ControlLogix HART I/O Modules

Simplify commissioning, operation and maintenance.

Key Benefits

- **Convenience: Simplify Loop Checkout** – the modules allow you to configure and monitor the analog and digital data from all of your HART® devices from a remote workstation. All data for a channel is visible via a single location.
- **Exceptional Value** – the field devices can be interfaced directly to these I/O modules, eliminating the need for additional HART multiplexers, lowering installation costs.
- **Flexibility** – the modules have a variety of selectable features, such as range, timestamping and filter frequencies. Modules are suited for control and asset analog data and management applications.

Features

- HART Primary Value (PV), Secondary Value (SV), Third Value (TV) and Fourth Value (FV) are directly available for use in control applications as Controller tags
- HART 5, 6 and 7 read/write capability
- Pass Through support for asset management software
- Device Type Manager (DTM) for use with Asset Manager software

1756- IF8IH and -OF8IH are 8-channel isolated modules with a dedicated HART modem per channel.

HART COMMUNICATION PROTOCOL

Leveraging the Power of New or Existing HART Field Devices While Protecting Your Investments

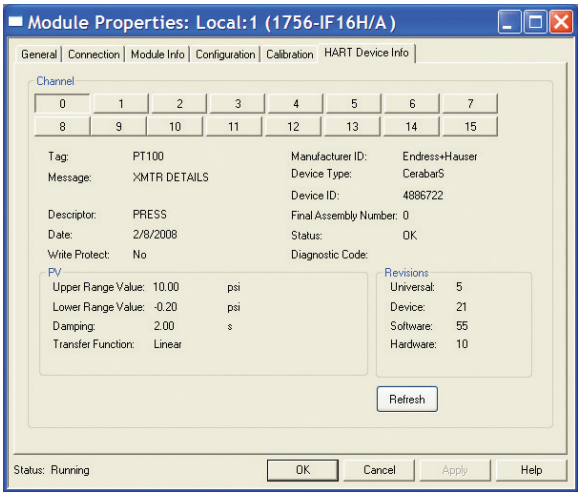
Highway Addressable Remote Transducer (HART) input and output modules provide your process automation system with full analog capability and the benefit of HART protocol in an I/O module that can be used locally or mounted remotely. The modules offer 8 or 16 channels of analog input or output data with accompanying HART digital information.

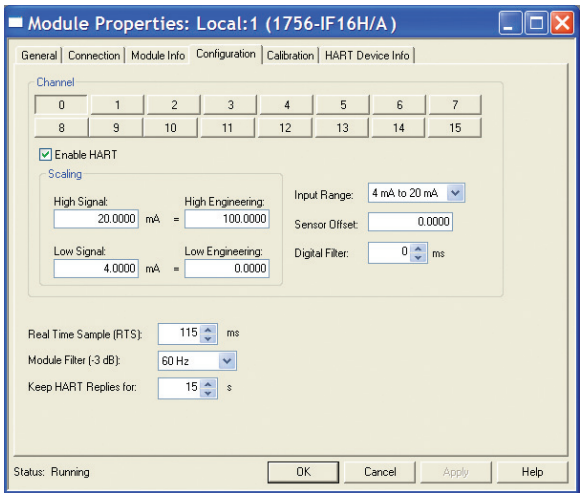
If you have a process application that contains HART field devices, the ControlLogix® HART modules enable you to leverage your existing instrumentation investment by allowing you to:

- Connect directly to HART devices without external HART multiplexers or extra wiring
- Provide access to more field device data, such as HART Primary Value, Secondary Value, Third Value, Fourth Value and device status information
- Manage HART devices individually that are connected directly to the modules
- Document the device wired to each channel

Lowering Your Operating Costs

The ControlLogix HART modules maximize your system performance by combining real-time HART data with standard analog data at a fraction of the cost. Simplify commissioning, operation and maintenance with increased insight to device status. You can use the digital data as the foundation of your asset management system.

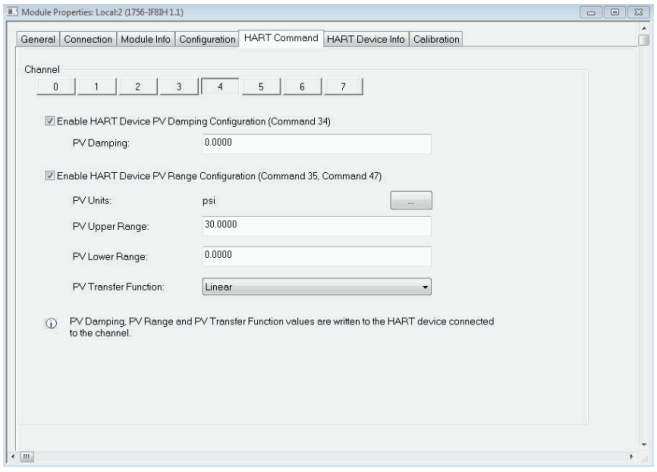




Each channel can be scaled with engineering units, filtering and real-time sample rate. Each channel is selectable for "current only" or "current and HART" for increased information availability. There is no need for application code to access the HART data. PV, SV, TV, FV and the associated status tags are in the module data structure.

You can see HART device configuration and diagnostic information in Studio 5000 Automation Engineering & Design Environment™ software. You can also view device information and verify which device is wired to a specific channel. The HART device tags, manufacturer and descriptor are visible for each channel. Additionally, to aid maintenance and troubleshooting activities, the device status and diagnostic code is available without a handheld device. Simply locate the device in its mounting position and connect directly.

From the Device Info tab for the 1756-IF8IH and 1756-OF8IH Modules, Device Tag, Message and Descriptor can be configured.



The Command Tab for the 1756-IF8IH and 1756-OF8IH module allows you to specify HART device parameters for each channel, like PV Units, Range and Dumping by using the HART device parameters for each channel.

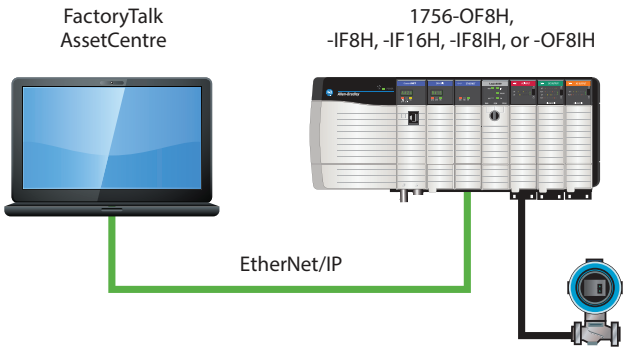
FactoryTalk AssetCentre for Asset Management

The FactoryTalk® AssetCentre software includes everything needed for effective asset management of HART field devices. It includes the communication DTMs and drivers needed to configure and manage HART instruments attached to the PlantPAx® Process Automation System. Because the asset management software is based on the open Field Device Tool (FDT) standard (IEC-62453 and ISA103), you can configure and manage any HART device using this software. Simply load the software onto a computer residing on the control network and you're ready to go. Configure, calibrate, tune, analyze and optimize HART devices connected to 1756 HART I/O modules installed in your PlantPAx Process Automation System from a central location.

FactoryTalk AssetCentre Process Device Configuration provides a single location to perform both offline and online modification of the HART device parameters. Device status and alarms from various devices can also be easily monitored. The ability to upload and download HART device configurations allows for faster replacement of failed devices to get your plant back up and running.

FDT Group

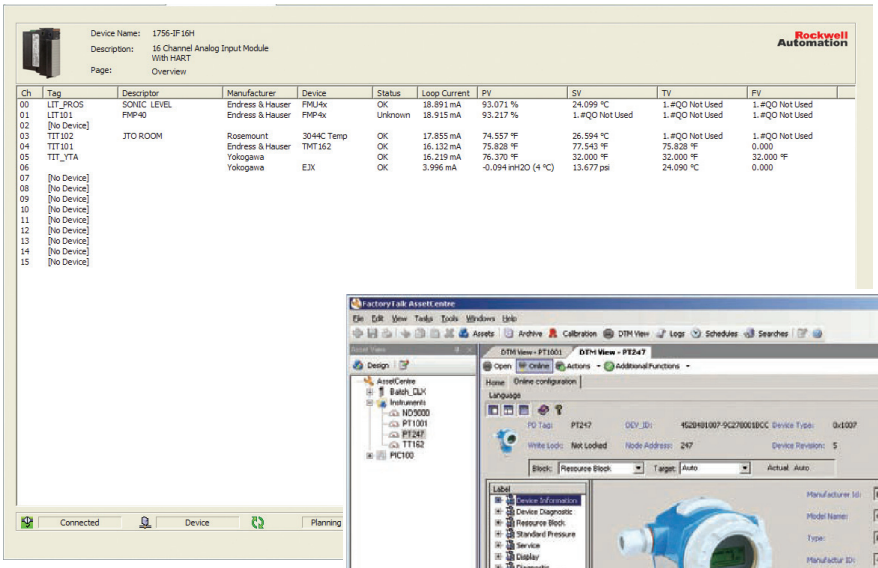
Asset Management

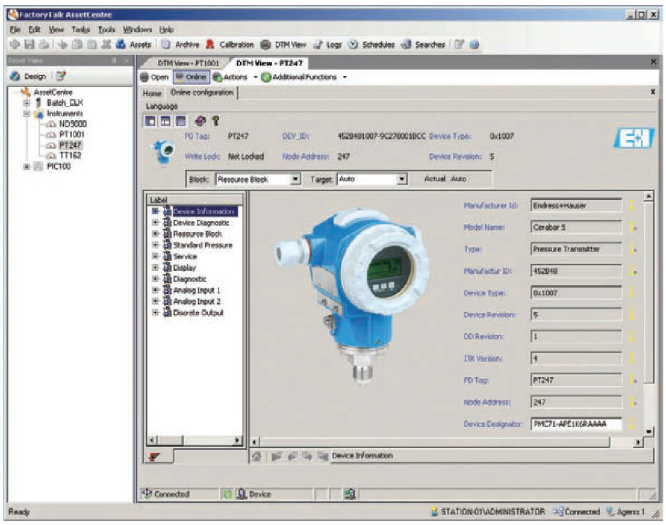


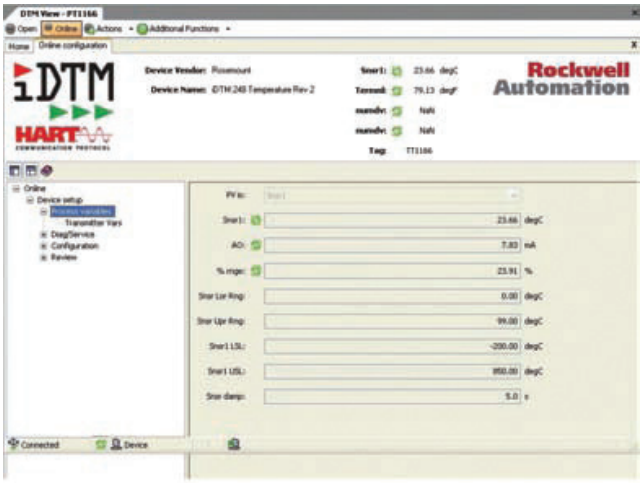
FDT Technology standardizes the communication interface between field devices and host systems to reduce integration efforts. FactoryTalk AssetCentre Process Device Configuration is enabled by FDT Technology.

FactoryTalk AssetCentre optional capabilities extend the value of your PlantPAx Process Automation System and allow you to optimize your investments.

DTM modules provide access to the device and also allow a quick overview of all devices connected to the module with the associated device, process data and diagnostics.







DTM device drivers can be obtained directly from the device manufacturer (for example, Endress+Hauser, Metso, Dresser Mason Neilson and others) for online configuration or for advanced device configuration. The iDTM can also be used when the device manufacturer does not supply DTMs for asset management solutions.

Specifications	1756-OF8H	1756-IF8H	1756-IF16H	1756-IF8IH	1756-OF8IH
Number of Channels	8 voltage or current outputs, 1 HART modem per module	8 differential voltage or current inputs, 1 HART modem per module	16 differential current inputs, dedicated HART modem per channel	8 current inputs	8 current outputs
Input Range	± 10V voltage 0...20 mA, 4...20 mA current	0...5V, 1...5V,0...10V, ± 10V voltage 0...20 mA, 4...20 mA current	0...20 mA, 4...20 mA		
Resolution	15...16 bits for all ranges	16...21 bits for all ranges	16...21 bits		15 bits across 24 mA
Compatible With	HART 5, 6, 7				
Module HART Scan Time	Analog: 12 ms min. floating point. HART: typically 1 s per HART channel enabled. Estimate 10 s if all 8 channels have HART enabled.	Analog: 18...488 ms (filter dependent). HART: typically 1 s per HART channel enabled. Estimate 10 s if all 8 channels have HART enabled.	HART: Estimate 1 s if all 16 channels are enabled.	HART: Estimate 1 s if all 8 channels are enabled.	
	Pass through messages, handheld communications, secondary masters, communication errors, or configuration changes can significantly increase the update time.				
Open Circuit Detection Time	Current output only (output must be set to <0.1 mA)	5 s	Within 5 s	5 s (4...20 mA range only)	Current output only (output must be set >= 0.1 mA)
Overvoltage Protection	± 24V DC	30V DC voltage 8V DC current	8V DC	+28.8V DC	±24V DC
Impedance	—	—	249 Ω	250 Ω ±5 Ω	—
Isolation Voltage	50V (continuous), basic insulation type Tested at 1500V AC for 60 s, I/O to backplane			250V AC rms working voltage(1)	250V AC working voltage 0.15% @ 4. . .20 A. Basic insulation, channel to channel and channel to FGND, tested at 2121V DC for one min Reinforced insulation, channel to backplane, tested at 3535V DC for one min
Calibrated Accuracy at 25 °C (77 °F) with HART Disabled	Better than 0.1% of range for voltage outputs 0.15% of range for current outputs	Better than 0.05% of range - voltage Better than 0.15% of range - current	Better than 0.13% of range (all filters)	0.15% - 1.5% of full scale, depend of selected filter	0.15% @ 4...20 mA
Calibration Interval	12 months typical				
Temperature Code	North American: T4A IEC: T4	North American: T4A IEC: T4	North American: T5 IEC: T4	North American: T5 IEC: T4	North American: T4 IEC: T4
Enclosure Type Rating	None (open style)				
RTB and Housing	1756-TBNH or TBSH	1756-TBCH 1756-TBS6H			
Relative Humidity	5...95% non-condensing			80...95% condensing, 20-60-20 °C temperature cycle (68-140-68 °F temperature cycle)	
Certification	C-UL-us, CE, RCM, Ex, KC, EAC				
DTM Supported	Yes				

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