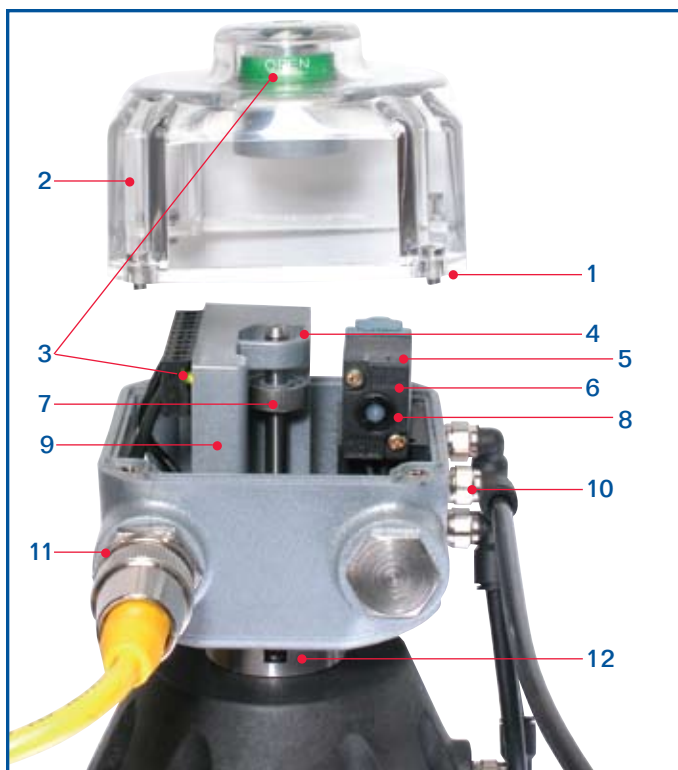


Prism

The Prism Series, designed for corrosive process environments, attaches directly to Sanitary Diaphragm and Angle Valves.

This rugged, feature-rich platform offers a full array of communication and switching options as well as discrete integral pneumatic control for single-acting valve actuator operation.



1. The Prism may be washed down and temporarily submerged with no adverse affects. It is rated NEMA 4, 4x, and 6. It may be used in Div. 2/Zone 2 areas (Nonincendive) or Div.1/Zones 0 & 1 (Intrinsically Safe) hazardous applications.

2. Enclosure features high strength polycarbonate with excellent corrosion resistance and exceptional temperature stability.

3. Visual electronic and mechanical position indication confirm valve and switch status for added safety.

4. Solid state proximity sensors monitor Open/Closed discrete valve position with precision and reliability.

5. Integral pneumatic valve is isolated from environmental contamination, offers high tolerance to dirty air and enables rapid valve operation.

6. Solenoid options available for 120VAC and 24VDC. Select Piezo option for bus powered FOUNDATION Fieldbus Applications.

7. Self Adjusting triggering system provides consistent Open and Closed indication even with diaphragm compression. No resetting is required.

8. Manual override enables valve operation without electrically energizing.

9. Dual module system seals all position sensing, communication and control electronics in a compact vibration proof package.

10. NPT port connections are stainless steel reinforced for long life sealing under high torque stress conditions.

11. Water proof quick connectors, compression fittings or conduit connections are available for convenient, reliable attachment to plant electrical systems.

12. Stainless steel adaptor system locks Prism securely to valve actuator and provides stability for shaft interface.

Sensing & Communication Module

The Prism features StoneL's dual module system with field proven reliability in all on/off applications: Namur (intrinsically safe), SST (switching) and VCTs (valve communication terminals). Dual modules have a 5-year warranty. (For more detailed information please see pages 28 through 37.)



SST Switching Sensors (33)

Configuration	(2) SST Switching Sensors (2) Wire Terminations (Solenoid) Select either NO or NC Models
Output	
Maximum Current	
Inrush	2.0 Amps
Continuous	0.3 Amps
Min. On Current	2.0 mA
Max. Leakage Current	0.5 mA
Voltage Range	8 to 125VDC / 24 to 125VAC
Max. Voltage Drop	7.0 Volts @ 100 mA

Namur Sensors (44)

Configuration	(2) NAMUR Sensors (2) Wire Terminations (Solenoid)
Output	Conforms to DIN 19234
Current Ratings	Target On I < 1.0 mA Target Off I > 3.0 mA
Voltage Range	6 to 29 VDC

AS-Interface VCT (96)

Configuration	(2) Sensor Inputs (2) Auxiliary Inputs (2) Power Outputs (Solenoids)
Max. Current	160mA, Both Outputs Combined (Current Limited to 200mA)
Outputs, Max. Power	4 Watts, Both Outputs Combined
Outputs, Voltage	25 to 30 VDC



AS-Interface VCT (97) with Extended Addressing

Configuration	(2) Sensor Inputs (2) Auxiliary Discrete Inputs (1) Power Output (Solenoid)
Max. Current	100mA
Outputs, Max. Power	2.4 Watts
Outputs, Voltage	25 to 30 VDC

DeviceNet VCT (92)

Configuration	(2) Discrete Inputs (Open & Closed) (2) Power Outputs (Solenoids) (1) 4-20 mA Auxiliary Input
Outputs, Max. Power	4 Watts, Both Outputs Combined
Outputs, Voltage	24 VDC

Bus Powered Foundation Fieldbus VCT (93)

Configuration	(2) Discrete Inputs, DI (Open & Closed) (2) Discrete Outputs, DO (Piezo Valves)
Outputs	2mA @ 6.5 VDC each; Current Limited to 2mA (Bus Powered)
Temperature Range	-40° to 82°C (40°F to 180°F)

Externally Powered Foundation Fieldbus VCT (94)

Configuration	(2) Discrete Inputs, DI (Open & Closed) (2) Power Outputs, DO (Solenoids)
Outputs	4 Watts @ 24VDC Both Outputs Combined; Current Limited to 200mA (Externally Powered)
Temperature Range	-40° to 82°C (40°F to 180°F)

Modbus VCT (95)

Configuration	(2) Discrete Inputs (Open & Closed) (2) Power Outputs (Solenoids) (1) 4-20 mA Auxiliary Input
Outputs	4 Watts @ 24VDC Both Outputs Combined (Current Limited 200mA)
Temperature Range	-40° to 82° C (40°F to 180°F)

Valve Diagnostics Cut Maintenance Costs

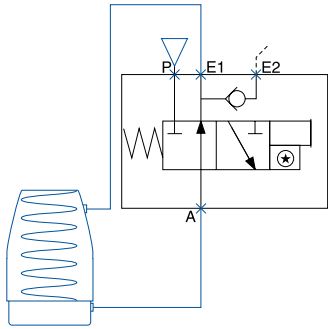
StoneL's dual modules with FOUNDATION Fieldbus feature valve stroke timing, cycle count and maintenance dating. This information is stored in the dual module and may be retrieved by the control system to determine valve system repair or replacement scheduling. Other protocols feature different forms of diagnostics depending on the protocol functionality. See dual module protocol specifications for more details.



Pneumatic Control & Other Specifications

The three way, two position spring return pneumatic valve is designed to operate single acting actuators. Working mechanisms on the valve are completely isolated from the environment enabling pneumatic control to be located in the field at the actuator with no threat of contamination. A standard rebreather enables exhaust

air from the pressurized actuator cylinder to be channeled into the spring side actuator chamber preventing the ingestion of contaminated air from the outside environment. Select a solenoid valve for conventional or device bus applications or a piezo valve for FOUNDATION Fieldbus bus powered applications.



General Pneumatic Specifications (Solenoid & Piezo)

Configuration	3-Way, 2-Position, Spring Return
Porting	1/8" NPT all pressurized ports
Rebreather Port	4-40 size
Flow Ratings	Cv - 0.1 (Kv - 1.4)
Rebreather	Standard on all models; Diverts air from Exhausting Cylinder into Actuator Spring Side, Excess air exhausted to atmosphere
Operating Life	1 Million Cycles
Operating Pressure	40psi to 120psi (2.6 to 8 bar)

Solenoid Valve ☉ = ☐



A poppet style valve with exceptional tolerance to dirty air, the solenoid valve may be used for most conventional AC or DC applications. The DC (low power) version may be used on AS-Interface, Modbus, DeviceNet bus powered applications and on Foundation

Fieldbus (94) externally powered applications.

Solenoid Valve Specifications

Filtration Requirements	40 Micron
Operating Temperature	-18°C to 50°C (0°F to 120°F)
DC Power Requirements	1.8 Watts @ 24VDC (0.075mA)
AC Inrush Current	0.09 Amps @ 120VAC
AC Holding Current	0.06 Amps @ 120VAC
AC Coil	Warranted Against Burn Out

Piezo Valve ☉ = ☐



The Piezo valve is ideally suited for use with the Foundation Fieldbus (FF) bus powered output module (93). Each module output provides up to 2mA @ 6.5 VDC which is sufficient to drive the piezo valve. Specifically designed for ON/OFF

discrete applications, the piezo valve may remain energized for extended periods of time with no memory effect.

Piezo Valve Specifications

Filtration Requirements	30 Micron
Operating Temperature	-10°C to 60°C (14°F to 140°F)
DC Power Requirements	2mA @ 6.5VDC
Hazardous Ratings	Ex ia IIC T6

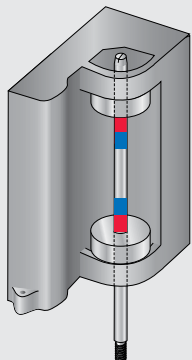
Self Adjusting Triggering System

Triggering cams adjust automatically over the valve diaphragm operating life. Cams are fitted snugly to the shaft assuring stability under high amplitude vibration at varying frequencies and temperatures.

Self Adjustment Sequence

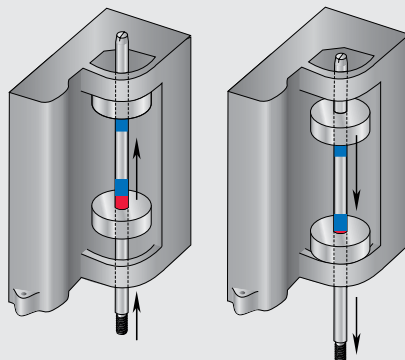
1. Installation

Cams are manually set to outer limits when fitted to actuation system. (Open at top; Closed at bottom)



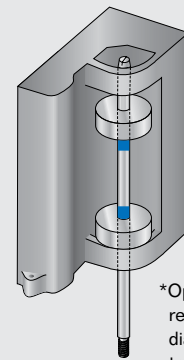
2. Automatic Initial Setting

On operation, cams are automatically positioned to proper set points by module stops at top and bottom.



3. Operational Self Adjustment

As diaphragm compresses over time, closed cam is automatically repositioned.*



*Open travel stops recommended on diaphragm actuators to maintain consistent travel with varying process line pressures.

Nonincendive & Intrinsically Safe Model Selector

Model Number Example: **PM961BS09RS**

	Function	Pneumatic Valve	Conduit/Connectors	Visual Indicator	Valve Size
PM	Sensor Modules	11 No Pneumatic Valve	S02 (2) 1/2" NPT	R Red Closed/Green Open	S* 1/4" to 2" (1/8" to 1 1/4" stroke)
	33 (2) SST N.O. Switching Sensors 44 (2) Namur Sensors (I.S.; DIN 19234)	1A 3-way Piezo (Recommended for use with Function option 93)	S05 (2) M20	G Green Closed/Red Open	L* 2" to 4" (1 1/4" to 2 1/4" stroke)
	Valve Communication Terminals (VCT)	1B 3-way 24VDC 1.8 W	S09 (2) Cable Glands		*Mounting system required. Order kit separately.
	92 DeviceNet VCT	1C 3-way 120VAC 7.2 W	S11 (1) 5-Pin Mini-Connector		
	93 FOUNDATION Fieldbus VCT (Bus Powered; I.S.)	1D 3-way 24VDC 0.5 W (Recommended for use with Function options 33, 44, 92, 94, 95, 96 and 97)	S13 (1) 4-Pin Micro-Connector		
	94 FOUNDATION Fieldbus VCT (Externally Powered)	1E 3-way 12VDC (Recommended for use with Function option 44.)	S14 (2) 4-Pin Micro-Connector		
	95 Modbus VCT		S15 (1) 5-Pin Micro-Connector		
	96 AS-Interface VCT				
	97 AS-Interface VCT (with extended addressing)				

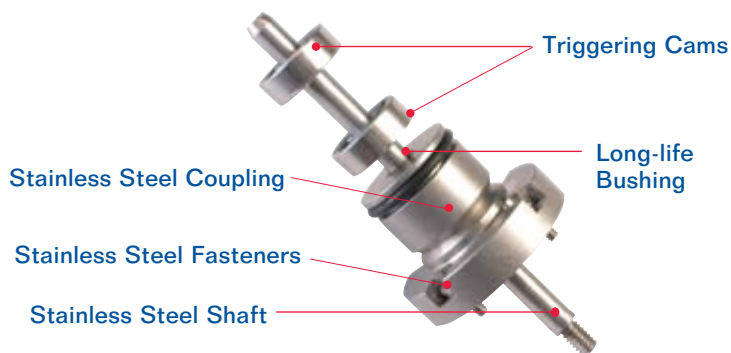
Mounting system required for all and sold separately.

Prism Mounting System

Prism adapting systems are designed specifically for each actuator manufacturer and model. The adaptor coupling, made of stainless steel, also integrates a corrosion proof, ultra long-life bushing. This system stabilizes the shaft from lateral motion and assures reliable, low friction movement over the actuator's life.

- Required for all
- Order kit separately
- For kit numbers, consult factory or visit www.stonel.com

Note: Kit numbers are specific to valve size and manufacturer.



Other Specifications and Ratings

Materials of Construction

Housing & Cover	Polycarbonate
Fasteners	Stainless Steel
Triggering Cams	Stainless Steel Banded Polycarbonate
Shaft	Stainless Steel
Valve Manifold	Polysulfone with Stainless Steel Reinforced NPT
Temperature Range with solenoid	-40° C to 82° C (-40° F to 180° F) Max. Ambient 50° C (120° F)

Operating Life 1 Million Cycles

Warranty

Dual Module	Five Years
Other Mechanicals	Two Years

Nonincendive Ratings

NEC/CEC Classes I and II, All Groups, Div. 2

Intrinsically Safe Ratings

NEC/CEC Classes I and II, All Groups, Div. 1 & 2

Enclosure Protection

NEMA 4, 4X and 6; IP67

For approval information visit www.stonel.com/approvals

Dimensions

Inches [mm]

