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HART Multi-drop Master Communication Module

MVI71-HART

The MVI71 HART Multi-drop Master Communication Module is a PLC backplane-compatible module that allows PLC processors to interface easily with HART compatible devices. Devices commonly supporting the protocol include pressure, temperature, flow transmitters, as well as other similar instruments commonly found in the process (and other) industry.

HART® is a registered trademark of the HART Communication Foundation

Features and Benefits

The MVI71-HART Master Communication Module allows Rockwell Automation PLC I/O compatible processors to easily communicate with HART slave devices. The MVI71-HART module interfaces up to 15 devices on each HART channel with the Rockwell Automation PLC processor. Four channels on the module support master protocol commands to interface with slave devices on their own networks. Each port is individually configurable. Data is exchanged between the HART network and the Rockwell Automation PLC processor backplane using the internal database contained in the module and direct control by the controller's ladder logic and pre-defined data objects (5000 registers maximum).

The MVI71-HART module is the perfect solution for industrial applications in chemical and refining operations, to gas and liquid distribution systems, and remote offshore monitoring stations are addressing virtually all aspects of control, data acquisition, and maintenance.

General Specifications

- Single Slot – 1771 backplane compatible
- The module is recognized as an Input/Output module and has access to processor memory for data transfer between processor and module
- Ladder Logic is used for data transfer between module and processor. Sample ladder file included.
- Configuration data obtained from configuration text file downloaded to module. Sample configuration file included.

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The HART protocol is supported by major instrument suppliers and the HART Communication Foundation (HCF).

Today, HART is the most widely used digital communications protocol for instruments in the process control industry. More than 105 manufacturers support HART with a choice of more than 170 different field instruments.

How to Contact Us: Sales and Support

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Hardware Specifications

Specification	Description
Form Factor	Single Slot 1771 chassis compatible BTR/BTW data transfer Local or remote rack
Backplane current load	800 mA @ 5 V
Operating temperature	0 to 60°C (32 to 140°F)
Storage temperature	-40 to 85°C (-40 to 185°F)
Shock	30g operational 50g non-operational
Vibration	5 g from 10150 Hz
Relative humidity	5 to 95% (non-condensing)
LED Indicators	Module status Backplane transfer status Application status Serial activity and error LED status
Debug/Configuration port (CFG)	
CFG Port (P1)	RJ45 (DB-9M with supplied cable) RS-232 only
Configuration Connector	RJ45 RS-232 Connector (RJ45 to DB-9 cable shipped with unit)
Application Ports	
Application Serial port (P2, P3) (Serial Modules)	(2) RJ45 RS-232/422/485 Application ports

Functional Specifications

The MVI71-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) or 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.

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.

Additional Products

ProSoft Technology offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms.

Visit our web site at <http://www.prosoft-technology.com> for a complete list of products.