FieldLink™ process networking solutions

Junction Module (JM™) Enclosure with:

MODBUS *Input/Output Module (JMM95____)*

These I/O Modules are designed to function as Modbus (RS485) nodes with termination points for connecting switches/sensors (discrete and analog, as well as outputs to operate devices such as low power solenoid valves and relays.

Inputs and Outputs

- Two (2) Discrete Inputs
- Two (2) Discrete Outputs
- One (1) Analog Input (4-20mA)

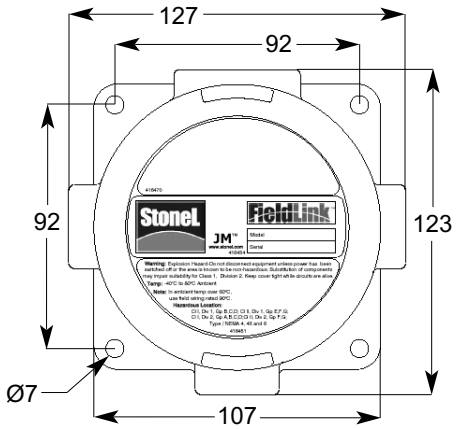
Features

- LED input displays for Inputs 1 & 2
- Optional Integrated Solenoid
- Pre-determined output fail state

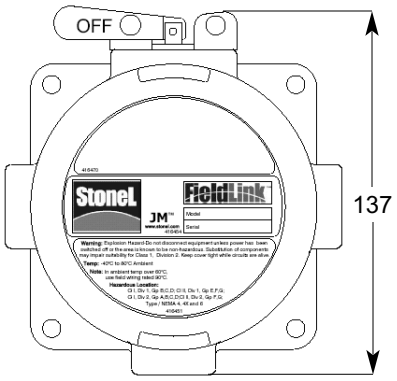
(See Page 3 detailed wiring instructions)

JM Enclosure Dimensions (in mm)

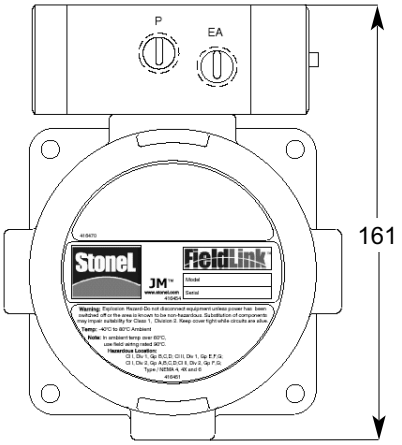
Standard Enclosure

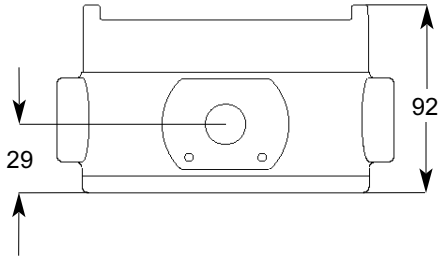


Switched Enclosure



Enclosure w/Cyclone Valve





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JM Model Options

Example: JMM952HE3

JM

Function

M95 I/O Module (2 DI/2 DO/1 AI), Modbus (only w/ Solenoid 11,2B,2E,2H,2L)

Solenoid

11 No Solenoid

Pilot	Type	Brass	SS
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

Enclosure

C Clear Cover
E Epoxy Coated Aluminum

Conduit Entries

3 (3) 1/2" NPT
N (4) 1/2" NPT
6 (3) M20
M (4) M20
9 (3) 3/4" NPT
T (4) 3/4" NPT

General Specifications

Operating Life	Unlimited
Materials of Construction	
Housing and Cover	Marine grade anodized aluminum epoxy coating
Clear Cover	Lexan® Polycarbonate
Elastomer Seals	Buna-N
Fasteners	Stainless Steel
Warranty	
Complete Assemblies	Two Years

Lexan is a registered trademark of General Electric Corporation.

Temperature Range	-40° to +80° C (-23° to 180° F)
Enclosure Protection	NEMA 4, 4X & 6; IP67

Hazardous Area Ratings

Explosion Proof (Aluminum Cover)
Class I, Div. 1 and 2, Groups B,C,D
Class II, Div. 1 and 2, Groups E,F,G

Non-incendive (Clear Cover)
Class I, Div. 2, Groups A,B,C,D
Class II, Div. 2, Groups E,F,G
(Not all units carry approvals, consult factory)

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

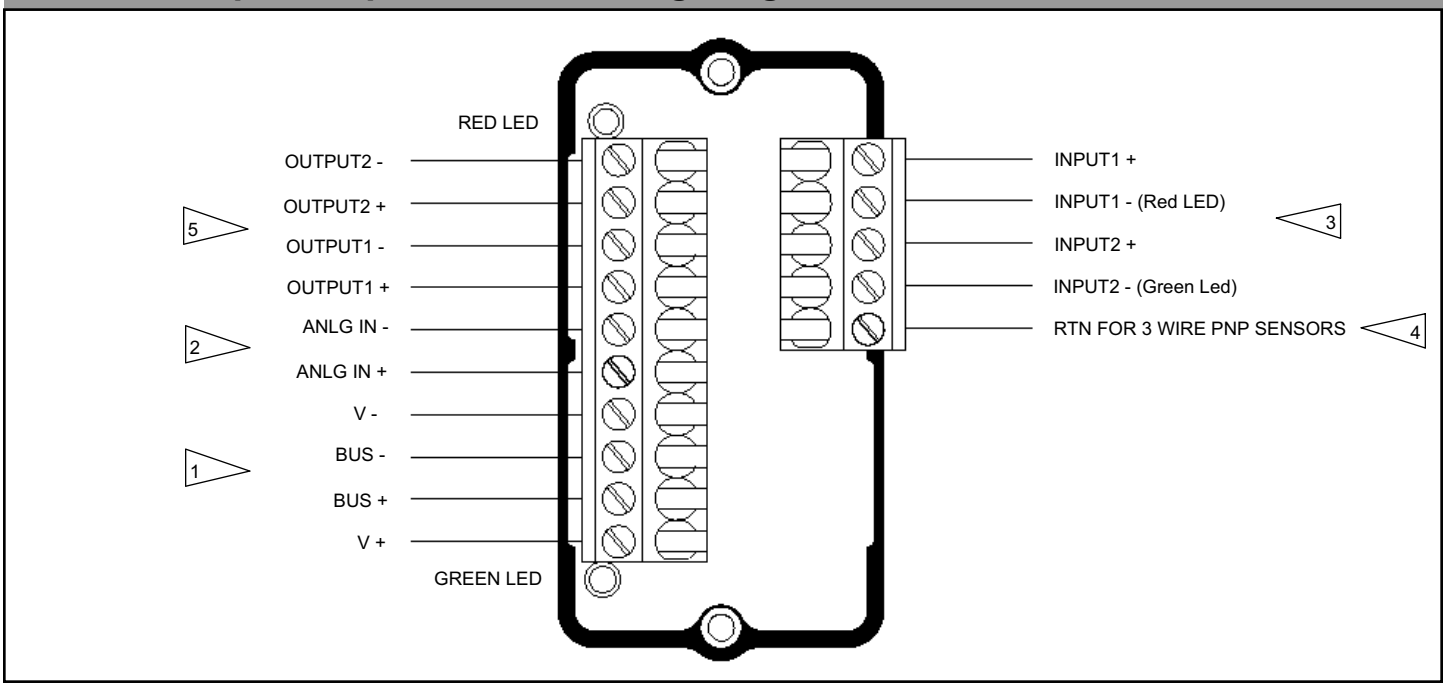
1. To insure NEMA 4, 4X. 6 and hazardous location ratings are maintained the cover **must be** completely closed and the O-Ring sealed to keep out water.

JMM95 Input/Output Module Specifications

Modbus 2 DI/2 DO/1 AI Input/Output Modules

Operating Voltage	24VDC (The 24VDC power source should share the same ground reference as the communication line)	Default Address	03
		Bit Assignment:	
		Input Data	**Output Data**
Discrete Inputs	(2) 7mA @ 24VDC gold contact mechanical, low power reed, or 2 wire solid state and 3 wire PNP solid state sensors	Input 1 (Red LED) = 10001 Input 2 (Green LED) = 10002 Analog Input = 30001	Output 1= 00001 Output 2 = 00002
Analog Input	(1) Analog (4-20 mA) input. 10 bit resolution (0.1%)	Operating Life	Unlimited
		Warranty	Two Years
Outputs	(2) 24VDC - Bus Powered (4 Watts total power available)		
Current Usage	20mA (no I/O enabled)		

Input/Output Module Wiring Diagram and Installation Notes



INSTALLATION NOTES:

1. Modbus bus communications connection points.
2. 24VDC Bus powered Analog Input device connection points. (4-20mA)
3. Bus powered Discrete Input connection points for low power (7mA @ 24VDC) gold contact mechanical switches, low power reed, or 2 wire solid state and 3 wire PNP solid state proximity sensors (max allowable current leakage of sensors 0.2mA). Red LED is local indication of discrete Input 1 on/off status and the Green LED for discrete Input 2 on/off status.
4. Connection point for the “return” of 3 wire PNP sensors. (See Note 3)
5. Connection points for 24VDC Bus powered Discrete Outputs (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 (Data 00001). For models with dual coil pneumatic valves, coil one is pre-wired to Output 1 (Data 00001) and coil two is pre-wired to Output 2 (Data 00002).

Cyclone Pneumatic Valve Specifications

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.

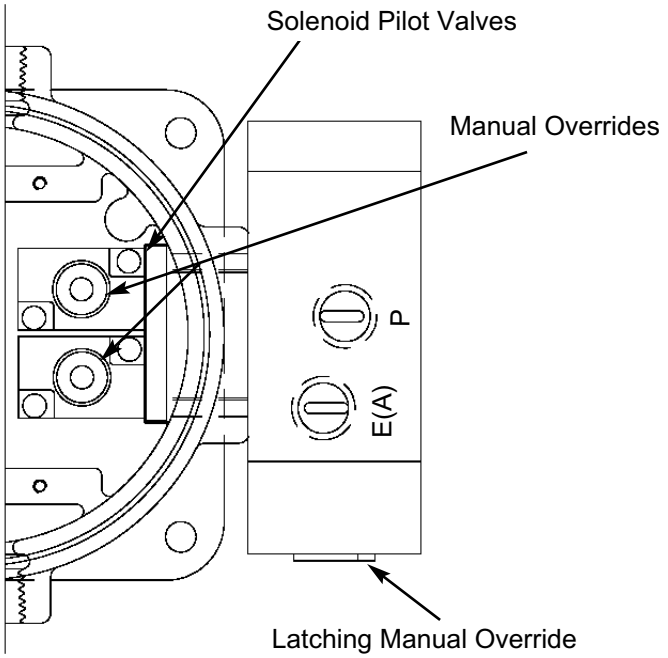
24 VDC Pilot	
Power	1.8 Watts
Current draw	75 mA @24VDC
Temperature	-18°C to +50°C
Filtration Requirements	40 Microns
Pressure Range	25 to 120 PSI
Cv	0.75 (10.7 Kv)
Piezo Pilot	
Current draw	2mA @6.5VDC
Temperature	-10°C to +60°C
Filtration Requirements	30 Microns
Pressure Range	25 to 120 PSI
Cv	0.75 (10.7 Kv)
Porting	1/4” NPT
Valve Body Material	360 brass or 303 Stainless
Operating Life	1 million cycles

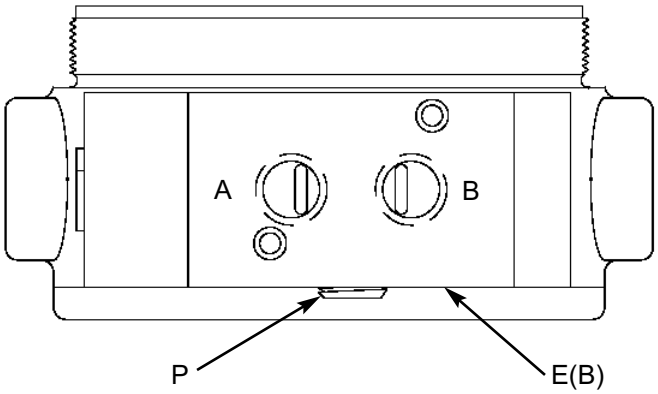
Manual Overrides:
One internal momentary and One external locking.

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

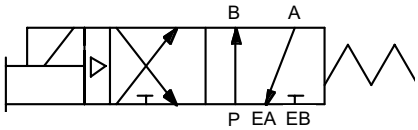




P - Pressure Port (1/4 " NPT)
A - Cylinder Port (1/4" NPT)
B - Cylinder Port (1/4" NPT)
E(A) - Exhaust for Cylinder Port A (1/4" NPT)
E(B) - Exhaust for Cylinder Port B (1/4" NPT)

Schematics

Single Coil: 5 way with Pneumatic pilot



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