

1756-IF8H, -OF8H and -IF16H HART 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 your HART devices from a single workstation. All data for a channel visible in single location.
- **Exceptional Value** – the field devices can be interfaced directly to these high density 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 well suited for control and asset analog data and management applications.

Features

- HART Primary Value (PV), Secondary Value (SV), Third Value (TV), Fourth Value (FV) are directly available for use in control application as Controller tags.
- HART 5, 6 and 7 read/write capability
- Pass Through support for asset management software
- DTM (Device Type Manager) for use with Asset Manager software
- Rated to SIL 2

HART
COMMUNICATION PROTOCOL



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

HART input and output modules provide your process automation system with full analog capability and the benefit of HART® (Highway Addressable Remote Transducer) 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:

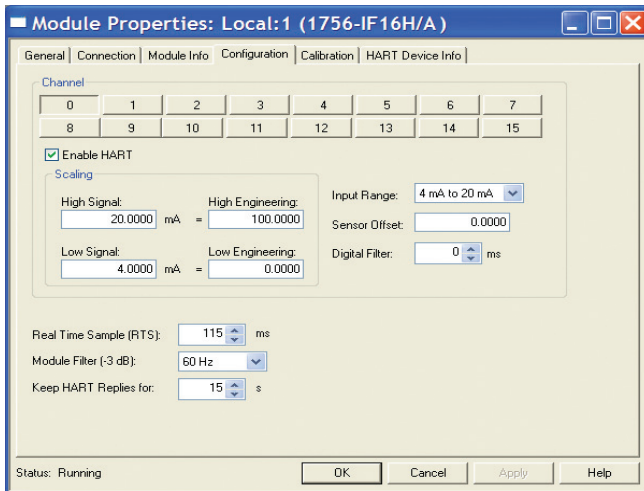
- Connecting directly to HART devices, without the need for external HART multiplexers or additional wiring
- Providing access to more field device data, such as HART Primary Value, Secondary Value, Third Value, and Fourth Value, as well as device status information
- Individually managing HART devices connected directly to the modules
- Documenting device wired to each channel

Lowering Your Operating Costs

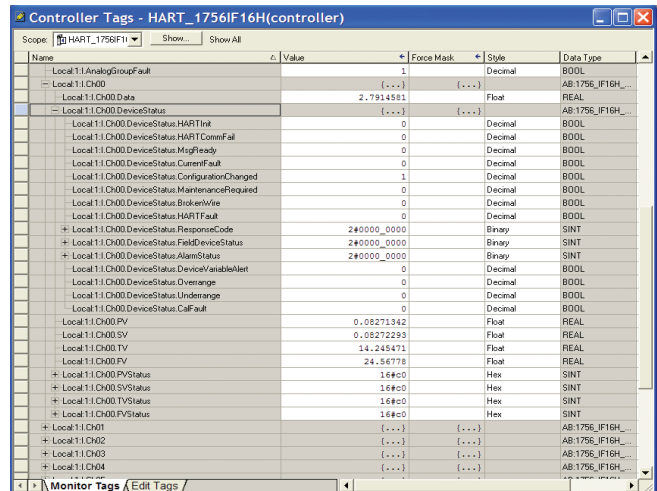
The ControlLogix HART modules maximize your system performance by combining real-time HART data with standard analog data — at a fraction of the cost. Simplify commissioning, operation, and maintenance with additional insight to device status. You can use the digital data as the foundation of your asset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

LISTEN.
THINK.
SOLVE.™

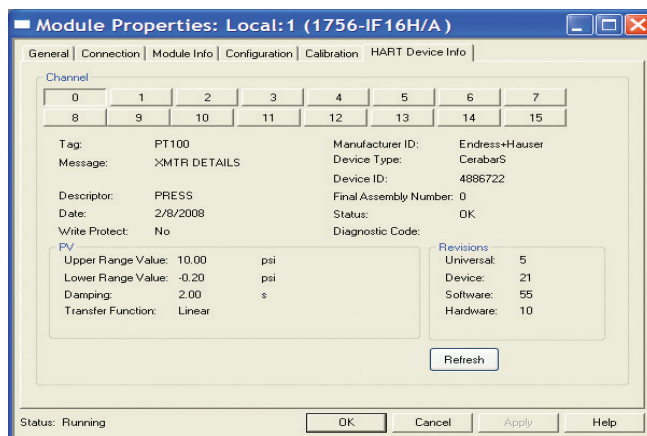
Leverage the Additional Process Data Provided by the HART Communication Protocol



Each channel can be scaled with engineering units, filtering, and real-time sample. Each channel is selectable for current only for improved performance 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 are tags in the module data structure. You can easily use HART data for each variable as part of your control strategy.



You can see HART device configuration and diagnostic information in RSLogix® 5000 engineering software. You can view device information and verify which device is wired to an analog 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 all without the need to grab a handheld, locate the device in its mounting position, and directly connect to the device.

FactoryTalk AssetCentre for Asset Management

The asset management software includes all you need for effective asset management of HART field devices. It includes the communication DTMs and drivers you need to configure and manage HART instruments attached to the PlantPAx Process Automation system. Because the asset management software is based on the open FDT standard (IEC-62453 and ISA103), you can configure and manage any HART device using this software. Simply

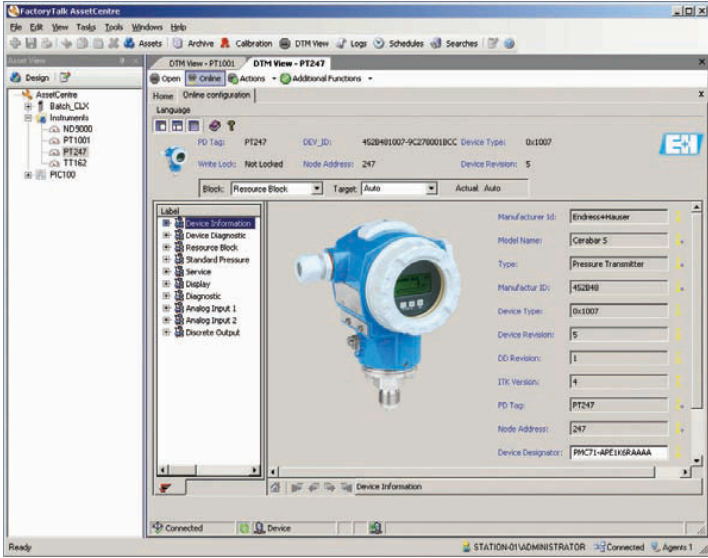
load the software onto a PC residing on the control network and you're ready to go. Configure, calibrate, tune, analyze, and optimize HART devices connected to 1756 HART analog I/O modules installed in your PlantPAx process automation system from a central location.

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 a variety of devices can also be monitored easily. The ability to upload and download HART device configurations allows for faster replacement of failed devices to get your plant back up and running.

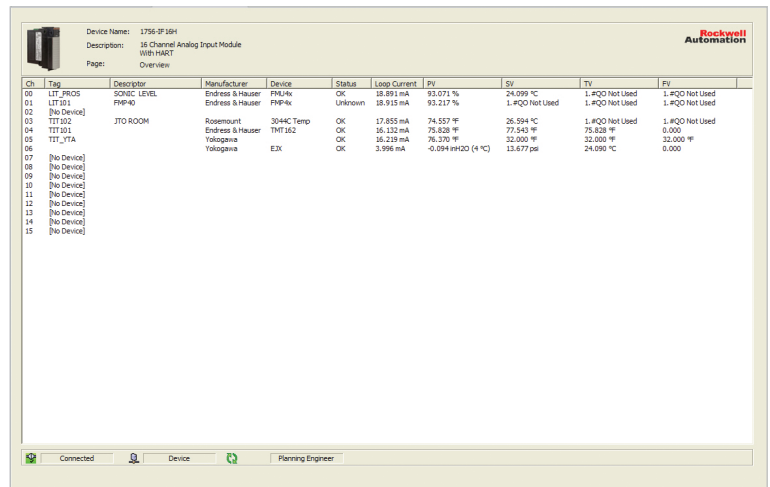


Asset Management



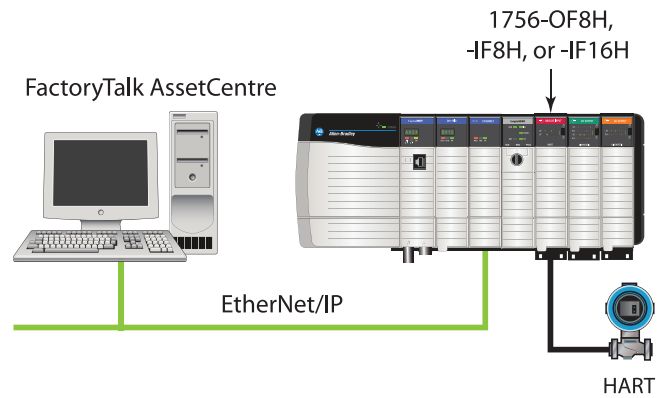
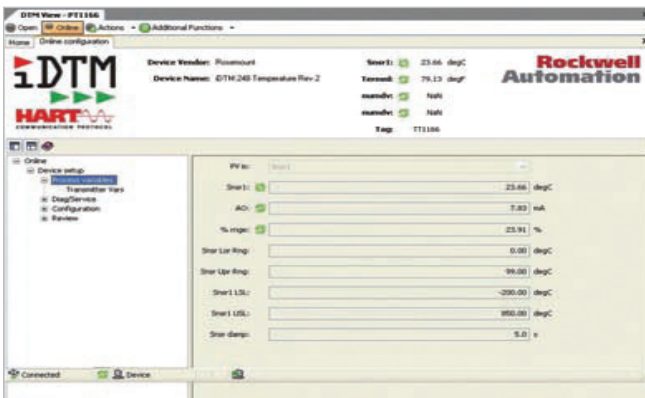
FactoryTalk AssetCentre Process Device Configuration is enabled by FDT Technology. FDT Technology standardizes the communication interface between field devices and host systems to reduce integration efforts.

The DTM Catalog makes it easy to manage all the DTMs registered within the FactoryTalk AssetCentre server. From the DTM Catalog, you can enable, disable or view installed DTMs. The DTM Catalog includes the complete Endress+Hauser Device Family.



For online configuration or for advanced device configuration, DTM device drivers can be obtained directly from the device manufacturer, e.g., Endress+Hauser, Metso, Dresser Mason Neilson, etc. or the iDTM can be used when the device manufacturer does not supply DTMs for asset management solutions.

FactoryTalk® AssetCentre optional capabilities extend the value of your PlantPAx process automation system and allow you to optimize your investments.



Specifications	1756-0F8H	1756-IF8H	1756-IF16H
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
Backplane Current	200 mA @5.1V 230 mA @24V (Total backplane power 6.54 W)	300 mA @5.1V 70 mA @24V (Total backplane power 3.21 W)	200 mA @ 5V 125 mA @ 24V (Total backplane power 3.21 W)
Power Dissipation within Module, Max.	4.92 W - 8 channel current 16.78 BTU/hr	3.21 W - 4.01 W current 11.0 BTU/hr, 13.7 BTU/hr current	6 W
Thermal Dissipation	16.78 BTU/hr	13.7 BTU/hr	12 BTU/hr
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
Compatible With	HART 5, 6, 7	HART 5, 6, 7	HART 5, 6, 7
Module HART scan time	Analog: 12 ms minimum floating point. HART: typically 1 second per HART channel enabled. Estimate 10 seconds if all 8 channels have HART enabled. Pass through messages, handheld communications, secondary masters, communication errors, or configuration changes can significantly increase the update time.	Analog: 18...488 msec (filter dependent). HART: typically 1 second per HART channel enabled. Estimate 10 seconds if all 8 channels have HART enabled. Pass through messages, handheld communications, secondary masters, communication errors, or configuration changes can significantly increase the update time.	HART: Estimate 1 second if all 16 channels are enabled. Pass through messages, handheld communicators, 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 <0.1mA)	5 seconds	Within 5 seconds
Overvoltage Protection	± 24V dc	30V dc voltage 8V dc current	8V DC
Impedance	>2 K Ω @ 10.4V voltage 50...750 Ω drive current	>1 M Ω voltage 250 Ω current	249 Ω
Isolation Voltage	50V (continuous), basic insulation type Tested at 1500V ac for 60 seconds, I/O to backplane	50V (continuous), basic insulation type Tested at 1500V ac for 60 seconds, I/O to backplane	50V (continuous), basic insulation type, tested at 1500V AC for 60 seconds, I/O to backplane
Calibrated Accuracy at 25° C (77° F)	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)
Calibration Interval	Twelve months typical	Twelve months typical	Twelve months typical
Temperature Code	North American: T4A IEC: T4	North American: T4A IEC: T4	North American: T5 IEC: T4
Enclosure Type Rating	None (open style)	None (open style)	None (open style)
RTB and Housing	20-position RTB (1756-TBNH or TBSH) ²	36-position RTB (1756-TBCH or TBS6H) ²	36-position RTB (1756-TBCH or TBS6H) ²
Relative Humidity	5...95% non-condensing	5...95% non-condensing	5...95% non-condensing
Certification ¹	c-UL-us, CE, FM, CE, C-Tick, EEx	c-UL-us, CSA, FM, CE, C-Tick, EEx	c-UL-us, CE, C-Tick, Ex

¹ See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

² Maximum wire size requires the extended housing - 1756-TBE

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