Prism

with Modbus Communication VCT

(PM95_____)

Pub # 105120revB

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.

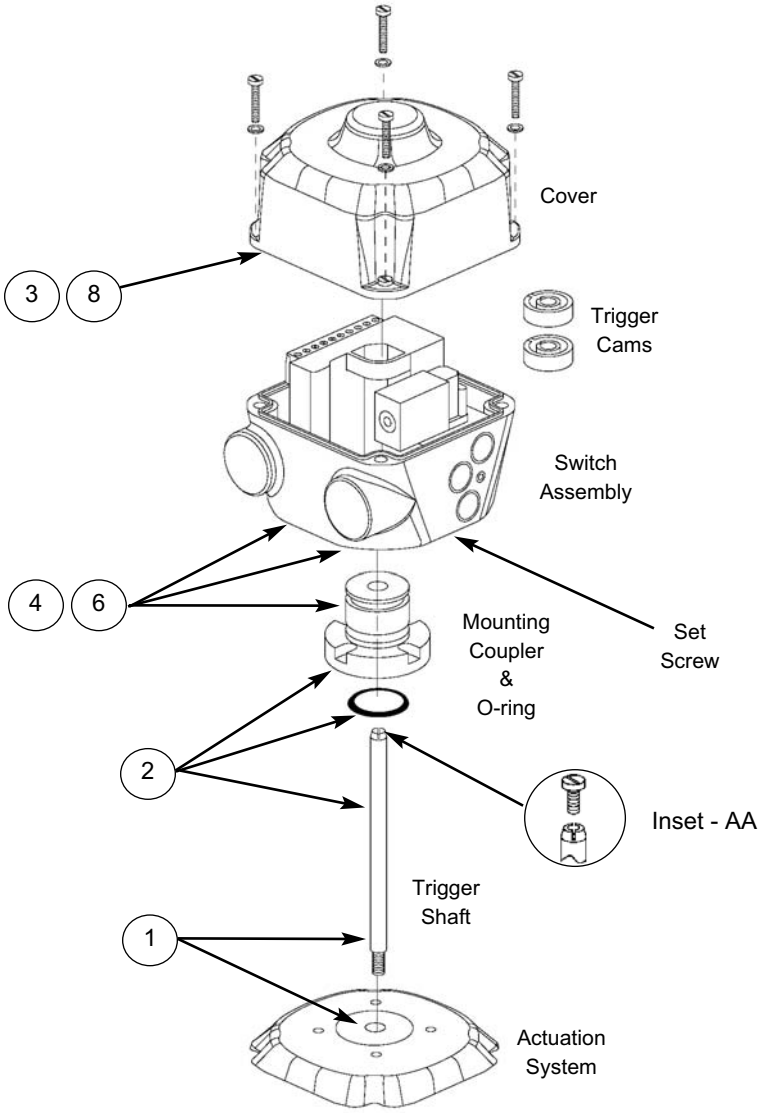
4. Slide the Prism Switch Assembly over the Trigger Shaft via the Mounting Coupler socket located on the bottom of the Switch Assembly. Do not seat the Switch Assembly onto the Mounting Coupler. The Trigger Shaft should now be approximately midway between upper and lower Cam Stops on the Dual Module.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

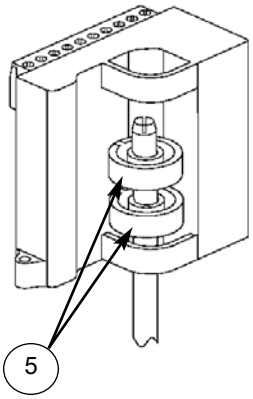
6. Fully seat the Switch Assembly onto the Mounting Coupler. Secure the Switch Assembly to the Mounting Coupler by tightening the set screw located on the bottom of the Switch Assembly, opposite of the conduit entries. **Some mounting systems for 2" and larger valves may have the Trigger Shaft threaded,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

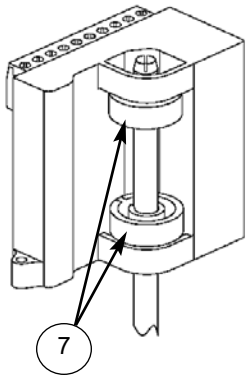
8. Perform applicable field wiring and replace Prism Cover. **(Applicable wiring diagrams and connector pin-out guides located on Page 4 of this document)**



Detail A



Detail B



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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

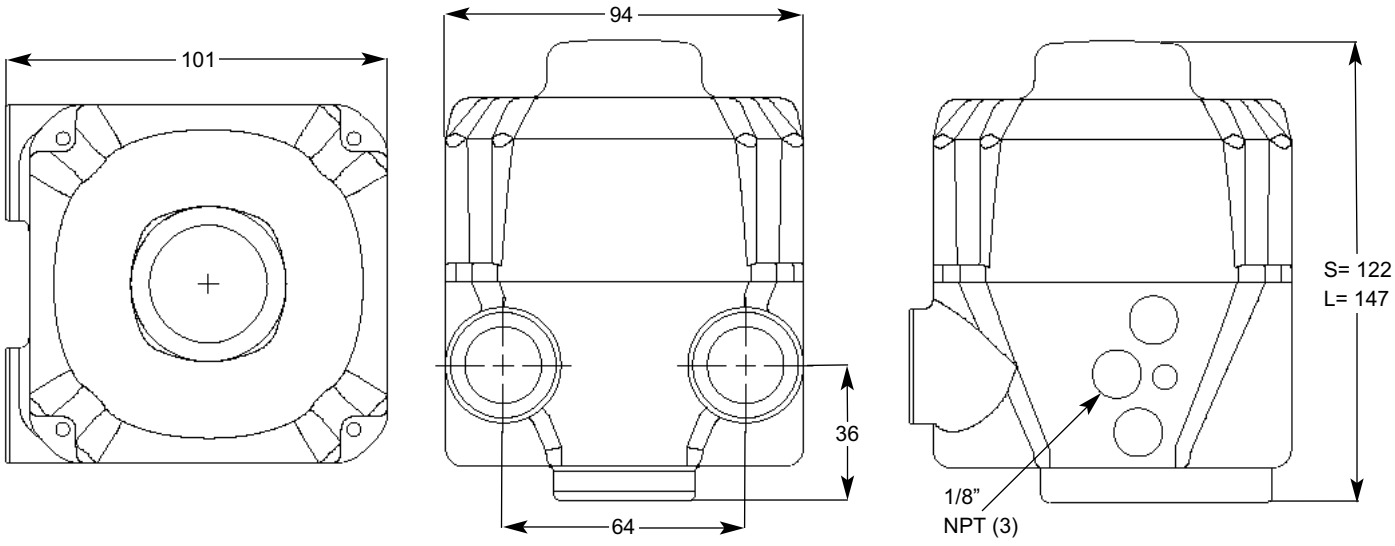
Hazardous Location Ratings

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

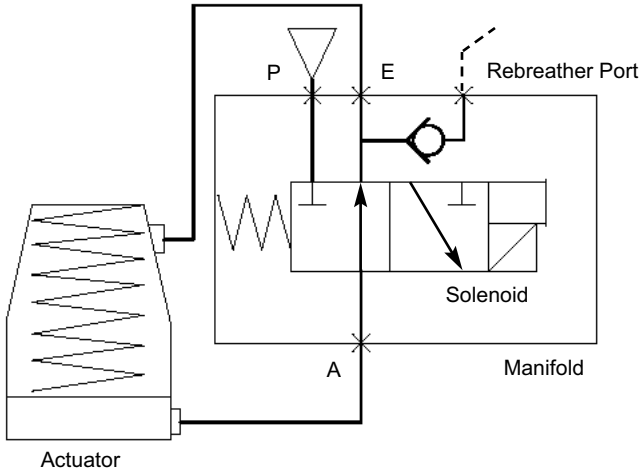
12 VDC (Intrinsically Safe)

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

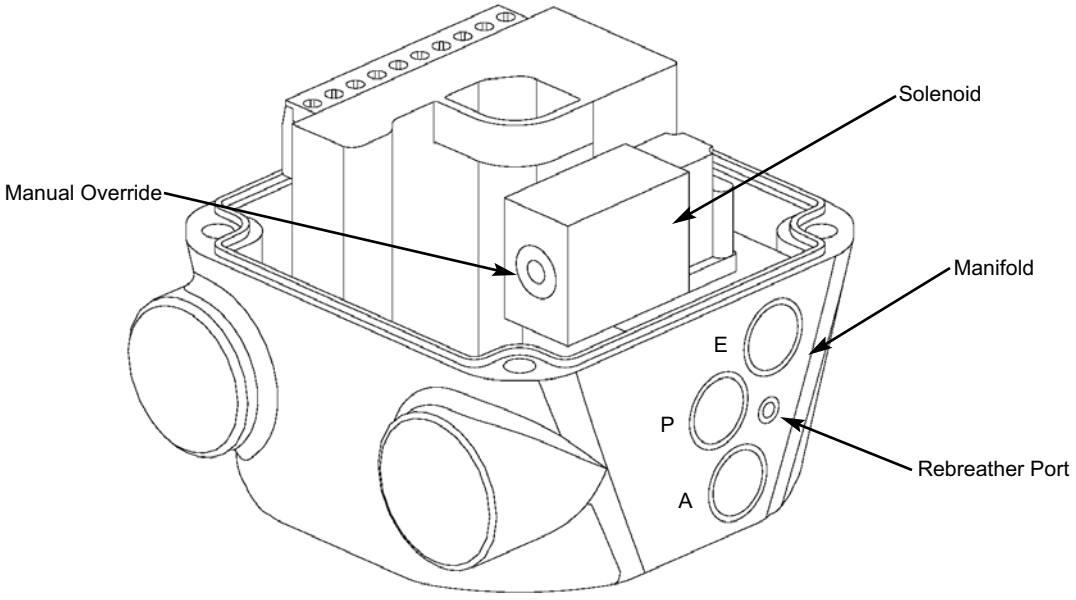
Piezo

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 Modbus VCT

Modbus VCT Specifications

Communication Protocol:	ModBus
Configuration:	(2) Discrete Inputs (Sensors) (1) Auxiliary Analog Input (4-20mA) (2) Discrete Outputs (Solenoids)
Voltage:	24VDC (The 24VDC power source should share the same ground reference as the communication line)
Output Voltage:	24VDC
Max. Output Current:	160mA, Both Outputs Combined
Max. Output Power:	4 Watts, Both Outputs Combined

Default Address:	03
Bit Assignment:	Inputs
	10001 = Red LED (Bottom Sensor)
	10002 = Green LED (Top Sensor)
	30001 = Analog Input
	Outputs
	00001 = OUT 1*
	00002 = OUT 2

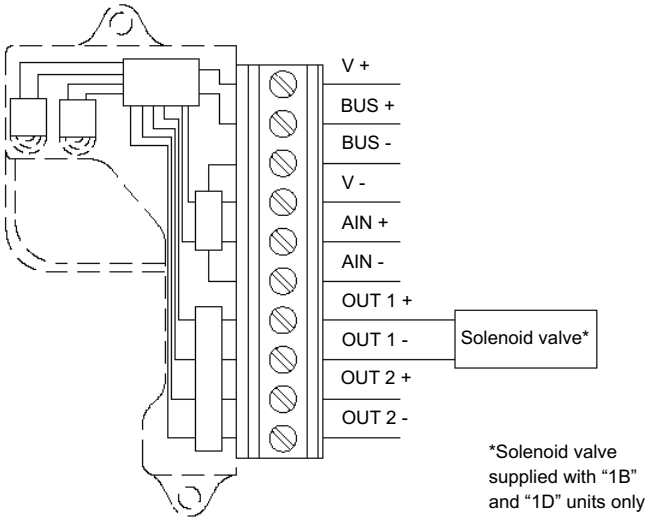
* Discrete Output 1 is used for units with integral solenoids

To Bench Test a Modbus VCT: Use 24 VDC power supply across V + and V -. No series resistor needed. A functioning ModBus 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

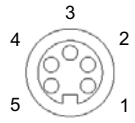


*Solenoid valve supplied with "1B" and "1D" units only

Connector Option (S11)

PIN	PM9511S11XX	PM951BS11XX	PM951DS11XX
1	NOT USED	NOT USED	NOT USED
2	V +	V +	V +
3	V -	V -	V -
4	BUS +	BUS +	BUS +
5	BUS -	BUS -	BUS -

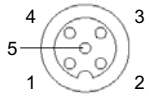
MINI-CONNECTOR



MALE (PINS)

Connector Option (S16)

MICRO-CONNECTOR



MALE (PINS)

MICRO-CONNECTOR

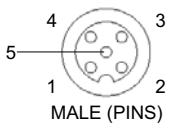
FEMALE (SOCKETS)

PIN	PM9511S16XX
1	NOT USED
2	V +
3	V -
4	BUS +
5	BUS -
XX	XXXXXXXXXX
1	NOT USED
2	NOT USED
3	OUT 1 -
4	OUT 1 +

Connector Option (S15)

PIN	PM9511S15XX	PM951BS15XX	PM951DS15XX
1	NOT USED	NOT USED	NOT USED
2	V +	V +	V +
3	V -	V -	V -
4	BUS +	BUS +	BUS +
5	BUS -	BUS -	BUS -

MICRO-CONNECTOR



MALE (PINS)