

## Junction Module (JM™) Enclosure with:



## AS-Interface Input/Output Module with Extended Addressing (JMM97\_\_\_)

These I/O Modules are designed to function as AS-Interface nodes with termination points for connecting switches/sensors, as well as outputs to operate devices such as low power solenoid valves and relays.

### Inputs and Outputs

- Four (4) Discrete Inputs
- Three (3) Discrete Outputs

### Features

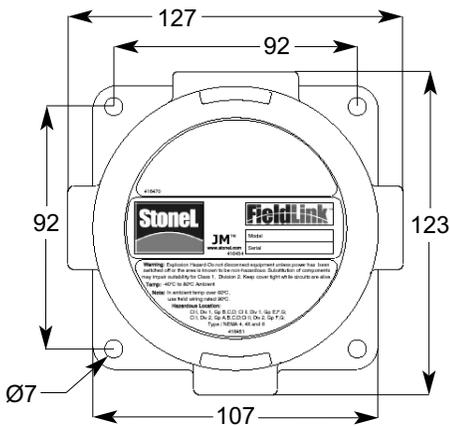
- LED input displays for Inputs 3 & 4
- Optional Integrated Solenoid



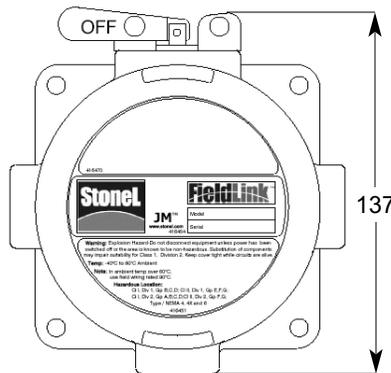
(See Page 3 detailed wiring instructions)

## JM Enclosure Dimensions (in mm)

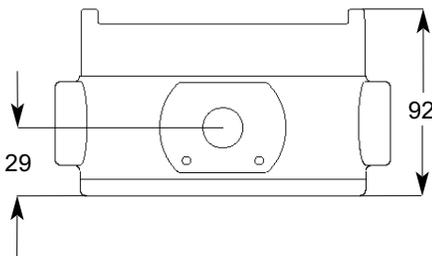
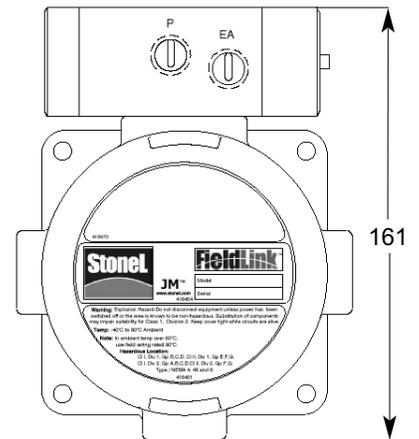
Standard Enclosure



Switched Enclosure



Enclosure w/Cyclone Valve



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**Example: JMM972HE3**

<b>JM</b>	<b>Function</b>	<b>Solenoid</b>				<b>Enclosure</b>	<b>Conduit Entries</b>
		<b>Pilot</b>	<b>Type</b>	<b>Brass</b>	<b>SS</b>		
<b>M97</b>	I/O Module (4 DI/3 DO), AS-Interface v2.1 (only available with Solenoid 11,2B,2H)	<b>11</b> No Solenoid				<b>C</b> Clear Cover <b>E</b> Epoxy Coated Aluminum	<b>3</b> (3) 1/2" NPT <b>N</b> (4) 1/2" NPT <b>6</b> (3) M20 <b>M</b> (4) M20 <b>9</b> (3) 3/4" NPT <b>T</b> (4) 3/4" NPT
		1-Solenoid	2-Postn,5-Way	2H	2B		
		1-IS Piezo	2-Postn,5-Way	3G	3A		
		2-Solenoids	2-Postn,5-Way	2L	2E		

**General Specifications**

<b>Operating Life</b>	Unlimited	<b>Temperature Range</b>	-40° to +80° C (-23° to 180° F)
<b>Materials of Construction</b>		<b>Enclosure Protection</b>	NEMA 4, 4X & 6; IP67
Housing and Cover	Marine grade anodized aluminum epoxy coating	<b>Hazardous Area Ratings</b>	
Clear Cover	Lexan® Polycarbonate	<b>Explosion Proof</b> (Aluminum Cover)	Class I, Div. 1 and 2, Groups B,C,D
Elastomer Seals	Buna-N		Class II, Div. 1 and 2, Groups E,F,G
Fasteners	Stainless Steel	<b>Non-incendive</b> (Clear Cover)	Class I, Div. 2, Groups A,B,C,D
<b>Warranty</b>			Class II, Div. 2, Groups E,F,G
Complete Assemblies	Two Years		(Not all units carry approvals, consult factory)

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**Mounting Instructions**

**Mounting The JM Enclosure**

1. Locate the position where the JM enclosure will be mounted. Ensure that there is sufficient room to operate the disconnect switch levers and to remove the cover.
2. Attach the JM enclosure to a wall or other stationary flat surface using the mounting holes provided.
3. Secure the cover until hand tight

**Attaching Conduit and Fittings**

1. Conduit entries are provided for the convenient attachment of threaded conduit and threaded conduit fittings. Attach threaded fittings and conduits securely.
2. Follow all applicable NEC codes and other regulations.

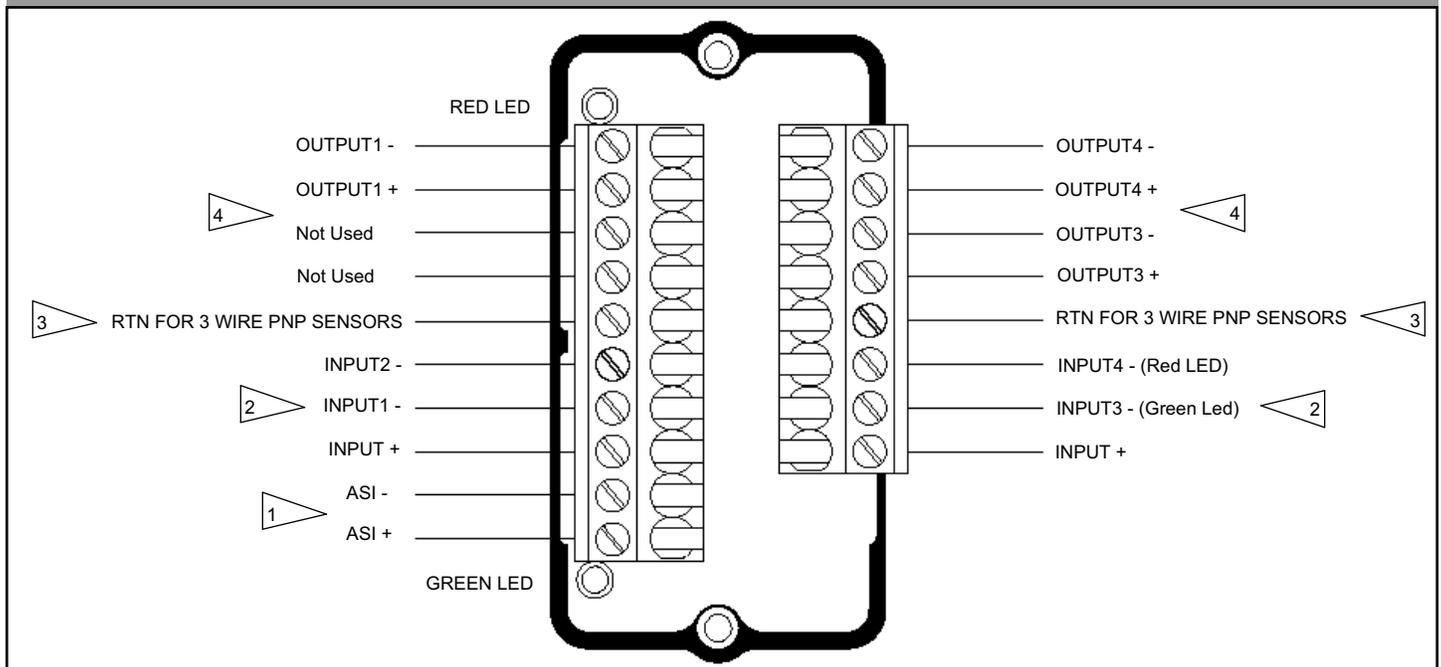
**Installing & Removing Cover**

1. To insure NEMA 4, 4X, 6 and hazardous location ratings are maintained the cover **must be** completely closed and the O-Ring sealed to keep out water.

## AS-Interface 4 DI/3 DO Input/Output Modules (Extended Addressing)

Operating Voltage	AS-Interface voltage	AS-Interface Profile	ID Code = A; IO Code = 7; ID1 = F; ID2 = E
Inputs	(4) 3mA @ 24 VDC gold contact mechanical, low power reed, or 2 wire and 3 wire PNP solid state sensors	Default Address	0A
		Bit Assignment	<u>Input Data</u> <u>Output Data</u>
			Input 1= DI0                      Output 1 = DO2
			Input 2= DI1                      Output 2 = Not Used
Outputs	(3) 28 VDC - Bus Powered (2.4 Watts total power available)		Input 3= DI2                      Output 3 = DO0
			Input 4= DI3                      Output 4 = DO1
Current Usage	40mA (no I/O enabled)	Temp Range	-25° to +70° C (-13° to 158° F)
		Operating Life	Unlimited
		Warranty	Two Years

## Input/Output Module Wiring Diagram and Installation Notes



### WIRING NOTES:

1. AS-Interface bus communications connection points.
2. Bus powered Discrete Input connection points for low power (3mA @ 28 VDC) gold contact mechanical switches, low power reed, or 2 wire and 3 wire PNP solid state proximity sensors (max allowable current leakage of sensors 0.3mA) . Red LED is local indication of discrete Input 4 on/off status and the Green LED for discrete Input 3 on/off status.
3. Connection point for the "return" of 3 wire PNP sensors. (See Note 2)
4. Connection points 28 VDC Bus powered Discrete Outputs (2.4 watts total power available) for low power solenoid valves and relays. For models with single coil pneumatic valves, coil is pre-wired to Output 1 (DO bit 2). JMM97 models not available with dual coil pneumatic valves.

The Cyclone Pneumatic Valve is a pilot operated 5-way spring return which may be used for single and double-acting actuators. It features a direct-acting solenoid with manual override for the pilot. The porting is sized to tolerate contaminants up to 40 microns in size which may be found in conventional pneumatic systems.

The Cyclone Pneumatic Valve is O-ring sealed on the Junction Module (JM) enclosure to maintain it's temporary submersibility rating.

**24 VDC Pilot**

Power .....	1.8 Watts
Current draw .....	75 mA @24VDC
Temperature .....	-18°C to +50°C
Filtration Requirements .....	40 Microns
Pressure Range .....	25 to 120 PSI
Cv .....	0.75 (10.7 Kv)

**Piezo Pilot**

Current draw .....	2mA @6.5VDC
Temperature .....	-10°C to +60°C
Filtration Requirements .....	30 Microns
Pressure Range .....	25 to 120 PSI
Cv .....	0.75 (10.7 Kv)

Porting .....	1/4" NPT
Valve Body Material .....	360 brass or 303 Stainless
Operating Life .....	1 million cycles

**Manual Overrides:**

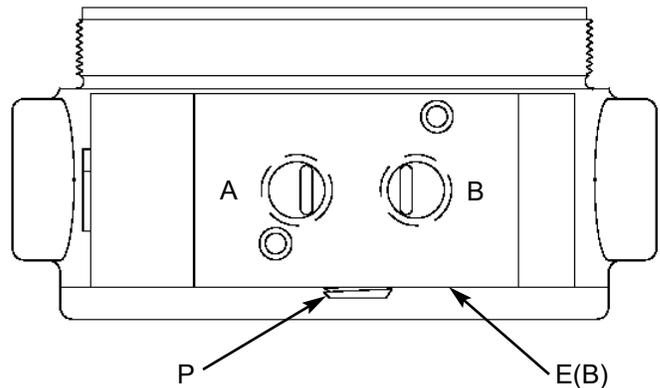
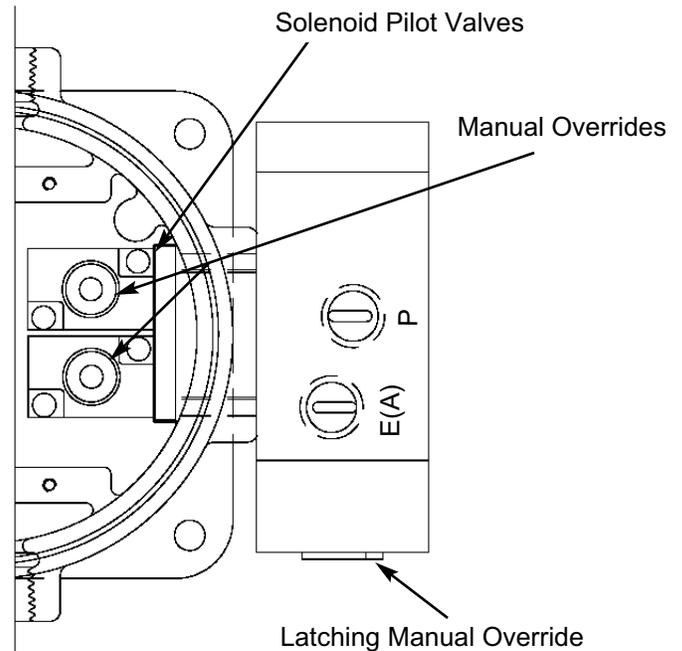
One internal momentary and One external locking.

**Variable Speed Adjustment:** Each cylinder port is internally ported to a unique exhaust port (EA for exhaust of port A and EB for exhaust of port B). To vary actuator speed flow restrictors may be added to EA or EB to reduce exhaust flow and actuator speed in either direction.

**Single-Acting Vent to Atmosphere or Refresh:**

Exhaust (EA or EB) and secondary ports (A or B) may be blocked for single-acting operation with the actuator venting directly to atmosphere. Alternatively, the secondary port may be plumbed to the actuator supplying air to the spring side of the actuator and preventing it from ingesting atmospheric contaminants.

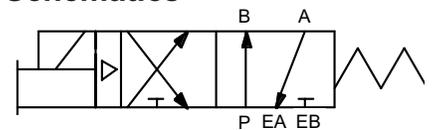
**Pneumatic Porting**



- P - Pressure Port (1/4 " NPT)
- A - Cylinder Port (1/4" NPT)
- B - Cylinder Port (1/4" NPT)
- E(A) - Exhaust for Cylinder Port A (1/4" NPT)
- E(B) - Exhaust for Cylinder Port B (1/4" NPT)

**Schematics**

Single Coil: 5 way with Pneumatic pilot



Dual Coil: Shuttle Piston with 2 Pneumatic pilots (2 Position Valve with position detent)

