROM Revision Warning
    - 08 = Remote Display Communications Error
    - 09 = Autodial Error
    - 10 = Software Module Warning
    - 11 = Tank Test Shutdown Warning
    - 12 = Protective Cover Alarm
    - 13 = BIR Shift Close Pending
    - 14 = BIR Daily Close Pending
    - 15 = PC(H8) Revision Warning
    - 16 = System Self Test Error
    - 17 = System Clock Incorrect Warning
    - 18 = System Device Poll Timeout

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 111 Notes: (Continued)

- 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
  - 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
  - 25 = Tank HRM Reconciliation Warning
  - 26 = Tank HRM Reconciliation Alarm
  - 27 = Tank Cold Temperature Warning
  - 28 = Tank Missing Delivery Ticket Warning
  - 29 = Tank/Line Gross Leak Alarm
- If AA is 03, 04, 07, 08, 12, or 13 and NN is:
  - 02 = Sensor Setup Data Warning
  - 03 = Sensor Fuel Alarm
  - 04 = Sensor Out Alarm
  - 05 = Sensor Short Alarm
  - 06 = Sensor Water Alarm
  - 07 = Sensor Water Out Alarm
  - 08 = Sensor High Liquid Alarm
  - 09 = Sensor Low Liquid Alarm
  - 10 = Sensor Liquid Warning
- If AA is 05 and NN is:
  - 01 = Input Setup Data Warning
  - 02 = Input Normal
  - 03 = Input Alarm

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 111 Notes: (Continued)

- If AA is 06 and NN is:
  - 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
  - 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 14 and NN is:
  - 01 = Autodial Setup Data Warning
  - 02 = Autodial Failed Alarm
  - 03 = Autodial Service Report Warning (Added in V19)
  - 04 = Autodial Alarm Clear Warning (Added in V19)
  - 05 = Autodial Delivery Report Warning (Added in V19)
- If AA is 18, 19 and NN is:
  - 02 = DIM Disabled Alarm
  - 03 = DIM Communication Failure Alarm
  - 04 = DIM Transaction Alarm
- If AA is 20 and NN is:
  - 01 = BIR Setup Data Warning
  - 02 = BIR Threshold Alarm
  - 03 = BIR Close Shift Warning
  - 04 = BIR Close Daily Warning

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 111 Notes: (Continued)

- 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
  - 05 = PLLD Periodic Test Needed Alarm
  - 06 = PLLD Sensor Open Alarm
  - 07 = PLLD High Pressure Alarm (Obsolete V19)
  - 08 = PLLD Shutdown Alarm
  - 09 = PLLD High Pressure Warning (Obsolete V19)
  - 10 = PLLD Continuous Handle On Warning (Obsolete V19)
  - 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 V19)
  - 16 = PLLD Continuous Handle On Alarm
  - 17 = PLLD Fuel Out Alarm
  - 18 = PLLD Line Equipment Alarm
- If AA is 26 and NN is:
  - 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 V19)
  - 10 = WPLLD Annual Test Fail Alarm
  - 11 = WPLLD Annual Test Needed Warning
  - 12 = WPLLD Annual Test Needed Alarm
  - 13 = WPLLD High Pressure Warning (Obsolete V19)
  - 14 = WPLLD High Pressure Alarm (Obsolete V19)
  - 15 = WPLLD Sensor Short Alarm (Obsolete V19)
  - 16 = WPLLD Continuous Handle On Alarm
  - 17 = WPLLD Fuel Out Alarm
  - 18 = WPLLD Line Equipment Alarm
- 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



## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 111 Notes: (Continued)

- 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 112

Version 2

**Function Type:** Non-Priority Alarm History Report

**Command Format:**

**Display:** <SOH>I11200

**Computer:** <SOH>i11200

### 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 i11100
3. cc - Sensor Category  
See explanation for "cc" in Function i11100
4. NN - Alarm Type Number:  
See explanation for "NN" in Function i11100
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

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

Version 14

**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
T 2  TANK      SPECIAL                    INVALID FUEL LEVEL        12-20-95 12:00PM
12-20-95 11:59AM
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i11300YYMMDDHHmma..ab..bc..cd..dAAccNNTTYMMDDHHmm...
AAccNNTTYMMDDHHmm&&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 i11100
7. cc - Sensor Category  
See explanation for "cc" in Function i11100
8. NN - Alarm Type Number:  
See explanation for "NN" in Function i11100
9. TT - Tank/Sensor Number
10. YYMMDDHHmm - Alarm Date and Time
11. && - Data Termination Flag
12. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 114  
**Function Type:** Cleared Alarm Report

Version 19

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

### 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 i11100
7. cc - Sensor Category:  
See explanation for "cc" in Function i11100
8. NN - Alarm Type Number:  
See explanation for "NN" in Function i11100
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 116**

Version 19

**Function Type:** Service Report History

**Command Format:**

**Display:** <SOH>I11600

**Computer:** <SOH>i11600

**Typical Response Message, Display Format:**

<SOH>  
I11600  
MAR 26, 1996 1:47 PM

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

SERVICE REPORT

DATE/TIME	ID	CODE
MAR 29, 1996 8:50 AM	1234567890	12345
MAR 28, 1996 8:50 AM	3482221100	EABC2
FEB 26, 1996 8:15 AM	3482221100	12345
JAN 25, 1996 2:20 PM	3482221100	Z1234
JAN 23, 1996 1:48 PM	3482221100	12345

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i11600YYMMDDHHmma..ab..bc..cd..dNNYYMMDDHHmmiiiiiiiiiiiccccc...  
YYMMDDHHmmiiiiiiiiiiiccccc&&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. NN - Number of Records to follow (Decimal)
7. YYMMDDHHmm - Date and Time of entry
8. iiiiiiiiii - Service ID entered by Service Contractor (10 alpha/numeric)
9. ccccc - Service Code entered by Service Contractor (5 alpha/numeric)
10. && - Data Termination Flag
11. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 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....

TANK	PRODUCT	VOLUME	TC VOLUME	ULLAGE	HEIGHT	WATER	TEMP
1	REGULAR UNLEADED	5329	5413	4699	48.97	0.00	37.39

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i201TTYMMDDHHmmTtpssssNNFFFFFFFF...  
TtpssssNNFFFFFFFF...&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
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
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 202  
**Function Type:** In-Tank Delivery Report

Version 1

**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....

DELIVERY REPORT

T 1:REGULAR UNLEADED
INCREASE   DATE / TIME                GALLONS TC GALLONS WATER  TEMP DEG F  HEIGHT

      END: JUL 28, 1997  3:14 PM        3231      3194  0.00        76.14   48.27
      START: JUL 28, 1997  3:05 PM        1244      1231  0.00        73.89   24.40
      AMOUNT:                1987      1963

      END: JUL 25, 1997  2:48 PM        4460      4414  0.00        74.56   63.06
      START: JUL 25, 1997  2:37 PM        1157      1146  0.00        72.85   23.22
      AMOUNT:                3303      3268

<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i202TTYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
      TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
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
9. && - Data Termination Flag
10. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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 1      REGULAR UNLEADED
TEST STATUS: OFF    0.2 GAL/HR TEST PASS
TEST START TIME: OCT 22, 1991 10:30 PM          DURATION:  7 HOURS
START TEMP: 58.7 DEG F    START VOLUME:  2123 GALLONS
ENDING TEMP: 58.1 DEG F    LEAK RATE:  -0.01 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>i203TYYMMDDHHmmTTpYYMMDDHHmmHHNNFFFFFFFFF...
TTpYYMMDDHHmmHHNNFFFFFFFFF...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
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 float:
  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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 204**

Version 1

**Function Type:** In-Tank Shift Inventory Report

**Command Format:**

**Display:** <SOH>I204TT

**Computer:** <SOH>i204TT

### Typical Response Message, Display Format:

```
<SOH>
I204TT
JAN 22, 1996  3:06 PM

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

TANK PRODUCT
  1  REGULAR UNLEADED      VOLUME TC VOLUME  ULLAGE  HEIGHT  WATER  TEMP
SHIFT 1 STARTING VALUES    8518      8492    1482   76.26   0.00  64.57
      ENDING VALUES      8518      8492    1482   76.26   0.00  64.57
      DELIVERY VALUE        0
      TOTALS                0
SHIFT 2 STARTING VALUES    8518      8492    1482   76.26   0.00  64.57
      ENDING VALUES      8518      8492    1482   76.26   0.00  64.57
      DELIVERY VALUE        0
      TOTALS                0

<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i204TTYMMDDHHmmTTpssNNFFFFFFFF...
      TtpssNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. ss - Shift Number 01, 02, 03
5. NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - ASCII Hex IEEE float:
  1. Start Volume
  2. Start Ullage
  3. Start TC Volume
  4. Start Height
  5. Start Water
  6. Start Temperature
  7. End Volume
  8. End Ullage
  9. End TC Volume
  - A. End Height
  - B. End Water
  - C. End Temperature
  - D. Total Value
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 205  
**Function Type:** In-Tank Status Report

Version 1

**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	PRODUCT	STATUS
1	REGULAR UNLEADED	NORMAL

<ETX>

### Typical Response Message, Computer Format:

<SOH>i205TTYMMDDHHmmTTnnAA...  
TTnnAA...&&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)

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 205 Notes: (Continued)

- 4.                   AA - Active tank alarm type:
  - 01 = Tank Setup Data Warning
  - 02 = Tank Leak Alarm
  - 03 = Tank High Water Alarm
  - 04 = Tank Overfill Alarm
  - 05 = Tank Low Product Alarm
  - 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
  - 25 = Tank HRM Reconciliation Warning
  - 26 = Tank HRM Reconciliation Alarm
  - 27 = Tank Cold Temperature Warning
  - 28 = Tank Missing Delivery Ticket Warning
  - 29 = Tank/Line Gross Leak Alarm
- 5.                   && - Data Termination Flag
- 6.                   CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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>

### Typical Response Message, Computer Format:

<SOH>i206TTYMMDDHHmmTTnnYYMMDDHHmmaaaa...  
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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 206 Notes: (Continued)

- 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: 207

Version 2

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
TANK LEAK TEST HISTORY

T 1:REGULAR UNLEADED

LAST GROSS TEST PASSED:
TEST START TIME      HOURS    VOLUME    % VOLUME    TEST TYPE
JUL 29, 1997  6:02 AM          2821        48.9    STANDARD

LAST ANNUAL TEST PASSED:

NO TEST PASSED

FULLEST ANNUAL TEST PASS

NO TEST PASSED

LAST PERIODIC TEST PASS:
TEST START TIME      HOURS    VOLUME    % VOLUME    TEST TYPE
JUL 29, 1997  4:15 AM        27        2680        46.4    CSLD

FULLEST PERIODIC TEST
PASSED EACH MONTH:

TEST START TIME      HOURS    VOLUME    % VOLUME    TEST TYPE
JUL 20, 1997  1:52 AM        25        2916        50.5    CSLD
<ETX>
```

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code 207 Notes:** (Continued)

**Typical Response Message, Computer Format:**

```
<SOH>i207TTTYMMDDHHmmTTNNRRnnttYYMMDDHHmmhhhhhhhhVVVVVVVpppppppp...
      TTNNRRnnttYYMMDDHHmmhhhhhhhhVVVVVVVpppppppp...&&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 = 0.2 gal/hr test
  - 01 = 0.1 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 208**

Version 2

**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 TYPE	START TIME	RESULT	RATE	HOURS	VOLUME
ANNUAL	NOV 21, 1995 8:34 AM	PASSED	0.00	12	9088
PERIODIC	NOV 21, 1995 8:34 AM	PASSED	0.00	12	9088
GROSS	NOV 24, 1995 8:04 AM	PASSED	0.00		9088

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i208TTYMMDDHHmmTTNNttmmYYMMDDHHmmRRrrrrrrrrrrhhhhhhhhVVVVVVVV...  
TTNNttmmYYMMDDHHmmRRrrrrrrrrrrhhhhhhhhVVVVVVVV...&&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 = 0.2 gal/hr Test
  - 01 = 0.1 gal/hr Test
  - 02 = Gross (3 gal/hr) Test
5. mm - In-Tank Leak Manifold Status:
  - 00 = Tank Not Manifoldered During Leak Test
  - 01 = Tank Manifoldered 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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

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

Version 110

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

### Typical Response Message, Display Format:

```
<SOH>
I20ATT
JAN 22, 1996  3:08 PM
```

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

### ADJUSTED DELIVERY REPORT

T 1:REGULAR UNLEADED

INCREASE DATE/TIME	INCREASE VOLUME	INCREASE TC VOLUME	ADJUSTMENT	DELIVERY VOLUME	DELIVERY 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 (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type
5. rr - Number of Records to follow (Decimal)
6. YYMMDDHHmm - Date/Time of Delivery Start
7. NN - Number of eight character Data Fields to follow (Hex)
8. FFFFFFFF - ASCII Hex IEEE float:
  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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 20B  
**Function Type:** BIR Adjusted Delivery Report

Version 110

**Command Format:**  
**Display:** <SOH>I20BTT  
**Computer:** <SOH>i20BTT

### Typical Response Message, Display Format:

```
<SOH>
I20BTT
JAN 22, 1996  3:08 PM
```

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

BIR ADJUSTED DELIVERY REPORT

T 1:REGULAR UNLEADED

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

<ETX>

### Typical Response Message, Computer Format:

```
<SOH>i20BTTYMMDDHHmmTTddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
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 float:
  1. Starting Volume
  2. Ending Volume
  3. Adjusted Delivery Volume
  4. Adjusted Temperature Compensated Delivery Volume
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 20C

Version 15

**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....
```

LAST DELIVERY REPORT

```
T 1:REGULAR UNLEADED
INCREASE  DATE / TIME                GALLONS TC  GALLONS WATER  TEMP DEG F  HEIGHT

      END: JUL 28, 1997  3:14 PM        3231         3194  0.00         76.14   48.27
      START: JUL 28, 1997  3:05 PM        1244         1231  0.00         73.89   24.40
      AMOUNT:                1987         1963
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i20CTTYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...
      TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
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
9. && - Data Termination Flag
10. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 20D

Version 15

**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 than 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, 1996  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>i20DTTYMMDDHHmmTTFFFFFFFF...
                TFFFFFFFFF&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 211  
**Function Type:** Tank Chart Report

Version 14

**Command Format:**  
**Display:** <SOH>I211TThhhhhh  
**Computer:** <SOH>i211TTFFFFFFF

### Notes:

1. TT - Tank number, 00 = All tanks
2. hhhhhh - 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)

Minimum Step Size: 0.010 inches or 0.397 millimeter

Minimum Resolution: 3 decimal places

### Typical Response Message, Display Format:

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

STATION HEADER 1....          TANK 1
STATION HEADER 2....          TANK CALIBRATION CHART
STATION HEADER 3....          10028 GALLONS
STATION HEADER 4....          96.00 INCHES
```

DEPTH INCHES	CAPACITY GALLONS	DEPTH INCHES	CAPACITY GALLONS	DEPTH INCHES	CAPACITY GALLONS	DEPTH INCHES	CAPACITY 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>i211TTYMMDDHHmmTTnnnnnaaaaaaaaaAAAAAAAAAbbbbbbbbbbBBBBBBBBB...
TTnnnnnaaaaaaaaaAAAAAAAAAbbbbbbbbbbBBBBBBBBB...&&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. aaaaaaaaa - Height 1 (ASCII Hex IEEE float)
5. AAAAAAAAA - Volume 1 (ASCII Hex IEEE float)
6. bbbbbbbbbb - Height 2 (ASCII Hex IEEE float)
7. BBBBBBBBB - Volume 2 (ASCII Hex IEEE float)
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 221**  
**Function Type:** Ticketed Delivery Report

Version 116

**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, 1998  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

      DELIVERY END DATE      TICKET  GAUGE      DLVY  BEFORE  AFTER  EST DLVY
      MAR  7, 1998  8:26 AM  VOLUME  VOLUME  VAR    TMP    TMP    TMP
      MAR  7, 1998  8:26 AM  5901.0   5905.0  -4.0   44.8   42.4   41.0
      MAR  9, 1998 11:37 AM  5901.0   5905.0  -4.0   44.6   43.2   42.4
      MAR 10, 1998 11:34 PM  4099.0   4094.0   5.0   44.6   42.6   40.5
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i221TTYMMDDHHmmTTpPPdddYYMMDDHHmmNNFFFFFFFF...
      TTpPPdddYYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
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 float:
  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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: **225**

Version 116

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, 1998 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 VOLUME	GAUGE VOLUME	VARIANCE
MAR 7, 1998 8:26 AM	5901.0	5905.0	-4.0
MAR 9, 1998 11:37 AM	5901.0	5905.0	-4.0
MAR 10, 1998 11:34 PM	4099.0	4094.0	5.0
MAR 12, 1998 8:27 PM	3800.0	3797.0	3.0
MAR 14, 1998 8:28 AM	5900.0	5899.0	1.0
MAR 16, 1998 11:39 AM	5902.0	5916.0	-14.0
MAR 18, 1998 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>

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code 225:** (Continued)

**Typical Response Message, Computer Format:**

```
<SOH>i225TYYMMDDHHmmTTpPPdddYYMMDDHHmmNNFFFFFFFF...  
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 float:
  1. ticketed volume
  2. gauged volume
  3. delivery variance
9. && - Data Termination Flag
10. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 226**

Version 116

**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, 1998  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, 1998 11:39 AM      5902.0      5916.0      -14.0
MAR 18, 1998  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>i226TTYMMDDHHmmTTpPPdddYYMMDDHHmmNNFFFFFFFF...
                                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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 227**

Version 116

**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, 1998  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, 1998 11:39 AM      5902.0      5916.0      -14.0
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i227TTYMMDDHHmmTTpPPdddYYMMDDHHmmNNFFFFFFFF...
                                TTPpPPdddYYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 251  
**Function Type:** CSLD Results Report

Version 3

**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>i251TTYMMDDHHmmTTrr...
                        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 (software versions 3 and 4 only)
  - 08 - INCR (software versions 5 and above)
  - 09 - WARN (software versions 5 and above)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 281**

Version 3

**Function Type:** Fuel Management Report

**Command Format:**

**Display:** <SOH>I281TT

**Computer:** <SOH>i281TT

**Typical Response Message, Display Format:**

```
<SOH>
I281TT
JAN 22, 1996  3:09 PM

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

FUEL MANAGEMENT REPORT

REGULAR UNLEADED      ( TANK 1 )
  DAYS FUEL REMAINING: 1.8                AVERAGE SALES (GALLONS)
  INVENTORY :          5308 GAL          SUN   MON   TUE   WED   THR   FRI   SAT
  95% ULLAGE:          4218 GAL          2696  2075  2602  2046  2471  2805  2824
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i281TTYMMDDHHmmPPTTpttp...NNFFFFFFFF...
PPTTpttp...NNFFFFFFFF...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Number of tank product code pairs to follow (Hex)
3. TTp,ttp - Tank Number (decimal) and Product Code (ASCII character)
4. NN - Number of eight character Data Fields to follow (Hex)
5. FFFFFFFF - ASCII Hex IEEE float:
  1. Days Supply of Fuel Remaining
  2. Present Inventory
  3. Present 95% Ullage
  4. Average Sales on Sundays
  5. Average Sales on Mondays
  6. Average Sales on Tuesdays
  7. Average Sales on Wednesdays
  8. Average Sales on Thursdays
  9. Average Sales on Fridays
  10. Average Sales on Saturdays
6. && - Data Termination Flag
7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 282

Version 19

**Function Type:** FLS Diagnostic: Volume History Table

**Command Format:**

**Display:** <SOH>I282TT

**Computer:** <SOH>i282TT

### Typical Response Message, Display Format:

```
<SOH>
I282TT
JAN  3, 1996 10:07 PM

FLS DIAGNOSTICS: VOLUME TABLE

T 1:UNLEADED GASOLINE
CURRENT INVENTORY VOLUME:  5345
CURRENT INVENTORY TIME:    JAN  3, 1996 10:07:22 PM
MOST RECENT STORED:       JAN  3, 1996 10:00:22 PM

    1141  1297  1476  1625  1742  1932  2085  2156  2218  2242  2242  2242  2242
    2248  2265  2281  2307  2339  2405  2456  2573  2701  2854  3022  3141  3297
    3476  3625  3742  3932  4085  4156    0    0  4242  4242  4242  4248  4265
    4281  4307  4339  4405  4456  4573  4701  4854  5022  5160  5276  5345  5450
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>iXXXXTTYMMDDHHmmTTFFFFFFFFFYMMDDHHmmNNFFFFFFFF...
      TFFFFFFFFFYMMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = All Tanks)
3. FFFFFFFF - Current Inventory Volume (ASCII Hex IEEE float)
4. YYMMDDHHmm - Date and Time of the most recent stored hourly history volume
5. NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - ASCII Hex IEEE floats
  1. Latest recorded hourly volume
  2. Intermediate hourly recorded volumes
  3. Oldest recorded hourly volume
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 2E2

Version 14

**Function Type:** In-Tank Stored Inventory Report

**Command Format:**

**Display:** <SOH>I2E2TTII

**Computer:** <SOH>i2E2TTII

**Typical Response Message, Display Format:**

```
<SOH>
I2E2TT
JAN 22, 1996  3:06 PM

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

JAN 22, 1996  8:00 AM
TANK PRODUCT      VOLUME TC VOLUME  ULLAGE  HEIGHT  WATER  TEMP
  1  REGULAR UNLEADED    5329    5413    4699   48.97   0.00   37.39
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i2E2TTYMMDDHHmmIIYYMMDDHHmmTTpssssNNFFFFFFF...
                                TTpssssNNFFFFFFF...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. II - Inventory Record Number (Decimal 01, 02, 03, 04)
3. YYMMDDHHmm - Date and Time of Recorded Inventory
4. TT - Tank Number (Decimal, 00 = all)
5. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
6. 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
7. NN - Number of eight character Data Fields to follow (Hex)
8. FFFFFFFF - ASCII Hex IEEE float:
  - 1. Volume
  - 2. TC Volume
  - 3. Ullage
  - 4. Height
  - 5. Water
  - 6. Temperature
  - 7. Water Volume
9. && - Data Termination Flag
10. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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	SENSOR NORMAL

<ETX>

**Typical Response Message, Computer Format:**

```
<SOH>i306SSYYMMDDHHmmSSssss...
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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	SENSOR NORMAL

<ETX>

**Typical Response Message, Computer Format:**

```
<SOH>i311SSYYMMDDHHmmSSssss...
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 341**

Version 2

**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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 342**

Version 2

**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>i342SSYYMDDHHmmSSNNYYMDDHHmmaaaa...
      SSNNYYMDDHHmmaaaa...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - Current Date and Time
2. SS - Sensor Number (Decimal, 00 = all)
3. NN - Number of Alarm Incidents to follow
4. YYMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 346**

Version 2

**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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 347**

Version 2

**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>i347SSYYMDDHHmmSSNNYYMDDHHmmaaaa...
                                SSNNYYMDDHHmmaaaa...&&CCCC<ETX>
```

**Notes:**

1. YYMDDHHmm - Current Date and Time
2. SS - Sensor Number (Decimal, 00 = all)
3. NN - Number of Alarm Incidents to follow
4. YYMDDHHmm - 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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 34B**

Version 4

**Function Type:** Universal Sensor Status Report

**Command Format:**

**Display:** <SOH>I34BSS

**Computer:** <SOH>i34BSS

**Typical Response Message, Display Format:**

```
<SOH>
I34BSS
FEB 18, 1990  10:53 AM
```

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

UNIVERSAL STATUS REPORT

SENSOR	LOCATION	STATUS
1	UNIVERSAL SENSOR #1	FUEL ALARM

<ETX>

**Typical Response Message, Computer Format:**

```
<SOH>i34BSSYYMMDDHHmmSSssss...
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 34C**

Version 4

**Function Type:** Universal Sensor Alarm History Report

**Command Format:**

**Display:** <SOH>I34CSS

**Computer:** <SOH>i34CSS

**Typical Response Message, Display Format:**

```
<SOH>
I34CSS
FEB 18, 1990  10:53 AM
```

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

UNIVERSAL ALARM HISTORY REPORT

SENSOR LOCATION

```
1  UNIVERSAL SENSOR 1
   FEB 12 1990  11:32 AM      FUEL ALARM
   FEB 10 1990  10:09 PM      OPEN ALARM
```

<ETX>

**Typical Response Message, Computer Format:**

```
<SOH>i34CSSYYMDDHHmmSSNNYYMDDHHmmaaaa...
                        SSNNYYMDDHHmmaaaa...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - Current Date and Time
2. SS - Sensor Number (Decimal, 00 = all)
3. NN - Number of Alarm Incidents to follow
4. YYMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.2.4 LINE LEAK REPORTS

**Function Code:** 351

Version 1

**Function Type:** Volumetric Line Leak Result Report

**Command Format:**

**Display:** <SOH>I351PP

**Computer:** <SOH>i351PP

**Typical Response Message, Display Format:**

```
<SOH>
I351PP
MAR 26, 1996  1:55 PM

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

P 1:REGULAR UNLEADED
  3.0 GAL/HR TEST      LINE    SELF    PUMP
    PREV 24 HOURS      104      104      111
    SINCE MIDNIGHT      53       53       56
  0.2 GAL/HR TEST
    MAR 25, 1996  8:14 PM          PASSED
    MAR 25, 1996  2:02 AM          PASSED
    MAR 24, 1996  2:20 AM          PASSED
  0.1 GAL/HR TEST
    MAR 26, 1996  1:48 AM          PASSED
    MAR 25, 1996  4:11 AM          PASSED
    MAR 24, 1996  3:25 AM          PASSED
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i351PPYYMMDDHHmmPPLLSSBBllssbbNNYYMMDDHHmmRR...nnYYMMDDHHmmRR...
PPLLSSBBllssbbNNYYMMDDHHmmRR...nnYYMMDDHHmmRR...&&CCCC<ETX>
```

#### Notes:

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. LL - 3.0 GPH Line tests passed in previous 24 hours (Hex)
4. SS - 3.0 GPH Self tests passed in previous 24 hours (Hex)
5. BB - 3.0 GPH Pumpsides tests passed in previous 24 hours (Hex)
6. ll - 3.0 GPH Line tests passed since midnight (Hex)
7. ss - 3.0 GPH Self tests passed since midnight (Hex)
8. bb - 3.0 GPH Pumpsides tests passed since midnight (Hex)
9. NN - Number of 0.2 GPH test date entries to follow (Decimal)
10. YYMMDDHHmm - Date and Time of test
11. RR - Test result (00=fail, 01=pass)
12. nn - Number of 0.1 GPH test date entries to follow (Decimal)
13. YYMMDDHHmm - Date and Time of test
14. RR - Test result (00=fail, 01=pass)
15. && - Data Termination Flag
16. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 352

Version 1

**Function Type:** Volumetric Line Leak Alarm History Report

**Command Format:**

**Display:** <SOH>I352PP

**Computer:** <SOH>i352PP

### Typical Response Message, Display Format:

```
<SOH>
I352PP
MAR 26, 1996  1:55 PM

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

P 1:REGULAR UNLEADED
  DEC 24, 1991  9:51 PM    LINE LEAK SHUTDOWN
  DEC 23, 1991  9:46 PM    LLD SELF TEST FAIL
  DEC 22, 1991  9:31 PM    LINE LEAK TEST FAIL
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i352PPYYMMDDHHmmPPNNYYMMDDHHmmaaaa...
PPNNYYMMDDHHmmaaaa...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. NN - Number of Alarm entries to follow (Decimal)
4. YYMMDDHHmm - Date and Time of Alarm

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 352 Notes: (Continued)

5.                   aaaa - Alarm type code:
  - 0001 = VLLD Setup Data Warning
  - 0002 = VLLD Self Test Alarm
  - 0003 = VLLD Shutdown Alarm
  - 0004 = VLLD Leak Test Fail Alarm
  - 0005 = VLLD Selftest Invalid Warning
  - 0006 = VLLD Continuous Handle On Warning
  - 0007 = VLLD Gross Line Test Fail Alarm
  - 0008 = VLLD Gross Line Selftest Fail Alarm
  - 0009 = VLLD Gross Pump Test Fail Alarm
  - 000A = VLLD Gross Pump Selftest Fail Alarm
  - 000B = VLLD Periodic Test Needed Warning
  - 000C = VLLD Annual Test Needed Warning
  - 000D = VLLD Periodic Test Needed Alarm
  - 000E = VLLD Annual Test Needed Alarm
  - 000F = VLLD Periodic Line Test Fail Alarm
  - 0010 = VLLD Periodic Line Selftest Fail Alarm
  - 0011 = VLLD Periodic Pump Test Fail Alarm
  - 0012 = VLLD Periodic Pump Selftest Fail Alarm
  - 0013 = VLLD Annual Line Test Fail Alarm
  - 0014 = VLLD Annual Line Selftest Fail Alarm
  - 0015 = VLLD Annual Pump Test Fail Alarm
  - 0016 = VLLD Annual Pump Selftest Fail Alarm
  - 0017 = VLLD Pressure Warning
  - 0018 = VLLD Pressure Alarm
  - 0019 = VLLD Gross Test Fault Alarm
  - 001A = VLLD Periodic Test Fault Alarm
  - 001B = VLLD Annual Test Fault Alarm
  - 001C = VLLD Fuel Out Alarm
6.                   && - Data Termination Flag
7.                   CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 353

Version 2

**Function Type:** Volumetric Line Leak Pump Status

**Command Format:**

**Display:** <SOH>I353PP

**Computer:** <SOH>i353PP

**Typical Response Message, Display Format:**

<SOH>  
I353PP  
MAR 26, 1996 1:55 PM

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

LINE	LOCATION	STATUS
1	REGULAR UNLEADED	ENABLED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i353PPYYMDDHHmmPPaaaa...  
PPaaaa&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. aaaa - Line Status:  
0001 - Enabled  
0002 - Disabled
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 373

Version 14

**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

Q 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

NO-VENT TEST ABORTS:
  3 OUT OF 10 TESTS
<ETX>
```

(Added in V19)

(Added in V19)

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code 373:** (Continued)

### Typical Response Message, Computer Format:

```
<SOH>i373QQYYMMDDHHmmQQyymdddhmmrrTTPPPPMNNYYMMDDHHmmRRtt...
                                     nnYYMMDDHHmmRRtt...
      QQyymdddhmmrrTTPPPPMNNYYMMDDHHmmRRtt...
                                     nnYYMMDDHHmmRRtt...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak sensor number (Decimal, 00 = All)
3. yymdddhmm - 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 0.1 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 (14 character groups) to follow (Hex)
13. YYMMDDHHmm - Date and time of 0.2 gal/hr test
14. RR - Test result
  - 00 = FAIL
  - 01 = PASS
15. tt - 0.2 gal/hr test type (unused, always 00)
16. && - Data Termination Flag
17. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 374

Version 14

**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

Q 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>i374QQYYMDDHHmmQQyyymmddhhmmTTNNYYMDDHHmmttnnYYMDDHHmmtt...
QQyyymmddhhmmTTNNYYMDDHHmmttnnYYMDDHHmmtt...&&CCCC<ETX>
```

**Notes:**

1. YYMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak sensor number (Decimal, 00 = All)
3. yyymmddhhmm - Last 3.0 gal/hr test pass time ("0000000000" if no test yet)
4. TT - 3.0 gal/hr test type (unused, always 00)
5. NN - Number of 0.10 gal/hr test results (12 character groups) to follow (Hex)
6. YYMDDHHmm - Date and time of 0.1 gal/hr test
7. tt - 0.1 gal/hr test type (unused, always 00)
8. nn - Number of 0.20 gal/hr test results (12 character groups) to follow (Hex)
9. YYMDDHHmm - Date and time of 0.2 gal/hr test
10. tt - 0.2 gal/hr test type (unused, always 00)
11. && - Data Termination Flag
12. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 381**

Version 7

**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
Q 1:REGULAR UNLEADED	ENABLED	TESTING 0.10 GAL/HR	OFF	OFF

ACTIVE ALARMS:  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i381QQYYMDDHHmmQQSSSttNNaaaa...  
QQSSSttNNaaaa...&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - 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 3.0 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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### 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 V19)
  - 0008 = PLLD Shutdown Alarm
  - 0009 = PLLD High Pressure Warning (Obsolete V19)
  - 000A = PLLD Continuous Handle On Warning (Obsolete V19)
  - 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 V19)
  - 0010 = PLLD Continuous Handle On Alarm
  - 0011 = PLLD Fuel Out Alarm
  - 0012 = PLLD Line Equipment Alarm
- 7. && - Data Termination Flag
- 8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 382

Version 7

**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

Q 1:REGULAR UNLEADED
      GROSS LINE FAIL          JAN  9, 1995  6:12 AM
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i382QQYYMDDHHmmQQNNyymmddhhmmaaaa...
      QQNNyymmddhhmmaaaa...&&CCCC<ETX>
```

**Notes:**

1. YYMDDHHmm - 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 V19)
  - 0008 = PLLD Shutdown Alarm
  - 0009 = PLLD High Pressure Warning (Obsolete V19)
  - 000A = PLLD Continuous Handle On Warning (Obsolete V19)
  - 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 V19)
  - 0010 = PLLD Continuous Handle On Alarm
  - 0011 = PLLD Fuel Out Alarm
  - 0012 = PLLD Line Equipment Alarm
6. && - Data Termination Flag
7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 383

Version 7

**Function Type:** Pressure Line Leak Test Results (0.10 test data only)

**Command Format:**

**Display:** <SOH>I383QQ

**Computer:** <SOH>i383QQ

**Notes:**

1. In Version 12, this command's response is inadvertently identical to I373QQ. In Versions 7-11, 14, and higher, the response is accurately defined here.

**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

Q 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>
```

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code 383:** (Continued)

**Typical Response Message, Computer Format:**

```
<SOH>i383QQYYMMDDHHmmQQyyymmddhhmmrrTTPPPPPMMMNYYMMDDHHmmRRtt...  
QQyyymmddhhmmrrTTPPPPPMMMNYYMMDDHHmmRRtt...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak sensor number (Decimal, 00 = All)
3. yyymmddhhmm - 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 0.1 gal/hr test
10. RR - Test result  
00 = FAIL  
01 = PASS
11. tt - 0.1 gal/hr test type (unused, always 00)
12. && - Data Termination Flag
13. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 384

Version 7

**Function Type:** Pressure Line Leak Test History (0.10 test data only)

**Command Format:**

**Display:** <SOH>I384QQ

**Computer:** <SOH>i384QQ

**Notes:**

1. In Version 12, this command's response is inadvertently identical to I374QQ. In Versions 7-11, 14, and higher, the response is accurately defined here.

**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

Q 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>i384QQYYMMDDHHmmQQyyymmddhhmmTTNNYYMMDDHHmmtt...
QQyyymmddhhmmTTNNYYMMDDHHmmtt...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak sensor number (Decimal, 00 = All)
3. yyymmddhhmm - Last 3.0 gal/hr test pass time ("0000000000" if no test yet)
4. TT - 3.0 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 0.1 gal/hr test
7. tt - 0.1 gal/hr test type (unused, always 00)
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 386**

Version 10

**Function Type:** WPLLD Line Leak Status

**Command Format:**

**Display:** <SOH>I386WW

**Computer:** <SOH>i386WW

**Typical Response Message, Display Format:**

```
<SOH>
I386WW
JAN 24, 1996  2:52 PM

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

WPLLD LINE LEAK STATUS

LINE                DISPENSING  TEST STATUS          PUMP    HANDLE
W 1:REGULAR UNLEADED  ENABLED      TESTING 0.20 GAL/HR  OFF     OFF

ACTIVE ALARMS:
  PLLD PERIODIC WARN
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i386WWYYMMDDHHmmWWSSSttNNaaaa...
                                WWSSSttNNaaaa...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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 0.20 gal/hr
  - 04 = test aborted
  - 05 = line lockout
  - 06 = disable alarm
  - 07 = test pending
  - 08 = test delay
  - 09 = testing at 0.10 gal/hr



## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 386 Notes: (Continued)

- 5. NN - number of active alarms to follow (Hex)
- 6. aaaa - type of alarm:
  - 0001 - WPLLD Setup Data Warning
  - 0002 - WPLLD Gross Test Fail Alarm
  - 0003 - WPLLD Periodic Test Fail Alarm
  - 0004 - WPLLD Periodic Test Needed Warning
  - 0005 - WPLLD Periodic Test Needed Alarm
  - 0006 - WPLLD Sensor Open Alarm
  - 0007 - WPLLD Communications Alarm
  - 0008 - WPLLD Shutdown Alarm
  - 0009 - WPLLD Continuous Handle On Warning (Obsolete V19)
  - 000A = WPLLD Annual Test Fail Alarm
  - 000B = WPLLD Annual Test Needed Warning
  - 000C = WPLLD Annual Test Needed Alarm
  - 000D = WPLLD High Pressure Warning (Obsolete V19)
  - 000E = WPLLD High Pressure Alarm (Obsolete V19)
  - 000F = WPLLD Sensor Short Alarm (Obsolete V19)
  - 0010 = WPLLD Continuous Handle On Alarm
  - 0011 = WPLLD Fuel Out Alarm
  - 0012 = WPLLD Line Equipment Alarm
- 7. && - Data Termination Flag
- 8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 387

Version 10

**Function Type:** WPLLD Line Leak Alarm History Report

**Command Format:**

**Display:** <SOH>I387WW

**Computer:** <SOH>i387WW

**Typical Response Message, Display Format:**

```
<SOH>
I387WW
JAN 24, 1996  2:52 PM

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

WPLLD LINE LEAK ALARM HISTORY REPORT

W 1:REGULAR UNLEADED
      GROSS LINE FAIL          JAN  9, 1995  6:12 AM
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i387WWYYMMDDHHmmWWNNyymmddhhmmaaaa...
      WWNNyymmddhhmmaaaa...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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 - WPLLD Setup Data Warning
  - 0002 - WPLLD Gross Test Fail Alarm
  - 0003 - WPLLD Periodic Test Fail Alarm
  - 0004 - WPLLD Periodic Test Needed Warning
  - 0005 - WPLLD Periodic Test Needed Alarm
  - 0006 - WPLLD Sensor Open Alarm
  - 0007 - WPLLD Communications Alarm
  - 0008 - WPLLD Shutdown Alarm
  - 0009 - WPLLD Continuous Handle On Warning (Obsolete V19)
  - 000A = WPLLD Annual Test Fail Alarm
  - 000B = WPLLD Annual Test Needed Warning
  - 000C = WPLLD Annual Test Needed Alarm
  - 000D = WPLLD High Pressure Warning (Obsolete V19)
  - 000E = WPLLD High Pressure Alarm (Obsolete V19)
  - 000F = WPLLD Sensor Short Alarm (Obsolete V19)
  - 0010 = WPLLD Continuous Handle On Alarm
  - 0011 = WPLLD Fuel Out Alarm
  - 0012 = WPLLD Line Equipment Alarm
6. && - Data Termination Flag
7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 388

Version 10

**Function Type:** WPLLD Line Leak Test Results

**Command Format:**

**Display:** <SOH>I388WW

**Computer:** <SOH>i388WW

### Typical Response Message, Display Format:

```
<SOH>
I388WW
JAN 24, 1996  2:52 PM

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

WPLLD LINE LEAK TEST RESULTS

W 1:REGULAR UNLEADED

  3.0 GAL/HR RESULTS:

LAST TEST:
JAN 24, 1996  2:12 PM PASS

NUMBER OF TESTS PASSED
  PREV 24 HOURS :    75
  SINCE MIDNIGHT :    39

0.20 GAL/HR RESULTS:

JAN 23, 1996 10:59 PM PASS

0.10 GAL/HR RESULTS:

JAN 21, 1996  3:27 AM PASS

NO-VENT TEST ABORTS:
  3 OUT OF 10 TESTS
<ETX>
```

(Added in V19)

(Added in V19)

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 388** (Continued)

### Typical Response Message, Computer Format:

```
<SOH>i388WWYYMMDDHHmmWYymdddhmmrrTTPPPPMNYYMMDDHHmmRRtt...
                                     nnYYMMDDHHmmRRtt...
WYymdddhmmrrTTPPPPMNYYMMDDHHmmRRtt...
                                     nnYYMMDDHHmmRRtt...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. yymdddhmm - 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 0.20 gal/hr test results (14 character groups) to follow (Hex)
9. YYMMDDHHmm - Date and time of test
10. RR - Test result
  - 00 = FAIL
  - 01 = PASS
11. tt - 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 test
14. RR - Test result
  - 00 = FAIL
  - 01 = PASS
15. tt - Test type (unused, always 00)
16. && - Data Termination Flag
17. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 389**

Version 12

**Function Type:** WPLLD Line Leak Test History

**Notes:**

1. While this command was implemented in Versions 10 & 11, the format shown below was not correct until Version 12. The format used in Versions 10 & 11 is shown in Command I384, except that the WPLLD tests were 0.20 GPH instead of 0.10 GPH.

**Command Format:**

**Display:** <SOH>I389WW

**Computer:** <SOH>i389WW

**Typical Response Message, Display Format:**

```
<SOH>
I389WW
JAN 24, 1996  2:52 PM

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

WPLLD LINE LEAK TEST HISTORY

W 1:REGULAR UNLEADED

LAST  3.0 PASS:           JAN 24, 1996  2:12 PM

FIRST 0.20 PASS EACH MONTH:  JAN 15, 1996 11:38 PM

FIRST 0.10 PASS EACH MONTH:  JAN 12, 1996 1:21 AM
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i389WWYYMMDDHHmmWWyymmddhhmmTTNNYYMMDDHHmmtt...nnYYMMDDHHmmtt...
WWyymmddhhmmTTNNYYMMDDHHmmtt...nnYYMMDDHHmmtt...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. yymmddhhmm - Last 3.0 gal/hr test pass time ("0000000000" if no test yet)
4. TT - 3.0 gal/hr test type (unused, always 00)
5. NN - Number of 0.20 gal/hr test results (12 character groups) to follow (Hex)
6. YYMMDDHHmm - Date and time of 0.20 gal/hr test
7. tt - 0.20 gal/hr test type (unused, always 00)
8. nn - Number of 0.10 gal/hr test results (12 character groups) to follow (Hex)
9. YYMMDDHHmm - Date and time of 0.10 gal/hr test
10. tt - 0.10 gal/hr test type (unused, always 00)
11. && - Data Termination Flag
12. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.2.5 MISCELLANEOUS REPORTS

**Function Code: 391**

Version 10

**Function Type:** Tanker Load Report

**Command Format:**

**Display:** <SOH>I391TT

**Computer:** <SOH>i391TT

**Typical Response Message, Display Format:**

```
<SOH>
I391TT
JAN 9, 1995  10:02 AM

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

TANK   1  REGULAR UNLEADED

NO START DATE/TIME GALLON  TEMP   END DATE/TIME GALLON  TEMP  TOTAL
 4  YY/MM/DD HH:mm GGGGGG  TT.T  YY/MM/DD HH:mm GGGGGG  TT.T  GGGGGG
 3  YY/MM/DD HH:mm GGGGGG  TT.T  YY/MM/DD HH:mm GGGGGG  TT.T  GGGGGG
 2  YY/MM/DD HH:mm GGGGGG  TT.T  YY/MM/DD HH:mm GGGGGG  TT.T  GGGGGG
 1  YY/MM/DD HH:mm GGGGGG  TT.T  YY/MM/DD HH:mm GGGGGG  TT.T  GGGGGG
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i391TTYMMDDHHmmTTLLSSNNYYMMDDHHmmaaaaaaabbabbbbbb
      YYMMDDHHmmccccccccddddddeeeeeee
      TTLLSSNNYYMMDDHHmmaaaaaaabbabbbbbb
      YYMMDDHHmmccccccccddddddeeeeeee&&CCCC<ETX>
```

#### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. LL - Total Loads for tank (Decimal, no data to follow if 00)
4. SS - Load Sequence Number (Decimal)
5. NN - Number of data items to follow (Hex)
6. YYMMDDHHmm - Starting Date/Time
7. aaaaaaaa - Starting Volume (ASCII Hex IEEE float)
8. bbbbbbbb - Starting Temperature (ASCII Hex IEEE float)
9. YYMMDDHHmm - Ending Date/Time
10. cccccccc - Ending Volume (ASCII Hex IEEE float)
11. dddddddd - Ending Temperature (ASCII Hex IEEE float)
12. eeeeeeee - Total (start volume - end volume) (ASCII Hex IEEE float)
13. && - Data Termination Flag
14. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.2.6 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>i401IIYYMDDHHmmIIsssss...

IIsssss&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - 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
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 402  
**Function Type:** Input Alarm History Report

Version 1

**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  LOCATION
  1      * EXTERNAL INPUT 1 *
        JAN 15, 1996  8:04 AM          SETUP DATA WARNING

<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i402IIYYMDDHHmmIINNYYMDDHHmmaaaa...
                                IINNYYMDDHHmmaaaa...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - Current Date and Time
2. II - Input Number (Decimal, 00 = all)
3. NN - Number of Alarm Incidents to follow (Hex)
4. YYMDDHHmm - Date and Time of alarm
5. aaaa - Alarm type number:
  - 0001 = Input Setup Data Warning
  - 0002 = Input Normal
  - 0003 = Input Alarm
6. && - Data Termination Flag
7. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 403

Version 5

**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>i403IIYYMDDHHmmIINNYYMDDHHmmaaaa...
                                IINNYYMDDHHmmaaaa...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - Current Date and Time
2. II - Input Number (Decimal, 00 = all)
3. NN - Number of Alarm Incidents to follow (Hex)
4. YYMDDHHmm - 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
6. && - Data Termination Flag
7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 406  
**Function Type:** Relay Status Report

Version 1

**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 *	OPEN

<ETX>

### Typical Response Message, Computer Format:

<SOH>i406RRYYMDDHHmmRRssss...  
RRssss&&CCCC<ETX>

#### Notes:

1. YYMDDHHmm - Current Date and Time
2. RR - Relay Number (Decimal, 00 = all)
3. ssss - Relay Status:  
0001 - Relay Open  
0002 - Relay Closed
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3 SETUP FUNCTIONS & REPORTS

#### 7.3.1 SYSTEM SETUP

**Function Code:** 501

Version 1

**Function Type:** Set Time of day

**Command Format:**

**Display:** <SOH>S50100YYMMDDHHmm

**Computer:** <SOH>s50100YYMMDDHHmm

**Inquire:**

<SOH>I50100

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 502

Version 1

**Function Type:** Set Shift Start Time 1, 2, 3, 4

**Command Format:**

**Display:** <SOH>S502SSHmm

**Computer:** <SOH>s502SSHmm

**Inquire:**

<SOH>I502SS

<SOH>i502SS

**Typical Response Message, Display Format:**

<SOH>

I50201

JAN 22, 1996 3:12 PM

SHIFT TIME 1 : DISABLED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i502SSYYMMDDHHmmSSHmm&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Shift Start time (01, 02, 03, 04)
3. HHmm - Hour and Minute (EE00 = Disabled)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 503

Version 1

**Function Type:** Set Print Header Line 1, 2, 3, 4

**Command Format:**

**Display:** <SOH>S503LLaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s503LLaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I503LL

<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>i503LLYYMMDDHHmmaaaaaaaaaaaaaaaaaaaaa&&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 from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 504

Version 1

**Function Type:** Set System RS-232 Security Code

**Command Format:**

**Display:** <SOH>S50400aaaaaa

**Computer:** <SOH>s50400aaaaaa

**Inquire:**

<SOH>I50400

<SOH>i50400

**Typical Response Message, Display Format:**

<SOH>  
I50400  
JAN 22, 1996 3:12 PM

SYSTEM SECURITY CODE  
CODE : 000000  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i50400YYMMDDHHmmaaaaaa&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. aaaaaa - Security Code (6 ASCII characters from 20 Hex - 7E Hex)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 505

Version 1

**Function Type:** Set System Type & Language Flags

**Command Format:**

**Display:** <SOH>S50500UL

**Computer:** <SOH>s50500UL

**Inquire:**

<SOH>I50500

<SOH>i50500

### Typical Response Message, Display Format:

```
<SOH>
I50500
JAN 22, 1996  3:12 PM

SYSTEM TYPE AND LANGUAGE FLAG

SYSTEM UNITS
U.S
SYSTEM LANGUAGE
ENGLISH
SYSTEM DATE/TIME FORMAT
MON DD YYYY HH:MM:SS xM
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i50500YYMMDDHHmmUL&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. U - System Units:
  - 1 = U.S
  - 2 = Metric
  - 3 = Imperial Gallons
3. L - System Language:
  - 1 = English
  - 2 = French
  - 3 = Spanish
  - 4 = German
  - 5 = Portuguese
  - 6 = Polish
  - 7 = Swedish
  - 8 = Japanese
  - 9 = Finnish
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 506

Version 2

**Function Type:** Set Periodic Test Needed Warning

**Command Format:**

**Display:** <SOH>S50600f

**Computer:** <SOH>s50600f

**Inquire:**

<SOH>I50600

<SOH>i50600

### Typical Response Message, Display Format:

<SOH>  
I50600  
JAN 22, 1996 3:12 PM

PERIODIC TEST WARNINGS: DISABLED  
<ETX>

### Typical Response Message, Computer Format:

<SOH>i50600YYMMDDHHmmf&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. f - Periodic Test Needed Warnings Flag:  
0 = Disabled  
1 = Enabled
3. && - Data Termination Flag
4. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 507

Version 4

**Function Type:** Set Days Before Periodic Test Needed Warning

**Command Format:**

**Display:** <SOH>S50700dd

**Computer:** <SOH>s50700dd

**Inquire:**

<SOH>I50700

<SOH>i50700

### Typical Response Message, Display Format:

<SOH>

I50700

JAN 22, 1996 3:12 PM

PERIODIC TEST WARNING: DAYS = 25

<ETX>

### Typical Response Message, Computer Format:

<SOH>i50700YYMMDDHHmmdd&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. dd - Days Before Periodic Test Needed Warning
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 508

Version 4

**Function Type:** Set Days Before Periodic Test Needed Alarm

**Command Format:**

**Display:** <SOH>S50800dd

**Computer:** <SOH>s50800dd

**Inquire:**

<SOH>I50800

<SOH>i50800

**Typical Response Message, Display Format:**

<SOH>

I50800

JAN 22, 1996 3:12 PM

PERIODIC TEST ALARM: DAYS = 30

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i50800YYMMDDHHmmdd&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. dd - Days Before Periodic Test Needed Alarm
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 509

Version 4

**Function Type:** Set Annual Test Needed Warning

**Command Format:**

**Display:** <SOH>S50900f

**Computer:** <SOH>s50900f

**Inquire:**

<SOH>I50900

<SOH>i50900

**Typical Response Message, Display Format:**

<SOH>  
I50900  
JAN 22, 1996 3:12 PM

ANNUAL TEST WARNINGS: DISABLED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i50900YYMMDDHHmmf&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. f - Annual Test Needed Warnings Flag:  
0 = Disabled  
1 = Enabled
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 50A

Version 4

**Function Type:** Set Days Before Annual Test Needed Warning

**Command Format:**

**Display:** <SOH>S50A00ddd

**Computer:** <SOH>s50A00ddd

**Inquire:**

<SOH>I50A00

<SOH>i50A00

**Typical Response Message, Display Format:**

<SOH>

I50A00

JAN 22, 1996 3:12 PM

ANNUAL TEST WARNING: DAYS = 355

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i50A00YYMMDDHHmmddd&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. ddd - Days Before Annual Test Needed Warning
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 50B

Version 4

**Function Type:** Set Days Before Annual Test Needed Alarm

**Command Format:**

**Display:** <SOH>S50B00ddd

**Computer:** <SOH>s50B00ddd

**Inquire:**

<SOH>I50B00

<SOH>i50B00

**Typical Response Message, Display Format:**

<SOH>

I50B00

JAN 22, 1996 3:12 PM

ANNUAL TEST ALARM: DAYS = 365

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i50B00YYMMDDHHmmddd&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. ddd - Days Before Annual Test Needed Alarm
3. && - Data Termination Flag
4. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 50C

Version 5

**Function Type:** Set Remote Printer Page Eject Flag

**Command Format:**

**Display:** <SOH>S50C00f

**Computer:** <SOH>s50C00f

**Inquire:**

<SOH>I50C00

<SOH>i50C00

**Typical Response Message, Display Format:**

<SOH>  
I50C00  
JAN 22, 1996 3:13 PM

REMOTE PRINTER  
DISABLED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i50C00YYMMDDHHmmf&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. f - Page Eject Flag:  
0 = Disabled  
1 = Enabled
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 50D

Version 8

**Function Type:** Set Print Temperature Compensation Flag

**Command Format:**

**Display:** <SOH>S50D00f

**Computer:** <SOH>s50D00f

**Inquire:**

<SOH>I50D00

<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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 50E

Version 8

**Function Type:** Set Temperature Compensation Value

**Command Format:**

**Display:** <SOH>S50E00DDD.hh

**Computer:** <SOH>s50E00FFFFFFFF

**Inquire:**

<SOH>I50E00

<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>i50E00YYMMDDHHmmFFFFFFFFF&&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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 50F**

Version 10

**Function Type:** Set System Date/Time Display Format

**Command Format:**

**Display:** <SOH>S50F00xx

**Computer:** <SOH>s50F00xx

**Inquire:**

<SOH>I50F00

<SOH>i50F00

### Typical Response Message, Display Format:

```
<SOH>
I50F00
JAN 22, 1996  3:13 PM

MON DD YYYY HH:MM:SS xM
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i50F00YYMMDDHHMMxx&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. xx - Display format for DATE/TIME code
  - 01 - MON DD, YYYY HH:MM:SS xM (12 Hour Clock)
  - 02 - MON DD YYYY HH:MM:SS (24 Hour Clock)
  - 03 - MM-DD-YY HH:MM:SS xM (12 Hour Clock)
  - 04 - MM-DD-YY HH:MM:SS (24 Hour Clock)
  - 05 - DD-MM-YY HH:MM:SS (24 Hour Clock)
  - 06 - YY-MM-DD HH:MM:SS (24 Hour Clock)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 511**

Version 110

**Function Type:** Set BIR Shift Printouts Flag

**Command Format:**

**Display:** <SOH>S51100f

**Computer:** <SOH>s51100f

**Inquire:**

<SOH>I51100

<SOH>i51100

**Typical Response Message, Display Format:**

<SOH>  
I51100  
JAN 22, 1996 3:13 PM

SHIFT BIR PRINTOUTS  
ENABLED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i51100YYMMDDHHmmf&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. f - Shift Printouts flag  
0 = Disable  
1 = Enable
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 512

Version 110

**Function Type:** Set BIR Daily Printouts Flag

**Command Format:**

**Display:** <SOH>S51200f

**Computer:** <SOH>s51200f

**Inquire:**

<SOH>I51200

<SOH>i51200

**Typical Response Message, Display Format:**

<SOH>  
I51200  
JAN 22, 1996 3:13 PM

DAILY BIR PRINTOUTS  
ENABLED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i51200YYMMDDHHmmf&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. f - Daily Printouts flag  
0 = Disable  
1 = Enable
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 513

Version 10

**Function Type:** Set Tanker Load Report Flag

**Command Format:**

**Display:** <SOH>S51300f

**Computer:** <SOH>s51300f

**Inquire:**

<SOH>I51300

<SOH>i51300

**Typical Response Message, Display Format:**

<SOH>  
I51300  
JAN 22, 1996 3:14 PM

TANKER LOAD REPORT  
ENABLED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i51300YYMMDDHHmmf&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. f - Tanker Load Report Flag:  
0 = Disable  
1 = Enable
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 514

Version 10

**Function Type:** Set H-Protocol Height/Volume format

**Command Format:**

**Display:** <SOH>S51400f

**Computer:** <SOH>s51400f

**Inquire:**

<SOH>I51400

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 515

Version 110

**Function Type:** Set HRM - QPLD Monthly Printout

**Command Format:**

**Display:** <SOH>S51500x

**Computer:** <SOH>s51500x

**Inquire:**

<SOH>I51500

<SOH>i51500

**Typical Response Message, Display Format:**

<SOH>  
I51500  
JAN 24, 1996 2:53 PM

QPLD MONTHLY PRINTOUT  
ENABLED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i51500YYMMDDHHmmx&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. x - QPLD Monthly Report:  
0 = Disabled  
1 = Enabled
3. && - Data Termination Flag
4. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 516

Version 14

**Function Type:** Set Re-direct Local Printout Flag

**Command Format:**

**Display:** <SOH>S51600x

**Computer:** <SOH>s51600x

**Inquire:**

<SOH>I51600

<SOH>i51600

**Typical Response Message, Display Format:**

<SOH>  
I51600  
OCT 15, 1996 4:29 PM

RE-DIRECT LOCAL PRINTOUT  
ENABLED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i51600YYMMDDHHmmx&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. x - Re-direct Local Printout:  
0 = Disabled  
1 = Enabled
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 517

Version 15

**Function Type:** Set System Type & Language Flags

**Command Format:**

**Display:** <SOH>S51700ULL

**Computer:** <SOH>s51700ULL

**Inquire:**

<SOH>I51700

<SOH>i51700

### Typical Response Message, Display Format:

```
<SOH>
I51700
JUL 29, 1997  9:03 AM

SYSTEM TYPE AND LANGUAGE FLAG

SYSTEM UNITS
U.S.
SYSTEM LANGUAGE
ENGLISH
SYSTEM DATE/TIME FORMAT
MON DD YYYY HH:MM:SS xM
<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
4. && - Data Termination Flag
5. CCCC - Message Checksum



## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 518

Version 15

**Function Type:** Set Secondary Language Code Page Output

**Command Format:**

**Display:** <SOH>S51800PP

**Computer:** <SOH>s51800PP

**Inquire:**

<SOH>I51800

<SOH>i51800

**Typical Response Message, Display Format:**

```
<SOH>
I51800
JUL 29, 1997  9:04 AM
ALTERNATE LANGUAGE CODE PAGE
```

CODE PAGE SELECTED:

WINDOWS

<ETX>

**Typical Response Message, Computer Format:**

```
<SOH>i51800YYMMDDHHmmPP&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Code Page selected  
00 = Windows  
01 = DOS
3. && - Data Termination Flag
4. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 519

Version 15

**Function Type:** Set PLLD & WPLLD Duration Before Precision Retest

**Command Format:**

**Display:** <SOH>S51900DDD

**Computer:** <SOH>s51900DDD

**Inquire:**

<SOH>I51900

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 51A

Version 15

**Function Type:** Set Enable/Disable Auto Daylight Saving Time

**Command Format:**

**Display:** <SOH>S51A00f

**Computer:** <SOH>s51A00f

**Inquire:**

<SOH>I51A00

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 51B

Version 15

**Function Type:** Set Start/End Daylight Saving Date and Time

**Command Format:**

**Display:** <SOH>S51BttMMWDHHmm

**Computer:** <SOH>s51BttMMWDHHmm

**Inquire:**

<SOH>I51B00

<SOH>i51B00

### Typical Response Message, Display Format:

<SOH>  
I51B00  
JUL 29, 1997 9:04 AM  
DAYLIGHT SAVING TIME

START DATE    APR    WEEK 1    SUN    2:00 AM  
END DATE      OCT    WEEK 4    SUN    2:00 AM  
<ETX>

### Typical Response Message, Computer Format:

<SOH>i51B00YYMMDDHHmmttMMWDHHmm&&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.            MMWDHHmm - Date & Time  
                    MM = Month (01 - 12)  
                    W = Week of Month (1 - 6)  
                    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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 51C

Version 116

**Function Type:** Set Ticketed Delivery Flag Enable

**Command Format:**

**Display:** <SOH>S51C00f

**Computer:** <SOH>s51C00f

**Inquire:**

<SOH>I51C00

<SOH>i51C00

**Typical Response Message, Display Format:**

<SOH>  
I51C00  
MAR 20, 1998 3:27 PM

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 - Disable  
1 - Enable
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 51D

Version 116

**Function Type:** Set Ticketed Delivery Temperature Compensation Flag

**Command Format:**

**Display:** <SOH>S51D00f

**Computer:** <SOH>s51D00f

**Inquire:**

<SOH>I51D00

<SOH>i51D00

**Typical Response Message, Display Format:**

<SOH>

I51D00

MAR 20, 1998 3:27 PM

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 - Temperature compensated
3. && - Data Termination Flag
4. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 51E

Version 116

**Function Type:** Set Ticketed Delivery Close Day of Week

**Command Format:**

**Display:** <SOH>S51E00D

**Computer:** <SOH>s51E00D

**Inquire:**

<SOH>I51E00

<SOH>i51E00

**Typical Response Message, Display Format:**

<SOH>  
I51E00  
MAR 20, 1998 3:28 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.2 COMMUNICATIONS SETUP

**Function Code: 520**

Version 20

**Function Type:** Set Receiver Auto Dial Type and Start Time II

**Command Format:**

Inquire:  
<SOH>I520RR

**Display:** <SOH>S520RRMYMMDDHHmm<CR> (if M = 1)  
MMWDHHmm<CR> (if M = 2)  
WDHHmm<CR> (if M = 3)  
DHHmm<CR> (if M = 4)  
HHmm<CR> (if M = 5)  
(if M = 6) Reserved  
(if M = 7) Reserved  
f<CR> (if M = 8)

**Computer:** <SOH>s520RRMYMMDDHHmm<CR> (if M = 1)  
MMWDHHmm<CR> (if M = 2)  
WDHHmm<CR> (if M = 3)  
DHHmm<CR> (if M = 4)  
HHmm<CR> (if M = 5)  
(if M = 6) Reserved  
(if M = 7) Reserved  
f<CR> (if M = 8)

<SOH>i520RR

**Typical Response Message, Display Format:**

<SOH>  
I520RR  
JUN 1, 2000 8:02 AM

RECEIVER AUTO DIAL TYPE & START TIME

RCVR	LOCATION LABEL	DIAL TYPE	START TIME
1	TLS LAB R1	DAILY	4:00 PM
2	TLS LAB R2	DAILY	4:30 PM
3	FINANCE R3	DAILY	5:00 PM
4	FINANCE R4	DAILY	5:30 PM
5	TCH SUP R5	DAILY	6:00 PM
6	TCH SUP R6	DAILY	6:30 PM
7	ENG/MKT R7	DAILY	7:00 PM
8	ENG/MKT R8	DAILY	7:30 PM

<ETX>



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code 520: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>i520RRYYMMDDHHmmRRNNMYMMDDHHmm...      (if M = 1)
          MMWDHHmm...                          (if M = 2)
          WDHHmm...                            (if M = 3)
          DHHmm...                            (if M = 4)
          HHmm...                             (if M = 5)
          (if M = 6) Reserved
          (if M = 7) Reserved
          f...                                (if M = 8)

RRNNMYMMDDHHmm&&CCCC<ETX> (if M = 1)
MMWDHHmm&&CCCC<ETX>      (if M = 2)
WDHHmm&&CCCC<ETX>        (if M = 3)
DHHmm&&CCCC<ETX>         (if M = 4)
HHmm&&CCCC<ETX>          (if M = 5)
          (if M = 6) Reserved
          (if M = 7) Reserved
          f&&CCCC<ETX>    (if M = 8)
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal, 00 = all)
3. NN - Number of character Data Fields to follow (Hex)
4. M - Auto Dial Method (frequency):
  - 1 = On Date
  - 2 = Annually
  - 3 = Monthly
  - 4 = Weekly
  - 5 = Daily
  - 8 = BIR End (V20 - BIR only)
5. - If M = 1 ON DATE, NNMYMMDDHHmm:
  - NN = 0B - Number of character Data Fields to follow (Hex)
  - M = 1 - ON DATE
  - YY = Year
  - MM = Month (01 - 12)
  - DD = Day
  - HHmm = Hour, Minute (EE00 = Disabled)
- If M = 2 ANNUALLY, NNMMWDHHmm:
  - NN = 09 - Number of character Data Fields to follow (Hex)
  - M = 2 - ANNUALLY
  - MM = Month (01 - 12)
  - W = Week Number (1 - 4)
  - D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)
  - HHmm = Hour, Minute (EE00 = Disabled)

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 520 Notes: (Continued)

- If M = 3 MONTHLY, NNMWDHm:NN  
NN = 07 - Number of character Data Fields to follow (Hex)  
M = 3 - MONTHLY  
W = Week Number (1 - 4)  
D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)  
HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 4 WEEKLY, NNMDDHm:NN  
NN = 06 - Number of character Data Fields to follow (Hex)  
M = 4 - WEEKLY  
D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)  
HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 5 DAILY, NNMHHm:NN  
NN = 05 - Number of character Data Fields to follow (Hex)  
M = 5 - DAILY  
HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 8 BIR END, NNMf:NN  
NN = 02 - Number of character Data Fields to follow (Hex)  
M = 8 - BIR END  
f = BIR Period End Enable Flag  
0 = Disabled  
1 = Auto Daily Closing
6.                    && - Data Termination Flag
7.                    CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 521

Version 2

**Function Type:** Set Receiver Configuration Flag

**Command Format:**

**Display:** <SOH>S521RRf

**Computer:** <SOH>s521RRf

**Inquire:**

<SOH>I521RR

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 522**

Version 2

**Function Type:** Set Receiver Location Label

**Command Format:**

**Display:** <SOH>S522RRaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s522RRaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I522RR

<SOH>i522RR

**Typical Response Message, Display Format:**

```
<SOH>
I522RR
JAN 22, 1996  3:14 PM

RECEIVER LABEL

DEVICE LABEL
  1  aaaaaaaaaaaaaaaaaaaaaa
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i522RRYYMMDDHHmmRRaaaaaaaaaaaaaaaaaaaaa
RRaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. a - Location Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 523**

Version 2

**Function Type:** Set Receiver Telephone Number

**Command Format:**

**Display:** <SOH>S523RRaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s523RRaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I523RR

<SOH>i523RR

### Typical Response Message, Display Format:

<SOH>

I523RR

JAN 22, 1996 3:14 PM

RECEIVER TELEPHONE NUMBER

RCVR	LOCATION LABEL	PHONE NUMBER
1	HOME OFFICE	aaaaaaaaaaaaaaaaaaaaa

<ETX>

### Typical Response Message, Computer Format:

<SOH>i523RRYYMMDDHHmmRRaaaaaaaaaaaaaaaaaaaaa  
RRaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. a - Phone Number (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 524

Version 2

**Function Type:** Set Receiver Dialing Destination Type

**Command Format:**

**Display:** <SOH>S524RRTT

**Computer:** <SOH>s524RRTT

**Inquire:**

<SOH>I524RR

<SOH>i524RR

### Typical Response Message, Display Format:

<SOH>

I524RR

JAN 22, 1996 3:15 PM

RECEIVER DIALING DESTINATION TYPE

RCVR	LOCATION LABEL	FAX TYPE
1	HOME OFFICE	FACSIMILE

<ETX>

### Typical Response Message, Computer Format:

<SOH>i524RRYYMMDDHHmmRRTT  
RRTT&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. TT - Dialing Destination Type:
  - 01 - Teletype
  - 02 - Facsimile
  - 03 - Computer
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 525

Version 2

**Function Type:** Set Receiver Port Number to Dial

**Command Format:**

**Display:** <SOH>S525RRn

**Computer:** <SOH>s525RRn

**Inquire:**

<SOH>I525RR

<SOH>i525RR

**Typical Response Message, Display Format:**

<SOH>

I525RR

JUL 29, 1997 9:05 AM

RECEIVER MODEM NUMBER TO DIAL

RCVR	LOCATION LABEL	PORT NUMBER
1	HOME OFFICE	1

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i525RRYYMMDDHHmmRRn

RRn&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. n - Port Number (max 3, or 6 in Version 1xx)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 526  
**Function Type:** Set Receiver Retry Number

Version 2

**Command Format:**  
**Display:** <SOH>S526RRnn  
**Computer:** <SOH>s526RRnn

**Inquire:**  
<SOH>I526RR  
<SOH>i526RR

### Typical Response Message, Display Format:

<SOH>  
I526RR  
JUL 29, 1997 9:05 AM

RECEIVER RETRY NUMBER

RCVR	LOCATION LABEL	RETRY NUMBER
1	HOME OFFICE	3

<ETX>

### Typical Response Message, Computer Format:

<SOH>i526RRYYMMDDHHmmRRnn  
RRnn&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. nn - Retry Number (03 through 99)
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 527

Version 2

**Function Type:** Set Receiver Retry Delay Time

**Command Format:**

**Display:** <SOH>S527RRnn

**Computer:** <SOH>s527RRnn

**Inquire:**

<SOH>I527RR

<SOH>i527RR

### Typical Response Message, Display Format:

<SOH>

I527RR

JUL 29, 1997 9:06 AM

RECEIVER RETRY DELAY TIME

RCVR	LOCATION LABEL	RETRY DELAY
------	----------------	-------------

1	HOME OFFICE	3
---	-------------	---

<ETX>

### Typical Response Message, Computer Format:

<SOH>i527RRYYMMDDHHmmRRnn

RRnn&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. nn - Retry Delay Time (00 to 60 minutes)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 528

Version 2

**Function Type:** Set Receiver Confirmation Report Flag

**Command Format:**

**Display:** <SOH>S528RRf

**Computer:** <SOH>s528RRf

**Inquire:**

<SOH>I528RR

<SOH>i528RR

### Typical Response Message, Display Format:

<SOH>

I528RR

JAN 22, 1996 3:15 PM

RECEIVER CONFIRMATION REPORT FLAG

RCVR	LOCATION LABEL	CONFIRMATION REPORT
1	HOME OFFICE	OFF

<ETX>

### Typical Response Message, Computer Format:

<SOH>i528RRYYMMDDHHmmRRf

RRf&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. f - Confirmation Report Flag:  
0 = OFF  
1 = ON
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 529  
**Function Type:** Set Fax Auto Dial Method

Version 19

**Command Format:**  
**Display:** <SOH>S52900f  
**Computer:** <SOH>s52900f

**Inquire:**  
<SOH>I52900  
<SOH>i52900

### Typical Response Message, Display Format:

<SOH>  
I52900  
MAY 05, 1999 1:54 PM

ALL PHONES  
<ETX>

### Typical Response Message, Computer Format:

<SOH>i52900YYMMDDHHmmf&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. f - Fax Auto Dial Method  
0 - ALL PHONES  
1 - SINGLE PHONE
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 52A

Version 3

**Function Type:** Set Receiver Report List

**Command Format:**

**Display:** <SOH>S52ARRNNRRss

**Computer:** <SOH>s52ARRNNRRss

**Inquire:**

<SOH>I52ARR

<SOH>i52ARR

### Typical Response Message, Display Format:

<SOH>  
I52ARR  
JUL 29, 1997 9:06 AM

#### RECEIVER REPORT LIST

RCVR	LOCATION LABEL	REPORT LIST
1	HOME OFFICE	SYSTEM STATUS
		IN-TANK STATUS
		INVENTORY
		PERIODIC DLVY VAR
		PERIODIC BOOK VAR
		DAILY VAR ANALY

<ETX>

### Typical Response Message, Computer Format:

<SOH>i52ARRYYMDDHHmmRRNNrrss...  
RRNNrrss...&&CCCC<ETX>

### Notes:

1. YYMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. NN - Total Number of Reports to Follow (Decimal)
4. rr - Report Number:
  - 01 = System Status
  - 02 = Priority Alarm History
  - 03 = Non-Priority Alarm History
  - 05 = In-Tank Status
  - 06 = In-Tank Inventory
  - 07 = In-Tank Delivery
  - 08 = In-Tank Leak Test
  - 09 = Shift Report
  - 10 = PLLD Results
  - 11 = WPLLD Results
  - 12 = Volumetric Line Leak Status
  - 13 = Periodic Row Report
  - 14 = Fuel Management Report
  - 15 = CSLD Results
  - 16 = Most Recent Delivery Report
  - 17 = Current Periodic Delivery Variance Report (Added in V19)
  - 18 = Current Periodic Book Variance Report (Added in V19)
  - 19 = Daily Variance Analysis Report (Added in V19)
5. ss - Report Status (01 = ON, 00 = OFF)
6. && - Data Termination Flag
7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 52B**

Version 3

**Function Type:** Set Receiver Auto Dial Type and Start Time

**Command Format:**

**Display:** <SOH>S52BRRMYMMDDHHmm<CR> (if M = 1)  
MMWDHHmm<CR> (if M = 2)  
WDHHmm<CR> (if M = 3)  
DHHmm<CR> (if M = 4)  
HHmm<CR> (if M = 5)  
**Computer:** <SOH>s52BRRMYMMDDHHmm<CR> (if M = 1)  
MMWDHHmm<CR> (if M = 2)  
WDHHmm<CR> (if M = 3)  
DHHmm<CR> (if M = 4)  
HHmm<CR> (if M = 5)

**Inquire:**  
<SOH>I52BRR

<SOH>i52BRR

**Typical Response Message, Display Format:**

```
<SOH>
I52BRR
JAN 22, 1996  3:15 PM

RECEIVER AUTO DIAL TYPE & START TIME

RCVR  LOCATION LABEL      DIAL TYPE  START TIME
  1    HOME OFFICE         DAILY      4:15 AM
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i52BRRYYMMDDHHmmRRMYMMDDHHmm      (if M = 1)
MMWDHHmm      (if M = 2)
WDHHmm      (if M = 3)
DHHmm      (if M = 4)
HHmm      (if M = 5)
RRMYMMDDHHmm&&CCCC<ETX>      (if M = 1)
MMWDHHmm&&CCCC<ETX>      (if M = 2)
WDHHmm&&CCCC<ETX>      (if M = 3)
DHHmm&&CCCC<ETX>      (if M = 4)
HHmm&&CCCC<ETX>      (if M = 5)
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal, 00 = all)

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 52B Notes: (Continued)

3. M - Auto Dial Method:
  - 1 = On Date
  - 2 = Annually
  - 3 = Monthly
  - 4 = Weekly
  - 5 = Daily
  - If M = 1 ON DATE, YYMMDDHHmm:  
YY = Year  
MM = Month (01 - 12)  
DD = Day  
HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 2 ANNUALLY, MMWDHHmm:  
MM = Month (01 - 12)  
W = Week Number (1 - 4)  
D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)  
HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 3 MONTHLY, WDHHmm:  
W = Week Number (1 - 4)  
D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)  
HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 4 WEEKLY, DHHmm:  
D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)  
HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 5 DAILY, HHmm:  
HHmm = Hour, Minute (EE00 = Disabled)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 52C

Version 3

**Function Type:** Set Receiver Auto Dial On Alarms

**Command Format:**

**Display:** <SOH>S52CRRAANNTTSS

**Computer:** <SOH>s52CRRAANNTTSS

**Inquire:**

<SOH>I52CRR

<SOH>i52CRR

### Typical Response Message, Display Format:

```
<SOH>
I52CRR
JAN 22, 1996  3:15 PM

RECEIVER SETUP REPORT

D 1: HOME OFFICE
- NO ALARM ASSIGNMENTS -
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i52CRRYYMMDDHHmmRRnnAANNTTSS...
RRnnAANNTTSS...&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. nn - Number of Alarms to Follow (Hex)
4. AA - Alarm/Warning Category:
  - 02 - Tank Alarm
  - 03 - Liquid Sensor Alarm
  - 04 - Vapor Sensor Alarm
  - 05 - Input Alarm
  - 06 - Volumetric Line Leak Alarm
  - 07 - Groundwater Sensor Alarm
  - 08 - Type A Sensor Alarm
  - 12 - Type B Sensor Alarm
  - 13 - Universal Sensor Alarm
  - 14 - Auto-Dial Fax Alarm
  - 18 - Mechanical Dispenser Interface Alarm
  - 19 - Electronic Dispenser Interface Alarm
  - 20 - Product Alarm
  - 21 - Pressure Line Leak Alarm
  - 26 - Wireless PLLD Alarm

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 52C Notes: (Continued)

5.                    NN - Alarm Type Number:
- If AA is 01 and NN is:
    - 01 = Printer out of Paper
    - 02 = Printer Error
    - 03 = EEPROM Configuration Error
    - 04 = Battery Off
    - 05 = Too Many Tanks
    - 06 = System Security Warning
    - 07 = ROM Revision Warning
    - 08 = Remote Display Communications Error
    - 09 = Autodial Error
    - 10 = Software Module Warning
    - 11 = Tank Test Shutdown Warning
    - 12 = Protective Cover Alarm
    - 13 = BIR Shift Close Pending
    - 14 = BIR Daily Close Pending
    - 15 = PC(H8) Revision Warning
    - 16 = System Self Test Error
    - 17 = System Clock Incorrect Warning
    - 18 = System Device Poll Timeout
  - 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
    - 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
    - 25 = Tank HRM Reconciliation Warning
    - 26 = Tank HRM Reconciliation Alarm
    - 27 = Tank Cold Temperature Warning
    - 28 = Tank Missing Delivery Ticket Warning
    - 29 = Tank/Line Gross Leak Alarm



## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 52C Notes: (Continued)

- If AA is 03, 04, 07, 08, 12, or 13 and NN is:
  - 02 = Sensor Setup Data Warning
  - 03 = Sensor Fuel Alarm
  - 04 = Sensor Out Alarm
  - 05 = Sensor Short Alarm
  - 06 = Sensor Water Alarm
  - 07 = Sensor Water Out Alarm
  - 08 = Sensor High Liquid Alarm
  - 09 = Sensor Low Liquid Alarm
  - 10 = Sensor Liquid Warning
- If AA is 05 and NN is:
  - 01 = Input Setup Data Warning
  - 02 = Input Normal
  - 03 = Input Alarm
- If AA is 06 and NN is:
  - 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
  - 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 14 and NN is:
  - 01 = Autodial Setup Data Warning
  - 02 = Autodial Failed Alarm
  - 03 = Autodial Service Report Warning (Added in V19)
  - 04 = Autodial Alarm Clear Warning (Added in V19)
  - 05 = Autodial Delivery Report Warning (Added in V19)

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### Function Code 52C Notes: (Continued)

- If AA is 18, 19 and NN is:
    - 02 = DIM Disabled Alarm
    - 03 = DIM Communication Failure Alarm
    - 04 = DIM Transaction Alarm
  - If AA is 20 and NN is:
    - 01 = BIR Setup Data Warning
    - 02 = BIR Threshold Alarm
    - 03 = BIR Close Shift Warning
    - 04 = BIR Close Daily Warning
  - 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
    - 05 = PLLD Periodic Test Needed Alarm
    - 06 = PLLD Sensor Open Alarm
    - 07 = PLLD High Pressure Alarm (Obsolete V19)
    - 08 = PLLD Shutdown Alarm
    - 09 = PLLD High Pressure Warning (Obsolete V19)
    - 10 = PLLD Continuous Handle On Warning (Obsolete V19)
    - 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 V19)
    - 16 = PLLD Continuous Handle On Alarm
    - 17 = PLLD Fuel Out Alarm
    - 18 = PLLD Line Equipment Alarm
  - If AA is 26 and NN is:
    - 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 V19)
    - 10 = WPLLD Annual Test Fail Alarm
    - 11 = WPLLD Annual Test Needed Warning
    - 12 = WPLLD Annual Test Needed Alarm
    - 13 = WPLLD High Pressure Warning (Obsolete V19)
    - 14 = WPLLD High Pressure Alarm (Obsolete V19)
    - 15 = WPLLD Sensor Short Alarm (Obsolete V19)
    - 16 = WPLLD Continuous Handle On Alarm
    - 17 = WPLLD Fuel Out Alarm
    - 18 = WPLLD Line Equipment Alarm
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status (Hex):
  - 00 = Clear
  - 01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 52D  
**Function Type:** Autodial Alarm Status

Version 17

**Command Format:**  
**Display:** <SOH>S52DRRf  
**Computer:** <SOH>s52DRRf

**Inquire:**  
<SOH>I52DRR  
<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
```

**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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 52E

Version 19

**Function Type:** Set Delay for Autodial on Alarm Clear

**Command Format:**

**Display:** <SOH>S52ERRhh

**Computer:** <SOH>s52ERRhh

**Inquire:**

<SOH>I52ERR

<SOH>i52ERR

**Typical Response Message, Display Format:**

<SOH>  
I52ERR  
JAN 28, 1996 10:09 AM

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

RECEIVER CLEARED ALARMS REPORT DELAY PERIOD

RCVR	LOCATION LABEL	DELAY PERIOD
1	Main Office D- 1	1
2	Finance D- 2	3
3	Home Office D- 3	8
4	Service D- 4	3

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i52ERRYYMMDDHHmmRRhh  
RRhh&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal, 00 = All)
3. hh - Number of hours to delay autodial on clear alarm (Decimal, 01-99)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 52F  
**Function Type:** Set Receiver Alarm Status

Version 19

**Command Format:**  
**Display:** <SOH>S52FRRAAf  
**Computer:** <SOH>s52FRRAAf

**Inquire:**  
<SOH>I52FRR  
<SOH>i52FRR

**Notes:**

1. RR - Receiver number (00 - all)
2. AA - Alarm Type number
  - 00 - all
  - 03 - Service Report Warning
  - 04 - Alarm Clear Warning
  - 05 - Delivery Report Warning
  - 06 - No Dial Tone Alarm
3. f - Alarm clear flag
  - 0 = clear; all others invalid

(Version 20)

**Typical Response Message, Display Format:**

```
<SOH>
I52FRR
JAN  1, 2000  8:06 AM
```

RECEIVER ALARM STATUS

```
D 1: HOME OFFICE
SERVICE REPORT WARN: CLEAR
ALARM CLEAR WARN    : CLEAR
DELIVERY REPORT WRN: CLEAR
NO DIAL TONE ALARM  : CLEAR
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i52FRRYYMMDDHHmmNNRRf...
RRf...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. NN - Number of receiver alarm flags per receiver
  - Order of alarms: Service Report Warn, Alarm Clear Warn, Delivery Report Warn, and No Dial Tone Alarm
3. RR - Receiver number
4. f - Alarm flags
  - 0 = clear
  - 1 = alarm
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 531

Version 8

**Function Type:** Set RS-232 End of Message

**Command Format:**

**Display:** <SOH>S53100f

**Computer:** <SOH>s53100f

**Inquire:**

<SOH>I53100

<SOH>i53100

### Typical Response Message, Display Format:

```
<SOH>
I53100
JAN 22, 1996  3:16 PM

RS-232 END OF MESSAGE
DISABLED
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i53100YYMMDDHHmmf&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. f - End of Message flag  
0 = Disable  
1 = Enable
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.3 WARNING, ALARM, & AUTO-PRINT SETUP

**Function Code:** 532

Version 116

**Function Type:** Set Ticketed Variance Analysis Printout Flags

**Command Format:**

**Display:** <SOH>S53200PWD

**Computer:** <SOH>s53200PWD

**Inquire:**

<SOH>I53200

<SOH>i53200

**Typical Response Message, Display Format:**

<SOH>

I53200

MAR 20, 1998 3:28 PM

PERIODIC, WEEKLY AND DAILY PRINTOUTS  
VARIANCE ANALYSIS

PERIODIC  
DISABLED

WEEKLY  
DISABLED

DAILY  
ENABLED  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i53200YYMMDDHHmmPWD&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. P - Periodic Printout flag  
0 - Disable  
1 - Enable
3. W - Weekly Printout flag  
0 - Disable  
1 - Enable
4. D - Daily Printout flag  
0 - Disable  
1 - Enable
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 533

Version 116

**Function Type:** Set Ticketed Delivery Book Variance Printout Flags

**Command Format:**

**Display:** <SOH>S53300PWD

**Computer:** <SOH>s53300PWD

**Inquire:**

<SOH>I53300

<SOH>i53300

### Typical Response Message, Display Format:

<SOH>

I53300

MAR 20, 1998 3:28 PM

PERIODIC, WEEKLY AND DAILY PRINTOUTS  
BOOK VARIANCE

PERIODIC

DISABLED

WEEKLY

DISABLED

DAILY

ENABLED

<ETX>

### Typical Response Message, Computer Format:

<SOH>i53300YYMMDDHHmmPWD&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. P - Periodic Printout flag  
0 - Disable  
1 - Enable
3. W - Weekly Printout flag  
0 - Disable  
1 - Enable
4. D - Daily Printout flag  
0 - Disable  
1 - Enable
5. && - Data Termination Flag
6. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 534**

Version 116

**Function Type:** Set Ticketed Delivery Variance Printout Flags

**Command Format:**

**Display:** <SOH>S53400PWD

**Computer:** <SOH>s53400PWD

**Inquire:**

<SOH>I53400

<SOH>i53400

**Typical Response Message, Display Format:**

<SOH>

I53400

MAR 20, 1998 3:28 PM

PERIODIC, WEEKLY AND DAILY PRINTOUTS  
DELIVERY VARIANCE

PERIODIC

DISABLED

WEEKLY

DISABLED

DAILY

ENABLED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i53400YYMMDDHHmmPWD&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. P - Periodic Printout flag  
0 - Disable  
1 - Enable
3. W - Weekly Printout flag  
0 - Disable  
1 - Enable
4. D - Daily Printout flag  
0 - Disable  
1 - Enable
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 536**

Version 20

**Function Type:** Set RS-232 Security Code per Port

**Command Format:**

**Display:** <SOH>S536PPsaaaaaa

**Computer:** <SOH>s536PPsaaaaaa

**Inquire:**

<SOH>I536PP

<SOH>i536PP

**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:**

```
<SOH>
I536PP
JUN  1, 2000  8:05 AM

232 SECURITY CODE

PORT  SECURITY CODE  STATUS

1      123456      ENABLED
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i536PPYYMDDHHmsaaaaaa&&CCCC<ETX>
```

**Notes:**

1. YYMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 537

Version 20

**Function Type:** Set Display Format RS-232 ETX per Port

**Command Format:**

**Display:** <SOH>S537PPAB

**Computer:** <SOH>s537PPAB

**Inquire:**

<SOH>I537PP

<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:**

```
<SOH>
I537PP
JUN  1, 2000  8:05 AM

DISPLAY MODE RS-232 ETX CHARATERS

PORT      ETX      ETX

  1         A      B
<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 538

Version 20

**Function Type:** Set Computer Format RS-232 ETX per Port

**Command Format:**

**Display:** <SOH>S538PPAB

**Computer:** <SOH>s538PPAB

**Inquire:**

<SOH>I538PP

<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:**

```
<SOH>
I538PP
JUN  1, 2000  8:06 AM

COMPUTER MODE RS-232 ETX CHARATERS

PORT      ETX      ETX

  1         C      D
<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 546

Version 15

**Function Type:** Set Tank Periodic Test Needed Warning

**Command Format:**

**Display:** <SOH>S54600f

**Computer:** <SOH>s54600f

**Inquire:**

<SOH>I54600

<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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 547

Version 15

**Function Type:** Set Days Before Tank Periodic Test Needed Warning

**Command Format:**

**Display:** <SOH>S54700dd

**Computer:** <SOH>s54700dd

**Inquire:**

<SOH>I54700

<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 Warning (Decimal, 00-30)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 548

Version 15

**Function Type:** Set Days Before Tank Periodic Test Needed Alarm

**Command Format:**

**Display:** <SOH>S54800dd

**Computer:** <SOH>s54800dd

**Inquire:**

<SOH>I54800

<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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 549

Version 15

**Function Type:** Set Tank Annual Test Needed Warning

**Command Format:**

**Display:** <SOH>S54900f

**Computer:** <SOH>s54900f

**Inquire:**

<SOH>I54900

<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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 54A

Version 15

**Function Type:** Set Days Before Tank Annual Test Needed Warning

**Command Format:**

**Display:** <SOH>S54A00ddd

**Computer:** <SOH>s54A00ddd

**Inquire:**

<SOH>I54A00

<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, 000-356)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 54B

Version 15

**Function Type:** Set Days Before Tank Annual Test Needed Alarm

**Command Format:**

**Display:** <SOH>S54B00ddd

**Computer:** <SOH>s54B00ddd

**Inquire:**

<SOH>I54B00

<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, 000-356)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 54C

Version 19

**Function Type:** Set CSLD Evaporation Reid Vapor Pressure Chart

**Command Format:**

**Display:** <SOH>S54C00GG.G...

**Computer:** <SOH>s54C00FFFFFFFFF...

**Inquire:**

<SOH>I54C00

<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>
I54C00
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>i54C00YYMMDDHHmmNNFFFFFFFFF...&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 553  
**Function Type:** Set Line Re-Enable Method

Version 19

**Command Format:**  
**Display:** <SOH>S55300f  
**Computer:** <SOH>s55300f

**Inquire:**  
<SOH>I55300  
<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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code: 554**

Version 18

**Function Type:** Set Periodic Line Leak Test Auto-Confirm

**Command Format:**

**Display:** <SOH>S55400f

**Computer:** <SOH>s55400f

**Inquire:**

<SOH>I55400

<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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 555

Version 18

**Function Type:** Set Annual Line Leak Test Auto-Confirm

**Command Format:**

**Display:** <SOH>S55500f

**Computer:** <SOH>s55500f

**Inquire:**

<SOH>I55500

<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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 556

Version 15

**Function Type:** Set Line Periodic Test Needed Warning

**Command Format:**

**Display:** <SOH>S55600f

**Computer:** <SOH>s55600f

**Inquire:**

<SOH>I55600

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 557

Version 15

**Function Type:** Set Days Before Line Periodic Test Needed Warning

**Command Format:**

**Display:** <SOH>S55700dd

**Computer:** <SOH>s55700dd

**Inquire:**

<SOH>I55700

<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



## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code: 558**

Version 15

**Function Type:** Set Days Before Line Periodic Test Needed Alarm

**Command Format:**

**Display:** <SOH>S55800dd

**Computer:** <SOH>s55800dd

**Inquire:**

<SOH>I55800

<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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 559

Version 15

**Function Type:** Set Line Annual Test Needed Warning

**Command Format:**

**Display:** <SOH>S55900f

**Computer:** <SOH>s55900f

**Inquire:**

<SOH>I55900

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 55A**

Version 15

**Function Type:** Set Days Before Line Annual Test Needed Warning

**Command Format:**

**Display:** <SOH>S55A00ddd

**Computer:** <SOH>s55A00ddd

**Inquire:**

<SOH>I55A00

<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, 000-356)
3. && - Data Termination Flag
4. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 55B

Version 15

**Function Type:** Set Days Before Line Annual Test Needed Alarm

**Command Format:**

**Display:** <SOH>S55B00ddd

**Computer:** <SOH>s55B00ddd

**Inquire:**

<SOH>I55B00

<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, 000-356)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 5BC

Version 19

**Function Type:** Set Receiver Auto Dial on Alarm II

**Command Format:**

**Display:** <SOH>S5BCRRAANNTTSS

**Computer:** <SOH>s5BCRRAANNTTSS

**Inquire:**

<SOH>I5BCRR

<SOH>i5BCRR

### Typical Response Message, Display Format:

<SOH>  
I5BCRR  
JAN 15, 1996 4:29 PM

RECEIVER SETUP REPORT

D 1: HOME OFFICE

IN-TANK ALARMS  
T 1:LEAK ALARM  
T 2:LEAK ALARM  
<ETX>

### Typical Response Message, Computer Format:

<SOH>i5BCRRYYMMDDHHmmRRnnAANNTTSS...  
RRnnAANNTTSS...&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Receiver Number (Decimal)
3. nn - Number of Alarms to Follow (Hex)
4. AA - Alarm/Warning Category (See AA Explained in Function s52CRR)
5. NN - Alarm Type Number (See NN Explained in Function s52CRR)
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status  
00 = Clear  
01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum.

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 5E2

Version 14

**Function Type:** Set Inventory Record Time 1, 2, 3, 4

**Command Format:**

**Display:** <SOH>S5E2SSHHmm

**Computer:** <SOH>s5E2SSHHmm

**Inquire:**

<SOH>I5E2SS

<SOH>i5E2SS

**Typical Response Message, Display Format:**

<SOH>  
I5E201  
JAN 22, 1996 3:12 PM

RECORD 1 : 2:22 PM  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i5E2SSYYMMDDHHmmSSHHmm&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Inventory Record Time (01, 02, 03, 04)
3. HHmm - Hour and Minute (EE00 = Disabled)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.4 IN-TANK SETUP

**Function Code:** 601  
**Function Type:** Set Tank Configuration

Version 1

**Command Format:**  
**Display:** <SOH>S601TTf  
**Computer:** <SOH>s601TTf

**Inquire:**  
<SOH>I601TT  
<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>i601TTYMMDDHHmmTTf  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 602

Version 1

**Function Type:** Set Tank Product Label

**Command Format:**

**Display:** <SOH>S602TTaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s602TTaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I602TT

<SOH>i602TT

**Typical Response Message, Display Format:**

<SOH>

I602TT

JAN 22, 1996 3:16 PM

TANK PRODUCT LABEL

TANK PRODUCT LABEL

1 REGULAR UNLEADED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i602TTYMMDDHHmmTTaaaaaaaaaaaaaaaaaaaaa

TTaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. a - Product Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 603  
**Function Type:** Set Tank Product Code

Version 1

**Command Format:**  
**Display:** <SOH>S603TTa  
**Computer:** <SOH>s603TTa

**Inquire:**  
<SOH>I603TT  
<SOH>i603TT

### Typical Response Message, Display Format:

<SOH>  
I603TT  
JAN 22, 1996 3:16 PM

TANK PRODUCT CODE

TANK	PRODUCT LABEL	
1	REGULAR UNLEADED	1

<ETX>

### Typical Response Message, Computer Format:

<SOH>i603TTYMMDDHHmmTTa  
TTa&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. a - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 604

Version 1

**Function Type:** Set Tank 1 Point Full Height Volume

**Command Format:**

**Display:** <SOH>S604TTGGGGGG

**Computer:** <SOH>s604TTFFFFFFFF

**Inquire:**

<SOH>I604TT

<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	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	9728

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i604TTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 605**

Version 1

**Function Type:** Set Tank 4 Point Full, 3/4, 1/2, 1/4 Volumes

**Command Format:**

**Display:** <SOH>S605TTGGGGGGggggggGGGGGGgggggg

**or:** <SOH>S605TTGGGG,gggg,GGGG,ggg

**Computer:** <SOH>s605TTFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF

**Inquire:**

<SOH>I605TT

<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	PRODUCT LABEL	GALLONS			
1	REGULAR UNLEADED	9728	7296	4864	2432

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i605TTYMMDDHHmmTTFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF  
 TFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 606

Version 1

**Function Type:** Set Tank 20 Point Full, 95%, 90%,...Volumes

**Command Format:**

**Display:** <SOH>S606TTGGGGGGgggggg...

**or:** <SOH>S606TTGGGG,gggg,GGGG,...

**Computer:** <SOH>s606TTFFFFFFFF...

**Inquire:**

<SOH>I606TT

<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	PRODUCT 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>i606TTYMMDDHHmmTTTTTTTTFF...

TTTTTTTTFF...&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 607  
**Function Type:** Set Tank Diameter

Version 1

**Command Format:**  
**Display:** <SOH>S607TTIII.hh  
**Computer:** <SOH>s607TTFFFFFFFF

**Inquire:**  
<SOH>I607TT  
<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	PRODUCT LABEL	INCHES
1	REGULAR UNLEADED	96.00

<ETX>

### Typical Response Message, Computer Format:

<SOH>i607TTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 608  
**Function Type:** Set Tank Tilt

Version 1

**Command Format:**  
**Display:** <SOH>S608TTIII.hh  
**Computer:** <SOH>s608TTFFFFFFFF

**Inquire:**  
<SOH>I608TT  
<SOH>i608TT

### Notes:

1. TT - Tank Number (Decimal, 00 = all)
2. III.hh - Tank Tilt, Inches and hundredths (Decimal)
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	PRODUCT LABEL	INCHES
1	REGULAR UNLEADED	2.40

<ETX>

### Typical Response Message, Computer Format:

<SOH>i608TTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 609

Version 1

**Function Type:** Set Tank Thermal Expansion Coefficient

**Command Format:**

**Display:** <SOH>S609TTc.cccccc

**Computer:** <SOH>s609TTFFFFFFFF

**Inquire:**

<SOH>I609TT

<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 PRODUCT LABEL

1 REGULAR UNLEADED 0.000700

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i609TTYMMDDHHmmTTFFFFFFFF

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 60A

Version 9

**Function Type:** Set Tank Linear Calculated Full Volume

**Command Format:**

**Display:** <SOH>S60ATTGGGGGG

**Computer:** <SOH>s60ATTFFFFFFFF

**Inquire:**

<SOH>I60ATT

<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	PRODUCT 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



## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 60B

Version 15

**Function Type:** Set Tank Stick Height Function Enable

**Command Format:**

**Display:** <SOH>S60B00f

**Computer:** <SOH>s60B00f

**Inquire:**

<SOH>I60B00

<SOH>i60B00

**Typical Response Message, Display Format:**

<SOH>

I60B00

JUL 29, 1997 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 60C

Version 15

**Function Type:** Set Tank Stick Height Offset

**Command Format:**

**Display:** <SOH>S60CTTIII.hh

**Computer:** <SOH>s60CTTFFFFFFFF

**Inquire:**

<SOH>I60CTT

<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, 1997 9:07 AM

TANK STICK HEIGHT OFFSET

TANK	PRODUCT LABEL	INCHES
------	---------------	--------

1	REGULAR UNLEADED	0.00
---	------------------	------

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i60CTTYMMDDHHmmTTFFFFFFFF

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 60E**

Version 22

**Function Type:** Set Tank Programmable Float Parameters

**Command Format:**

**Display:** <SOH>S60ETTIIII.tttIIII.tttIIII.tttIIII.ttt  
**or:** <SOH>S60ETTIII.ttt,III.ttt,III.ttt,III.ttt

**Inquire:**  
 <SOH>I60ETT

**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>i60ETTYMMDDHHmmTTNNFFFFFFFF...  
 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 60F  
**Function Type:** Set Tank Probe Offset

Version 22

**Command Format:**  
**Display:** <SOH>S60FTTIII.hh  
**Computer:** <SOH>s60FTTFFFFFFFF

**Inquire:**  
<SOH>I60FTT  
<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	PRODUCT LABEL	INCHES
1	REGULAR UNLEADED	2.40

<ETX>

### Typical Response Message, Computer Format:

<SOH>i60FTTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 610  
**Function Type:** Set Tank Delivery Delay

Version 1

**Command Format:**  
**Display:** <SOH>S610TTdd  
**Computer:** <SOH>s610TTdd

**Inquire:**  
<SOH>I610TT  
<SOH>i610TT

### Typical Response Message, Display Format:

<SOH>  
I610TT  
JAN 22, 1996 3:17 PM

TANK DELIVERY DELAY

TANK	PRODUCT LABEL	
1	REGULAR UNLEADED	5

<ETX>

### Typical Response Message, Computer Format:

<SOH>i610TTYMMDDHHmmTTdd  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 611**

Version 1

**Function Type:** Set Tank Leak Test Type & Start Time

**Command Format:**

**Display:** <SOH>S611TTDDRMYYMMDDHHmm<CR> (if M = 1)  
 MMWDHHmm<CR> (if M = 2)  
 WDHHmm<CR> (if M = 3)  
 DHHmm<CR> (if M = 4)  
 HHmm<CR> (if M = 5)  
 <CR> (if M = 6)  
 <CR> (if M = 7)

**Inquire:**  
 <SOH>I611TT

**Computer:** <SOH>s611TTDDRMYYMMDDHHmm<CR> (if M = 1)  
 MMWDHHmm<CR> (if M = 2)  
 WDHHmm<CR> (if M = 3)  
 DHHmm<CR> (if M = 4)  
 HHmm<CR> (if M = 5)  
 <CR> (if M = 6)  
 <CR> (if M = 7)

<SOH>i611TT

### Typical Response Message, Display Format:

```
<SOH>
I611TT
JUN  1, 2000  8:06 AM

LEAK TEST METHOD
- - - - -
TEST ON DATE : TANK 1
JUN  1, 2000
START TIME : DISABLED
TEST RATE  :0.20 GAL/HR
DURATION   : 2  HOURS
TST EARLY STOP:DISABLED
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i611TTYMMDDHHmmTTDDRMYYMMDDHHmm (if M = 1)
MMWDHHmm (if M = 2)
WDHHmm (if M = 3)
DHHmm (if M = 4)
HHmm (if M = 5)
(none) (if M = 6)
(none) (if M = 7)
TTDDRMYYMMDDHHmm&&CCCC<ETX> (if M = 1)
MMWDHHmm&&CCCC<ETX> (if M = 2)
WDHHmm&&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)
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. DD - Leak test Duration in hours (2 <= DD <= 24)
4. R - Leak test Rate (0 = 0.2, 1 = 0.1)

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 611 Notes: (Continued)

5.                    M - Leak test Method:
- 1 = On Date
  - 2 = Annually
  - 3 = Monthly
  - 4 = Weekly
  - 5 = Daily
  - 6 = Automatic
  - 7 = CSLD
- If M = 1 ON DATE, YYMMDDHHmm:
- YY    = Year
  - MM    = Month (01 - 12)
  - DD    = Day
  - HHmm = Hour, Minute (EE00 = Disabled)
- If M = 2 ANNUALLY, MMWDHHmm:
- MM    = Month (01 - 12)
  - W     = Week Number (1 - 4)
  - D     = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)
  - HHmm = Hour, Minute (EE00 = Disabled)
- If M = 3 MONTHLY, WDHHmm:
- W     = Week Number (1 - 4)
  - D     = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)
  - HHmm = Hour, Minute (EE00 = Disabled)
- If M = 4 WEEKLY, DHHmm:
- D     = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)
  - HHmm = Hour, Minute (EE00 = Disabled)
- If M = 5 DAILY, HHmm:
- HHmm = Hour, Minute (EE00 = Disabled)
6.                    && - Data Termination Flag
7.                    CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 612  
**Function Type:** Set Tank Manifolded Partners

Version 1

**Command Format:**  
**Display:** <SOH>S612TTttTTtt...<CR>  
**Computer:** <SOH>s612TTttTTtt...<CR>

**Inquire:**  
<SOH>I612TT  
<SOH>i612TT

### Typical Response Message, Display Format:

```
<SOH>
I612TT
JAN 22, 1996  3:17 PM

TANK MANIFOLDED PARTNERS

TANK   PRODUCT LABEL      MANIFOLDED TANKS
 1     REGULAR UNLEADED    2,3
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i612TTYMMDDHHmmTTNNtt...
      TTNNtt...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Number of the first tank to be manifolded
3. NN - Number of tanks that are manifolded together
4. tt - Tank numbers of other tanks to be manifolded to first tank
5. && - Data Termination Flag
6. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 613

Version 3

**Function Type:** Set CSLD Probability of Detection

**Command Format:**

**Display:** <SOH>S613TTf

**Computer:** <SOH>s613TTf

**Inquire:**

<SOH>I613TT

<SOH>i613TT

**Typical Response Message, Display Format:**

<SOH>

I613TT

JAN 22, 1996 3:17 PM

CSLD PROBABILITY OF DETECTION

T 1:REGULAR UNLEADED : Pd = 95%

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i613TTYMMDDHHmmTTf

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 614  
**Function Type:** Set CSLD Climate Factor

Version 5

**Command Format:**  
**Display:** <SOH>S614TTf  
**Computer:** <SOH>s614TTf

**Inquire:**  
<SOH>I614TT  
<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>i614TTYMMDDHHmmTTf  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 615  
**Function Type:** Set BIR Meter Data Present

Version 108

**Command Format:**  
**Display:** <SOH>S615TTf  
**Computer:** <SOH>s615TTf

**Inquire:**  
<SOH>I615TT  
<SOH>i615TT

### Typical Response Message, Display Format:

<SOH>  
I615TT  
JAN 22, 1996 3:18 PM

TANK	PRODUCT LABEL	METER DATA
1	REGULAR UNLEADED	YES

<ETX>

### Typical Response Message, Computer Format:

<SOH>i615TTYMMDDHHmmTTf  
TTf&&CCCC<ETX>

#### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank number (Decimal, 00 = All)
3. f - Meter data availability:  
0 = No Meter Data Available  
1 = Meter Data Present
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 616

Version 110

**Function Type:** Set AccuChart Update Scheduling

**Command Format:**

**Display:** <SOH>S616TTf

**Computer:** <SOH>s616TTf

**Inquire:**

<SOH>I616TT

<SOH>i616TT

**Typical Response Message, Display Format:**

<SOH>

I616TT

JAN 22, 1996 3:18 PM

TANK	PRODUCT LABEL	CAL UPDATE
1	REGULAR UNLEADED	IMMEDIATE

<ETX>

**Typical Response Message, Computer Format:**

<SOH>s616TTYMMDDHHmmTTf

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 618

Version 19

**Function Type:** Set Tank CSLD Evaporation Compensation

**Command Format:**

**Display:** <SOH>S618TTf

**Computer:** <SOH>s618TTf

**Inquire:**

<SOH>I618TT

<SOH>i618TT

**Notes:**

1. Only accepted if CSLD has been selected as the leak test method (S611TT) for the addressed tank and its Climate Factor (S614TT) has been set to Extreme. Also, for this feature to take effect, there must be valid entries in the RVP table (S54C00).

**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>i618TTYMMDDHHmmTTf

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 619

Version 19

**Function Type:** Set Tank Stage II Vapor Recovery

**Command Format:**

**Display:** <SOH>S619TTf

**Computer:** <SOH>s619TTf

**Inquire:**

<SOH>I619TT

<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>i619TTYMMDDHHmmTTf

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 61A

Version 20

**Function Type:** Set In-Tank Leak Test Early Stop

**Command Format:**

**Display:** <SOH>S61ATTf

**Computer:** <SOH>s61ATTf

**Inquire:**

<SOH>I61ATT

<SOH>i61ATT

### Typical Response Message, Display Format:

```
<SOH>
I61ATT
JUN  1, 2000  8:06 AM

IN-TANK LEAK TEST EARLY STOP
```

TANK	PRODUCT 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
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 61B

Version 121

**Function Type:** Set In-Tank Static Gross Test Auto-Confirm

**Command Format:**

**Display:** <SOH>S61BTTf

**Computer:** <SOH>s61BTTf

**Inquire:**

<SOH>I61BTT

<SOH>i61BTT

**Typical Response Message, Display Format:**

<SOH>

I61BTT

OCT 10, 2000 3:11 PM

IN-TANK STATIC GROSS TEST AUTO-CONFIRM:

TANK	PRODUCT LABEL	AUTO-CONFIRM
------	---------------	--------------

1	REGULAR UNLEADED	DISABLED
---	------------------	----------

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i61BTTYMMDDHHmmTTf...

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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 61C  
**Function Type:** Set CSLD Report Only Mode

Version 121

**Command Format:**  
**Display:** <SOH>S61CTTf  
**Computer:** <SOH>s61CTTf

**Inquire:**  
<SOH>I61CTT  
<SOH>i61CTT

### Typical Response Message, Display Format:

<SOH>  
I61CTT  
OCT 10, 2000 10:00 AM

CSLD REPORT ONLY

TANK	PRODUCT LABEL	CSLD REPORT ONLY
1	UNLEADED GASOLINE	DISABLED

<ETX>

### Typical Response Message, Computer Format:

<SOH>i61CTTYMMDDHHmmTTf...  
TTf...&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. f - CSLD Report Only flag  
0 = Disabled  
1 = End of Month  
2 = Day 15 and End of Month  
3 = Day 25 and End of Month
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 621  
**Function Type:** Set Tank Low Level Limit

Version 1

**Command Format:**  
**Display:** <SOH>S621TTGGGGGG  
**Computer:** <SOH>s621TTFFFFFFFF

**Inquire:**  
<SOH>I621TT  
<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	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	1000

<ETX>

### Typical Response Message, Computer Format:

<SOH>i621TTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 622  
**Function Type:** Set Tank High Level Limit

Version 1

**Command Format:**  
**Display:** <SOH>S622TTGGGGGG  
**Computer:** <SOH>s622TTFFFFFFFF

**Inquire:**  
<SOH>I622TT  
<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)

### Typical Response Message, Display Format:

<SOH>  
I622TT  
JAN 22, 1996 3:18 PM

TANK HIGH PRODUCT LIMIT

TANK	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	9500

<ETX>

### Typical Response Message, Computer Format:

<SOH>i622TTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 623

Version 1

**Function Type:** Set Tank Overfill Level Limit

**Command Format:**

**Display:** <SOH>S623TTGGGGGG

**Computer:** <SOH>s623TTFFFFFFFF

**Inquire:**

<SOH>I623TT

<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)

**Typical Response Message, Display Format:**

<SOH>

I623TT

JAN 22, 1996 3:18 PM

TANK OVERFILL LEVEL LIMIT

TANK	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	9300

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i623TTYMMDDHHmmTTFFFFFFFF

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 624**

Version 1

**Function Type:** Set Tank High Water Level Limit

**Command Format:**

**Display:** <SOH>S624TTII.t

**Computer:** <SOH>s624TTFFFFFFFF

**Inquire:**

<SOH>I624TT

<SOH>i624TT

**Notes:**

1. TT - Tank Number (Decimal, 00 = all)
2. II.t - High Water Level Limit, Inches and tenths (Decimal, Max=05.0)
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	PRODUCT LABEL	INCHES
1	REGULAR UNLEADED	4.5

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i624TTYMMDDHHmmTTFFFFFFFF

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 625  
**Function Type:** Set Tank Sudden Loss Limit

Version 1

**Command Format:**  
**Display:** <SOH>S625TTGGGGGG  
**Computer:** <SOH>s625TTFFFFFFFF

**Inquire:**  
<SOH>I625TT  
<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	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	100

<ETX>

### Typical Response Message, Computer Format:

<SOH>i625TTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 626  
**Function Type:** Set Tank Leak Alarm Limit

Version 1

**Command Format:**  
**Display:** <SOH>S626TTGGGGGG  
**Computer:** <SOH>s626TTFFFFFFFF

**Inquire:**  
<SOH>I626TT  
<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	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	50

<ETX>

### Typical Response Message, Computer Format:

<SOH>i626TTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 627

Version 2

**Function Type:** Set Tank High Water Warning Limit

**Command Format:**

**Display:** <SOH>S627TTII.t

**Computer:** <SOH>s627TTFFFFFFFF

**Inquire:**

<SOH>I627TT

<SOH>i627TT

**Notes:**

1. TT - Tank Number (Decimal, 00 = all)
2. II.t - High Water Warning Limit, Inches and tenths (Decimal, Max=05.0)
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	PRODUCT LABEL	INCHES
1	REGULAR UNLEADED	3.5

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i627TTYMMDDHHmmTTFFFFFFFF

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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 628

Version 2

**Function Type:** Set Tank Maximum Volume Limit

**Command Format:**

**Display:** <SOH>S628TTGGGGGG

**Computer:** <SOH>s628TTFFFFFFFF

**Inquire:**

<SOH>I628TT

<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	PRODUCT LABEL	GALLONS
------	---------------	---------

1	REGULAR UNLEADED	9600
---	------------------	------

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i628TTYMMDDHHmmTTFFFFFFFF

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 629

Version 2

**Function Type:** Set Tank Delivery Required Limit

**Command Format:**

**Display:** <SOH>S629TTGGGGGG

**Computer:** <SOH>s629TTFFFFFFFF

**Inquire:**

<SOH>I629TT

<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	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	1500

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i629TTYMMDDHHmmTTFFFFFFFF

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 62A

Version 2

**Function Type:** Set Tank Annual Leak Test Minimum Volume

**Command Format:**

**Display:** <SOH>S62ATTGGGGGG

**Computer:** <SOH>s62ATTFFFFFFFF

**Inquire:**

<SOH>I62ATT

<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	PRODUCT LABEL	GALLONS
------	---------------	---------

1	REGULAR UNLEADED	6000
---	------------------	------

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i62ATTYYMDDHHmmTTFFFFFFFF

TTFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 62B  
**Function Type:** Set Tank Last Annual Test

Version 2

**Command Format:**  
**Display:** <SOH>S62BTTYMMDD  
**Computer:** <SOH>s62BTTYMMDD

**Inquire:**  
<SOH>I62BTT  
<SOH>i62BTT

### Typical Response Message, Display Format:

<SOH>  
I62BTT  
JAN 22, 1996 3:19 PM

TANK LAST ANNUAL TEST

TANK	PRODUCT LABEL	DATE
1	REGULAR UNLEADED	940225

<ETX>

### Typical Response Message, Computer Format:

<SOH>i62BTTYMMDDHHmmTTYMMDD  
TTYMMDD&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. YYMMDD - Year, Month, Day
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 62C

Version 2

**Function Type:** Set Tank Periodic Test Type

**Command Format:**

**Display:** <SOH>S62CTTp

**Computer:** <SOH>s62CTTp

**Inquire:**

<SOH>I62CTT

<SOH>i62CTT

### Typical Response Message, Display Format:

<SOH>

I62CTT

JAN 22, 1996 3:19 PM

TANK PERIODIC TEST TYPE

TANK	PRODUCT LABEL	PERIODIC TEST TYPE
------	---------------	--------------------

1	REGULAR UNLEADED	QUICK
---	------------------	-------

<ETX>

### Typical Response Message, Computer Format:

<SOH>i62CTTYMMDDHHmmTTP

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 62D

Version 2

**Function Type:** Set Enable/Disable Tank Leak Test Fail Alarms

**Command Format:**

**Display:** <SOH>S62DTTgpa

**Computer:** <SOH>s62DTTgpa

**Inquire:**

<SOH>I62DTT

<SOH>i62DTT

### Typical Response Message, Display Format:

<SOH>

I62DTT

JAN 22, 1996 3:19 PM

TANK LEAK TEST FAIL ALARMS

TANK	PRODUCT 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>i62DTTYMMDDHHmmTTgpa

TTgpa&&CCCC<ETX>

### Notes:

1. YMMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 62E**

Version 3

**Function Type:** Set CAP0 Probe Conductive Boot Flag

**Command Format:**

**Display:** <SOH>S62ETTc

**Computer:** <SOH>s62ETTc

**Inquire:**

<SOH>I62ETT

<SOH>i62ETT

**Typical Response Message, Display Format:**

<SOH>

I62ETT

JAN 22, 1996 3:19 PM

CAP0 PROBE CONDUCTIVE BOOT FLAG

TANK	PRODUCT LABEL	CAP0 CONDUCTIVE BOOT:
1	REGULAR UNLEADED	YES

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i62ETTYMMDDHHmmTTc

TTc&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. c - CAP0 Conductive Boot Flag  
0 = OFF  
1 = ON
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 62F  
**Function Type:** Set Mag Probe Float Size

Version 3

**Command Format:**  
**Display:** <SOH>S62FTTf  
**Computer:** <SOH>s62FTTf

**Inquire:**  
<SOH>I62FTT  
<SOH>i62FTT

### Typical Response Message, Display Format:

<SOH>  
I62FTT  
JAN 22, 1996 3:19 PM

MAG PROBE FLOAT SIZE

TANK	PRODUCT LABEL	FLOAT SIZE:
1	REGULAR UNLEADED	4.0 INCHES

<ETX>

### Typical Response Message, Computer Format:

<SOH>i62FTTYMMDDHHmmTTf  
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"
  - 9 = CUSTOM

(Added in V22)  
(Added in V22)
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 630

Version 3

**Function Type:** Set Tank Leak Test Notify

**Command Format:**

**Display:** <SOH>S630TTf

**Computer:** <SOH>s630TTf

**Inquire:**

<SOH>I630TT

<SOH>i630TT

**Typical Response Message, Display Format:**

<SOH>

I630TT

JAN 22, 1996 3:20 PM

IN-TANK LEAK TEST NOTIFY

TANK	PRODUCT LABEL	TANK TEST NOTIFY:
1	REGULAR UNLEADED	OFF

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i630TTYMMDDHHmmTTf

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 631

Version 5

**Function Type:** Set Tank Leak Test Averaging

**Command Format:**

**Display:** <SOH>S631TTap

**Computer:** <SOH>s631TTap

**Inquire:**

<SOH>I631TT

<SOH>i631TT

### Typical Response Message, Display Format:

<SOH>

I631TT

JAN 22, 1996 3:20 PM

TANK LEAK TEST AVERAGING

TANK	PRODUCT LABEL	ANNUAL	PERIODIC
1	REGULAR UNLEADED	OFF	OFF

<ETX>

### Typical Response Message, Computer Format:

<SOH>i631TTYMMDDHHmmTTap  
TTap&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. a - Annual Leak Test Averaging  
0 = OFF  
1 = ON
4. p - Periodic Leak Test Averaging  
0 = OFF  
1 = ON
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 632  
**Function Type:** Set Tank Test Siphon Break

Version 5

**Command Format:**  
**Display:** <SOH>S632TTf  
**Computer:** <SOH>s632TTf

**Inquire:**  
<SOH>I632TT  
<SOH>i632TT

### Typical Response Message, Display Format:

<SOH>  
I632TT  
JAN 22, 1996 3:20 PM

TANK TEST SIPHON BREAK

TANK	PRODUCT LABEL	SIPHON BREAK
1	REGULAR UNLEADED	OFF

<ETX>

### Typical Response Message, Computer Format:

<SOH>i632TTYMMDDHHmmTTf  
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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 633  
**Function Type:** Set Leak Test Report Type

Version 9

**Command Format:**  
**Display:** <SOH>S63300f  
**Computer:** <SOH>s63300f

**Inquire:**  
<SOH>I63300  
<SOH>i63300

#### Typical Response Message, Display Format:

<SOH>  
I63300  
JAN 22, 1996 3:20 PM

LEAK TEST REPORT FORMAT: NORMAL  
<ETX>

#### Typical Response Message, Computer Format:

<SOH>i63300YYMMDDHHmmf&CCCC<ETX>

#### Notes:

1. YYMMDDHHmm - Current Date and Time
2. f - Leak test Report Type:  
0 = Normal  
1 = Enhanced
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 634

Version 110

**Function Type:** Set Tank HRM Reconciliation Warning Limit

**Command Format:**

**Display:** <SOH>S634TTGGGGGG

**Computer:** <SOH>s634TTFFFFFFFF

**Inquire:**

<SOH>I634TT

<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, 1996 3:20 PM

RECONCILIATION WARNING LIMIT

TANK	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	50

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i634TTYMMDDHHmmTTFFFFFFFF

TTFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. FFFFFFFF - HRM Reconciliation Warning Limit, Gallons (ASCII Hex IEEE float)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 635

Version 110

**Function Type:** Set Tank HRM Reconciliation Alarm Limit

**Command Format:**

**Display:** <SOH>S635TTGGGGGG

**Computer:** <SOH>s635TTFFFFFFFF

**Inquire:**

<SOH>I635TT

<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, 1996 3:20 PM

RECONCILIATION ALARM LIMIT

TANK	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	90

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i635TTYMMDDHHmmTTFFFFFFFF  
TTFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. FFFFFFFF - HRM Reconciliation Alarm Limit, Gallons (ASCII Hex IEEE float)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 636**

Version 14

**Function Type:** Set Tank Periodic Leak Test Minimum Volume

**Command Format:**

**Display:** <SOH>S636TTGGGGGG

**Computer:** <SOH>s636TTFFFFFFFF

**Inquire:**

<SOH>I636TT

<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	PRODUCT LABEL	GALLONS
1	REGULAR UNLEADED	3000

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i636TTYMMDDHHmmTTFFFFFFFF  
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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 639

Version 115

**Function Type:** Set Tank AccuChart End Shape Type and Factor

**Command Format:**

**Display:** <SOH>S639TTSU.t

**Computer:** <SOH>s639TTSFFFFFFFF

**Inquire:**

<SOH>I639TT

<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
JUL 29, 1997 9:08 AM
1    REGULAR UNLEADED
END FACTOR: OTHER
END VALUE: 0.1
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i639TTYMMDDHHmmTTSFFFFFFFF
TTSFFFFFFFF&&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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 63A

Version 22

**Function Type:** Set Tank Low Level Threshold for Sequential Line Manifold

**Command Format:**

**Display:** <SOH>S63ATTTPP.hh

**Computer:** <SOH>s63ATTFFFFFFFF

**Inquire:**

<SOH>I63ATT

<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	PRODUCT LABEL	PUMP THRESHOLD
------	---------------	----------------

1	REGULAR UNLEADED	10.00%
---	------------------	--------

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i79800YYMMDDHHmmTTFFFFFFFF...

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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 680

Version 6

**Function Type:** Fuel Management General Setup Inquiry

**Command Format:**

**Display:** <SOH>I680TT

**Computer:** Computer format is not supported for this command

**Typical Response Message, Display Format:**

```
<SOH>
I680TT
JAN 22, 1996  3:20 PM

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

FUEL MANAGEMENT SETUP

DELIVERY WARN DAYS:  3.5
AUTO PRINT:         10:00 AM

FUEL MANAGEMENT AVERAGE SALES (GALLONS)

REGULAR UNLEADED      ( TANK 1 )
  SUN   MON   TUE   WED   THR   FRI   SAT
  2696  2075  2602  2046  2471  2805  2824
<ETX>
```

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 681

Version 6

**Function Type:** Set Fuel Management Delivery Needed Warning

**Command Format:**

**Display:** <SOH>S68100DD.hh

**Computer:** <SOH>s68100FFFFFFFF

**Inquire:**

<SOH>I68100

<SOH>i68100

**Notes:**

1. DD.hh - Delivery Needed Warning, Days and hundredths (Decimal)
2. FFFFFFFF - Delivery Needed Warning, Days (ASCII Hex IEEE float)

**Typical Response Message, Display Format:**

<SOH>

I68100

JAN 22, 1996 3:20 PM

FUEL MANAGEMENT DELIVERY NEEDED WARNING DAYS

DELIVERY WARN DAYS: 2.50

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i68100YYMMDDHHmmFFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. FFFFFFFF - Delivery Needed Warning, Days (ASCII Hex IEEE float)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 682

Version 6

**Function Type:** Set Fuel Management Automatic Report Print Time

**Command Format:**

**Display:** <SOH>S68200hhmm

**Computer:** <SOH>s68200hhmm

**Inquire:**

<SOH>I68200

<SOH>i68200

### Typical Response Message, Display Format:

<SOH>

I68200

JAN 22, 1996 3:21 PM

FUEL MANAGEMENT AUTOMATIC REPORT PRINT TIME

AUTO PRINT: 10:00 AM

<ETX>

### Typical Response Message, Computer Format:

<SOH>i68200YYMMDDHHmmhhmm&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. hhmm - Report Printout Time (hours, minutes; EE00 = disabled)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 683**

Version 6

**Function Type:** Set Fuel Management Average Daily Sales

**Command Format:**

**Display:** <SOH>S683TTDVVVVVV

**Computer:** <SOH>s683TTDvvvvvvvv

**Inquire:**

<SOH>I683TT

<SOH>i683TT

**Notes:**

1. TT - Tank Number for any Tank Containing the Product
2. D - Day for which to Program the Average Sales Volume (0 = All Days, 1 = Sunday, 2 = Monday,...7 = Saturday)
3. VVVVVV - Average Sales for the Day, Gallons (Decimal, Only one day is programmed per serial command)
4. vvvvvvvv - Average Sales for the Day, Gallons (ASCII Hex IEEE float, Only one day is programmed per serial command)

**Typical Response Message, Display Format:**

```
<SOH>
I683TT
JAN 22, 1996  3:21 PM

FUEL MANAGEMENT AVERAGE SALES (GALLONS)

REGULAR UNLEADED      ( TANK 1 )
  SUN  MON   TUE   WED   THR   FRI   SAT
  2696 2075  2602  2046  2471  2805  2824
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i683TTYMMDDHHmmNNTTpSSSSSSSSMMMMMMMTTTTTTTTWWWWWWW
                                RRRRRRRRFFFFFFFFssssssss...
                                NNTTpSSSSSSSSMMMMMMMTTTTTTTTWWWWWWW
                                RRRRRRRRFFFFFFFFssssssss...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. NN - Number of Tank/Product Sets (Tp) to Follow (Hex)
3. TTp - Tank Number (decimal) and Product Code (ASCII character)
4. SSSSSSSS - Avg Sales on Sundays (ASCII Hex IEEE float)
5. MMMMMMMM - Avg Sales on Mondays (ASCII Hex IEEE float)
6. TTTTTTTT - Avg Sales on Tuesdays (ASCII Hex IEEE float)
7. WWWWWWWW - Avg Sales on Wednesdays (ASCII Hex IEEE float)
8. RRRRRRRR - Avg Sales on Thursdays (ASCII Hex IEEE float)
9. FFFFFFFF - Avg Sales on Fridays (ASCII Hex IEEE float)
10. ssssssss - Avg Sales on Saturdays (ASCII Hex IEEE float)
11. && - Data Termination Flag
12. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.5 SENSOR SETUP

**Function Code:** 701

Version 1

**Function Type:** Set Liquid Sensor Configuration

**Command Format:**

**Display:** <SOH>S701SSf

**Computer:** <SOH>s701SSf

**Inquire:**

<SOH>I701SS

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 702

Version 1

**Function Type:** Set Liquid Sensor Location Label

**Command Format:**

**Display:** <SOH>S702SSaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s702SSaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I702SS

<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>i702SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaaa
SSaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Liquid Sensor Number (Decimal, 00 = all)
3. a - Location Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 703**

Version 1

**Function Type:** Set Liquid Sensor Type

**Command Format:**

**Display:** <SOH>S703SSt

**Computer:** <SOH>s703SSt

**Inquire:**

<SOH>I703SS

<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
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 704**

Version 2

**Function Type:** Set Liquid Sensor Category

**Command Format:**

**Display:** <SOH>S704SSc

**Computer:** <SOH>s704SSc

**Inquire:**

<SOH>I704SS

<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 = Piping Sump
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 706**

Version 1

**Function Type:** Set Vapor Sensor Configuration

**Command Format:**

**Display:** <SOH>S706SSf

**Computer:** <SOH>s706SSf

**Inquire:**

<SOH>I706SS

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 707

Version 1

**Function Type:** Set Vapor Sensor Location Label

**Command Format:**

**Display:** <SOH>S707SSaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s707SSaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I707SS

<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>i707SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaaa
SSaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Vapor Sensor Number (Decimal, 00 = all)
3. a - Location Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 708

Version 1

**Function Type:** Set Vapor Sensor Alarm Threshold

**Command Format:**

**Display:** <SOH>S708SSVVVVV

**Computer:** <SOH>s708SSFFFFFFFF

**Inquire:**

<SOH>I708SS

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 709**

Version 2

**Function Type:** Set Vapor Sensor Category

**Command Format:**

**Display:** <SOH>S709SSt

**Computer:** <SOH>s709SSt

**Inquire:**

<SOH>I709SS

<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 = Piping Sump
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 711**

Version 1

**Function Type:** Set Groundwater Sensor Configuration

**Command Format:**

**Display:** <SOH>S711SSf

**Computer:** <SOH>s711SSf

**Inquire:**

<SOH>I711SS

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 712

Version 1

**Function Type:** Set Groundwater Sensor Location Label

**Command Format:**

**Display:** <SOH>S712SSaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s712SSaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I712SS

<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>i712SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaaa  
SSaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Groundwater Sensor Number (Decimal, 00 = all)
3. a - Location Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 713**

Version 2

**Function Type:** Set Groundwater Sensor Category

**Command Format:**

**Display:** <SOH>S713SSt

**Computer:** <SOH>s713SSt

**Inquire:**

<SOH>I713SS

<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 = Piping Sump
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 741

Version 2

**Function Type:** Set Type A (2 Wire CL) Sensor Configuration

**Command Format:**

**Display:** <SOH>S741SSf

**Computer:** <SOH>s741SSf

**Inquire:**

<SOH>I741SS

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 742**

Version 2

**Function Type:** Set Type A (2 Wire CL) Sensor Location Label

**Command Format:**

**Display:** <SOH>S742SSaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s742SSaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I742SS

<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>i742SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaaa
SSaaaaaaaaaaaaaaaaaaaaa&&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 from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 743**

Version 2

**Function Type:** Set Type A (2 Wire CL) Sensor Type

**Command Format:**

**Display:** <SOH>S743SSt

**Computer:** <SOH>s743SSt

**Inquire:**

<SOH>I743SS

<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 = ULTRA 3
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 744**

Version 2

**Function Type:** Set Type A (2 Wire CL) Sensor Category

**Command Format:**

**Display:** <SOH>S744SSa

**Computer:** <SOH>s744SSa

**Inquire:**

<SOH>I744SS

<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 = Piping Sump
4. && - Data Termination Flag
5. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 746

Version 2

**Function Type:** Set Type B (3 Wire CL) Sensor Configuration

**Command Format:**

**Display:** <SOH>S746SSf

**Computer:** <SOH>s746SSf

**Inquire:**

<SOH>I746SS

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 747**

Version 2

**Function Type:** Set Type B (3 Wire CL) Sensor Location Label

**Command Format:**

**Display:** <SOH>S747SSaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s747SSaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I742SS

<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>i747SSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaaa
SSaaaaaaaaaaaaaaaaaaaaa&&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 from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code: 748**

Version 5

**Function Type:** Set Type B (3 Wire CL) Sensor Type

**Command Format:**

**Display:** <SOH>S748SSt

**Computer:** <SOH>s748SSt

**Inquire:**

<SOH>I748SS

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 749**

Version 2

**Function Type:** Set Type B (3 Wire CL) Sensor Category

**Command Format:**

**Display:** <SOH>S749SSa

**Computer:** <SOH>s749SSa

**Inquire:**

<SOH>I749SS

<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 = Piping Sump
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 74B

Version 4

**Function Type:** Set Universal Sensor Configuration

**Command Format:**

**Display:** <SOH>S74BSSf

**Computer:** <SOH>s74BSSf

**Inquire:**

<SOH>I74BSS

<SOH>i74BSS

### Typical Response Message, Display Format:

<SOH>

I74BSS

JAN 28, 1995 10:41 AM

UNIVERSAL CONFIGURATION

DEVICE	LABEL	CONFIGURED
--------	-------	------------

1	UNIVERSAL SENSOR #1	ON
---	---------------------	----

<ETX>

### Typical Response Message, Computer Format:

<SOH>i74BSSYYMMDDHHmmSSf

SSf&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. SS - Sensor Number (Decimal)
3. f - Configuration Flag  
0 = Off  
1 = On
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 74C**

Version 4

**Function Type:** Set Universal Sensor Location Label

**Command Format:**

**Display:** <SOH>S74CSSaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s74CSSaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I74CSS

<SOH>i74CSS

**Typical Response Message, Display Format:**

<SOH>

I74CSS

JAN 28, 1995 10:41 AM

UNIVERSAL LABEL

DEVICE LABEL

1 UNIVERSAL SENSOR #1

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i74CSSYYMMDDHHmmSSaaaaaaaaaaaaaaaaaaaaa

SSaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Sensor Number (Decimal)
3. a - Location Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 74D  
**Function Type:** Set Universal Sensor Type

Version 4

**Command Format:**  
**Display:** <SOH>S74DSSt  
**Computer:** <SOH>s74DSSt

**Inquire:**  
<SOH>I74DSS  
<SOH>i74DSS

### Typical Response Message, Display Format:

<SOH>  
I74DSS  
JAN 28, 1995 10:41 AM

UNIVERSAL TYPE

SENSOR	LOCATION	TYPE
1	UNIVERSAL SENSOR #1	ULTRA/Z-1

<ETX>

### Typical Response Message, Computer Format:

<SOH>i74DSSYYMMDDHHmmSSt  
SSt&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. SS - Sensor Number (Decimal)
3. t - Sensor Type
  - 1 = TRI-STATE
  - 2 = NORMALLY CLOSED
  - 3 = DUAL DIFFERENTIATING
  - 4 = ULTRA 2
  - 5 = ULTRA 3
  - 6 = ULTRA/Z-1
  - 7 = ULTRA/Z-1 HV
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 74E  
**Function Type:** Set Universal Sensor Category

Version 4

**Command Format:**  
**Display:** <SOH>S74ESSa  
**Computer:** <SOH>s74ESSa

**Inquire:**  
<SOH>I74ESS  
<SOH>i74ESS

### Typical Response Message, Display Format:

<SOH>  
I74ESS  
JAN 28, 1995 10:41 AM

UNIVERSAL CATEGORY

SENSOR	LOCATION	CATEGORY
1	UNIVERSAL SENSOR #1	ANNULAR

<ETX>

### Typical Response Message, Computer Format:

<SOH>i74ESSYYMMDDHHmmSSc  
SSc&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. SS - Sensor Number (Decimal)
3. c - Category
  - 1 = Other
  - 2 = Annular
  - 3 = Dispenser Pan
  - 4 = Monitoring Well
  - 5 = STP Sump
  - 6 = Piping Sump
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.6 VOLUMETRIC LINE LEAK SETUP

**Function Code:** 751

Version 1

**Function Type:** Set Volumetric Line Leak Configuration

**Command Format:**

**Display:** <SOH>S751PPf

**Computer:** <SOH>s751PPf

**Inquire:**

<SOH>I751PP

<SOH>i751PP

**Typical Response Message, Display Format:**

<SOH>

I751PP

MAR 26, 1996 1:53 PM

LINE LEAK CONFIGURATION

DEVICE	LABEL	CONFIGURED
--------	-------	------------

1	REGULAR UNLEADED	ON
---	------------------	----

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i751PPYYMDDHHmmPPf

PPf&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. f - Configuration Flag  
0 = Off  
1 = On
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 752

Version 1

**Function Type:** Set Volumetric Line Leak Tank Number

**Command Format:**

**Display:** <SOH>S752PPtt

**Computer:** <SOH>s752PPtt

**Inquire:**

<SOH>I752PP

<SOH>i752PP

**Typical Response Message, Display Format:**

```
<SOH>
I752PP
MAR 26, 1996  1:53 PM

LINE LEAK TANK ASSIGNMENT

LINE  LABEL                      TANK
   1  REGULAR UNLEADED           1
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i752PPYYMMDDHHmmPPtt
      Ptt&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. tt - Tank number (00 = not assigned)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 753**

Version 1

**Function Type:** Set Volumetric Line Leak 2 Inch Pipe Length

**Command Format:**

**Display:** <SOH>S753PPLLL

**Computer:** <SOH>s753PPFFFFFFFFF

**Inquire:**

<SOH>I753PP

<SOH>i753PP

**Notes:**

1. PP - Pipeline Number (Decimal, 00 = all)
2. LLL - 2" Pipe Length, Feet (Decimal)
3. FFFFFFFF - 2" Pipe Length, Feet (ASCII Hex IEEE float)

**Typical Response Message, Display Format:**

<SOH>

I753PP

MAR 26, 1996 1:53 PM

LINE LEAK 2" INCH PIPING LENGTH

P 1:REGULAR UNLEADED

2" PIPING LENGTH: 250

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i753PPYYMMDDHHmmPPFFFFFFFFF

PPFFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. FFFFFFFF - 2" Pipe Length, Feet (ASCII Hex IEEE float)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 754**

Version 1

**Function Type:** Set Volumetric Line Leak 3 Inch Pipe Length

**Command Format:**

**Display:** <SOH>S754PPLLL

**Computer:** <SOH>s754PPFFFFFFFF

**Inquire:**

<SOH>I754PP

<SOH>i754PP

**Notes:**

1. PP - Pipeline Number (Decimal, 00 = all)
2. LLL - 3" Pipe Length, Feet (Decimal)
3. FFFFFFFF - 3" Pipe Length, Feet (ASCII Hex IEEE float)

**Typical Response Message, Display Format:**

<SOH>

I754PP

MAR 26, 1996 1:53 PM

LINE LEAK 3" INCH PIPING LENGTH

P 1:REGULAR UNLEADED

3" PIPING LENGTH: 0

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i754PPYYMMDDHHmmPPFFFFFFFF

PPFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. FFFFFFFF - 3" Pipe Length, Feet (ASCII Hex IEEE float)
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 755

Version 1

**Function Type:** Set Volumetric Line Leak Pump PSI

**Command Format:**

**Display:** <SOH>S755PPppp

**Computer:** <SOH>s755PPFFFFFFFF

**Inquire:**

<SOH>I755PP

<SOH>i755PP

**Notes:**

1. PP - Pipeline Number (Decimal, 00 = all)
2. ppp - Pump Pressure, PSI (Decimal)
3. FFFFFFFF - Pump Pressure, PSI (ASCII Hex IEEE float)

**Typical Response Message, Display Format:**

<SOH>  
I755PP  
MAR 26, 1996 1:53 PM

LINE LEAK PUMP PSI

P 1:REGULAR UNLEADED  
PUMP PSI : 27  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i755PPYYMMDDHHmmPPFFFFFFFF  
PPFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. FFFFFFFF - Pump Pressure, PSI (ASCII Hex IEEE float)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 756**

Version 1

**Function Type:** Set Volumetric Line Leak Piping Material

**Command Format:**

**Display:** <SOH>S756PPmm

**Computer:** <SOH>s756PPmm

**Inquire:**

<SOH>I756PP

<SOH>i756PP

**Typical Response Message, Display Format:**

```
<SOH>
I756PP
MAR 26, 1996  1:53 PM

LINE LEAK PIPING MATERIAL

P 1:REGULAR UNLEADED
PIPE TYPE: FIBERGLASS
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i756PPYYMMDDHHmmPPmm
PPmm&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. mm - Piping Material:
  - 01 = Steel
  - 02 = Fiberglass
  - 03 = 2-Wall Fiberglass
  - 04 = Flexible
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 757

Version 1

**Function Type:** Set Volumetric Line Leak Shutdown Rate

**Command Format:**

**Display:** <SOH>S757PPrr

**Computer:** <SOH>s757PPrr

**Inquire:**

<SOH>I757PP

<SOH>i757PP

**Typical Response Message, Display Format:**

```
<SOH>
I757PP
MAR 26, 1996  1:53 PM

LINE LEAK SHUTDOWN RATE

P 1:REGULAR UNLEADED
SHUTDOWN : 3.0 GAL/HR
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i757PPYYMMDDHHmmPPrr
PPrr&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. rr - Line Leak Shutdown Rate:
  - 01 = 3.0 Gal/Hr
  - 02 = 0.2 Gal/Hr
  - 03 = 0.1 Gal/Hr
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 758

Version 1

**Function Type:** Set Volumetric Line Leak Pump Side Test

**Command Format:**

**Display:** <SOH>S758PPss

**Computer:** <SOH>s758PPss

**Inquire:**

<SOH>I758PP

<SOH>i758PP

**Typical Response Message, Display Format:**

```
<SOH>
I758PP
MAR 26, 1996  1:53 PM

LINE LEAK PUMP SIDE TEST

P 1:REGULAR UNLEADED
PUMPSIDE TEST: ENABLED
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i758PPYYMMDDHHmmPPss
PPss&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. ss - Line Leak Pump Side Test:
  - 00 = Disable
  - 01 = Enable
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 759**

Version 1

**Function Type:** Set Volumetric Line Leak Test Type & Start Time

**Command Format:**

**Display:** <SOH>S759PPrrMYMMDDHHmm<CR> (if M = 1)  
 MMWDHHmm<CR> (if M = 2)  
 WDHHmm<CR> (if M = 3)  
 DHHmm<CR> (if M = 4)  
 HHmm<CR> (if M = 5)

**Inquire:**  
 <SOH>I759PP

**Computer:** <SOH>s759PPrrMYMMDDHHmm<CR> (if M = 1)  
 MMWDHHmm<CR> (if M = 2)  
 WDHHmm<CR> (if M = 3)  
 DHHmm<CR> (if M = 4)  
 HHmm<CR> (if M = 5)

<SOH>i759PP

**Typical Response Message, Display Format:**

```
<SOH>
I759PP
MAR 26, 1996  1:53 PM

LINE LEAK TEST SETUP
- - - - -
TEST ON DATE : ALL LINES
APR  1, 1996
START TIME :  2:15 PM
TEST RATE  :0.20 GAL/HR
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i759PPYYMMDDHHmmPPrrMYMMDDHHmm      (if M = 1)
      MMWDHHmm      (if M = 2)
      WDHHmm      (if M = 3)
      DHHmm      (if M = 4)
      HHmm      (if M = 5)
PPrrMYMMDDHHmm&&CCCC<ETX> (if M = 1)
      MMWDHHmm&&CCCC<ETX> (if M = 2)
      WDHHmm&&CCCC<ETX> (if M = 3)
      DHHmm&&CCCC<ETX> (if M = 4)
      HHmm&&CCCC<ETX> (if M = 5)
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. rr - Volumetric Line Leak Test Type:
  - 01 = 0.2 Gal/Hr
  - 02 = 0.1 Gal/Hr

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code 759 Notes: (Continued)

4. M - Volumetric Line Leak Test Method:
  - 1 = On Date
  - 2 = Annually
  - 3 = Monthly
  - 4 = Weekly
  - 5 = Daily
  - If M = 1 ON DATE, YYMMDDHHmm:
    - YY = Year
    - MM = Month (01 - 12)
    - DD = Day
    - HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 2 ANNUALLY, MMWDHHmm:
    - MM = Month (01 - 12)
    - W = Week Number (1 - 4)
    - D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)
    - HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 3 MONTHLY, WDHHmm:
    - W = Week Number (1 - 4)
    - D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)
    - HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 4 WEEKLY, DHHmm:
    - D = Day (1 = Monday, 2 = Tuesday, . . . 7 = Sunday)
    - HHmm = Hour, Minute (EE00 = Disabled)
  - If M = 5 DAILY, HHmm:
    - HHmm = Hour, Minute (EE00 = Disabled)
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: 75A

Version 1

**Function Type:** Set Line Leak Lockout Schedule (All Types)

**Command Format:**

**Display:** <SOH>S75A00SHHmmmHHmm<CR> (if S = 0)

NsHHmmeHHmm<CR> (if S = 1)

**Computer:** <SOH>s75A00SHHmmHHmm<CR> (if S = 0)

NsHHmmeHHmm<CR> (if S = 1)

Inquire:

<SOH>I75A00

<SOH>i75A00

**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>i75A00YYMDDHHmmSHHmnmHHmnm                (if S = 0)
      NsHHmnmHHmnm                                   (if S = 1)
      SHHmnmHHmnm&&CCCC<ETX>                        (if S = 0)
      NsHHmnmHHmnm&&CCCC<ETX>                        (if S = 1)
```

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

```

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 75B

Version 2

**Function Type:** Set Line Disable Alarm Assignments

**Command Format:**

**Display:** <SOH>S75BPPAANNTTSS

**Computer:** <SOH>s75BPPAANNTTSS

**Inquire:**

<SOH>I75BPP

<SOH>i75BPP

### Typical Response Message, Display Format:

```
<SOH>
I75BPP
MAR 26, 1996  1:54 PM

LINE LEAK SETUP REPORT

P 1:REGULAR UNLEADED
- NO ALARM ASSIGNMENTS -
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i75BPPYYMMDDHHmmPPnnAANNTTSS...
PPnnAANNTTSS...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. nn - Number of Alarms to Follow
4. AA - Alarm/Warning Category:  
See explanation for "AA" in Function s52CRR
5. NN - Alarm Type Number:  
See explanation for "NN" in Function s52CRR
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status:  
00 = Clear  
01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 75C

Version 2

**Function Type:** Set Volumetric Line Leak Last Annual Test

**Command Format:**

**Display:** <SOH>S75CPPYYMMDD

**Computer:** <SOH>s75CPPYYMMDD

**Inquire:**

<SOH>I75CPP

<SOH>i75CPP

**Typical Response Message, Display Format:**

```
<SOH>
I75CPP
MAR 26, 1996  1:54 PM

LINE LEAK LAST ANNUAL TEST

P 1:REGULAR UNLEADED
MAR 26, 1996
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i75CPPYYMMDDHHmmPPYYMMDD
PPYYMMDD&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. YYMMDD - Year, Month, Day of Last Annual Test
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 75D

Version 4

**Function Type:** Set Volumetric Line Leak Dispense Mode

**Command Format:**

**Display:** <SOH>S75DPPf

**Computer:** <SOH>s75DPPf

**Inquire:**

<SOH>I75DPP

<SOH>i75DPP

**Typical Response Message, Display Format:**

<SOH>

I75DPP

MAR 26, 1996 1:54 PM

LINE LEAK DISPENSE MODE

| LINE | LABEL | DISPENSE MODE |
|------|-------|---------------|
|------|-------|---------------|

|   |                  |          |
|---|------------------|----------|
| 1 | REGULAR UNLEADED | STANDARD |
|---|------------------|----------|

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i75DPPYYMMDDHHmmPPf

PPf&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 75E**

Version 4

**Function Type:** Set Volumetric Line Leak Fuel Type

**Command Format:**

**Display:** <SOH>S75EPPss

**Computer:** <SOH>s75EPPss

**Inquire:**

<SOH>I75EPP

<SOH>i75EPP

**Typical Response Message, Display Format:**

<SOH>  
I75EPP  
MAR 26, 1996 1:54 PM

LINE LEAK FUEL TYPE

P 1:REGULAR UNLEADED  
FUEL TYPE: GASOLINE  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i75PPYYMMDDHHmmPPss  
PPss&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. ss - Fuel Type:  
00 = Gasoline  
01 = Diesel
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 75F

Version 5

**Function Type:** Set Volumetric Line Leak Wait Method

**Command Format:**

**Display:** <SOH>S75FPPr

**Computer:** <SOH>s75FPPr

**Inquire:**

<SOH>I7F7PP

<SOH>i7F7PP

**Typical Response Message, Display Format:**

```
<SOH>
I75FPP
MAR 26, 1996  1:54 PM

LINE LEAK WAIT MODE

P 1:REGULAR UNLEADED
WAIT MODE: TEMP. MEAS.
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i75FPYYMMDDHHmmPPrr
PPrr&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. rr - Line Leak Wait Method:
  - 1 = Temperature Measurement
  - 2 = Volume Change Measurement
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 760

Version 6

**Function Type:** Set Volumetric Line Leak Location Label

**Command Format:**

**Display:** <SOH>S760PPaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s760PPaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I760SS

<SOH>i760SS

**Typical Response Message, Display Format:**

```
<SOH>
I760PP
MAR 26, 1996  1:52 PM

LINE LEAK LABEL

DEVICE LABEL
      1  REGULAR UNLEADED
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i760PPYYMMDDHHmmPPaaaaaaaaaaaaaaaaaaaaa
PPaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. a - Location Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 761

Version 7

**Function Type:** Set Volumetric Line Leak Blend Partner

**Command Format:**

**Display:** <SOH>S761PPss

**Computer:** <SOH>s761PPss

**Inquire:**

<SOH>I761PP

<SOH>i761PP

**Typical Response Message, Display Format:**

```
<SOH>
I761PP
MAR 26, 1996  1:52 PM
LINE  LABEL                NBP PARTNER
P 1:REGULAR UNLEADED        NONE
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i761PPYYMMDDHHmmPPss
PPss&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. ss - Pipeline Number of Blend Partner (Decimal, 00 = all)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.7 PUMP SENSOR SETUP

**Function Code:** 771

Version 2

**Function Type:** Set Pump Sensor Configuration

**Command Format:**

**Display:** <SOH>S771SSf

**Computer:** <SOH>s771SSf

**Inquire:**

<SOH>I771SS

<SOH>i771SS

**Typical Response Message, Display Format:**

<SOH>

I771SS

MAR 27, 1996 5:49 PM

PUMP SENSE CONFIGURATION

DEVICE	LABEL	CONFIGURED
--------	-------	------------

1	UNLEADED REGULAR	ON
---	------------------	----

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i771SSYYMDDHHmmSSf

SSf&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - Current Date and Time
2. SS - Pump Sensor Number (Decimal, 00 = all)
3. f - Configuration Flag  
0 = Off  
1 = On
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 772

Version 2

**Function Type:** Set Pump Sensor Tank Number

**Command Format:**

**Display:** <SOH>S772SStt

**Computer:** <SOH>s772SStt

**Inquire:**

<SOH>I772SS

<SOH>i772SS

**Typical Response Message, Display Format:**

```
<SOH>
I772SS
MAR 27, 1996  5:49 PM

PUMP SENSOR TANK ASSIGNMENT

PUMP SENSOR      TANK
              1      1

<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i772SSYYMMDDHHmmSStt
                      SStt&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Pump Sensor Number (Decimal, 00 = all)
3. tt - Tank Number (Decimal, 00 = not assigned)
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 773**

Version 4

**Function Type:** Set Pump Sensor Dispense Mode

**Command Format:**

**Display:** <SOH>I773SSf

**Computer:** <SOH>i773SSf

**Inquire:**

<SOH>I773SS

<SOH>i773SS

**Typical Response Message, Display Format:**

```
<SOH>
I773SS
MAR 27, 1996  5:50 PM

PUMP SENSOR DISPENSE MODE

PUMP SENSOR  MODE
      1  MANIFOLDED: SEQUENTIAL
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i773SSYYMMDDHHmmSSf
      SSf&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Pump Sensor Number (Decimal)
3. f - Dispense Mode:
  - 1 = Standard
  - 2 = Manifolded: Alternate
  - 3 = Manifolded: Sequential
  - 4 = Manifolded: All Pumps
4. && - Data Termination Flag
5. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### 7.3.8 PRESSURE LINE LEAK SETUP

**Function Code:** 77C

Version 19

**Function Type:** Set Pressure Line Leak Low Pressure Shutoff

**Command Format:**

**Display:** <SOH>S77CQQf

**Computer:** <SOH>s77CQQf

**Inquire:**

<SOH>I77CQQ

<SOH>i77CQQ

**Typical Response Message, Display Format:**

<SOH>

I77CQQ

JAN 24, 2000 2:54 PM

PRESSURE LINE LEAK LOW PRESSURE SHUTOFF

LINE

LOW PRESSURE SHUTOFF

Q 1:REGULAR UNLEADED

YES

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i77CQQYYMDDHHmmQQf

QQf&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 77D

Version 19

**Function Type:** Set Pressure Line Leak Altitude Pressure Offset

**Command Format:**

**Display:** <SOH>S77DQQII.p

**Computer:** <SOH>s77DQQFFFFFFFF

**Inquire:**

<SOH>I77DQQ

<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

PRESSURE OFFSET

Q 1:REGULAR UNLEADED

0.0 PSI

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i77DQQYYMDDHHmmQQFFFFFFFF

QQFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - 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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 77F

Version 17

**Function Type:** Set Pressure Line Leak Secondary Pipe Length  
(only used for the larger diameter line in dual diameter  
piping configurations)

**Command Format:**

**Display:** <SOH>S77FQQLLL

**Computer:** <SOH>s77FQQFFFFFFFF

**Inquire:**

<SOH>I77FQQ

<SOH>i77FQQ

**Notes:**

1. QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
2. LLL - 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 PIPE LENGTH

LINE	1.5 IN DIAM LEN	2.5 IN DIAM LEN
------	-----------------	-----------------

Q 1:UNLEADED REGULAR	50 FEET	250 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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 780

Version 7

**Function Type:** Pressure Line Leak General Setup Inquiry

**Command Format:**

**Display:** <SOH>I780QQ

**Computer:** Computer format is not supported for this command

**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>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 781**

Version 7

**Function Type:** Set Pressure Line Leak Configuration

**Command Format:**

**Display:** <SOH>S781QQf

**Computer:** <SOH>s781QQf

**Inquire:**

<SOH>I781QQ

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 782

Version 7

**Function Type:** Set Pressure Line Leak Label

**Command Format:**

**Display:** <SOH>S782QQaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s782QQaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I782QQ

<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 783

Version 7

**Function Type:** Set Pressure Line Leak 0.10 GPH Test Schedule

**Command Format:**

**Display:** <SOH>S783QQf

**Computer:** <SOH>s783QQf

**Inquire:**

<SOH>I783QQ

<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 (Added in V17)
  - 3 = Manual (Added in V18)
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 784**

Version 7

**Function Type:** Set Pressure Line Leak Shutdown Rate

**Command Format:**

**Display:** <SOH>S784QQrr

**Computer:** <SOH>s784QQrr

**Inquire:**

<SOH>I784QQ

<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 = 0.1 gal/hr
  - 02 = 3.0 gal/hr
  - 03 = 0.2 gal/hr
  - 04 = None
4. && - Data Termination Flag
5. CCCC - Message Checksum

(Added in V19)

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 785

Version 7

**Function Type:** Set Pressure Line Leak Tank Number

**Command Format:**

**Display:** <SOH>S785QQtt

**Computer:** <SOH>s785QQtt

**Inquire:**

<SOH>I785QQ

<SOH>i785QQ

**Typical Response Message, Display Format:**

<SOH>

I785QQ

JAN 24, 1996 2:54 PM

PRESSURE LINE LEAK TANK NUMBER

LINE

TANK NUMBER

Q 1:REGULAR UNLEADED

3

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i785QQYYMMDDHHmmQQtt

QQtt&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak sensor number (Decimal, 00 = All)
3. tt - Tank number (Decimal) (00 = no tank)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 786

Version 7

**Function Type:** Set Pressure Line Leak Dispense Mode

**Command Format:**

**Display:** <SOH>S786QQf

**Computer:** <SOH>s786QQf

**Inquire:**

<SOH>I786QQ

<SOH>i786QQ

**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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 787

Version 7

**Function Type:** Set Pressure Line Leak Disable Alarm Assignments

**Command Format:**

**Display:** <SOH>S787QQAANNTTSS

**Computer:** <SOH>s787QQAANNTTSS

**Inquire:**

<SOH>I787QQ

<SOH>i787QQ

### Typical Response Message, Display Format:

```
<SOH>
I787QQ
JAN 24, 1996  2:54 PM

PRESSURE LLD SETUP REPORT

Q 1:REGULAR UNLEADED
- NO ALARM ASSIGNMENTS -
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i787QQYYMMDDHHmmQQnnAANNTTSS...
      QQnnAANNTTSS...&&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
4. AA - Alarm/Warning Category:  
See explanation for "AA" in Function s52CRR
5. NN - Alarm Type Number:  
See explanation for "NN" in Function s52CRR
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status:  
00 = Clear  
01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 788**

Version 9

**Function Type:** Set Pressure Line Leak Piping Material

**Command Format:**

**Display:** <SOH>S788QQtt

**Computer:** <SOH>s788QQtt

**Inquire:**

<SOH>I788QQ

<SOH>i788QQ

**Typical Response Message, Display Format:**

```
<SOH>
I788QQ
JAN 14, 1995  10:15 PM

PRESSURE LINE LEAK PIPE TYPE

LINE                PIPE TYPE:
Q 1:UNLEADED REGULAR FIBERGLASS
<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" Fiberglass
  - 02 = 2" Steel
  - 03 = White Enviroflex PP1501
  - 04 = 1.5" Environ Geoflex II (Added in V11)
  - 05 = Omniflex CP1501 (Added in V15)
  - 06 = Yellow Enviroflex PP1500
  - 07 = 1.5"/2.5" Enviroflex PP1502/2502 (Added in V17)
  - 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" Environ Geoflex D (Added in V19)
  - 14 = APT P175SC (Added in V121)
  - 15 = OPW Pisces CP15DW (Added in V19)
  - 16 = OPW Pisces CP20 (Added in V19)
  - 17 = (Reserved)
4. && - Data Termination Flag
5. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 789

Version 9

**Function Type:** Set Pressure Line Leak Primary Pipe Length  
(also used for the smaller diameter line in dual diameter  
piping configurations)

**Command Format:**

**Display:** <SOH>S789QQLLL

**Computer:** <SOH>s789QQFFFFFFF

**Inquire:**

<SOH>I789QQ

<SOH>i789QQ

**Notes:**

1. QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
2. LLL - 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>s789QQYYMMDDHHmmQQFFFFFFF

QQFFFFFFF&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 78A**

Version 11

**Function Type:** Set Pressure Line Leak Sensor Type

**Command Format:**

**Display:** <SOH>S78AQQp

**Computer:** <SOH>s78AQQp

**Inquire:**

<SOH>I78AQQ

<SOH>i78AQQ

### Typical Response Message, Display Format:

<SOH>  
I78AQQ  
JAN 24, 1996 2:54 PM

PRESSURE LINE LEAK

LINE	PUMP
Q 1:REGULAR UNLEADED	NON-VENTED
<ETX>	

### Typical Response Message, Computer Format:

<SOH>i78AQQYYMMDDHHmmQQp  
QQp&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak sensor number (Decimal, 00 = All)
3. p - Sensor Type
  - 1 = Non-vented
  - 2 = Vented
  - 3 = High Pressure
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 78B

Version 16 (Obsolete at Version 17, use 78E)

**Function Type:** Set Pressure Line Leak 0.10 GPH Test Schedule

**Command Format:**

**Display:** <SOH>S78BPPMMDD

**Computer:** <SOH>s78BPPMMDD

**Inquire:**

<SOH>I78BPP

<SOH>i78BPP

**Typical Response Message, Display Format:**

<SOH>

I78BPP

JAN 24, 1998 2:55 PM

PLLD 0.10 GPH SCHEDULE

LINE

SCHEDULE

P 1:REGULAR UNLEADED

02/11

<ETX>

**Typical Response Message, Computer Format:**

<SOH>s78BPPYYMMDDHHmmPPMMDD

PPMMDD&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - PLLD Line Leak sensor number (Decimal, 00 = all)
3. MMDD - Month and Day for 0.10 GPH test to start
4. && - Data Termination Flag
5. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 78C

Version 12

**Function Type:** Set Pressure Line Leak 0.20 GPH Test Schedule

**Command Format:**

**Display:** <SOH>S78CQQf

**Computer:** <SOH>s78CQQf

**Inquire:**

<SOH>I78CQQ

<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 (Added in V18)
  - 3 = Manual (Added in V18)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 78E

Version 17

**Function Type:** Set Pressure Line Leak 0.1 GPH Auto Test Enable

**Command Format:**

**Display:** <SOH>S78EQQf

**Computer:** <SOH>s78EQQf

**Inquire:**

<SOH>I78EQQ

<SOH>i78EQQ

**Typical Response Message, Display Format:**

```
<SOH>
I78EQQ
JAN 24, 1996  2:54 PM

PRESSURE LINE LEAK 0.10 AUTO ENABLE

LINE                                0.10 GPH 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 78F

Version 17

**Function Type:** Set Pressure Line Leak Dispense Threshold

**Command Format:**

**Display:** <SOH>S78FQQPP

**Computer:** <SOH>s78FQQFFFFFFFF

**Inquire:**

<SOH>I78FQQ

<SOH>i78FQQ

**Notes:**

1. QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
2. PP - Low Pressure, PSI (Decimal)
3. FFFFFFFF - Low Pressure, PSI (ASCII Hex IEEE float)

**Typical Response Message, Display Format:**

<SOH>

I78FQQ

JAN 14, 1995 10:15 PM

PRESSURE LINE LEAK DISPENSE THRESHOLD

LINE

LOW PRESSURE

Q 1:UNLEADED REGULAR

15 PSI

<ETX>

**Typical Response Message, Computer Format:**

<SOH>s78FQQYYMMDDHHmmQQFFFFFFFF

QQFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
3. FFFFFFFF - Low Pressure, PSI (ASCII Hex IEEE float)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.9 RECONCILIATION SETUP

**Function Code:** 790

Version 118

**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:1 VR:330273-002-C TD:97.11.13.15.52

<ETX>

**Typical Response Message, Computer Format:**

**Notes:**

1. Response is the same as display format.

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 791**

Version 106

**Function Type:** Set Mechanical Dispenser Interface String

**Command Format:**

**Display:** <SOH>S791NNaaaaaaaaaaaaa

**Computer:** <SOH>s791NNaaaaaaaaaaaaa

**Inquire:**

<SOH>I791NN

<SOH>i791NN

**Typical Response Message, Display Format:**

<SOH>

S791NN

MAR 29, 1996 6:27 PM

DISP. MODULE DATA STRING

MDIM 1: aaaaaaaaaaaaaa

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i791NNYYMDDHHmmNNaaaaaaaaaaaaa

NNaaaaaaaaaaaaa&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - Current Date and Time
2. NN - MDIM Number (Decimal, 00 = all)
3. aaaaaaaaaaaaaa - Data String (12 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 792

Version 106

**Function Type:** Set Electronic Dispenser Interface String

**Command Format:**

**Display:** <SOH>S792NNaaaaaaaaaaaaa

**Computer:** <SOH>s792NNaaaaaaaaaaaaa

**Inquire:**

<SOH>I792NN

<SOH>i792NN

**Typical Response Message, Display Format:**

<SOH>  
I792NN  
JAN 22, 1996 3:21 PM  
  
DISP. MODULE DATA STRING  
EDIM 1: aaaaaaaaaaaaa  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i792NNYYMMDDHHmmNNaaaaaaaaaaaaa  
NNaaaaaaaaaaaaa&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. NN - EDIM Number (Decimal, 00 = all)
3. aaaaaaaaaaaaa - Data String (12 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 793**

Version 106

**Function Type:** Set Reconciliation Auto Daily Closing Time

**Command Format:**

**Display:** <SOH>S79300HHmm

**Computer:** <SOH>s79300HHmm

**Inquire:**

<SOH>I79300

<SOH>i79300

**Typical Response Message, Display Format:**

<SOH>

I79300

JAN 22, 1996 3:21 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 794**

Version 106

**Function Type:** Set Auto Shift Closing Time 1, 2, 3, 4

**Command Format:**

**Display:** <SOH>S794SSHHmm

**Computer:** <SOH>s794SSHHmm

**Inquire:**

<SOH>I794SS

<SOH>i794SS

**Typical Response Message, Display Format:**

<SOH>  
I794SS  
MAR 26, 1996 1:49 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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 795**

Version 106

**Function Type:** Set Periodic Reconciliation Mode

**Command Format:**

**Display:** <SOH>S79500ss

**Computer:** <SOH>s79500ss

**Inquire:**

<SOH>I79500

<SOH>i79500

**Typical Response Message, Display Format:**

<SOH>

I79500

JAN 22, 1996 3:22 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 796

Version 106

**Function Type:** Set Periodic Reconciliation Report Length

**Command Format:**

**Display:** <SOH>S79600dd

**Computer:** <SOH>s79600dd

**Inquire:**

<SOH>I79600

<SOH>i79600

**Typical Response Message, Display Format:**

<SOH>

I79600

JAN 22, 1996 3:22 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 797

Version 106

**Function Type:** Set Periodic Reconciliation Alarm Flag

**Command Format:**

**Display:** <SOH>S79700ss

**Computer:** <SOH>s79700ss

**Inquire:**

<SOH>I79700

<SOH>i79700

**Typical Response Message, Display Format:**

<SOH>

I79700

JAN 22, 1996 3:22 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 798**

Version 106

**Function Type:** Set Periodic Reconciliation Alarm Threshold

**Command Format:**

**Display:** <SOH>S79800PP.hh

**Computer:** <SOH>s79800FFFFFFFF

**Inquire:**

<SOH>I79800

<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:**

<SOH>

I79800

JUN 1, 2000 8:07 AM

PERIODIC RECONCILIATION

ALARM THRESHOLD: 1.00%

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i79800YYMMDDHHmmFFFFFFFFF&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 799

Version 106

**Function Type:** Set Periodic Reconciliation Alarm Offset

**Command Format:**

**Display:** <SOH>S79900GGGGGG

**Computer:** <SOH>s79900FFFFFFFF

**Inquire:**

<SOH>I79900

<SOH>i79900

**Notes:**

1. GGGGGG - Alarm Offset, Gallons (Decimal)
2. FFFFFFFF - Alarm Offset, Gallons (ASCII Hex IEEE float)

**Typical Response Message, Display Format:**

<SOH>  
I79900

JAN 22, 1996 3:22 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 79A

Version 106

**Function Type:** Set Remote Printer Reconciliation Report Format

**Command Format:**

**Display:** <SOH>S79A00tt

**Computer:** <SOH>s79A00tt

**Inquire:**

<SOH>I79A00

<SOH>i79A00

**Typical Response Message, Display Format:**

<SOH>  
I79A00  
JAN 22, 1996 3:22 PM

REMOTE REPORT FORMAT  
SELECT: ROW  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i79A00YYMMDDHHmmtt&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. tt - Remote Printer Report Type  
01 = Row  
02 = Column
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 79B

Version 106

**Function Type:** Set Shift Manual Adjustment Value

**Command Format:**

**Display:** <SOH>S79BTTssGGGGGG

**Computer:** <SOH>s79BTTssFFFFFFFF

**Inquire:**

<SOH>I79BTT

<SOH>i79BTT

**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
MAR 26, 1996  1:50 PM

T 1:REGULAR UNLEADED
CURRENT SHFT ADJ:    300
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i79BTTYMMDDHHmmTTssFFFFFFFF&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank number
3. ss - Shift mode  
01 = Current  
02 = Previous
4. FFFFFFFF - Adjustment Value, Gallons (ASCII Hex IEEE float)
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 79C

Version 106

**Function Type:** Set Daily Manual Adjustment Value

**Command Format:**

**Display:** <SOH>S79CTTMMDDGGGGGG

**Computer:** <SOH>s79CTTMMDDFFFFFFFF

**Inquire:**

<SOH>I79CTT

<SOH>i79CTT

**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
MAR 26, 1996  1:50 PM

T 1:REGULAR UNLEADED
MAR 26  ADJ VOL:    300
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i79CTTYMMDDHHmmTTMMDDFFFFFFFF&&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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 79D

Version 106

**Function Type:** Close Current Reconciliation Shift

**Command Format:**

**Display:** <SOH>S79D00ff

**Computer:** <SOH>s79D00ff

**Inquire:**

<SOH>I79D00

<SOH>i79D00

### Typical Response Message, Display Format:

```
<SOH>
I79D00
JAN 22, 1996  3:23 PM

MANUAL SHIFT CLOSE
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
3. && - Data Termination Flag
4. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 79E  
**Function Type:** Clear Tank Map Table

Version 106

**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, 1996  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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 79F

Version 108

**Function Type:** Set BIR Temperature Compensation Flag

**Command Format:**

**Display:** <SOH>S79F00f

**Computer:** <SOH>s79F00f

**Inquire:**

<SOH>I79F00

<SOH>i79F00

**Typical Response Message, Display Format:**

<SOH>  
I79F00  
JAN 22, 1996 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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### 7.3.10 WIRELESS PLLD SETUP

**Function Code:** 7A0

Version 10

**Function Type:** WPLLD Line Leak General Setup

**Command Format:**

**Display:** <SOH>I7A0WW

**Computer:** Computer format is not supported for this command

**Typical Response Message, Display Format:**

<SOH>

I7A0WW

JAN 24, 1996 2:54 PM

WPLLD LINE LEAK SETUP

W 1:REGULAR UNLEADED

PIPE TYPE: FIBERGLASS

LINE LENGTH: 200 FEET

0.20 GPH TEST: ENABLED

SHUTDOWN RATE: 3.0 GPH

T 1:REGULAR UNLEADED

DISPENSE MODE:

STANDARD

<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A1

Version 10

**Function Type:** Set WPLLD Line Leak Configuration

**Command Format:**

**Display:** <SOH>S7A1WWf

**Computer:** <SOH>s7A1WWf

**Inquire:**

<SOH>I7A1WW

<SOH>i7A1WW

### Typical Response Message, Display Format:

```
<SOH>
I7A1WW
JAN 24, 1996  2:54 PM

WPLLD LLD  CONFIGURATION

DEVICE LABEL                CONFIGURED
   1  REGULAR UNLEADED      ON
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i7A1WWYYMMDDHHmmWWf
WWf&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. f - Configuration flag  
0 = Off  
1 = On
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A2

Version 10

**Function Type:** Set WPLLD Line Leak Label

**Command Format:**

**Display:** <SOH>S7A2WWaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s7A2WWaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

<SOH>I7A2WW

<SOH>i7A2WW

**Typical Response Message, Display Format:**

```
<SOH>
I7A2WW
JAN 24, 1996  2:54 PM

WPLLD LLD   LABEL

DEVICE LABEL
    1  REGULAR UNLEADED
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i7A2WWYYMMDDHHmmWWaaaaaaaaaaaaaaaaaaaaa
WWaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. a - Indicates any printable ASCII character
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A3

Version 10

**Function Type:** Set WPLLD Line Leak 0.20 GPH Test Schedule

**Command Format:**

**Display:** <SOH>S7A3WWf

**Computer:** <SOH>s7A3WWf

**Inquire:**

<SOH>I7A3WW

<SOH>i7A3WW

**Typical Response Message, Display Format:**

<SOH>

I7A3WW

JAN 24, 1996 2:54 PM

WPLLD LINE LEAK 0.20 TEST SCHEDULE

LINE 0.20 GPH TEST

W 1:REGULAR UNLEADED MONTHLY

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i7A3WWYYMMDDHHmmWWf

WWf&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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

(Added in V18)

(Added in V18)

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A4

Version 10

**Function Type:** Set WPLLD Line Leak Shutdown Rate

**Command Format:**

**Display:** <SOH>S7A4WWrr

**Computer:** <SOH>s7A4WWrr

**Inquire:**

<SOH>I7A4WW

<SOH>i7A4WW

**Typical Response Message, Display Format:**

<SOH>

I7A4WW

JAN 24, 2000 2:55 PM

WPLLD LINE LEAK SHUTDOWN RATE

LINE

SHUTDOWN RATE

W 1:REGULAR UNLEADED

3.0 GPH

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i7A4WWYYMMDDHHmmWWrr

WWrr&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. rr - Shutdown rate
  - 01 = 0.2 gal/hr
  - 02 = 3.0 gal/hr
  - 03 = 0.1 gal/hr
  - 04 = None
4. && - Data Termination Flag
5. CCCC - Message Checksum

(Added in V19)



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A5

Version 10

**Function Type:** Set WPLLD Line Leak Tank Number

**Command Format:**

**Display:** <SOH>S7A5WWtt

**Computer:** <SOH>s7A5WWtt

**Inquire:**

<SOH>I7A5WW

<SOH>i7A5WW

**Typical Response Message, Display Format:**

<SOH>

I7A5WW

JAN 24, 1996 2:55 PM

WPLLD LINE LEAK TANK NUMBER

LINE

TANK NUMBER

W 1:REGULAR UNLEADED

1

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i7A5WWYYMMDDHHmmWWtt

WWtt&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. tt - Tank number (Decimal) (00 = no tank)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A6

Version 10

**Function Type:** Set WPLLD Line Leak Dispense Mode

**Command Format:**

**Display:** <SOH>S7A6WWf

**Computer:** <SOH>s7A6WWf

**Inquire:**

<SOH>I7A6WW

<SOH>i7A6WW

**Typical Response Message, Display Format:**

<SOH>

I7A6WW

JAN 24, 1996 2:55 PM

WPLLD LINE LEAK DISPENSE MODE

LINE

DISPENSE MODE

W 1:REGULAR UNLEADED

STANDARD

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i7A6WWYYMMDDHHmmWWf

WWf&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A7

Version 10

**Function Type:** Set WPLLD Line Disable Alarm Assignments

**Command Format:**

**Display:** <SOH>S7A7WWAANNTTSS

**Computer:** <SOH>s7A7WWAANNTTSS

**Inquire:**

<SOH>I7A7WW

<SOH>i7A7WW

**Typical Response Message, Display Format:**

```
<SOH>
I7A7WW
JAN 24, 1996  2:55 PM

WPLLD LLD    SETUP REPORT

W 1:REGULAR UNLEADED
- NO ALARM ASSIGNMENTS -
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i7A7WWYYMMDDHHmmWWnnAANNTTSS...
                               WWnnAANNTTSS...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. nn - Number of Alarms to Follow
4. AA - Alarm/Warning Category:  
See explanation for "AA" in Function s52CRR
5. NN - Alarm Type Number:  
See explanation for "NN" in Function s52CRR
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status:  
00 = Clear  
01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A8

Version 10

**Function Type:** Set WPLLD Line Leak Pipe Type

**Command Format:**

**Display:** <SOH>S7A8WWzz

**Computer:** <SOH>s7A8WWzz

**Inquire:**

<SOH>I7A8WW

<SOH>i7A8WW

**Typical Response Message, Display Format:**

<SOH>

I7A8WW

JAN 24, 1996 2:55 PM

WPLLD LINE LEAK PIPE TYPE

LINE

W 1:REGULAR UNLEADED

<ETX>

PIPE TYPE:

FIBERGLASS

**Typical Response Message, Computer Format:**

<SOH>s7A8WWYYMMDDHHmmWWzz

WWzz&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = all)
3. zz - Pipe Type:
  - 01 = 2" Fiberglass
  - 02 = 2" Steel
  - 03 = Flexible-A (White Enviroflex PP1501)
  - 04 = Flexible-B (1.5" Environ Geoflex D) (Added in V15)
  - 05 = Flexible-C (Omniflex CP1501) (Added in V15)
  - 06 = Flexible-D (Yellow Enviroflex PP1500) (Added in V15)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7A9

Version 10

**Function Type:** Set WPLLD Line Leak Pipe Length

**Command Format:**

**Display:** <SOH>S7A9WWLLL

**Computer:** <SOH>s7A9WWFFFFFFFFF

**Inquire:**

<SOH>I7A9WW

<SOH>i7A9WW

**Notes:**

1. WW - WPLLD Line Leak sensor number (Decimal, 00 = all)
2. LLL - Pipe Length, Feet (Decimal)
3. FFFFFFFF - Pipe Length, Feet (ASCII Hex IEEE float)

**Typical Response Message, Display Format:**

<SOH>

I7A9WW

JAN 24, 1996 2:55 PM

WPLLD LINE LEAK LINE LENGTH

LINE

LINE LENGTH

W 1:REGULAR UNLEADED

200 FEET

<ETX>

**Typical Response Message, Computer Format:**

<SOH>s7A8WWYYMMDDHHmmWWFFFFFFFFF

WWFFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number
3. FFFFFFFF - Pipe Length, Feet (ASCII Hex IEEE float)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7AA

Version 11 (Obsolete at Version 17, use 7AC)

**Function Type:** Set WPLLD Line Leak 0.10 GPH Test Schedule

**Command Format:**

**Display:** <SOH>S7AAWWMMDD

**Computer:** <SOH>s7AAWWMMDD

**Inquire:**

<SOH>I7AAWW

<SOH>i7AAWW

**Typical Response Message, Display Format:**

<SOH>

I7AAWW

JAN 24, 1996 2:55 PM

WPLLD 0.10 GPH SCHEDULE

LINE

SCHEDULE

W 1:REGULAR UNLEADED

02/11

<ETX>

**Typical Response Message, Computer Format:**

<SOH>s7AAWWYYMMDDHHmmWWMMDD

WWMMDD&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = all)
3. MMDD - Month and Day for 0.10 GPH test to start
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7AC

Version 17

**Function Type:** Set WPLLD Line Leak 0.10 GPH Test Schedule Enable

**Command Format:**

**Display:** <SOH>S7ACWWf

**Computer:** <SOH>s7ACWWf

**Inquire:**

<SOH>I7ACWW

<SOH>i7ACWW

**Typical Response Message, Display Format:**

<SOH>

I7ACWW

JAN 24, 1996 2:54 PM

WPLLD LINE LEAK 0.10 TEST SCHEDULE

LINE 0.10 GPH TEST

W 1:REGULAR UNLEADED DISABLED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i7ACWWYYMMDDHHmmWWf

WWf&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (Decimal, 00 = All)
3. f - 0.10 GPH Test Schedule
  - 0 = Disabled
  - 1 = (Reserved)
  - 2 = Auto
  - 3 = Manual
4. && - Data Termination Flag
5. CCCC - Message Checksum

(Added in V18)

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7AD

Version 20

**Function Type:** Set WPLLD Line Leak Secondary Pipe Length  
(only used for the larger diameter line in dual diameter  
piping configurations)

**Command Format:**

**Display:** <SOH>S7ADWWLLL

**Computer:** <SOH>s7ADWWFFFFFFFF

**Inquire:**

<SOH>I7ADWW

<SOH>i7ADWW

**Notes:**

1. WW - Wireless Pressure Line Leak Sensor Number (Decimal, 00 = all)
2. LLL - Pipe Length, Feet (Decimal)
3. FFFFFFFF - Pipe Length, Feet (ASCII Hex IEEE float)

**Typical Response Message, Display Format:**

```
<SOH>
I7ADWW
JUN  1, 2000  8:09 AM

WPLLD LINE LEAK LINE LENGTH  LARGE

LINE                               LINE LENGTH
W 2:WPLLD NUMBER 2                150 FEET
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>s7ADWWYYMMDDHHmmWWFFFFFFFF
WWFFFFFFFF&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - 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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7AF

Version 19

**Function Type:** Set WPLLD Line Leak Altitude Pressure Offset

**Command Format:**

**Display:** <SOH>S7AFWWII.p

**Computer:** <SOH>s7AFWWFFFFFFFF

**Inquire:**

<SOH>I7AFWW

<SOH>i7AFWW

**Notes:**

1. WW - WPLLD 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>

I7AFWW

JAN 1, 2000 1:44 AM

ALTITUDE PRESSURE OFFSET ADJUSTMENT

LINE

PRESSURE OFFSET

W 1:REGULAR UNLEADED

0.0 PSI

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i7AFWWYYMMDDHHmmWWFFFFFFFF

WWFFFFFFFF&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.11 METER MAP & DELIVERY TICKET SETUP

**Function Code:** 7B1

Version 110

**Function Type:** Set BIR Meter/Tank mapping

**Command Format:**

**Display:** <SOH>S7B100 B S FP M TT

**Computer:** Computer format is not supported for this command

**Inquire:**

<SOH>I7B100

**Notes:**

1. B - Bus
  - 2 = Power Bus (MDIM)
  - 3 = Comm Bus
2. S - Slot
  - Bus 2: 9-16
  - Bus 3: 1-6
3. FP - Fueling Position (0-99)
4. M - Meter (0-9)
5. TT - Tank Number (-1, 0, or any legitimate tank number)
  - 1 = Probeless tank
  - 0 = Unmap present tank
6. It is not necessary that the meter be in the map prior to mapping the meter to a tank

**Typical Response Message, Display Format:**

```
<SOH>
I7B100
JAN 22, 1996 3:24 PM
FUELING POSITION - METER - TANK MAP
```

BUS	SLOT	FUEL_P	METER	TANK
3	3	0	0	1
3	3	0	1	3
3	3	0	2	2
3	3	1	0	1
3	3	1	1	3
3	3	1	2	2
3	3	2	0	2
3	3	2	1	3
3	3	2	2	1
3	3	3	0	2
3	3	3	1	3
3	3	3	2	1
3	3	4	0	1
3	3	4	1	3
3	3	4	2	2
3	3	5	0	1
3	3	5	1	3
3	3	5	2	2
3	3	6	0	2
3	3	6	1	3
3	3	6	2	1
3	3	7	0	2
3	3	7	1	3
3	3	7	2	1

<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7B2

Version 20

**Function Type:** Set Meter Calibration Offset

**Command Format:**

**Display:** <SOH>S7B200pp.ppp

**Computer:** <SOH>s7B200FFFFFFFF

**Inquire:**

<SOH>I7B200

<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, 2000 8:10 AM

METER CALIBRATION  
OFFSET: 0.000%  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i7B200YYMMDDHHmmFFFFFFFFF&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7B5

Version 116

**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, 1998  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      GAUGE      VARIANCE
                                VOLUME      VOLUME
JAN  8, 1993  2:10 AM      500.0      503.0      3.0
<ETX>
```

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code 7B5:** (Continued)

### Typical Response Message, Computer Format:

```
<SOH>i7B5TTYMMDDHHmmeeTTpPPRRYYMMDDHHmmNNNNNNNN...  
TTpPPRRYYMMDDHHmmNNNNNNNN...&&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 (single ASCII character, from 20 Hex - 7E Hex)
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 float:
  1. ticketed volume
  2. gauged volume
  3. delivery variance
10. && - Data Termination Flag
11. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.12 I/O DEVICE SETUP

**Function Code:** 7BC

Version 19

**Function Type:** Set Line Disable Alarm Assignments II

**Command Format:**

**Display:** <SOH>S7BCPPAANNTTSS

**Computer:** <SOH>s7BCPPAANNTTSS

**Inquire:**

<SOH>I7BCPP

<SOH>i7BCPP

**Typical Response Message, Display Format:**

```
<SOH>
I7BCPP
JAN 15, 1996 4:29 PM

LINE LEAK SETUP REPORT

P 1: LLD NUMBER 1

LINE LEAK
P 1:ANNUAL LINE FAIL <ETX>
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i7BCPPYYMMDDHHmmPPnnAANNTTSS...
PPnnAANNTTSS...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. nn - Number of Alarms to Follow (Hex)
4. AA - Alarm/Warning Category (See AA Explained in Function s52CRR)
5. NN - Alarm Type Number (See NN Explained in Function s52CRR)
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status:
  - 00 = Clear
  - 01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7BD

Version 19

**Function Type:** Set Pressure Line Disable Alarm Assignments II

**Command Format:**

**Display:** <SOH>S7BDQQAAANNTTSS

**Computer:** <SOH>s7BDQQAAANNTTSS

**Inquire:**

<SOH>I7BDQQ

<SOH>i7BDQQ

### Typical Response Message, Display Format:

```
<SOH>
I7BDQQ
JAN  3, 1996 11:15 PM

PRESSURE LLD SETUP REPORT

Q 1:PLLD NUMBER 1

IN-TANK ALARMS
ALL:LEAK ALARM
ALL:HIGH WATER ALARM
ALL:OVERFILL ALARM

PRESSURE LINE LEAK
ALL:PLLD OPEN ALARM
ALL:CONT HANDLE ALM
ALL:LN EQUIP FAULT ALM
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i7BDQQYYMDDHHmmQQnnAAANNTTSS...
                                QQnnAAANNTTSS...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak Sensor Number (Decimal, 00 = all)
3. nn - Number of Alarms to Follow (Hex)
4. AA - Alarm/Warning Category
  - 02 - Tank Alarm
  - 21 - Pressure Line Leak Alarm
5. NN - Alarm Type Number
  - If AA is 02 and NN is:
    - 02 = Tank Leak Alarm
    - 03 = Tank High Water Alarm
    - 04 = Tank Overfill Alarm
  - If AA is 21 and NN is:
    - 06 = PLLD Sensor Open Alarm
    - 16 = PLLD Continuous Handle On Alarm
    - 18 = PLLD Line Equipment Alarm
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status:
  - 00 = Clear
  - 01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 7BE

Version 19

**Function Type:** Set WPLLD Line Disable Alarm Assignments II

**Command Format:**

**Display:** <SOH>S7BEWWAANNTTSS

**Computer:** <SOH>s7BEWWAANNTTSS

**Inquire:**

<SOH>I7BEWW

<SOH>i7BEWW

**Typical Response Message, Display Format:**

```
<SOH>
I7BEWW
JAN  3, 1996 11:15 PM

WPLLD LLD SETUP REPORT

W 1:WPLLD NUMBER 1

IN-TANK ALARMS
ALL:LEAK ALARM
ALL:HIGH WATER ALARM
ALL:OVERFILL ALARM

WPLLD LINE LEAK
ALL:WPLLD OPEN ALARM
ALL:CONT HANDLE ALM
ALL:LN EQUIP FAULT ALM
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i7BEWWYYMDDHHmmWWnnAANNTTSS...
                               WWnnAANNTTSS...&&CCCC<ETX>
```

**Notes:**

1. YYMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak Sensor Number (Decimal, 00 = all)
3. nn - Number of Alarms to Follow (Hex)
4. AA - Alarm/Warning Category
  - 02 - Tank Alarm
  - 26 - Wireless PLLD Alarm
5. NN - Alarm Type Number
  - If AA is 02 and NN is:
    - 02 = Tank Leak Alarm
    - 03 = Tank High Water Alarm
    - 04 = Tank Overfill Alarm
  - If AA is 26 and NN is:
    - 06 - WPLLD Sensor Open Alarm
    - 16 = WPLLD Continuous Handle On Alarm
    - 18 = WPLLD Line Equipment Alarm
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status:
  - 00 = Clear
  - 01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 801  
**Function Type:** Set Input Configuration

Version 1

**Command Format:**  
**Display:** <SOH>S801IIIf  
**Computer:** <SOH>s801IIIf

**Inquire:**  
<SOH>I801II  
<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>i801IIYYMMDDHHmmIIIf  
IIIf&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 802  
**Function Type:** Set Input Location Label

Version 1

**Command Format:**  
**Display:** <SOH>S802IIaaaaaaaaaaaaaaaaaaaaa  
**Computer:** <SOH>s802IIaaaaaaaaaaaaaaaaaaaaa

**Inquire:**  
<SOH>I802II  
<SOH>i802II

### Typical Response Message, Display Format:

```
<SOH>
I802II
MAR 26, 1996  1:50 PM

EXTERNAL INPUT LABEL

DEVICE LABEL
    1  aaaaaaaaaaaaaaaaaaaaaa
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i802IIYYMMDDHHmmIIaaaaaaaaaaaaaaaaaaaaa
IIaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. II - Input Number (Decimal, 00 = all)
3. a - Location Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 803  
**Function Type:** Set Input Type

Version 1

**Command Format:**  
**Display:** <SOH>S803IItnTT  
**Computer:** <SOH>s803IItnTT

**Inquire:**  
 <SOH>I803II  
 <SOH>i803II

### Typical Response Message, Display Format:

```
<SOH>
I803II
MAR 26, 1996  1:51 PM
```

EXTERNAL INPUT TYPE

INPUT	NAME	TYPE	ORIENTATION	TANK#
1	EXTERNAL INPUT #1	GENERATOR	NORMALLY CLOSED	2
2	DCD INPUT	STANDARD ACK	NORMALLY OPEN	

<ETX>

### Typical Response Message, Computer Format:

```
<SOH>i803IIYYMDDHHmmIItnNNTT
IItnNNTT&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - 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
4. n - Input Orientation (Decimal)
 

(Generator & Pump Sense only, not returned for others)

  - 1 = Normally Open
  - 2 = Normally Closed
5. NN - Number of Tanks to follow (Hex)
 

(Generator & Pump Sense only, not returned for others)
6. TT - Tank Number (Decimal, 00 = none)
 

(Generator & Pump Sense only, not returned for others)
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 804**

Version 4

**Function Type:** Set Input Dispense Mode

**Command Format:**

**Display:** <SOH>S804IIIm

**Computer:** <SOH>s804IIIm

**Inquire:**

<SOH>I804II

<SOH>i804II

**Typical Response Message, Display Format:**

```
<SOH>
I804II
MAR 27, 1996  5:51 PM

INPUT DISPENSE MODE

INPUT  MODE
    1  MANIFOLDED: ALTERNATE
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i804IIYYMMDDHHmmIIIm
      IIm&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. II - Input (Pump Sensor) Number (Decimal)
3. m - Dispense Mode:
  - 1 = Standard
  - 2 = Manifolded: Alternate
  - 3 = Manifolded: Sequential
  - 4 = Manifolded: All Pumps
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 806  
**Function Type:** Set Relay Configuration

Version 1

**Command Format:**  
**Display:** <SOH>S806RRf  
**Computer:** <SOH>s806RRf

**Inquire:**  
<SOH>I806RR  
<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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 807  
**Function Type:** Set Relay Location Label

Version 1

**Command Format:**  
**Display:** <SOH>S807RRaaaaaaaaaaaaaaaaaaaaa  
**Computer:** <SOH>s807RRaaaaaaaaaaaaaaaaaaaaa

**Inquire:**  
<SOH>I807RR  
<SOH>i807RR

### Typical Response Message, Display Format:

<SOH>  
I807RR  
MAR 26, 1996 1:51 PM  
  
RELAY LABEL  
  
DEVICE LABEL  
1 aaaaaaaaaaaaaaaaaaaaaa  
<ETX>

### Typical Response Message, Computer Format:

<SOH>i807RRYYMMDDHHmmRRaaaaaaaaaaaaaaaaaaaaa  
RRaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Relay Number (Decimal, 00 = all)
3. a - Location Label (20 ASCII characters from 20 Hex - 7E Hex)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 808  
**Function Type:** Set Relay Alarm Assignments

Version 1

**Command Format:**  
**Display:** <SOH>S808RRAANNTTSS  
**Computer:** <SOH>s808RRAANNTTSS

**Inquire:**  
<SOH>I808RR  
<SOH>i808RR

### Typical Response Message, Display Format:

```
<SOH>
I808RR
MAR 26, 1996  1:51 PM

RELAY SETUP REPORT

R 1:
TYPE:
    STANDARD
    NORMALLY OPEN

- NO ALARM ASSIGNMENTS -
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i808RRYYMDDHHmmRRnnAANNTTSS...
                                RRnnAANNTTSS...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - Current Date and Time
2. RR - Relay Number (Decimal, 00 = all)
3. nn - Number of Alarms to follow (Decimal)
4. AA - Alarm/Warning Category:  
See explanation for "AA" in Function s52CRR
5. NN - Alarm Type Number:  
See explanation for "NN" in Function s52CRR
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status (Hex):  
00 = Clear  
01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 809  
**Function Type:** Set Relay Orientation

Version 2

**Command Format:**  
**Display:** <SOH>S809RRs  
**Computer:** <SOH>s809RRs

**Inquire:**  
<SOH>I809RR  
<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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 80A  
**Function Type:** Set Relay Type

Version 4

**Command Format:**  
**Display:** <SOH>S80ARRt  
**Computer:** <SOH>s80ARRt

**Inquire:**  
<SOH>I80ARR  
<SOH>i80ARR

### Typical Response Message, Display Format:

<SOH>  
I80ARR  
MAR 26, 1996 1:51 PM

RELAY TYPE

RELAY DESIGNATION	TYPE
1 EXTERNAL RELAY #1	STANDARD

<ETX>

### Typical Response Message, Computer Format:

<SOH>i80ARRYYMMDDHHmmRRt  
Rrt&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Relay Number (Decimal, 00 = All)
3. t - Relay Type:
  - 1 - Standard
  - 2 - Pump Control Output
  - 3 - Momentary
  - 4 - Pump Comm Control
4. && - Data Termination Flag
5. CCCC - Message Checksum

(Added in V22)

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 80B  
**Function Type:** Set Relay Tank Assignment

Version 4

**Command Format:**  
**Display:** <SOH>S80BRRtt  
**Computer:** <SOH>s80BRRtt

**Inquire:**  
<SOH>I80BRR  
<SOH>i80BRR

### Typical Response Message, Display Format:

<SOH>  
I80BRR  
MAR 26, 1996 1:51 PM

RELAY TANK ASSIGNMENT

RELAY DESIGNATION	TANK
1 EXTERNAL RELAY #1	1

<ETX>

### Typical Response Message, Computer Format:

<SOH>i80BRRYYMMDDHHmmRRtt  
RRtt&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. RR - Relay Number (Decimal, 00 = All)
3. tt - Relay Tank Assignment (00 = No Assignment)
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.13 EEPROM SETUP

**Function Code:** 851

Version 107

**Function Type:** Restore All Setup Data from EEPROM

**Command Format:**

**Display:** <SOH>S85100149

**Computer:** <SOH>s85100149

**Inquire:**

<SOH>I85100

<SOH>i85100

**Notes:**

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

**Typical Response Message, Display Format:**

<SOH>

I85100

JAN 24, 1996 2:55 PM

RESTORE SETUP DATA: DISABLED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i85100YYMMDDHHmmss&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. ss - Status  
00 = Disabled  
01 = Enabled
3. && - Data Termination Flag
4. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code: 852**

Version 107

**Function Type:** Save All Setup Data to EEPROM

**Command Format:**

**Display:** <SOH>S85200149

**Computer:** <SOH>s85200149

**Inquire:**

<SOH>I85200

<SOH>i85200

**Notes:**

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

**Typical Response Message, Display Format:**

<SOH>

I85200

JAN 24, 1996 2:55 PM

SAVE SETUP DATA: DISABLED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i85200YYMMDDHHmmss&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. ss - Status  
00 = Disabled  
01 = Enabled
3. && - Data Termination Flag
4. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code:** 853

Version 107

**Function Type:** Clear All Setup Data from EEPROM

**Command Format:**

**Display:** <SOH>S85300149

**Computer:** <SOH>s85300149

**Inquire:**

<SOH>I85300

<SOH>i85300

**Notes:**

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

**Typical Response Message, Display Format:**

<SOH>

I85300

JAN 24, 1996 2:55 PM

CLEAR SETUP DATA: DISABLED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i85300YYMMDDHHmmss&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. ss - Status  
00 = Disabled  
01 = Enabled
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.3.14 MISCELLANEOUS SETUP

**Function Code:** 881

Version 9

**Function Type:** Set Communication Port Data

**Command Format:**

**Display:** <SOH>S881PPBBBBBPSDTAA

**Computer:** <SOH>s881PPBBBBBPSDTAA

**Inquire:**

<SOH>I881PP

<SOH>i881PP

**Notes:**

1. PP - Communication Port Number (Decimal 01..06)

**Typical Response Message, Display Format:**

```
<SOH>
I881PP
JUN  1, 2000  8:10 AM
PORT SETTINGS:

COMM BOARD   : 1 (RS-232)
BAUD RATE    : 9600
PARITY       : ODD
STOP BIT     : 1 STOP
DATA LENGTH  : 7 DATA
RS-232 SECURITY
CODE : 123456
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i881PPYYMMDDHHmmBBBBBPSDTAA&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. BBBBBB - Baud Rate (Decimal)
3. P - Parity (Decimal; 0=None, 1 or 2)
4. S - Stop Bit (Decimal; 1 or 2)
5. D - Data Bit (Decimal; 7 or 8)
6. T - Pulse or Tone (Decimal; 0=Tone, 1=Pulse)
7. AA - Number of Rings before Answer (Decimal)
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 882

Version 9

**Function Type:** Initialize Communication Port Data

**Command Format:**

**Display:** <SOH>S882PP149

**Computer:** <SOH>s882PP149

**Inquire:**

<SOH>I882PP

<SOH>i882PP

**Notes:**

1. PP - Communication Port Number (Decimal 01..06)
2. 149 - This verification code must be sent to confirm the command

**Typical Response Message, Display Format:**

```
<SOH>
I882PP
JUN  1, 2000  8:10 AM
PORT SETTINGS:

COMM BOARD   : 1 (RS-232)
BAUD RATE    : 9600
PARITY        : ODD
STOP BIT      : 1 STOP
DATA LENGTH   : 7 DATA
RS-232 SECURITY
CODE : 123456
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>i882PPYYMMDDHHmmBBBBBPSDTAA&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. BBBBB - Baud Rate (Decimal)
3. P - Parity (Decimal; 0=None, 1 or 2)
4. S - Stop Bit (Decimal; 1 or 2)
5. D - Data Bit (Decimal; 7 or 8)
6. T - Pulse or Tone (Decimal; 0=Tone, 1=Pulse)
7. AA - Number of Rings before Answer (Decimal)
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 885  
**Function Type:** Set SiteLink Modem Type

Version 19

**Command Format:**  
**Display:** <SOH>S885PPMM  
**Computer:** <SOH>s885PPMM

**Inquire:**  
<SOH>I885PP  
<SOH>i885PP

### Typical Response Message, Display Format:

<SOH>  
I885PP  
NOV 5, 1999 12:00 AM

COM BOARD 1: S-LINK  
MODEM TYPE : NETCOMM SMART M7F  
<ETX>

### Typical Response Message, Computer Format:

<SOH>i885PPYYMMDDHHmmMM&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. MM - Modem Type:  
00 = NETCOMM SMART M7F  
01 = US ROBOTICS (UK)
3. && - Data Termination Flag
4. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 886**

Version 20

**Function Type:** Set Modem Setup String

**Command Format:**

**Display:** <SOH>S886PPaaaaaaaaaaaaaaaaaaaaa

**Computer:** <SOH>s886PPaaaaaaaaaaaaaaaaaaaaa

**Inquire:**

I886PP

i886PP

**Notes:**

1. PP - Communication Port Number (Decimal 01..06)

**Typical Response Message, Display Format:**

<SOH>

I886PP

JUN 1, 2000 8:15 AM

COMM BOARD : 3 (FXMOD)

MODEM SETUP STRING : GJMDAQ

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i886PPYYMMDDHHmmaaaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. a - Modem Setup String (20 ASCII characters)
3. && - Data Termination Flag
4. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 887

Version 20

**Function Type:** Set Dial Tone Validation Interval

**Command Format:**

**Display:** S887PPHHHH

**Computer:** s887PPHHHH

**Inquire:**

I887PP

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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 888

Version 19

**Function Type:** Communication Status Information

**Command Format:**

**Display:** <SOH>I888PP

**Computer:** <SOH>i888PP

**Typical Response Message, Display Format:**

```
<SOH>
I888PP
JAN  1, 1996  9:12 AM

COMM BOARD  : 1 (RS-232)
CONNECTION  : NONE

COMM BOARD  : 2 (FXMOD)
CONNECTION  : MODEM DIAL IN
FUNCTION    : NONE
ERROR       : UART SETTINGS ERROR
BAUD RATE   : 2400
PARITY      : ODD
STOP BIT    : 1 STOP
DATA LENGTH: 7 DATA
TIME OF LAST COMM DATA: JAN  1, 1996  9:12 AM
TIME OF LAST COMM ERROR: JAN  1, 1996  8:00 AM
<ETX>
```

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code 888:** (Continued)

### Typical Response Message, Computer Format:

```
<SOH>i888PPYYMMDDHHmmNNPPnnCCSSEEBBBBPSDYMMDDHHmmYYMMDDHHmm...
PPnnCCSSEEBBBBPSDYMMDDHHmmYYMMDDHHmm...&&CCCC<ETX>
```

#### Notes:

1. YYMMDDHHmm - Current Date and Time
2. NN - Total Number of Error Reports To Follow
3. PP - Communication Port Number (00=all)
4. nn - Number of Errors to follow for each port
5. CC - Connect Type
  - 00 = NO CONNECTION
  - 01 = AUTO DIAL TELETYPE
  - 02 = AUTO DIAL FAX
  - 03 = AUTO DIAL COMPUTER
  - 04 = AUTO TRANSMIT
  - 05 = MODEM DIAL IN
  - 06 = RS232 REQUEST
6. SS - State or Function Code (Decimal):
  - 00 = NONE
  - 01 = OPEN PHONE PORT
  - 02 = MODEM CHECK CONNECTION
  - 03 = TRANSMITTING DATA
  - 04 = CHECKING FOR CARRIER
  - 05 = WAITING FOR DATA
  - 06 = HANGING UP
  - 07 = FAXMODEM INITIALIZING
  - 08 = FAX CHECK CONNECTION
  - 09 = FAX CHECK PAGE
  - 10 = FAX END PAGE
  - 11 = FAX BUILD MESSAGE
7. EE - Error Code (Decimal):
  - 01 = UART SETTINGS ERROR
  - 02 = MODEM INITIALIZATION FAILED
  - 03 = MODEM TIMED OUT
  - 04 = LOST CARRIER
  - 05 = DATA TIMED OUT
  - 06 = HANG UP FAILED
  - 07 = FAX INITIALIZATION FAILED
  - 08 = FAX CONNECTION FAILED
  - 09 = FAX TIMED OUT
  - 10 = FAX INTERPAGE ERROR
  - 11 = FAX END PAGE ERROR
  - 12 = FAX BUILD MESSAGE ERROR
8. BBBB - BAUD of UART During Error (Decimal)
9. P - Parity of UART During Error (Decimal):
  - 0: None
  - 1: Odd
  - 2: Even
  - 3: Mark
  - 4: Space
10. S - Stop Bits of UART During Error (Decimal)
11. D - Data Bits of UART During Error (Decimal)
12. YYMMDDHHmm - Last Communication Date/Time
13. YYMMDDHHmm - Last Error's Date/Time
14. && - Data Termination Flag
15. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 889

Version 121

**Function Type:** DTR Normal State for Serial Satellite Boards

**Command Format:**

**Display:** <SOH>S889PPs

**Computer:** <SOH>s889PPs

**Inquire:**

<SOH>I889PP

<SOH>i889PP

**Notes:**

1. PP - Communication Port Number (01..06)

**Typical Response Message, Display Format:**

<SOH>

I889PP

AUG 22, 2000 4:49 PM

COMM BOARD : 1 (S-SAT )

DTR NORMAL STATE: HIGH

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i889PPYYMMDDHHms&&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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code: 891**

Version 108

**Function Type:** Set AccuChart Calibration Restart

**Command Format:**

**Display:** <SOH>S891TT149

**Computer:** <SOH>s891TT149

**Inquire:**

<SOH>I891TT

<SOH>i891TT

**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>  
S891TT

MAR 29, 1996 6:27 PM

T 1:REGULAR UNLEADED ACCU\_CHART RESTART  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i891TTYMMDDHHmmTTss&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank number (Decimal)
3. ss - Status:  
01 = AccuChart restarted
4. && - Data Termination Flag
5. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** 8BC

Version 19

**Function Type:** Set Relay Alarm Assignments II

**Command Format:**

**Display:** <SOH>S8BCRRAANNTTSS

**Computer:** <SOH>s8BCRRAANNTTSS

**Inquire:**

<SOH>I8BCRR

<SOH>i8BCRR

**Typical Response Message, Display Format:**

<SOH>  
I8BCRR  
JAN 15, 1996 4:29 PM

RELAY SETUP REPORT

R 1:  
TYPE:  
STANDARD  
NORMALLY OPEN

PRESSURE LINE LEAK  
Q 1:ANNUAL LINE FAIL  
<ETX>

**Typical Response Message, Computer Format:**

<SOH>i8BCRRYYMMDDHHmmRRnnAANNTTSS...  
RRnnAANNTTSS...&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. RR - Relay Number (Decimal, 00 = all)
3. nn - Number of Alarms to Follow (Hex)
4. AA - Alarm/Warning Category (See AA Explained in Function s52CRR)
5. NN - Alarm Type Number (See NN Explained in Function s52CRR)
6. TT - Tank/Sensor Number (Decimal, 00 = all)
7. SS - Status:  
00 = Clear  
01 = Set
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.4 DIAGNOSTIC REPORTS

#### 7.4.1 SYSTEM DIAGNOSTIC REPORTS

**Function Code:** 901

Version 1

**Function Type:** Self Test Results Report

**Command Format:**

**Display:** <SOH>I90100

**Computer:** <SOH>i90100

**Typical Response Message, Display Format:**

<SOH>

I90100

JAN 22, 1996 3:24 PM

	I/O	RAM	PROM
SYSTEM BOARD	PASS	PASS	PASS

<ETX>

**Typical Response Message, Computer Format:**

<SOH>i90100YYMMDDHHmmIIRRPP&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. II - I/O Test result  
00 = pass  
01 = fail
3. RR - RAM Test result  
00 = pass  
01 = fail
4. PP - PROM Test result  
00 = pass  
01 = fail
5. && - Data Termination Flag
6. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 902**

Version 1

**Function Type:** System Revision Level Report

**Command Format:**

**Display:** <SOH>I90200

**Computer:** <SOH>i90200

### 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 903**

Version 106

**Function Type:** PC Diagnostic Report

**Command Format:**

**Display:** <SOH>I90300

**Computer:** <SOH>i90300

### Typical Response Message, Display Format:

```
<SOH>
I90300
JAN 22, 1996  3:24 PM
  PC DIAGNOSTIC DATA
  PERIPHERAL CONTROLLER
- - - - -

PC SWARE# 330269-002-B
CREATED - 94.12.16.13.26
PC ROM CHECKSUM = PASSED

PC RESET COUNTS =      6
PC COMM ERRORS  =      0
MC CKSUM ERRS   =     108
MC->PC COMMS    = 36261666
MC<-PC COMMS    = 36262714
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>i90300YYMMDDHHmmP..PT..TNNR..RE..ES..St..tr..r&&CCCC<ETX>
```

#### Notes:

1. YYMMDDHHmm - Current Date and Time
2. P..P - Software Part Number (14 characters)
3. Y..T - Software Creation Date and Time (14 characters)  
YY.MM.DD.HH.MM
4. NN - Number of values to follow (Decimal)
5. R..R - PC Reset Counts (Hex, 8 characters)
6. E..E - PC Communication Errors (Hex, 8 characters)
7. S..S - MC Checksum Errors (Hex, 8 characters)
8. t..t - MC -> PC Command Send Counts (Hex, 8 characters)
9. r..r - MC <- PC Command Receive Counts (Hex, 8 characters)
10. && - Data Termination Flag
11. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: 905**

Version 15

**Function Type:** System Revision Level Report II

**Command Format:**

**Display:** <SOH>I90500

**Computer:** <SOH>i90500

**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 = "IFS"

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### 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.           nnnnnn-vvv-r - SEM Info 3 parts, if none "NO SOFTWARE MODULE"
- 21.                  nnnnnn - SEM number (ASCII text string)
- 22.                  vvv - SEM Software version number (ASCII text string)
- 23.                  r - SEM Software revision level (ASCII text string)
  
- 24.                  && - Data Termination Flag
- 25.                  CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 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, 1996  3:25 PM

TANK  1  REGULAR UNLEADED      TYPE  CODE  LENGTH  SERIAL NO.  D/CODE
TANK  2  SUPER UNLEADED        CAP1  A66C   96.00   278147     2410
TANK  3  PREMIUM UNLEADED      CAP0  0001   96.00   200100     0000
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>ia01TTYMMDDHHmmTTpPPKKKKFFFFFFFFSSSSSScccc
TTpPPKKKKFFFFFFFFSSSSSScccc&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A02

Version 1

**Function Type:** Probe Factory Dry Calibration Values

**Command Format:**

**Display:** <SOH>IA02TT

**Computer:** <SOH>iA02TT

### Typical Response Message, Display Format:

```
<SOH>
IA02TT
JAN 22, 1996  3:25 PM
TANK 1  REGULAR UNLEADED      MAG   GRADIENT =  178.1400
TANK 2  SUPER UNLEADED        CAP1   FACTORY DRY5
1573.000 1871.000 5020.000 4977.000 4961.000 5006.000 4967.000 5019.000
5033.000 4972.000 5045.000
265.000  311.000  836.000   834.000   827.000   827.000   833.000   834.000
839.000   827.000   837.000
TANK 3  PREMIUM UNLEADED      CAP0   FACTORY DRY5
97.000   180.000  649.000  657.000  652.000  655.000  647.000  657.000
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>iA02TTYMMDDHHmmTTpPPNNFFFFFFFF...
                        TTpPPNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 01 - CAP0
  - 02 - CAP1
  - 03 - MAG1
5. NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - Probe Data (ASCII Hex IEEE float)
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A03

Version 1

**Function Type:** Probe Factory Wet Calibration Values

**Command Format:**

**Display:** <SOH>IA03TT

**Computer:** <SOH>iA03TT

**Typical Response Message, Display Format:**

```
<SOH>
IA03TT
JAN 22, 1996  3:25 PM
TANK 1  REGULAR UNLEADED      MAG  GRADIENT =  178.1400
TANK 2  SUPER UNLEADED        CAP1  FACTORY WETS
3066.000 3197.000 8321.000 8213.000 8230.000 8189.000 8251.000 8296.000
8335.000 8205.000 8332.000
569.000  576.000 1485.000 1486.000 1471.000 1477.000 1479.000 1476.000
1479.000 1472.000 1474.000
TANK 3  PREMIUM UNLEADED      CAP0  FACTORY WETS
130.000  335.000 1214.000 1214.000 1204.000 1217.000 1200.000 1222.000
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iA03TTYMMDDHHmmTTpPPNNFFFFFFFF...
                        TTPPPNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 01 - CAP0
  - 02 - CAP1
  - 03 - MAG1
5. NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - Probe Data (ASCII Hex IEEE float)
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A04

Version 1

**Function Type:** Probe Updated Dry Calibration Values

**Command Format:**

**Display:** <SOH>IA04TT

**Computer:** <SOH>ia04TT

**Typical Response Message, Display Format:**

```
<SOH>
IA04TT
JAN 22, 1996  3:25 PM
TANK  1  REGULAR UNLEADED      MAG
TANK  2  SUPER UNLEADED      CAP1  UPDATED DRY5
1573.000 1871.000 5020.000 4977.000 4961.000 5006.000 4967.000 5019.000
5033.000 4972.000 5045.000
265.000  311.000  836.000   834.000   827.000   827.000   833.000   834.000
839.000  827.000  837.000
TANK  3  PREMIUM UNLEADED      CAP0  UPDATED DRY5
97.000  180.000  649.000  657.000  652.000  655.000  647.000  657.000
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>ia04TTYMMDDHHmmTTpPPNNFFFFFFFF...
                        TTpPPNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 01 - CAP0
  - 02 - CAP1
  - 03 - MAG1
5. NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - Probe Data (ASCII Hex IEEE float)
7. && - Data Termination Flag
8. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A05

Version 1

**Function Type:** Probe Updated Wet Calibration Values

**Command Format:**

**Display:** <SOH>IA05TT

**Computer:** <SOH>iA05TT

**Typical Response Message, Display Format:**

```
<SOH>
IA05TT
JAN 22, 1996  3:25 PM
TANK  1  REGULAR UNLEADED      MAG
TANK  2  SUPER UNLEADED      CAP1  UPDATED WETS
3119.000  3197.000  8321.000  8213.000  8230.000  8189.000  8251.000  8296.000
8335.000  8205.000  8332.000
569.000   576.000  1485.000  1486.000  1471.000  1477.000  1479.000  1476.000
1479.000  1472.000  1474.000
TANK  3  PREMIUM UNLEADED    CAP0  UPDATED WETS
130.000   335.000  1214.000  1214.000  1204.000  1217.000  1200.000  1222.000
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iA05TTYMMDDHHmmTTpPPNNFFFFFFFF...
                        TTpPPNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 01 - CAP0
  - 02 - CAP1
  - 03 - MAG1
5. NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - Probe Data (ASCII Hex IEEE float)
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A06

Version 1

**Function Type:** Probe Segment Sensitivity Ratios

**Command Format:**

**Display:** <SOH>IA06TT

**Computer:** <SOH>ia06TT

**Typical Response Message, Display Format:**

```
<SOH>
IA06TT
JAN 22, 1996  3:25 PM
TANK  1  REGULAR UNLEADED      MAG
TANK  2  SUPER UNLEADED      CAP1  SENSITIVITY RATIOS
      0.000    0.703    0.356    1.002    1.011    0.970    1.032    0.982
      1.000    1.007    0.987
      0.000    0.734    0.353    1.006    1.006    1.005    0.985    0.995
      0.989    1.024    0.977
TANK  3  PREMIUM UNLEADED      CAP0  SENSITIVITY RATIOS
      0.000    1.023    0.279    0.971    1.010    1.003    1.010    0.988
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>ia06TTYMMDDHHmmTTpPPNNFFFFFFFF...
                        TTPPPNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 01 - CAP0
  - 02 - CAP1
  - 03 - MAG1
5. NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - Probe Data (ASCII Hex IEEE float)
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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>iA10TTYMMDDHHmmTTpPPSSSSNNFFFFFFFF...
      TTpPPSSSSNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: **A11**

Version 1

Function Type: Probe Fast Average Buffers

### Command Format:

Display: <SOH>IA11TT

Computer: <SOH>iA11TT

### Typical Response Message, Display Format:

```
<SOH>
IA11TT
JAN 22, 1996  3:25 PM
TANK 1  REGULAR UNLEADED      MAG  NUMBER OF SAMPLES =      5
  695.000  8587.200  8587.400  8587.400  8587.000  8587.000  8587.000  8587.000
  8587.400  8587.000  8587.000  38257.801  31768.199  30813.801  30616.000  30250.398
30252.398  30259.600  38261.801
TANK 2  SUPER UNLEADED      CAP1  NUMBER OF SAMPLES =      5
  6852.000  6930.000  12054.000  11946.000  11963.000  11922.000  11984.000  12029.000
  9026.000  8705.000  8777.000  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 =      5
  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>iA11TTYMMDDHHmmTTpPPSSSSNNFFFFFFFF...
TTpPPSSSSNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 01 - CAP0
  - 02 - CAP1
  - 03 - MAG1
5. SSSS - Number of Samples (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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: A12**

Version 1

**Function Type:** Probe Standard Average Buffers

**Command Format:**

**Display:** <SOH>IA12TT

**Computer:** <SOH>iA12TT

**Typical Response Message, Display Format:**

```
<SOH>
IA12TT
JAN 22, 1996  3:25 PM
TANK  1  REGULAR UNLEADED      MAG  NUMBER OF SAMPLES =   20
  695.100  8587.000  8587.450  8587.300  8587.050  8587.650  8587.050  8587.050
  8587.200  8587.000  8587.000 38258.148 31767.449 30814.250 30616.801 30250.500
30252.500 30259.801 38261.750
TANK  2  SUPER UNLEADED      CAP1  NUMBER OF SAMPLES =   40
  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 =   40
   234.000   439.000 1317.000 1317.000 1307.000 1321.000 1104.000   761.000
   104.000 1686.000
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iA12TTYMMDDHHmmTTpPPSSSSNNFFFFFFFF...
      TTpPPSSSSNNFFFFFFFF...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 01 - CAP0
  - 02 - CAP1
  - 03 - MAG1
5. SSSS - Number of Samples (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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: A13**

Version 1

**Function Type:** Probe Long Term Average Buffers

**Command Format:**

**Display:** <SOH>IA13TT

**Computer:** <SOH>iA13TT

**Typical Response Message, Display Format:**

```
<SOH>
IA13TT
JAN 22, 1996  3:26 PM
TANK 1  REGULAR UNLEADED      MAG    NUMBER OF SAMPLES = 44544
  695.555  9687.276  9687.250  9687.222  9687.210  9687.204  9960.201  9960.196
  9960.193  9960.189  9960.189  38259.258  31891.879  30702.641  30339.914  30188.129
30113.578 30118.578 38260.867
TANK 2  SUPER UNLEADED      CAP1    NUMBER OF SAMPLES = 1115
  6852.000  6930.000 12054.000 11946.000 11963.000 11922.000 11984.000 12029.000
  9026.000  8705.000  8777.000  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 = 1117
  234.000   439.000 1317.000 1317.000 1307.000 1321.000 1104.000   761.000
 104.000 1686.000
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iA13TTYMMDDHHmmTTpPPSSSSNNFFFFFFFF...
      TTpPPSSSSNNFFFFFFFF...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 01 - CAP0
  - 02 - CAP1
  - 03 - MAG1
5. SSSS - Number of Samples (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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A14

Version 19

**Function Type:** Mag Probe Option Table

**Command Format:**

**Display:** <SOH>IA14TT

**Computer:** <SOH>iA14TT

**Typical Response Message, Display Format:**

```
<SOH>
IA14TT
JUN  1, 2000  8:15 AM

MAG PROBE OPTIONS TABLE

TNK    LOW
NUM    TEMP

    1    NO
    2    NO
    3    NO
    4    NO
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iA14TTYMMDDHHmmTTNNL...
                        TTNNL...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. NN - Number of option flags to follow
4. L - Low temperature capability  
0 = NO  
1 = YES
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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>iA20TTYMMDDHHmmTTpPPNNFFFF...
                        TTPPPNNFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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>iA21TTYMMDDHHmmTTpPPNNFFFF...
                        TTPPPNNFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A22

Version 2

**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>iA22TTYMMDDHHmmTTpPPNNFFFF...
TTpPPNNFFFF...&&CCCC<ETX>
```

**Notes:**

1. YMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type:
  - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: A23**

Version 5

**Function Type:** Tank Leak Test Averaging Buffers

**Command Format:**

**Display:** <SOH>IA23TT

**Computer:** <SOH>iA23TT

**Typical Response Message, Display Format:**

```
<SOH>
IA23TT
APR 8, 1995 8:27 AM
TANK 1 SUPER UNLEADED          MAG    LEAK TEST AVERAGING BUFFERS
0.20 GAL/HR LEAK TEST BUFFER
START TIME          HOURS  VOLUME    RATE
APR 8, 1995  5:22 AM   3.0    6107   -0.059
APR 8, 1995  1:01 AM   4.0    6107   -0.058
APR 7, 1995  9:56 PM   3.0    6108   -0.060
APR 7, 1995  6:51 PM   3.0    6108   -0.045
APR 7, 1995  4:49 PM   2.0    6108   -0.039
AVERAGE                3.0    6108   -0.052
0.10 GAL/HR LEAK TEST BUFFER
START TIME          HOURS  VOLUME    RATE
APR 8, 1995  5:22 AM   3.0    6107   -0.059
APR 8, 1995  1:01 AM   4.0    6107   -0.058
APR 7, 1995  9:56 PM   3.0    6108   -0.060
APR 7, 1995  6:51 PM   3.0    6108   -0.045
AVERAGE                3.3    6107   -0.056
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iA23TTYYMMDDHHmmTTpPPNNYYMMDDHHmmddddddVVVVVVVRRRRRRR...
nnYYMMDDHHmmddddddVVVVVVVRRRRRRR...
TTpPPNNYYMMDDHHmmddddddVVVVVVVRRRRRRR...
nnYYMMDDHHmmddddddVVVVVVVRRRRRRR...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. PP - Probe Type
5. NN - Number of 34 character 0.2 gal/hr test records to follow
6. YYMMDDHHmm - Leak test start time - year, month, day, hour, min
7. dddddddd - Leak test duration in hours (ASCII Hex IEEE float)
8. VVVVVVVV - Leak test volume (gallons) (ASCII Hex IEEE float)
9. RRRRRRRR - Leak test rate (gal/hr) (ASCII Hex IEEE float)
10. nn - Number of 34 character 0.1 gal/hr test records to follow
11. YYMMDDHHmm - Leak test start time - year, month, day, hour, min
12. dddddddd - Leak test duration in hours (ASCII Hex IEEE float)
13. VVVVVVVV - Leak test volume (gallons) (ASCII Hex IEEE float)
14. RRRRRRRR - Leak test rate (gal/hr) (ASCII Hex IEEE float)
15. && - Data Termination Flag
16. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: A51**

Version 3

**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>iA51TTYMMDDHHmmTTRRssNNttttttttFFFFFFFF...
      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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: **A52**

Version 3

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>iA52TTYMMDDHHmmTTYMMDDHHmmSSCCccNNFFFFFFFF...  
TTYMMDDHHmmSSCCccNNFFFFFFFF...&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A53

Version 3

**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>iA53TTYMMDDHHmmTTNNhhhhhhhhFFFFFFFFF...
                        TTNNhhhhhhhhhhFFFFFFFFF...&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A54

Version 3

**Function Type:** CSLD Diagnostics: Moving Average Table

**Command Format:**

**Display:** <SOH>IA54TT

**Computer:** <SOH>iA54TT

**Typical Response Message, Display Format:**

<SOH>  
IA54TT

MAR 26, 1996 1:48 PM

CSLD DIAGNOSTICS: MOVING AVERAGE TABLE

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
MOVING AVERAGE:		3056.51				

DISPENSE STATE: ACTIVE \* 702.324829

<ETX>

**Typical Response Message, Computer Format:**

<SOH>A5401YYMDDHHmmTTSSRRssNNaaaaaaaaFFFFFFFFF...  
TTSSRRssNNaaaaaaaaFFFFFFFFF...&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - Current Date
2. TT - Tank Number (Decimal, 00 = All Tanks)
3. RR - Number of records to follow
4. ss - Number of samples averaged into this record
5. NN - Number of eight character Data Fields to follow (Hex)
6. aaaaaaaaa - Time recorded (seconds since 1/1/70, unsigned long)
7. FFFFFFFF - ASCII Hex IEEE floats
  1. Temperature compensated volume
  2. Height
  3. Average temperature
  4. Temperature stratification
  5. Current moving average
8. && - Data Termination Flag
9. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A55

Version 3

**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	TEST STATUS	DURATION
------	-------------	----------

1	NO TEST	0.0
---	---------	-----

<ETX>

**Typical Response Message, Computer Format:**

<SOH>iA55TTYMMDDhhmmTTssFFFFFFFF

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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A56  
**Function Type:** CSLD Monthly Report

Version 121

**Command Format:**  
**Display:** <SOH>IA56TTt  
**Computer:** <SOH>iA56TTt

### 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 AVAIL
OCT 24, 2000 3:22 PM  RESULT: PASS
OCT 23, 2000 6:26 AM  RESULT: FAIL
OCT 20, 2000 12:44 PM RESULT: INCR
OCT 20, 2000 5:23 AM  RESULT: WARN
OCT 19, 2000 8:23 AM  RESULT: INVL
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>iA56TTYMMDDHHmmtTTNNYYMMDDHHmmrr...
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: INCR  
98 - STATUS: NO IDLE DATA  
99 - STATUS: ACTIVE
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: A61**

Version 110

**Function Type:** HRM Diagnostic Report

**Command Format:**

**Display:** <SOH>IA61TT

**Computer:** <SOH>iA61TT

**Typical Response Message, Display Format:**

```
<SOH>
IA61TT
JUL 29, 1997  9:08 AM
T 1:REGULAR UNLEADED
TIME STAMP    ENDTEMP  ENDEVOL    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>iA61TTYMMDDHHmmTTpRRYYMMDDHHmmFFFFFFFFEEEESSSSSSSSVVVVVVVV
TTpRRYYMMDDHHmmFFFFFFFFEEEESSSSSSSSVVVVVVVV&&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
5. YYMMDDHHmm - Record Date and Time stamp
6. FF - Status Flag (ASCII 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A62  
**Function Type:** HRM Daily History

Version 112

**Command Format:**  
**Display:** <SOH>IA62TT  
**Computer:** <SOH>iA62TT

### Typical Response Message, Display Format:

<SOH>  
IA62TT  
AUG 26, 1996 1:47 PM

T 1:REGULAR UNLEADED

DAILY HRM HISTORY

TIME/DATE	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>iA61TTYMMDDHHmmTTpRRYYMMDDHHmmhhaaaaaaabbabbbbbbccccccccSS  
TTpRRYYMMDDHHmmhhaaaaaaabbabbbbbbccccccccSS&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = All Tanks)
3. p - Product Code (single ASCII character, from 20 Hex - 7E Hex)
4. RR - Number of history records to follow
5. YYMMDDHHmm - Record Date and Time stamp
6. hh - Number of hours in record (decimal)
7. aaaaaaaa - Minimum Value (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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A81

Version 6

**Function Type:** Fuel Management Diagnostic Report

**Command Format:**

**Display:** <SOH>IA81TT

**Computer:** <SOH>iA81TT

**Notes:**

1. TT - Tank number for any tank containing desired product

**Typical Response Message, Display Format:**

```
<SOH>
IA81TT
JAN 24, 1996  2:55 PM

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

FUEL MANAGEMENT DIAGNOSTIC REPORT

REGULAR UNLEADED      ( TANK 1 )
  DAYS FUEL REMAINING: 2.7
INVENTORY :          2969 GAL          SUN   MON   TUE   WED   THR   FRI   SAT
95% ULLAGE:          2516 GAL          1211  462  1362  1005  1123  1184  970
                                     LAST SALES:  910  783  1083  1176  1080  1108  946
                                     PREDICTED SALES: 1122  427  1261   929  1039  1096  897

<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iA81TTYMMDDHHmmnnTTp...NNNNNNNNNN...
nnTTp...NNNNNNNNNN...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. nn - Number of tanks of this product type - number of tank product code (TTp) sets to follow
3. TTp - Tank numbers and product codes of this product type

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code A81 Notes: (Continued)

- 4. NN - Number of eight character Data Fields to follow (Hex)
- 5. FFFFFFFF - ASCII Hex IEEE floats
  - 1. Days supply of fuel remaining
  - 2. Inventory
  - 3. 95% Ullage
  - 4. Average sales for Sunday
  - 5. Average sales for Monday
  - 6. Average sales for Tuesday
  - 7. Average sales for Wednesday
  - 8. Average sales for Thursday
  - 9. Average sales for Friday
  - 10. Average sales for Saturday
  - 11. Last sales for Sunday
  - 12. Last sales for Monday
  - 13. Last sales for Tuesday
  - 14. Last sales for Wednesday
  - 15. Last sales for Thursday
  - 16. Last sales for Friday
  - 17. Last sales for Saturday
  - 18. Predicted sales for Sunday
  - 19. Predicted sales for Monday
  - 20. Predicted sales for Tuesday
  - 21. Predicted sales for Wednesday
  - 22. Predicted sales for Thursday
  - 23. Predicted sales for Friday
  - 24. Predicted sales for Saturday
- 6. && - Data Termination Flag
- 7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** A91

Version 9

**Function Type:** Power Outage Diagnostic 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....

POWER OUTAGE REPORT

T 1:REGULAR UNLEADED
INCREASE  DATE / TIME                FUEL VOLUME    WATER VOLUME    TEMP DEG F

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>iA91TTYYMDDHHmmTtnnYYMDDHHmmYYMDDHHmmNNNNNNNNNN...
      YYMDDHHmmYYMDDHHmmNNNNNNNNNN...
      TtnnYYMDDHHmmYYMDDHHmmNNNNNNNNNN...
      YYMDDHHmmYYMDDHHmmNNNNNNNNNN...&&CCCC<ETX>
```

**Notes:**

1. YYMDDHHmm - Current Date and Time
2. TT - Tank Number (Decimal, 00 = all).
3. nn - Number of History Records to follow (Decimal)
4. YYMDDHHmm - Power Restored Date/Time
5. YYMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 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

LIQUID DIAGNOSTIC REPORT
```

SAMPLE		HIGH	LOW	
SENSOR	COUNTER	REF	REF	VALUE
1	5	1072	193	145727

<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 float:
  - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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

VAPOR DIAGNOSTIC REPORT

      SAMPLE      HIGH      LOW
SENSOR COUNTER    REF      REF      VALUE1      VALUE2
      1          5      1080      208          322      175355
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iB06SSYYMDDHHmmSSNNFFFFFFFF...
      SSNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - 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 - 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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B07

Version 3

**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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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

GROUNDWATER DIAGNOSTIC REPORT

	SAMPLE	HIGH	LOW		
SENSOR	COUNTER	REF	REF	VALUE1	VALUE2
1	5	5440	930	49875	90972

<ETX>

**Typical Response Message, Computer Format:**

<SOH>iB11SSYYMDDHHmmSSNNFFFFFFFF...

SSNNFFFFFFFF...&&CCCC<ETX>

**Notes:**

1. YYMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**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>iB21SSYYMDDHHmmSSNNFFFFFFFF...
      SSNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - 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 - Temperature Channel Last Reading
  - 5 - Temperature Channel Average Reading
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B41**

Version 2

**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

2 WIRE CL DIAGNOSTIC REPORT

      SAMPLE      HIGH      LOW
SENSOR COUNTER  REF      REF      VALUE
    1          5      1815      7823      4193
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iB41SSYYMDDHHmmSSNNFFFFFFFF...
      SSNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - 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 Value
  - 2 - High Reference Value
  - 3 - Low Reference Value
  - 4 - Last Reading
  - 5 - Current Average Value
5. && - Data Termination Flag
6. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B46**

Version 2

**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

3 WIRE CL DIAGNOSTIC REPORT

      SAMPLE      HIGH      LOW
SENSOR COUNTER  REF      REF      VALUE1      VALUE2
    1          5      8900    32000      5200      100000
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iB46SSYYMDDHHmmSSNNFFFFFFFF...
      SSNNFFFFFFFF...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - 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 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B4B

Version 4

**Function Type:** Universal Sensor Diagnostic Report

**Command Format:**

**Display:** <SOH>IB4BSS

**Computer:** <SOH>iB4BSS

**Typical Response Message, Display Format:**

<SOH>

IB4BSS

FEB 18, 1990 10:53 AM

UNIVERSAL DIAGNOSTIC REPORT

	SAMPLE	HIGH	LOW		
SENSOR	COUNTER	REF	REF	VALUE1	VALUE2
1	5	8900	32000	5200	100000

<ETX>

**Typical Response Message, Computer Format:**

<SOH>iB4BSSYYMDDHHmmSSNNFFFFFFFF...

SSNNFFFFFFFF...&&CCCC<ETX>

### Notes:

1. YYMDDHHmm - 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 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.4.4 LINE LEAK DIAGNOSTIC REPORTS

**Function Code:** B50

Version 1

**Function Type:** Volumetric Line Leak Status

**Command Format:**

**Display:** <SOH>IB50PP

**Computer:** <SOH>iB50PP

**Typical Response Message, Display Format:**

```
<SOH>
IB50PP
MAR 26, 1996  1:46 PM

P 1:REGULAR UNLEADED
PMP IN = OFF   PMP OUT = OFF
PRS SW =  ON   EQU VLV = OFF
FIN SW = OFF   TST VLV = OFF
STR SW =  ON   DISABLE =  ON
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iB50PPYYMMDDHHmmPPIIppFFssOOeeTTdd
PPIIppFFssOOeeTTdd&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. II - Pump In signal state (00=off, 01=on)
4. pp - Pressure switch state (00=off, 01=on)
5. FF - Final switch state (00=off, 01=on)
6. ss - Start switch state (00=off, 01=on)
7. OO - Pump Out signal state (00=off, 01=on)
8. ee - Equalizing valve state (00=off, 01=on)
9. TT - Test valve state (00=off, 01=on)
10. dd - Disable output state (00=off, 01=on)
11. && - Data Termination Flag
12. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B51

Version 1

**Function Type:** Volumetric Line Leak Diagnostic Gross Test History

**Command Format:**

**Display:** <SOH>IB51PP

**Computer:** <SOH>iB51PP

**Typical Response Message, Display Format:**

```
<SOH>
IB51PP
MAR 26, 1996  1:46 PM

P 1:REGULAR UNLEADED
DATE/TIME      TYP  GRND  TANK  DELY  LGTH  RSET  TEST  RSLT
MAR 26, 1996  1:43 PM  6  46.9  45.9    1  300.0   0.0   7.8  PASSED
MAR 26, 1996  1:43 PM  5  46.9  45.9    1   10.0   0.5  10.0  PASSED
MAR 26, 1996  1:42 PM  4  46.9  45.9    0   13.5   0.0   5.3  PASSED
MAR 26, 1996  1:42 PM  3  46.9  45.9    0   13.5   0.0  13.5  PASSED
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iB51PPYYMMDDHHmmPPNNYYMMDDHHmmTTg..gt..tDDDDLLLLRRRRTTTTrr...
PPNNYYMMDDHHmmTTg..gt..tDDDDLLLLRRRRTTTTrr...&&CCCC<ETX>
```

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. NN - Number of test data entries to follow (Decimal)
4. YYMMDDHHmm - Date and Time of test
5. TT - Test type code (Hex)
6. g..g - Ground Temp dispenser off (8 character ASCII Hex IEEE float)
7. t..t - Tank Temp dispenser off (8 character ASCII Hex IEEE float)
8. DDDD - Minutes since dispenser off (Hex)
9. LLLL - Allowed tenths of a second for Final Switch to actuate (Hex)
10. RRRR - Tenths of a second for Start Switch to close (Hex)
11. TTTT - Actual tenths of a second for Final Switch to actuate (Hex)
12. && - Data Termination Flag
13. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B52

Version 1

**Function Type:** Volumetric Line Leak 0.1 & 0.2 GPH Diagnostic History

**Command Format:**

**Display:** <SOH>IB52PP

**Computer:** <SOH>iB52PP

**Typical Response Message, Display Format:**

```
<SOH>
IB52PP
MAR 26, 1996  1:47 PM

P 1:REGULAR UNLEADED
DATE/TIME      TYP  GRND  TANK  DELY   LGTH  RSET   TEST  RSLT
MAR 26, 1996  1:48 AM  14  45.3  45.4   81  300.0   0.0    7.5  PASSED
MAR 26, 1996  1:45 AM  13  45.3  45.4   78  146.0   0.1   146.0  PASSED
MAR 26, 1996  1:41 AM  12  45.3  45.4   74  794.0   0.0   251.3  PASSED
MAR 26, 1996  1:27 AM  11  45.3  45.4   60  794.0   0.0   794.1  PASSED
MAR 25, 1996  8:14 PM  10  44.8  45.3   29  300.0   0.0    7.3  PASSED
MAR 25, 1996  8:12 PM   9  44.8  45.3   27   60.0   4.9   60.0  PASSED
MAR 25, 1996  8:10 PM   8  44.8  45.3   25  326.0   1.1   97.7  PASSED
MAR 25, 1996  8:05 PM   7  44.8  45.3   20  326.0   0.0  326.0  PASSED
<ETX>
```

**Notes:**

1. Numbers in "TYP" column above and "TT" below refer to 0.20 GPH tests (7-10) or 0.10 GPH tests (11-14)

**Typical Response Message, Computer Format:**

```
<SOH>iB52PPYYMMDDHHmmPPNNYYMMDDHHmmTTg..gt..tDDDDLLLLRRRRTTTTrr...
PPNNYYMMDDHHmmTTg..gt..tDDDDLLLLRRRRTTTTrr...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. PP - Pipeline Number (Decimal, 00 = all)
3. NN - Number of test data entries to follow (Decimal)
4. YYMMDDHHmm - Date and Time of test
5. TT - Test type code (Hex)
6. g..g - Ground Temp dispenser off (8 character ASCII Hex IEEE float)
7. t..t - Tank Temp dispenser off (8 character ASCII Hex IEEE float)
8. DDDD - Minutes since dispenser off (Hex)
9. LLLL - Allowed tenths of a second for Final Switch to actuate (Hex)
10. RRRR - Tenths of a second for Start Switch to close (Hex)
11. TTTT - Actual tenths of a second for Final Switch to actuate (Hex)
12. rr - Test result code (Hex)
13. && - Data Termination Flag
14. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B71**

Version 2

**Function Type:** Pump Sensor Diagnostic

**Command Format:**

**Display:** <SOH>IB71SS

**Computer:** <SOH>iB71SS

**Typical Response Message, Display Format:**

```
<SOH>
IB7102
JAN 17, 1995  8:35 AM
PUMP SENSOR DIAGNOSTIC
S 2: SUPER UNLEADED
CARD 1  INPUT 2
TANK #: 3
PUMP OFF
MINS PUMP OFF = 14
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iB71SSYYMMDDHHmmSSNNttttssssMMMMMMMM...
SSNNttttssssMMMMMMMM...&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. SS - Pump Sensor Number (Decimal, 00 = all)
3. NN - Number of 4 character Data Blocks to Follow (Hex)
4. tttt - Tank Number (Hex)
5. ssss - Pump Status  
0001 = ON  
0000 = OFF
6. MMMMMMMM - Minutes Pump has been Off (Hex)
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B7C

Version 19

**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>iB7CQQYYMDDHHmmQQaFFFFFFFFFYMMDDHHmm...

QQaFFFFFFFFFYMMDDHHmm&CCCC<ETX>

### Notes:

1. YYMDDHHmm - 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. YYMDDHHmm - Date and Time of last Pressure Offset Test
6. && - Data Termination Flag
7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B7D

Version 19

**Function Type:** WPPLD Line Leak Pressure Offset Test

**Command Format:**

**Display:** <SOH>IB7DWW

**Computer:** <SOH>iB7DWW

**Typical Response Message, Display Format:**

<SOH>

IB7DWW

JAN 1, 2000 6:27 PM

WPPLD LINE LEAK PRESSURE OFFSET TEST

W 1:REGULAR UNLEADED

LAST PRESSURE OFFSET TEST: +2.5 PSI DEC 1, 1999 5:20 PM

<ETX>

**Typical Response Message, Computer Format:**

<SOH>iB7DWWYYMMDDHHmmWWaFFFFFFFFFYMMDDHHmm

WWaFFFFFFFFFYMMDDHHmm&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. WW - WPPLD 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B7E**

Version 19

**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
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>IB7EQQYYMMDDHHmmQQAABBBBCCDDDDDEEEEEEEEEEEEEEEEEEE
GGHHHHHHHHHHIIIIIIJJJJJJJJ
QQAABBBBCCDDDDDEEEEEEEEEEEEEEEEEEE
GGHHHHHHHHHHIIIIIIJJJJJJJJ&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B7F**

Version 19

**Function Type:** WPLLD Line Leak Pressure Offset Monitor Report

**Command Format:**

**Display:** <SOH>IB7FWW

**Computer:** <SOH>iB7FWW

**Typical Response Message, Display Format:**

```
<SOH>
IB7FWW
JAN  1, 2000  2:56 PM

WPLLD LINE LEAK      PRESSURE OFFSET MONITORS REPORT

W 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
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>IB7FWWYYMMDDHHmmWWAABBBBCCDDDDDEEEEEEEEEEEEEEEEEEE
GGHHHHHHHHHHIIIIIIJJJJJJJJ
WWAABBBBCCDDDDDEEEEEEEEEEEEEEEEEEE
GGHHHHHHHHHHIIIIIIJJJJJJJJ&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B81

Version 7

**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
Q 1:REGULAR UNLEADED  ENABLED    TESTING 0.10 GAL/HR  OFF     OFF
14.397 PSI

A/D COUNTS
LOW REF =          5926 CNTS
HIGH REF =           551 CNTS
SENSOR =          1556 CNTS
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iB81QQYYMMDDHHmmQQSSSttNNFFFFFFFFF...
                      QQSSSttNNFFFFFFFFF...&&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 3.0 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

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### Function Code B81 Notes: (Continued)

- 5.                   NN - Number of eight character Data Fields to follow (Hex)
- 6.                   FFFFFFF - ASCII Hex IEEE float:
  - 1. Pressure sensor reading
  - 2. A/D low reference counts
  - 3. A/D high reference counts
  - 4. A/D sensor counts
- 7.                   && - Data Termination Flag
- 8.                   CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B82**

Version 10

**Function Type:** WPLLD Line Leak Diagnostic Report

**Command Format:**

**Display:** <SOH>IB82WW

**Computer:** <SOH>iB82WW

### Typical Response Message, Display Format:

<SOH>  
IB82WW

JAN 24, 1996 2:56 PM

WPLLD LINE LEAK DIAGNOSTIC REPORT

LINE	DISPENSING	TEST STATUS	PUMP	HANDLE
W 1:REGULAR UNLEADED	ENABLED	DISPENSING	ON	ON

34.782 PSI

P 0:-99.000 PSI P 7:-99.000 PSI  
P 1:-99.000 PSI P 8:-99.000 PSI  
P 2:-99.000 PSI P 9:-99.000 PSI  
P 3:-99.000 PSI P10:-99.000 PSI  
P 4:-99.000 PSI P11:-99.000 PSI  
P 5:-99.000 PSI P12:-99.000 PSI  
P 6:-99.000 PSI P13:-99.000 PSI  
<ETX>

### Typical Response Message, Computer Format:

<SOH>iB82WWYYMDDHHmmWWSSSSSttPPPPPPPP  
WWSSSSSttPPPPPPPP&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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 3.0 gal/hr
  - 03 = testing at 0.20 gal/hr
  - 04 = test aborted
  - 05 = line lockout
  - 06 = disable alarm
  - 07 = test pending
  - 08 = test delay
  - 09 = testing at 0.10 gal/hr
5. PPPPPPPP - Current Pressure in PSI (ASCII Hex IEEE float)
6. && - Data Termination Flag
7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B83

Version 10

**Function Type:** WPLLD Line Leak Communication Diagnostic Report

**Command Format:**

**Display:** <SOH>IB83WW

**Computer:** <SOH>iB83WW

**Typical Response Message, Display Format:**

```
<SOH>
IB83WW
JAN 24, 1996  2:56 PM

WPLLD LINE LEAK COMMUNICATION REPORT

W 1:REGULAR UNLEADED
CRC:0          PARITY:0
#: 349666-666-666
95.11.09.14.46
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>iB83WWYYMMDDHHmmWWSSSSSttAAAAAAAABBBBBBBB
WWSSSSSttAAAAAAAABBBBBBBB&&CCCC<ETX>
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD Line Leak sensor number (decimal)
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 3.0 gal/hr
  - 03 = testing at 0.20 gal/hr
  - 04 = test aborted
  - 06 = line lockout
  - 06 = disable alarm
  - 07 = test pending
  - 08 = test delay
  - 09 = testing at 0.10 gal/hr
5. AAAAAAAA - Checksum error count (ASCII Hex IEEE float)
6. BBBBBBBB - Parity error count (ASCII Hex IEEE float)
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B87**

Version 19

**Function Type:** Pressure Line Leak 3.0 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

Q 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
NO TEST DATA AVAILABLE

<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>IB87QQYYMMDDHHmmQQRRLLYYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
RRLLYYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
RRLLYYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
QQRRLLYYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
RRLLYYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
RRLLYYMMDDHHmmaaaaaaabbabbbbbbcccccccc...&&CCC
```

### 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. bbbbbb - First pressure read (ASCII Hex IEEE float)
8. ccccccc - Second pressure read (ASCII Hex IEEE float)
9. && - Data Termination Flag
10. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B88**

Version 19

**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>IB88QQYYMDDHHmmQQRRLLYYMDDHHmmaaaaaaabbabbbbbbcccccccc...
                                RRLLYMDDHHmmaaaaaaabbabbbbbbcccccccc...
                                QQRRLLYYMDDHHmmaaaaaaabbabbbbbbcccccccc...
                                RRLLYMDDHHmmaaaaaaabbabbbbbbcccccccc...&&CCC
```

**Notes:**

1. YYMDDHHmm - 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. YYMDDHHmm - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B89

Version 19

**Function Type:** Pressure Line Leak 0.2 GPH Test Diagnostic

**Command Format:**

**Display:** <SOH>IB89QQ

**Computer:** <SOH>iB89QQ

**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
JUL 10, 1995  9:33 AM      0.0 PSI      0.00          0      PASSED
JUN  9, 1995  8:52 AM      0.0 PSI      0.00          0      PASSED
MAY  9, 1995  8:10 AM      0.0 PSI      0.00          0      PASSED
APR  8, 1995  7:28 AM      0.0 PSI      0.00          0      PASSED
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>IB89QQYYMMDDHHmmQQLLYMMDDHHmmRRaaaaaaaaabbbbbbbcccccccc...
QQLLYMMDDHHmmRRaaaaaaaaabbbbbbbcccccccc...&&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 - Pass  
01 - Fail
6. aaaaaaaa - Pump on pressure read (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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B8A**

Version 19

**Function Type:** Pressure Line Leak 0.1 GPH Test Diagnostic

**Command Format:**

**Display:** <SOH>IB8AQQ

**Computer:** <SOH>iB8AQQ

**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
JUL 10, 1995 10:20 AM	0.0 PSI	0.00	0	PASSED
JUN  9, 1995  9:39 AM	0.0 PSI	0.00	0	PASSED
MAY  9, 1995  8:57 AM	0.0 PSI	0.00	0	PASSED
APR  8, 1995  8:15 AM	0.0 PSI	0.00	0	PASSED

```
<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>IB8AQQYYMDDHHmmQQLLYMMDDHHmmRRaaaaaaaabbbbbbbcccccccc...
QQLLYMMDDHHmmRRaaaaaaaabbbbbbbcccccccc...&&CCCC<ETX>
```

### Notes:

1. YYMDDHHmm - Current Date and Time
2. QQ - Pressure Line Leak sensor number (Decimal, 00 = All)
3. LL - Total Tests to follow (Max = 10)
4. YYMDDHHmm - Date/Time Test
5. RR - Test Result
  - 00 - Pass
  - 01 - Fail
6. aaaaaaaa - Pump on pressure read (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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B8B**

Version 19

**Function Type:** WPLLD Line Leak 3.0 GPH Test Diagnostic

**Command Format:**

**Display:** <SOH>IB8BWW

**Computer:** <SOH>iB8BWW

**Typical Response Message, Display Format:**

```
<SOH>
IB8BWW
OCT 15, 1996 4:29 PM

WPLLD LINE LEAK DIAGNOSTIC REPORT

W 1:WPLLD 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
NO TEST DATA AVAILABLE

<ETX>
```

**Typical Response Message, Computer Format:**

```
<SOH>IB8BWWYYMMDDHHmmWWRRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
RRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
RRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
WWRRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
RRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
RRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...&&CCC
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B8C

Version 19

**Function Type:** WPLLD Line Leak Mid-range Test Diagnostic

**Command Format:**

**Display:** <SOH>IB8CWW

**Computer:** <SOH>iB8CWW

**Typical Response Message, Display Format:**

```
<SOH>
IB8CWW
JAN  1, 1996  8:24 AM

WPLLD LINE LEAK DIAGNOSTIC REPORT

W 1:WPLLD 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>IB8CWYYMMDDHHmmWWRRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
                                RRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
                                WWRRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...
                                RRLLYMMDDHHmmaaaaaaabbabbbbbbcccccccc...&&CCC
```

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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. bbbbbb - First pressure read (ASCII Hex IEEE float)
8. ccccccc - Second pressure read (ASCII Hex IEEE float)
9. && - Data Termination Flag
10. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B8D

Version 19

**Function Type:** WPLLD Line Leak 0.2 GPH Test Diagnostic

**Command Format:**

**Display:** <SOH>IB8DWW

**Computer:** <SOH>iB8DWW

**Typical Response Message, Display Format:**

<SOH>

IB8DWW

JAN 1, 1996 8:26 AM

WPLLD LINE LEAK DIAGNOSTIC REPORT

W 1:WPLLD NUMBER 1

0.20 TEST RESULTS

DATE/TIME	PUMP ON	RATIO	DURATION	RESULTS
JUL 10, 1995 9:33 AM	0.0 PSI	0.00	0	PASSED
JUN 9, 1995 8:52 AM	0.0 PSI	0.00	0	PASSED
MAY 9, 1995 8:10 AM	0.0 PSI	0.00	0	PASSED
APR 8, 1995 7:28 AM	0.0 PSI	0.00	0	PASSED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>IB8DWWYYMMDDHHmmWWLLYYMMDDHHmmRRaaaaaaaaabbbbbbbcccccccc...

WWLLYYMMDDHHmmRRaaaaaaaaabbbbbbbcccccccc...&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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 - Pass
  - 01 - Fail
6. aaaaaaaa - Pump on pressure read (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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B8E

Version 19

**Function Type:** WPLLD Line Leak 0.1 GPH Test Diagnostic

**Command Format:**

**Display:** <SOH>IB8EWW

**Computer:** <SOH>iB8EWW

**Typical Response Message, Display Format:**

<SOH>

IB8EWW

JAN 1, 1996 8:30 AM

WPLLD LINE LEAK DIAGNOSTIC REPORT

W 1:WPLLD NUMBER 1

0.10 TEST RESULTS

DATE/TIME	PUMP ON	RATIO	DURATION	RESULTS
JUL 10, 1995 10:20 AM	0.0 PSI	0.00	0	PASSED
JUN 9, 1995 9:39 AM	0.0 PSI	0.00	0	PASSED
MAY 9, 1995 8:57 AM	0.0 PSI	0.00	0	PASSED
APR 8, 1995 8:15 AM	0.0 PSI	0.00	0	PASSED

<ETX>

**Typical Response Message, Computer Format:**

<SOH>IB8EWWYYMMDDHHmmWWLLYYMMDDHHmmRRaaaaaaaaabbbbbbbcccccccc...

WWLLYYMMDDHHmmRRaaaaaaaaabbbbbbbcccccccc...&&CCCC<ETX>

### Notes:

1. YYMMDDHHmm - Current Date and Time
2. WW - WPLLD 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 - Pass
  - 01 - Fail
6. aaaaaaaa - Pump on pressure read (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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.4.5 RECONCILIATION DIAGNOSTIC REPORTS

**Function Code:** B91

Version 108

**Function Type:** AccuChart Diagnostics Report

**Command Format:**

**Display:** <SOH>IB91TT

**Computer:** <SOH>iB91TT

**Typical Response Message, Display Format:**

<SOH>

IB91TT

JAN 24, 1996 2:56 PM

ACCU\_CHART DIAGNOSTICS

TK STATUS	DIAMETER	LENGTH	OFFSET	TILT	SHAPE F	CAPACITY
1 ENABLED	91.0	144.4	0.00	1.00	1.00	5774

<ETX>

**Typical Response Message, Computer Format:**

<SOH>iB91TTYMMDDHHmmTTSSNNFFFFFFFF...

TTSSNNFFFFFFFF...&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank number (Decimal, 00 = All)
3. SS - Status:
  - 00 = AccuChart disabled
  - 01 = AccuChart enabled
4. NN - Number of eight character Data Fields to follow (Hex)
5. FFFFFFFF - ASCII Hex IEEE float:
  - 1. Tank diameter
  - 2. Tank length
  - 3. Probe offset
  - 4. Tank tilt
  - 5. Tank end shape factor
  - 6. Tank capacity
6. && - Data Termination Flag
7. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code: B93**

Version 108

**Function Type:** AccuChart Status Report

**Command Format:**

**Display:** <SOH>IB93TT

**Computer:** <SOH>iB93TT

**Typical Response Message, Display Format:**

<SOH>

IB93TT

JAN 24, 1996 2:56 PM

ACCU\_CHART STATUS

TK STATUS	MODE	USER STATUS	DURATION	ALARM	FITNESS	DATA
1 ENABLED	CALIBRATE	DISABLED	9.2	OFF	0.00	566

<ETX>

**Typical Response Message, Computer Format:**

<SOH>iB9301YYMMDDHHmmTTSSMMUUAANNFFFFFFFFF...

TTSSMMUUAANNFFFFFFFFF...&&CCCC<ETX>

**Notes:**

1. YYMMDDHHmm - Current Date and Time
2. TT - Tank number (Decimal, 00 = All)
3. SS - Status:
  - 00 = AccuChart disabled
  - 01 = AccuChart enabled
4. MM - Mode:
  - 00 = Calibrate
  - 01 = Monitor
5. UU - User enable:
  - 00 = user chart
  - 01 = AccuChart
6. AA - Alarm status:
  - 00 = No Alarm
  - 01 = Alarm
  - 02 = Alarm latched
7. NN - Number of eight character Data Fields to follow (Hex)
8. FFFFFFFF - ASCII Hex IEEE float:
  - 1. Mode duration in days
  - 2. Calibration fitness factor
  - 3. Data quantity factor
9. && - Data Termination Flag
10. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** B94

Version 108

**Function Type:** AccuChart Calibration History Report

**Command Format:**

**Display:** <SOH>IB94TT

**Computer:** <SOH>iB93TT

### Typical Response Message, Display Format:

```
<SOH>
IB94TT
JAN 24, 1996  2:57 PM

ACCU_CHART CALIBRATION HISTORY

T 1:REGULAR UNLEADED

DATE/TIME      DIAM  LENGTH  OFFSET  TILT  SHAPE F  CAPACITY  FITNESS
96/01/01 08:03  91.0   144.4   0.00   1.00   1.00     5774     0.00
<ETX>
```

### Typical Response Message, Computer Format:

```
<SOH>iB94TTYYMDDHHmmTTrYYMDDHHmmNNFFFFFFFF...
TTrYYMDDHHmmNNFFFFFFFF...&&CCCC<ETX>
```

#### Notes:

1. YYMDDHHmm - Current Date and Time
2. TT - Tank number (Decimal, 00 = All)
3. rr - Number of calibration records to follow
4. YYMDDHHmm - Calibration Date and Time
5. NN - Number of eight character Data Fields to follow (Hex)
6. FFFFFFFF - ASCII Hex IEEE float:
  1. Tank diameter
  2. Tank length
  3. Probe offset
  4. Tank tilt
  5. Tank end shape factor
  6. Tank capacity
  7. Calibration fitness
7. && - Data Termination Flag
8. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** BAO  
**Function Type:** MDIM Totalizer Report

Version 110

**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>iBA000YYMMDDHHmmdddddFFFFFFF
          ddddFFFFFFF&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.5 RECONCILIATION REPORTS

**Function Code:** C01

Version 106

**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, 1996 1:43 PM

STATION HEADER 1....

STATION HEADER 2....

STATION HEADER 3....

STATION HEADER 4....

MAR 26, 1996 1:43 PM

DAILY RECONCILIATION REPORT

T 1:REGULAR UNLEADED

DATE	TIME	OPENING	METERED	MANUAL	CALC'D	PHYSICAL	WATER
MAR 25	2:00 AM	VOLUME	DLVRIES	SALES	ADJUST	INVNTY	INVNTY
						HEIGHT	VARIANCE
MAR 26	2:00 AM	6081	0	1888	0	4193	4199 0.00 6

SIGNATURE \_\_\_\_\_  
<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C01: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC01PPYYMMDDHHmmPPnnTTYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...  
PPnnTTYMMDDHHmmYYMMDDHHmmNNFFFFFFFF...&&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



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** C02

Version 106

**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, 1996  1:43 PM

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

MAR 26, 1996  1:43 PM

DAILY RECONCILIATION REPORT

PRODUCT                UNLEADED

OPENING DATE    MAR 25, 1996
OPENING TIME    2:00 AM

OPENING VOLUME      6081
DELIVERIES          0
METERED SALES       1888
MANUAL ADJUST       0
CALC'D INVNTY      4193
PHYSICAL INVNTY     4199
WATER HEIGHT       0.00
VARIANCE           6

CLOSING DATE    MAR 26, 1996
CLOSING TIME    2:00 AM

SIGNATURE _____
<ETX>
```

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C02: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC02PPYYMMDDHHmmGGPPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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 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
10. && - Data Termination Flag
11. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: **C03**

Version 106

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, 1996 1:44 PM

STATION HEADER 1....

STATION HEADER 2....

STATION HEADER 3....

STATION HEADER 4....

MAR 26, 1996 1:44 PM

CURRENT SHIFT RECONCILIATION REPORT

T 1:REGULAR UNLEADED

DATE	TIME	OPENING	METERED	MANUAL	CALC'D	PHYSICAL	WATER		
		VOLUME	DLVRIES	SALES	ADJUST	INVNTY	INVNTY	HEIGHT	VARIANCE
MAR 26	6:00 AM	4114	0	1083	0	3031	3026	0.00	-5

SIGNATURE \_\_\_\_\_

<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C03: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC03PPYYMMDDHHmmPPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** C04

Version 106

**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, 1996  1:44 PM

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

MAR 26, 1996  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 INVNTY      3031
PHYSICAL INVNTY     3026
WATER HEIGHT       0.00
VARIANCE           -5

CLOSING DATE    MAR 26, 1996
CLOSING TIME    1:42 PM

SIGNATURE _____
<ETX>
```

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code C04:** (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC04PPYYMMDDHHmmGGPPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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 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
10. && - Data Termination Flag
11. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: C05

Version 106

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, 1996 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

T 1:REGULAR UNLEADED

DATE	TIME	OPENING	METERED	MANUAL	CALC'D	PHYSICAL	WATER		
		VOLUME	DLVRIES	ADJUST	INVNTY	INVNTY	HEIGHT	VARIANCE	
MAR 1	2:00 AM	5429	0	0	2088	2092	0.00	4	
MAR 3	2:00 AM	2092	5409	0	5625	5625	0.00	0	
MAR 4	2:00 AM	5625	3336	0	5896	5862	0.00	-34	
MAR 5	2:00 AM	5874	2009	0	5676	5672	0.00	-4	
MAR 6	2:00 AM	5672	0	0	4104	4108	0.00	4	
MAR 7	2:00 AM	4108	6503	0	8441	8443	0.00	2	
MAR 8	2:00 AM	8444	0	0	6870	6872	0.00	2	
MAR 9	2:00 AM	6872	0	0	4577	4581	0.00	4	
MAR 10	2:00 AM	4581	5405	0	7105	7099	0.00	-6	
MAR 11	2:00 AM	7099	0	0	3787	3793	0.00	6	
MAR 12	2:00 AM	3793	3898	0	5255	5253	0.00	-2	
MAR 13	2:00 AM	5253	0	0	3508	3497	0.00	-11	
MAR 13	2:21 AM	3497	4811	0	6709	6718	0.00	9	
MAR 14	2:00 AM	6718	0	0	4607	4612	0.00	5	
MAR 16	2:00 AM	4612	6213	0	6929	6931	0.00	2	
MAR 17	2:00 AM	6896	0	0	4089	4096	0.00	7	
MAR 18	2:00 AM	4096	3302	0	3958	3969	0.00	11	
MAR 19	2:00 AM	3969	4802	0	6841	6839	0.00	-2	
MAR 20	2:00 AM	6839	0	0	4760	4775	0.00	15	
MAR 21	2:00 AM	4775	5407	0	7940	7947	0.00	7	
MAR 22	2:00 AM	7947	0	0	5395	5398	0.00	3	
MAR 23	2:00 AM	5398	5410	0	7499	7510	0.00	11	
MAR 24	2:00 AM	7510	0	0	4455	4465	0.00	10	
MAR 25	2:00 AM	4465	4812	0	6077	6081	0.00	4	
MAR 26	2:00 AM	6081	0	0	4193	4199	0.00	6	
TOTALS		5407	61317	62578	0	4146	4199	0.00	53

THRESHOLD: 755

SIGNATURE \_\_\_\_\_  
<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C05: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC05PPYYMMDDHHmmPPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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 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
10. && - Data Termination Flag
11. CCCC - Message Checksum



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** C06

Version 106

**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, 1996 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, 1996  
OPENING TIME 2:00 AM

OPENING VOLUME 5407  
DELIVERIES 61317  
METERED SALES 62578  
MANUAL ADJUST 0  
CALC'D INVNTY 4146  
PHYSICAL INVNTY 4199  
WATER HEIGHT 0.00  
VARIANCE 53  
THRESHOLD 755

CLOSING DATE MAR 20, 1996  
CLOSING TIME 2:00 AM

SIGNATURE \_\_\_\_\_  
<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C06: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC06PPYYMMDDHHmmGGPPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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 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
10. && - Data Termination Flag
11. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: **C07**

Version 114

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

T 1:REGULAR UNLEADED

DATE	TIME	OPENING	METERED	MANUAL	CALC'D	PHYSICAL	WATER	
		VOLUME	DLVRIES	SALES	ADJUST	INVNTY	INVNTY	HEIGHT VARIANCE
MAR 1	2:00 AM	5429	0	3341	0	2088	2092	0.00 4
MAR 2	2:00 AM	2092	5409	1876	0	5625	5625	0.00 0
MAR 3	2:00 AM	5625	3336	3065	0	5896	5862	0.00 -34
MAR 4	2:00 AM	5874	2009	2207	0	5676	5672	0.00 -4
MAR 5	2:00 AM	5672	0	1568	0	4104	4108	0.00 4
MAR 6	2:00 AM	4108	6503	2170	0	8441	8443	0.00 2
MAR 7	2:00 AM	8444	0	1574	0	6870	6872	0.00 2
MAR 8	2:00 AM	6872	0	2295	0	4577	4581	0.00 4
MAR 9	2:00 AM	4581	5405	2881	0	7105	7099	0.00 -6
MAR 10	2:00 AM	7099	0	3312	0	3787	3793	0.00 6
MAR 11	2:00 AM	3793	3898	2436	0	5255	5253	0.00 -2
MAR 12	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 15	2:00 AM	4612	6213	3896	0	6929	6931	0.00 2
MAR 16	2:00 AM	6896	0	2807	0	4089	4096	0.00 7
MAR 17	2:00 AM	4096	3302	3440	0	3958	3969	0.00 11
MAR 18	2:00 AM	3969	4802	1930	0	6841	6839	0.00 -2
MAR 19	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>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C07: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC07PPYYMMDDHHmmPPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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 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
10. && - Data Termination Flag
11. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** C08

Version 114

**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, 1996  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, 1996
OPENING TIME    2:00 AM

OPENING VOLUME          5407
DELIVERIES            61317
METERED SALES         62578
MANUAL ADJUST              0
CALC'D INVNTY          4146
PHYSICAL INVNTY         4199
WATER HEIGHT           0.00
VARIANCE              53
THRESHOLD             755

CLOSING DATE    MAR 20, 1996
CLOSING TIME    2:00 AM

SIGNATURE _____
<ETX>
```

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C08: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC08PPYYMMDDHHmmGGPPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...YYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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 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
10. && - Data Termination Flag
11. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** C09

Version 19

**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, 2000 3:30 PM
INDIVIDUAL BASIC RECONCILIATION HISTORY DIAGNOSTIC
```

```
T 1:* MAG PROBE #1 *
STRT TIME  END TIME  STRT HT  END HT  STRT VL  END_VL  SALES  DELIV OFFSET  VAR
9912311104 0001010130 45.737  48.000  4700.0  5000.0  0.0   300.0  0.0    0.0
0001010130 0001010931 48.000  47.895  5000.0  4986.1  0.0    0.0  0.0   -13.9
```

**Typical Response Message, Computer Format:**

```
<SOH>iC0900YYMMDDHHmmTTrYYMMDDHHmmYYMMDDHHmmYYMMDDHHmmNNFFFFFFF...
TTrYYMMDDHHmmYYMMDDHHmmYYMMDDHHmmNNFFFFFFF...&&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 float:
  - 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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

### 7.6 VARIANCE ANALYSIS REPORTS

Function Code: C10

Version 116

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, 1998 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 VOLUME	METERED SALES	TICKET DLVY	MAN ADJ	CLS INVNTY	BOOK INVNTY	GAUGED INVNTY	DAILY VARIANCE
MAR 5	9:18 PM	6279	151	0	0	6128	6128	0 =	0.00%
MAR 6	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>



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C10: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC10PPYYMMDDHHmmPPnnTT...rrYYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...rrYYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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 float:
  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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** C11  
**Function Type:** Weekly Book Variance

Version 116

**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, 1998 3:30 PM

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

#### CURRENT WEEK BOOK VARIANCE

T 1:REGULAR UNLEADED									DAILY
DATE	TIME	OPENING	METERED	TICKET	MAN	CLS	BOOK	GAUGED	VARIANCE
MAR 16	12:00 AM	VOLUME	SALES	DLVY	ADJ	INVNTY	INVNTY		
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>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C11: (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 float:
  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

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: **C12**  
Function Type: Daily Book Variance

Version 116

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, 1998 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
		VOLUME	SALES	DLVY	ADJ	INVNTY	INVNTY		VARIANCE
MAR 18	12:00 AM								
MAR 19	12:00 AM	3346	3069	5901	0	6178	6179	-1 =	0.03%

THRESHOLD: 148

SIGNATURE \_\_\_\_\_  
<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code C12: (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC10PPYYMMDDHHmmPPnnTT...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 float:
  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

## TLS-300/350/350R Monitoring Systems

**Function Code:** C20

Version 116

**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, 1998 3:30 PM

STATION HEADER 1....

STATION HEADER 2....

STATION HEADER 3....

STATION HEADER 4....

CURRENT PERIOD VARIANCE ANALYSIS

T 1:REGULAR UNLEADED

DATE	TIME	BOOK	DLVY	SALES	BK_VAR	TEMP	WATER	UNEX
MAR 5	9:18 PM	VAR	VAR	VAR	%	VAR	CHG	VAR
MAR 20	12:00 AM	-48	-13	-35	0.12	-16	0	-18

SIGNATURE \_\_\_\_\_

<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code C20:** (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC20PPYYMMDDHHmmPPnnTTYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllll
                                     NNFFFFFFF...
PPnnTTYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllll
                                     NNFFFFFFF...&&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. YYMMDDHHmm - Opening Date and Time for period
6. YYMMDDHHmm - Closing Date and Time for period
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 float:
  1. book variance
  2. delivery variance
  3. sales variance
  4. book variance percent
  5. temperature variance
  6. water change
  7. unexplained variance
11. && - Data Termination Flag
12. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code:** C21

Version 116

**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

T 1:REGULAR UNLEADED

DATE	TIME	BOOK	DLVY	SALES	BK_VAR	TEMP	WATER	UNEX
MAR 16	12:00 AM	VAR	VAR	VAR	%	VAR	CHG	VAR
MAR 19	12:00 AM	-15	-13	-2	0.17	-2	0	0

SIGNATURE \_\_\_\_\_

<ETX>



# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code C21:** (Continued)

**Typical Response Message, Computer Format:**

```
<SOH>iC21PPYYMMDDHHmmPPnnTTYMMDDHHmmYYMMDDHHmmLLLLLLLLlllllllll
                                     NNFFFFFFF...
PPnnTTYMMDDHHmmYYMMDDHHmmLLLLLLLLlllllllll
                                     NNFFFFFFF...&&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 float:
  1. book variance
  2. delivery variance
  3. sales variance
  4. book variance percent
  5. temperature variance
  6. water change
  7. unexplained variance
11. && - Data Termination Flag
12. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: **C22**

Version 116

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, 1998 3:31 PM

STATION HEADER 1....

STATION HEADER 2....

STATION HEADER 3....

STATION HEADER 4....

DAILY VARIANCE ANALYSIS

T 1:REGULAR UNLEADED

DATE	TIME	BOOK	DLVY	SALES	BK_VAR	TEMP	WATER	UNEX
MAR 18	12:00 AM	VAR	VAR	VAR	%	VAR	CHG	VAR
MAR 19	12:00 AM	-15	-13	-2	0.17	-2	0	0

SIGNATURE \_\_\_\_\_

<ETX>

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

**Function Code C22:** (Continued)

### Typical Response Message, Computer Format:

```
<SOH>iC22PPYYMMDDHHmmPPnnTTYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllll
                                     NNFFFFFFF...
PPnnTTYMMDDHHmmYYMMDDHHmmLLLLLLLLllllllll
                                     NNFFFFFFF...&&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 float:
  1. book variance
  2. delivery variance
  3. sales variance
  4. book variance percent
  5. temperature variance
  6. water change
  7. unexplained variance
11. && - Data Termination Flag
12. CCCC - Message Checksum

# Serial Interface Manual

## TLS-300/350/350R Monitoring Systems

Function Code: **C25**

Version 19

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, 1996 8:05 AM

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

CURRENT PERIOD VARIANCE ANALYSIS

T 1:UNLEADED GASOLINE

DATE	TIME	BOOK VAR	DLVY VAR	SALES VAR	BK_VAR %	TEMP VAR	WATER CHG	UNEX VAR
DEC 10	2:00 AM	7	9	-2	0.54	6	4	-8
DEC 11	2:00 AM	-1	0	-1	0.07	0	4	-1
DEC 12	2:00 AM	0	0	0	0.00	0	4	0
DEC 13	2:00 AM	-2	0	-2	0.15	0	4	-2
DEC 14	2:00 AM	-3	0	-3	0.30	0	4	-3
DEC 15	2:00 AM	-15	-10	-5	1.04	0	4	-5
DEC 16	2:00 AM	-2	0	-2	0.14	0	4	-2
DEC 17	2:00 AM	0	0	0	0.00	0	4	0
DEC 18	2:00 AM	-2	-5	3	0.13	-9	4	12
DEC 19	2:00 AM	2	0	2	0.13	0	4	2
DEC 20	2:00 AM	1	0	1	0.08	0	4	1
DEC 21	2:00 AM	-1	0	-1	0.14	0	4	-1
DEC 22	2:00 AM	5	0	5	0.36	0	4	5
DEC 23	2:00 AM	1	0	1	0.09	0	4	1
DEC 24	2:00 AM	-3	0	-3	0.24	0	4	-3
DEC 25	2:00 AM	7	10	-3	0.51	-11	4	8
DEC 26	2:00 AM	0	0	0	0.00	0	4	0
DEC 27	2:00 AM	5	0	5	0.40	0	4	5
DEC 28	2:00 AM	0	0	0	0.00	0	0	0
DEC 29	2:00 AM	0	0	0	0.00	0	0	0
DEC 30	2:00 AM	-2	0	-2	0.17	0	0	-2
DEC 31	2:00 AM	13	10	3	0.98	-20	0	23
JAN 1	2:00 AM	-503	-503	0	33.83	31	0	-31

<ETX>

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

**Function Code C25:** (Continued)

**Typical Response Message, Computer Format:**

```
<SOH>iC25PPYYMMDDHHmmPPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNNNNNNN...  
PPnnTT...ddYYMMDDHHmmYYMMDDHHmmNNNNNNNN...&&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. NN - Number of eight character Data Fields to follow (HEX)
9. FFFFFFFF - ASCII HEX IEEE float
  1. Book variance
  2. Delivery variance
  3. Sales variance
  4. Book variance percent
  5. Temperature variance
  6. Water change
  7. Unexplained variance
10. && - Data Termination Flag
11. CCCC - Message Checksum

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

## 8.0 IFSF DATABASE SUPPORT

When equipped with the appropriate software and interface module, these systems can respond to commands using the International Forecourt Standards Forum (IFSF) tank gauge communications protocols as defined in the following tables. Please see the IFSF documents "PART II, COMMUNICATION SPECIFICATION" and "PART III.3 TANK LEVEL GAUGE APPLICATION" for further details.

### 8.1 TANK LEVEL GAUGE DATABASE

TANK LEVEL GAUGE DATABASE DB_Ad = TLG_DAT (01H)			
Data_Id	Data Element Name	M/O	Supported
CONFIGURATION DATA			
1	Nb_Tanks	M	Yes
2	Reference_Temp	O	Yes
3	TLG_Measurement_Units	O	Yes
6	Country_Code	M	Yes
7	Maint_Password	M	Yes
50	TLG_Manufacturer_Id	M	Yes
51	TLG_Model	M	Yes
52	TLG_Type	M	Yes
53	TLG_Serial_Nb	M	Yes
54	TLG_Appl_Software_Ver	M	Yes
58	IFSF_Protocol_Ver	M	Yes
59	Current_Date	O	Yes
60	Current_Time	O	Yes
61	SW_Checksum	M	Yes
TLG COMMAND			
70	Enter_Maint_Mode	M	Yes
71	Exit_Maint_Mode	M	Yes

## Serial Interface Manual

### TLS-300/350/350R Monitoring Systems

#### 8.2 TANK LEVEL GAUGE ERROR CODE DATABASE

TANK LEVEL GAUGE ERROR CODE DATABASE DB_Ad = TLG_DAT (01H) + TLG_ER_DAT (41H) + TLG_ER_ID (01H-40H)			
Data_Id	Data Element Name	M/O	Supported
ERROR DATA			
1	TLG_Error_Type	M	Yes
2	TLG_Err_Description	O	Yes
3	TLG_Error_Total	M	Yes
4	TLG_Error_Total_Erase_Date	O	Yes
UNSOLICITED DATA			
100	TLG_Error_Type_Mes	M	Yes

#### 8.3 TANK PROBE DATABASE

TANK PROBE DATABASE DB_Ad = TP_ID (21H-3FH)			
Data_Id	Data Element Name	M/O	Supported
CONFIGURATION			
1	TP_Manufacturer_Id	M	Yes
2	TP_Type	M	Yes
3	TP_Serial_Nb	M	Yes
4	TP_Model	M	Yes
5	TP_Appl_Software_Ver	M	Yes
6	Prod_Nb	O	Yes
7	Prod_Description	O	Yes
8	Prod_Group_Code	O	Yes
9	Ref_Density	O	No
10	Tank_Diameter	O	Yes
11	Shell_Capacity	O	Yes
12	Max_Safe_Fill_Capacity	O	Yes
13	Low_Capacity	O	Yes
14	Min_Operating_Capacity	O	Yes
15	HiHi_Level_Setpoint	O	No
16	Hi_Level_Setpoint	O	No
17	Lo_Level_Setpoint	O	No
18	LoLo_Level_Setpoint	O	No

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**TLS-300/350/350R Monitoring Systems**

TANK PROBE DATABASE DB_Ad = TP_ID (21H-3FH)			
Data_Id	Data Element Name	M/O	Supported
19	Hi_Water_Setpoint	O	Yes
20	Water_Detection_Thresh	O	Yes
21	Tank_Tilt_Offset	O	Yes
22	Tank_Manifold_Partners	O	Yes
23	TP_Measurement_Units	O	Yes
CONTROL DATA			
32	TP_Status	M	Yes
33	TP_Alarm	M	Yes
TANK READING			
64	Product_Level	M	Yes
65	Total_Observed_Volume	O	Yes
66	Gross_Standard_Volume	O	Yes
67	Average_Temp	O	Yes
68	Water_Level	M	Yes
69	Observed_Density	O	No
70	Last_Reading_Date	O	Yes
71	Last_Reading_Time	O	Yes
UNSOLICITED			
100	TP_Status_Message	M	Yes



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**8.4 TANK CONTENTS TABLE DATABASE**

TANK CONTENTS TABLE DATABASE DB_Ad=TP_ID (21H-3FH) + CAL_DAT (21H) + ENTRY (01H-FFH)			
Data_Id	Data Element Name	M/O	Supported
CONFIGURATION			
1	Strap_Level	O	No
2	Strap_Vol	O	No

**8.5 TANK TEMPERATURE TABLE DATABASE**

TANK TEMPERATURE TABLE DATABASE DB_Ad = TP_ID (21H-3FH) + TEMP_DAT (22H) + TEMP_ADDR (01H-08H)			
Data_Id	Data Element Name	M/O	Supported
CONFIGURATION			
1	Temp_height	O	Yes
2	Temp_value	O	Yes

**8.6 TANK PROBE ERROR CODE DATABASE**

TANK PROBE ERROR CODE DATABASE DB_Ad = TP_ID (21H-3FH) + TP_ER_DAT (41H) + TP_ER_ID (01H-40H)			
Data_Id	Data Element Name	M/O	Supported
ERROR DATA			
1	TP_Error_Type	M	Yes
2	TP_Err_Description	O	Yes
3	TP_Error_Total	M	Yes
4	TP_Error_Total_Erase_Date	O	Yes
5	TP_Error_Status	M	Yes
UNSOLICITED DATA			
100	TP_Error_Type_Mes	M	Yes

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**8.7 DATA DOWNLOAD DATABASE**

DATA DOWNLOAD DATABASE DB_Ad = SW_DAT (81H)			
Data_Id	Data Element Name	M/O	Supported
CONFIGURATION DATA			
1	Data_Type	O	No
2	Software_Block_Id	O	No
3	Start_Addr	O	No
4	Nb_Bytes	O	No
5	Data_Download	O	No
6	Data_Checksum	O	No
COMMAND			
10	Activate_Software	O	No
11	Restart	O	No

**8.8 COMMUNICATION SERVICE DATABASE**

COMMUNICATION SERVICE DATABASE DB_Ad = 00H		
Data_Id	Variable Name	Supported
CONFIGURATION		
1	Communication_Protocol_Ver (read only)	Yes
2	Local_Node_Address	Yes
3	Recipient_Addr_Table	Yes
4	Heartbeat_Interval	Yes
5	Max_Block_Length	Yes
COMMANDS		
10	Heartbeat_Error	Yes
11	Add_Recipient_Addr	Yes
12	Remove_Recipient_Addr	Yes

## **Serial Interface Manual**

### **TLS-300/350/350R Monitoring Systems**

## **9.0 FUNCTION CODE SUMMARY**

### **CONTROL FUNCTIONS (7.1)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>001</b>	1	System Reset
<b>002</b>	1	Clear Power Reset Flag
<b>003</b>	1	Remote Alarm Reset
<b>031</b>	10	Confirm Clear Function
<b>051</b>	1	Clear In-Tank Delivery Reports
<b>052</b>	1	Start In-Tank Leak Detect Test
<b>053</b>	1	Stop In-Tank Leak Detect Test
<b>054</b>	5	Delete CSLD Rate Table
<b>081</b>	7	Start Pressure Line Leak Test (3.0 GPH only in V18)
<b>082</b>	7	Stop Pressure Line Leak Test
<b>083</b>	10	Start WPLLD Line Leak Test (3.0 GPH only in V18)
<b>084</b>	10	Stop WPLLD Line Leak Test
<b>087</b>	18	Start Pressure Line Leak Test by Type
<b>088</b>	18	Start WPLLD Line Leak Test by Type
<b>089</b>	19	Pressure Line Leak Pressure Offset Reset
<b>090</b>	19	WPLLD Line Leak Pressure Offset Reset
<b>091</b>	15	Close Current Shift

## **Serial Interface Manual**

### **TLS-300/350/350R Monitoring Systems**

#### **OPERATIONAL REPORTS (7.2)**

##### **SYSTEM REPORTS (7.2.1)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>101</b>	1	System Status Report
<b>102</b>	1	System Configuration Report
<b>111</b>	2	Priority Alarm History Report
<b>112</b>	2	Non-Priority Alarm History Report
<b>113</b>	14	Active Alarm Report
<b>114</b>	19	Cleared Alarm Report
<b>116</b>	119	Service Report History

##### **IN-TANK REPORTS (7.2.2)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>201</b>	1	In-Tank Inventory Report
<b>202</b>	1	In-Tank Delivery Report
<b>203</b>	1	In-Tank Leak Detect Report
<b>204</b>	1	In-Tank Shift Inventory Report
<b>205</b>	1	In-Tank Status Report
<b>206</b>	1	In-Tank Alarm History Report
<b>207</b>	2	In-Tank Leak Test History Report
<b>208</b>	2	In-Tank Leak Test Results Report
<b>20A</b>	110	HRM Adjusted Delivery Report
<b>20B</b>	110	BIR Adjusted Delivery Report
<b>20C</b>	15	In-Tank Most Recent Delivery Report
<b>20D</b>	15	In-Tank Stick Height Report
<b>211</b>	14	Tank Chart Report
<b>221</b>	116	Ticketed Delivery Report
<b>225</b>	116	Periodic Delivery Variance Report
<b>226</b>	116	Weekly Delivery Variance Report
<b>227</b>	116	Daily Delivery Variance Report

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### **TLS-300/350/350R Monitoring Systems**

#### **IN-TANK REPORTS (7.2.2) (Continued)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>251</b>	3	CSLD Results Report
<b>281</b>	3	Fuel Management Report
<b>282</b>	119	FLS Diagnostic: Volume History Table
<b>2E2</b>	14	In-Tank Stored Inventory Report

#### **SENSOR REPORTS (7.2.3)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>301</b>	1	Liquid Sensor Status Report
<b>302</b>	1	Liquid Sensor Alarm History Report
<b>306</b>	1	Vapor Sensor Status Report
<b>307</b>	1	Vapor Sensor Alarm History Report
<b>311</b>	1	Groundwater Sensor Status Report
<b>312</b>	1	Groundwater Sensor Alarm History Report
<b>341</b>	2	Type A (2 Wire CL) Sensor Status Report
<b>342</b>	2	Type A (2 Wire CL) Sensor Alarm History Report
<b>346</b>	2	Type B (3 Wire CL) Sensor Status Report
<b>347</b>	2	Type B (3 Wire CL) Sensor Alarm History Report
<b>34B</b>	4	Universal Sensor Status Report
<b>34C</b>	4	Universal Sensor Alarm History Report

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### **TLS-300/350/350R Monitoring Systems**

#### **LINE LEAK REPORTS (7.2.4)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>351</b>	1	Volumetric Line Leak Result Report
<b>352</b>	1	Volumetric Line Leak Alarm History Report
<b>353</b>	2	Volumetric Line Leak Pump Status
<b>373</b>	14	Pressure Line Leak Test Results (with 0.20 test data)
<b>374</b>	14	Pressure Line Leak Test History (with 0.20 test data)
<b>381</b>	7	Pressure Line Leak Status
<b>382</b>	7	Pressure Line Leak Alarm History Report
<b>383</b>	7	Pressure Line Leak Test Results (0.10 test data only)
<b>384</b>	7	Pressure Line Leak Test History (0.10 test data only)
<b>386</b>	10	WPLLD Line Leak Status
<b>387</b>	10	WPLLD Line Leak Alarm History Report
<b>388</b>	10	WPLLD Line Leak Test Results
<b>389</b>	12	WPLLD Line Leak Test History

#### **MISCELLANEOUS REPORTS (7.2.5)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>391</b>	10	Tanker Load Report

#### **I/O DEVICE REPORTS (7.2.6)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>401</b>	1	Input Status Report
<b>402</b>	1	Input Alarm History Report
<b>403</b>	5	Input/Generator Alarm History Report
<b>406</b>	1	Relay Status Report

## **Serial Interface Manual**

### **TLS-300/350/350R Monitoring Systems**

#### **SETUP FUNCTIONS & REPORTS (7.3)**

##### **SYSTEM SETUP (7.3.1)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>501</b>	1	Set Time of day
<b>502</b>	1	Set Shift Start Time 1, 2, 3, 4
<b>503</b>	1	Set Print Header Line 1, 2, 3, 4
<b>504</b>	1	Set System RS-232 Security Code
<b>505</b>	1	Set System Type & Language Flags
<b>506</b>	2	Set Periodic Test Needed Warning
<b>507</b>	4	Set Days Before Periodic Test Needed Warning
<b>508</b>	4	Set Days Before Periodic Test Needed Alarm
<b>509</b>	4	Set Annual Test Needed Warning
<b>50A</b>	4	Set Days Before Annual Test Needed Warning
<b>50B</b>	4	Set Days Before Annual Test Needed Alarm
<b>50C</b>	5	Set Remote Printer Page Eject Flag
<b>50D</b>	8	Set Print Temperature Compensation Flag
<b>50E</b>	8	Set Temperature Compensation Value
<b>50F</b>	10	Set System Date/Time Display Format
<b>511</b>	110	Set BIR Shift Printouts Flag
<b>512</b>	110	Set BIR Daily Printouts Flag
<b>513</b>	10	Set Tanker Load Report Flag
<b>514</b>	10	Set H-Protocol Height/Volume format
<b>515</b>	110	Set HRM - QPLD Monthly Printout
<b>516</b>	14	Set Re-direct Local Printout Flag
<b>517</b>	15	Set System Type & Language Flags
<b>518</b>	15	Set Secondary Language Code Page Output
<b>519</b>	15	Set PLLD & WPLLD Duration Before Precision Retest

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### TLS-300/350/350R Monitoring Systems

#### SYSTEM SETUP (7.3.1) (Continued)

Code	Ver	Function
51A	15	Set Enable/Disable Auto Daylight Saving Time
51B	15	Set Start/End Daylight Saving Date and Time
51C	116	Set Ticketed Delivery Flag Enable
51D	116	Set Ticketed Delivery Temperature Compensation Flag
51E	116	Set Ticketed Delivery Close Day of Week

#### COMMUNICATIONS SETUP (7.3.2)

Code	Ver	Function
520	20	Set Receiver Auto Dial Type and Start Time II
521	2	Set Receiver Configuration Flag
522	2	Set Receiver Location Label
523	2	Set Receiver Telephone Number
524	2	Set Receiver Dialing Destination Type
525	2	Set Receiver Port Number to Dial
526	2	Set Receiver Retry Number
527	2	Set Receiver Retry Delay Time
528	2	Set Receiver Confirmation Report Flag
529	19	Set Fax Auto Dial Method
52A	3	Set Receiver Report List
52B	3	Set Receiver Auto Dial Type and Start Time
52C	3	Set Receiver Auto Dial On Alarms
52D	17	Autodial Alarm Status
52E	19	Set Delay for Autodial on Alarm Clear
52F	19	Set Receiver Alarm Status
531	8	Set RS-232 End of Message



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#### WARNING, ALARM, & AUTO-PRINT SETUP (7.3.3)

Code	Ver	Function
<b>532</b>	116	Set Ticketed Variance Analysis Printout Flags
<b>533</b>	116	Set Ticketed Delivery Book Variance Printout Flags
<b>534</b>	116	Set Ticketed Delivery Variance Printout Flags
<b>536</b>	20	Set RS-232 Security Code per Port
<b>537</b>	20	Set Display Format RS-232 ETX per Port
<b>538</b>	20	Set Computer Format RS-232 ETX per Port
<b>546</b>	15	Set Tank Periodic Test Needed Warning
<b>547</b>	15	Set Days Before Tank Periodic Test Needed Warning
<b>548</b>	15	Set Days Before Tank Periodic Test Needed Alarm
<b>549</b>	15	Set Tank Annual Test Needed Warning
<b>54A</b>	15	Set Days Before Tank Annual Test Needed Warning
<b>54B</b>	15	Set Days Before Tank Annual Test Needed Alarm
<b>54C</b>	19	Set CSLD Evaporation Reid Vapor Pressure Chart
<b>553</b>	19	Set Line Re-Enable Method
<b>554</b>	18	Set Periodic Line Leak Test Auto-Confirm
<b>555</b>	18	Set Annual Line Leak Test Auto-Confirm
<b>556</b>	15	Set Line Periodic Test Needed Warning
<b>557</b>	15	Set Days Before Line Periodic Test Needed Warning
<b>558</b>	15	Set Days Before Line Periodic Test Needed Alarm
<b>559</b>	15	Set Line Annual Test Needed Warning
<b>55A</b>	15	Set Days Before Line Annual Test Needed Warning
<b>55B</b>	15	Set Days Before Line Annual Test Needed Alarm
<b>5BC</b>	19	Set Receiver Auto Dial on Alarm II
<b>5E2</b>	14	Set Inventory Record Time 1, 2, 3, 4

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#### IN-TANK SETUP (7.3.4)

Code	Ver	Function
<b>601</b>	1	Set Tank Configuration
<b>602</b>	1	Set Tank Product Label
<b>603</b>	1	Set Tank Product Code
<b>604</b>	1	Set Tank 1 Point Full Height Volume
<b>605</b>	1	Set Tank 4 Point Full, 3/4, 1/2, 1/4 Volumes
<b>606</b>	1	Set Tank 20 Point Full, 95%, 90%,... Volumes
<b>607</b>	1	Set Tank Diameter
<b>608</b>	1	Set Tank Tilt
<b>609</b>	1	Set Tank Thermal Expansion Coefficient
<b>60A</b>	9	Set Tank Linear Calculated Full Volume
<b>60B</b>	15	Set Tank Stick Height Function Enable
<b>60C</b>	15	Set Tank Stick Height Offset
<b>60E</b>	22	Set Tank Programmable Float Parameters
<b>60F</b>	22	Set Tank Probe Offset
<b>610</b>	1	Set Tank Delivery Delay
<b>611</b>	1	Set Tank Leak Test Type & Start Time
<b>612</b>	1	Set Tank Manifolded Partners
<b>613</b>	3	Set CSLD Probability of Detection
<b>614</b>	5	Set CSLD Climate Factor
<b>615</b>	108	Set BIR Meter Data Present
<b>616</b>	110	Set AccuChart Update Scheduling
<b>618</b>	19	Set Tank CSLD Evaporation Compensation
<b>619</b>	19	Set Tank Stage II Vapor Recovery
<b>61A</b>	20	Set In-Tank Leak Test Early Stop
<b>61B</b>	121	Set In-Tank Static Gross Test Auto-Confirm
<b>61C</b>	121	Set CSLD Report Only Mode

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#### IN-TANK SETUP (7.3.4) (Continued)

Code	Ver	Function
<b>621</b>	1	Set Tank Low Level Limit
<b>622</b>	1	Set Tank High Level Limit
<b>623</b>	1	Set Tank Overfill Level Limit
<b>624</b>	1	Set Tank High Water Level Limit
<b>625</b>	1	Set Tank Sudden Loss Limit
<b>626</b>	1	Set Tank Leak Alarm Limit
<b>627</b>	2	Set Tank High Water Warning Limit
<b>628</b>	2	Set Tank Maximum Volume Limit
<b>629</b>	2	Set Tank Delivery Required Limit
<b>62A</b>	2	Set Tank Annual Leak Test Minimum Volume
<b>62B</b>	2	Set Tank Last Annual Test
<b>62C</b>	2	Set Tank Periodic Test Type
<b>62D</b>	2	Set Enable/Disable Tank Leak Test Fail Alarms
<b>62E</b>	3	Set CAP0 Probe Conductive Boot Flag
<b>62F</b>	3	Set Mag Probe Float Size
<b>630</b>	3	Set Tank Leak Test Notify
<b>631</b>	5	Set Tank Leak Test Averaging
<b>632</b>	5	Set Tank Test Siphon Break
<b>633</b>	9	Set Leak Test Report Type
<b>634</b>	110	Set Tank HRM Reconciliation Warning Limit
<b>635</b>	110	Set Tank HRM Reconciliation Alarm Limit
<b>636</b>	14	Set Tank Periodic Leak Test Minimum Volume
<b>639</b>	115	Set Tank AccuChart End Shape Type and Factor
<b>63A</b>	22	Set Tank Low Level Threshold for Sequential Line Manifold
<b>680</b>	6	Fuel Management General Setup Inquiry
<b>681</b>	6	Set Fuel Management Delivery Needed Warning
<b>682</b>	6	Set Fuel Management Automatic Report Print Time
<b>683</b>	6	Set Fuel Management Average Daily Sales

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#### SENSOR SETUP (7.3.5)

Code	Ver	Function
<b>701</b>	1	Set Liquid Sensor Configuration
<b>702</b>	1	Set Liquid Sensor Location Label
<b>703</b>	1	Set Liquid Sensor Type
<b>704</b>	2	Set Liquid Sensor Category
<b>706</b>	1	Set Vapor Sensor Configuration
<b>707</b>	1	Set Vapor Sensor Location Label
<b>708</b>	1	Set Vapor Sensor Alarm Threshold
<b>709</b>	2	Set Vapor Sensor Category
<b>711</b>	1	Set Groundwater Sensor Configuration
<b>712</b>	1	Set Groundwater Sensor Location Label
<b>713</b>	2	Set Groundwater Sensor Category
<b>741</b>	2	Set Type A (2 Wire CL) Sensor Configuration
<b>742</b>	2	Set Type A (2 Wire CL) Sensor Location Label
<b>743</b>	2	Set Type A (2 Wire CL) Sensor Type
<b>744</b>	2	Set Type A (2 Wire CL) Sensor Category
<b>746</b>	2	Set Type B (3 Wire CL) Sensor Configuration
<b>747</b>	2	Set Type B (3 Wire CL) Sensor Location Label
<b>748</b>	5	Set Type B (3 Wire CL) Sensor Type
<b>749</b>	2	Set Type B (3 Wire CL) Sensor Category
<b>74B</b>	4	Set Universal Sensor Configuration
<b>74C</b>	4	Set Universal Sensor Location Label
<b>74D</b>	4	Set Universal Sensor Type
<b>74E</b>	4	Set Universal Sensor Category

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### **TLS-300/350/350R Monitoring Systems**

#### **VOLUMETRIC LINE LEAK SETUP (7.3.6)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>751</b>	1	Set Volumetric Line Leak Configuration
<b>752</b>	1	Set Volumetric Line Leak Tank Number
<b>753</b>	1	Set Volumetric Line Leak 2 Inch Pipe Length
<b>754</b>	1	Set Volumetric Line Leak 3 Inch Pipe Length
<b>755</b>	1	Set Volumetric Line Leak Pump PSI
<b>756</b>	1	Set Volumetric Line Leak Piping Material
<b>757</b>	1	Set Volumetric Line Leak Shutdown Rate
<b>758</b>	1	Set Volumetric Line Leak Pump Side Test
<b>759</b>	1	Set Volumetric Line Leak Test Type & Start Time
<b>75A</b>	1	Set Line Leak Lockout Schedule (All Types)
<b>75B</b>	2	Set Line Disable Alarm Assignments
<b>75C</b>	2	Set Volumetric Line Leak Last Annual Test
<b>75D</b>	4	Set Volumetric Line Leak Dispense Mode
<b>75E</b>	4	Set Volumetric Line Leak Fuel Type
<b>75F</b>	5	Set Volumetric Line Leak Wait Method
<b>760</b>	6	Set Volumetric Line Leak Location Label
<b>761</b>	7	Set Volumetric Line Leak Blend Partner

#### **PUMP SENSOR SETUP (7.3.7)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>771</b>	2	Set Pump Sensor Configuration
<b>772</b>	2	Set Pump Sensor Tank Number
<b>773</b>	4	Set Pump Sensor Dispense Mode

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#### **PRESSURE LINE LEAK SETUP (7.3.8)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>77C</b>	19	Set Pressure Line Leak Low Pressure Shutoff
<b>77D</b>	19	Set Pressure Line Leak Altitude Pressure Offset
<b>77F</b>	17	Set Pressure Line Leak Secondary Pipe Length
<b>780</b>	7	Pressure Line Leak General Setup Inquiry
<b>781</b>	7	Set Pressure Line Leak Configuration
<b>782</b>	7	Set Pressure Line Leak Label
<b>783</b>	7	Set Pressure Line Leak 0.10 GPH Test Schedule
<b>784</b>	7	Set Pressure Line Leak Shutdown Rate
<b>785</b>	7	Set Pressure Line Leak Tank Number
<b>786</b>	7	Set Pressure Line Leak Dispense Mode
<b>787</b>	7	Set Pressure Line Leak Disable Alarm Assignments
<b>788</b>	9	Set Pressure Line Leak Piping Material
<b>789</b>	9	Set Pressure Line Leak Primary Pipe Length
<b>78A</b>	11	Set Pressure Line Leak Sensor Type
<b>78B</b>	16	Set Pressure Line Leak 0.10 GPH Test Schedule
<b>78C</b>	12	Set Pressure Line Leak 0.20 GPH Test Schedule
<b>78E</b>	17	Set Pressure Line Leak 0.1 GPH Auto Test Enable
<b>78F</b>	17	Set Pressure Line Leak Dispense Threshold

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#### **RECONCILIATION SETUP (7.3.9)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>790</b>	118	DIM Software Revision
<b>791</b>	106	Set Mechanical Dispenser Interface String
<b>792</b>	106	Set Electronic Dispenser Interface String
<b>793</b>	106	Set Reconciliation Auto Daily Closing Time
<b>794</b>	106	Set Auto Shift Closing Time 1, 2, 3, 4
<b>795</b>	106	Set Periodic Reconciliation Mode
<b>796</b>	106	Set Periodic Reconciliation Report Length
<b>797</b>	106	Set Periodic Reconciliation Alarm Flag
<b>798</b>	106	Set Periodic Reconciliation Alarm Threshold
<b>799</b>	106	Set Periodic Reconciliation Alarm Offset
<b>79A</b>	106	Set Remote Printer Reconciliation Report Format
<b>79B</b>	106	Set Shift Manual Adjustment Value
<b>79C</b>	106	Set Daily Manual Adjustment Value
<b>79D</b>	106	Close Current Reconciliation Shift
<b>79E</b>	106	Clear Tank Map Table
<b>79F</b>	108	Set BIR Temperature Compensation Flag

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#### **WIRELESS PLLD SETUP (7.3.10)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>7A0</b>	10	WPLLD Line Leak General Setup
<b>7A1</b>	10	Set WPLLD Line Leak Configuration
<b>7A2</b>	10	Set WPLLD Line Leak Label
<b>7A3</b>	10	Set WPLLD Line Leak 0.20 GPH Test Schedule
<b>7A4</b>	10	Set WPLLD Line Leak Shutdown Rate
<b>7A5</b>	10	Set WPLLD Line Leak Tank Number
<b>7A6</b>	10	Set WPLLD Line Leak Dispense Mode
<b>7A7</b>	10	Set WPLLD Line Disable Alarm Assignments
<b>7A8</b>	10	Set WPLLD Line Leak Pipe Type
<b>7A9</b>	10	Set WPLLD Line Leak Pipe Length
<b>7AA</b>	11	Set WPLLD Line Leak 0.10 GPH Test Schedule
<b>7AC</b>	17	Set WPLLD Line Leak 0.10 GPH Test Schedule Enable
<b>7AD</b>	20	Set WPLLD Line Leak Secondary Pipe Length
<b>7AF</b>	19	Set WPLLD Line Leak Altitude Pressure Offset

#### **METER MAP & DELIVERY TICKET SETUP (7.3.11)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>7B1</b>	110	Set BIR Meter/Tank mapping
<b>7B2</b>	20	Set Meter Calibration Offset
<b>7B5</b>	116	Set Ticketed Delivery



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#### **I/O DEVICE SETUP (7.3.12)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>7BC</b>	19	Set Line Disable Alarm Assignments II
<b>7BD</b>	19	Set Pressure Line Disable Alarm Assignments II
<b>7BE</b>	19	Set WPLLD Line Disable Alarm Assignments II
<b>801</b>	1	Set Input Configuration
<b>802</b>	1	Set Input Location Label
<b>803</b>	1	Set Input Type
<b>804</b>	4	Set Input Dispense Mode
<b>806</b>	1	Set Relay Configuration
<b>807</b>	1	Set Relay Location Label
<b>808</b>	1	Set Relay Alarm Assignments
<b>809</b>	2	Set Relay Orientation
<b>80A</b>	4	Set Relay Type
<b>80B</b>	4	Set Relay Tank Assignment

#### **EEPROM SETUP (7.3.13)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>851</b>	107	Restore All Setup Data from EEPROM
<b>852</b>	107	Save All Setup Data to EEPROM
<b>853</b>	107	Clear All Setup Data from EEPROM

#### **MISCELLANEOUS SETUP (7.3.14)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>881</b>	9	Set Communication Port Data
<b>882</b>	9	Initialize Communication Port Data
<b>885</b>	19	Set SiteLink Modem Type
<b>886</b>	20	Set Modem Setup String
<b>887</b>	20	Set Dial Tone Validation Interval
<b>888</b>	19	Communication Status Information
<b>889</b>	121	DTR Normal State for Serial Satellite Boards
<b>891</b>	108	Set AccuChart Calibration Restart
<b>8BC</b>	19	Set Relay Alarm Assignments II

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### **TLS-300/350/350R Monitoring Systems**

#### **DIAGNOSTIC REPORTS (7.4)**

##### **SYSTEM DIAGNOSTIC REPORTS (7.4.1)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>901</b>	1	Self Test Results Report
<b>902</b>	1	System Revision Level Report
<b>903</b>	106	PC Diagnostic Report
<b>905</b>	15	System Revision Level Report II

##### **IN-TANK DIAGNOSTIC REPORTS (7.4.2)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>A01</b>	1	Probe Type and Serial Number
<b>A02</b>	1	Probe Factory Dry Calibration Values
<b>A03</b>	1	Probe Factory Wet Calibration Values
<b>A04</b>	1	Probe Updated Dry Calibration Values
<b>A05</b>	1	Probe Updated Wet Calibration Values
<b>A06</b>	1	Probe Segment Sensitivity Ratios
<b>A10</b>	1	Probe Last Sample Buffers
<b>A11</b>	1	Probe Fast Average Buffers
<b>A12</b>	1	Probe Standard Average Buffers
<b>A13</b>	1	Probe Long Term Average Buffers
<b>A14</b>	19	Mag Probe Option Table
<b>A20</b>	1	Probe Leak Test Flags - Present Test
<b>A22</b>	2	Probe Leak Test Flags - Gross Test
<b>A23</b>	5	Tank Leak Test Averaging Buffers
<b>A51</b>	3	CSLD Diagnostics: Rate Table
<b>A52</b>	3	CSLD Diagnostics: Rate Test
<b>A53</b>	3	CSLD Diagnostics: Volume History Table
<b>A54</b>	3	CSLD Diagnostics: Moving Average Table
<b>A55</b>	3	CSLD Diagnostics: Leak Test Status
<b>A56</b>	121	CSLD Monthly Report
<b>A61</b>	110	HRM Diagnostic Report
<b>A62</b>	112	HRM Daily History
<b>A81</b>	6	Fuel Management Diagnostic Report
<b>A91</b>	9	Power Outage Diagnostic Report

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### **TLS-300/350/350R Monitoring Systems**

#### **SENSOR DIAGNOSTIC REPORTS (7.4.3)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>B01</b>	1	Liquid Sensor Diagnostic Report
<b>B06</b>	1	Vapor Sensor Diagnostic Report
<b>B07</b>	3	Vapor Sensor Concentration (PPM) Report
<b>B11</b>	1	Groundwater Sensor Diagnostic Report
<b>B21</b>	1	Ground Temperature Sensor Diagnostic Report
<b>B41</b>	2	Type A Sensor (2 Wire CL) Diagnostic Report
<b>B46</b>	2	Type B Sensor (3 Wire CL) Diagnostic Report
<b>B4B</b>	4	Universal Sensor Diagnostic Report

#### **LINE LEAK DIAGNOSTIC REPORTS (7.4.4)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>B50</b>	1	Volumetric Line Leak Status
<b>B51</b>	1	Volumetric Line Leak Diagnostic Gross Test History
<b>B52</b>	1	Volumetric Line Leak 0.1 & 0.2 GPH Diagnostic History
<b>B71</b>	2	Pump Sensor Diagnostic
<b>B7C</b>	19	Pressure Line Leak Pressure Offset Test
<b>B7D</b>	19	WPPLD Line Leak Pressure Offset Test
<b>B7E</b>	19	Pressure Line Leak Pressure Offset Monitor Report
<b>B7F</b>	19	WPLLD Line Leak Pressure Offset Monitor Report
<b>B81</b>	7	Pressure Line Leak Diagnostic Report
<b>B82</b>	10	WPLLD Line Leak Diagnostic Report
<b>B83</b>	10	WPLLD Line Leak Communication Diagnostic Report

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#### LINE LEAK DIAGNOSTIC REPORTS (7.4.4) (continued)

Code	Ver	Function
B87	19	Pressure Line Leak 3.0 GPH Test Diagnostic
B88	19	Pressure Line Leak Mid-range Test Diagnostic
B89	19	Pressure Line Leak 0.2 GPH Test Diagnostic
B8A	19	Pressure Line Leak 0.1 GPH Test Diagnostic
B8B	19	WPLLD Line Leak 3.0 GPH Test Diagnostic
B8C	19	WPLLD Line Leak Mid-range Test Diagnostic
B8D	19	WPLLD Line Leak 0.2 GPH Test Diagnostic
B8E	19	WPLLD Line Leak 0.1 GPH Test Diagnostic

#### RECONCILIATION DIAGNOSTIC REPORTS (7.4.5)

Code	Ver	Function
B91	108	AccuChart Diagnostics Report
B93	108	AccuChart Status Report
B94	108	AccuChart Calibration History Report
BA0	110	MDIM Totalizer Report

#### RECONCILIATION REPORTS (7.5)

Code	Ver	Function
C01	106	Basic Inventory Reconciliation Daily "Row" Report
C02	106	Basic Inventory Reconciliation Daily "Column" Report
C03	106	Basic Inventory Reconciliation Shift "Row" Report
C04	106	Basic Inventory Reconciliation Shift "Column" Report
C05	106	Basic Inventory Reconciliation Periodic "Row" Report
C06	106	Basic Inventory Reconciliation Periodic "Column" Report
C07	114	Basic Inventory Reconciliation Periodic "Row" Report
C08	114	Basic Inventory Reconciliation Periodic "Column" Report
C09	119	Individual Basic Reconciliation Daily History Diagnostic

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#### **VARIANCE ANALYSIS REPORTS (7.6)**

<b>Code</b>	<b>Ver</b>	<b>Function</b>
<b>C10</b>	116	Periodic Book Variance
<b>C11</b>	116	Weekly Book Variance
<b>C12</b>	116	Daily Book Variance
<b>C20</b>	116	Periodic Variance Analysis Report
<b>C21</b>	116	Weekly Variance Analysis Report
<b>C22</b>	116	Daily Variance Analysis Report
<b>C25</b>	119	Periodic Variance Analysis Daily Report