

HART Products



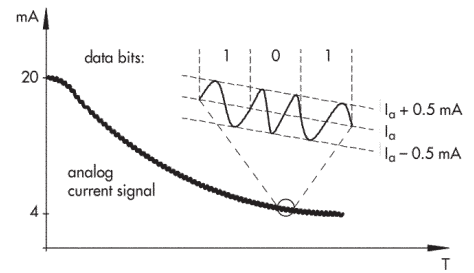
7.1. HART Introduction & Products

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7.1. Overview

HART Field Communications Protocol extends this 4 ~ 20 mA standard to enhance communication with smart field instruments. The protocol preserves the 4 ~ 20 mA signal and enables two-way digital communications to occur without disturbing the integrity of the 4 ~ 20 mA signal. Unlike other communication technologies, the HART protocol can maintain compatibility with existing 4 ~ 20 mA systems with a uniquely backward compatible solution. Here are two main operational modes of HART instruments: analog/digital mode, and multi-drop mode.

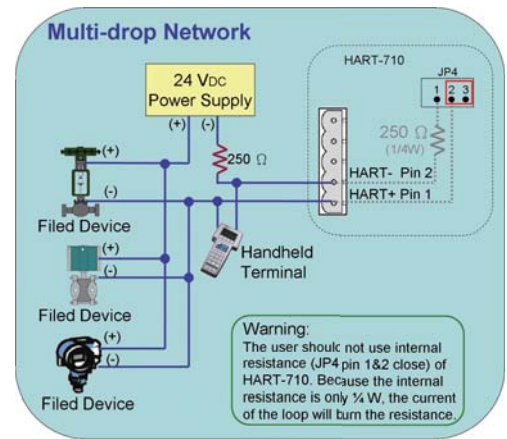
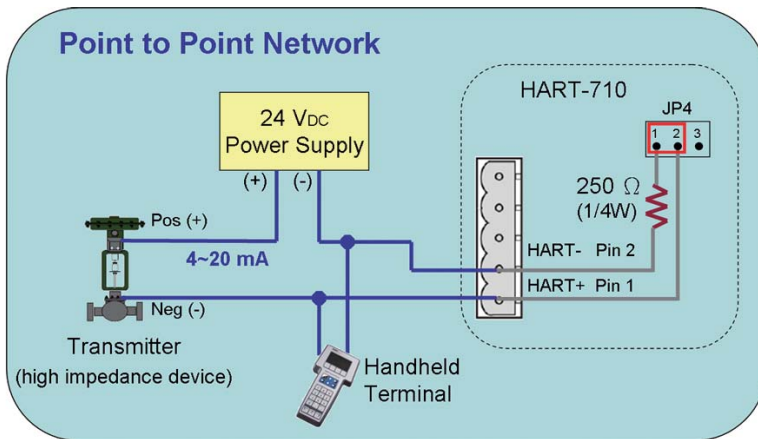


➤ Peer-to-Peer mode

The analog and digital signals can be communicated in this mode. Here the digital signals are overlaid on the 4 ~ 20 mA loop current. Both the 4 ~ 20 mA current and the digital signal are valid output values from the instrument. The polling address of the instrument is set to "0". Only one instrument can be put on each instrument cable signal pair.

➤ Multi-drop mode (digital)

In this mode, only the digital signals are used. The analog loop current is fixed at 4 mA. In multi-drop mode it is possible to have up to 15 instruments on one signal cable. The polling addresses of the instruments will be in the range 1 ~ 15. Each meter needs to have a unique address.



➤ HART Features

- Relatively easy to understand and use, the HART protocol provides access to the wealth of additional information (variables, diagnostics, calibration, etc.)
- HART is a no risk solution for enhanced field communication
- Compatibility with standard 4 ~ 20 mA wiring
- Simultaneous transmission of digital data
- Risk reduction through a highly accurate and robust protocol
- Increase plant Availability
- Improve regulatory compliance

• HART Series Selection Guide

| Product | | Interface | Description |
|-----------------|----------|-------------------------------------|---|
| HART Converters | I-7567 | HART master <--> USB | USB to HART master converter |
| | I-7570 | HART master <--> RS-232/RS485/RS422 | HART to RS-232/RS-485/RS-422 converter |
| HART Gateways | HART-710 | HART master <--> RS-232/RS485/RS422 | HART master to Modbus RTU/ASCII slave gateway |
| | GW-7557 | HART master <--> PROFIBUS DP slave | PROFIBUS slave to HART master gateway |
| HART Modules | I-87H17W | HART master, 8 current inputs | 8-ch current input HART master module |
| | I-87H24W | HART master, 4 current outputs | 4-ch current output HART master module |

• HART Converters

USB to HART Master Converter

I-7567 CR

NEW



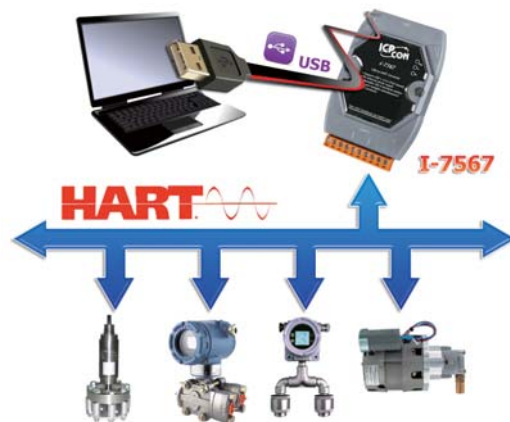
The USB interface is comprehensive applied in PCs and notebooks. In order to touch the users' requirements more closely, the I-7567 is presented. It is a USB to HART converter specially designed as the master device of HART protocol. Through it, users can easily to access the HART network via USB port which is implemented as a virtual COM port on PCs or notebooks. Because the I-7567 is powered by the USB interface, the external power is not necessary. Moreover, the I-7567 provides the Utility tool which is helpful for diagnosing and configuring the HART network. If you would like to develop a HART network, the I-7567 will be a good tool to reduce your setup costs.

Features

- Support HART Short/Long frame
- Support HART Burst mode
- Allow two HART masters
- Support the in point-to-point or multi-drop HART network mode
- Allow to connect with max. 15 HART modules
- Provide selectable 250 Ω load resistor
- Compatible with USB 1.1 and 2.0 standards
- Powered by USB (external power is not necessary)
- Support firmware update via USB
- Provide utility tool for module configuration
- Built-in watchdog
- 4 kV ESD protection
- 3000 Vdc intra-module isolation

Utility Features

- Easily transmit/receive HART command for testing
- Provide HART device diagnostic information
- Provide module parameter configuration



HART to RS-232/RS-485/RS-422 Converter

I-7570 CR

NEW



The I-7570 is a Serial to HART converter specially designed as the master device of HART protocol. By using I-7570, the HART devices, such transmitters, actuators, gauges, meters, and the current output devices, can be easily integrated into the HMI/PLC/PC devices via serial port which may be RS-232/RS-422/RS-485 interface. In order to diagnose and configure the HART network more easily, the I-7570 Utility tool with friendly configuration interface is given. It is helpful for diagnosing and configuring the HART network. Through it, you can build a HART network more easily and quickly.

Features

- Support HART Short/Long frame
- Support HART Burst mode
- Allow two HART masters
- Support the in point-to-point or multi-drop HART network mode
- Allow to connect with max. 15 HART modules
- Provide selectable 250 Ω load resistor
- Isolated COM 1: 3-wire RS-232/RS-422/RS-485
- Support firmware update via COM1
- Provide utility tool for module configuration
- Provide PWR/RUN/ERR LED indicators
- Built-in watchdog
- 4 kV ESD protection
- Mountable on DIN Rail

Utility Features

- Easily transmit/receive HART command for testing
- Provide HART device diagnostic information
- Provide module parameter configuration



• HART Gateways

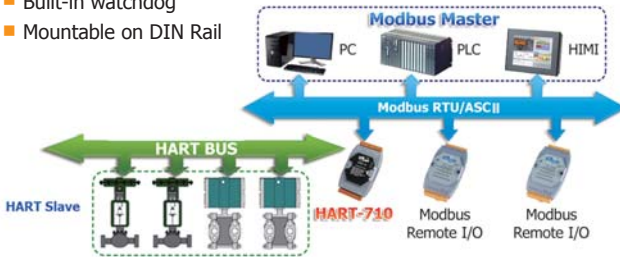
HART Master to Modbus RTU/ASCII Slave Gateway

HART-710 CR
NEW



The HART-710 is a HART master to Modbus slave gateway. It provides an economic solution for Modbus master device to access the HART slave devices. In order to diagnose and configure the HART network more easily, the HART-710 Utility tool with friendly configuration interface is given.

- Support HART Short/Long frame
- Support HART Burst mode
- Allow two HART masters
- Support the in point-to-point or multi-drop HART network mode
- Allow to connect with max. 15 HART modules
- Support Modbus RTU and ASCII format
- Modbus Function Code: 01, 02, 03, 04, 05, 06, 15 and 16
- Isolated COM 1: 3-wire RS-232/RS-422/RS-485
- Built-in watchdog
- Mountable on DIN Rail



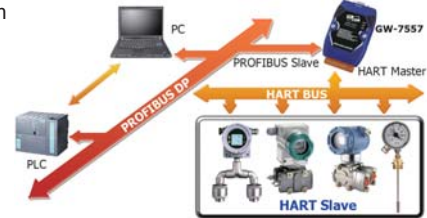
PROFIBUS Slave to HART Master Gateway

GW-7557 CR
NEW



The GW-7557 is designed for the slave device of PROFIBUS DP protocol. It allows the PROFIBUS master to access the HART slave devices. These HART devices may be a transmitter, an actuator, a current output device and so forth. Owing to the GW-7557, you can put the HART slave devices into PROFIBUS network very easily.

- Protocol: PROFIBUS DP-V0 slave
- Detect transmission rate (9.6 to 12000 kbps) on PROFIBUS automatically
- 240 bytes max. input data length
- 240 bytes max. output data length
- PROFIBUS address 0 ~ 126 set by DIP switch
- Support HART mode: point-to-point/multi-drop
- Support 4 HART channels, each for max. 15 HART modules
- Support HART Short/Long frame
- Network isolation protection: 2500 Vrms high speed iCoupler
- 3000 Vdc isolation protection on PROFIBUS side



• HART Modules

8-ch Current Input HART Master Module

I-87H17W CR
NEW



The I-87H17W is an 8-ch HART analog input module. It can measure 4~20 mA current and act as a HART master, allowing communication with HART field devices. Users can measure current directly without any external resistor. The I-87H17W adopts DCON protocol and can be used in WinPAC, ViewPAC, XPAC, LinPAC and iPAC series PAC.

- Support HART Short/Long frame
- Support HART Burst mode
- Allow two HART masters
- Support the in point-to-point or multi-drop HART network mode
- Allow to connect with max. 15 HART modules
- Support 4 ~ 20 mA current input
- 2-wire or 4-wire transmitters of HART
- Support DCON protocol
- Open wire detection
- 4 kV ESD protection, and 2500 Vdc intra-module isolation



4-ch Current Output HART Master Module

I-87H24W CR
Available soon



The I-87H24W is a 4-ch HART analog output module. It can output 4~20 mA current and be as a HART master, allowing communication with HART field devices. The I-87H24W supports DCON protocol defined by ICP DAS, and can be used in WinPAC, ViewPAC, XPAC, LinPAC and iPAC series PAC.

- Support HART Short/Long frame
- Support HART Burst mode
- Allow two HART masters
- Support the in point-to-point or multi-drop HART network mode
- Allow to connect with max. 15 HART modules
- Support 4 ~ 20 mA current output
- 2-wire transmitters of HART
- Support DCON protocol
- Open wire detection
- 4 kV ESD protection, and 2500 Vdc intra-module isolation

