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Logix 2000 Digital Positioner

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Introduction

The Valtek® Logix™ Series 2000 is a digital positioner based on the StarPac™ II housing and positioning module. The benefits of the Logix system include: exceptionally high positioner performance, diagnostics, PID control (using a process value from an external transmitter), data logger, keypad configuration, and Modbus communications. Configuration software is included with the Logix 2000 at no additional cost.

Maintenance procedures are dramatically improved with Logix's ability to record and report on valve performance. By generating and storing an initial signature upon installation and comparing subsequent signatures after the valve is in service, changes in the packing, positioner, etc., can be identified, and preventive maintenance can be scheduled.

Logix technology also allows multiple failure modes to be set, including: loss of power, air supply or command signal. This ensures greater reliability and safety for the process in case of emergency shutdowns, protecting the process and personnel.

All the tuning and operating parameters can be set without the use of any external configuration device by accessing the membrane keypad located behind the front door of the unit. The keypad consists of four context-sensitive function keys, numeric keys, and shift keys that allow the user to enter any numeric or alpha character, as well as "slew keys" for those steps when the user may want to change the value slightly without typing in a new value.

The use of intelligent systems in hazardous application start-ups and shutdowns provides process insight and control – previously only available with expensive, complicated equipment installations. Logix's "intelligent" reaction to system failure can give the user that extra safety edge over conventional multi-device control-loops.

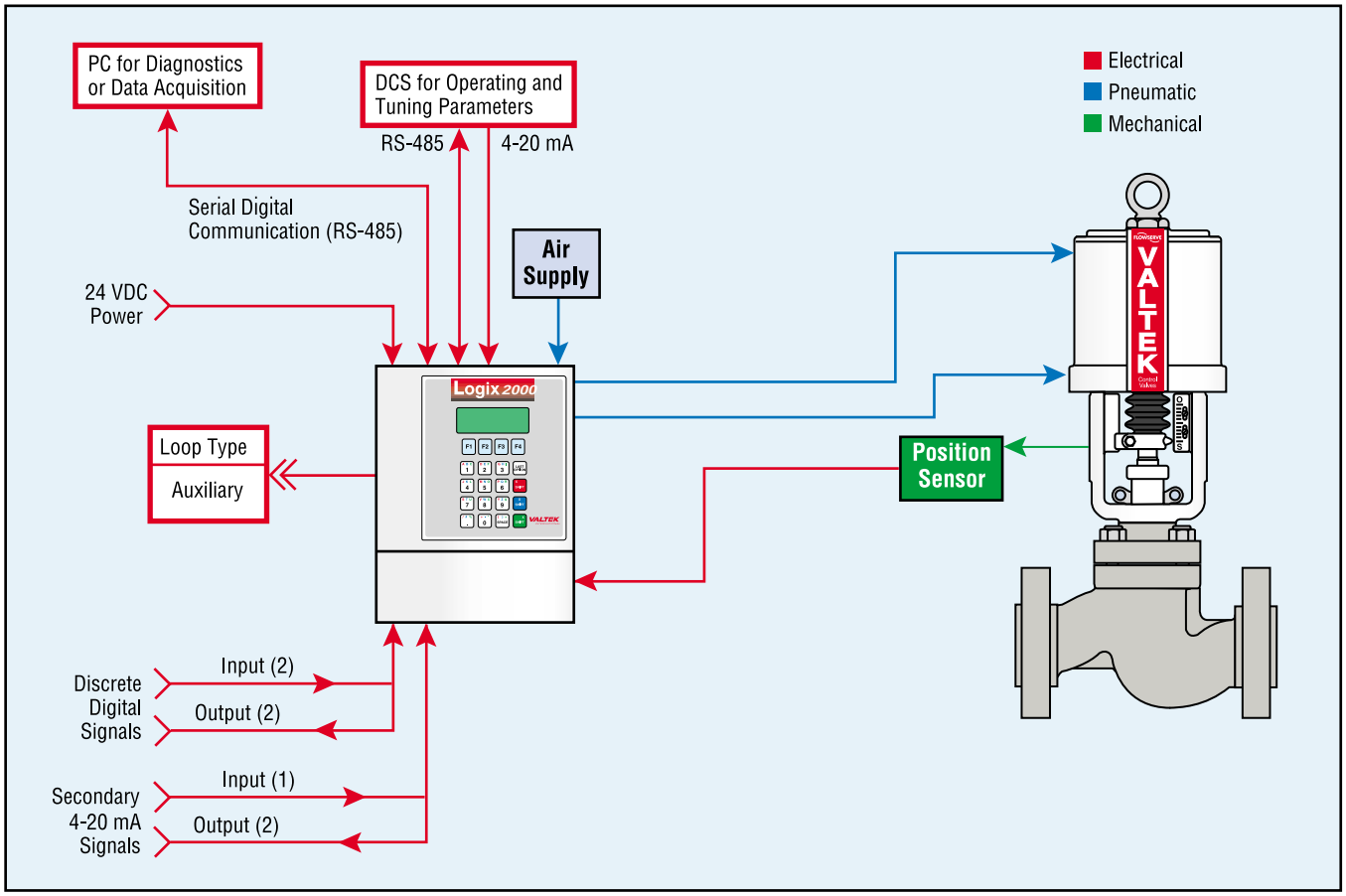

Figure 1: Logix 2000 Digital Positioner Schematic

Valtek Logix 2000 Digital Positioner
Specifications

Benefits and Advantages

Better Process Operation	The extremely high-performance positioner responds to very small or large changes in command signal. The speed of response is exceptionally quick, starting stem movement in less than 0.1 seconds, with 98 percent of final stem movement generally occurring less than one second after the command change.
Wide Versatility	Remote sensors can be tied into the Logix 2000 unit for control of other process parameters. Cascade action and ratio control are also supported.
Simple System Configuration	The system can be fully configured from the membrane keypad on the front of the electronics unit. In addition, a simple Windows™-based configuration program is included for remote configuration. The configuration registers are also available to a DCS over the Modbus link.
Full Power at all Stem Positions	Because the Logix 2000 positioner is powered by a separate power source, the system performs at full capability, regardless of command signal. The Logix 2000 does not "go to sleep" at low levels.
Predictive Maintenance	The Logix 2000 allows the intelligent system to be used to diagnose valve function during operation to predict acceptable performance or potential failure. Maintenance can then be performed before process failure occurs, dramatically reducing operational costs.

Software Specifications

Computer	Windows 3.x or higher, 80486 processor running 33 MHz, 8 MB RAM
Drive Required	Hard disk (10 MB) minimum
Logix Units per Link	Up to 31
Data Logger	300 most recent samples at user-defined intervals from 1 second (5 minutes total) to 3 hours (34 days total)

Digital Positioner Specifications

Dead band	<0.03% full scale
Repeatability	<0.035% full scale
Linearity	<0.5% full scale
Air consumption at 60 psi	<0.3 SCFM

Physical Specifications

Housing	Cast, powder-coated aluminum
Tubing	316 stainless steel with Swagelok® fittings
Environmental Vibration	NEMA 3; Up to 2 G's - 30 to 500 Hz, measured at electronics

Operating Temperature Range

Temperature Effect	-40 to -10° F (0.07% ° F) -10 to 150° F (0.02% ° F) 150 to 185° F (0.07% ° F)

Electrical Specifications

Power Supply	Nominal 24 VDC (18 to 64 VDC allowable) providing 300 mA
Analog Inputs	Isolation protection to 1000 V
Command Auxiliary Input	13-bit resolution, 16 Hz sampling rate
Analog Outputs Two (2)	4-20 mA that will each drive up to 750 Ω
Discrete Inputs (2 channels)	Jumper selectable input voltages of 120 and 24 V accept either AC or DC signals, pulse width > 1/16 second
Discrete Output No. 1: Alarm Relay	Jumper selectable NO or NC contacts maximum relay contact rating: 24 VDC resistive. Groups A & B - 230 mA, Group C - 590 mA, Group D - 800 mA
Discrete Output No. 2: Pulse Relay	24 VAC or VDC operation, maximum output switching frequency of 256 Hz
Non-incendive	Class I, Division II, Groups B,C,D
Overload Protection	Minimum 500 volt isolation; 24V power fuse protected
Serial Interface	Dual RS-485 ports; Modbus Protocol

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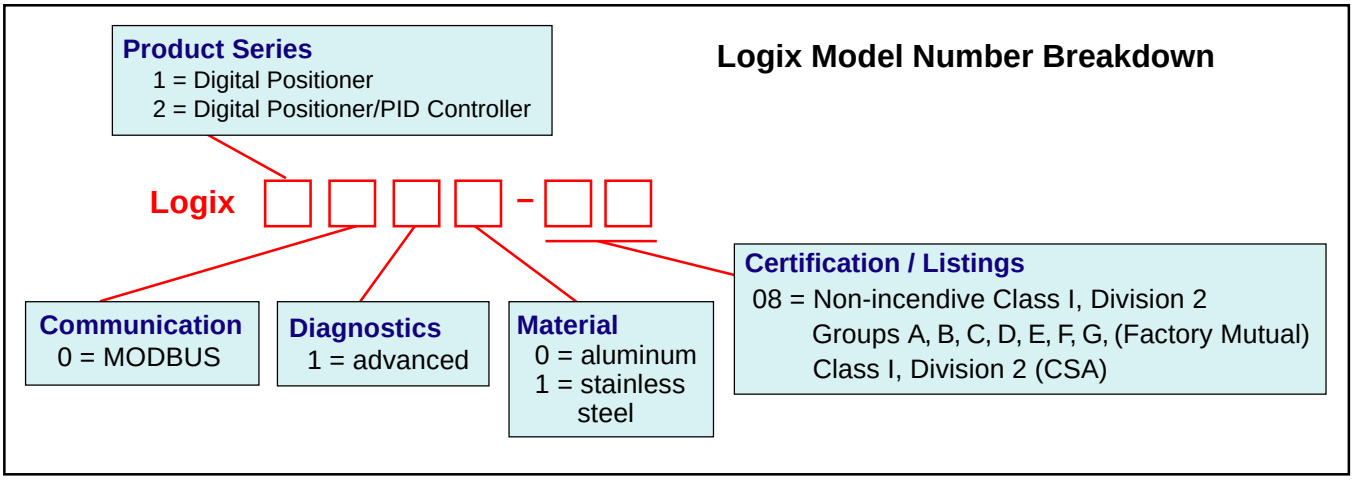
Ordering Information



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