TopWorx™ HART 7

Communication protocol for D-Series Switchboxes

Get connected with HART 7

The new TopWorx™ HART 7 protocol allows you to gain access to critical operational data as well as diagnostic information for your automated on/off valve package. The powerful and easy to use HART 7 solution incorporates intelligent features and a robust 4-20mA signal to help you lower operating costs and increase plant availability.

Why TopWorx HART?

- HART communication is the global standard for the process automation industry
- Avoid unplanned shutdown
- Improve plant reliability
- Lower maintenance cost
- Diagnose potential device problems
- Simple, reliable, and easy to use
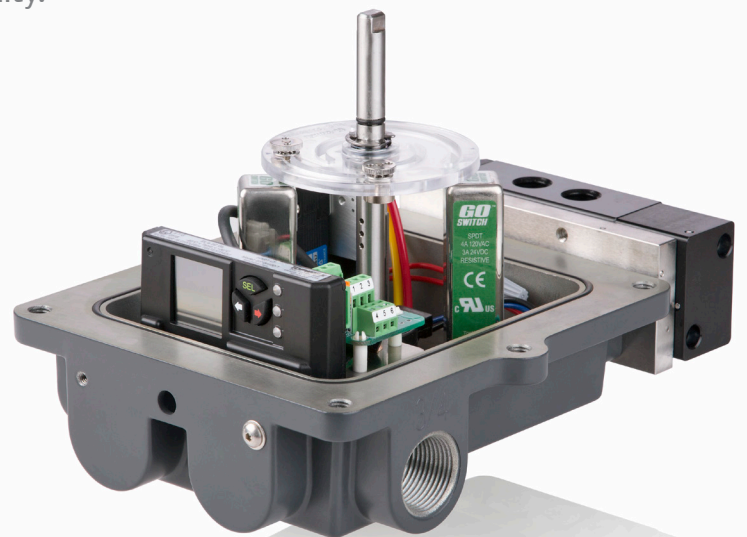
Local User Interface via Graphic LCD

- Local LEDs for open/close indication
- Third LED for alert status
- Push button interface for local commissioning and access to primary variable and faults

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Specifications:

Physical Specification	Min.	Typ.	Max.
Device Terminal Voltage	10.0 VDC	24 VDC	39 VDC
Linearity (1/4 Turn)	-	1% of span	-
Hysteresis	-	0.5 %	-
Repeatability	-	0.5 %	-
Shaft Rotation	20˚	-	180˚ (Consult Factory for Additional Shaft Rotation Sensing)
Internal Temperature Sensor Accuracy	-	±2.5 ˚C	-
Operating Temperature Limits	-40 ˚C	-	80 ˚C
Device Resistance and Capacitance	-	Rx: 27.12k ohms, Cx: 6.11nF @ 950 Hz	-
High (H) Alarm NE-43 Current	-	22.3mA	-
Low (L) Alarm NE-43 Current	-	< 3.5mA	-
Multi-Drop Current Draw		4.0mA	
Lift-Off Voltage		10.0V	

Wiring Diagram:
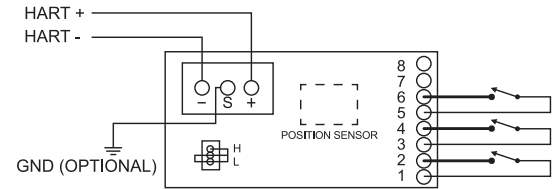
Product Variables and Settable Alarms:

Index	Device Variable	Units	Dynamic Variable Mapping	Description	Range
0	Position	%	Primary Variable	Travel	% of Calibrated Span
1	Limit Switch 1	None	Tertiary Variable	End of Travel 1	1 = Tripped, 0 = Not Tripped
2	Limit Switch 2	None	Quaternary Variable	End of Travel 2	1 = Tripped, 0 = Not Tripped
3	Auxiliary Limit Switch	None	User selectable to SV, TV or QV	Optional Aux. limit switch	1 = Tripped, 0 = Not Tripped
4	Internal Device Temperature	Celsius	Secondary Variable	Ambient device conditions	-55 to 130
5	Last Close Stroke Time	Milliseconds	User selectable to SV, TV, or QV	Travel time to close the valve	0 to 4294967295
6	Last Open Stroke Time	Milliseconds	User selectable to SV, TV, or QV	Travel time to open the valve	0 to 4294967295
7	Opened Dwell Time	Seconds	User selectable to SV, TV, or QV	Time last spent in the opened position	0 to 4294967295
8	Closed Dwell Time	Seconds	User selectable to SV, TV, or QV	Time last spent in the closed position	0 to 4294967295
9	Cycle Count	None	User selectable to SV, TV, or QV	Counted valve strokes	0 to 9999999
10	Valve State	None	User selectable to SV, TV, or QV	Indicates current valve position	0 = Opened, 1 = Closed, 2 = Opening, 3 = Closing, 4 = Stopped, 5 = Un-known
11	Higest Device Temperature	˚C, ˚F	User selectable to SV, TV, or QV	Highest ambient temperature seen by the device	-55 to 130
12	Lowest Device Temperature	˚C, ˚F	User selectable to SV, TV, or QV	Lowest ambient temperature seen by the device	-55 to 130
13	Transition Dwell Time	Milliseconds	User selectable to SV, TV, or QV	Accumulated time the valve last spent between the open and closed positions	0 to 4294967295

For more information:
www.emerson.com/topworx

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