Prism

with DeviceNet Communication VCT

(PM92_____)

Pub # 105117revB

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.

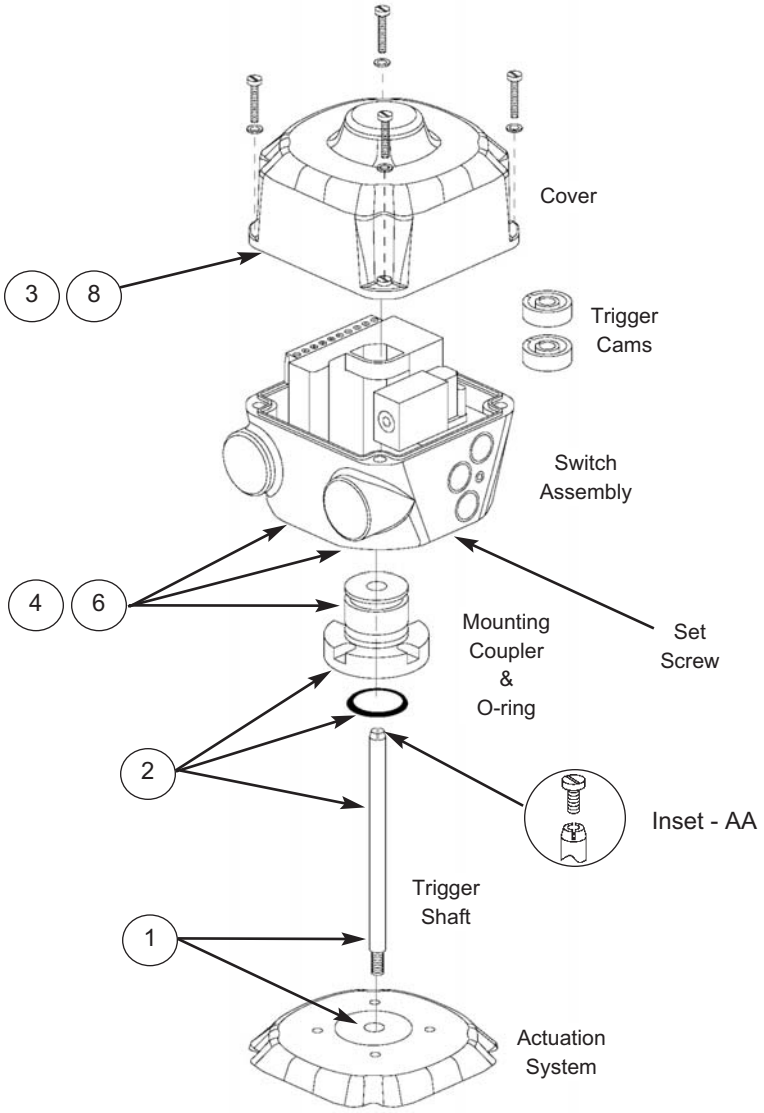
4. Slide the Prism Switch Assembly over the Trigger Shaft via the Mounting Coupler socket located on the bottom of the Switch Assembly. Do not seat the Switch Assembly onto the Mounting Coupler. The Trigger Shaft should now be approximately midway between upper and lower Cam Stops on the Dual Module.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

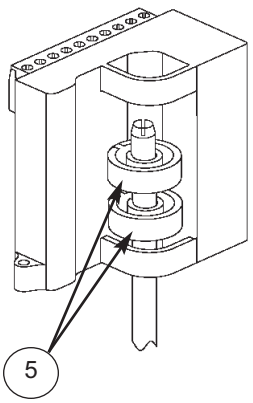
6. Fully seat the Switch Assembly onto the Mounting Coupler. Secure the Switch Assembly to the Mounting Coupler by tightening the set screw located on the bottom of the Switch Assembly, opposite of the conduit entries. **Some mounting systems for 2" and larger valves may have the Trigger Shaft threaded, 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)

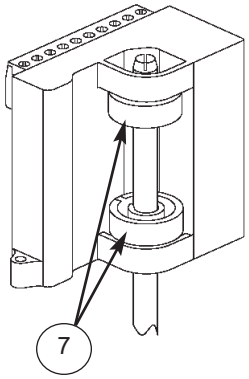
8. Perform applicable field wiring and replace Prism Cover. **(Applicable wiring diagrams and connector pin-out guides located on Page 4 of this document)**



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** **97** AS-Interface VCT (Ext Add)** * For use with pneumatic valve option 11 or 1A only ** For use with pneumatic valve option 11, 1B or 1D only	**11** No Pneumatic Valve **1A** 3-way/Piezo* **1B** 3-way/24 VDC/1.8 W **1C** 3-way/120 VAC/5.4 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

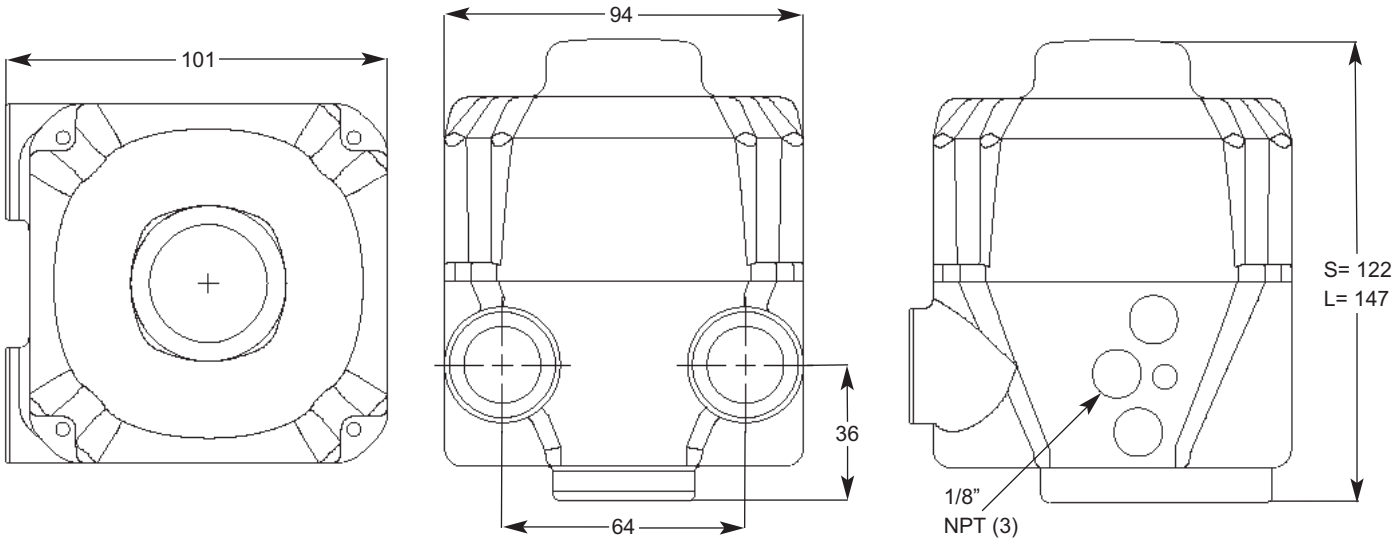
Hazardous Location Ratings

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

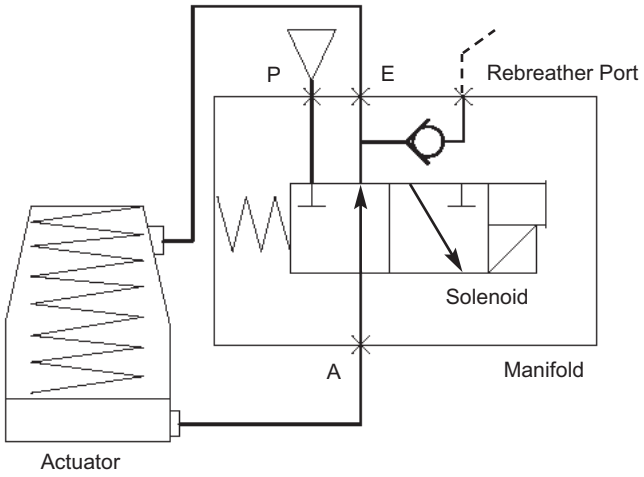
12 VDC (Intrinsically Safe)

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

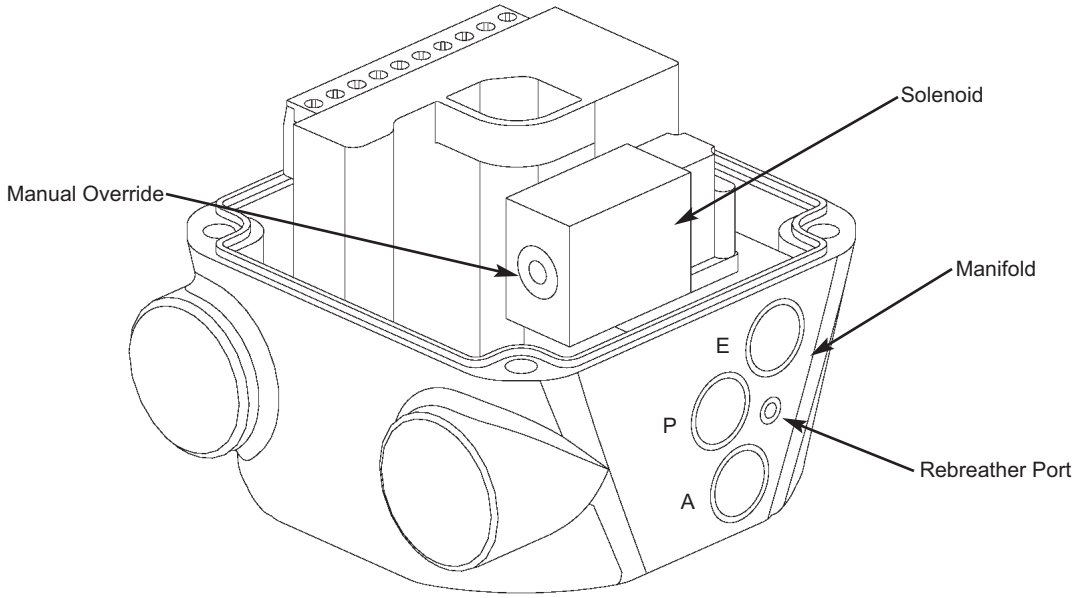
Piezo

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 DeviceNet VCT

DevcieNet VCT Specifications

Communication Protocol:	DeviceNet
Configuration:	(2) Discrete Inputs (Sensors) (1) Auxiliary Analog Input (4-20mA) (2) Discrete Outputs (Solenoids)
Voltage:	24 VDC via DeviceNet network
Output Voltage:	24 VDC
Current Consumption:	47mA/0.5w coil (D); 101mA/1.8w coil (B)
Max. Output Power:	4 Watts, Both Outputs Combined

Default Address:	63	
Default Baud Rate:	125K	
Bit Assignment:	Inputs (3 Bytes)	Outputs (1 Byte)
	Bit 0 = Red LED	Bit 0 = OUT 1*
	Bit 1 = Green LED	Bit 1 = OUT 2
	Bit 4 = Fault Bit	
	(Set when both Input Bits 0 and 1 = 1)	
	Bits 8-15 = Analog Input (Low Byte)	
	Bits 16-23 = Analog Input (High Byte)	

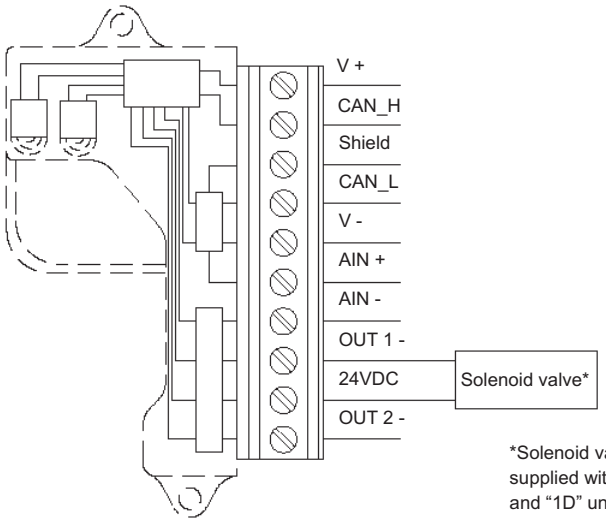
* Discrete Output 1 is used for units with integral solenoid

To Bench Test a DeviceNet VCT: To test Sensors use 24 VDC power supply across V + and V -. No series resistor needed. A functioning DeviceNet network is required to test communications

WARNING:

DO NOT APPLY EXTERNAL POWER TO THE OUTPUT TERMINALS. THIS WILL RESULT IN PERMANENT DAMAGE TO THE UNIT.

Wiring Diagram/Connector Pin-Out

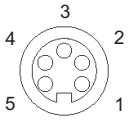


*Solenoid valve supplied with "1B" and "1D" units only

Connector Option (S11)

PIN	PM9211S11XX	PM921BS11XX	PM921DS11XX
1	Shield	Shield	Shield
2	V +	V +	V +
3	V -	V -	V -
4	CAN_H	CAN_H	CAN_H
5	CAN_L	CAN_L	CAN_L

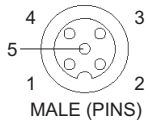
MINI-CONNECTOR



MALE (PINS)

Connector Option (S16)

MICRO-CONNECTOR



MALE (PINS)

MICRO-CONNECTOR

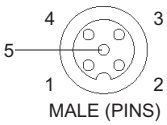
FEMALE (SOCKETS)

PIN	PM9211S16XX
1	Shield
2	V +
3	V -
4	CAN_H
5	CAN_L
XX	XXXXXXXXXX
1	NOT USED
2	NOT USED
3	OUT 1 -
4	24VDC

Connector Option (S15)

PIN	PM9211S15XX	PM921BS15XX	PM921DS15XX
1	Shield	Shield	Shield
2	V +	V +	V +
3	V -	V -	V -
4	CAN_H	CAN_H	CAN_H
5	CAN_L	CAN_L	CAN_L

MICRO-CONNECTOR



MALE (PINS)