

HRT-310

Dimensions

The HRT-310 gateway is specially designed for the master device of HART protocol. It allows the Modbus master device to access the HART slave devices. These HART devices may be a transmitter, an actuator, a current output device and so forth. In addition, we also provide the utility (HG\_Tool) for module configuration and HART device diagnosis. By using this module, users can integrate their HART devices into Modbus network easily and quickly.

### Features

- Support HART Short/Long frame
- Support HART Burst mode
- Allow two HART Masters
- Working in point-to-point or multi-drop HART mode
- Connecting up to 15 HART modules
- Support Modbus RTU and ASCII format
- Support Modbus Slave mode
- Provide LED indicators
- Support Loop Power function (module provides +30V)
- Built-in HART loop resistor (250 Ohm, 1W)
- Enhanced HART signal (for longer comm. distance)

### Modbus Support

Support the following Modbus commands.

Code	Name	Description
01	Read Coil Status	Read the ON/OFF status of discrete outputs in the slave
02	Read Input Status	Read the ON/OFF status of discrete inputs in the slave
03	Read Holding Registers	Read the binary contents of holding registers in the slave
04	Read Input Registers	Read the binary contents of input registers in the slave
05	Force Single Coil	Write a single output to either ON or OFF in the slave
06	Preset Single Register	Write an integer value into a single register in the slave
15	Force Multi. Coils	Write each coil in the sequence of coils to either ON or OFF in the slave
16	Preset Multi. Registers	Write a block of contiguous registers in the slave

#### Utility Features

- Read/Write HART device by HART command
- Provide diagnostic Information
- Read/Write module configuration of the HRT-310
- Show Modbus address of HART command



Pin Assignments



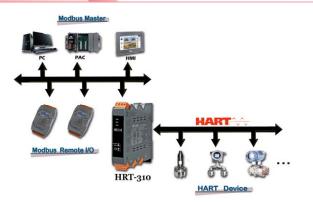


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# Hardware Specifications

WatchdogWatchdog ICESD Protection $4$ kV class AUART InterfaceUART InterfaceRS-232 => Rx, Tx, GND (3 wire)RS-232 => Rx, Tx, GND (3 wire)RS-485 => D+, D-Baud Rate (bps)HART InterfaceApproxement of Modbus RTU / Modbus ASCIIHART Interface2-pin screwed terminal block (H+, H-)HART TopologyPoint to Point or Multi-DropHART TopologyPoint to Point or Multi-DropHART StateBurst ModeSuportedMart ModeSuported				
ESD Protection4 kV class AUART InterfaceCOM ConnectorRS-232 => Rx, Tx, GND (3 wire) RS-425 => Dx, D- RS-485 => D+, D- RS-485 => D+, D-Baud Rate (bps)1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200ProtocolModbus RTU / Modbus ASCIIHART InterfaceHART Interface2-pin screwed terminal block (H+, H-)HART Device2-wired or 4-wired HART devicesHART Dovice2-wired or 4-wired HART devicesHART DataOnly Digital DataHART Frame TypeShort and Long FrameBurst ModeSupportedMax, HART Device15Loop Resistor250 $\Omega$ (1W) resistor by Dip-Switch IsolationIsolationFollow UL1577 Spec.PowerPower supplyUnregulated +10 ~ +30 VocProtectionPower reverse polarity protection, Over-voltage brown-out protection $0 \text{ Symmer way as the max 120 mm (W x L x H)}$ Environment	Hardware			
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ProtectionPower reverse polarity protection, Over-voltage brown-out protectionPower Consumption3.5 W (Max.)MechanismDIN-RailInstallationDIN-RailDimensions25 mm x 116 mm x 120 mm (W x L x H)EnvironmentOperating Temp25 °C ~+75 °CStorage Temp30 °C ~+80 °C	Power			
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Operating Temp. $-25 \ ^{\circ}C \ \sim +75 \ ^{\circ}C$ Storage Temp. $-30 \ ^{\circ}C \ \sim +80 \ ^{\circ}C$	Dimensions	25 mm x 116 mm x 120 mm (W x L x H)		
Storage Temp. $-30 \degree C \sim +80 \degree C$	Environment			
	Operating Temp.	-25 °C ~+75 °C		
	Storage Temp.	-30 °C ~ +80 °C		
Humidity 5% ~ 95% RH, non-condensing	Humidity	5% ~ 95% RH, non-condensing		

## Applications



## Ordering Information

**HRT-310 CR** 

Modbus RTU/ASCII to HART Gateway (Upright) (RoHS)