Communication protocol

1.Overview

Our company's Communication protocol is entirely compatible with Veeder-Root communication protocol , and is used for the data communication between Console and Software Management System.

Baud   9600
Frame Format: Start Bit 1, Data Field 8, Stop Bit 1, A total of 10 bit . no parity(N)

2.Function Code

Function Code	Function
i201	In-Tank Inventory Report
i501	Set Time of day
i205	In-Tank Status Report
i20C	In-Tank Most Recent Delivery Report
i602	Set Tank Product Label
i607	Set Tank Diameter
S501	Set Time of day
i10100	System Status Report

Our company produces console used in the table above 8 commands.

3.Serial Interface Manual
Function Code: i201
Function Type: In-Tank Inventory Report
Command Format: <SOH>i201TT
Typical Response Message, Computer Format:
         <SOH>i201TTYYMMDDHHmmTTpssssNNFFFFFFFF...
                              TTpssssNNFFFFFFFF...&&CCCC<ETX>
     Notes :
       1.YYMMDDHHmm –   Current Date and Time
       2.   TT－ Tank Number (Decimal, 00=all)
       3.   p－ Product Code (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
                             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

Function Code: i205
Function Type: In-Tank Status Report
Command Format: <SOH>i205TT
Typical Response Message, Computer Format:
 <SOH>i205TTYYMMDDHHmmTTnnAA...
                     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, 0 = none)
    4.   AA－Active tank alarm type:
              07 = Tank High Product Alarm
              05 = Tank Low Product Alarm
              03 = Tank High Water Alarm
              09 = Tank Probe Out Alarm
    5.   &&－ Date Termination Flag
    6.   CCCC－ Message Checksum

Function Code: i20C
Function Type: In-Tank Most Recent Delivery Report
Command Format: <SOH>i20CTT
Typical Response Message, Computer Format:
<SOH>i20CTTYYMMDDHHmmTTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF…...
              TTpddYYMMDDHHmmYYMMDDHHmmNNFFFFFFFF…...
              &&CCCC<ETX>

   Notes:
    1.   YYMMDDHHmm – Current Date and Time
    2.   TT－ Tank Number (Decimal, 00 = all)
    3.   P－ Product Code (single ASCII character, from 20 Hex - 7E Hex)
    4.   dd－ Number of Deliveries to follow
    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 TV 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

Function Code: i602
Function Type: Set Tank Product Label
Command Format: <SOH>i602TT
Typical Response Message, Computer Format:
  <SOH>i602TTYYMMDDHHmmTTaaaaaaaaaaaaaaaaaaaa
                                        TTaaaaaaaaaaaaaaaaaaaa&&CCCC<ETX>
        Notes:
        1.   YYMMDDHHmm – Current Date and Time
        2.   TT－Tank Number (Decimal, 00 = all)
        3.   a－Product Label (20 ASCII characters from 20 Hex - 7E Hex)
        4.   &&－Data Termination Flag
        5.   CCCC－Message Checksum

Function Code: i607
Function Type: Set Tank Diameter
Command Format: <SOH>i607TT
Typical Response Message, Computer Format:
                        <SOH>i607TTYYMMDDHHmmTTFFFFFFFF
                                            TTFFFFFFFF&&CCCC<ETX>
        Notes：
        1.   YYMMDDHHmm – Current Date and Time
        2.   TT－Tank Number (Decimal, 00 = all)
        3.   FFFFFFFF－Tank Diameter
        4.   &&－ Data Termination Flag
        5.   CCCC－ Message Checksum

Function Code: i501
Function Type: Set Time of day
Command Format: <SOH>i50100
Typical Response Message, Computer Format:
  <SOH>i50100YYMMDDHHmm YYMMDDHHmm &&CCCC<ETX>
        Notes:
        1.   YYMMDDHHmm –   Current Date and Time
        2.   YYMMDDHHmm –   Year,Month,Day,Hour and Minute
        3.   && － Data Termination Flag
        4.   CCCC － Message Checksum

Function Code: s501
Function Type: Set Time of day
Command Format: <SOH>s50100TTYYMMDDHHmm
Typical Response Message, Computer Format::

<SOH>s50100YYMMDDHHmm &&CCCC<ETX>

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

Function Code: i101
Function Type: System Status Report
Command Format: <SOH>i10100
Typical Response Message, Computer Format:
 <SOH>i10100YYMMDDHHmmAANNTT...
                              AANNTT&&CCCC<ETX>

Notes:
1.   YYMMDDHHmm – Current Date and Time
2.   AA－   Alarm/Warning Category
3.   NN－   Alarm Type Number
                         If   AA=02 and NN is:
                                  07 = Tank High Product Alarm
                                  05 = Tank Low Product Alarm
                                  03 = Tank High Water Alarm
                                  09= Tank Probe Out Alarm
4.   TT －Tank Number
5.   &&－ Data Termination Flag
6.   CCCC－ Message Checksum

Note: Currently I produced Console alarm types only AA = 02 tanks alarm