

Specifications	1769sc-IF4IH	1769sc-OF4IH
Inputs/Outputs	4 (four) inputs	4 (four) outputs
Module Location	1769 I/O chassis—1 slot	1769 I/O chassis—1 slot
Input/Output Types Current Voltage	0-20 mA, 4-20 mA 0-5 V, 1-5 V, 0-10 V, ±10 V	0-20 mA, 4-20 mA
HART Dynamic Variables	Primary w/Engineering Units Secondary w/Engineering Units Tertiary w/Engineering Units Fourth 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	5 filter frequencies Factory calibration; open circuit	Factory calibration
Accuracy	±0.2% of range voltage ±0.35% of range current	0.5% of range voltage 0.15% of range current
Update Times	18 to 488 ms, all channels 6 seconds for HART	10 ms minimum 6 seconds for HART
Resolution	16 bits—all ranges	15-16—all ranges
Data Formats	Integer	Integer
Electrical Isolation	500 channel-to-channel 500 VDC field-wiring-to-backplane 500 VDC field-wiring-to-chassis-ground	500 channel-to-channel 500 VDC field-wiring-to-backplane 500 VDC field-wiring-to-chassis-ground
Impedance	>220 kohm Voltage <250 ohm, Current	50-750 ohm drive, Current
Overvoltage Protection	24 VDC voltage 7 VDC current	± 24 VDC
Common Mode Rejection	60 dB at 60 Hz	
Normal Mode Rejection	50 dB at 50/60 Hz	
Backplane Current Required	160 mA at 5 V max 125 mA at 24 V max	200 mA at 5 V max 160 mA at 24 V max
Thermal Dissipation	4.01 Watts maximum	3.4 Watts maximum
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity	0 °C to 60 °C (32 °F to 140 °F) -40 °C to +85 °C (-40 °F to +185 °F) 5% to 95% (non-condensing)	0 °C to 60 °C (32 °F to 140 °F) -40 °C to +85 °C (-40 °F to +185 °F) 5% to 95% (non-condensing)
Certifications	UL/CUL (Class I, Div 2, Groups ABCD), CE, ATEX,CCC, CMIM, UKCA	UL/CUL (Class I, Div 2, Groups ABCD), CE, ATEX,CCC, CMIM, UKCA
Terminal Block	18-position	18-position
FDT-DTM	DTM files are available at www.spectrumcontrols.com	

Analog+HART I/O

Analog Input and Output Modules with HART Protocol

1769sc-IF4IH & 1769sc-OF4IH for Allen-Bradley CompactLogix™ PLCs



Exploit the power of your existing HART field instruments with the 1769sc-IF4IH and 1769sc-OF4IH 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 1769sc-IF4IH Analog Input and 1769sc-OF4IH Analog Output Modules provide CompactLogix PLCs with full analog capability and the benefit of the HART (highway addressable remote transducer) protocol in an I/O module. These modules offer four channels of analog input and output—each easily configured for voltage or current signals. The 1769sc-IF4IH and 1769sc-OF4IH also act as a HART master, allowing communication with HART field devices. HART data is available directly on the network.

The Analog+HART I/O modules reside in a standard 1769 I/O backplane 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, timestamping, and filter frequencies.
- **Convenience** with the ability to program and monitor HART devices from a single workstation.
- **Ease of installation** with support from RSLogix 5000 programming software. Installation and operation mirror CompactLogix modules, including simple configuration.

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

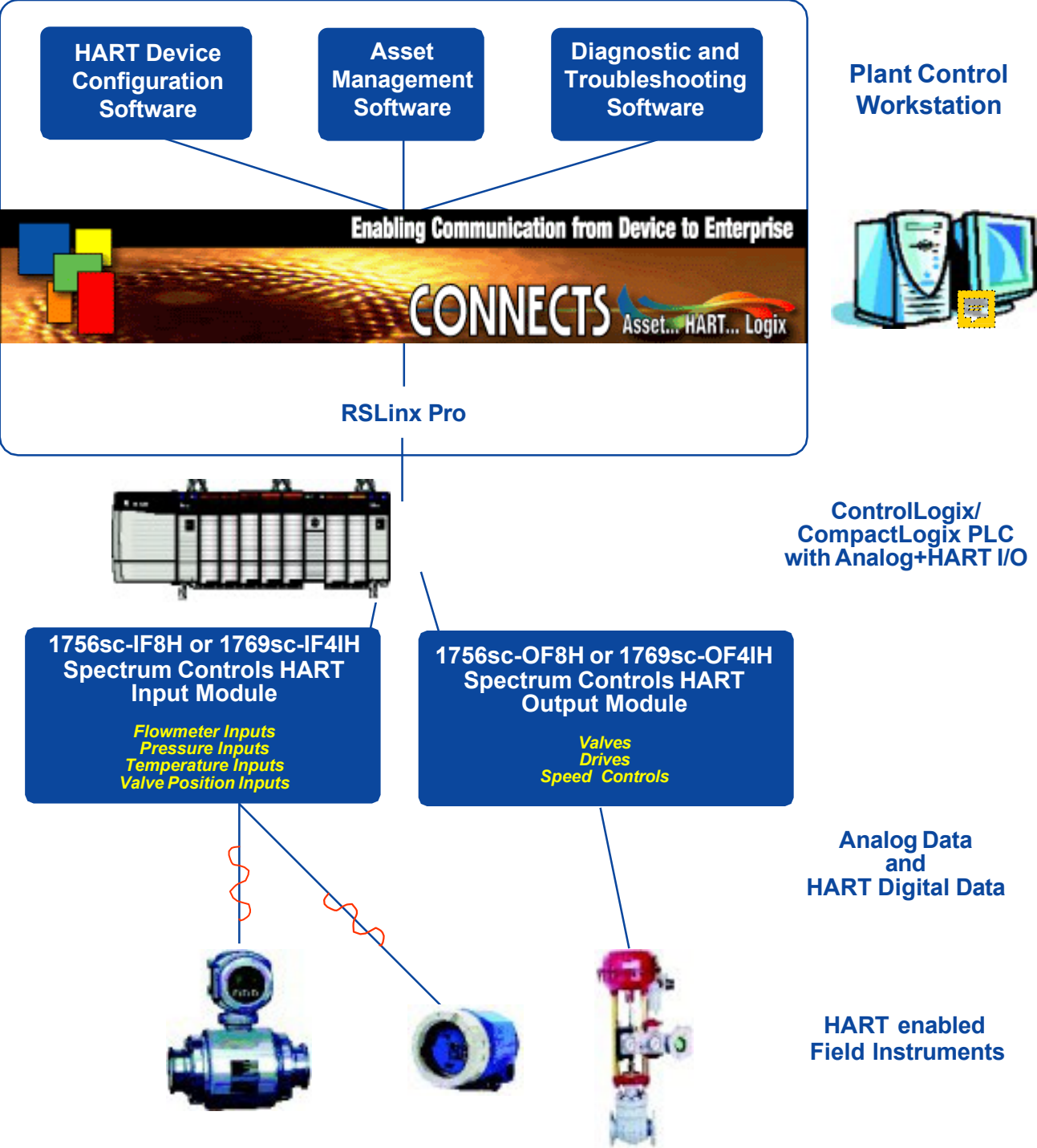
The Spectrum Controls Analog+HART I/O Modules include:

- **Full Read/Write HART capability.**
- **Pass-through messaging capability.**
- **HART PV, SV, TV, FV along with analog data.**
- **Isolation. 500 VDC channel-to-channel, 500 VDC channel-to-backplane isolation.**

HART Connectivity Gateway

for 1769sc-IF4IH and 1769sc-OF4IH

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



A CompactLogix PLC can be the HART gateway for a complete plant control system. 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 or enterprise network.

Integrated HART Device Networks for ControlLogix 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 Analog+HART I/O
System Requirements (Minimum)	
Pentium 500 MHz Processor	
128 MB RAM	
100 MB free hard drive space	
Windows XP or newer	