

FieldPort Analog+HART I/O Industrial Ethernet I/O Modules with HART Protocol



Exploit the power of your existing HART field instruments with Spectrum Controls FieldPort FPIO-I8H and FPIO-O8H modules with HART protocol.

Obtain real-time data from your process instruments and operate a *smart* network—without the need for additional wiring.

Easily perform setup, calibration, commissioning and periodic maintenance functions.

The FPIO-I8H Analog Input and FPIO-O8H Analog Output Modules provide Control Systems with full analog capability and the benefit of HART (Highway Addressable Remote Transducer) protocol in one I/O module. These modules offer eight channels of analog input and output—each easily configured for voltage or current signals. The FPIO-I8H and FPIO-O8H also act as a HART master, allowing communication with HART field devices. HART data is available to your PLC or DCS via an ethernet connection.

The Analog+HART I/O modules interface to your system using industrial ethernet and offer:

- **Versatility** by providing both voltage and current measurements and the HART data in one module.
- **Exceptional value** by substantially lowering installation costs. Field devices may be interfaced directly to the module, eliminating the expense of additional external HART bridge devices or hand-held communicators.
- **Flexibility** through a wide variety of user selectable features such as selectable range type, process alarms, filter frequencies.
- **Convenience** with the ability to program and monitor HART devices from a single workstation.
- **Ease of installation** with a web-based configuration interface. Installation is accomplished using your web browser and existing PLC configuration software.

Dramatically Reduce Operating Costs

These modules maximize your system performance by combining real-time HART data acquisition in conjunction with standard analog acquisition and control—at a fraction of the cost. Simplify commissioning, operation and maintenance. The data may be used as the foundation for your asset management system.

Outstanding Features

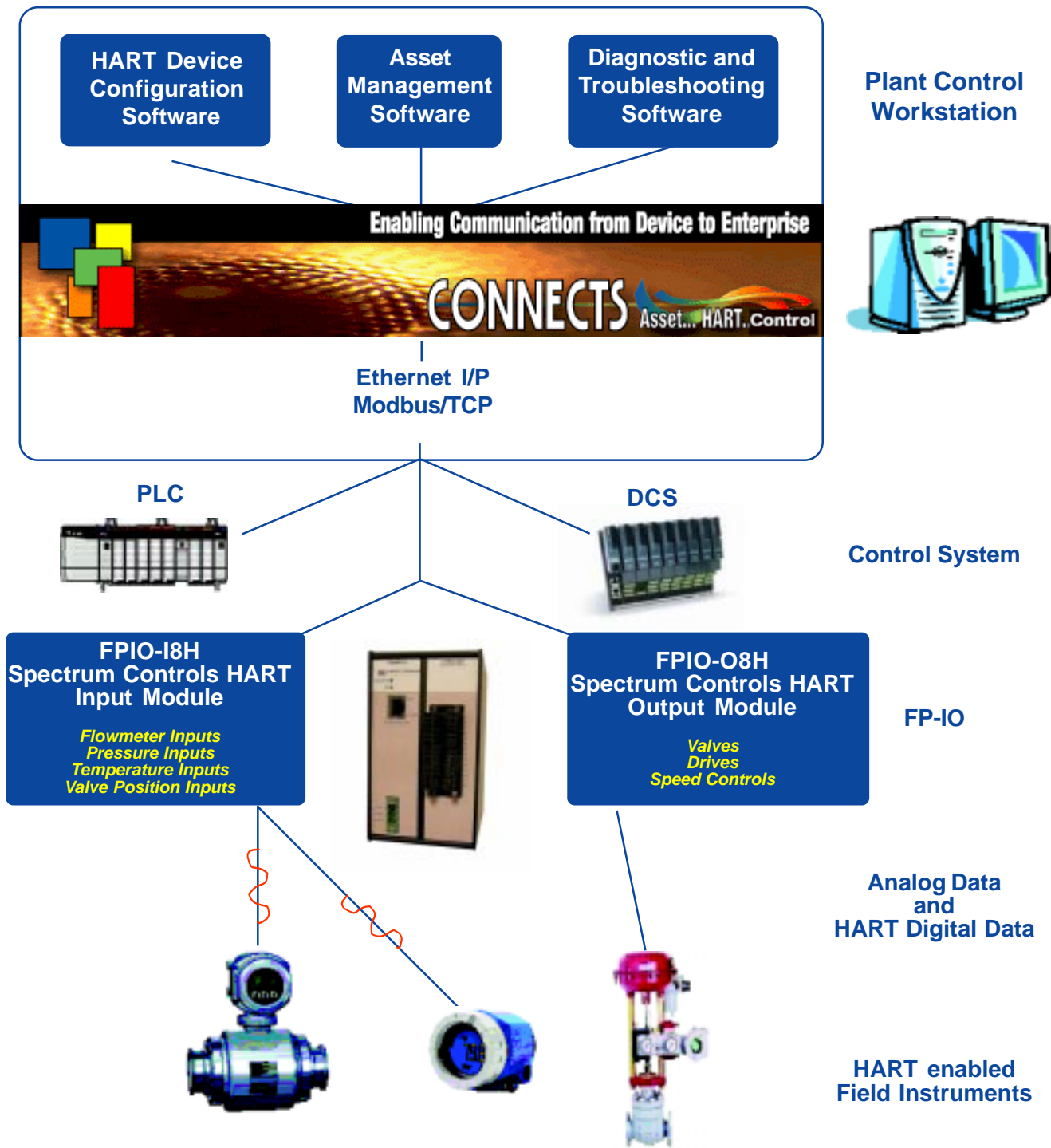
The Spectrum Controls Analog+HART I/O Modules include:

- **Full Read/Write HART capability**
- **Independent messaging capability**
- **HART PV, SV, TV, FV**
- **Analog Input and Output data**
- **Ramp, Clamp and Alarm functionality**

HART Connectivity Gateway

for FPIO-I8H and FPIO-O8H

Spectrum Controls **Connects** communication gateway software, **Analog+HART I/O** modules and existing HART field devices provide a full feature process management system with configuration, operation and maintenance capability.



Ethernet-enabled I/O can be the HART gateway for a complete plant control system. Existing PLC and DCS systems can use both analog and HART data for Asset management, system configuration and maintenance tasks that required personnel to acquire data from the factory floor can now be easily performed from a single workstation. Ethernet-enabled I/O can also tie directly to your enterprise device management utility for direct access to your instrumentation.

Integrated HART Device Networks for...

Commissioning, Operation and Maintenance

The Spectrum Controls Analog+HART I/O communicates digitally with field devices, increases input/output capacity and provides access to more field device data than conventional I/O subsystems. These unique modules greatly enhance device diagnostics, improving your control strategy by alerting operators to device malfunctions. When used with Connects communication gateway for Analog+HART I/O, you have an integrated network allowing full commissioning, operation and maintenance of the system.

Benefits

Take advantage of smart device capabilities

The Spectrum Controls Analog+HART I/O increases the ability to communicate with field devices. You can have complete trust in your signal, knowing that Analog+HART I/O is in constant communication with your smart devices. Use the additional Analog+HART I/O information from the devices in a control strategy for trending and alarming—just like signals from standard I/O. The integrated network enhances all aspects of your system.

Commissioning

Quickly verify and document device configuration and calibration, verify the integrity of wiring and confirm the operational capability of every control loop—all from one central location. Verify and tune valve operation by performing loop checks and read back position via the network. Generate and archive system configuration data faster.

Operation

Access multivariable instruments. Dramatically reduce costs using Analog+HART I/O by increasing information flow four to eight-fold. For example, a mass flowmeter can measure mass flow, temperature, density and volume flow. An Analog+HART I/O channel can read back all this information. Analog+HART I/O can also read actual valve position, number of cycles and status without the need for additional wiring. Standard I/O does not allow access to this information.

Maintenance

An integrated network allows more efficient scheduling which can significantly reduce downtime. System backup is performed electronically, allowing for fast recovery in the event of a failure. Historical reference data can be used to identify trends and determine instrument reliability.

Increase your process control systems level of sophistication using Spectrum Controls Analog+HART I/O and Connects communication gateway. You know that data and diagnostics are available from your HART field instruments. Now go one step further and create an asset management system (AMS) with your Analog+HART I/O.

Ordering Information

Catalog Number	Description
SCX 3000	Connects—Communication gateway for FieldPort HART I/O

System Requirements (Minimum)

Pentium 500MHz Processor
128 MB RAM
100 MB free hard-drive space
Windows 2000, NT or XP

Specifications	FPIO-I8H	FPIO-O8H
Inputs/Outputs	8 (eight) inputs (differential)	8 (eight) outputs
Addressing	Static IP	Static IP
Protocol	Ethernet/IP (PCCC), Modbus/TCP 10/100 Data Negotiation	Ethernet/IP (PCCC), Modbus/TCP 10/100 Data Negotiation
Input/Output Types		
Current	0-20 mA, 4-20 mA	0-20 mA, 4-20 mA
Voltage	0-5V, 0-10V, ±10V	±10V, 0-10V, ±5V, 0-5V
HART Dynamic Variables	Primary w/Engineering Units Secondary w/Engineering Units Tertiary w/Engineering Units Fourth w/Engineering Units Slot Variables 0-3 w/Engineering Units	Primary w/Engineering Units Secondary w/Engineering Units Tertiary w/Engineering Units Fourth w/Engineering Units Slot Variables 0-3 w/Engineering Units
Advanced Features	6 filter frequencies Factory calibration; open circuit	Factory calibration; open circuit
Accuracy	0.05% of range voltage 0.15% of range current	0.05% of range voltage 0.15% of range current
Update Times	10 to 488ms all channels 4 seconds for HART	10ms minimum (floating point) 4 seconds for HART
Resolution	16 to 21 bits — all ranges	15-16 — all ranges
Data Formats	Floating Point IEEE 32 bit, Integer	Floating Point IEEE 32 bit, Integer
Electrical Isolation	2550 Vdc field-wiring-to-chassis-ground	2550 Vdc field-wiring-to-chassis-ground
Impedance	>1 Mohm Voltage <250 ohm, Current	>2kohm @ 10.4V voltage 50-750 ohm drive, Current
Overvoltage Protection	30 Vdc voltage 8 Vdc current	+/- 24 Vdc
Common Mode Rejection	100 dB @ 60 Hz	
Normal Mode Rejection	85 dB @ 50/60 Hz	
Power Requirements	18-57Vdc - 5.3W Max (POE)	18-57Vdc - 6W Max (POE)
Environmental Conditions		
Operational Temperature	0° to 60°C (32° to 140°F)	0° to 60°C (32° to 140°F)
Storage Temperature	-40° to +85°C (-40° to +185°F)	-40° to +85°C (-40° to +180°F)
Relative Humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)
Certifications	UL/cUL (Class I, Div 2, Groups ABCD) and CE	UL/cUL (Class I, Div 2, Groups ABCD) and CE
Terminal Block	28 position	28 position
Dimensions	4.7" (L) x 5.75" (H) x 3" (W)	4.7" (L) x 5.75" (H) x 3" (W)
Weight	28 oz.	28 oz.
Mounting	DIN rail	DIN rail
Accessories		
Power Supply	24V - 6W	
Ethernet Cable	Cat 5, 3ft Long	
Ethernet Crossover Cable	Cat 5, 3ft Long	



Spectrum Controls, Inc.
P.O. Box 5533 • Bellevue, WA 98006 USA
Tel 425-746-9481 • Fax 425-641-9473
Email spectrum@spectrumcontrols.com
www.spectrumcontrols.com

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