

# Net Safety JB Series Junction Box





# Important Instructions

Net Safety Monitoring, Inc (Net Safety) designs, manufactures and tests products to function within specific conditions. Because these products are sophisticated technical instruments, it is important that the owner and operation personnel must strictly adhere both to the information printed on the product nameplate and to all instructions provided in this manual prior to installation, operation, and maintenance.

## **WARNING**

**Installing, operating or maintaining a Net Safety Product improperly could lead to serious injury or death from explosion or exposure to dangerous substances. Comply with all information on the product, in this manual, and in any local and national codes that apply to the product. Do not allow untrained personnel to work with this product. Use Net Safety parts and work procedures specified in this manual.**

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# Section 1: Introduction

## 1.1 Models covered

The Net Safety JB series junction box is a multi-purpose junction box that is used with numerous Net Safety products. It can be used as a termination box for flame detectors or for remote mounting gas sensors from transmitters. It is available in copper-free Aluminum or 316 Stainless Steel.

**Models covered:**

- JB-IR3SAR - Used with IR3S-AR flame detectors to provide 4-20mA analog and relay outputs
- JB-MPD - Used for remote mounting of Millennium II combustible (SC3) and toxic (ST3) gas sensors, Millennium combustible (SIR100) IR sensors, and APM sensors
- JB-MPG - General junction box used to separate Millennium toxic (ST2), Millennium combustible (SC1100), and Gas Shield sensors from their transmitter
- JB-MPH - Used to separate the HART Port (HPT-001) from the HART device
- JB-MPNS - Used with the IR3S-A, UVS-A, and UV/IRS-A flame detectors and separated Millennium toxic sensors (ST1); includes current loop test jacks
- JB-MPR - Used with UVS-AR and UV/IRS-AR relay models only
- JB-MPR3 - Used with IR3S-R relay models only
- JB-MPS - Used with UVS-A and UV/IRS-A flame detectors only, includes magnetic switch for manual VI testing

## 1.2 Service support

Technical support for this product can be provided by contacting your local Emerson Process Management/Net Safety representative or by contacting the Net Safety Technical Support department at +1 866 347 3427 or [safety.csc@emerson.com](mailto:safety.csc@emerson.com).

## 1.3 Return of material

To expedite the repair and return of this product, proper communication between the customer and the factory is important. Before returning a product for repair, call +1866 347 3427 or e-mail [safety.csc@emerson.com](mailto:safety.csc@emerson.com) for a Material Return Authorization (MRA) number.

On the return of the equipment, include the following information:

1. MRA number provided to you by Net Safety
2. Company name and contact information
3. Purchase order, from your company, authorizing repairs or request for quote
4. Ship all equipment, prepaid to:  
**Net Safety Monitoring**  
**2721 Hopewell Place NE**  
**Calgary, Alberta, Canada T1Y 7J7**
5. Mark all packages with as **Return for Repair** and include MRA number

Pack items to protect them from damage and use anti-static bags or aluminum-backed cardboard as protection from electrostatic damage.

*All equipment must be shipped prepaid. Collect shipments will not be accepted.*

## 1.4 Product recycling/disposal

Recycling of equipment and packaging should be taken into consideration and disposed of in accordance with local and national legislations/regulations.

# Section 2: Installation

## 2.1 Unpacking and inspection

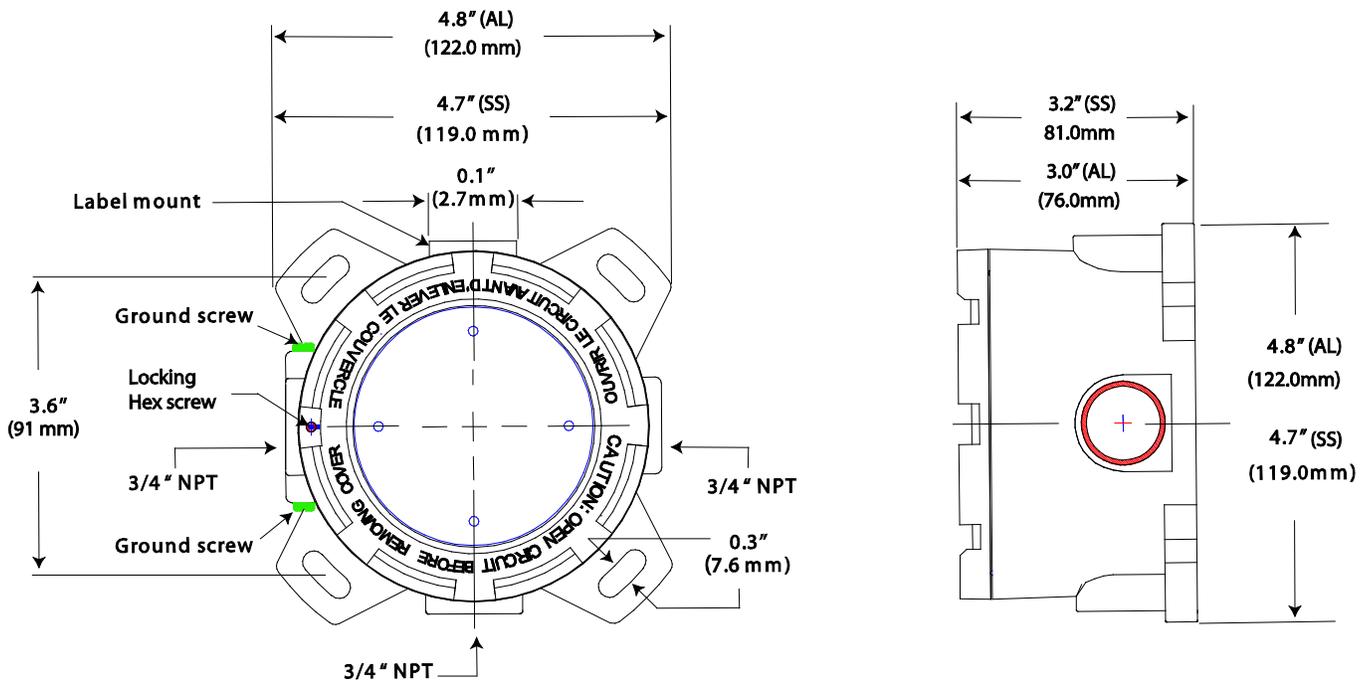
Carefully remove all of the components from the packaging and verify them against the enclosed packing list. Inspect all components for any obvious damage such as broken or loose parts. If you find any components missing or damaged, notify your local Net Safety representative or the factory immediately.

Recycling of packaging should be taken into consideration and disposed of in accordance with local and national legislations/regulations.

## 2.2 Dimensions

The following drawing outlines the dimensions of the junction box. Measurements are in inches and millimeters. As a standard, the junction box is provided with one (1) conduit plug.

Figure 2-1 Net Safety junction box dimensional drawing



## 2.3 Mounting

Three (3) conduit entries located on the junction box body are available in 1/2 inch-14NPT, 3/4 inch-14 NPT, or M20 x 1.5 mm thread. The standard offering is 3/4 inch NPT, consult your Emerson Process Management/Net Safety representative for availability of other conduit entry sizes. Connection of conduit, cable glands, sensors, or detectors to these conduit entries should be done so by use of tools. A 6mm Hex Key is required for installing or removing conduit entry plugs. Use a 1.5 mm Hex key to tighten the locking Hex screw securing the top cover. The junction box has mounting holes for installing directly on a wall or to a pole, with the aid of a pole mounting kit, as desired.

## 2.4 Wiring

### **⚠ WARNING**

Failure to follow these installation guidelines could result in death or serious injury. Ensure that only qualified personnel perform the installation.

Electrical shock could cause death or serious injury. Use extreme caution when making contact with the leads and terminals.

Do not open the junction box enclosure when in a classified area or when an explosive atmosphere may be present unless the power to the sensor has been removed.

Prior to touching the painted enclosure surface or non-metallic labels, dispel any charge in your body or equipment by touching a grounded metal surface to prevent the generation of a spark.

### **NOTICE**

Installation shall be in accordance with the manufacturer's instructions and the National Electrical Code®, ANSI/NFPA 70, the Canadian Electrical Code C22.1, or EN60079-14, as applicable.

The use of shielded cable is highly recommended to protect against interference caused by extraneous electrical or electromagnetic 'noise'. To meet EN/IEC61326 EMC requirements, multi-conductor braid shield cable is recommended. Connection of conduit or cable glands should be done so by use of tools.

In applications where the wiring is installed in conduit, the conduit must not be used for wiring to other electrical equipment.

The junction box may be susceptible to ESD. Refer to [Section 5](#) for further information on proper handling of this equipment.

The temperature rating of the wires connected to the junction box must be greater than 100°C (212°F)

### 2.4.1 Device separation distance

The maximum separation distance between the junction box and the connected device is limited by the resistance of the connected wiring, which is a function of the gauge of the wire being used. Net Safety recommends that separation must not exceed 2000 feet (610 meters) while using 16AWG (1.31mm<sup>2</sup>) wire. The Net Safety Millennium SC1100 combustible sensor should not be separated more than 150 feet (46 meters). Refer to [Section 6](#) for wire gauges and resistance values.

### 2.4.2 Seals

#### **⚠ WARNING**

To fully avoid any environmental exposure, the use of seals is recommended, especially for installations that use high-pressure or steam cleaning devices in proximity to the junction box

Water-proof and explosion-proof conduit seals are recommended to prevent water accumulation within the enclosure.

Seals should be located as close to the device as possible and not more than 18 inches (46cm) away; seal all conduits within 18 inches (46cm). Consult the local electrical code for specific requirements.

Explosion proof installations may require an additional seal where the conduit enters a non-hazardous area. Ensure conformity with local wiring codes.

When pouring a seal, use a fiber dam to ensure proper formation of the seal. Seals should never be poured at temperatures below freezing. Always refer to the seal manufacturers recommendations.

The jacket and shielding of the cable should be stripped back to permit the seal to form around the individual wires. This will prevent air, gas, and water leakage through the inside of the shield and into the enclosure.

It is recommended that explosion-proof drains and conduit breathers be used. In some applications, alternate changes in temperature and barometric pressure can cause breathing which allows moist air to enter and circulate inside the conduit. Joints in the conduit system are seldom tight enough to prevent this breathing.

Threaded connections on the enclosure between the housing and conduit pipe need to be sealed with thread tape, such as Teflon tape, or something similar.

The conduit openings are gauged using an L-1 gauge to +½ to 2 turn tolerance.

## NOTICE

Field maintenance or servicing on the junction box is not recommended. If there are any issues, concerns, or warranty information required, please contact Net Safety.

### 2.4.3 Terminal block connections

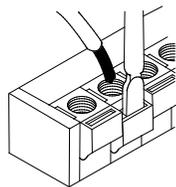
#### ⚠ WARNING

**Do not open the transmitter, sensor, or junction box enclosure when in a classified area or when an explosive atmosphere may be present unless the power to the sensor has been removed.**

**Prior to touching the painted enclosure surface or non-metallic labels, dispel any charge in your body or equipment by touching a grounded metal surface to prevent the generation of a spark.**

When connecting cable wires, use a small flathead screwdriver to gently press down and hold the spring connector open. Insert the appropriate wire into the open connector hole, releasing the screwdriver to secure the wire. Refer to [Figure 2-2](#) below.

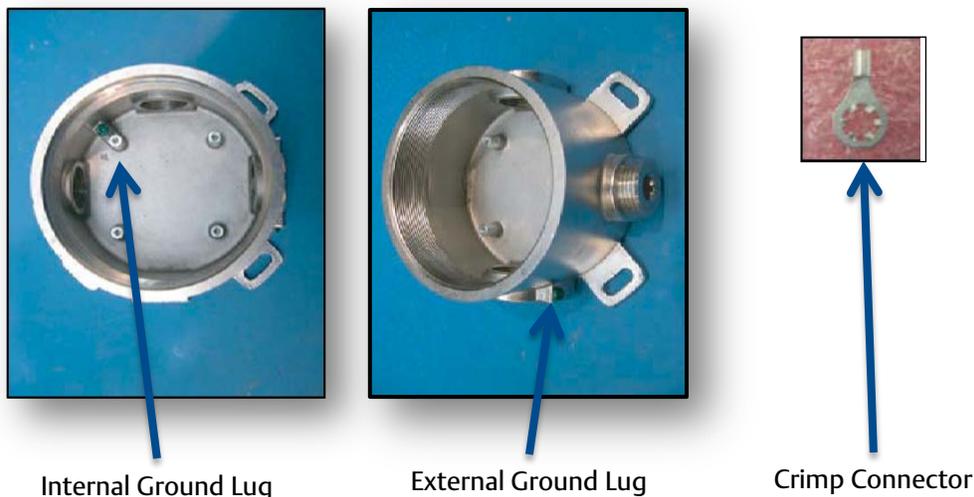
**Figure 2-2 Terminal connection**



## 2.4.4 Ground connections

The junction box is equipped with an internal and external earth ground lug. One crimp connector is provided for each ground lug. On installation, crimp the ground wire to crimp connector and then securely fasten crimp connector to ground lug. See [Figure 2-3](#) below for locations of internal and external grounding lugs.

**Figure 2-3 Ground lug locations and crimp connector**



## 2.5 Installation checklist

Review the following checklist prior to turning the power on to the junction box after installation has been completed:

- Ensure that the junction box is properly and firmly mounted
- Ensure that stopping plugs are securely tightened on any unused conduit entries
- Ensure that the junction box is not obstructed such that it is accessible
- Ensure adherence to applicable local guidelines and requirements on wiring and sealing of equipment in hazardous and non-hazardous areas
- Ensure that proper shielding and grounding practices are adhered to and local codes are being followed
- Check system operational voltage and conditions and ensure that they are within the applicable specifications of the connected devices
- Verify wiring at all termination and junction points (junction box and power supply)

## Section 3: Terminal board configurations

There are multiple terminal board configurations facilitated by the JB series junction box. This allows effective, safe, and accurate terminations and sensor separation requirements across the Net Safety product line. These configurations are outlined below.

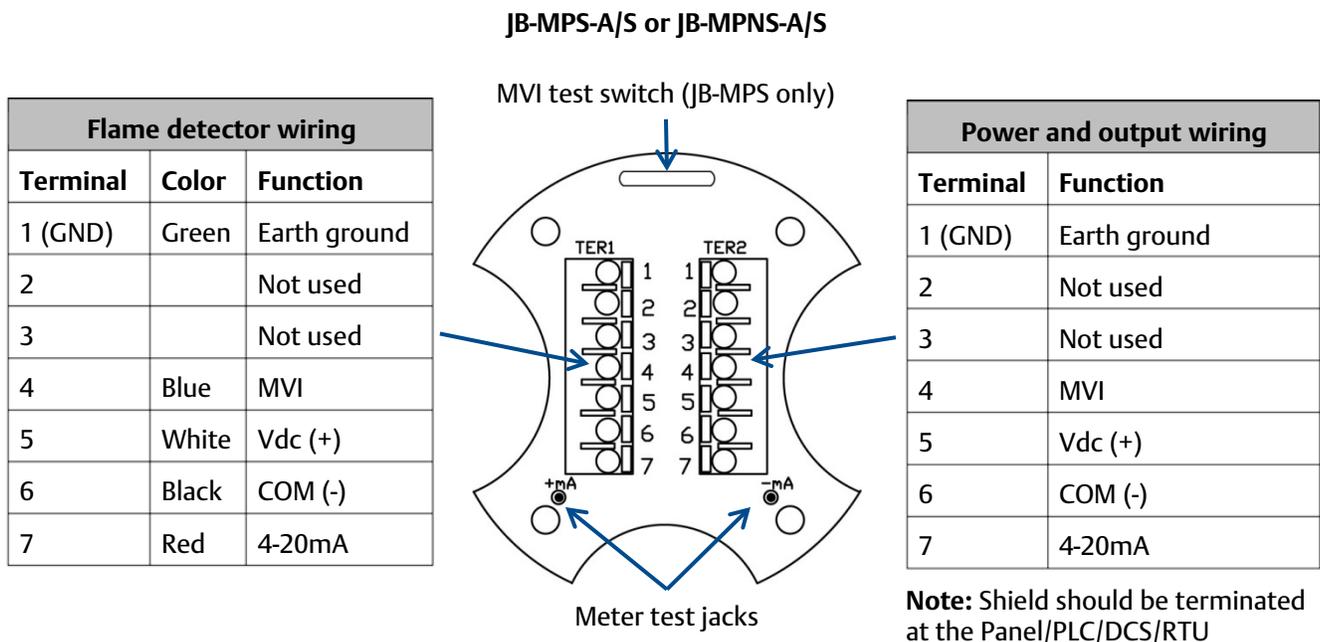
Each model of the multi-purpose junction box contains a PCB with different components for features that are applicable to specific models of Net Safety products, such as meter test jacks or a magnetic switch. Please refer to the specific transmitter, detector, or sensor manuals for detailed instructions about using these options.

### 3.1 Flame detection

#### NOTICE

In the following drawings, the flame detector wiring side refers to wiring between the flame detector and the junction box terminals. Panel/PLC/DCS/RTU wiring side refers to wiring between the power source and the junction box. Wiring should be done according to the designated terminal connectors.

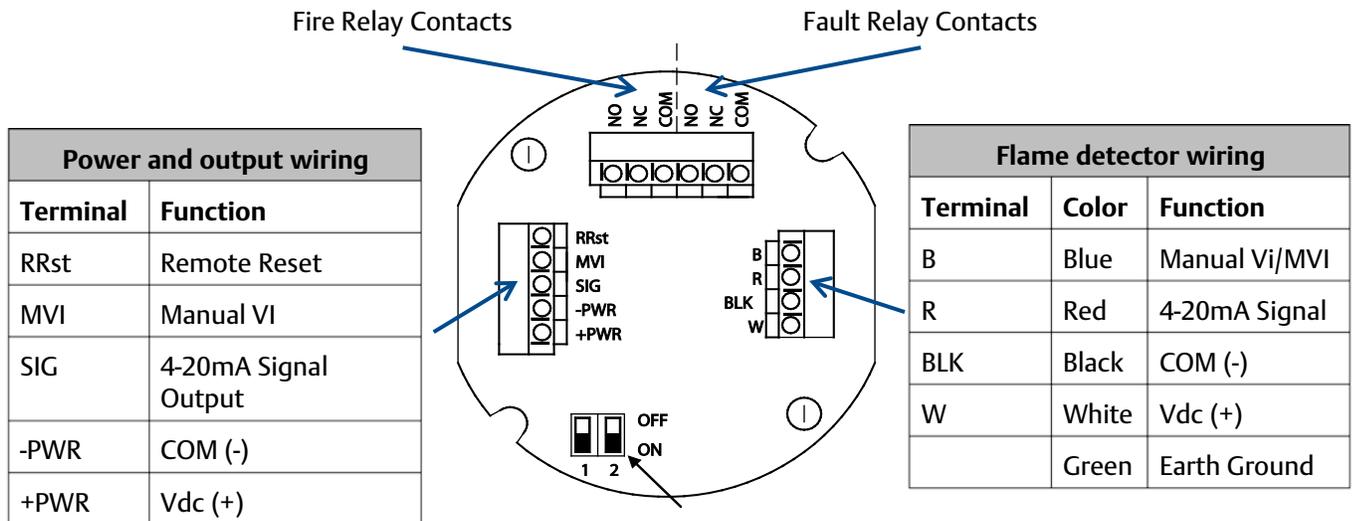
#### 3.1.1 Models: UVS-A, and UV/IRS-A



### 3.1.2 Models: UVS-AR, and UV/IRS-AR

#### JB-MPR-A/S

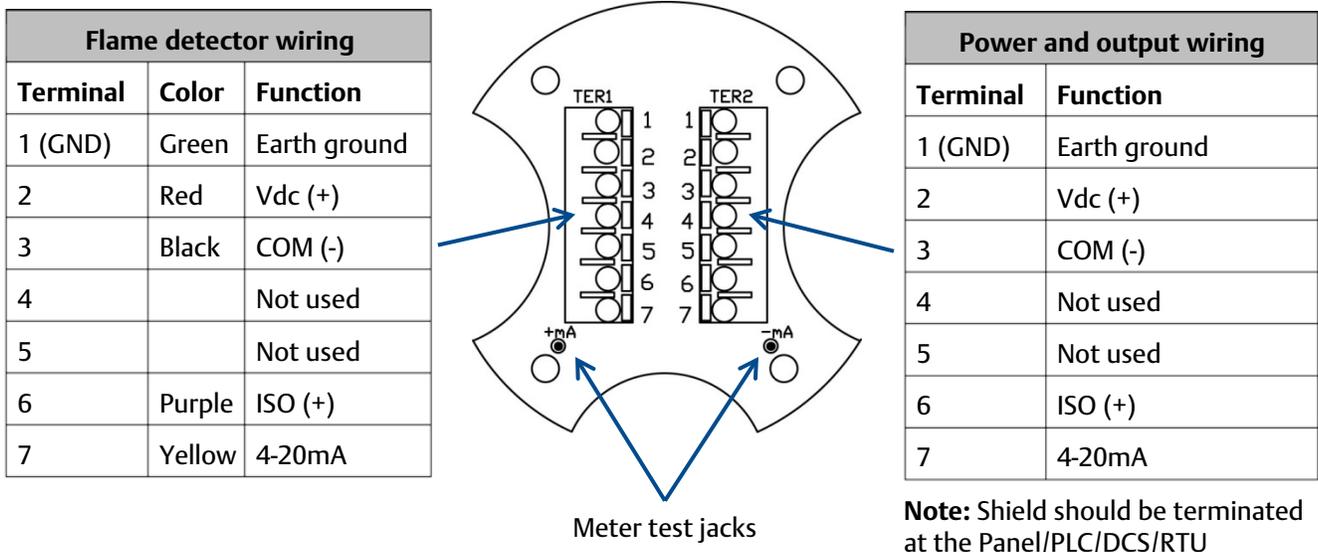
Relay Contacts	
NO	Normally Open
NC	Normally Closed
COM	Common



**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.1.3 Models: IR3S-A

#### JB-MPNS-A/S

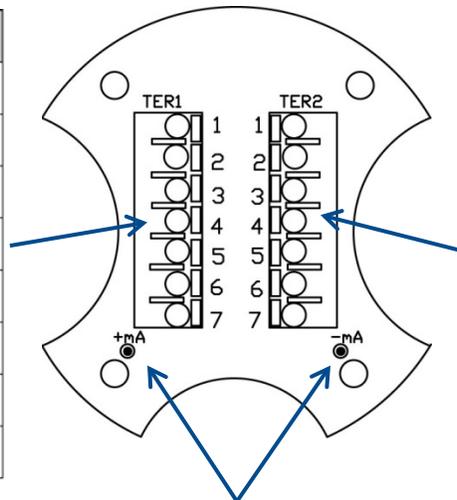


**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.1.4 Models: IR3S-D

JB-MPNS-A/S

Flame detector wiring		
Terminal	Color	Function
1 (GND)	Green	Earth ground
2	Red	Vdc (+)
3	Black	COM (-)
4	Blue	A (Comm)
5	Brown	B (Comm)
6		Not used
7		Not used



Meter test jacks

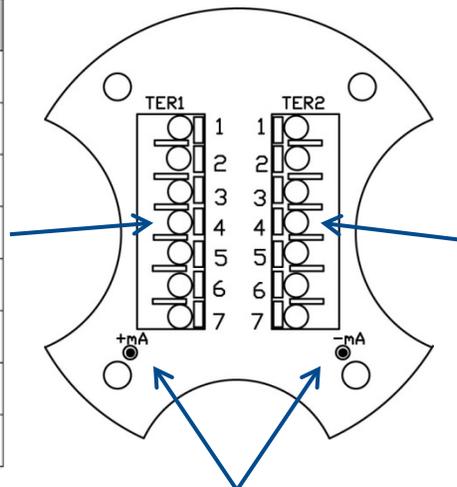
Power and output wiring	
Terminal	Function
1 (GND)	Earth ground
2	Vdc (+)
3	COM (-)
4	A (Communication)
5	B (Communication)
6	Not used
7	Not used

**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.1.5 Models: IR3S-AD

JB-MPNS-A/S

Flame detector wiring		
Terminal	Color	Function
1 (GND)	Green	Earth ground
2	Red	Vdc (+)
3	Black	COM (-)
4	Blue	A (Comm)
5	Brown	B (Comm)
6	Purple	ISO (+)
7	Yellow	4-20mA



Meter test jacks

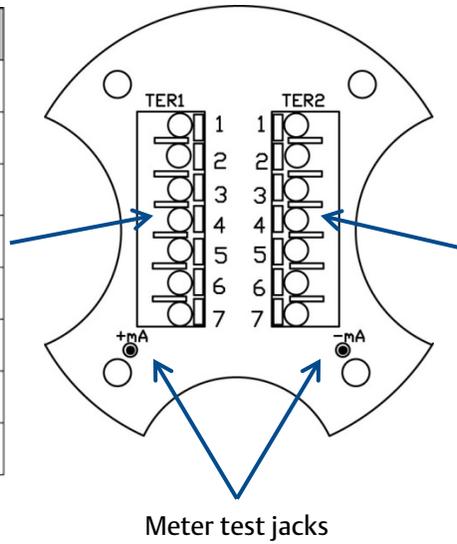
Power and output wiring	
Terminal	Function
1 (GND)	Earth ground
2	Vdc (+)
3	COM (-)
4	A (Communication)
5	B (Communication)
6	ISO (+)
7	4-20mA

**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.1.6 Models: IR3S-R

JB-MPR3-A/S

Flame detector wiring		
Terminal	Color	Function
1 (GND)	Green	Earth ground
2	Red	Vdc (+)
3	Black	COM (-)
4	Orange	Alarm relay
5	Orange	Alarm relay
6	Violet	Fault relay
7	Violet	Fault relay



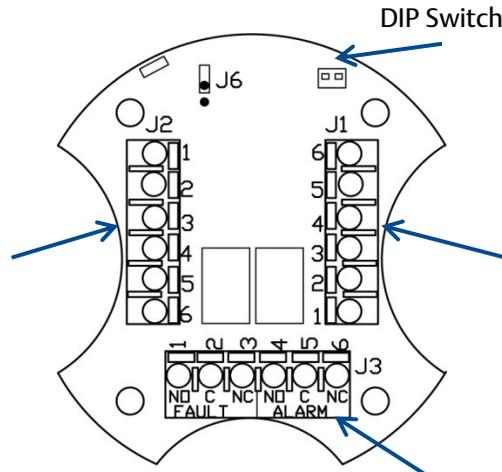
Power and output wiring	
Terminal	Function
1 (GND)	Earth ground
2	Vdc (+)
3	COM (-)
4	Alarm relay
5	Alarm relay
6	Fault relay
7	Fault relay

**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.1.7 Models: IR3S-AR

JB-IR3SAR-A/S

Power and output wiring (J2)	
Terminal	Function
1	Reset
2	4-20mA
3	ISO (+)
4	COM (-)
5	Not used
6	Vdc (+)



Flame detector wiring (J1)		
Terminal	Color	Function
1 (GND)	Green	Earth ground
2	Red	Vdc (+)
3		Not used
4	Black	COM (-)
5	Purple	ISO (+)
6	Yellow	4-20mA

**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

Coil and latch status (DIP switch)		
Alarm relay	Position 1	Position 2
De-energized/non-latching	On	On
Energized/non-latching	On	Off
De-energized/latching	Off	On
Energized/latching	Off	Off

Relay wiring		
Terminal	Relay	Contact state
1	Fault	NO
2		Common
3		NC
4	Alarm	NO
5		Common
6		NC

By default the Fault relay is fixed as Energized and Non-latching and cannot be changed. The default setting for the Alarm relay is De-energized and Non-latching. The current loop jumper pins at J6 are not jumpered by default.

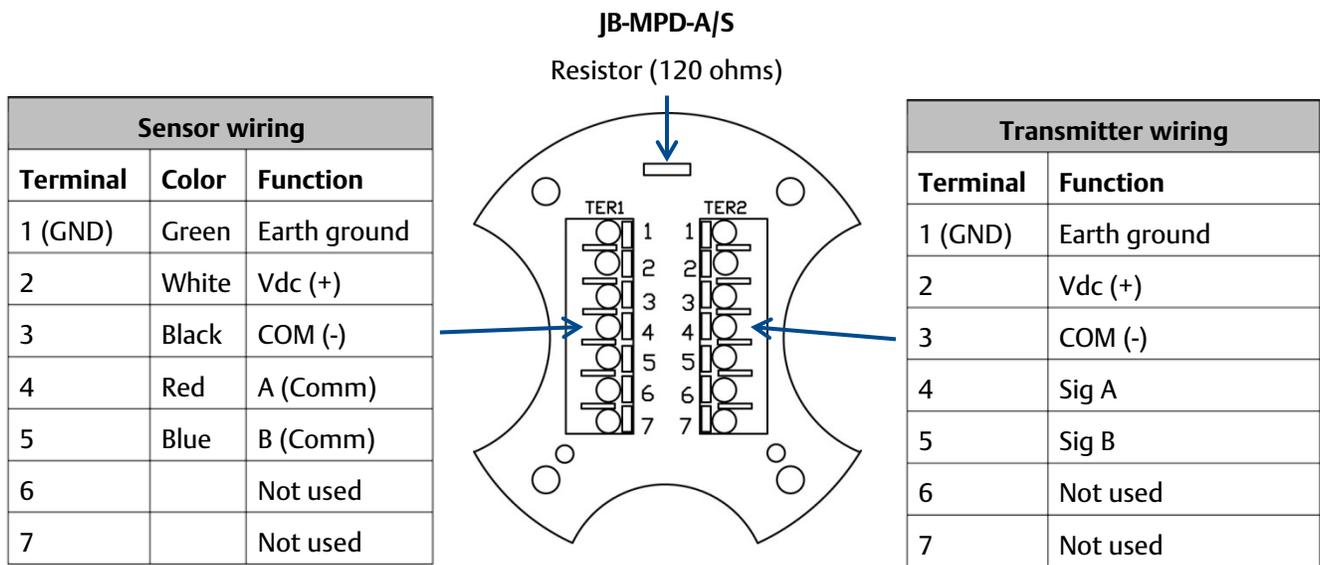
If 4-20 mA is not being used close the loop by placing the current loop jumper over pins (short J6). To reset latched alarm, connect Reset (Terminal 1) to ground, recycle power or activate Reset magnetic switch using the magnet.

## 3.2 Gas detection

### NOTICE

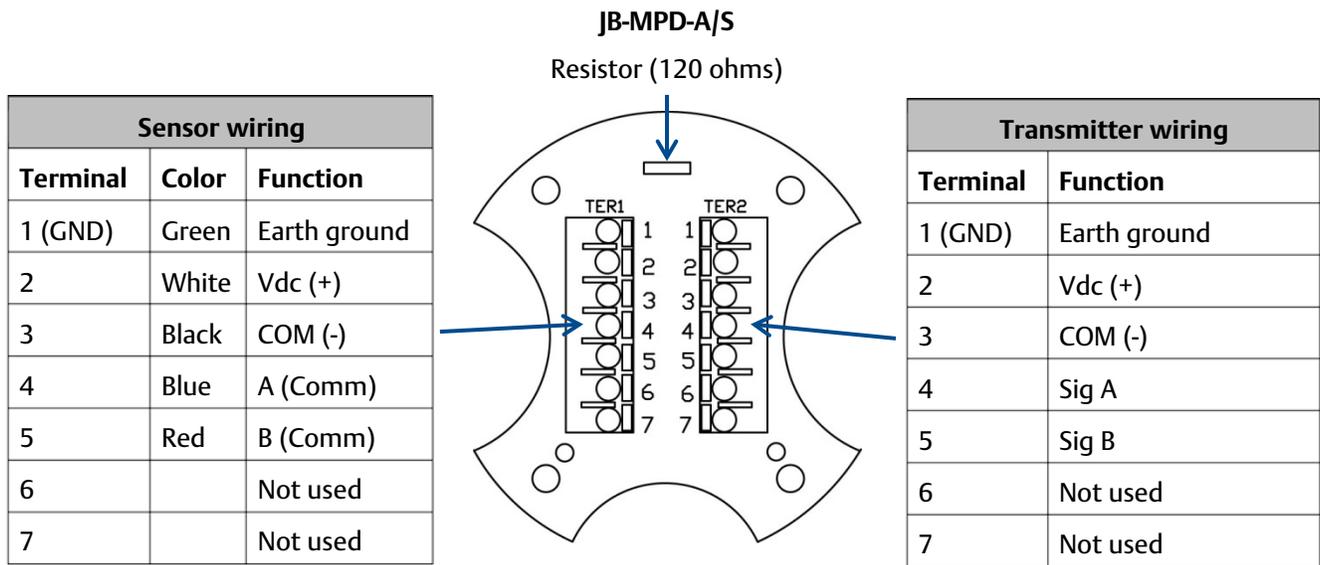
In the following drawings, the sensor wiring side refers to the wiring between the gas transmitter and the junction box terminals. The transmitter wiring side refers to wiring between the transmitter and the junction box terminals.

### 3.2.1 Models: Millennium II ST3 and SC3 sensor series



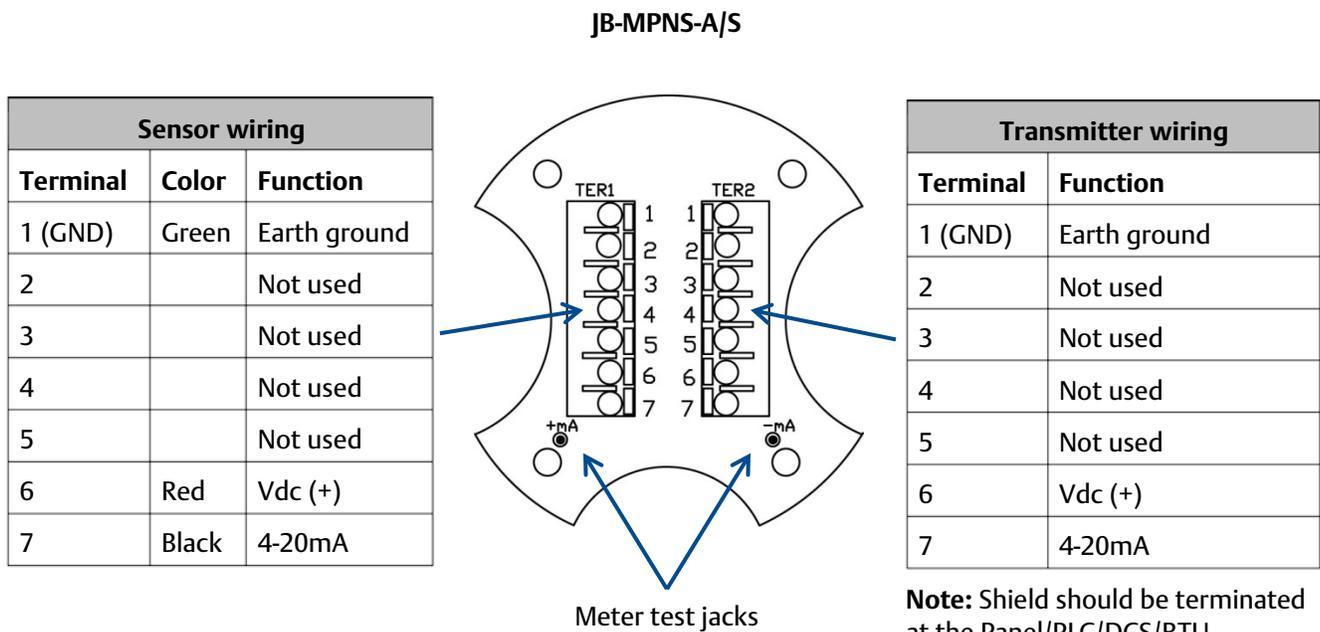
**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.2.2 Millennium SIR100 and APM



**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.2.3 Millennium ST1 toxic sensor series

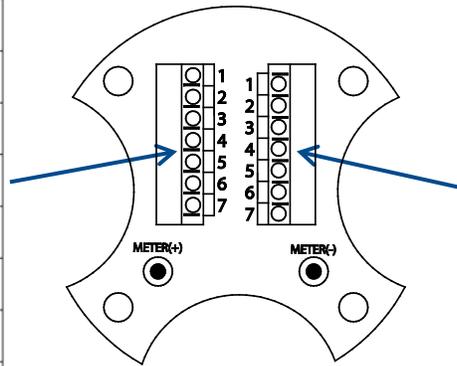


**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.2.4 Millennium SC1 combustible sensor series

JB-MPG-A/S

Sensor wiring		
Terminal	Color	Function
1 (GND)	Green	Earth ground
2	White	Vdc (+)
3	Red	Signal
4	Black	COM (-)
5		Not used
6		Not used
7		Not used



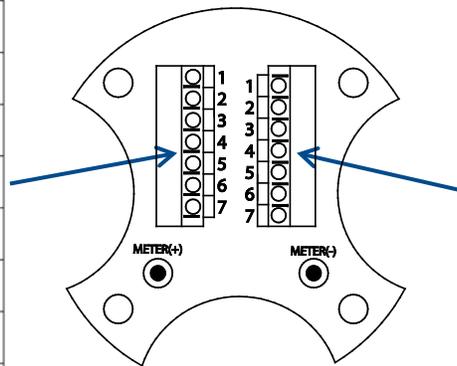
Transmitter wiring	
Terminal	Function
1 (GND)	Earth ground
2	Vdc (+)
3	Signal
4	Com (-)
5	Not used
6	Not used
7	Not used

**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.2.5 Millennium ST2 & Gas Shield ST7 toxic sensor series

JB-MPG-A/S

Sensor wiring		
Terminal	Color	Function
1 (GND)	Green	Earth ground
2	Red	Vdc (+)
3	Blue	Communication
4	Black	COM (-)
5		Not used
6		Not used
7		Not used



Transmitter wiring	
Terminal	Function
1 (GND)	Earth ground
2	Vdc (+)
3	Communication
4	Com (-)
5	Not used
6	Not used
7	Not used

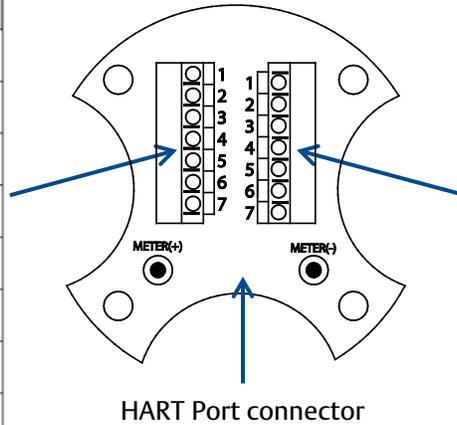
**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

### 3.3 Common junction boxes

#### 3.3.1 HART Port remote connection box (JB-MPH-A/S)

JB-MPH-A/S

Millennium II transmitter or flame detector wiring	
Terminal	Function
1 (GND)	Earth ground
2	Vdc (+)
3	COM (-)
4	Not used
5	Not used
6	ISO (+)
7	4-20mA



Power and output wiring	
Terminal	Function
1 (GND)	Earth ground
2	Vdc (+)
3	COM (-)
4	Not used
5	Not used
6	ISO (+)
7	4-20mA

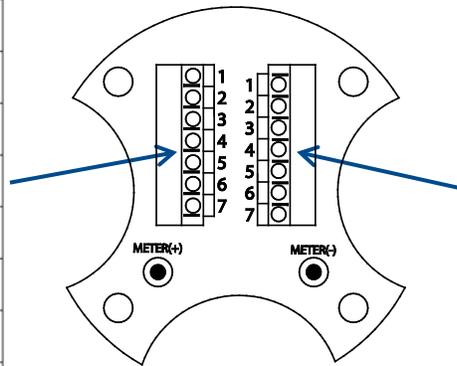
**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

The HART Port connector plugs onto the PCB board. The Black wire is a safety ground. Connect the black wire to earth ground. When no earth ground is available connect the black wire to the loop common.

#### 3.3.2 General termination box (JB-MPG-A/S)

JB-MPG-A/S

Sensor wiring		
Terminal	Color	Function
1 (GND)	Green	Earth ground
2		As assigned
3		As assigned
4		As assigned
5		As assigned
6		As assigned
7		As assigned



Transmitter wiring	
Terminal	Function
1 (GND)	Earth ground
2	As assigned
3	As assigned
4	As assigned
5	As assigned
6	As assigned
7	As assigned

**Note:** Shield should be terminated at the Panel/PLC/DCS/RTU

## Section 4: Maintenance

### 4.1 Troubleshooting

The junction box is not designed to be repaired in the field. If problems should develop, first check for faulty wiring and confirm proper voltage to the junction box. If problems persist, please contact Net Safety's technical support department first by phone to try and resolve any issues. If issues cannot be resolved, please follow the procedure in [Section 1.3](#) Return of material.

### 4.2 Storage

The sensor and its electronic components/parts should be stored in locations free from dust, liquid spills, contaminants, and moisture. The storage temperature should be well within the limits of the certified temperatures of the equipment. See [Section 7](#) for certified temperatures.

### 4.3 Spare parts and accessories

Description	Part Number
Replacement terminal board for model JB-MPS-A/S	PCBA-0252C
Replacement terminal board for model JB-MPNS-A/S	PCBA-0252B
Replacement terminal board for model JB-MPH-A/S	PCBA-0252A
Replacement terminal board for model JB-MPD-A/S	PCBA-0252D
Replacement terminal board for model JB-MPG-A/S	PCBA-0252E
Replacement terminal board for model JB-MPR3-A/S	PCBA-0252F
Replacement terminal board for model JB-IR3S-AR-A/S	PCBA-0268
3/4" to M20 certified conduit reducer - aluminum	M20R
3/4" to M20 certified conduit reducer - stainless	M20R-SS
3/4" NPT certified conduit plug - aluminum	CP-AL-002
3/4" NPT certified conduit plug - stainless	CP-SS-001
1" pipe mounting bracket (stainless steel)	UN-MK-31
2" pipe mounting bracket (stainless steel)	UN-MK-32
3" pipe mounting bracket (stainless steel)	UN-MK-33

## Section 5: Electrostatic sensitive device

Definition: Electrostatic discharge (ESD) is the transfer, between bodies, of an electrostatic charge caused by direct contact or induced by an electrostatic field.

The most common cause of ESD is physical contact. Touching an object can cause a discharge of electrostatic energy. If the charge is sufficient and occurs near electronic components, it can damage or destroy those components. In some cases, damage is instantaneous and an immediate malfunction occurs. However, symptoms are not always immediate—performance may be marginal or seemingly normal for an indefinite period of time, followed by a sudden failure.

To eliminate potential ESD damage, review the following guidelines:

- Handle boards by the sides —taking care not to touch electronic components.
- Wear grounded wrist or foot straps, ESD shoes or heel grounders to dissipate unwanted static energy.
- Prior to handling boards, dispel any charge in your body or equipment by touching a grounded metal surface.
- Ensure all components are transported and stored in ESD safe packaging.
- When returning boards, carefully package in the original carton and static protective wrapping.
- Prior to touching the painted enclosure surface or non-metallic labels, dispel any charge in your body or equipment by touching a grounded metal surface to prevent the generation of a spark.
- Ensure ALL personnel are educated and trained in ESD Control Procedures.

In general, exercise accepted and proven precautions normally observed when handling electrostatic sensitive devices.



## Section 6: Wire resistance table

Distance Feet (Meters)	AWG #20 0.5mm <sup>2</sup>	AWG #18 0.8mm <sup>2</sup>	AWG #16 1.0mm <sup>2</sup>	AWG #14 2.0mm <sup>2</sup>
100 (30.5)	1.02	0.64	0.40	0.25
200 (61)	2.03	1.28	0.80	0.51
300 (91.4)	3.05	1.92	1.20	0.76
400 (121.9)	4.06	2.55	1.61	1.01
500 (152.4)	5.08	3.20	2.01	1.26
600 (182.9)	6.09	3.83	2.41	1.52
700 (213.4)	7.11	4.47	2.81	1.77
800 (243.8)	8.12	5.11	3.21	2.02
900 (274.3)	9.14	5.75	3.61	2.27
1000 (304.8)	10.20	6.39	4.02	2.53
1250 (381)	12.70	7.99	5.03	3.16
1500 (457.2)	15.20	9.58	6.02	3.79
1750 (533.4)	17.80	11.20	7.03	4.42
2000 (609.6)	20.30	12.80	8.03	5.05
2250 (685.8)	22.80	14.40	9.03	5.68
2500 (762)	25.40	16.00	10.00	6.31
3000 (914.4)	30.50	19.20	12.00	7.58
3500 (1066.8)	35.50	22.40	14.10	8.84
4000 (1219.2)	40.60	25.50	16.10	10.00
4500 (1371.6)	45.70	28.70	18.10	11.40
5000 (1524)	50.10	32.00	20.10	12.60
5500 (1676.4)	55.80	35.10	22.10	13.91
6000 (1828.8)	61.00	38.30	24.10	15.20
6500 (1981.2)	66.00	41.50	26.10	16.40
7000 (2133.6)	71.10	44.70	28.10	17.70
7500 (2286)	76.10	47.90	30.10	19.00
8000 (2438.4)	81.20	51.10	33.10	20.20
9000 (2743.2)	91.40	57.50	36.10	22.70
10000 (3048)	102.00	63.90	40.20	25.30

Resistance shown is one way. This figure must be doubled when determining closed loop resistance.

## Section 7: Specifications

### 7.1 Electrical

#### 7.1.1 Operating voltage

10 to 32 Vdc

#### 7.1.2 Conduit entries

3 x 3/4" NPT

#### 7.1.3 Power consumption (JB-IR3SAR)

Nominal: 170mA (1.7W) @10Vdc  
Maximum: 275mA (2.9W) @ 10Vdc

Nominal: 73mA (1.8W) @ 24Vdc  
Maximum: 117mA (2.8W) @ 24Vdc

#### 7.1.4 Relay contacts (JB-IR3SAR)

5A at 30Vdc/250Vac  
Form-C (SPDT), dry contacts

### 7.2 Environmental

#### 7.2.1 Storage temperature

-55°C to +85°C (-67°F to +185°F)

#### 7.2.2 Operating temperature

-55°C to +85°C (-67°F to +185°F)

#### 7.2.3 Relative humidity

5-95% non-condensing

#### 7.2.4 Metallurgy (housing)

Aluminum (AL6061)  
Stainless steel (316)

#### 7.2.5 Ingress protection

IP67  
Type 4X

## 7.2.6 Weight

Aluminum: 2.0lbs, 0.8kg  
Stainless steel: 3.5lbs, 1.6kg

## 7.3 Warranty

2 years

## Section 8: Certifications

### 8.1 North America



Class I, Division 1 Groups B,C, D T5  
Class I, Zone 1 Ex d IIB +H<sub>2</sub> T5 (Canada)  
Class I, Zone 1 AEx d IIB +H<sub>2</sub> T5 (United States)  
-55°C ≤ Ta +85°C  
NEMA Type 4X/IP67

### 8.2 ATEX

CE 0575  II 2G Ex d IIB+H<sub>2</sub> T5 Gb  
-55°C ≤ Ta + 85°C  
IP67  
FM07ATEX0044

### 8.3 IECEx

Ex d IIB+H<sub>2</sub> T5  
-55°C ≤ Ta + 85°C (sensor dependent)  
IP67  
IEC 60079-0:2011 / IEC 60079-1:2007  
IECEx FMG 14.0009X

Special conditions for safe use:

- Consult the manufacturer if dimensional information on the flameproof joints is necessary.
- Follow the manufacturer's instructions to reduce the potential of an electrostatic charging hazard.

## Section 9: Ordering information

Model	Description
JB	Multi-purpose termination box
	<b>Type</b> Performance
IR3SAR	4-20mA Analog and Fire & Fault Relays (IR3S only)
MPD	Digital Output (Gas Sensors & APM Only)
MPG	General junction box
MPH	Used to separate remote HART Port (order HPT-001 separate)
MPNS	Analog & Digital Output - Test Jacks
MPR	4-20mA Analog and Fire & Fault Relays (UVS & UV/IRS only)
MPR3	Relay Output (IR3S-R Only)
MPS	Analog Output - Switch (for remote MVI testing) & Test Jacks (Flame Only)
	<b>Housing</b> Enclosure Material
A	Aluminum
S	Stainless Steel

Notes:

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