

HART Multi-drop Network Interface Module for Quantum, non-CE PTQ-HART

The PTQ-HART Multi-drop Master Communication Module allows Modicon[®] Quantum processors to interface easily with HART-compatible devices, such as pressure, temperature, and flow transmitters. HART protocol devices and instruments are becoming increasingly popular for use in all kinds of process control and automation applications in a wide variety of industries.

The PTQ-HART module provides data exchange between slave devices on the HART network and the Quantum processor using the module's internal 5000 register database. Data is transferred to and from the module's memory and the processor's internal state RAM.

The PTQ-HART module is the perfect solution for industrial applications in chemical and refining operations, gas and liquid distribution systems, and remote offshore monitoring stations are addressing virtually all aspects of control, data acquisition, and maintenance. HART[®] is a registered trademark of the HART Communication Foundation.



Features

Benefits

Flexible Interfacing Options

- ◆ The PTQ-HART module interfaces up to 15 devices on each of four HART Multi-drop channels with a Quantum processor. The four ports on the module support HART master commands to interface with slave devices on their own networks. Each port is individually configurable. Compatible devices include a large array of field devices including pressure, temperature, metering, and many other instruments.

Data Exchange

- ◆ Data is exchanged between the HART network and the Quantum processor state RAM using the internal database contained in the module. The database is user-defined and stored in the module to hold the data required by the protocol.

Backed by ProSoft Technology[®]

- ◆ Industrial data communications experts who understand your protocols, devices, and applications
- ◆ Three year standard warranty

Configuration

ProSoft Configuration Builder (PCB) provides a PC-based software configuration solution for quick and easy management of module configuration files, as well as viewing communication and network diagnostics.

PCB is not only a powerful solution for new configuration files, but also allows you to import information from previously installed (known working) configurations into new projects.

General Specifications

- Single Slot - Quantum backplane compatible
- The module is recognized as an Options module and has access to PLC memory for data transfer
- Configuration data is stored in non-volatile memory in the ProTalk® module
- Configuration software for Microsoft Windows XP, 2000 and NT is included with the module
- Up to four modules can be placed in a rack
- Local rack - The module must be placed in the same rack as processor
- Compatible with all common Quantum programming packages, including Concept (version 2.6 or higher), Unity Pro (version 2.2 or higher), ProWORX (version 2.20 or later), and ModSoft.
- Quantum data types supported: 3x, 4x
- High speed data transfer across backplane provides quick data update times
- Sample ladder file available

Functional Specifications

The PTQ-HART module supports the HART Multi-drop implementation of the protocol. Following are some general specifications for the module:

- Built in accordance to the HART Bell 202 Frequency Shift Keying (FSK) standard to superimpose digital signals at a low level on top of the 4 to 20mA
 - Four independent HART master ports that are completely user-configurable
 - Supports up to 15 devices per port
 - Point-to-point (slave address 0), and Multi-drop (slave address 1 to 15) modes supported
- Supports 99 universal and common practice commands per port to control and monitor devices with integer, IEEE754 floating-point and packed ASCII character string data blocks
- Burst mode can be used for faster update of data from a single slave
- Supports an auto polling feature that will automatically collect data from each HART instrument on the channel and store the data in the module database
- Communication ports can be configured as a secondary master (that is, handheld configuration device)

Protocol Supported: HART protocol uses the Bell 202 standard frequency shift-keying (FSK) digital signal to communicate at 1200 baud, superimposed at a low level on the 4 to 20mA analog measurement signal. The PTQ-HART module supports version 5 of the HART protocol.

Supported Function Codes: HART Universal Commands Set supported are 00 to 03, 06 to 09, and 11 to 22. HART Common Practice Commands Set supported are 33 to 83 and 105 to 110.

HART Network Communications: Supports four master channels. Each channel on the module is configured independently to emulate a HART master. Burst mode can be used for faster update of data from a slave device.

Command polling is also user-configurable, including disabled, continuous, on change of data (write only), and dynamically user or automatic enabled.

Status: Error codes returned by the HART protocol available on an individual command basis. In addition, a slave status list is maintained per active channel.



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Hardware Specifications

Specification	Value
Backplane Current Load	1100 mA maximum @ 5 Vdc ± 5%
Operating Temperature	0°C to 60°C (32°F to 140°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Relative Humidity	5% to 95% (without condensation)
Vibration	Sine vibration 4-100 Hz in each of the 3 orthogonal axes
Shock	30g, 11 msec. in each of the 3 orthogonal axes
Dimensions (HxWxD), Approx.	250 x 103.85 x 40.34 mm 9.84 x 4.09 x 1.59 in
LED Indicators	Module Status Backplane Transfer Status Serial Port Activity Serial Activity and Error Status

Debug/Configuration Port (Debug)

CFG Port (DEBUG)	DB-9M PC Compatible RS-232 only No hardware handshaking
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Application Ports

App Port	HART terminal connector
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Agency Approvals & Certifications

CSA/cUL	C22.2 No. 213-1987
CSA CB Certified	IEC61010
ATEX	EN60079-0 Category 3, Zone 2 EN60079-15



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Additional Products

ProSoft Technology® offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms. For a complete list of products, visit our website at: www.prosoft-technology.com

Ordering Information

To order this product, please use the following:

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PTQ-HART

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