



HART/Modbus Gateway

HTM-611

DATA SHEET

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1 Product Function

HTM-611 is a gateway that achieving data communication between HART and MODBUS. HART side can be configured as a primary master or the secondary master. HTM-611 act as slave at the side of Modbus.

2 Product Features

- Application is simple: The user simply refer to the product manuals and application examples, configured according to the requirements then can achieve communication in a short period of time.
- Powerful: Support the interconnection between HART and MODBUS, transparent transmission between HART and serial.
- Rich debugging functions: Visual display of data exchange, HART slave command diagnosis and common debugging features are greatly convenient to the user's communication test.

3 Technical Specifications

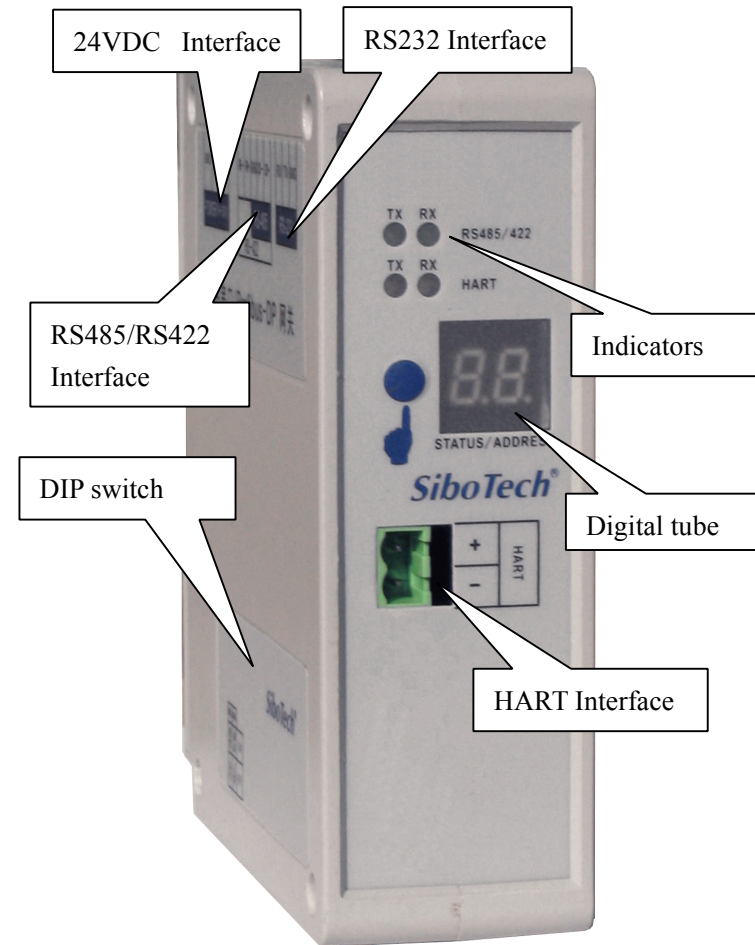
- [1] HART can be used as a primary master or the secondary master.
- [2] Support one HART-channel, multi-point mode using gateway internal resistance support connecting 13 instruments, and using an external resistor (250Ω) support

connecting 15 instruments

- [3] Support single-point and multi-point mode at the side of HART
- [4] Single-point mode, support data burst operation of slave device
- [5] Support all commands of the HART protocol
- [6] Each HART command can be configured for change-of-state output, polling output, initialization output or disable output
- [7] HART per channel supports up to 128 user commands, HART output data buffer up to 1000 bytes, and the input data buffer up to 1600 bytes.
- [8] Can choose to use an internal or external sampling resistor
- [9] Serial RS232, RS485, RS232 optional, baud rate: 300K, 600K, 1200K, 2400K, 9600K, 19.2 K, 38.4K, 57.6K, 115.2Kbps optional
- [10] Serial side can be configured for MODBUS slave, support function code: 03H, 04H, 06H, 10H.
- [11] MODBUS slave support RTU and ASCII communication.
- [12] The serial port can be configured as universal mode, and achieve transparent data transmission with HART slave devices.
- [13] Power: 24VDC (9V~30V), 80mA (24VDC) ;
- [14] Working circumstance temperature: -20~60°C, Humidity: 95%;
- [15] External dimensions: (Width) 40mm* (Height) 125mm* (Depth)110mm;
- [16] Installation: 35mm DIN RAIL;

[17] Protection Level: IP20;

4 Product Appearance



Note: This picture is for reference only. Product appearance should accord to the real object.

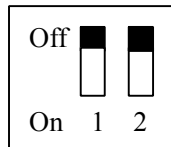
4.1 Indicators

Indicator	State	Status Description
PBF	Reserve	Reserve
	Reserve	Reserve
STA	Reserve	Reserve
	Reserve	Reserve
TX	Blinking	Bus data is sending
	Close	No data is sending
RX	Blinking	Bus data is receiving
	Close	No data is receiving

4.2 Configuration Switch

4.2.1 Status setting switch

Configuration switch located at the bottom of product, bit 1 is the debugging bit and bit 2 is the mode bit.



The debugging (bit 1)	Configuration (bit 2)	Description
Off	Off	Running mode
Off	On	Configuration Mode
On	Off	Debugging mode
On	On	Configuration Mode

Note: ①After re-configure the switch, you have to restart the HTM-611 to make the settings take effect!

②Set to debug mode, “MODBUS slave” or “common mode” will be compulsory for RS485 interface for communication port, RS232 interface for debugging interface.

③Configuration interface using the RS232 interface.

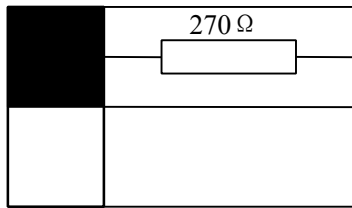
4.2.2 The MODBUS address set button

Under normal working condition of the HTM-611, digital tube always displays the address of the current Modbus address. Quickly press(double-click) the button twice in succession, the high bit starts flash, and the low bit always on, click the button to add 1 to start setting the Modbus address high bit. Long-press the button for 3 seconds, the high bit starts always on, and the low bit starts flash. Click the button to add 1 to start setting the MODBUS address low bit. Then long-press the button for 3 seconds, the address flashing three times shows that the address set successfully. If no

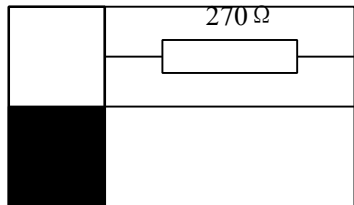
button action within ten seconds, HTM-611 exits the status of setting address and continue to display the original address. HTM-611 settable range of MODBUS address is 0 to 99 (decimal).

4.2.3 Internal / external sampling resistance switch

HTM-611 can choose using the internal sampling resistance or external sampling resistance for HART signal. The specifications of the internal resistance is 270Ω , 2W. When the power of the sampling resistance is more than 2W, you must use an external resistance.



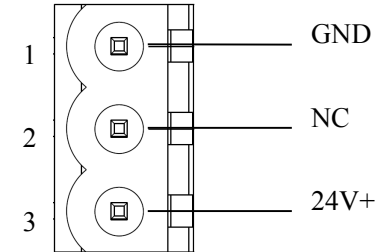
Switch to the top, using the internal sampling resistance



Switch to the bottom, using an external sampling resistance

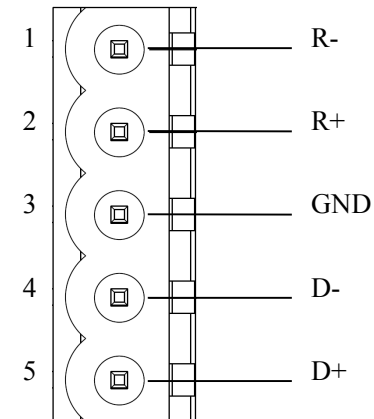
4.3 Interface

4.3.1 Power Interface



Pin	Function
1	GND
2	NC(No Connect)
3	24V+, DC plus 24V

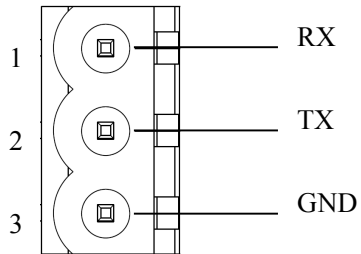
4.3.2 RS-485/RS-422 interface



Pin	Function
1	R-, RS-422 Receive Negative
2	R+, RS-422 Receive Positive
3	GND
4	D-, RS-485/RS-422 Transmit Negative
5	D+, RS-485/RS-422 Transmit Positive

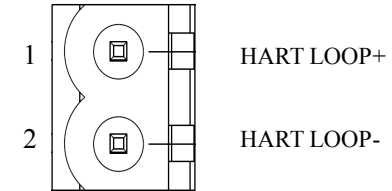
4.3.3 RS-232 interface

RS-232 interface uses a 3-pin pluggable open terminal, and its pin description is shown as follows:



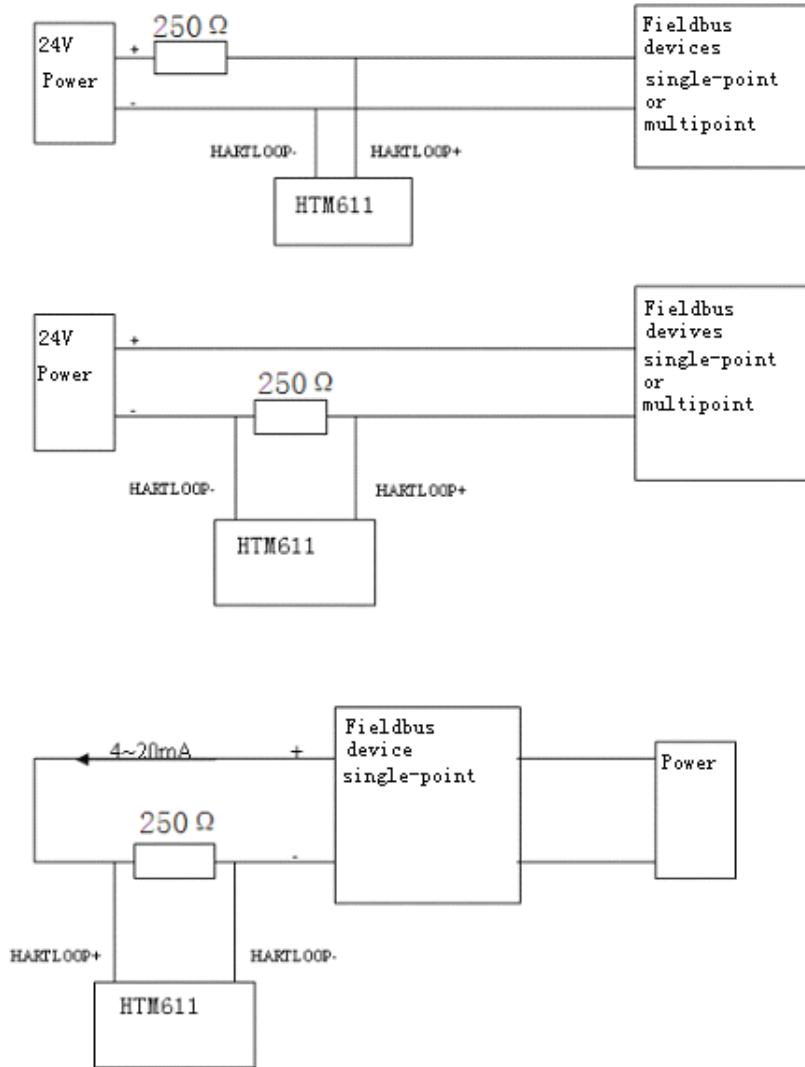
Pin	Function
1	RX, Connect user device RS232's RX
2	TX, Connect user device RS232's TX
3	GND, Connect user device RS232's GND

4.3.4 HART interface

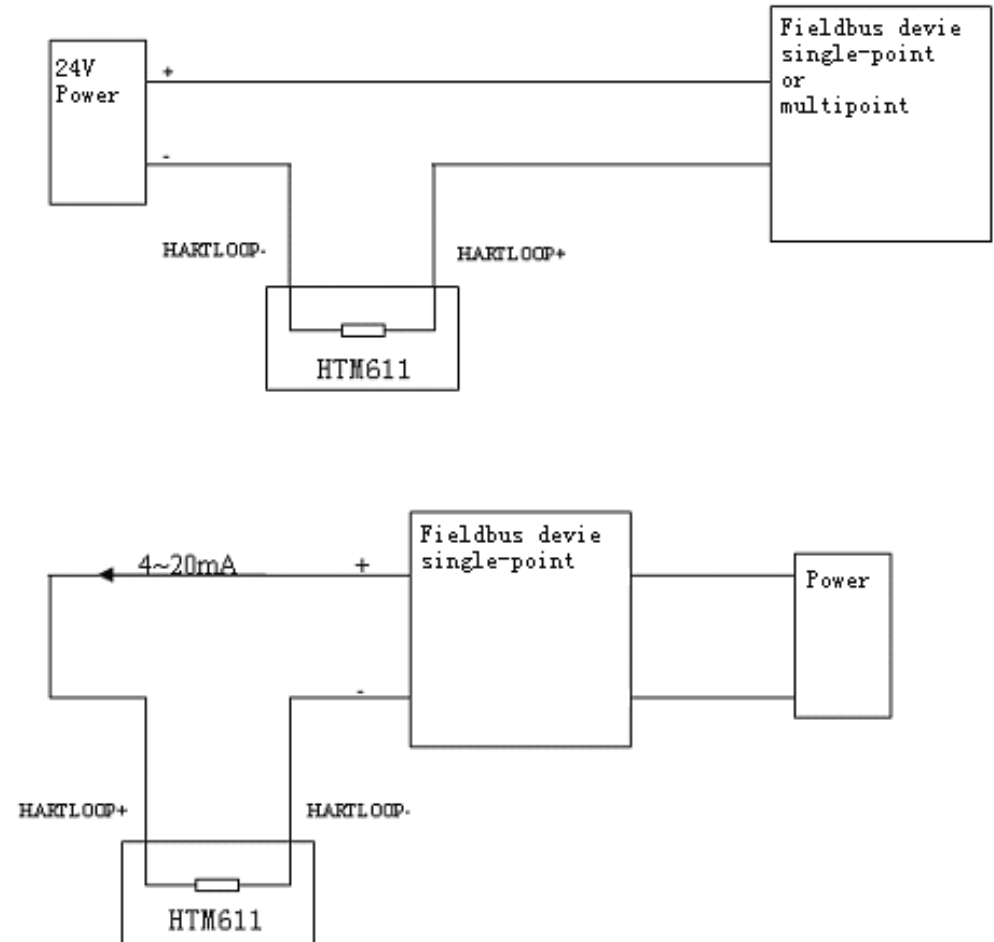


Pin	Function
1	Connect HART signal positive
2	Connect HART signal negative

5 Topology of HTM-611



Do not use the internal resistance!



Using internal resistance!

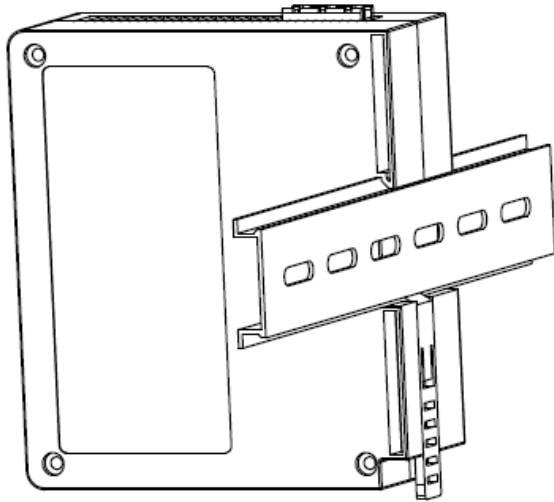
Note: 1. Some HART slave instrument need to perform self-test and other internal work when power on, may not proceed HART communication then gateway can not

receive the response of the instrument right now. Recommendations to the HART slave instrument and gateway separate power supply, so that the gateway can immediately establish communication with instrument.

2. When configuration HART commands in the software HT-123, the commands need to be configured according to the actual needs. To improve the speed of bus communication, it is recommended not to configure the empty node (in fact, not connected to the node) and empty commands(the actual unwanted commands).

6 Installation Method

Using 35mm DIN RAIL



7 Machine Dimension

Size: 40mm (width)*125mm (height)*110mm (depth)

