

DATASHEET

HART Multi-drop Master Communication Module MVI69-HART

The MVI69-HART Multi-drop Master Communication Module is designed to allow CompactLogix / MicroLogix 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.

The MVI69-HART Master Communication Module allows Rockwell Automation CompactLogix / MicroLogix compatible processors to easily communicate with HART slave devices. The MVI69-HART module interfaces up to 15 devices on each HART channel with the processor. HART 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 CompactLogix / MicroLogix processor backplane using the internal database contained in the module and direct control by the processor's ladder logic and pre-defined data objects (5000 registers maximum).

The MVI69-HART module is the perfect solution for industrial applications in chemical and refining operations, gas and liquid distribution systems, and remote offshore monitoring stations, addressing virtually all aspects of control, data acquisition, and maintenance.

HART[®] is a registered trademark of the HART Communication Foundation.



Features

- ◆ Single-slot - 1769 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 memory and processor controller tags. A sample ladder file with AOI is included
- ◆ Configuration data obtained from configuration text file downloaded to module. A sample configuration file is included.
- ◆ Supports CompactLogix and MicroLogix 1500 LRP Controllers except 1769-QBFC1B, 1769-L16x, and 1769-L18x

Functional Specifications

The MVI69-HART module supports the HART Multi-drop implementation of the protocol. Following are some general specifications for the module:

- Built 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 20 mA
 - Two 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 20 mA analog measurement signal. The MVI69-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 two 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	Description
Dimensions	Standard 1769 single-slot module
Current Load	800 mA max @ 5 VDC Power supply distance rating of 2 (L43 and L45 installations on first 2 slots of 1769 bus)
Operating Temp.	0°C to 60°C (32°F to 140°F)
Storage Temp.	-40°C to 85°C (-40°F to 185°F)
Relative Humidity	5% to 95% (with no condensation)
LED Indicators	Power and Module Status Application Status HART Channel Status Serial Port Activity Serial Activity and Error Status
Debug/Configuration Port (CFG)	
CFG Port (CFG)	RJ45 (DB-9M with supplied cable) RS-232 only No hardware handshaking
Application Port	
App Port	HART terminal connector

Agency Approvals and Certifications

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MVI69-HART

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