



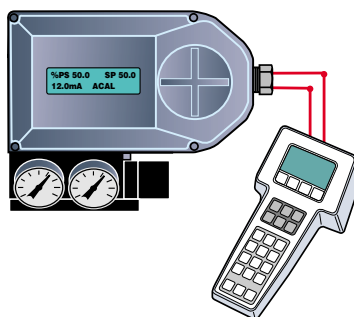
Intelligent Proximity Positioner with HART® Communicator Capability and Online Diagnostics

ICoT™ 5300

Intelligent Positioner w/ Hart® Capability

Intelligent Calibration HART® Protocol

The ICoT™ 5300 provides intelligence for the control valve through a microprocessor-based system utilizing the HART® protocol. Accurate measurement of valve stem position, input signal, and actuator pressure can be recorded during normal operation, thereby providing information for control valve signature generation.



A standard hand-held terminal (the HART® Communicator) may be utilized for field operations in conjunction with a remote PC for maintenance information and documentation.

Intelligent Control

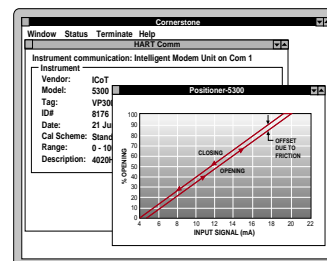
ICoT, with HART® protocol, opens up an endless array of new possibilities for improving efficiency and preventive maintenance procedures in all areas pertaining to control valve usage.

ICoT™ 5300

- Local LCD Display
Local Position Display
Local Diagnostics
- Auto Cal, PID Control
Autotuning
- Keypad Calibration
Hand-Held Communicator
- Online Diagnostics
Fugitive Emissions Monitoring
End Limit Position Sensing
- 4-20 mA Position Transmitter
Early-Warning Diagnostic Software
Multiplex Capability
- Remote Position Control

Diagnostic Capability

A preventive maintenance and data logging system, in parallel with the 4-20 mA loops, performs online diagnostics of control valves with automatic record keeping for documentation purposes. The HART® communications capability of the ICoT™ positioner, coupled with the HPORT™ multiplexer and Cornerstone™ control valve specific software, provides operating personnel the opportunity of implementing customized preventive maintenance programs. It additionally simplifies adherence to occupational health and safety requirements mandated by government regulations.



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CORNERSTONE is a trademark of Applied System Technologies, Inc.



HART® Hand-Held Terminal

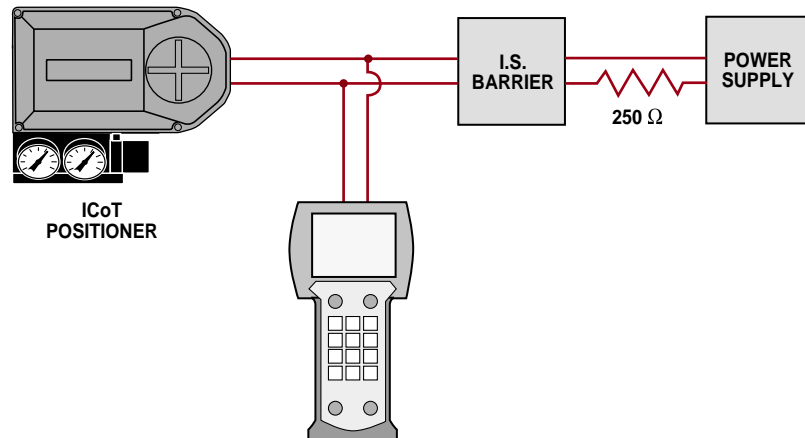
A single 4-20 mA ICoT® positioner with up to two master devices may be connected to each HART® loop. The primary master is generally a management system or a PC while the secondary unit can be a hand-held terminal or laptop computer.

A standard hand-held HART® Communicator is available for making field operations as uniform as possible. Manufactured by Rosemount, the Model 375 functions as a common

tool for HART® microprocessor-based field instruments. From any wiring termination point in the loop, the battery-powered Model 375 can perform diagnostic, configuration, and interrogation functions. Additionally, while the 375 is offline, configuration data can be stored for later downloading to one or more positioners. Simultaneous communication capabilities allow the hand-held terminal to receive data from and send data to the positioner without disrupting the positioner's signal from the control room.

Communication

The Model 375 communicates with ICoT™ Smart Positioners via HART® protocol. Communication is accomplished by superimposing a high frequency signal on top of the 4-20 mA output signal. This allows simultaneous communication and output without comprising loop integrity.



HAZARDOUS LOCATIONS CERTIFICATIONS

CENELEC
Intrinsic Safety Certification
EEx ib IIC T6
Certificate No. Ex89C2279

Factory Mutual (FM)
Intrinsic Safety and Nonincendive Approval
Intrinsically Safe for Class I, Division 1, Groups A, B, C and D; Nonincendive for Class I, Division 2, Groups A, B, C and D.

Canadian Standards Association (CSA)
Intrinsic Safety Approval.
Intrinsically Safe for Class I, Division 1, Groups A, B, C and D.

SPECIFICATIONS for HART Model 375	
FUNCTIONAL SPECIFICATIONS	
Memory	A nonvolatile memory retains stored information when the Model 375 is powered down; provided a charged battery pack is installed.
Power Supply	Five AA 1.5V batteries. (Rechargeable nickel-cadmium battery pack optional.)
PERFORMANCE SPECIFICATIONS - Temperature Limits	
Operating Limits	32 to 122°F (0 to 50°C)
Storage Limits	-4 to 158°F (-20 to 70°C)
Humidity Limits	Operates in 0-95% relative humidity under non-condensing conditions below 104°F (40°C) without error.
PHYSICAL SPECIFICATIONS	
Display	4-line liquid crystal display with 20 character line width.
Keyboard	Complete alphanumeric keyboard, six dedicated function keys, and four software defined keys.
Weight	Approximately 2 lbs. (0.9 kg) including batteries.

ICoT™ 5300

Intelligent Positioner w/ Hart® Capability

Diagnostic and Configuration Software

ICoT™ has developed a Smart Positioner possessing the capability to predict rather than react to valve maintenance needs. With the ICoT™ positioner, operating personnel gain a real-time perspective on the state of control at the valve, including a view of operating integrity and emerging alert conditions. Timely information about each control valves condition is quickly made available to the plant's production and maintenance engineers.

%PS 50.0 SP 50.0
12.0 mA ACAL

THE PRINCIPLE ADVANTAGE OF ONLINE DIAGNOSTICS IS THE ABILITY TO DETECT DEVIATIONS FROM ESTABLISHED PATTERNS OF BEHAVIOR AS THEY OCCUR UNDER ACTUAL OPERATING CONDITIONS.

Control valves are the most maintenance intensive components commonly used in instrumentation and control systems. By inclusion of internal parameter sensing within the valve positioner, forewarning of the need for maintenance is made available with a comfortable degree of lead time.

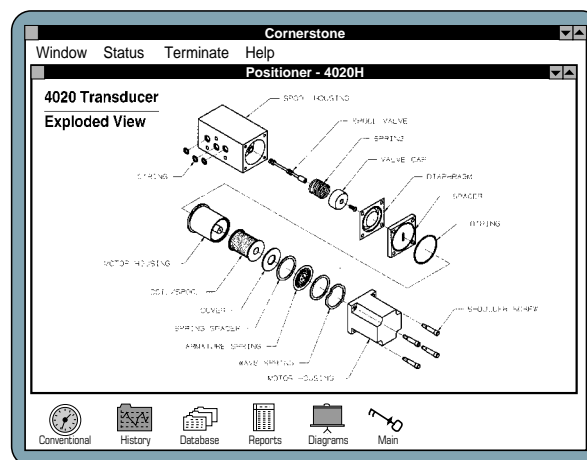
The ICoT™ positioner's diagnostic compatibility is based upon observations of the following operating parameters:

- Valve position vs. input signal.
- Actuator pressure vs. valve position.
- Airset filter outlet pressure.
- Confirmation of principal operating pressures within positioner.
- Pressure generation within packing gland area.

Online Diagnostics via HART® Link

- "Stick-slip" detection.
- Excessive static position error.
- Fugitive emissions monitoring.
- Low air supply pressure.
- Clogged air supply filter.
- Restricted transducer nozzle.
- Transducer diaphragm air leak.
- Non-functioning spool valve.
- Calibration error.

For additional information utilizing Hart compatible software such as Cornerstone or Fisher Rosemounts' AMS, please consult factory.



Cornerstone software

AGENCY APPROVALS



Intrinsically Safe:
Class I, II & III
Groups A- G,
Divisions 1 & 2

Nonincendive:
Class I, Groups A-D
Class II & III,
Groups F-G, Div. 2



Intrinsically Safe:
Class I, Groups A-D,
Class II & III
Groups E-G, Div. 1
Exia IIC T4; Class I,
Zone 0

Nonincendive:
Class I, Groups A-D
Class II & III
Groups F-G, Div. 2



AEx II 2 G
EExib IIC T4

OPERATING SPECIFICATIONS

MODEL 5300	LINEAR	ROTARY
Input Current	4 to 20 mA (Analog)	4 mA (Digital HART)
Voltage Drop	12.3 Volts	
Supply Air Pressure	(low) 15 to 45 PSI (high) 40 to 120 PSI	
Standard Stroke	.25 to 48 inches	0 to 95 Degrees
Resolution	0.2% of span	
* Linearity	1% of span (0.4" to 1.25")	0.5% of span
Hysteresis	0.2% of span	
Repeatability	0.2% of span	
Thermal Coefficient	2% / 100°C	
Output Flow Rates	(low) 8.0 scfm @ 25 PSI (high) 16.2 scfm @ 90 PSI	
Air Consumption	(low) .003 scfm @ 20 PSI (high) .008 scfm @ 90 PSI	
Operating Temp. Range	-40°C to 85°C (-40°F to 185°F)	
Gain	Electronically Adjustable w/ Autotuning	
Speed Response	Electronically Adjustable	
Feedback	Magnetic (Non-contact)	
Diagnostics	HART Protocol	
Air Connection Ports	1/4" NPT	
Calibration Method	HART® or HART® & Keypad	

*NOTE: For linear graphs displaying deviation from straight line (0.4" to 20") see technical manual #374.

ORDERING GUIDE

ICoT™ 5300	MOUNTING CONFIGURATION	CONSTRUCTION	PRESSURE/CALIBRATION	CONDUIT ENTRY	POSITION SENSOR	POSITION TRANSMITTER
<p>53</p> <p>Nema 4, 4X Nonincendive Groups A - G, Division 2 Intrinsically Safe Groups A - G, Divisions 1 & 2</p>	<p>STANDARD</p> <p>LINEAR Nonincendive 10NI Intrinsically Safe 10IS</p> <hr/> <p>ROTARY Nonincendive 30NI Intrinsically Safe 30IS</p>	<p>Engineered Resin E</p>	<p>High Pressure (40 to 120 PSI) HART & Keypad HB</p> <hr/> <p>Low Pressure (15 to 45 PSI) HART & Keypad LB</p> <hr/> <p>High Flow (40-120 psi) Hart & Keypad VB</p>	<p>1/2" NPT A</p> <p>M20 B</p>	<p>(Rotary Only) No Sensors 0</p> <p>Magnum One SPST 1</p> <p>Magnum Two SPST 2</p> <p>Position switches not available on remote mount</p>	<p>Without Transmitter A</p> <p>4-20 mA B</p>
	<p>REMOTE MOUNT</p> <p>LINEAR Nonincendive 15NI Intrinsically Safe 15IS</p> <hr/> <p>ROTARY Nonincendive 35NI Intrinsically Safe 35IS</p>					