



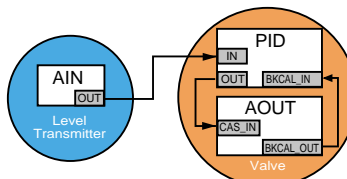
Foundation Fieldbus® Enabled Intelligent Positioner with Online Diagnostics

ICoT™ 5400

Foundation Fieldbus® Enabled Intelligent Positioner

Intelligent Calibration Foundation Fieldbus® Protocol

The ICoT™ 5400 provides intelligence for the control valve through a microprocessor-based system utilizing the Foundation Fieldbus protocol. Accurate measurement of valve stem position, input signal, actuator pressure, cycle time and cycle count data can be recorded during normal operation, thereby providing information for control valve signature generation.



The positioner has a local LCD display which indicates valve position, set-point in percentage open, calibration status, alarms status and whether the SmartCal is in local or fieldbus control. The SmartCal has the capability to self monitor operation. If a failure condition occurs, an error message is displayed on the local LCD display and communicated to the Host system via fieldbus.

Intelligent Control

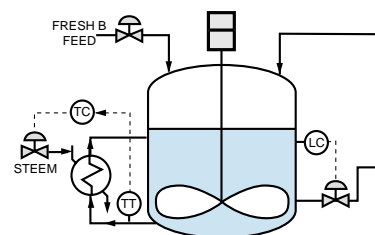
The FF ICoT provides accurate measurements of valve stem position, input signal, actuator pressure and travel time. With the ICoT's internal trending capability, information for control valve signature generation is developed for use in predictive maintenance.

ICoT 5400

- ATEX Approval for Intrinsically Safe applications
- Auto Cal, PID Control Autotuning, Data Trending
- Calibration via the FF bus, local keypad or using the Rosemount 375 Field Communicator
- Online Diagnostics End Limit Position Sensing
- Local LCD Display Local Position Display Local Diagnostics
- Remote Position Control

Foundation Fieldbus

Foundation Fieldbus communications protocol is an industry proven international standard (IEC 61158) designed for use in the process industry. Features include multi-drop capabilities (as many as 32 devices per segment), extended trunk length, single loop integrity, "control in the field", power and communications on a shielded twisted pair network, and compatibility with intrinsically safe networks. A key feature of the FF protocol is the ability to select where control of the process is situated - in the host, in the field, or in various combinations of both locations.





Handheld Programmers

The Rosemount Model 375 communicates with the FF ICoT Smart Positioners via the FF protocol.

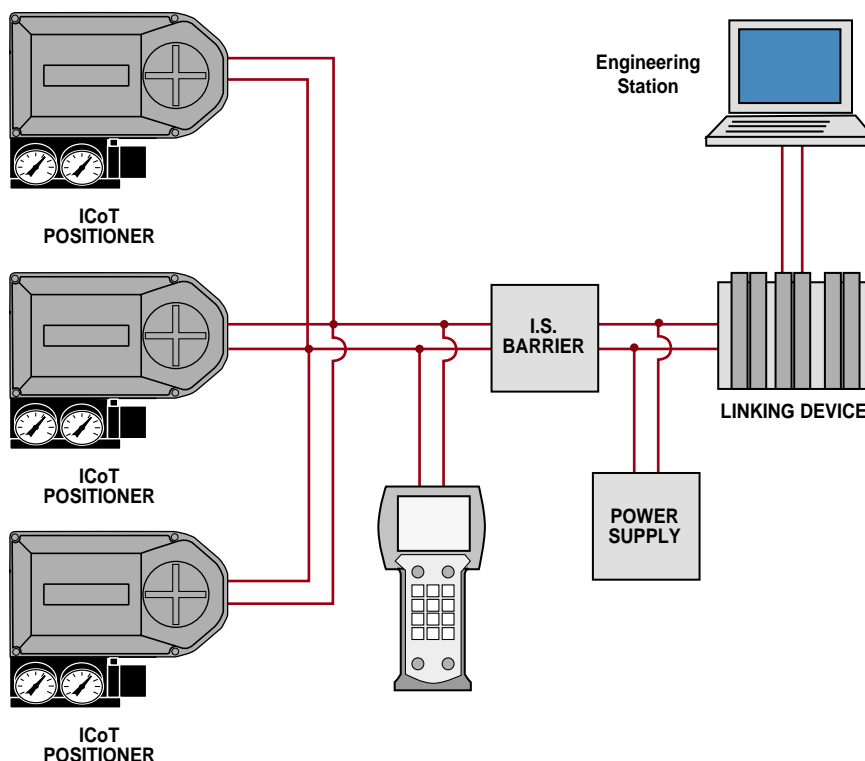
Fieldbus Foundation Conformance Documentation

The Westlock 5400 IS FF ICoT is a Fieldbus Foundation registered device having successfully completed the required conformance tests to ITK revision 4.51.

FF ICoT DD and CFF Availability

The CFF and DD are downloadable from the Foundation's website at www.fieldbus.org or at www.westlockcontrols.com. They are also available on CD, please contact the factory for a copy.

Fieldbus Foundation Conformance Documentation	
Manufacturer	Westlock Controls
Model	ICoT Valve Controller 5400-IS
Category	Final Control Element
Type	IS Pneumatic Positioner
Tested Function Blocks	1xAI(S), 1xAD(s), 1xPID(s)
Other Blocks	2xTB(c)
H1 Profile Class	31PS
H1 Device Class	Basic
Test Camp. Number	IT019200
MANUFAC_ID	0x574343
DEV_TYPE	0x1100
DEV_REV	0x01
ITK Version	4.51



ICoT™ 5400

Foundation Fieldbus® Enabled Intelligent Positioner

Diagnostic and Configuration Software

The ICoT™ possesses 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.

SP-50% PV-49.9%
F-CTRL ERROR 6D

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

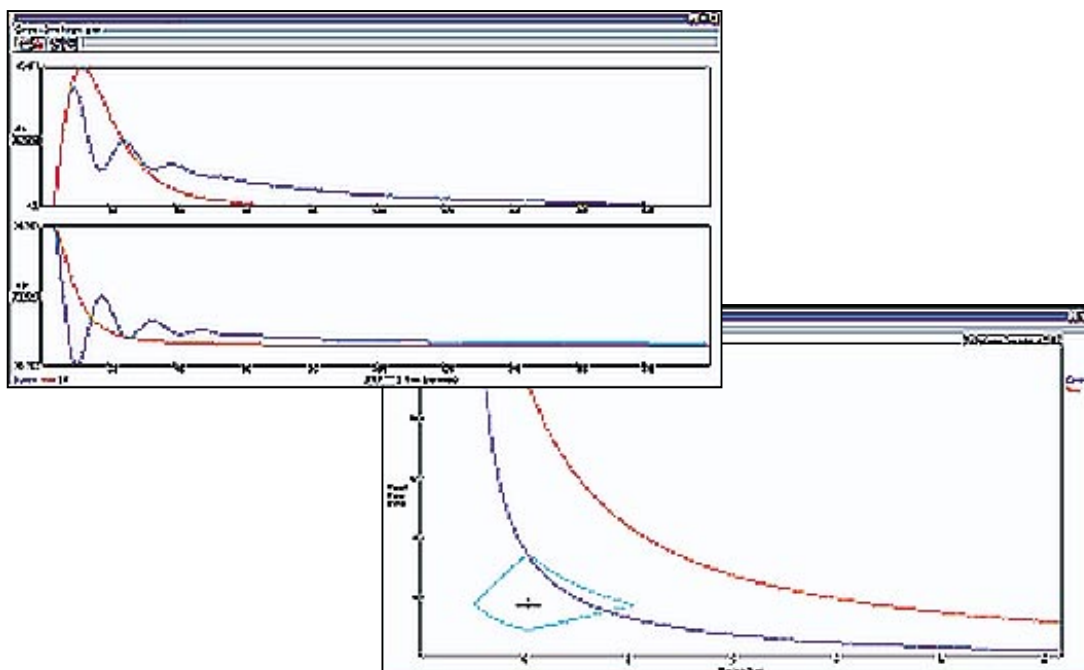
Control valves are the most maintenance intensive components commonly used in instrumentation and control systems. By inclusion of internal parameter sensing within the valve positioner, forewarning of the need for maintenance is made available with a comfortable degree of lead time.




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

- "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.

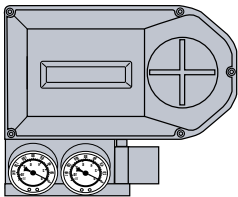





AGENCY APPROVALS	
	Intrinsically Safe: Class I, II & III Groups A- G, Divisions 1 & 2
	Nonincendive: Class I, Groups A-D Class II & III, Groups F-G, Div. 2
	Intrinsically Safe: Class I, Groups A-D, Class II & III Groups E-G, Div. 1 Exia IIC T4; Class I, Zone 0
	AEx II 2 G EExib IIC T4

OPERATING SPECIFICATIONS

MODEL 5400 SPECIFICATIONS	
Signal	Two wire FOUNDATION Fieldbus, polarity insensitive
Voltage	9 – 35 Vdc
Pressure:	Low: 15 - 45 psi High: 40 - 120 psi
Position Feedback	Magnetic (Non-Contact)
Flow Rate	Low: 8.0 scfm @ 25 psi High: 16.2 scfm @ 90 psi
Actuator	Single Acting or Double Acting
Stroke	Linear: 0.25 to 24 inches Rotary: 0 to 95 Degrees
Resolution	2% Full Travel
Linearity	Rotary 0.5% Full Scale Linear 1% Full Scale
Hysteresis	0.2% Full Scale
Repeatability	0.2% Over One Hour
Operating Temp	-40°C to 85°C (-40°F to 185°F)
Thermal Coefficient	2% / 100°C
Air Consumption	Low: 0.003 scfm @ 25 psi High: 0.008 scfm @ 90 psi
Material	Engineered Resin
Weight	7.2 Pounds
Air Connections	1/4" NPT
Conduit Connections	Standard:1/2" NPT Optional:M20

ORDERING GUIDE

ICoT™ 5400	MOUNTING CONFIGURATION	CONSTRUCTION	PRESSURE/CALIBRATION	CONDUIT ENTRY	POSITION SENSOR	POSITION TRANSMITTER
<p>54</p>  <p>Nema 4, 4X Nonincendive Groups A - G, Division 2 Intrinsically Safe Groups A - G, Divisions 1 & 2</p>   	STANDARD	Engineered Resin E	High Pressure (40 to 120 PSI) FF & Keypad HF	1/2" NPT A M20 B	No Sensors O	Without Transmitter A 4-20 mA B
	LINEAR Nonincendive 10NI Intrinsically Safe 10IS					
	ROTARY Nonincendive 30NI Intrinsically Safe 30IS					
	REMOTE MOUNT					
	LINEAR Nonincendive 15NI Intrinsically Safe 15IS		Low Pressure (15 to 45 PSI) FF & Keypad LF			
	ROTARY Nonincendive 35NI Intrinsically Safe 35IS		High Flow (40-120 psi) FF & Keypad VF			

Westlock reserves the right to change product designs and specifications without notice, and is not responsible for errors and omissions.