



FLOWSERVETM

Valtek
Logix Series 1000
Digital Positioner

Valtek Logix Series 1000 Digital Positioner

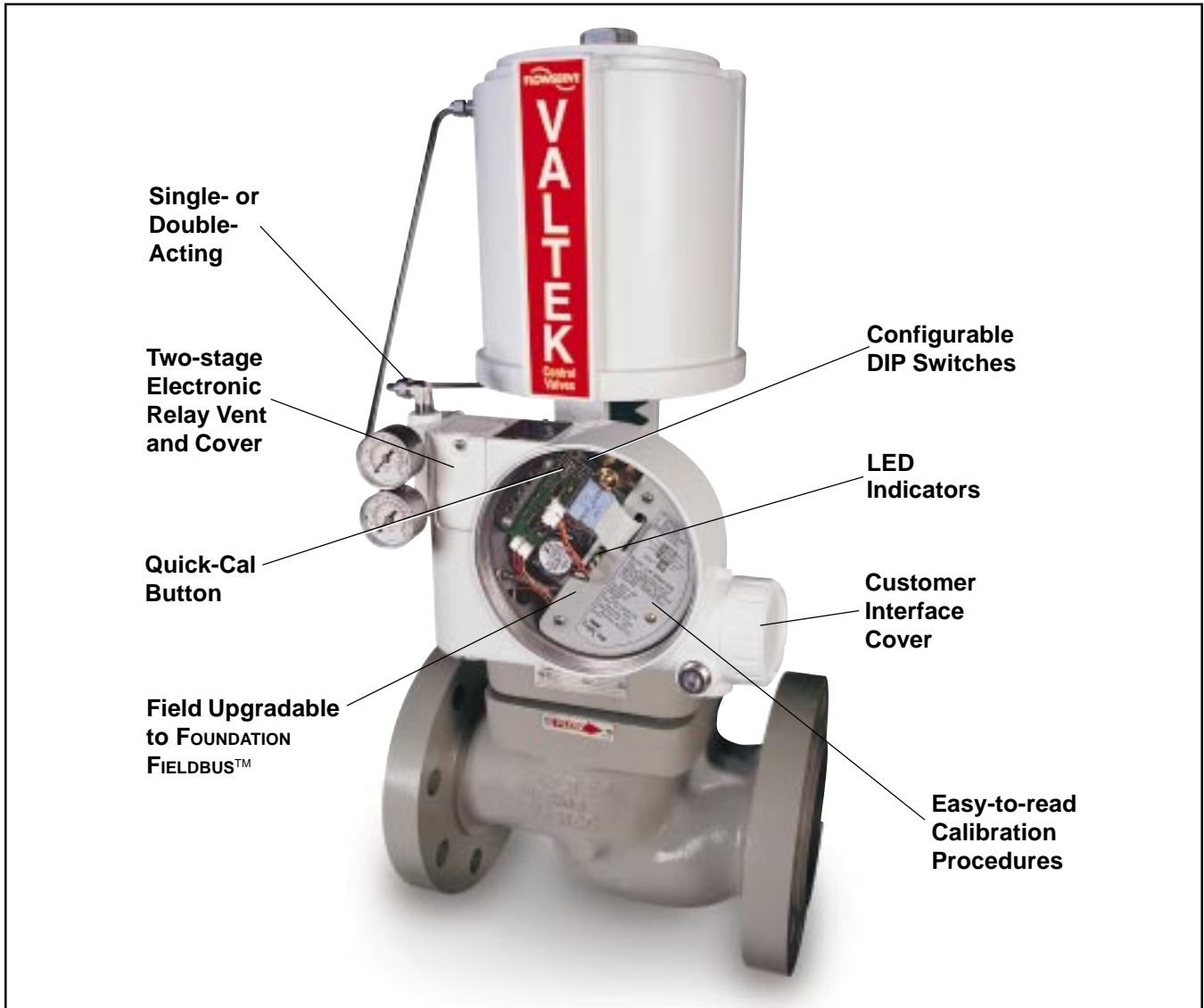


Figure 1: Logix Series 1000 Digital Positioner

Introduction

The Valtek® Logix™ Series 1000 digital positioner combines the latest technology and Valtek's extensive experience in 'smart' product development into a digital positioner which is unparalleled in its performance. This is accomplished through the use of a powerful 16-bit microprocessor and proprietary two-stage electronic relay (patent pending). An on-board Quick-Cal™ button allows the user to complete setup and calibration in less than 30 seconds without the use of hand-held devices or additional software. Local status LEDs provide an insight into valve status at a glance.

Data transfer with the ValTalk™ software is substantially faster than other current HART®-compatible systems, resulting in a dramatic speed increase in configuration and diagnostic signature acquisition. In addition to high performance, these positioners offer in-process diagnostics to the valve as well as the actuation system. Logix Series 1000 positioners are designed to provide users with significant improvements in today's plant operations while offering simple and economical migration to Fieldbus™ standards.

Valtek Logix Series 1000

Benefits and Advantages

Enhanced Performance

'Quick-Cal' Function	A Quick-Cal function provides the fastest, most convenient, self-calibration available.
Two-stage Electronic Relay	The fundamental positioning control is based on a two-stage electronic relay (patent pending), which facilitates quick, accurate response to both large and small changes in the position command.
Enhanced Data-packing Technique	Using an enhanced data-packing technique and ValTalk software, data transfer with the Logix Series 1000 positioner can be accomplished up to seven times faster than current HART-compatible systems, resulting in a dramatic speed increase in configuration and diagnostic signature acquisition.
Sixteen-bit Processor	The Logix Series 1000 digital positioner utilizes a 16-bit microprocessor which provides a substantial increase in CPU speed, allowing greater on-board diagnostics capability and 21-point custom characterization.
Low Operating Current	Many digital positioners cease operating if current drops below 4 mA. Although communications require about 3.5 mA the Logix positioner continues to operate even when current drops as low as 2.8 mA.
HART Handheld Support	The Logix 12XX is supported by the HART Model 275 handheld communicator.
ValTalk Software	The ValTalk Windows-based software allows the operator to run diagnostics and signatures, calibrate, display parameters, log data, set alarms, and perform many other functions in a familiar Windows environment with on-line help files.
Twenty-one point Custom Characterization	Twenty-one individual points can be programmed so the valve can be in virtually any position the operator desires for a given signal.
Configuration Filing Capability	Through ValTalk software a configuration can be saved to disk, allowing values to be restored to that valve or downloaded to another valve.

Maintenance

Local Status LEDs	Local status LEDs provide operators with a 'window into the system,' alerting personnel to potential problems. This results in improved plant safety and less down time. The green LED indicates that the positioner and all alerts are normal. Yellow indicates a user limit or alert has been reached. Red indicates that a positioner failure has occurred.
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Increased Safety

Hazardous Area Certification	The Logix Series 1000 digital positioner carries both explosion-proof and intrinsically safe approvals which is indicated by the fifth and sixth digits of the model number (see <i>Model Number Breakdown</i> on page 7).
Alarms	The Logix Series 1000 positioner includes calibration, pressure sensor and user programmable alarms that inform personnel of potential problems so preventive measures can be taken, ensuring the safety of plant personnel.

Valtek Logix Series 1000

Information Accessible from the Logix Series 1000 Digital Positioner

Calibration

Stroke
 4-20 mA signal
 Pressure sensor
 Calibration date
 Calibrated by initials

Plus more than 100 other parameters

(Red denotes additional benefits available on model with advanced diagnostics)

Data Acquisition

Valve position
 4-20 mA signal
 Command signal
 Top actuator pressure
 Bottom actuator pressure

Identification

Spool ID
 Air action
 Tag number
 Spring type
 Valve style
 Valve material
 Valve body size
 Valve serial number
 Valve manufacturer
 Valve pressure class
 Valve end connections
 Fail position
 Stroke length
 Flow direction
 Trim number/size
 Trim characteristic
 Stem/shaft diameter
 Trim type and material
 Leakage class
 Engineering units
 Actuator size and type
 Device name/description
 Inlet and outlet pressure
 Electronic serial number
 Embedded software version
 Message - up to 32 characters



**Logix Series 1000
 Digital Positioner
 mounted on Kammer
 Model 4824 Actuator**



**Logix Series 1000 Digital
 Positioner mounted on
 Neles-Jamesbury Series
 BC Rotary Actuator**



Logix Series 1000 Digital Positioner mounted on Masoneilan Model 35 Actuator

Preventive Maintenance

- Actual travel
- Rated travel
- Travel alert
- Packing style
- Cycle counter
- Cycle alert

Diagnostics and Signatures

- Step test
- Ramp test
- Internal power test



Logix Series 1000 Digital Positioner mounted on Fisher Series 667 Actuator

Logix Series 1000 Variables

- Noise filter
- Integral gain
- Board current
- Travel position
- Supply pressure
- Digital input signal
- Analog input signal
- Stroke open speed
- Stroke closed speed
- Internal temperature
- Position deviation alert
- Minimum position cutoff
- Minimum proportional gain
- Maximum proportional gain
- Proportional gain multiplier
- Upper and lower travel alert
- Upper and lower soft limit stop
- Actuator pressure sensor check
- 21-point custom characterization

ValTalk Features

- Two-level security
- Multiple characterization library
- Communication error log

Valtek Logix Series 1000 Wiring Schematics

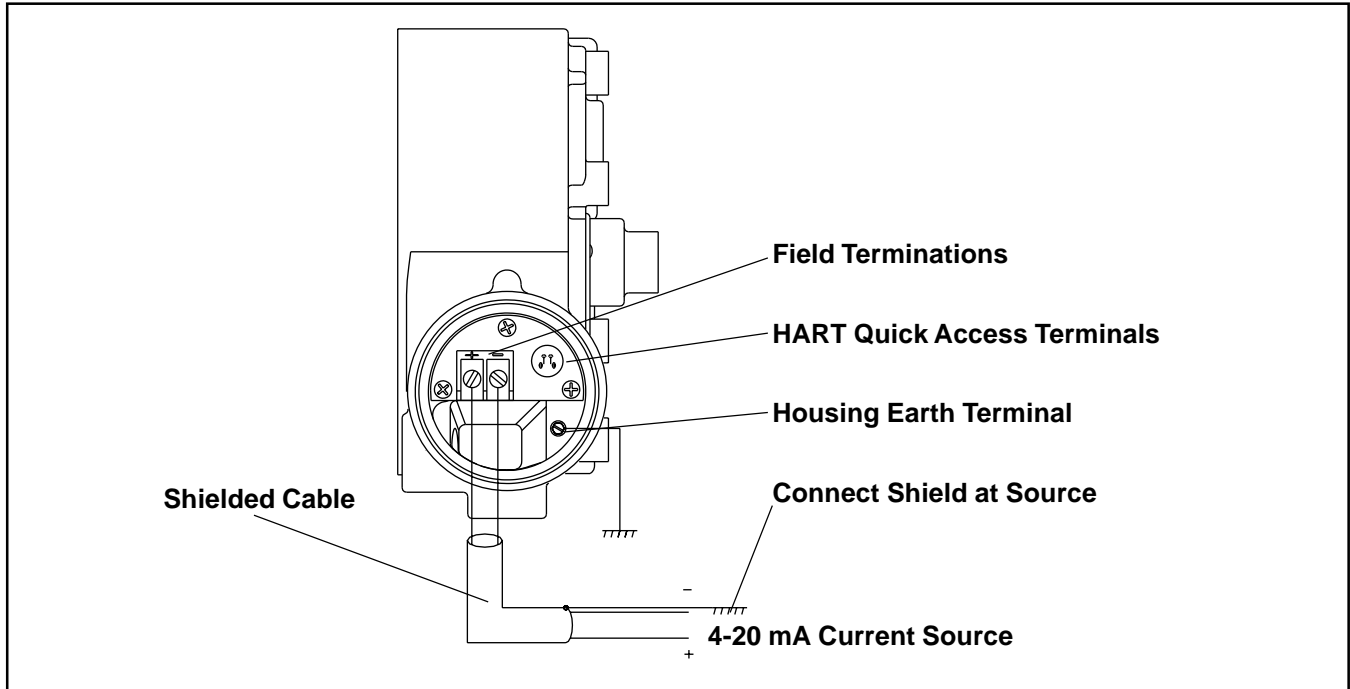


Figure 2: Logix Series 1000 Digital Positioner Wiring Schematic

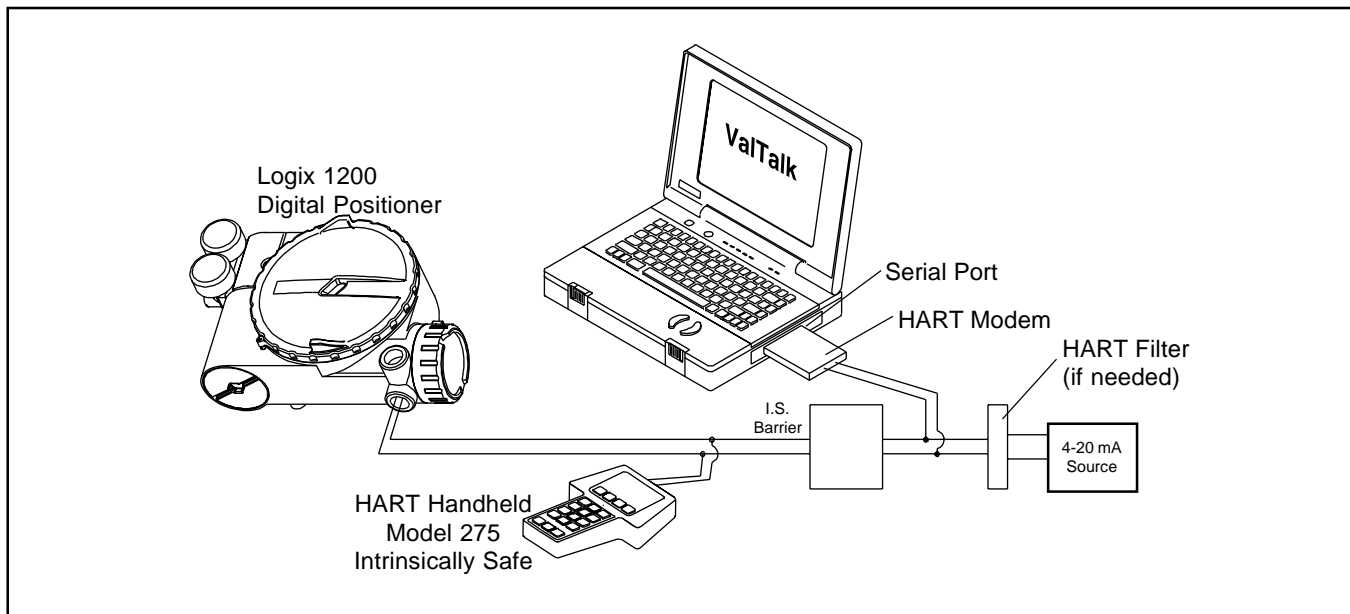


Figure 3: Wiring Diagram of 4-20 mA Input Signal and HART Communications

Optional Accessories

- HART 275 Controller
- HART Filter
- ValTalk Software
- HART Modem

Valtek Logix Series 1000 Specifications

Electrical Specifications

Power supply	Two-wire, 4-20 mA input
Compliance voltage	12 VDC
Effective resistance	600 Ω @ 20 mA
Communications	HART Protocol
Minimum required Start-up current	3.2 mA
Minimum operating current	2.8 mA

ValTalk Software Specifications

Computer	Minimum 80486 processor running Windows 95 or NT, 16 MB total memory (32 MB recommended), 20 MB available hard disk space, one 3.5-inch floppy drive
HART Compatible RS-232 Modem	Supplied with Logix module of ValTalk software

Physical Specifications

Operating Temperature Range	-40° C to +60° C -40° F to +140° F
Housing	Cast, powder-painted aluminum or stainless steel
Weight	8.5 pounds 3.9 kg aluminum 20.5 pounds 9.3 kg stainless steel

Performance Specifications

Response Level	0.1% full scale
Dead band	<0.1% full scale
Resolution	0.1% full scale
Linearity	<0.5% (rotary), <0.8% (linear) full scale
Repeatability	<0.05% full scale
Hysteresis	Avg. 0.1% full scale Max 0.2% full scale
Air Consumption at 60 psig 4 barg Max. Air Supply	<0.3 SCFM (0.5 Nm ³ /hr) 150 psig 10.3 bar

*Hazardous Area Certifications

Explosion Proof Groups	FM/CSA Class 1, Div 1, B, C, D
Non-incendive Groups	FM/CSA Class 1, Div 2, A, B, C, D EEx ib, II C, T5
Intrinsically Safe Groups**	FM/CSA Class 1, Div 1, A, B, C, D CENELEC EEx ib, II C, T4 IP-66

* At time of printing, some of these certifications were pending approval. For further information, consult factory.

** **Warning: Substitution of components may impair intrinsic safety**

Logix Model Number Breakdown

Logix -

Communication
2 = HART
4 = Fieldbus **

Diagnostics
0 = basic
1 = advanced

Material
0 = aluminum
1 = stainless steel

Product Series
1 = Digital Positioner
2 = Digital Positioner/PID Controller

Certification / Listings
10 = Explosion-proof Class I, Division 1, Groups B,C,D. Intrinsically safe Class I, Division 1, Groups A through G (FM / CSA) FM Nonincendive. CSA Class 1, Division 2, Class 1, ZOne 1, Group IIB + H2 and Exia Class 1, Zone 0, Group IIC (CSA only)
13 = Intrinsically safe EEX ib, EEx n (CENELEC SCS)

(Meet CE Mark requirements for the EMC Directive.)

** Contact factory for availability

Valtek Logix Series 1000

Dimensions

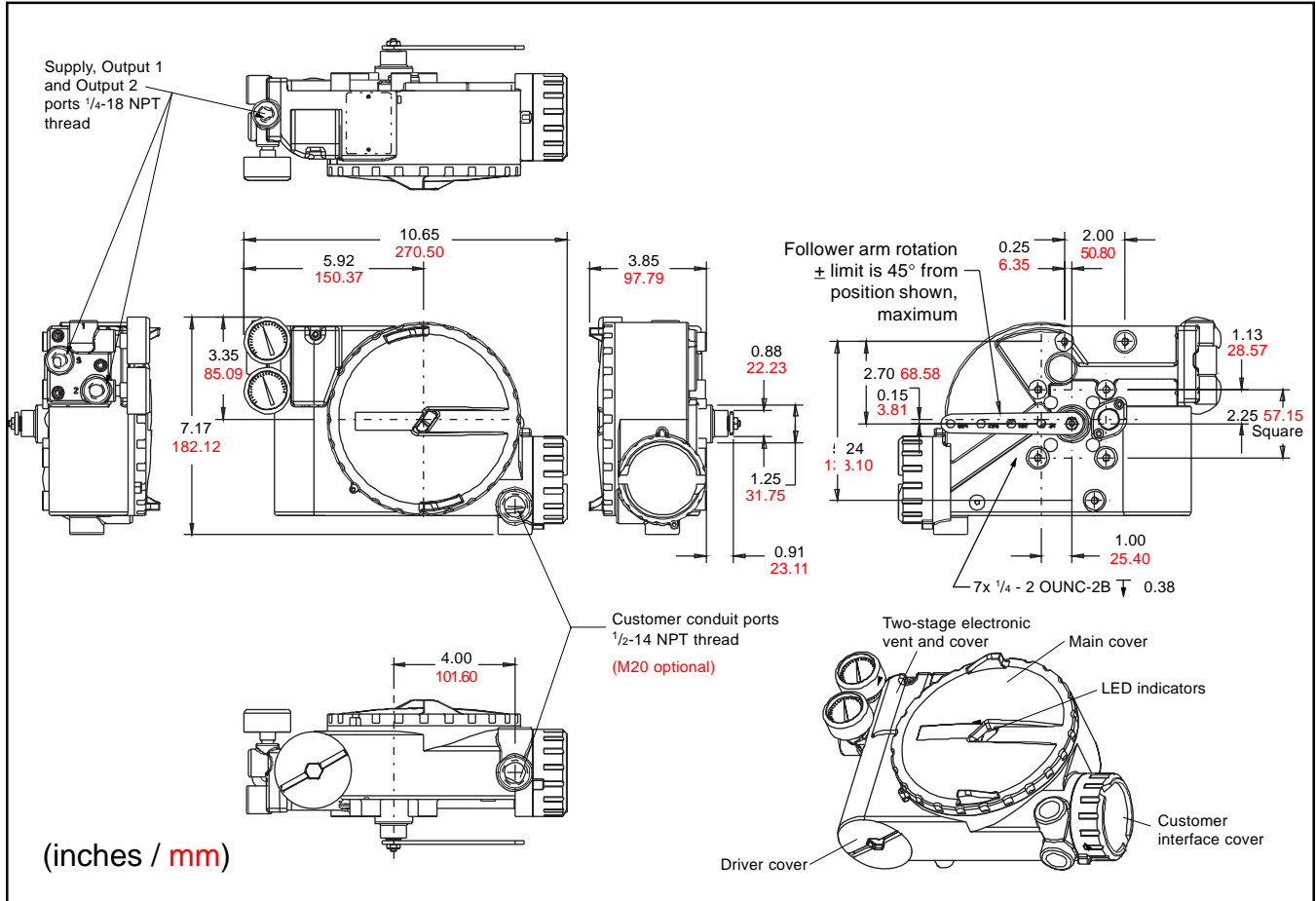


Figure 4: Certified Dimensional Drawings of the Logix Series 1000 Digital Positioner

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