Prism

with Dual Module NAMUR Sensors
(PM44_____)

Pub # 105116revC

Installation & Adjusting Instructions

Prism™ Mounting

1. Thread the Trigger Shaft onto the actuation system stem.

2. Place provided o-ring in groove on the bottom of the Mounting Coupler and slide over the Trigger Shaft. Secure Mounting Coupler to the actuation system. Fastening of Mounting Coupler to the actuation system will be either flange mounted or threaded. (Dependent on manufacturer of valve assembly)

3. Remove the Prism's Cover.

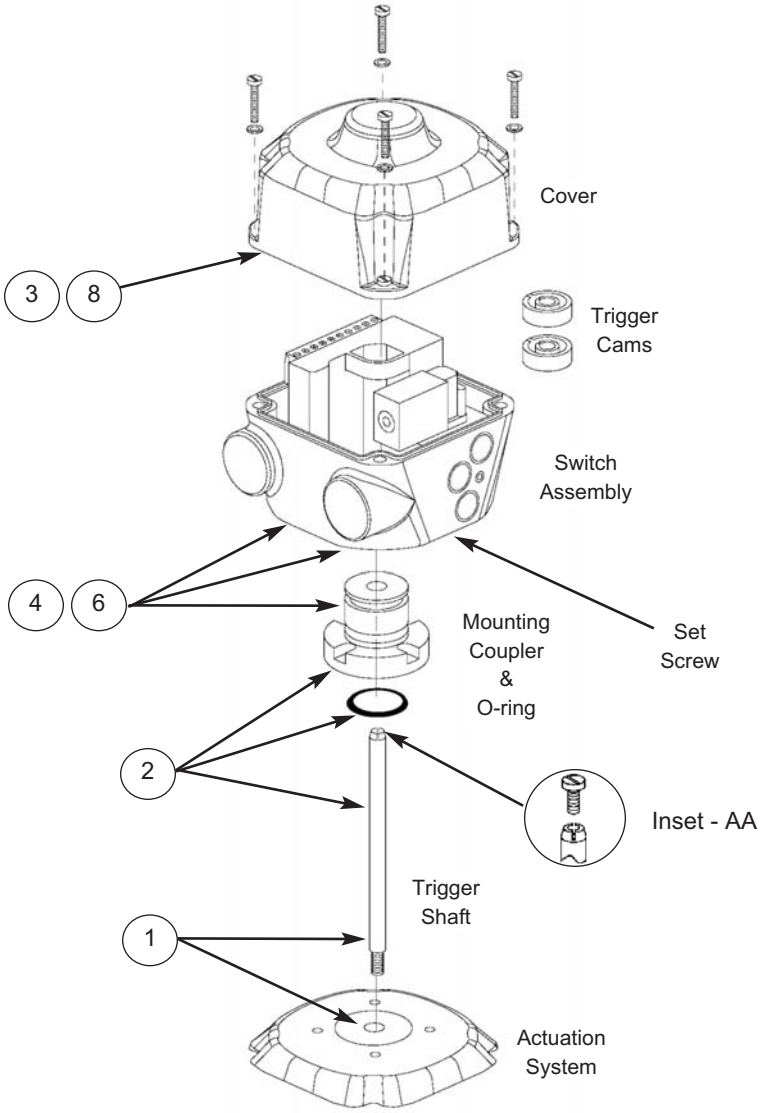
4. Slide the Prism Switch Assembly over the Trigger Shaft via the Mounting Coupler socket located on the bottom of the Switch Assembly. Do not seat the Switch Assembly onto the Mounting Coupler. The Trigger Shaft should now be approximately midway between upper and lower Cam Stops on the Dual Module. (See Detail A)

5. While supporting the Switch Assembly with one hand, place the two Trigger Cams onto the Trigger Shaft between the cam stops. (See Detail A)

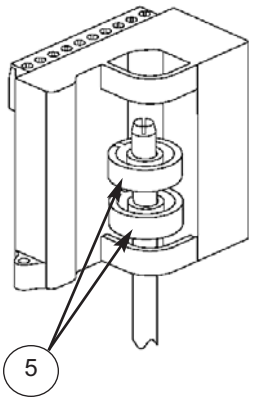
6. Fully seat the Switch Assembly onto the Mounting Coupler. Secure the Switch Assembly to the Mounting Coupler by tightening the set screw located on the bottom of the Switch Assembly, opposite of the conduit entries. **Some mounting systems for 2" and larger valves may have the Trigger Shaft threaded, in these cases thread the provided 6/32 screw into the top of the Trigger Shaft. (See Inset - AA)**

7. To set the Cam Triggers, slide the upper trigger until it touches the upper cam stop (or 6/32 screw) and push down the lower trigger until it touches the lower cam stop. Cycle the actuator and the triggers will automatically be set to the proper position. (See Detail B)

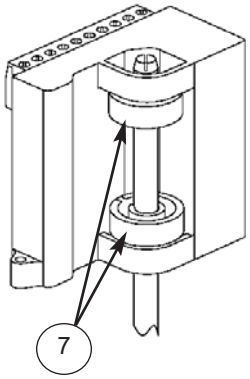
8. Perform applicable field wiring and replace Prism Cover. **(Applicable wiring diagrams and connector pin-out guides located on Page 4 of this document)**



Detail A



Detail B



StoneL
One StoneL Dr
26271 US Hwy 59
Fergus Falls, MN 56537
USA
Telephone: 218.739.5774
Toll Free: 800.843.7866
Fax: 218.739.5776
E-mail: sales@stonel.com
Website: www.stonel.com

PRISM Model Selector

	Function	Pneumatic Valve	Conduit/Connectors	Visual Indicator	Valve Size
PM	**33** (2) SST N.O. Sensors **34** (2) SST N.C. Sensors **44** (2) NAMUR Sensors **92** DeviceNet VCT** **93** Foundation Fieldbus VCT* (Bus Power Outputs; I.S.) **94** Foundation Fieldbus VCT** (Externally Powered Outputs) **95** Modbus VCT** **96** AS-Interface VCT** * For use with pneumatic valve option 11 or 1A only ** For use with pneumatic valve option 11 or 1B only	**11** No Pneumatic Valve **1A** 3-way/Piezo* **1B** 3-way/24 VDC/1.8 W **1C** (3-way/120 VAC/7.2 W **1D** 3-way/24 VDC/0.5 W **1E** 3-way/12 VDC (I.S.)** * For use with Function 93 only ** For use with Function 44 only	**S02** (2) 1/2" NPT **S05** (2) M20 **S09** (2) Cable Glands **S11** (1) 5-Pin Mini-Connector **S13** (1) 4-Pin Micro-Connector **S14** (2) 4-Pin Micro-Connector **S15** (1) 5-Pin Micro-Connector **S16** (1) 5-Pin Micro-Connector & (1) 4-Pin Micro Connector	**R** Red Closed/ Green Open **G** Green Closed/ Red Open	**S** Stroke less than 2" **L** Stroke from 2" to 4"

Model Number Example: PM961BS2RS

General Specifications and Ratings

Materials of Construction

Housing & Cover:	Polycarbonate
Fasteners:	Stainless Steel
Triggering Cams:	Stainless Steel Banded Polycarbonate
Mounting System:	Stainless Steel
O-Rings:	Buna-N
Valve Manifold:	Polysulfone with Stainless Steel Reinforced NPT Ports

Operating Life:	One Million Cycles
Temperature Range:	-40° C to 80° C (-40° F to 180° F)

Enclosure Protection

NEMA:	4, 4X, 6; IP67

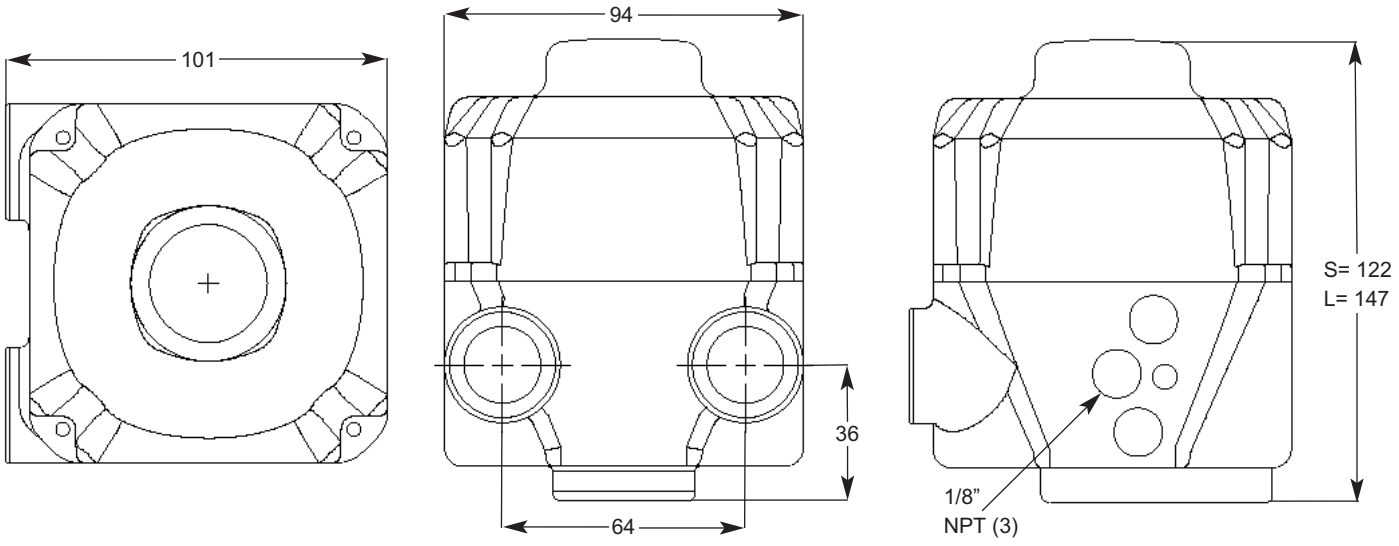
Hazardous Location Ratings

Nonincendive:	Class I&II, Div 2, All Gas Groups

Warranty

Dual Modules/VCTs:	Five Years
Mechanical Components:	Two Years

Dimensions (mm)



Pneumatic Valve Specifications

General Pneumatic Specifications

Configuration:	3-Way, 2-Position, Spring Return
Porting:	1/8 NPT (all pressurized ports)
Rebreather Port:	4-40 size
Operating Pressure:	40 psi to 120 psi (2.6 to 8.0 bar)
Flow Rating:	0.1 Cv (1.4 Kv)
Rebreather:	Standard on all models; Diverts air from exhausting cylinder into actuator spring side, Excess air exhausted to the atmosphere
Valve Cycle Time:	
1/2" Stroke	To Open = < 1 sec. To Close = < 1 sec.
1 1/8" Stroke	To Open = 3.4 sec. To Close = 3.1 sec.
Operating Life:	One Million Cycles

Solenoid Coil Specifications

120 VAC (with burn-out proof coil)

Power:	5.4 Watts
Inrush Current:	0.09 Amps @ 120 VAC
Holding Current:	0.06 Amps @120 VAC

24 VDC

Power:	1.8 Watts (1B); 0.5 Watts (1D)
Current Draw:	0.075 Amps (1B); 0.02 Amps (1D)
Temperature Range:	-18° C to 50° C (0° F to 120° F)
Filtration Requirements:	40 Microns

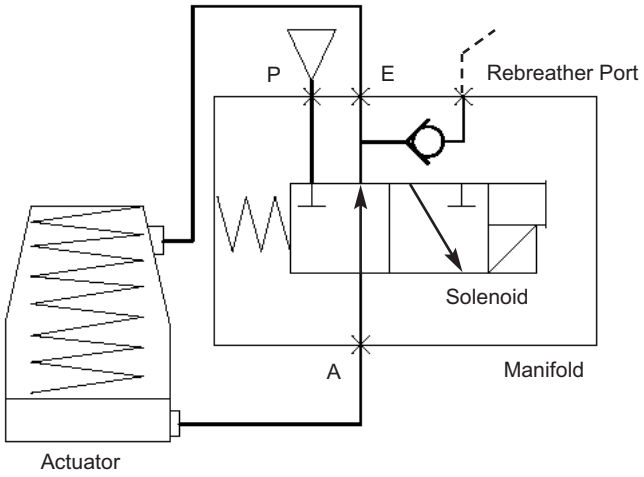
12 VDC (Intrinsically Safe)

Power:	0.5 Watts
Current Draw:	0.04 Amps
Temperature Range:	-18° C to 50° C (0° F to 120° F)
Filtration Requirements:	40 Microns

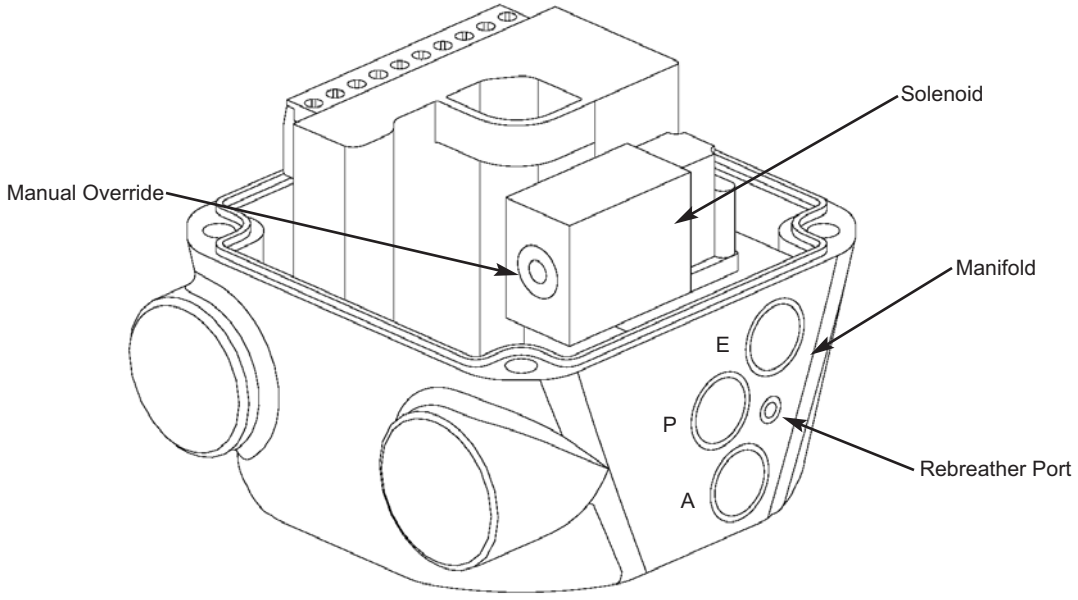
Piezo

Operating Voltage:	5.5 VDC to 9.0 VDC
Current Draw:	2.0 mA @ 6.5 VDC
Temperature Range:	-10° C to 60° C (14° F to 140° F)
Filtration Requirements:	30 Microns
Hazardous Ratings:	EEx ia IIC T6

Pneumatic Valve Schematic



Pneumatic Valve Component Locator



PRISM with Dual Module NAMUR Sensors

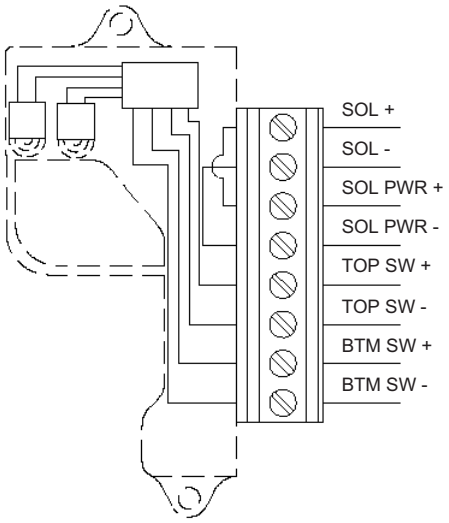
44 Dual Module Specifications

Outputs:	(2) NAMUR Sensors (EN 60947-5-6)
Voltage Range:	6 to 29 VDC
Current Ratings:	
Target Present	Current<1.0 mA (LED = OFF)
Target Absent	Current>3.0 mA (LED = ON)

Use with intrinsically safe repeater barrier. NAMUR sensors fully conform to EN 60947-5-6 Standard.

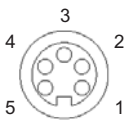
To Bench Test a Dual Module NAMUR Sensor: Use StoneL Light Read Tester or use a 24 VDC power supply. No series load resistor required.

Wiring Diagram/Connector Pin-Out



Connector Option (S11)

MINI-CONNECTOR



MALE (PINS)

PIN	PM4411S11XX
1	BTM +
2	BTM -
3	NOT USED
4	TOP +
5	TOP -

Connector Option (S13)

MICRO-CONNECTOR

MALE (PINS)

PIN	PM4411S13XX
1	TOP +
2	BTM +
3	BTM -
4	TOP -

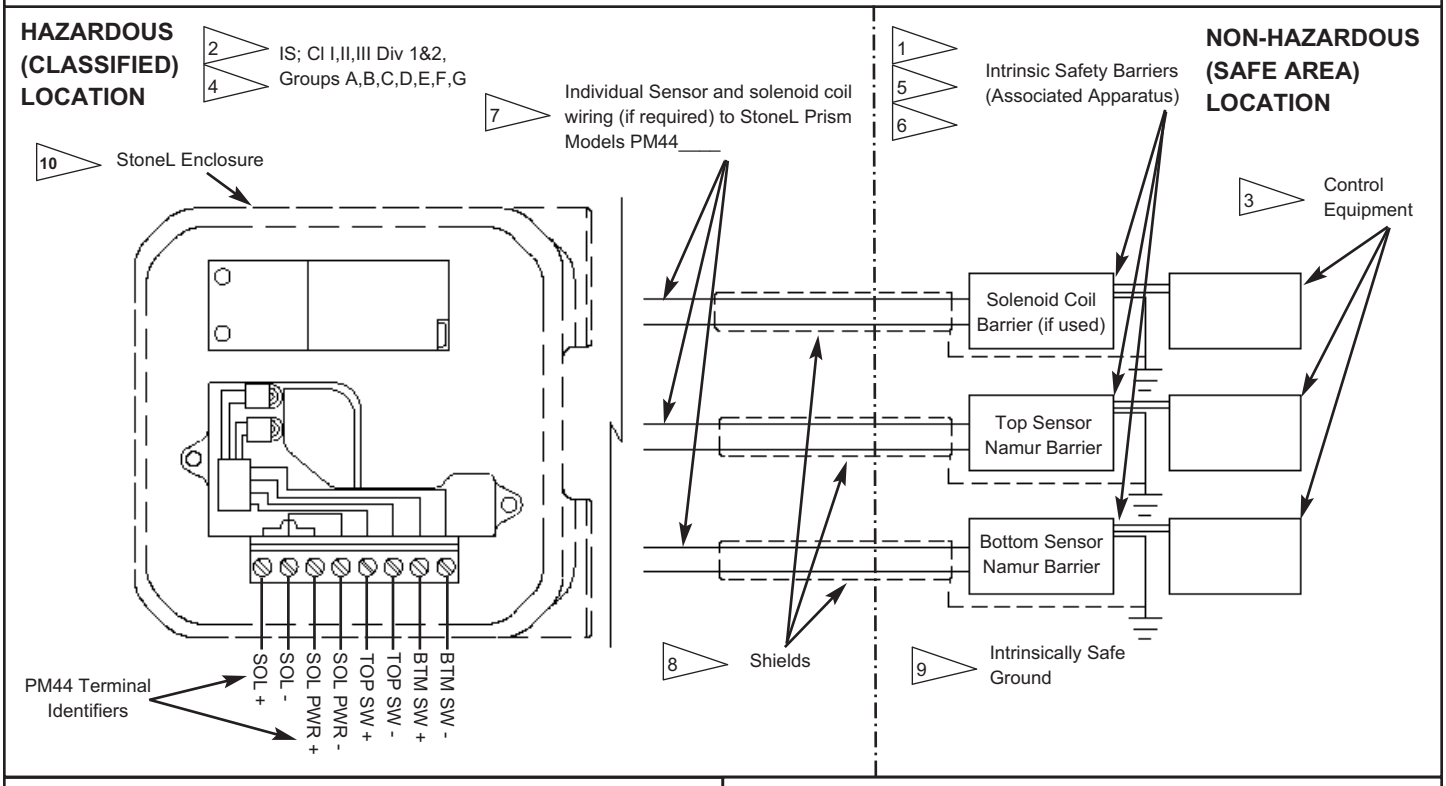
Intrinsic Safety Hazardous Location Installation Diagram

Prism models approved for Intrinsically Safe Installations:

PM4411____†*; PM441E02__*; PM441E05__*; PM441E09__*

† Any Conduit/Connector option is approved for units with Solenoid Option 11 (no solenoid).

* Any Visual Indicator and Valve Size option is approved.



PM4411S13__ Pin Identifiers

MICRO-CONNECTOR (MALE (PINS))

Pins	PM4411S13
1	Top Sensor +
2	Bottom Sensor +
3	Bottom Sensor -
4	TopSensor -

PM4411S11__ Pin Identifiers

MINI-CONNECTOR (MALE (PINS))

Pins	PM4411S11
1	Bottom Sensor +
2	Bottom Sensor -
3	Not Used
4	Top Sensor +
5	TopSensor -

INSTALLATION NOTES:

Entity Parameters: PM44_____: Ui (Vmax) = 28 Vdc; Ii (Imax) = 120 mA ; Ci = 60 nF; Li = 0.8 mH; Pi = 2.0 W

IS Coil (1E): Ui (Vmax) = 28 Vdc; Ii (Imax) = 120 mA ; Ci = 00 nF; Li = 0.0 mH; Pi = 1.0 W

1. Voc or Vt ≤ Ui (Vmax), Isc or It ≤ Ii (Imax), Ca ≥ Ci + Ccable, La ≥ Li + Lcable.
2. Dust-tight conduit seal must be used when installed in Class II and Class III environments or where Ingress Protection of IP67 is required.
3. Control equipment connected to barrier must not use or generate more than 250 Vrms or Vdc.
4. Installation should be in accordance with ANSI/ISA RPA12.6.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70) or in accordance with the Canadian Electric Code.
5. The configuration of associated apparatus for each sensor wiring pair or solenoid wiring pair must be approved.
6. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
7. To maintain intrinsic safety, wiring associated with each sensor or solenoid coil wiring must be run in separate cables or separate shields connected to intrinsically safe (associated apparatus) ground.
8. Conduit Grounding - Upon installation verify electrical continuity between conduit and ground terminal.
9. Resistance between Intrinsic Safe Ground and earth ground must be less than one ohm.

WARNING:

10. Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charge on non-conductin surfaces. Additionally, cleaning of the equipment should only be done with a damp cloth.
11. Substitution of components may impair hazardous location safety.