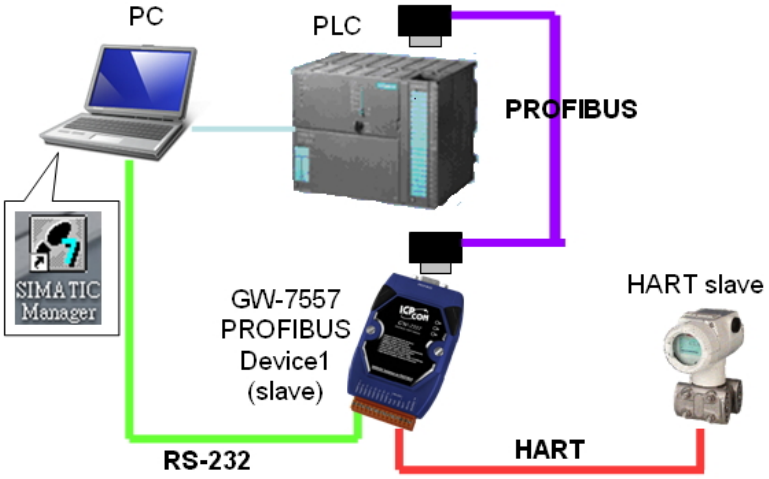
Quick Start User Guide

1. Introduction

This manual introduces the GW-7557's basic setting and operating quickly, the user can refer to the user manual in the ICP DAS companion CD-ROM (Path: “CD:\profibus\gateway\gw-7557\manual\gw-7557 user manual.pdf”).

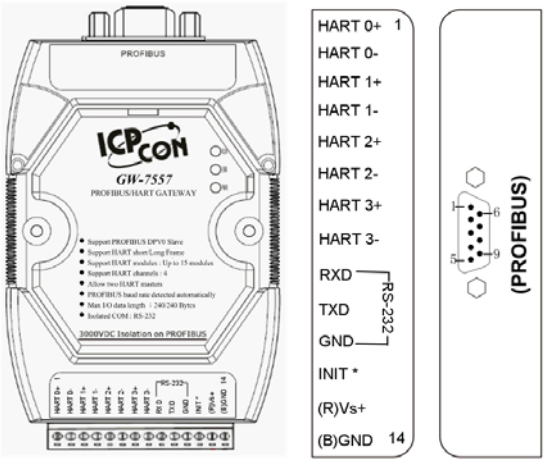
This manual helps users to understand about the GW-7557 module and application. We use Siemens S7-300 PLC(as a PROFIBUS master)、a GW-7557(as a HART master) and one HART slave to make a simple application here, as shown in figure 1.



Application example of PROFIBUS to HART

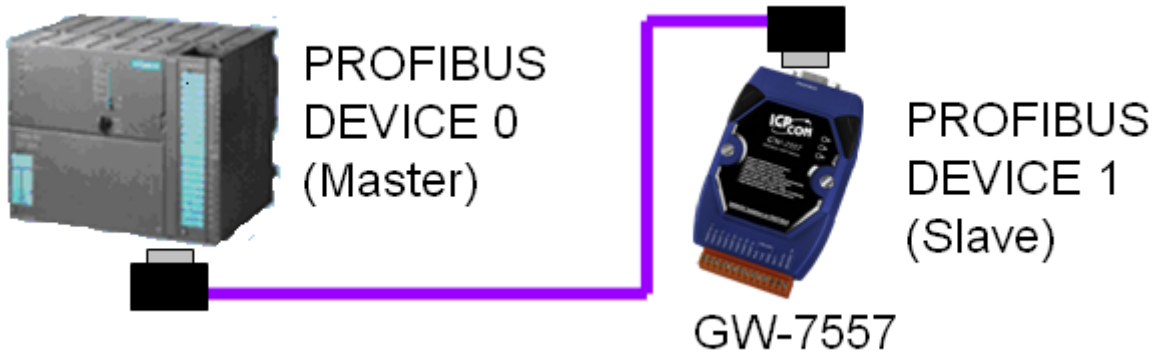
2. Hardware configuration

Pin Assignment

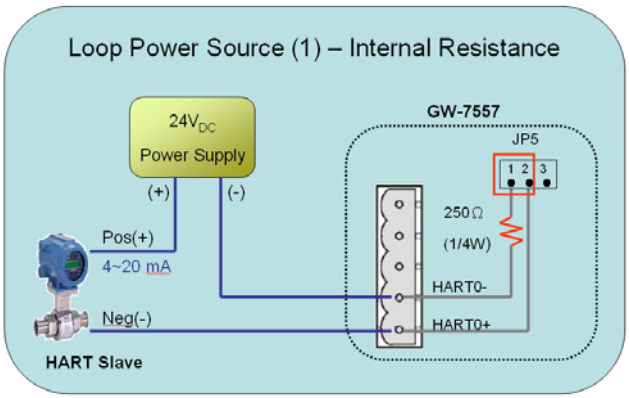


PROFIBUS connection

Here we recommend users to use the standard PROFIBUS cable and connector (DB9 male). It is only needed to use D-type connector via PROFIBUS cable to connect PROFIBUS Master station and GW-7557 module. PROFIBUS Master station and GW-7557 module belong to terminal equipments in this example, thus we need to enable the terminator resistor in the D-type connector.

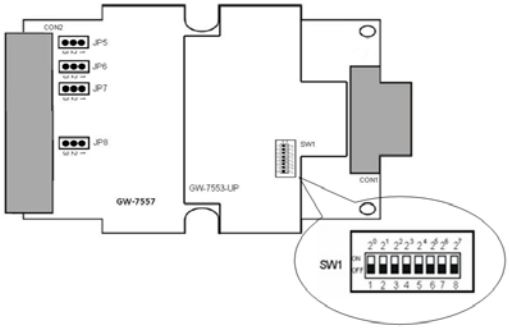


HART connection



Address setting

The GW-7557 is a slave device of PROFIBUS DP protocol. The station address of GW-7557 can be set by DIP switch. The DIP switch can be seen by open the cover, as shown in the below. The range of DIP switch is 0~126, here we set GW-7557 module's DIP switch to 1.



Station address	DIP switch (SW1)							
	1	2	3	4	5	6	7	8
1	1	0	0	0	0	0	0	0
10	0	1	0	1	0	0	0	0
31	1	1	1	1	1	0	0	0

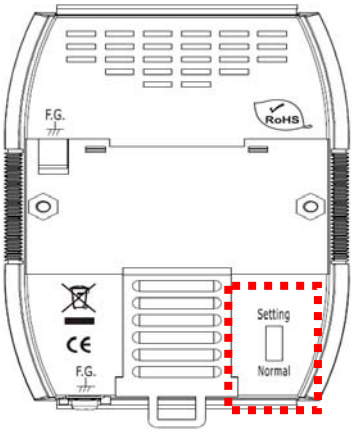
Note: 1=>ON, 0=>OFF

LED status indicator

LED	Status	Description
PWR	flash	Power supply is ok. HART channel is transmitting or receiving data.
	on	Power supply is ok.
	off	Power supply has failed.
ERR	flash	When the GW-7557 connects with the utility tool, it will flash fast (flash once about 55ms). When the GW-7557 has diagnostic message, it will flash slowly (flash once about 220ms).
	on	The connection is error with PROFIBUS Master device or PROFIBUS system configuration is not correct.
	off	PROFIBUS system configuration is correct. It is normal operation.
RUN	on	Data exchange mode. It is normal operation.
	off	GW-7557 module is not in data exchange mode.

DIP switch

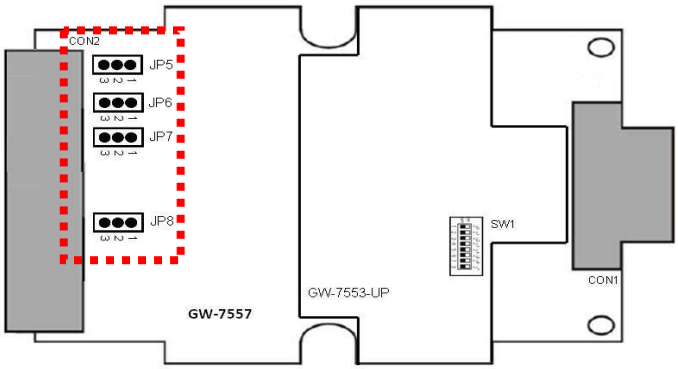
The user can sets the DIP switch to the “Setting” position for default settings of COM Port.



About default system settings are shown in the below:
Baudrate: 115200 bps
Data bit: 8 bits
Stop bit: 1 bit
Parity: None

Jumper

When the pin 1&2 of JP5 is closed, 250 Ω (1/4 W) resistor will connect to HART network of HART channel 0. By default, the pin1&2 of JP5 is closed.



The relation between jumpers and HART channels is shown in below.

JP5：Channel 0

JP6：Channel 1

JP7：Channel 2

JP8：Channel 3

3. Software configuration

GSD file

Please copy the GSD file (IPDS0D61.gsd) and the bitmap file (ICP_7557. bmp, GW_7557.bmp) from the CD of the GW-7557 module into the Profibus configuration tool.

File->CopyGSD

(Directory: --> CD:\profibus\gateway\gw-7557\gsd \)

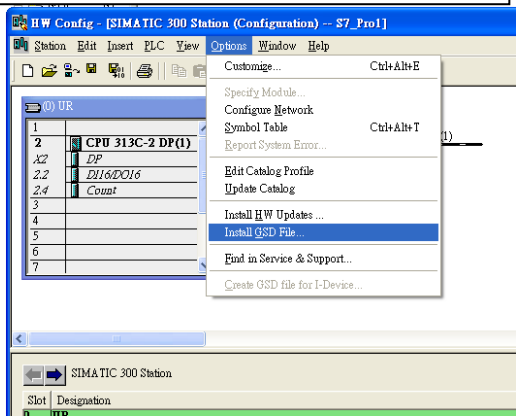
➢ **the example of how to load GSD file**

Here, we use the Siemens S7-300 PLC as a PROFIBUS master to show how to load GW-7557's GSD file step by step.

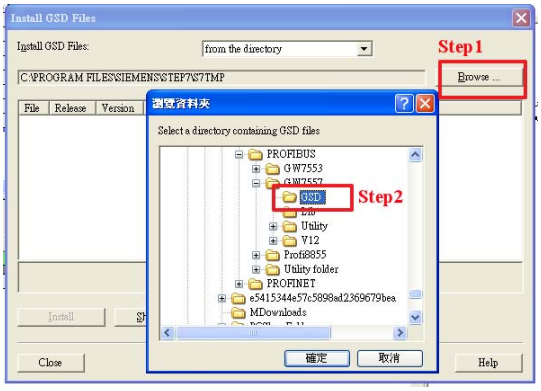
Step 1: Open "SIMATIC Manager", and open a new project.

Step 2: Double click "Hardware" to open "HW Config"

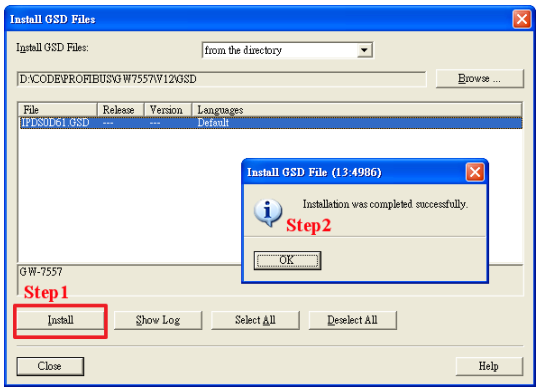
Step 3: Click "Install GSD File".



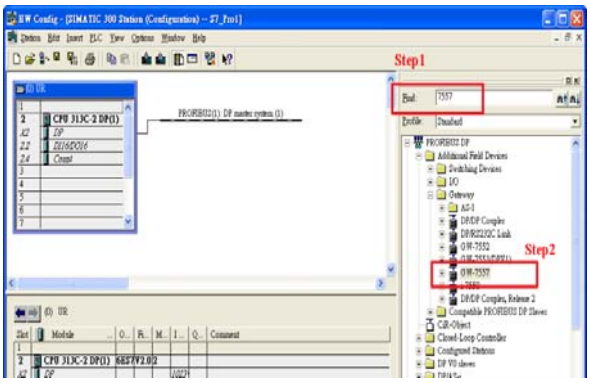
Step 4: Select the directory of GW-7557's GSD



Step5：Click”Install”



Step6：Confirm GW-7552’s GSD file is available



➢ Set the parameters of the GW-7557

The user just use the default value in all the parameters in this example. Please refer to user manual section 4.3 The Configuration of the common parameters.

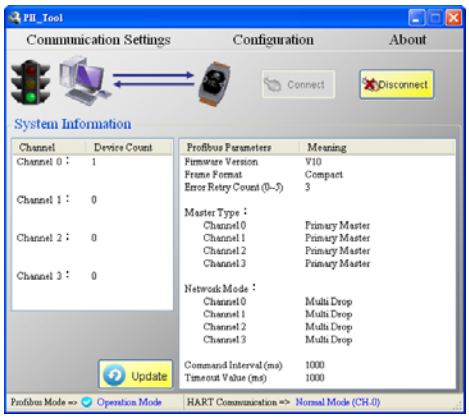
➢ Set the modules of the GW-7557

The modules of the GW-7557 are described below.

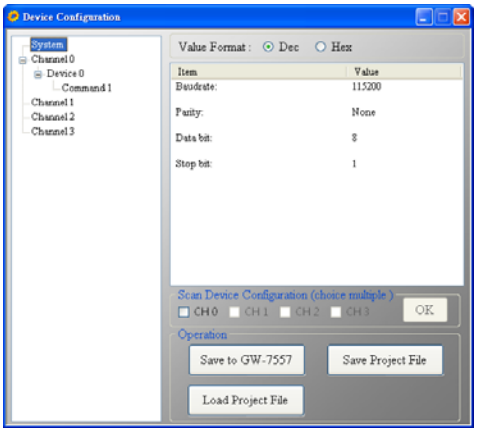
- System setting module：13 Bytes in, 6 Bytes out
- Output length module：Output Words→ 4~48 Bytes
- Input length module：Input Words→ 8~48 Bytes
- HART command module：Support universal and common command

In this example, we configure a “System Setting” module, an “Command 1” module, as follows.

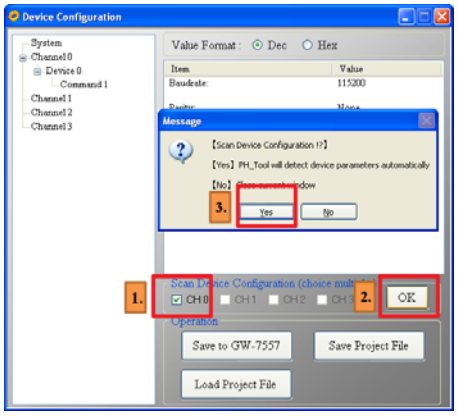
1. Execute PH_Tool, and click “connect” button



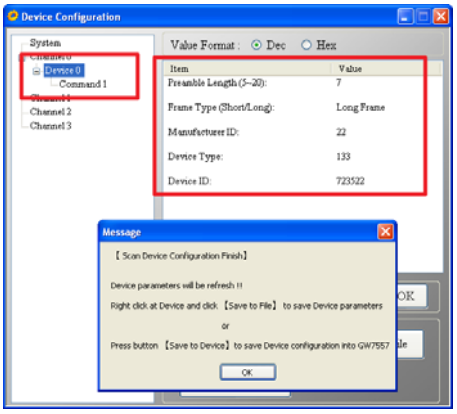
2. Click Configuration->Device Configuration



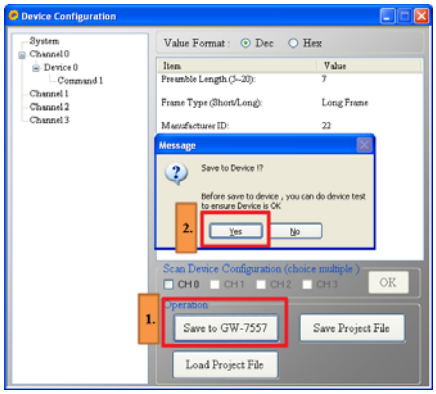
3. Select CH-0 and click “OK” button, then click “Yes”



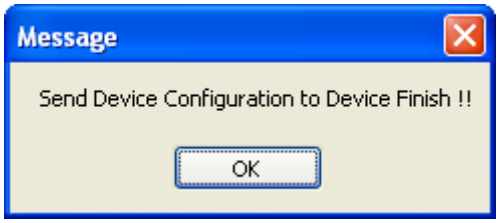
4. Scan HART communication parameter successfully



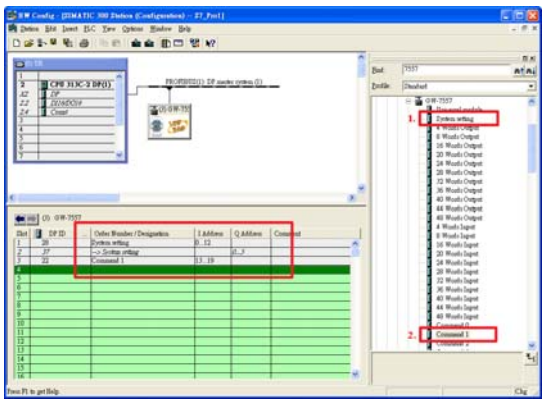
5. Click “Save to GW-7557”, then click “Yes”



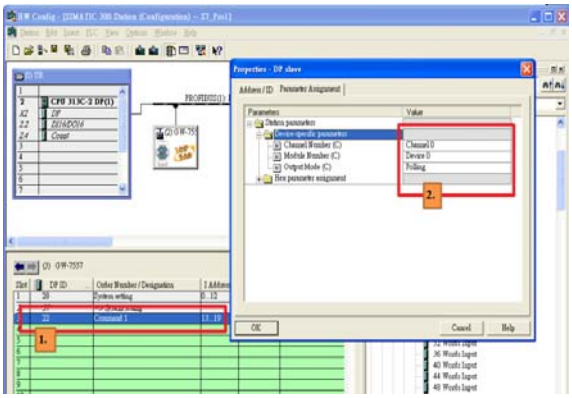
6. Write HART communication parameters successfully



7. Double click”GW-7557”icon to open “Properties”dialog

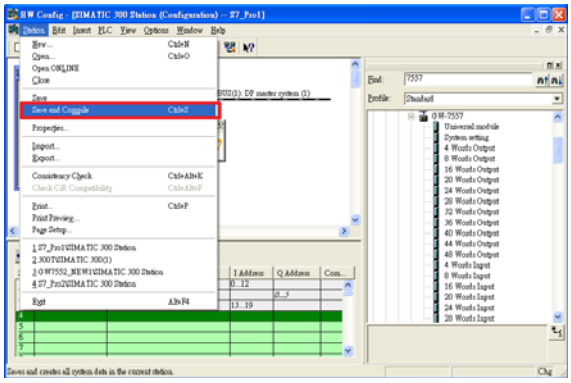


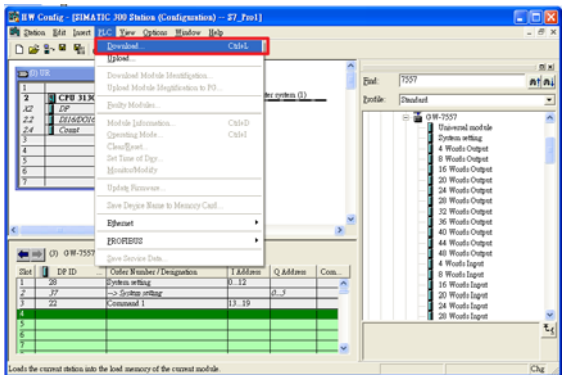
8. Use the default value, and click “OK”



9. Click< Save and Compile >

10. Click< Download> to download configuration to PLC





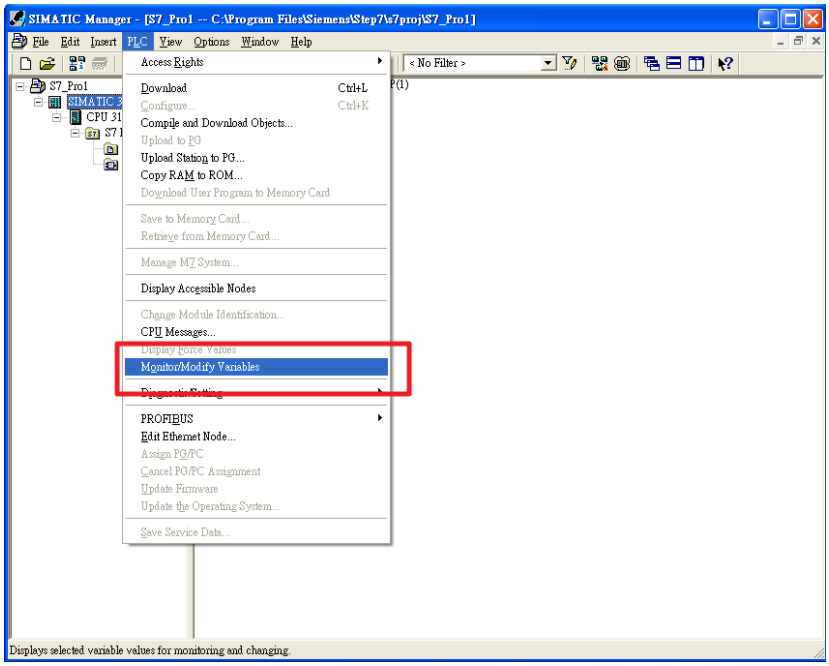
11. Reset the power of the GW-7557 for an active setting

4. GW-7557 module communication test

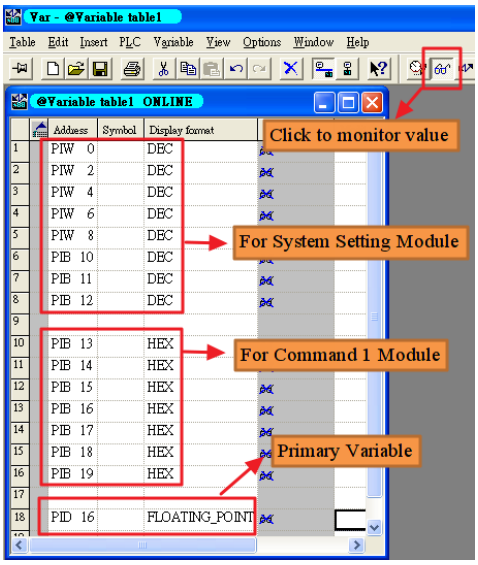
In this example, device configurations of HART slave device are listed as follows.

- HART channel：channel 0
- Preamble length：0x07
- HART frame type：Long frame
- Manufacturer ID：0x16
- Device type：0x85
- Device ID：0x0B0A42

1. Click “Monitor/Modify Variables” to establish a variable table

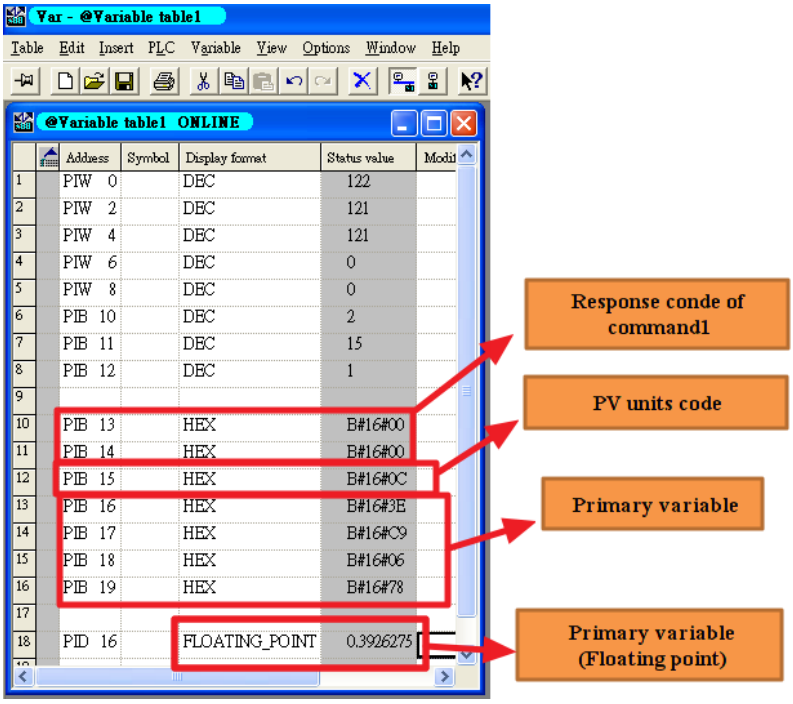


2. Fill in address of PROFIBUS input area



3. The value of PIW0、PIW2、PIW4 increase in order, and the value of PIB13~PIB19 always change.

   It means GW-7557 sends query frame of command 1 to HART slave and receives response frame of command 1from HART slave continuously


Var - @Variable table1
Table Edit Insert PLC Variable View Options Window Help
@Variable table1 ONLINE
Address Symbol Display format Status value Modif
1 PIW 0 DEC 122
2 PIW 2 DEC 121
3 PIW 4 DEC 121
4 PIW 6 DEC 0
5 PIW 8 DEC 0
6 PIB 10 DEC 2
7 PIB 11 DEC 15
8 PIB 12 DEC 1
9
10 PIB 13 HEX B#16#00
11 PIB 14 HEX B#16#00
12 PIB 15 HEX B#16#0C
13 PIB 16 HEX B#16#3E
14 PIB 17 HEX B#16#C9
15 PIB 18 HEX B#16#06
16 PIB 19 HEX B#16#78
17
18 PID 16 FLOATING_POINT 0.3926275
Response conde of command1
PV units code
Primary variable
Primary variable (Floating point)