

LCD Function

The LCD module is used for field adjustment to fine tune all the parameter settings before measuring pressure and temperature. The internal and external buttons can be utilized in safe or hazardous areas.

Product with LCD



The LCD is wired directly into the terminals, which can be viewed through the lens

Opening in safe area



Internal LCD buttons function in safe areas, open the cover, use the internal buttons for programming and operation

Button operation hazardous area



External button operation in dangerous area, slide open the nameplate, use the external buttons for programming and operation

Key Operations

For example, factory setting parameters; pressure range -10~100kPa, display unit mA, operate in the atmosphere.

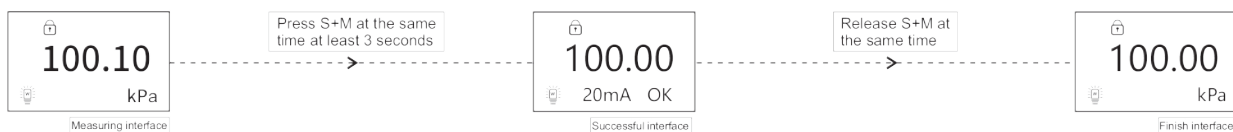
Screen unlock



Set PV=0

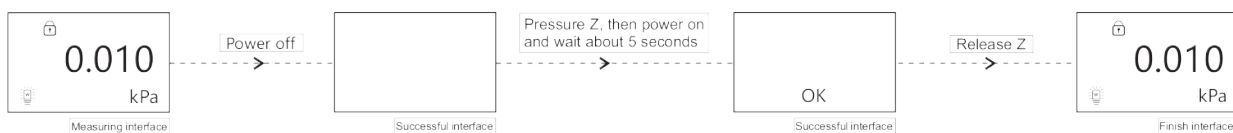


Full range adjustment

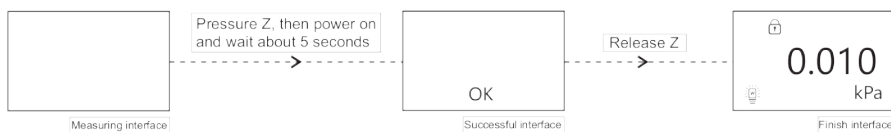


Factory reset

Method 1:



Method 2:



Temperature Sensor unit switching:



Detailed Operating Instructions

Parameters table

Lower range value

-19999-99999

Upper range value

-19999-99999

Decimal digit

Display	Decimal digit
Auto	Automatic
PPPPP.	0
PPPP P	1
PPP.PP	2
PP.PPP	3
P.PPPP	4

Damping time

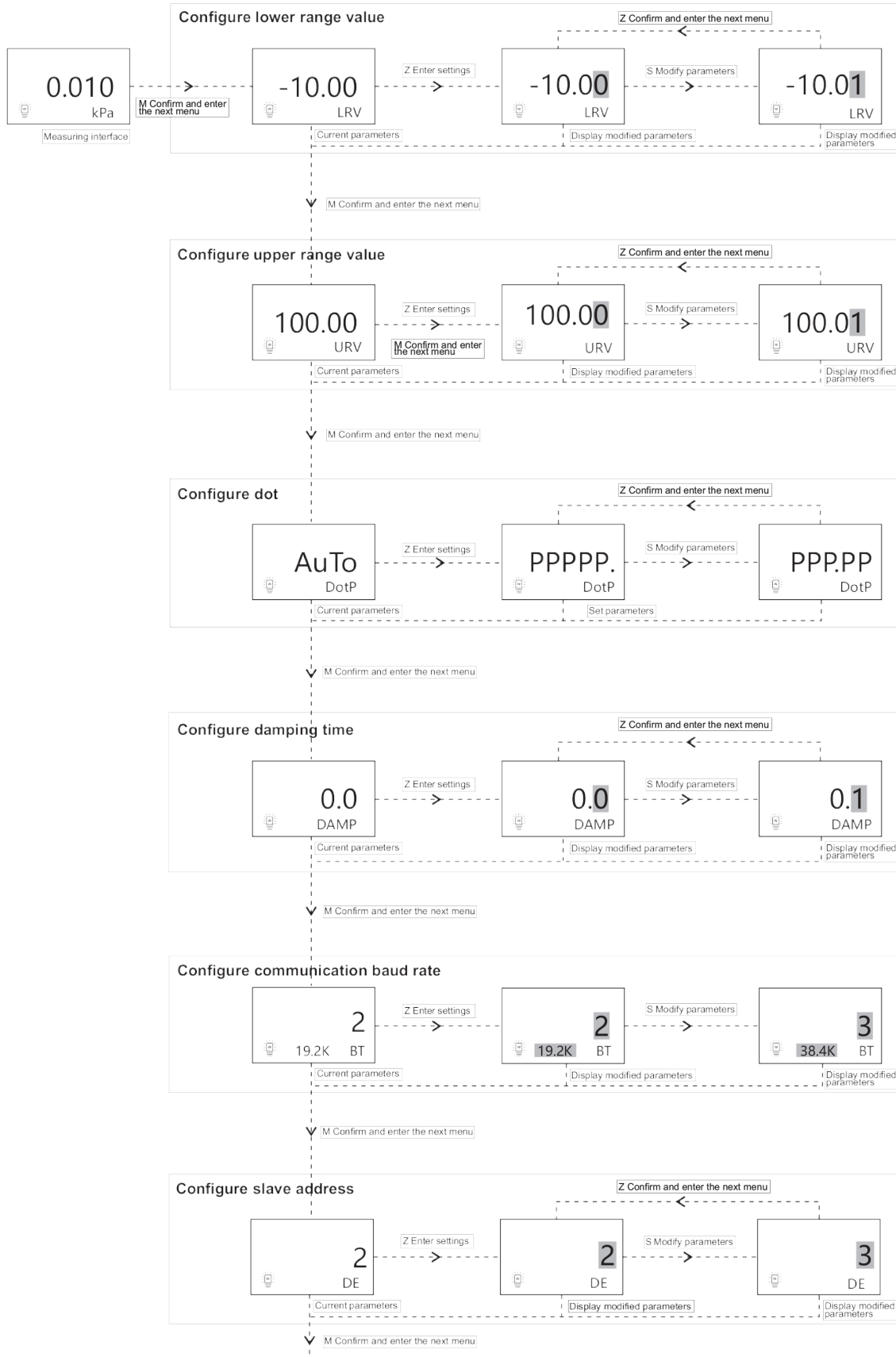
0.0-5.0S

Communication baud rate

0	4.8K
1	9.6K
2	19.2K
3	38.4K
4	57.6K
5	115.2K

Slave address

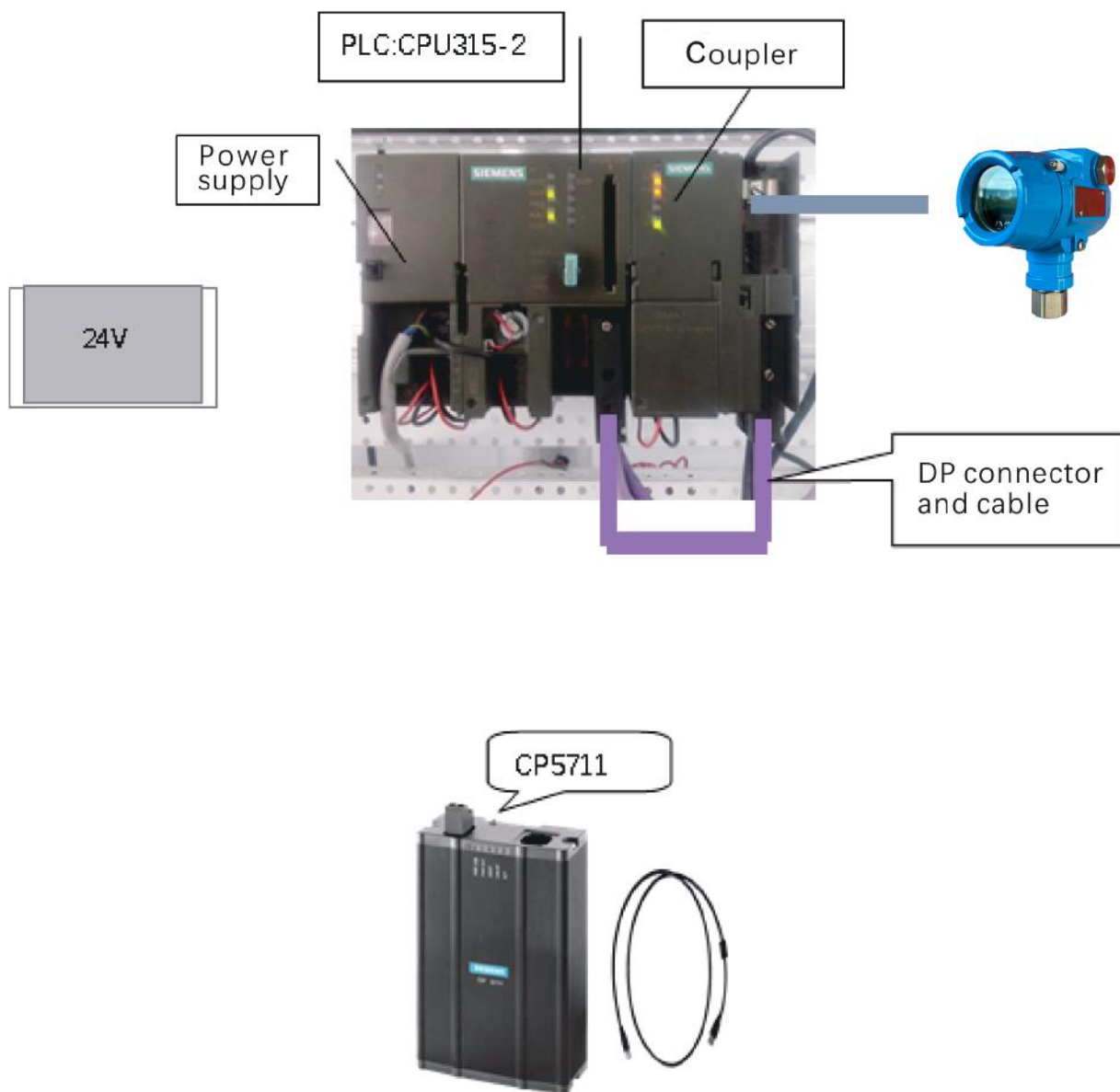
1-247



PROFIBUS PA Instrument Testing Instructions

1.1 Working Environment

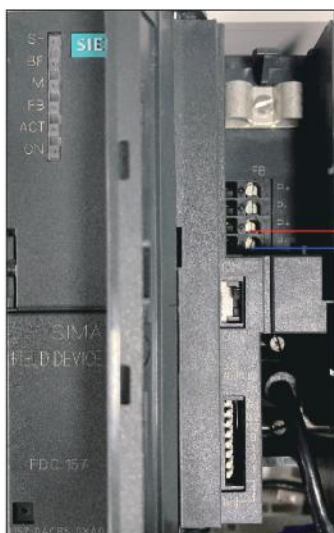
- 1.) PC, the operating system is Windows XP or above (i.e. Windows 7 32-bit)
- 2.) Siemens Step7 configuration software (i.e. V5.5)
- 3.) Siemens PDM device management software (i.e. V6.0)
- 4.) DP/PA coupler or linker
- 5.) Class 1 master station, like PLC (i.e. SIMATIC 315)
- 6.) Class 2 master station (i.e. CP5711 card)
- 7.) DP connector and cable



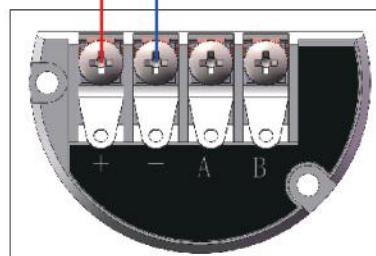
Note: The picture is a sample to show the devices for hardware conditions of testings

1.2 Field Device Hardware Connection

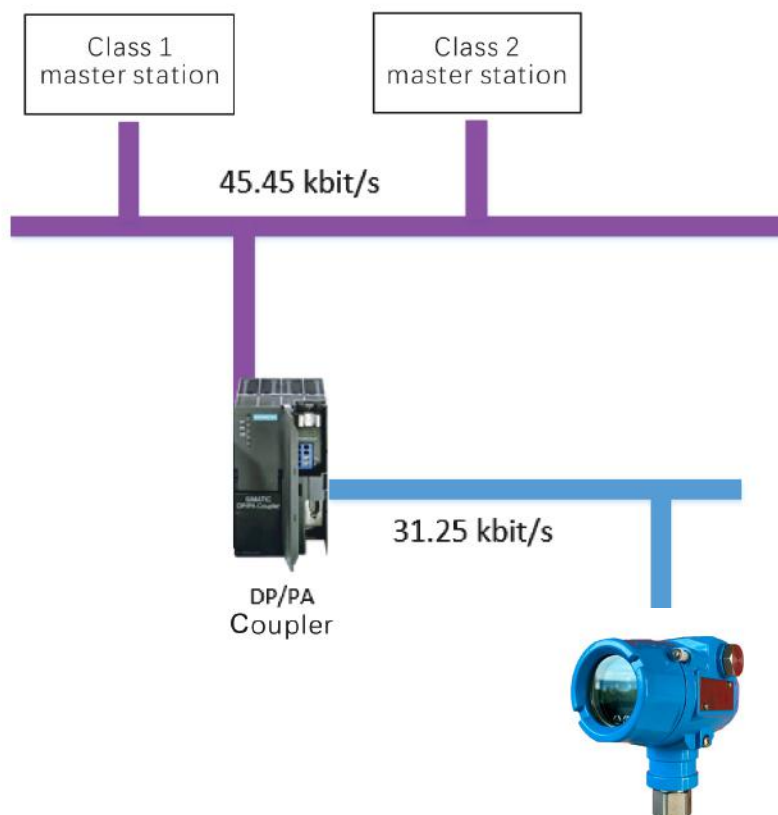
※Wiring Diagram



“+” connects to PA bus terminal “P+”
“-” connects to PA bus terminal “P-”



※Hardware connection diagram:



1.3 Communication Method

1.3.1 Cyclic Communication

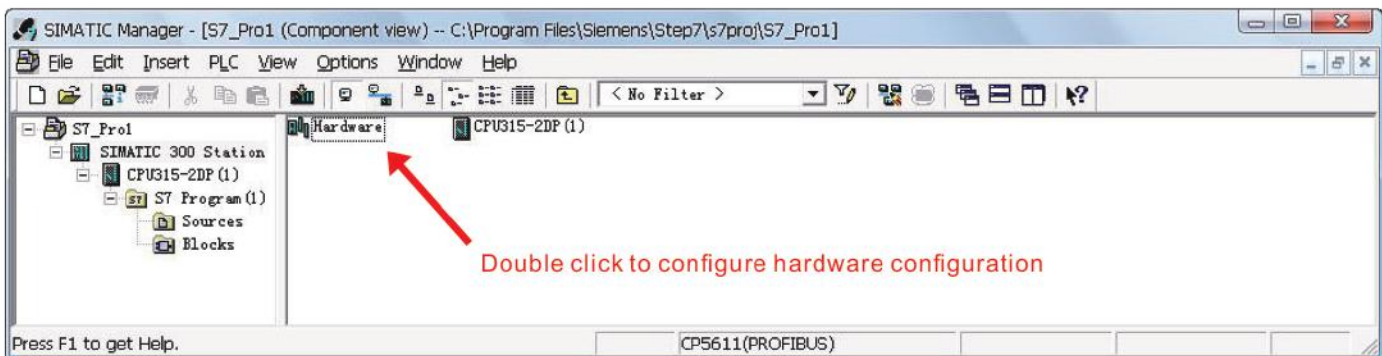
Cyclic data communication is mainly used for slave and PLC master device configurations. Through cyclic data communication, the PLC master obtains the input data from the slave in real time or outputs data to the slave. The cyclic data of the pressure transmitter comes from the output parameters of the three AI function blocks in the device. Each AI function block outputs 5 bytes, including 4 bytes of floating-point data of pressure value and 1 byte of status data. For cyclic communication, the transmitter supports multiple identifiers. There are two identifiers for AI, short identifier and long identifier. As follows:

AI	Short identifier	0x94
	long identifier	0x42, 0x84, 0x08, 0x05

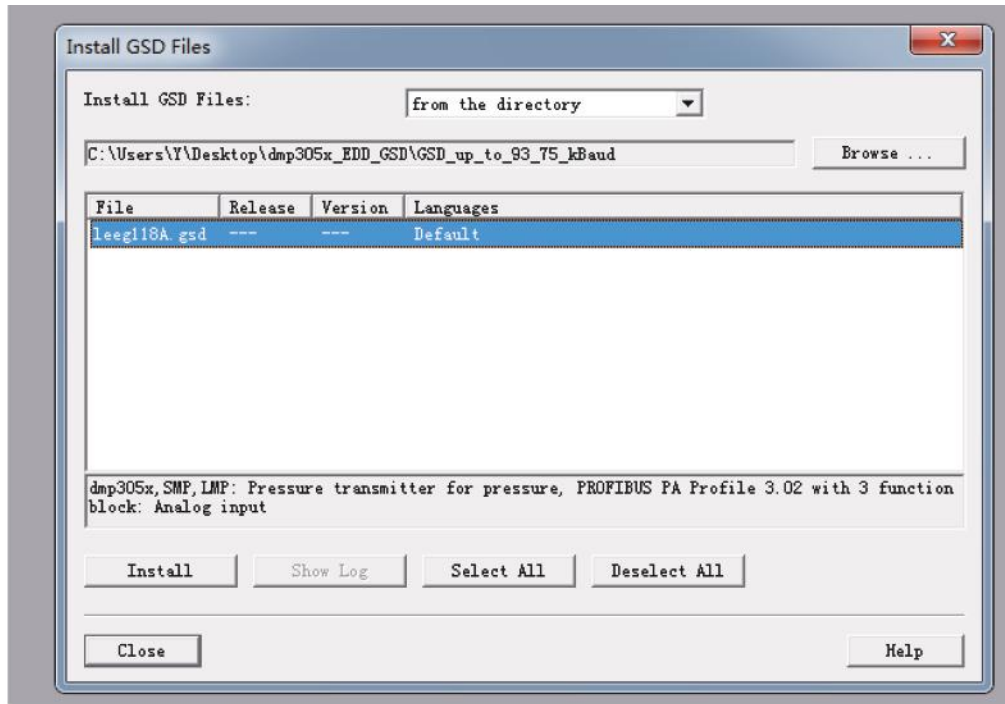
You can use Siemens Step7 to configure cycle data communications for PROFIBUS PA

Steps:

Open SIMATIC Manager, follow the prompts, select PLC master and create new project

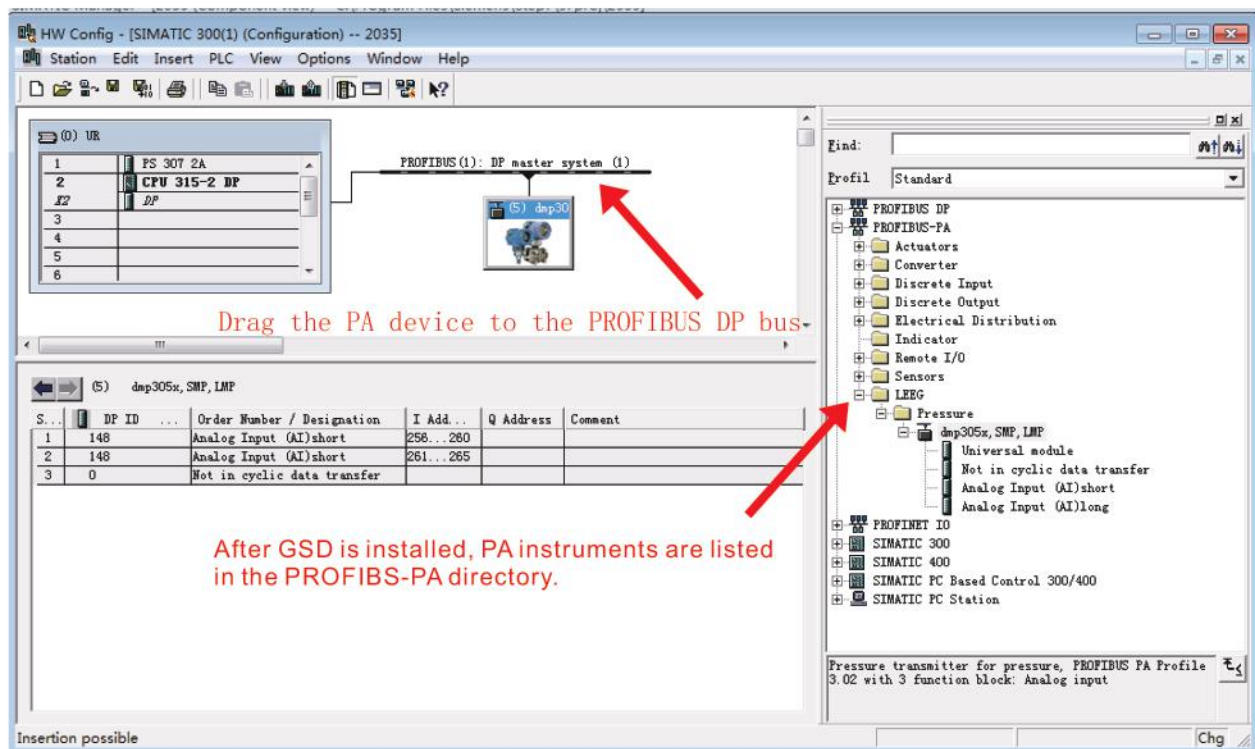


Double click hardware to open the HW config software-hardware configuration. Select the install GSD option to the GSD file of the PA transmitter.



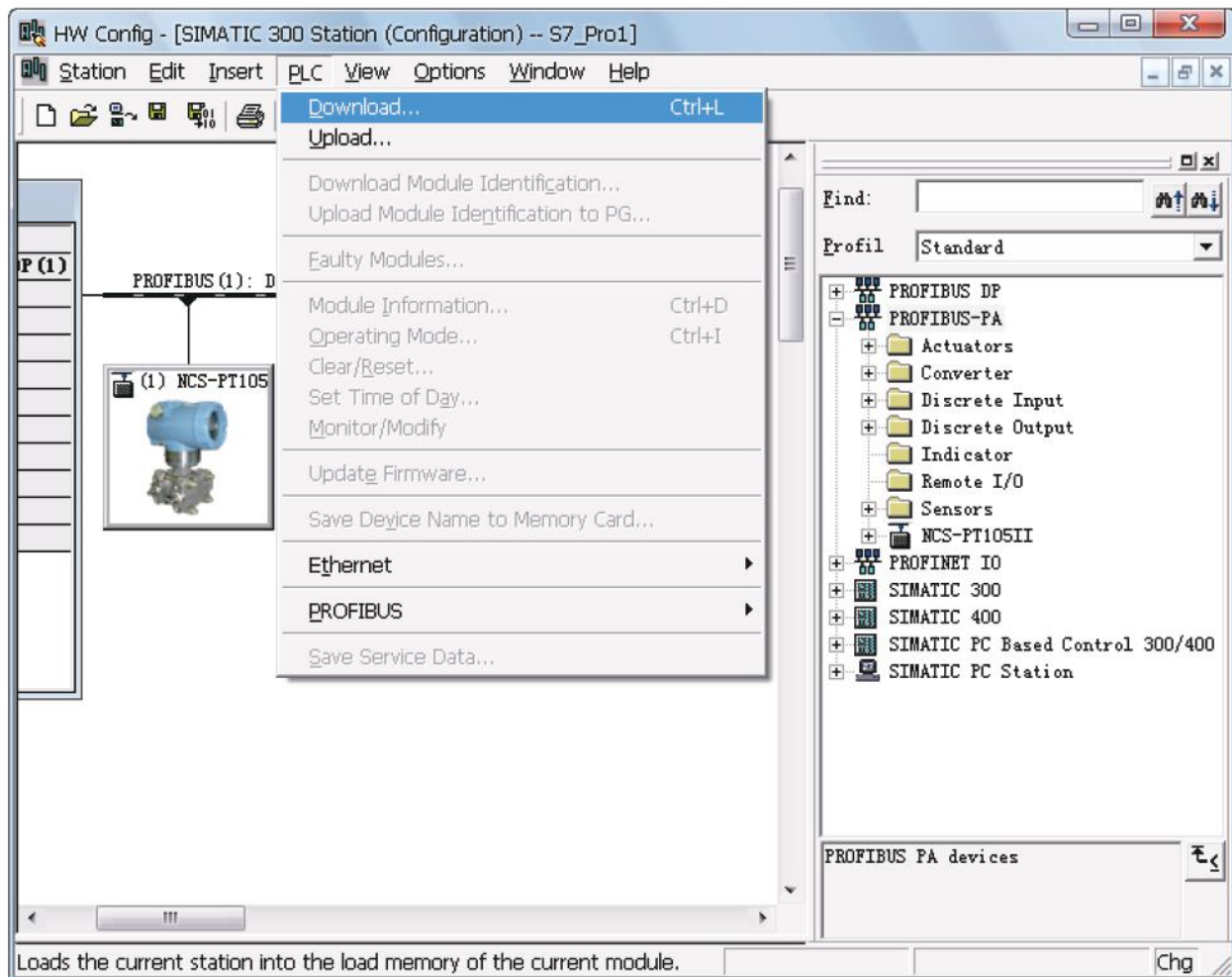
Install GSD file

After the GSD file is installed, the PA device just installed will be listed in the PROFIBUS-PA category in the device list on the right side of the HW config software. Select and drag it to the PROFIBUS DP bus.



Drag the PA device to the PROFIBUS DP bus

Select download in the PLC menu to download the configuration information to the PLC master station. This completes the cyclic data communication configuration between the PA instrument and the master.



Download configuration information to PLC

Var - [VAT_1 -- @cyhvp\SIMATIC 300(1)\CPU 315-2 DP\S7 Program(1...]

	Address	Symbol	Display format	Status value	Modify value
1	MD 20		FLOATING_POINT	80.0	80.0
2	MB 24		HEX	B#16#80	B#16#80
3					

Monitor the data, if the data is consistent with the data uploaded by the instrument, the cyclic communication works normally

1.3.2 Non-Cyclic Data Communication

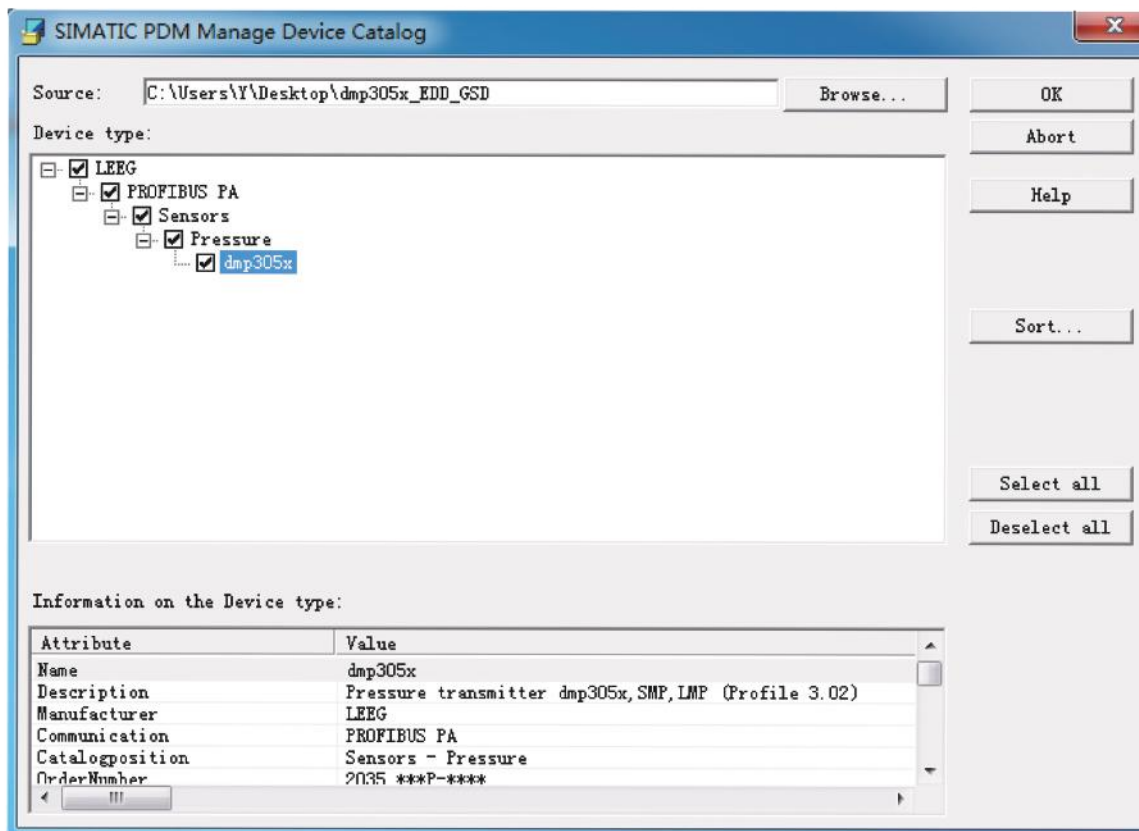
The non-cyclic data communication of PROFIBUS DP refers to the connection-oriented data communication between the Class2 master stations and slave stations. This data communication is carried out in the non-cyclic cycle without affecting the cyclic data communication. The non-cyclic data is mainly about the parameters of the PA block, and the identification and diagnostic information of the device. Non-cyclic data communication is mainly the management, diagnosis, identification, adjustment and maintenance of PA equipment.

You can use Siemens' device management software SIMATIC PDM to configure non-cyclic data communication for PA instruments.

Below is an example of configuring non-cycling communication for PA transmitters by SIMATIC PDM. Before configuration, you need to import the manufacturer information first.

Find the manufacturer .csv file in the path ...\\Siemens\\Step7\\S7BIN.

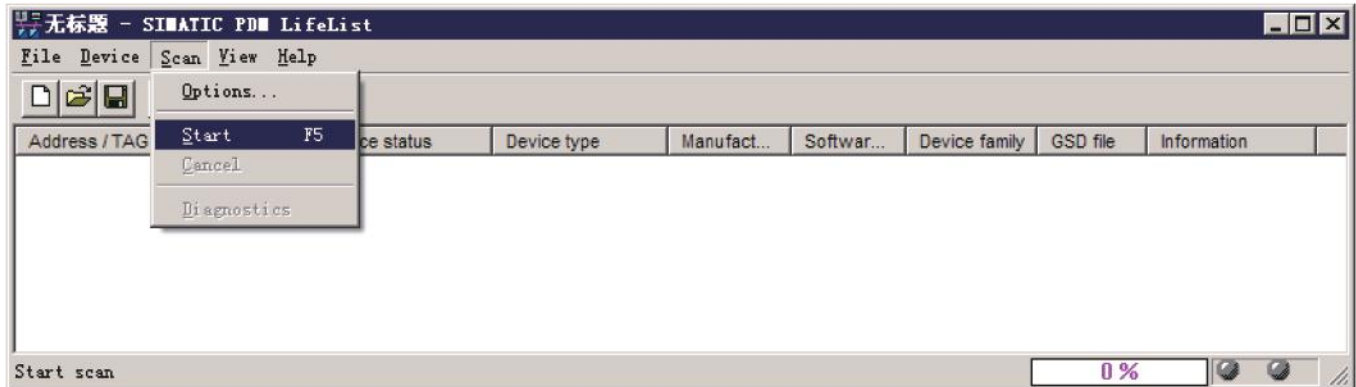
Add "LEEG;;;;;LEEG 0x0169." The red font is just for example the actual addition depends on the real manufacturer. Open the manage device catalog software in SIMATIC PDM, select the EDD file of the device and import it.



Select device type

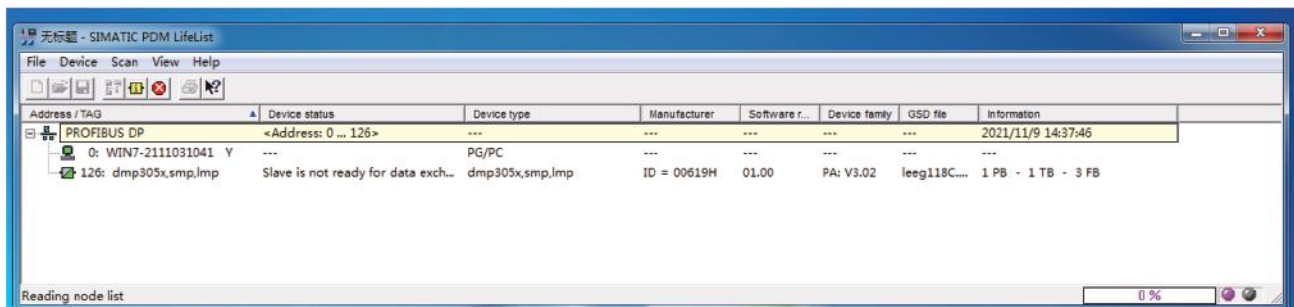
Open LifeList in SIMATIC PDM, and select start to scan the DP bus under the scan menu.

Start



LifeList

After scanning the bus, the slave devices on the DP bus will be listed, also the manufacturer ID and some diagnostic information about the device will be displayed.



After selecting the device type, click OK, then the non-cyclic data communication configuration is complete. The upload and download functions of the PDF software can be used to read and write the parameters of the PA instrument. If the read-write data is correct, the non-cyclic communication works normally.

SIMATIC PDM - dmp305x.smp.lmp (Temporary project)

File Device View Options Help

Networks

- WIN7-2111031041
 - PROFIBUS DP
 - dmp305x.smp.lmp

Parameter	Value	Unit	Status
2035 (Specialist)			
» Device Identification			
» » Manufacturer Info			
Manufacturer	0x619		Loaded
Product designation	dmp305x.smp.lmp		Loaded
» » Set Block Tag			
Physical Tag	dmp305x.smp.lmp		Loaded
Transducer Tag			Loaded
Analog Input 1 Tag			Loaded
Analog Input 2 Tag			Loaded
Analog Input 3 Tag			Loaded
» » Descriptor, Message and Date			
Descriptor			Loaded
Message			Loaded
Installation Date	2021-09-14		Loaded
» » Serial Numbers			
Device Serial Num	SN:		Loaded
Sensor Serial Number	0		Loaded
Sensor Type	Differential Pressure		Loaded
» » Device Revisions			
Static Revision No.	0		Loaded
Software Revision	01.00		Loaded
Hardware Revision	1.0		Loaded
Profile	PROFIBUS PA, Compact Class B		Loaded
Profile Revision	3.02		Loaded
DD Reference	1		Loaded
DD Revision	1		Loaded
» » Certificates and Approvals			
Device Certification	See plate		Loaded
» Transducer Block 1			
Static Revision No.	0		Loaded
» » Primary Value Type			
Transmitter Type	Pressure		Loaded
» » Measuring Limits			
Unit Pressure Raw Value	bar		Loaded
Lower Value Min	-40	bar	Loaded
Upper Value Max	40	bar	Loaded
» » Measuring Range			
Unit (Secondary Value 1)	bar		Loaded

Upload to PG/PC...closed

Specialist Connected NUM

Use PDM software for device management