

JM - Junction Enclosure Modules for Communication Networks

Installation & Adjusting Instructions for JMT, JMP, JMS, JMD, JMB series

The JM provides a watertight / explosion proof enclosure for a wide variety of “fieldbus” drop connectors. Passive, Protected, or Switched

Mounting The JM Enclosure

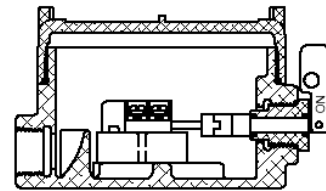
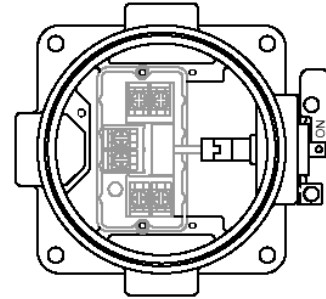
1. Locate the position where the JM enclosure will be mounted. Ensure that there is sufficient room to operate the disconnect switch levers and to remove the cover.
2. Attach the JM enclosure to a wall or other stationary flat surface using the mounting holes provided.
3. Secure the cover until hand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

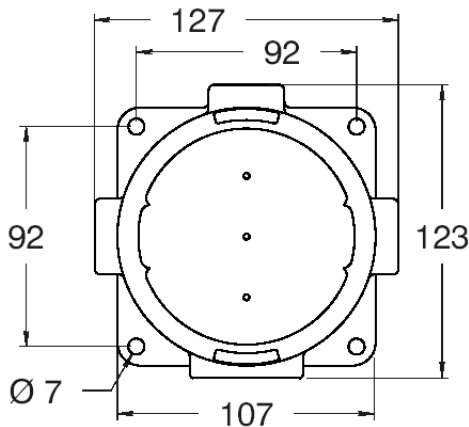
Installing & Removing Cover

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.

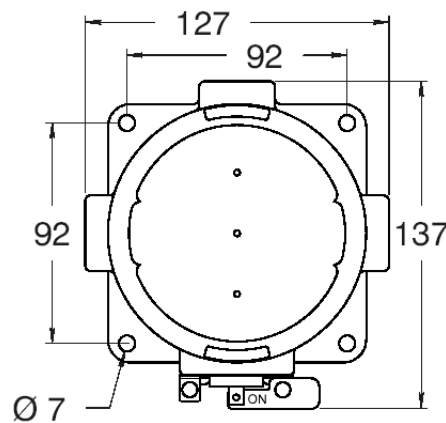


JM Dimensions (in mm)

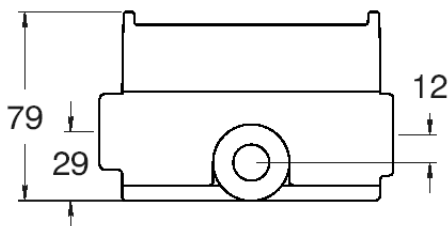
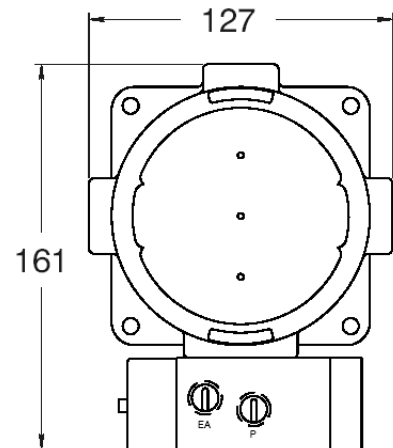
Standard Enclosure



Switched Enclosure



Enclosure w/ Cyclone Valve



StoneL Corporation
 One StoneL Dr
 26275 US Hwy 59
 Fergus Falls, MN 56537
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Telephone: 218.739.5774
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 Website: www.stonel.com

Example: JMT0111E3

	<u>Function</u>	<u>Solenoid</u>	<u>Enclosure</u>	<u>Conduit Entries</u>
JM	T00 (1-1) Passive drop connector for 2 wire	11 No Solenoid	C Clear Cover E Epoxy Coated Aluminum	3 (3) 1/2" NPT N (4) 1/2" NPT 6 (3) M20 M (4) M20 Z Potted Leads Note: Consult factory for sealed leads on drop leg of disconnect switch for Division 1 areas.
	T01 (1-2) Passive drop connector for AS-I			
	T03 (1-2) Passive drop connector for DeviceNet			
	T05 (1-2) Passive drop connector for Modbus, DP			
	T07 (1-2) Passive drop connector for FF-H1, PA			
	P01 (1-1) Protected drop connector for FF-H1, PA (40mA)			
	P03 (1-1) Protected drop connector for AS-I (240mA)			
	S01* (1-1) Switched protected drop connector for FF-H1,PA (40mA)			
	S03* (1-1) Switched protected drop connector for AS-I (240mA)			
	S11* (1-1) Switched passive drop connector for DeviceNet			
	D00 2 (1-1) Passive drop connectors for 2 wire			
	D11 2 (1-1) Protected drop connectors for FF-H1, PA (40mA)			
	D13 2 (1-1) Protected drop connectors for AS-I (240mA)			
	B06 6 Pole Terminal Block			
	B12 12 Pole Terminal Block			
000 Housing only				
* Switched protected drop connector available only with conduit Option 3				

General Specifications

Operating Life	Unlimited	Temperature Range	-40° to +85° C (-23° to 185° F)
Materials of Construction		Enclosure Protection	NEMA 4, 4X & 6; IP67
Housing and Cover	Marine grade anodized aluminum epoxy coating	Hazardous Area Ratings	
Clear Cover	Lexan® Polycarbonate	Explosion Proof (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	Non-incendive (Clear Cover)	Class I, Div. 2, Groups A,B,C,D
Warranty			Class II, Div. 2, Groups E,F,G
Complete Assemblies	Two Years		(Not all units carry approvals, consult factory)

Lexan is a registered trademark of General Electric Corporation.

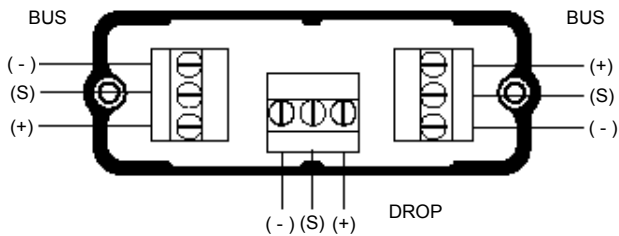


JMT00

Passive Drop Connector

- Bus in, Bus out, (1) Drop for 2 wire networks
- Provides for easy spur wiring and branching from the trunk.

Voltage Range	0-125 VAC/VDC
Current Rating	8 Amps
Break Current	None
Reset Current	None
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	Negligible

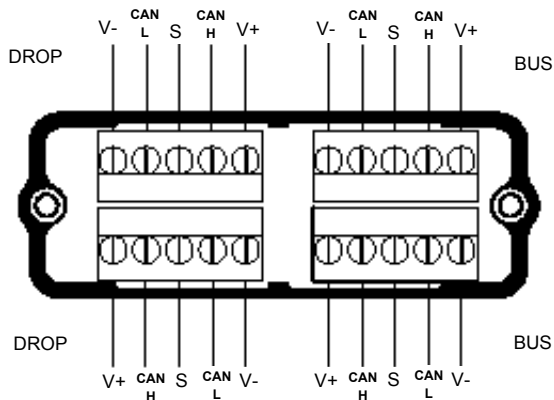


JMT03

Passive Drop Connector

- Bus in, Bus out, (2) Drops for DeviceNet networks
- Provides for easy spur wiring and branching from the trunk.

Voltage Range	0-125 VAC/VDC
Current Rating	8 Amps
Break Current	None
Reset Current	None
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	Negligible

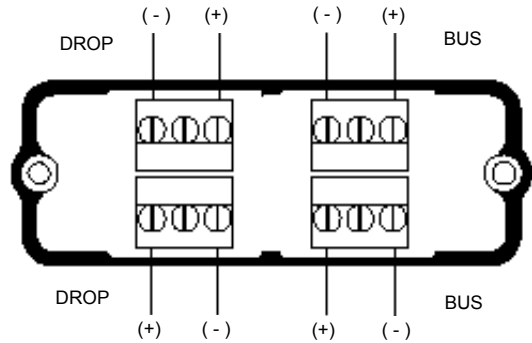


JMT01

Passive Drop Connector

- Bus in, Bus out, (2) Drops for AS-Interface networks and other 2 wire networks
- Provides for easy spur wiring and branching from the trunk.

Voltage Range	0-125 VAC/VDC
Current Rating	8 Amps
Break Current	None
Reset Current	None
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	Negligible

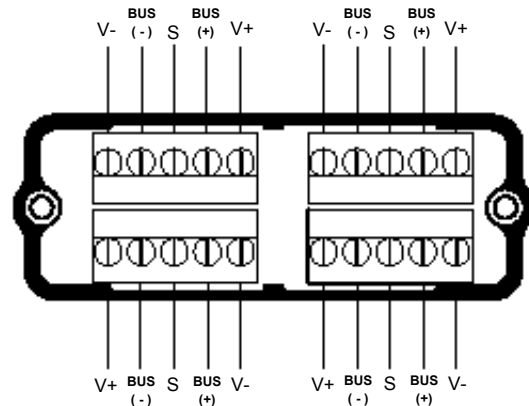


JMT05

Passive Drop Connector

- Bus in, Bus out, (2) Drops for Modbus, Profibus-DP and other 2 wire networks with separate power bus
- Provides for easy spur wiring and branching from the trunk.

Voltage Range	0-125 VAC/VDC
Current Rating	8 Amps
Break Current	None
Reset Current	None
Voltage Drop (Trunk)	Negligible



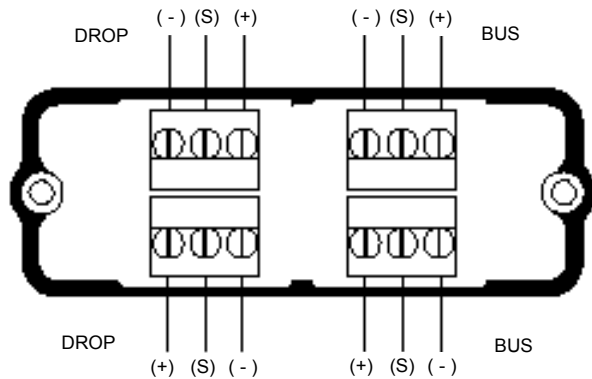
JMT, JMP, JMS, JMD, JMB Specifications & Wiring Diagrams

JMT07

Passive Drop Connector

- Bus in, Bus out, (2) Drops for Foundation Fieldbus H1 and Profibus-PA networks
- Provides for easy spur wiring and branching from the trunk.

Voltage Range	0-125 VAC/VDC
Current Rating	8 Amps
Break Current	None
Reset Current	None
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	Negligible

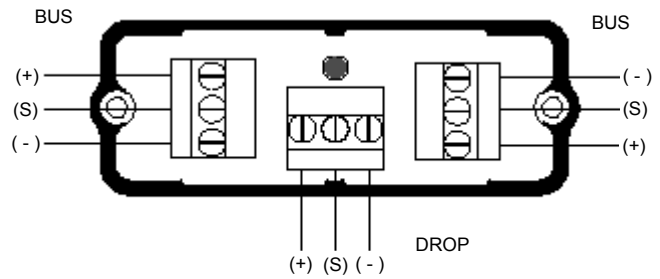


JMP01

Protected Drop Connector

- Bus in, Bus out, (1) Drop for Foundation Fieldbus H1 and Profibus-PA networks
- Provides for easy spur wiring and branching from the trunk.
- Short circuit protection on drop. Automatically resets.
- LED indicates drop fault.

Voltage Range	9-32 VDC (F/F Voltage)
Current Rating (Trunk)	8 Amps
Break Current	40 mA
Holding Current	28mA
Reset Current	<28mA
Voltage Drop (Trunk)	Negligible

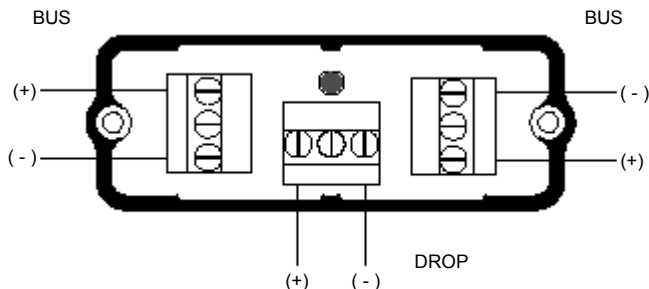


JMP03

Protected Drop Connector

- Bus in, Bus out, (1) Drop for AS-Interface networks
- Provides for easy spur wiring and branching from the trunk.
- Short circuit protection on drop. Automatically resets.
- LED indicates drop fault.

Voltage Range	AS-Interface Voltage
Current Rating (Trunk)	8 Amps
Break Current	240 mA
Holding Current	28mA
Reset Current	<28mA
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	1.0 Volt Max

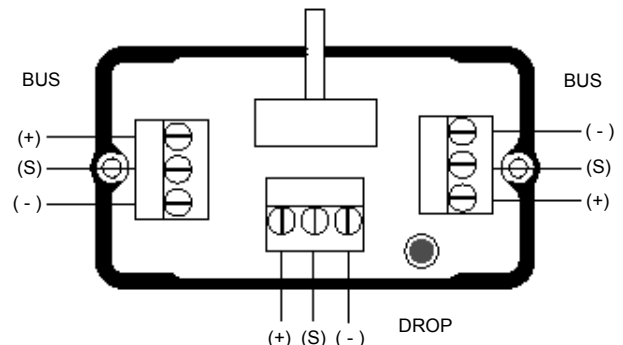


JMS01

Switched Protected Drop Connector

- Bus in, Bus out, (1) Drop for Foundation Fieldbus H1 and Profibus-PA networks
- Provides for easy spur wiring and branching from the trunk.
- Disconnect drop from bus.
- Short circuit protection on drop. Automatically resets.
- LED indicates drop fault.

Voltage Range	9-32 VDC (F/F Voltage)
Current Rating (Trunk)	8 Amps
Break Current	40 mA
Holding Current	28mA
Reset Current	<28mA
Voltage Drop (Trunk)	Negligible



JMT, JMP, JMS, JMD, JMB Specifications & Wiring Diagrams

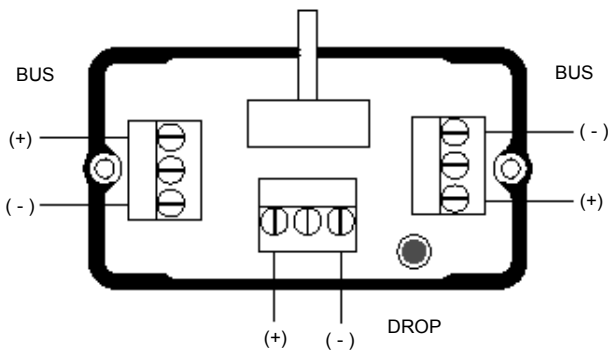
JMS03

JMS11

Switched Protected Drop Connector

- Bus in, Bus out, (1) Drop for AS-Interface networks
- Provides for easy spur wiring and branching from the trunk.
- Disconnect drop from bus.
- Short circuit protection on drop. Automatically resets.
- LED indicates drop fault.

Voltage Range	AS-Interface Voltage
Current Rating (Trunk)	8 Amps
Break Current	240 mA
Holding Current	28mA
Reset Current	<28mA
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	1.0 Volt Max

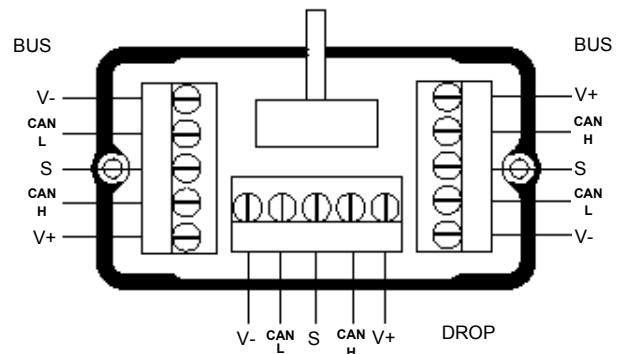


JMD00

Switched Passive Drop Connector

- Bus in, Bus out, (1) Drop for DeviceNet networks
- Provides for easy spur wiring and branching from the trunk.
- Disconnect drop from bus.

Voltage Range	24 VDC (DeviceNet Voltage)
Current Rating	8 Amps
Break Current	None
Reset Current	None
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	1.0 Volt Max

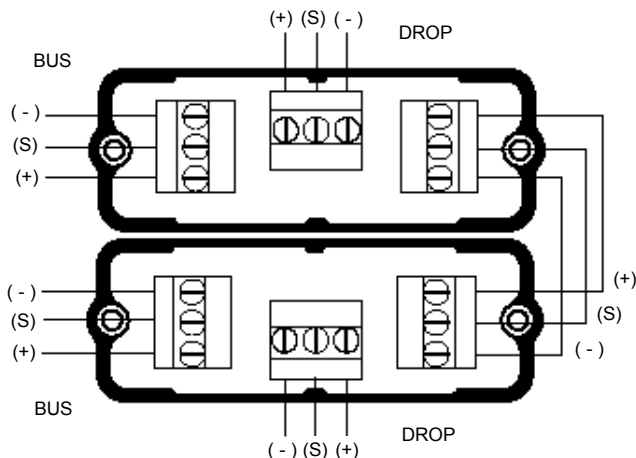


JMD11

Passive Drop Connectors

- (2) Bus in's, (2) Bus out's, (2) Drops for 2 wire systems
- Provides for easy spur wiring and branching from the trunk

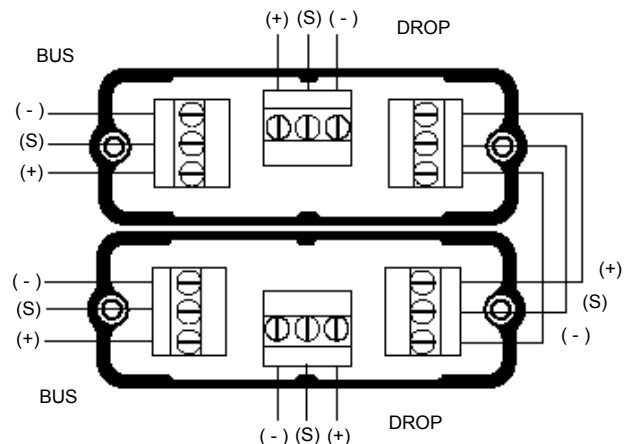
Voltage Range	0-125 VAC/VDC
Current Rating	8 Amps
Break Current	None
Reset Current	None
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	Negligible



Protected Drop Connectors

- (2) Bus in's, (2) Bus out's, (2) Drops for Foundation Fieldbus H1 and Profibus-PA networks
- Short circuit protection on drop. LED indicates drop fault.

Voltage Range	9-32 VDC (F/F Voltage)
Current Rating (Trunk)	8 Amps
Break Current	40 mA
Holding Current	28mA
Reset Current	<28mA
Voltage Drop (Trunk)	Negligible
Voltage Drop (Spur)	1.0 Volt Max



JMT, JMP, JMS, JMD, JMB Specifications & Wiring Diagrams

JMD13

Protected Drop Connectors

- (2) Bus in's, (2) Bus out's, (2) Drops for AS-Interface networks

- Short circuit protection on drop. LED indicates drop fault.

Voltage Range AS-Interface Voltage

Current Rating (Trunk) 8 Amps

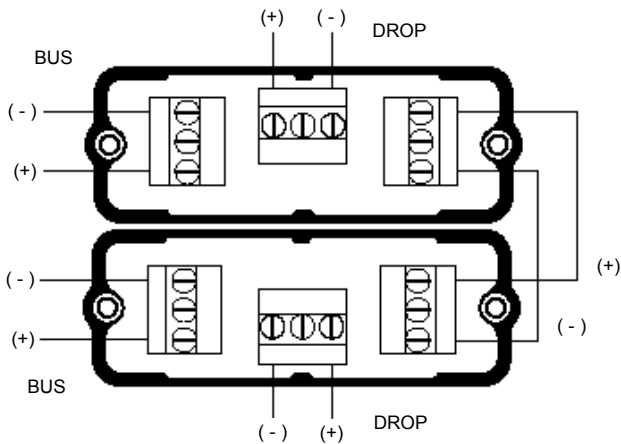
Break Current 240 mA

Holding Current 28mA

Reset Current <28mA

Voltage Drop (Trunk) Negligible

Voltage Drop (Spur) 1.0 Volt Max



JMB12

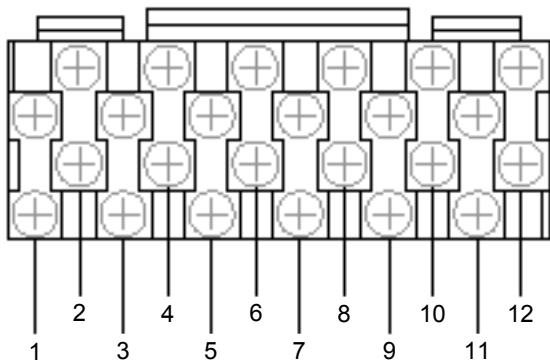
12 Pole Terminal Block

- Provides convenient termination points in a rugged junction box

- Accepts up to 12 AWG wire or (2) 14 AWG wires

Voltage 0-300 VAC/VDC

Current Rating 20 amps



JMB06

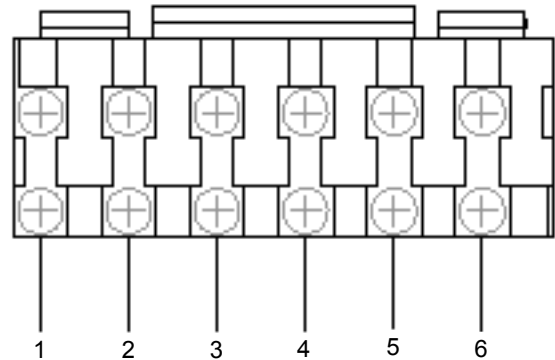
6 Pole Terminal Block

- Provides convenient termination points in a rugged junction box

- Accepts up to 12 AWG wire or (2) 14 AWG wires

Voltage 0-300 VAC/VDC

Current Rating 20 amps



JM - Junction Enclosure Modules for Communication Networks

Installation & Adjusting Instructions for JMR, JMI, JMX series

The JM provides a watertight / explosion proof enclosure for a wide variety of "fieldbus" Input/Output Relay Modules and Special Function Modules

Mounting The JM Enclosure

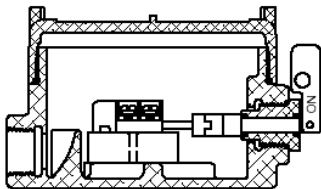
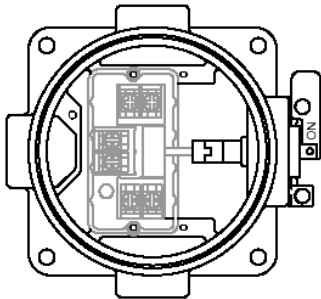
1. Locate the position where the JM enclosure will be mounted. Ensure that there is sufficient room to operate the disconnect switch levers and to remove the cover.
2. Attach the JM enclosure to a wall or other stationary flat surface using the mounting holes provided.
3. Secure the cover until hand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

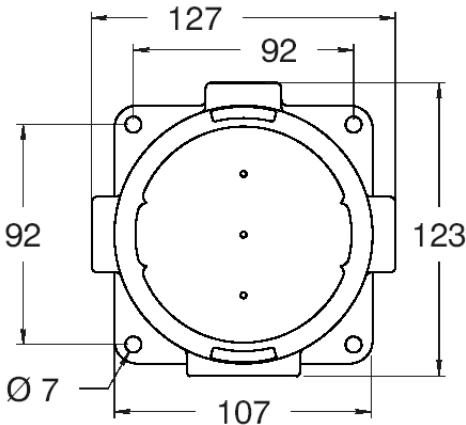
Installing & Removing Cover

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.

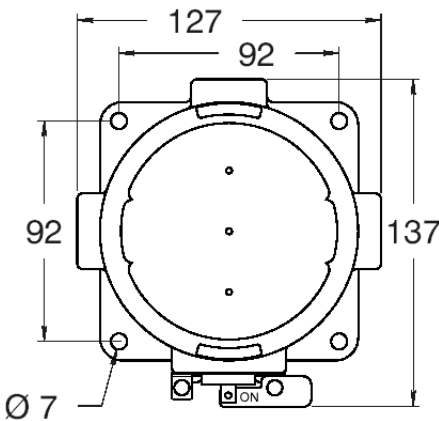


JM Dimensions (in mm)

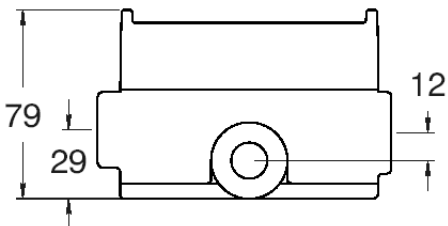
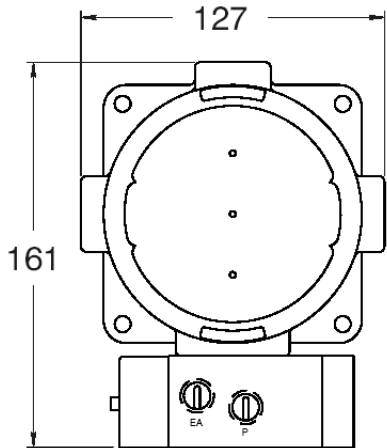
Standard Enclosure



Switched Enclosure



Enclosure w/ Cyclone Valve



StoneL Corporation
One StoneL Dr
26275 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

Example: JMR0111E3

	<u>Function</u>	<u>Solenoid</u>	<u>Enclosure</u>	<u>Conduit Entries</u>
JM	R92 I/O Relay Module, Independent Outputs, DeviceNet	11 No Solenoid	C Clear Cover E Epoxy Coated Aluminum	N (4) 1/2" NPT M (4) M20
	R94 I/O Relay Module, Independent Outputs, Foundation Fieldbus			
	R95 I/O Relay Module, Independent Outputs, ModBus			
	R96 I/O Relay Module, Independent Outputs, AS-Interface			
	I92 I/O Relay Module, Interlocked Outputs, DeviceNet			
	I94 I/O Relay Module, Interlocked Outputs, Foundation Fieldbus			
	I95 I/O Relay Module, Interlocked Outputs, ModBus			
	I96 I/O Relay Module, Interlocked Outputs, AS-Interface			
	X02 Power Conditioner, Redundant Supplies, AS-Interface			
	X05 Power Conditioner, Daisy Chained, AS-Interface			

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 +85° C (-23° to 185° F)
AS-Interface Relay Modules	-25° to +70° C (-13° to 158° 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)



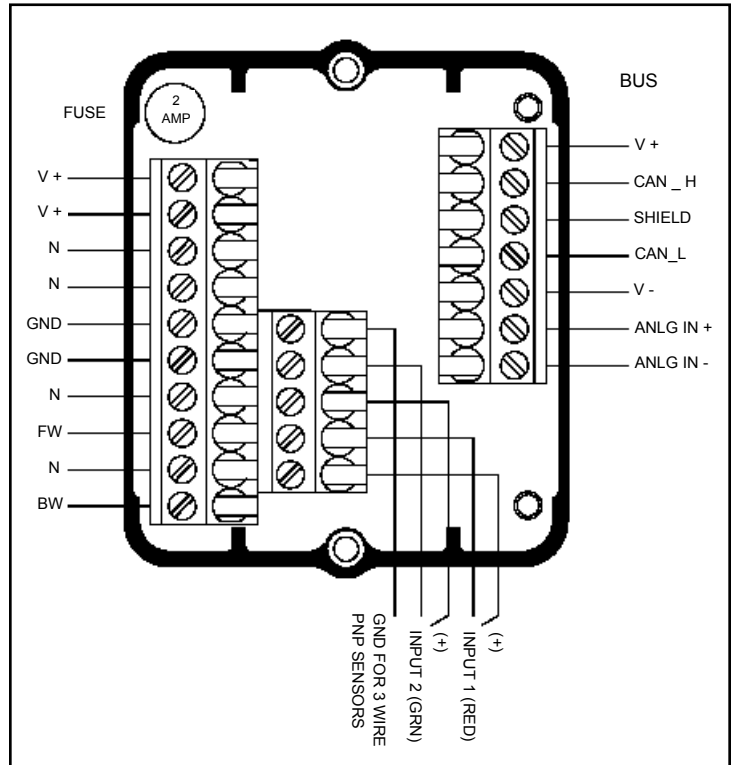
JMR, JMI, JMX Specifications & Wiring Diagrams

JMR92, JMI92

DeviceNet 2 DI/2 DO/1 AI Input/Output Relay Module

Is designed to function as a DeviceNet node with termination points for connecting switches/sensors as well as relay outputs to operate AC motors or other high power devices. Outputs can be interlocked to operate AC motors. Includes (1) analog input.

Operating Voltage	24 VDC via DeviceNet voltage	
Inputs	(2) 7mA @ 24 VDC, gold contact mechanical, low power reed, or proximity sensors.	
Outputs	JMR92: (2) Independent 120/250 VAC fused @ 2 amps for AC loads JMI92: (2) Interlocked 120/250 VAC fused @ 2 amps for AC motors	
Analog Input	(1) Analog (4-20 mA) input. 8 bit resolution (0.4%)	
External Voltage	Up to 250 VAC; 30 VDC	
Indication	Input 1 = Red LED; Input 2 = Green LED	
Default Address	63	
Bit Assignment:	<u>Inputs: (3 Bytes)</u>	<u>Outputs (1 Byte)</u>
	Bit 0 = Input 1 (Red)	Bit 0 = Output 1
	Bit 1 = Input 2 (Green)	Bit 1 = Output 2
	Bit 4 = Fault Bit (On if both Input 1 and Input 2 are on)	
	Bits 8-15 = Analog Input (Low Byte)	
	Bits 16-23 = Analog Input (High Byte)	

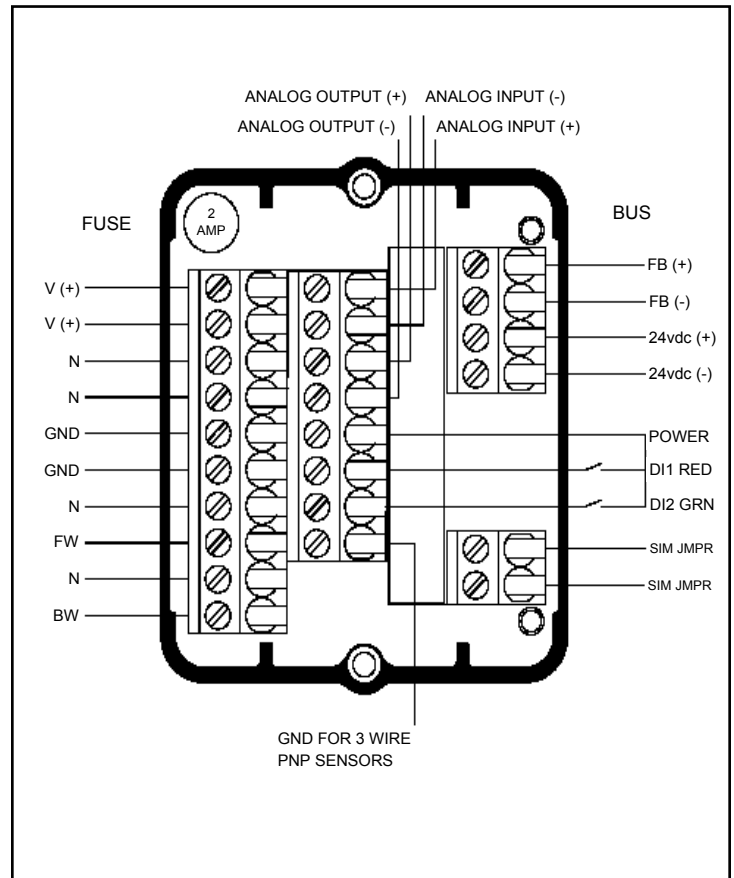


JMR94, JMI94

Foundation Fieldbus 2 DI/2 DO/1 AI/1 AO Input/Output Relay Module

Is designed to function as a Foundation Fieldbus node with termination points for connecting switches/sensors as well as relay outputs to operate AC motors or other high power devices. Outputs can be interlocked to operate AC motors. Includes (1) analog input and (1) analog output.

Operating Voltage	9-32 VDC via Foundation Fieldbus voltage	
Inputs	(2) Low power dry contact capable of operating at <.045mA @ 6.5 VDC or solid state PNP capable of operating at <1mA and 6.5 VDC	
Outputs	JMR94: (2) Independent 120/250VAC fused @ 2 amps for AC loads JMI94: (2) Interlocked 120/250VAC fused @ 2 amps for AC motors	
Analog Input	(1) Analog (4-20 mA) input. 10 bit resolution (0.1%)	
Analog Output	(1) Analog (4-20 mA) output. 10 bit resolution (0.1%)	
External Voltage	24 VDC (Analog I/O)	
External Voltage	Up to 250 VAC; 30 VDC (Relay outputs)	
Indication	Input 1 = Red LED; Input 2 = Green LED	
Function Blocks	2 DI, 2 DO, 1 AI, 1AO	



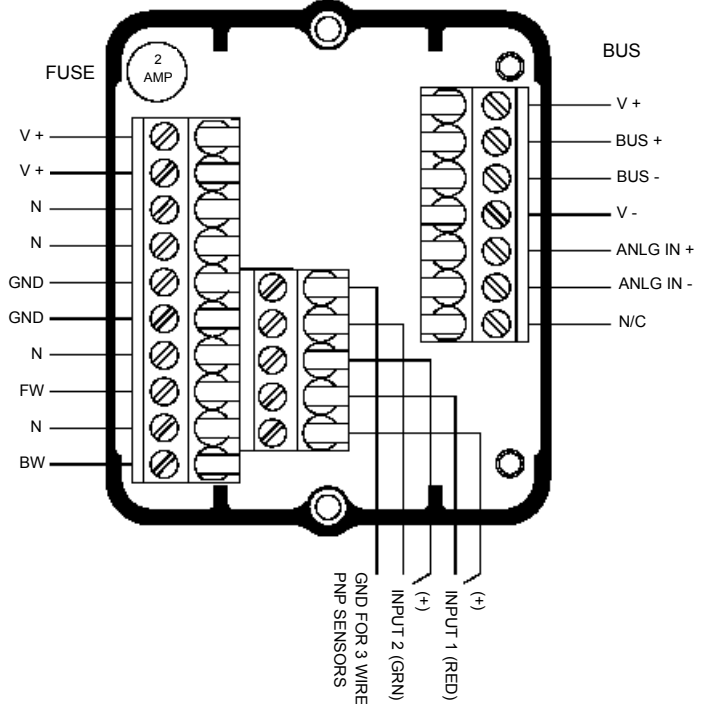
JMR, JMI, JMX Specifications & Wiring Diagrams

JMR95, JMI95

Modbus 2 DI/2 DO/1 AI Input/Output Relay Module

Is designed to function as a Modbus (RS485) node with termination points for connecting switches/sensors as well as relay outputs to operate AC motors or other high power devices. Outputs can be interlocked to operate AC motors. Includes (1) analog input.

Operating Voltage	24 VDC via Modbus voltage	
Inputs	(2) 7mA @ 24 VDC, gold contact mechanical, low power reed, or proximity sensors.	
Outputs	JMR95: (2) Independent 120/250 VAC fused @ 2 amps for AC loads JMI95: (2) Interlocked 120/250 VAC fused @ 2 amps for AC motors	
Analog Input	(1) Analog (4-20 mA) input. 8 bit resolution (0.4%)	
External Voltage	Up to 250 VAC; 30 VDC	
Indication	Input 1 = Red LED; Input 2 = Green LED	
Default Address	03	
Bit Assignment	<u>Input Data</u>	<u>Output Data</u>
	Input 1 = 10001	Output 1 = 00001
	Input 2 = 10002	Output 2 = 00002
	Analog input = 30001	

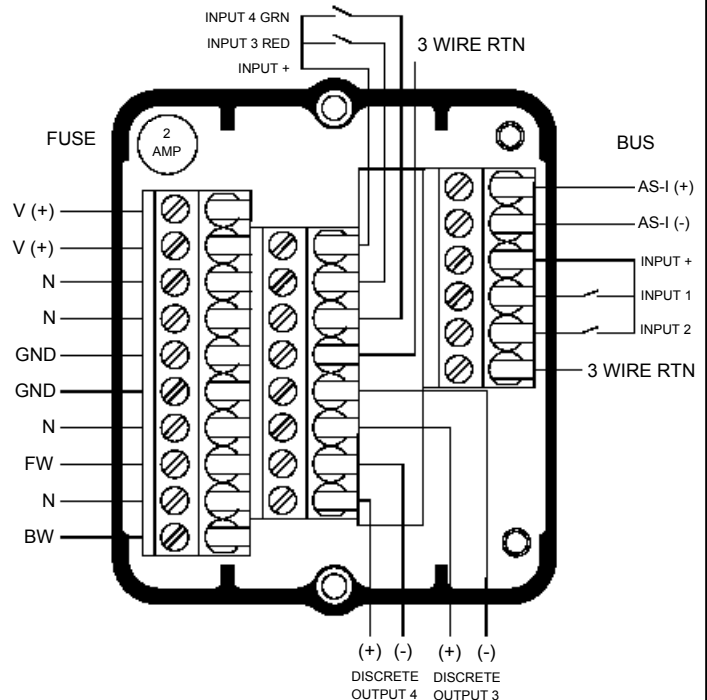


JMR96, JMI96

AS-Interface 4 DI/2 DO (relay) Input/Output Relay Module

Is designed to function as an AS-Interface node with termination points for connecting switches/sensors as well as relay outputs to operate AC motors or other high power devices. Outputs can be interlocked to operate AC motors.

AS-Interface Profile	ID Code = F; I/O Code = 7 (4DI/4DO)	
Operating Voltage	AS-Interface voltage	
Inputs	(4) 3mA @ 28 VDC, gold contact mechanical, low power reed, or proximity sensors.	
Relay Outputs	JMR96: (2) Independent 120/250 VAC fused @ 2 amps for AC loads JMI96: (2) Interlocked 120/250 VAC fused @ 2 amps for AC motors	
Outputs (Bus Powered)	(2) 28 VDC (4 Watts total power available)	
External Voltage	Up to 250 VAC; 30 VDC	
Indication	Input 3 = Red LED; Input 4 = Green LED	
Default Address	00	
Bit Assignment	<u>Input Data</u>	<u>Output Data</u>
	Input 1 = DI0	Output 1 = DO2
	Input 2 = DI1	Output 2 = DO3
	Input 3 = DI2	Output 3 = DO0
	Input 4 = DI3	Output 4 = DO1



JMX02

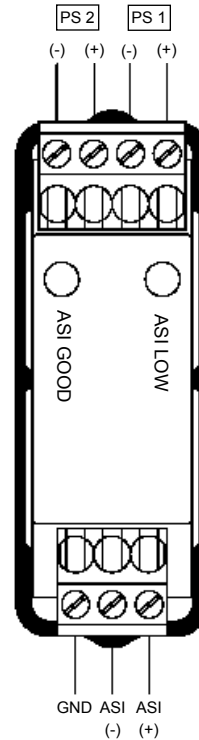
AS-Interface Power Conditioner

Converts any 30 VDC power supply to an AS-Interface Power Supply by providing the data decoupling function.

To be used to power an AS-Interface segment with redundant power supplies.

Allows remote placement of the power supply that does not add to the AS-I Network total length.

Input Voltage	26-32 VDC
Max Voltage	35 VDC
Max Current	3 Amps
Indication	Green LED indicates AS-I bus power is good (≥ 26 VDC) Red LED indicates AS-I bus power is low (< 26 VDC)



JMX05

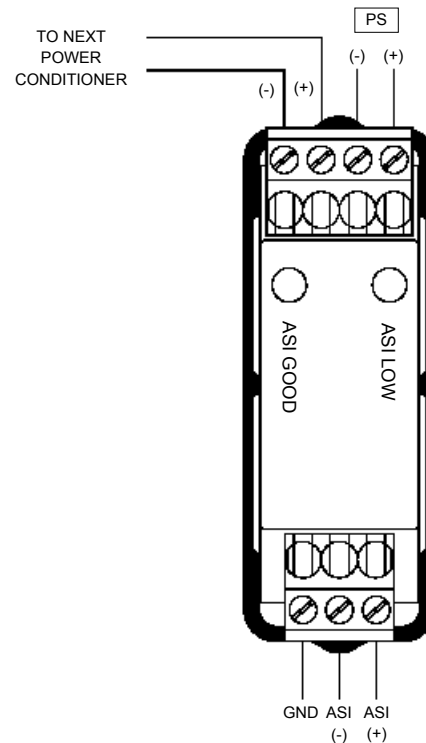
AS-Interface Power Conditioner

Converts any 30 VDC power supply to an AS-Interface Power Supply by providing the data decoupling function.

To be used to power an AS-Interface segment with redundant power multiple AS-Interface segments with one power supply.

Allows remote placement of the power supply that does not add to the AS-I Network total length.

Input Voltage	26-32 VDC
Max Voltage	35 VDC
Max Current	3 Amps
Indication	Green LED indicates AS-I bus power is good (≥ 26 VDC) Red LED indicates AS-I bus power is low (< 26 VDC)



JM - Junction Enclosure Modules for Communication Networks

Installation & Adjusting Instructions for JMM series

The JM provides a watertight / explosion proof enclosure for a wide variety of "fieldbus" Input/Output Modules

Mounting The JM Enclosure

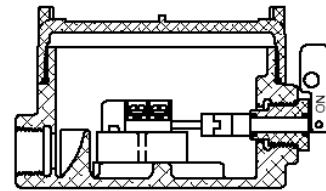
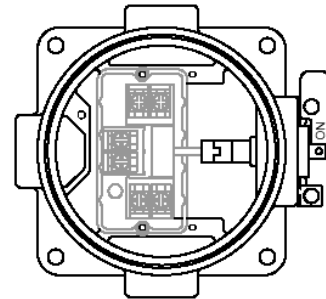
1. Locate the position where the JM enclosure will be mounted. Ensure that there is sufficient room to operate the disconnect switch levers and to remove the cover.
2. Attach the JM enclosure to a wall or other stationary flat surface using the mounting holes provided.
3. Secure the cover until hand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

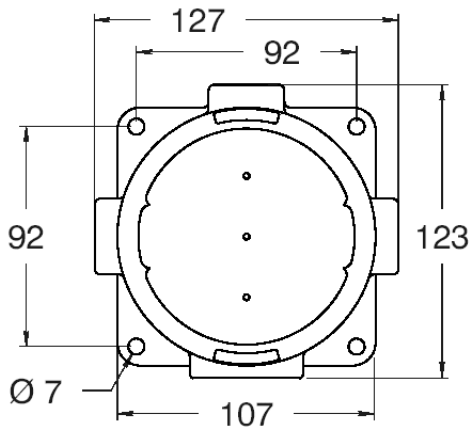
Installing & Removing Cover

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.

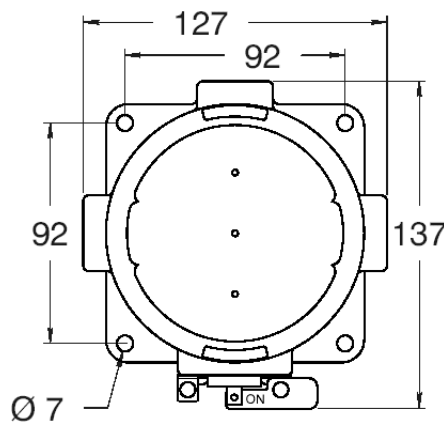


JM Dimensions (in mm)

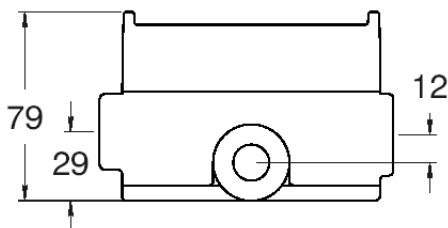
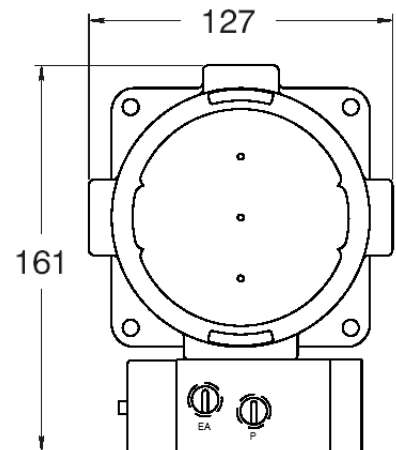
Standard Enclosure



Switched Enclosure



Enclosure w/ Cyclone Valve



StoneL Corporation
 One StoneL Dr
 26275 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

Example: JMM962HE3

JM	Function		Solenoid				Enclosure	Conduit Entries													
	M91	I/O Module (2 DI/2 DO), AS-Interface v2.0 (only w/ Solenoid 11,2B,2E,2H,2L,2N,2Q)	11 No Solenoid <table border="1"> <thead> <tr> <th>Pilot</th> <th>Type</th> <th>Brass</th> <th>SS</th> </tr> </thead> <tbody> <tr> <td>1-Solenoid</td> <td>2-Postn,5-Way</td> <td>2H</td> <td>2B</td> </tr> <tr> <td>1-IS Piezo</td> <td>2-Postn,5-Way</td> <td>3G</td> <td>3A</td> </tr> <tr> <td>2-Solenoids</td> <td>2-Postn,5-Way</td> <td>2L</td> <td>2E</td> </tr> </tbody> </table>	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	C Clear Cover E Epoxy Coated Aluminum	
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																	
M92	I/O Module (2 DI/2 DO/1 AI), DeviceNet (only w/ Solenoid 11,2B,2E,2H,2L,2N,2Q)																				
M93	I/O Module (2 DI/2 DO), F/Fieldbus (only w/ Solenoid 11,3A,3G)																				
M94	I/O Module (2 DI/2DO/1AI/1DO, F/Fieldbus (only w/ Solenoid 11,2B,2E,2H,2L,2N,2Q)																				
M95	I/O Module (2 DI/2 DO), ModBus (only w/ Solenoid 11,2B,2E,2H,2L,2N,2Q)																				
M96	I/O Module (4 DI/4 DO), AS-Interface v2.1 (only w/ Solenoid 11,2B,2E,2H,2L,2N,2Q)																				

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 +85° C (-23° to 185° F)
AS-Interface I/O Modules	-25° to +70° C (-13° to 158° F)
24 VDC Pneumatic Valve	-18° to +50° C (0° to 120° F)
Piezo Pneumatic Valve	-10° to +60° C (14° to 140° 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)	



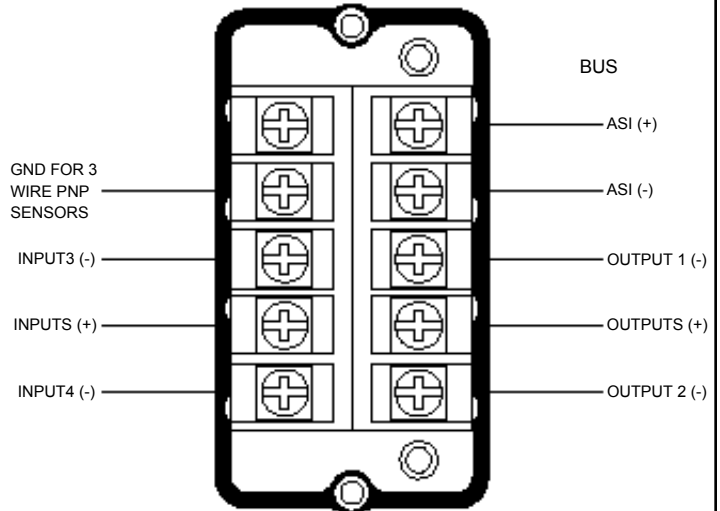
JMM Specifications & Wiring Diagrams

JMM91

AS-Interface 2 DI/2 DO Input/Output Module

Is designed to function as an AS-Interface slave device with termination points for connecting switches/sensors as well as output devices such as solenoid valves and relays

AS-Interface Profile	ID Code = F; I/O Code = B (2DI/2DO)										
Operating Voltage	AS-Interface voltage										
Inputs	(2) 3mA @ 28 VDC, gold contact mechanical, low power reed, or proximity sensors.										
Outputs	(2) 28 VDC (4 watts total power available)										
Current Draw	<60mA (no outputs energized)										
Indication	Input 3 = Green LED; Input 4 = Red LED										
Default Address	00										
Bit Assignment	<table border="0"> <tr> <td><u>Input Data</u></td> <td><u>Output Data</u></td> </tr> <tr> <td>Input 1 = Not used</td> <td>Output 1 = DO2</td> </tr> <tr> <td>Input 2 = Not used</td> <td>Output 2 = DO3</td> </tr> <tr> <td>Input 3 = DI2</td> <td>Output 3 = Not used</td> </tr> <tr> <td>Input 4 = DI3</td> <td>Output 4 = Not used</td> </tr> </table>	<u>Input Data</u>	<u>Output Data</u>	Input 1 = Not used	Output 1 = DO2	Input 2 = Not used	Output 2 = DO3	Input 3 = DI2	Output 3 = Not used	Input 4 = DI3	Output 4 = Not used
<u>Input Data</u>	<u>Output Data</u>										
Input 1 = Not used	Output 1 = DO2										
Input 2 = Not used	Output 2 = DO3										
Input 3 = DI2	Output 3 = Not used										
Input 4 = DI3	Output 4 = Not used										

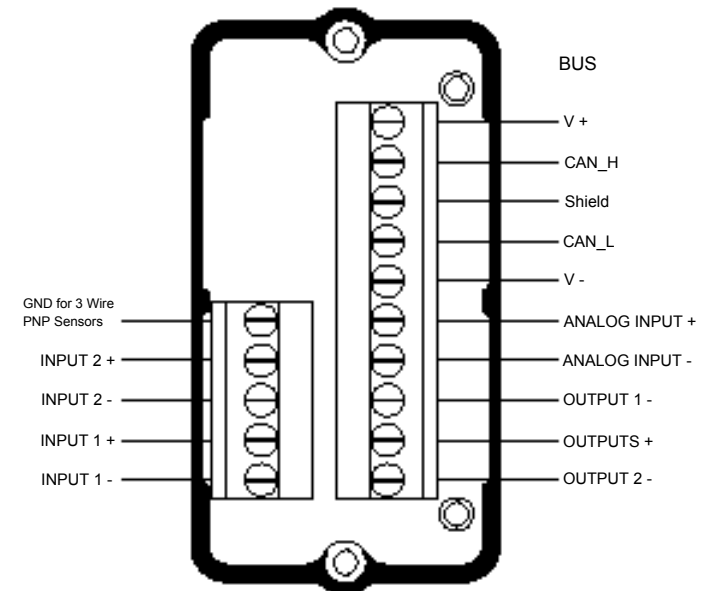


JMM92

DeviceNet 2 DI/2 DO/1 AI Input/Output Module

Is designed to function as a DeviceNet node (Group 2 slave) with termination points for connecting switches/sensors as well as output devices such as solenoid valves and relays. Includes (1) analog input. Outputs can be configured to fail on or off.

Operating Voltage	24 VDC via DeviceNet voltage																		
Inputs	(2) 7mA @ 24 VDC, gold contact mechanical, low power reed, or proximity sensors.																		
Outputs	(2) 28 VDC (4 watts total power available)																		
Analog Input	(1) Analog (4-20 mA) input. 8 bit resolution (0.4%)																		
Indication	Input 1 = Red LED; Input 2 = Green LED																		
Default Address	63																		
Bit Assignment	<table border="0"> <tr> <td colspan="2">Inputs: (3 Bytes)</td> </tr> <tr> <td>Bit 0 = Input 1 (Red)</td> <td></td> </tr> <tr> <td>Bit 1 = Input 2 (Green)</td> <td></td> </tr> <tr> <td>Bit 4 = Fault Bit (On if both Input 1 and Input 2 are on)</td> <td></td> </tr> <tr> <td>Bits 8-15 = Analog Input (Low Byte)</td> <td></td> </tr> <tr> <td>Bits 16-23 = Analog Input (High Byte)</td> <td></td> </tr> <tr> <td colspan="2">Outputs (1 Byte)</td> </tr> <tr> <td>Bit 0 = Output 1</td> <td></td> </tr> <tr> <td>Bit 1 = Output 2</td> <td></td> </tr> </table>	Inputs: (3 Bytes)		Bit 0 = Input 1 (Red)		Bit 1 = Input 2 (Green)		Bit 4 = Fault Bit (On if both Input 1 and Input 2 are on)		Bits 8-15 = Analog Input (Low Byte)		Bits 16-23 = Analog Input (High Byte)		Outputs (1 Byte)		Bit 0 = Output 1		Bit 1 = Output 2	
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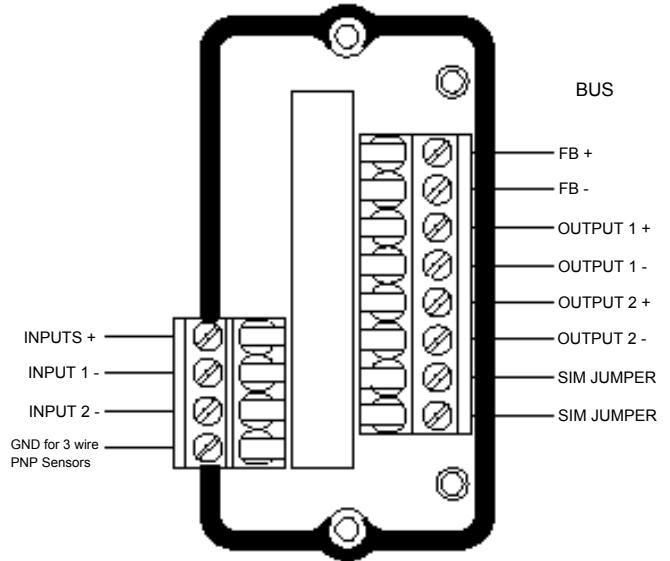
JMM Specifications & Wiring Diagrams

JMM93

Foundation Fieldbus 2 DI/2 DO Input/Output Module

Is designed to function as a Foundation Fieldbus node with termination points for connecting switches/sensors as well as output devices such as peizo solenoids and low power relays. Outputs can be configured to fail on or off.

Operating Voltage	9-32 VDC via Foundation Fieldbus voltage
Inputs	(2) Low power dry contact capable of operating at <.045mA @ 6.5 VDC or solid state PNP capable of operating at <1mA and 6.5 VDC
Outputs	(2) 6.5 VDC 2mA. Suitable for StoneL Piezo Valve
Indication	Input 1 = Red LED; Input 2 = Green LED
Function Blocks	2 DI, 2 DO, 1 AI, 1AO

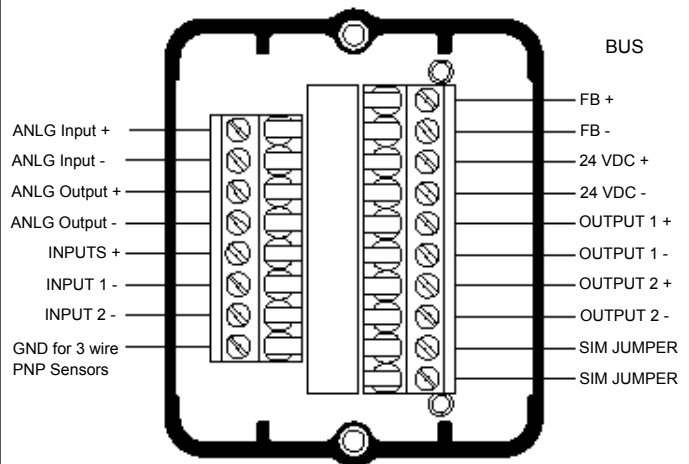


JMM94

Foundation Fieldbus 2 DI/2 DO/1 AI/1 AO Input/Output Module

Is designed to function as a Foundation Fieldbus node with termination points for connecting switches/sensors as well as output devices such as solenoid valves and relays. Includes (1) analog input and (1) analog output. This device requires an external 24 VDC power supply.

Operating Voltage	9-32 VDC via Foundation Fieldbus voltage
Inputs	(2) Low power dry contact capable of operating at <.045mA @ 6.5 VDC or solid state PNP capable of operating at <1mA and 6.5 VDC
Outputs	(2) 24 VDC (4 watts total power)
Analog Input	(1) Analog (4-20 mA) input. 10 bit resolution (0.1%)
Analog Output	(1) Analog (4-20 mA) output. 10 bit resolution (0.1%)
External Voltage	24 VDC (Analog I/O)
Indication	Input 1 = Red LED; Input 2 = Green LED
Function Blocks	2 DI, 2 DO, 1 AI, 1AO



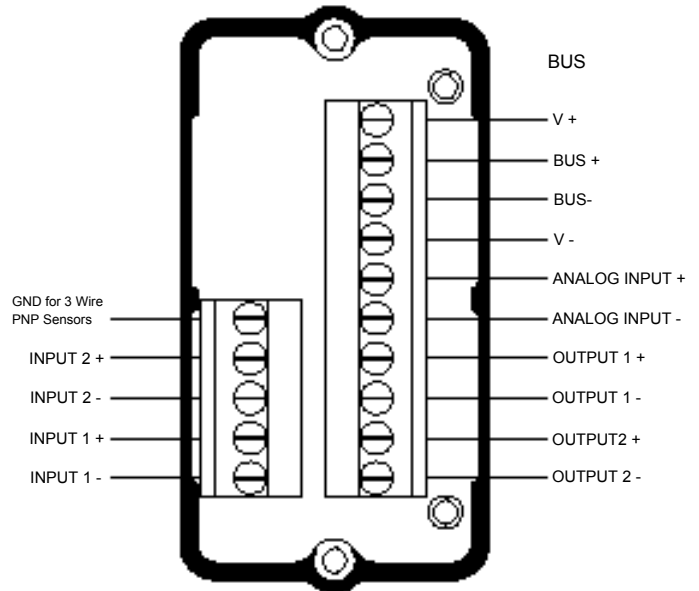
JMM Specifications & Wiring Diagrams

JMM95

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

Is designed to function as a Modbus (RS485) node with termination points for connecting switches/sensors as well as output devices such as solenoid valves and relays. Includes (1) analog input.

Operating Voltage	24 VDC via Modbus voltage	
Current Draw	<20mA (no outputs energized and no analog input)	
Inputs	(2) 7mA @ 24 VDC, gold contact mechanical, low power reed, or proximity sensors.	
Outputs	(2) 24 VDC (4 watts total power)	
Analog Input	(1) Analog (4-20 mA) input. 10 bit resolution (0.1%)	
Data Rate	9.6K, 19.2K, 38.4K Baud (software settable)	
Indication	Input 1 = Red LED; Input 2 = Green Led	
Default Address	03	
Bit Assignment	<u>Input Data</u>	<u>Output Data</u>
	Input 1 = 10001	Output 1 = 00001
	Input 2 = 10002	Output 2 = 00002
	Analog input = 30001	

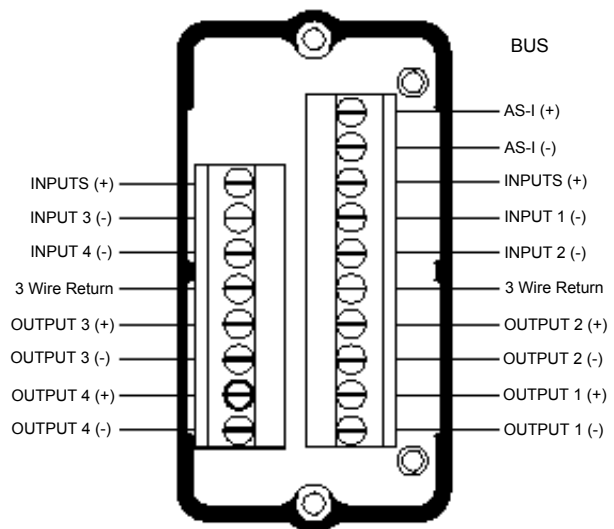


JMM96

AS-Interface 4 DI/4 DO Input/Output Module

Is designed to function as an AS-Interface slave device with termination points for connecting switches/sensors as well as output devices such as solenoid valves and relays.

AS-Interface Profile	ID Code = F; I/O Code = 7 (4DI/4DO)	
Operating Voltage	AS-Interface voltage	
Current Draw	<40mA (no outputs energized)	
Inputs	(4) 3mA @ 28 VDC, gold contact mechanical, low power reed, or proximity sensors.	
Outputs	(4) 28 VDC (4 watts total power)	
Indication	Input 3 = Green LED; Input 4 = Red LED	
Default Address	00	
Bit Assignment	<u>Input Data</u>	<u>Output Data</u>
	Input 1 = DI0	Output 1 = DO2
	Input 2 = DI1	Output 2 = DO3
	Input 3 = DI2	Output 3 = DO0
	Input 4 = DI3	Output 2 = DO1



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.

