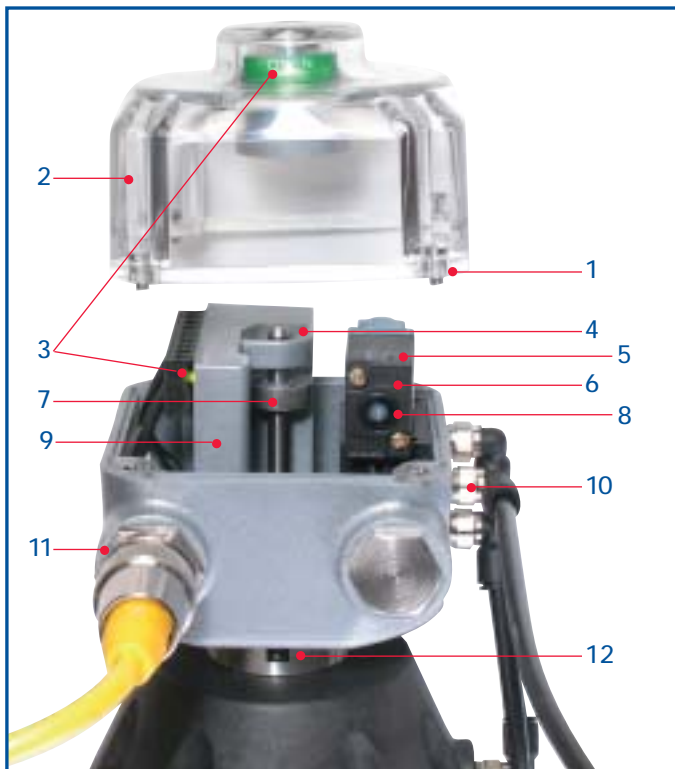


The Prism Series, designed for corrosive process environments, attaches directly to Sanitary Diaphragm and Angle Valves. This rugged, feature-rich platform, offers a full array of communication and switching options as well as discrete integral pneumatic control for single-acting valve actuator operation.



1. **The Prism may be washed down and temporarily submersed** with no adverse affects. It is rated NEMA 4, 4x, and 6 as well as designed for Class I and II, Division 2 (Nonincendive Equipment) 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 2 through 8.)**



SST Switching Sensors (33)

Configuration	(2) SST Switching Sensors (2) Wire Terminations (Solenoid)
Output	Select either NO or NC Models
Max. Current Inrush	2.0 Amps
Continuous	0.3 Amps
Min. On Current	2.0 mA
Max. Leakage Current	0.25 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



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)
Other Features	Stores Number of Actuations Stores Date of Last Service Predetermined Output Fail State

Externally Powered FOUNDATION Fieldbus VCT (94)

Configuration	(2) Discrete Inputs, DI (Open & Closed) (2) Power Outputs, DO (Solenoids)
Outputs	160mA @ 24VDC Both Outputs Combined; Current Limited to 200mA (Externally Powered)
Temperature Range	-40° to 82°C (40°F to 180°F)
Other Features	Stores Number of Actuations Stores Date of Last Service Pre-determined Output Fail State

Modbus VCT (95)

Configuration	(2) Discrete Inputs (Open and Closed) (2) Power Outputs (Solenoids)
Outputs	160mA @ 24VDC Both Outputs Combined; Current Limit 200mA
Temperature Range	-40° to 82° C (40°F to 180°F)
Other Features	Pre-determined Output Fail State

Valve Diagnostics Cut Maintenance Costs

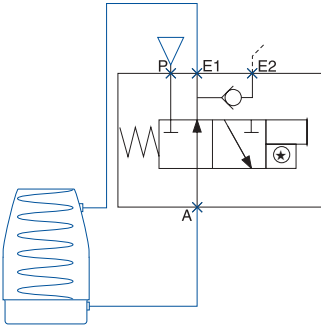
StoneL's dual modules with FOUNDATION Fieldbus feature valve stroke timing, cycle count and maintenance dating. This information is stored in the dual module and may be retrieved by the control system to determine valve system repair or replacement scheduling. Other protocols feature different forms 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

Valve Schematic



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	EEx ia IIC T6

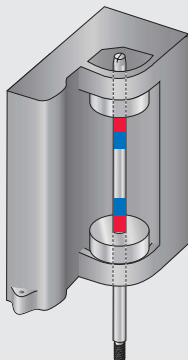
Self Adjusting Triggering System

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.

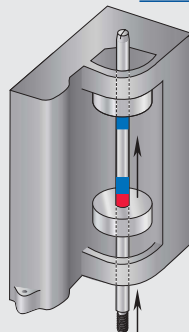
Self Adjustment Sequence

1. Cams are manually set to outer limits when fitted to actuation system. (Open at top; Closed at bottom)
2. On operation, cams are automatically positioned to proper set points by module stops at top and bottom.
3. As diaphragm compresses over time, closed cam is automatically repositioned.

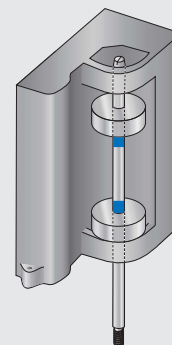
1. Installation



2. Automatic Initial Setting



3. Operational Self Adjustment



Prism Model Selector

Model Number Example: PM961BS09RS

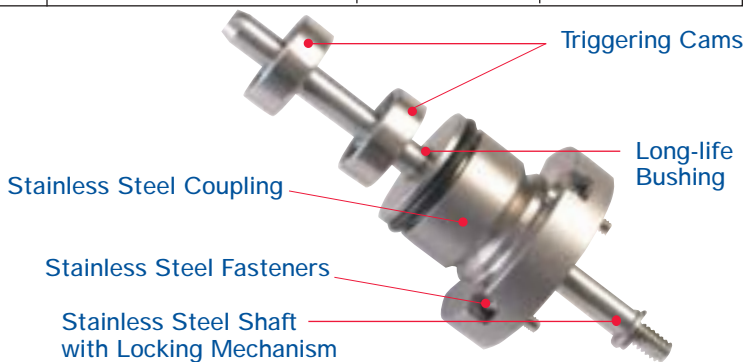
	FUNCTION	PNEUMATIC VALVE	CONDUIT/CONNECTORS	VISUAL INDICATOR	VALVE SIZE (stroke length)
PM	<p>Sensor Modules</p> <p>33 (2) SST N.O. Switching Sensors</p> <p>44 (2) Namur Sensors (I.S.; DIN 19234)</p> <p>Valve Communication Terminals (VCT)</p> <p>92** DeviceNet VCT</p> <p>93* FOUNDATION Fieldbus VCT (Bus Powered; I.S.)</p> <p>94** FOUNDATION Fieldbus VCT (Externally Powered)</p> <p>95** Modbus VCT</p> <p>96** AS-Interface VCT</p> <p><i>* For use with pneumatic valve option 1A only.</i></p> <p><i>** For use with pneumatic valve option 1B only.</i></p>	<p>11 No Pneumatic Valve</p> <p>1B 3-way 24VDC 1.8 W</p> <p>1C 3-way 120VAC 7.2 W</p> <p>1A* 3-way Piezo</p> <p><i>* For use with Function 93 only.</i></p>	<p>S02 (2) 1/2" NPT</p> <p>S05 (2) M20</p> <p>S09 (2) Cable Glands</p> <p>S11 (1) 5-Pin Mini-Connector</p> <p>S13 (1) 4-Pin Micro-Connector</p> <p>S14 (2) 4-Pin Micro-Connector</p> <p>S15 (1) 5-Pin Micro-Connector</p>	<p>R Red Closed/ Green Open</p> <p>G Green Closed/ Red Open</p>	<p>S* 1/4" to 2" (1/8" to 1 1/4" stroke)</p> <p>L* 2" to 4" (1 1/4" to 2 1/4" stroke)</p> <p><i>* Mounting system required. Order kit separately.</i></p>

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/prism

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



Other Specifications and Ratings

Operating Life	1 Million Cycles
Temperature Range with solenoid	-40° C to 82° C (-40° F to 180° F) Max. Ambient 50° C (120° F)

Warranty	
Dual Module	Five Years
Other Mechanicals	Two Years

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 Ports

Enclosure Protection	
NEMA	4, 4X and 6; IP67

Hazardous Locations	
Nonincendive	Classes I and II, All Groups, Div. 2

For approval information visit www.stonel.com/valvepoint/approvals

Dimensions (mm)

