



Logix 3000 Series Digital Positioner



Experience In Motion



The Logix 3400IQ offers local setup and calibration in seconds... easy as 1, 2, 3

With the 3400IQ, function blocks are no longer required to set up, configure and perform a simple stroke calibration. The 3400IQ can be set up with 9-32 VDC supply and 45 psi (min.) air supply on any valve/actuator platform.

When the 3400IQ is in OOS (Out Of Service mode), the local interface shown to the right is accessible and setup can be carried out through the following steps:

1. Make sure the mechanical linkage, air tubing and actuator mounting are correct.
2. Set the configuration switches to the desired operation of the valve/actuator.
3. Set the quick calibration switch to Jog or Auto. In Jog, the 100% position can be manually adjusted using the yellow up and down buttons after Re-Cal is pressed. In Auto, the positioner finds the 100% position and calibration is complete. LED blink codes will guide the user through the process. Four green blinks (GGGG) or (GGGY) at the end of the sequence confirm that the calibration was successful.

4. If needed, the GAIN switch located to the right of the jog buttons will speed up or slow down the positioner's response to command changes. With the Auto Tune configuration switch set to "On", the positioner's algorithm will select a gain with no over-shoot. The "E" position of the rotary GAIN dial indicates "neutral" with respect to gain adjustment. Turning clockwise from E to H and will speed up the response. Tuning counter-clockwise from E will slow it down, with A being the slowest response.



Calibration, configuration and tuning parameters from the local interface will be automatically updated in the Transducer Block on the Logix 3400IQ. Local setup and calibration that does not require a link to a host controller, PC or hand-held device, as well as local validation that setup is correct, make any FOUNDATION Fieldbus™ installation easy and straightforward.





The Logix 3200IQ – no software or hand-held device required... easy as 1, 2, 3

The Logix 3200IQ can be set up with 10 VDC milliamp current supply current and 45 psi (min.) air supply on any valve/actuator platform.

With the Logix 3200IQ, the local interface shown to the right can be used to set up the unit in seconds through the following steps:

1. Make sure the mechanical linkage, air tubing and actuator mounting are correct.
2. Set the configuration switches to the desired operation of the valve/actuator.
3. Set the quick calibration switch to Jog or Auto. In Jog, 100% position can be manually adjusted using the yellow up and down buttons after Re-Cal is pressed. In Auto, the positioner finds the 100% position and calibration is complete. LED blink codes will guide the user through the process. Four green blinks (GGGG) or (GGGY) at the end of the sequence confirm that the calibration was successful.

4. If needed, the GAIN switch located to the right of the jog buttons will speed up or slow down the positioner's response to command changes. With the Auto Tune configuration switch set to "On", the positioner's algorithm will select a gain with no over-shoot. The 'E' position of the rotary GAIN dial indicates "neutral" with respect to gain adjustment. Turning clockwise from E to H and will speed up the response. Tuning counter-clockwise from E will slow it down, with A being the slowest response.



Calibration, configuration and tuning parameters from the local interface will be automatically updated in the HART registers on the Logix 3200IQ. Local setup and calibration that does not require a link to a host controller, PC or hand-held device, and local validation that setup is correct make any HART™ installation easy and straightforward.



The Logix 3400IQ for FOUNDATION Fieldbus Applications

Complete local configuration, on any valve/actuator and local.

- FF Simulate – Run a control strategy without process
- FF Write Protect – Locks out unauthorized writes to NVRAM

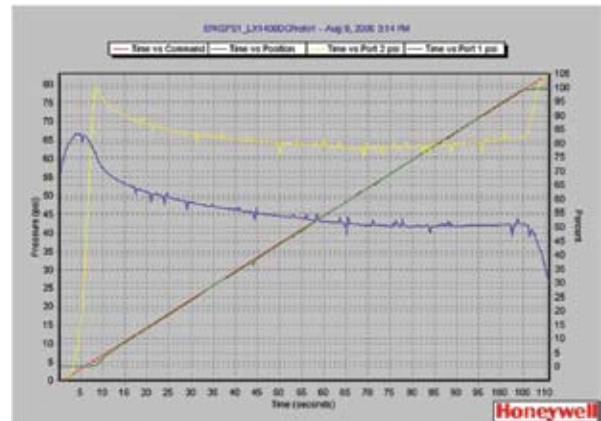
FOUNDATION Fieldbus made easy.

(In OOS) Calibrate stroke and adjust tuning without entering the Transducer Block —Updates the Block when complete.

36 status and alert and messages displayed locally via three easy-to-read LEDs



Logix 3400IQ Features	
RFI/EMI Immunity	✓
FISCO Compliant, User Interface	✓
Polarity Insensitive UI (Potted UI)	✓
PID Block (6 Honeywell PID Equations)	✓
LAS (Link Master Device)	✓
Auto Tune (Positioner Performance)	✓
High Friction Stability	✓
FF Code Download	✓
Flash Ram (Local Positioner Embedded Code Upgrade)	✓
Local Valve Signature Storage	✓
Local Calibration and Setup (While in OOS)	✓
24/7 Local Fault Monitoring	✓
Local Adjustable Gain	✓
Wizard/Method for On-line Commissioning	✓
Local Jog Buttons to Adjust 100% Command Position (While in OOS)	✓
Fast Function Block Execution Time	✓
Linkable Position feedback (AO Read Back)	✓
Multiple View Objects in Transducer Block	✓
Honeywell PKS Partner with Signature Acquisition Tool and Flowserve Scout	✓
Three Response Curves (Linear, =% and Custom) Locally Activated, or Through FF	✓



Valve Signature with Logix 3400IQ from Honeywell Experion.

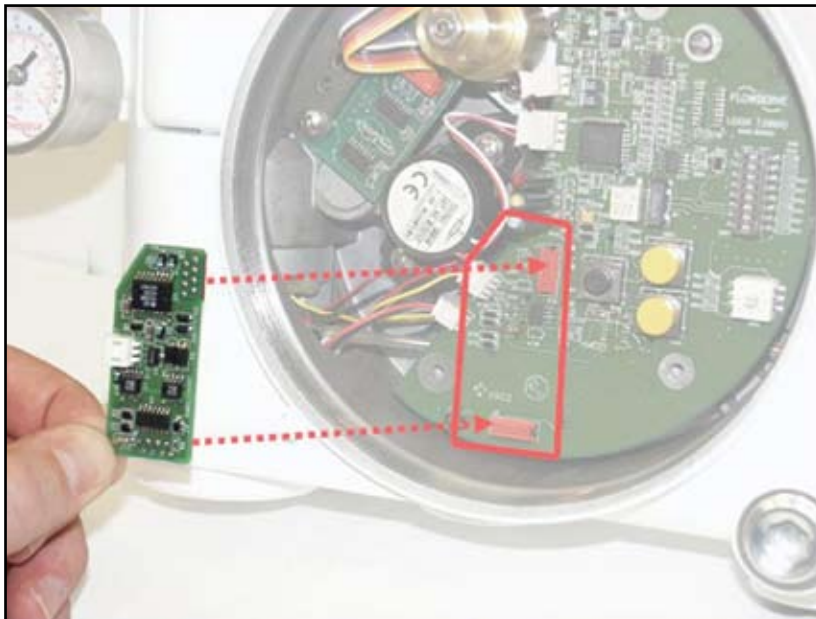
HONEYWELL
PKS[™] ADVANTAGE

Flowserve is a Honeywell Partner, with Flowserve Scout and Signature Acquisition Tool integrated in the ExperionDCS Asset Manager

The Logix 3200IQ for HART Applications

Complete local configuration, just like the Logix 3400IQ, but HART protocol

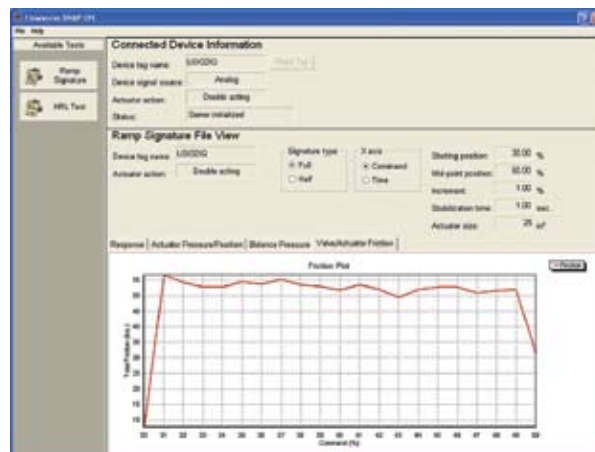
- Local status and alert messages
- Tuning (Auto Tune function and manual adjustment)
- Jog buttons to manually adjust 100% position
- Easy-to-install 4-20 mA analog feedback card option



HONEYWELL
PKS[™]ADVANTAGE

Simple plug-in AO card, automatically zero and spans position feedback during Quick Cal

Logix 3200IQ Features	
RFI/EMI Immunity	✓
Auto Tune (Positioner Performance)	✓
High Friction Stability Tuning	✓
Integral 4-20 mA Feedback Option	✓
Flash RAM (Local Positioner Embedded Code Upgrade)	✓
Local Valve Signature Storage	✓
Local Calibration and Setup	✓
24/7 Local Fault Monitoring	✓
Local Adjustable Gain	✓
Three Response Curves (Linear, =% and custom)	✓
Local Jog Buttons to Adjust 100% Command Position	✓
Valve Signature Diag. "Valve Analysis" AMS SnapOn [®] Application	✓
AMS Device Manager	✓
Honeywell PKS Partner with Honeywell HART FDM	✓



ValveAnalysis friction plot-signature running inside AMS Device Manager



The Logix 3200IQ positioner is AMS aware and is included in AMS Device Manager.



There's a Flowserve Expert Inside

We've taken the guesswork out of setting up and calibrating positioners by building our expert knowledge into every 3000 series positioner. Simply start the calibration process by pushing a button, and the “brain on board” takes over. Even tuning is as easy as turning a knob, making the positioner more or less responsive to signal changes—and when complete, the positioner gives you a “thumbs up” that it's ready to go.

Whether it is mounted on one of the world-renowned heritage brand valves from Flowserve, or any other OEM valve/ actuator platform, when you select a 3000 series positioner, the Flowserve expert comes with it—at no extra charge.



A Logix 3000 Series mounted to a Kinertrol Size 14 Rotary vane actuator.

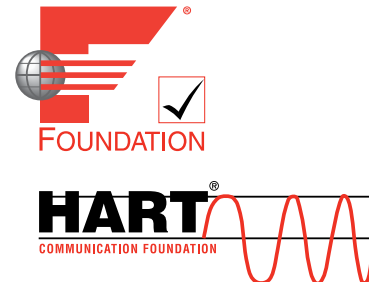
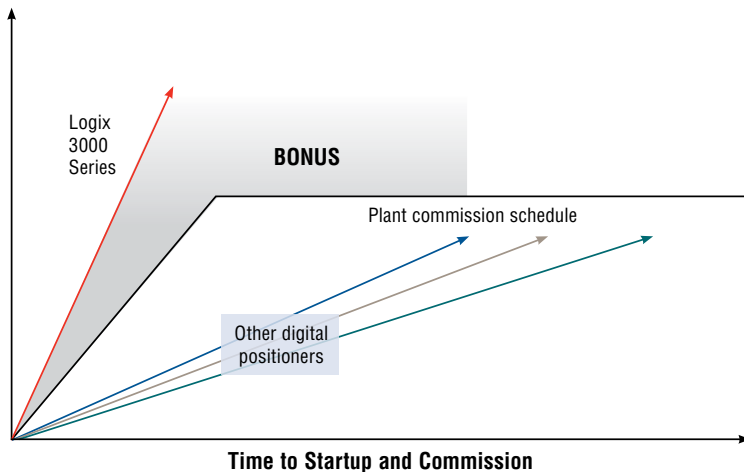


A Logix 3000 Series mounted on a Valtek Mark One



Time is Money

Up and running, making money faster with the 3000 series



3000 Series Facts

3400

- Two versions: Basic & Advanced (Advanced includes pressure sensors to measure actuator pressure and calculate supply pressure)
- ITK - CFF 4.51, 4.6
- DD Version 0601 FB Code Version 2.04.23
- DD available at www.fieldbus.org or www.flowserve.com
- Stores a valve signature onboard in NVRAM
- Onboard temperature sensor to measure local positioner ambient
- Stroke speed limiter (configurable in transducer block)
- Stainless steel version available

3200

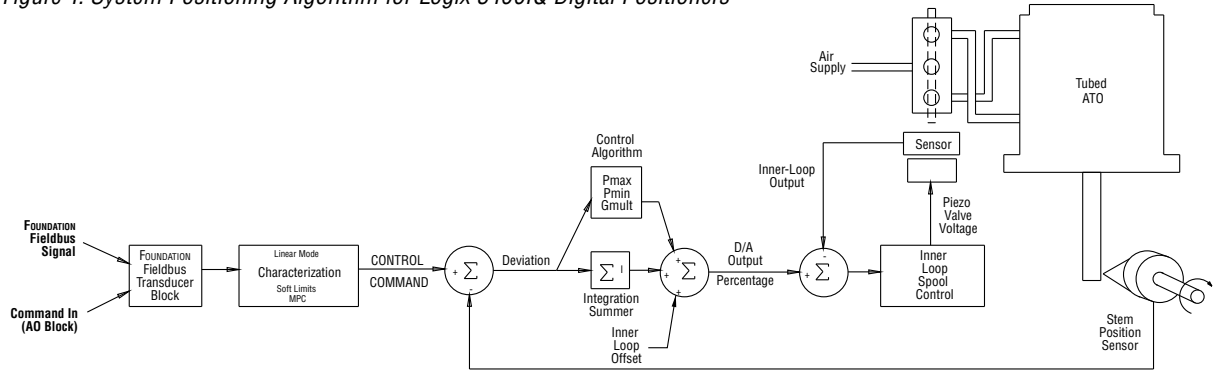
- Two versions: Basic & Advanced (Advanced includes pressure sensors to measure actuator pressure)
- HART Command 1, 3, 9, 33 & 48
- Burst Mode available to continuously transmit
 - Position command analog loop current
 - Final value of command after characterization
 - Supply pressure (advanced), Temperature (basic)
 - Stem position in percent
- Onboard temperature sensor to measure local positioner ambient
- Stroke speed limiter (configurable through HART)
- Stainless steel version available
- Enhanced Device Description for advanced signature diagnostics
 - Step test, friction test, HRL, data logger

Logix 3400 Positioner Overview

The Logix 3400IQ digital positioner is a two-wire FOUNDATION Fieldbus registered, LinkMaster (LAS) digital valve positioner. The positioner is configurable through the local user interface. The Logix 3400IQ utilizes the FF protocol to allow two-way remote communications with the positioner.

The Logix 3400IQ positioner can control both double- and single-acting actuators with linear or rotary mountings. The positioner is completely powered by the FF signal. Start up voltage must be at least 9 V.

Figure 1: System Positioning Algorithm for Logix 3400IQ Digital Positioners



Specifications

Table I: Electrical Specifications

Power Supply	Two-wire, 9-32 VDC FF compatible
IS	Fisco compliant
Communications	FF Protocol ITK 4.6x
Operating Current	23 mA
Maximum Voltage	36.0 VDC

Table II: Environmental Conditions

Operating Temperature Range	Standard	-40° to 176°F (-40° to 80°C)
Transport and Storage Temperature Range	-40° to 176°F (-40° to 80°C)	
Operating Humidity	0 - 100% non-condensing	

Note: The air supply must conform to ISA Standard ISA 7.0.01 (a dew point at least 18 degrees Fahrenheit below ambient temperature, particle size below five microns—one micron recommended—and oil content not to exceed one part per million).

Table III: Physical Specifications

Housing Material	Cast, powder-painted aluminum or stainless steel
Soft Goods	Buna-N / Florosilicone
Weight	8.3 pounds (3.9 kg) aluminum 20.5 pounds (9.3 kg) stainless steel

Table IV: Positioner Specifications

Deadband	<0.1% full scale
Repeatability	<0.05% full scale
Linearity	<0.5% (rotary), <0.8%, (sliding stem) full scale
Air Consumption	<0.3 SCFM (0.5 Nm ³ /hr) @ 60 psi (4 bar)
Air Supply	30-150 psig (ISA 7.0.0.1 compliant)
Air Delivery	12 SCFM @ 60 psi

Table V: Hazardous Area Certifications

Intrinsically Safe (PENDING)		
	Approved Explosion Proof	Explosion Proof
Intrinsically Safe (PENDING)	Class I, Div 1, Groups B, C, D	Class I, Div I, Groups B, C, D
	Class II, III, Div 1, Groups E, F, G T6 Ta = 60°C NEMA/TYP 4X	Class II, Groups E, F, G Class III Exd IIB+H2, T5 Type 4X

Intrinsically Safe (PENDING)

Flameproof (PENDING)

CE Compliant

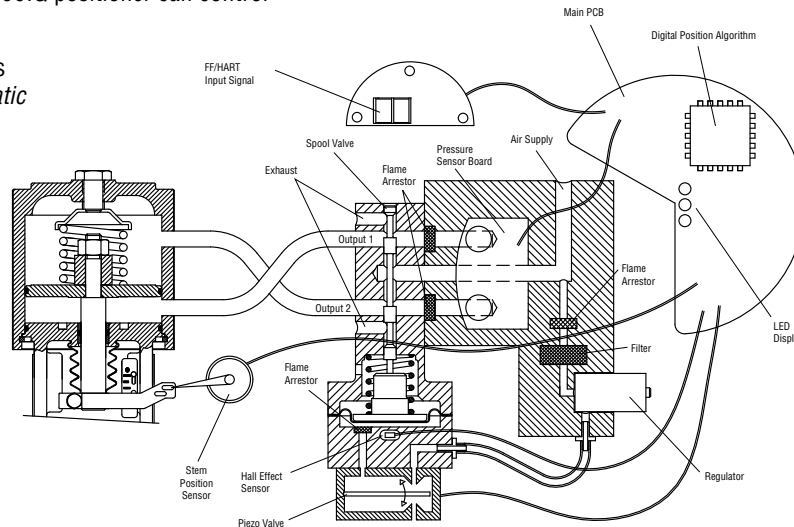
FISCO Compliant

Logix 3200 Positioner Overview

The Logix 3200/Q digital positioner is a two-wire 4-20 mA input digital valve positioner. The positioner is configurable through the local user interface. The Logix 3200/Q utilizes the HART protocol to allow two-way remote communications with the positioner. The Logix 3200/Q positioner can control

both double- and single-acting actuators with linear or rotary mountings. The positioner is completely powered by the 4-20 mA input signal. Start up current must be at least 3.6 mA without AO card or 3.85 mA with AO card.

Figure 1: Logix 3000 Series Digital Positioners Schematic (air-to-open configuration)



Specifications

Table I: Electrical Specifications

Power Supply	Two-wire, 4-20 mA 10.0 to 30.0 VDC
Compliance Voltage	10.0 VDC @ 20 mA
Effective Resistance	495 Ω @ 20 mA Typical Add 20 Ω when HART communication active
Communications	HART Protocol
Minimum Operating Current	3.6 mA without AO board 3.7 mA with AO board
Maximum Voltage	30.0 VDC

Table II: Environmental Conditions

Operating Temperature Range	Standard	-4° to 176°F (-20° to 80°C)
	Low	-40° to 176°F (-40° to 80°C)
Transport and Storage Temperature Range	-40° to 176°F (-40° to 80°C)	
Operating Humidity	0 - 100% non-condensing	

Note: The air supply must conform to ISA Standard ISA 7.0.01 (a dew point at least 18 degrees Fahrenheit below ambient temperature, particle size below five microns—one micron recommended—and oil content not to exceed one part per million).



Table III: Physical Specifications

Housing Material	Cast, powder-painted aluminum or stainless steel
Soft Goods	Buna-N / Florosilicone
Weight	8.3 pounds (3.9 kg) aluminum 20.5 pounds (9.3 kg) stainless steel

Table IV: Positioner Specifications

Deadband	<0.1% full scale
Repeatability	<0.05% full scale
Linearity	<0.5% (rotary), <0.8%, (sliding stem) full scale
Air Consumption	<0.3 SCFM (0.5 Nm ³ /hr) @ 60 psi (4 bar)
Air Supply	30-150 psig (ISA 7.0.0.1 compliant)
Air Delivery	12 SCFM @ 60 psi

Table V: Hazardous Area Certifications

Intrinsically Safe (PENDING)		
	Approved Explosion Proof	Explosion Proof
Intrinsically Safe (PENDING)	Class I, Div 1, Groups B, C, D Class II, III, Div 1, Groups E, F, G T6 Ta = 60°C NEMA/TYPE 4X	Class I, Div I, Groups B, C, D Class II, Groups E, F, G Class III Exd IIB+H2, T5 Type 4X

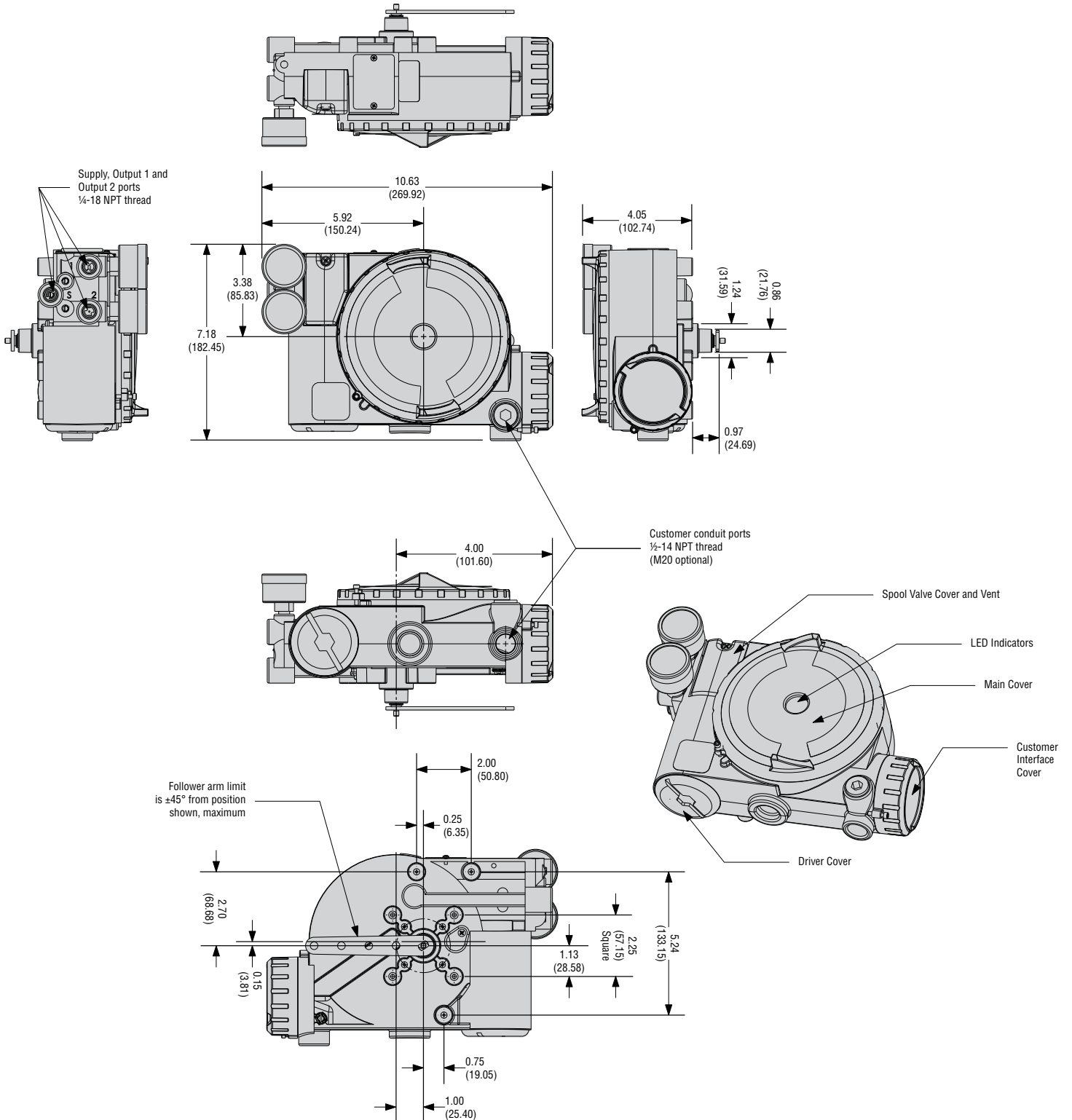
Intrinsically Safe (PENDING)

Flameproof (PENDING)

CE Compliant

3000 Series dimensions

NOTE: Dimensions in inches (mm)

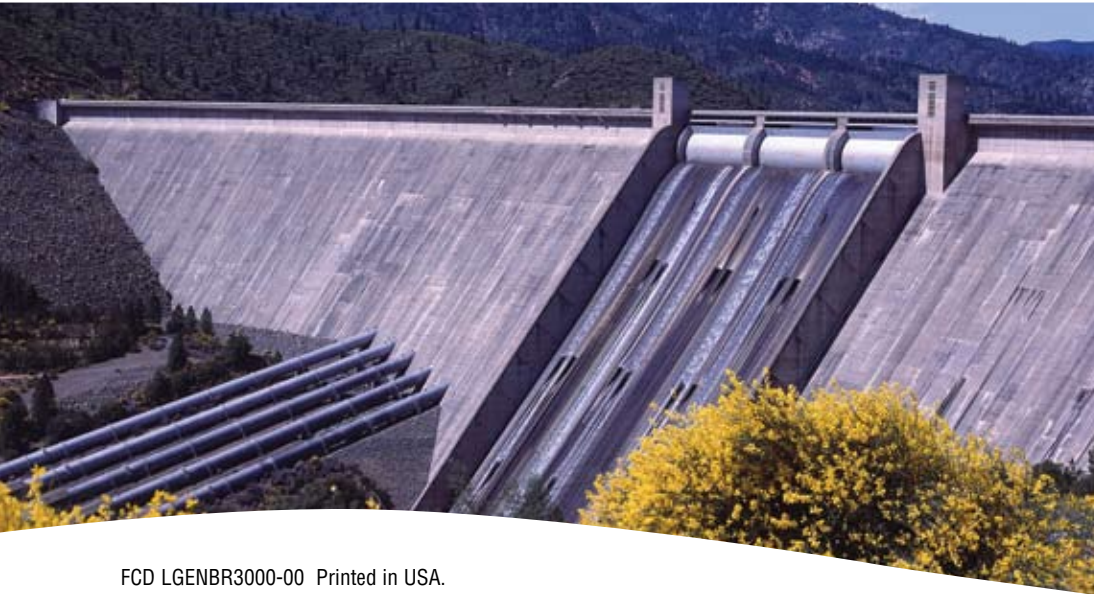


How to order

Selection				Code	Example
				3	3
Protocol	HART			2	2
	FOUNDATION Fieldbus			4	
Diagnostics	Standard Diagnostics			0	1
	Advanced Diagnostics			1	
Material	Aluminum, White Paint (Valtek)			0	0
	Stainless Steel, No paint (Valtek)			1	
Certifications		3200	3400		14
	Explosion proof Class I, Div 1, Groups B,C,D FM/CSA)		✓	01	
	Explosion proof EEx d IIB + H2 ATEX II 2 GD (GENELEC)	✓		07	
	Explosion proof Class I, Div 1, Groups B,C,D Intrinsically Safe Class I, Div 1,	✓		10	
	Groups A thru G (FM, CSA) FM Nonincendive. CSA Class I, Div 2				
	Group IIB + H2 and Exia Class 1, Zone 0, Group IIC (CSA ONLY)				
	General Purpose	✓	✓	14	
	Intrinsically Safe EEx ia IIC T4/T5, Standard Temp: -20°C<=Ta<=80°C/55°C, Low Temp: -40°C<=Ta<=80°C/55°C, ATEX II 1 G (GENELEC)	✓		15	
Explosion proof IECEx Ex d II B + H2	✓		16		
Shaft	DD Shaft - 316 SS (Valtek Standard)			D6	D6
	NAMUR Shaft - 316 SS (VDI/VDE 3845)			N6	
Conduit Connections	½" NPT			E	M
	M20			M	
Action	4-Way (Double Acting)			04	4V
	3-Way (Single Acting)			03	
	4-Way Vented (Double Acting)			4V	
	3-Way Vented (Single Acting)			3V	
Temperature	Operating Temperature (-40° to 80°C)			40	40
Gauges	SS with brass internals, psi (bar/kPa) (Valtek Standard)			0G	KS
	SS with SS internals, psi (bar/kPa)			0S	
	SS with brass internals, psi (kg/cm²)			KG	
	SS with SS internals, psi (kg/cm²)			KS	
	No gauges			0U	
Special Options	No special options			00	0F
	4-20 mA Position Feedback (not available on 3400)			0F	
	Remote Mount Feedback (Only Available with Certification Option 14)			RM	
	Fail Option Feedback*			SF	

For each category, select the code for one of the options.

* Contact factory before specifying this option.



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To find your local Flowserve representative:

For more information about Flowserve Corporation, visit www.flowserve.com or call USA 1 800 225 6989

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