

### DESCRIPTION

Badger Meter® produces the Model A1018 Opto-Isolator as well as an enhanced version, the Model A1018-4026.

The Model A1018-4026 isolator has superior three-way isolation and is offered as the standard.

The Model A-1018 Sensor Isolator can isolate sensitive Programmable Logic Controllers (PLC), and computer systems from sensor circuits that may have a different ground reference.

Model A-1018 isolates the signal generated by a flow sensor from system input circuitry. Some applications require signal voltage swings that exceed the nominal 8 vp-p signal produced by series 200 and 4000 flow sensors.

Both versions permit a flow-sensor signal to be shared with two input devices without concern about interaction between the devices (for example, a flow monitor and a PLC). In the A1018 version, *Power Supply Common* and *Signal Out (-)* share a single connection.

The A1018-4026 achieves signal-output isolation by using a small amount of the signal to power the output stage. From a signal standpoint, in most applications, the only difference between the two versions is that the *Signal Out (-)* wire is connected to Pin #1 in the A1018 and to Pin #4 in the A1018-4026. For most applications where the A1018 is acceptable, the versions can be made interchangeable by connecting Pin #1 to Pin #4.

The only cases where an A1018 *must* be used are the following:

- Sensor input is from a Low Frequency Square Wave device, such as our Series 4000, where the true square wave output could remain low for extended periods, eventually causing the output to toggle high due to loss of output control voltage.
- Any non-Badger Meter device that would be affected by 100 kΩ of parallel resistance.

### MECHANICAL

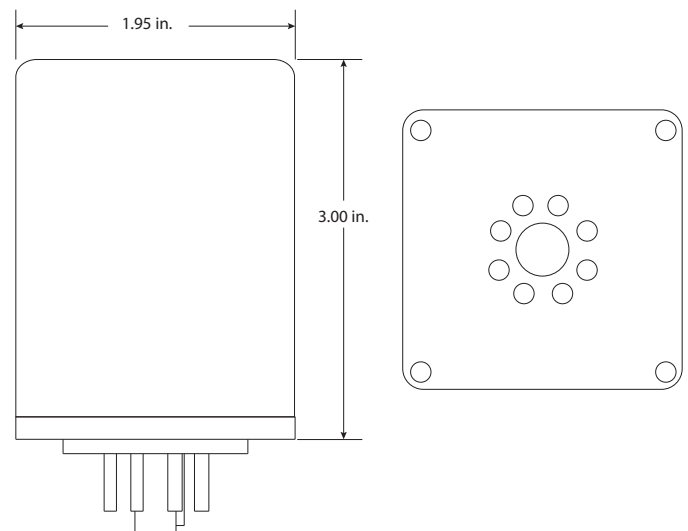
The A-1018 installs into a standard Octal Relay Socket (Part Number 55105)



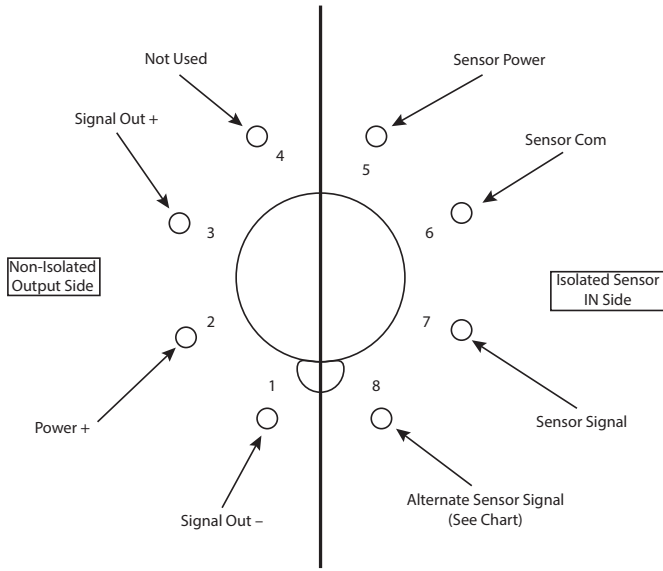
### ELECTRICAL SPECIFICATIONS

|  |                                      |  |
|--|--------------------------------------|--|
| <b>Power Supply</b>                            | 12...28V DC at 65 mA                 |  |
| <b>Sensor Power Out Pin #5 (Ref to Pin #6)</b> | 14V DC at 15 mA max.                 |  |
| <b>Sensor Input</b>                            | V Low                                | 2.0V DC  |
| <b>Threshold Voltage</b>                       | V High                               | 6.0V DC  |
| <b>A-1018</b>                                  | Open Collector Current Sink          | 30 mA max.   |
|  | Maximum Applied Open Circuit Voltage | 28V DC   |
| <b>A1018-4026</b>                              | Leakage Current (V High-State)       | 80 μA at 8V DC   |
|  | <b>Signal Out (Pin #3)</b>           | (100 kΩ Signal (+) to Signal (-) after initial 10 μF capacitor charge) |

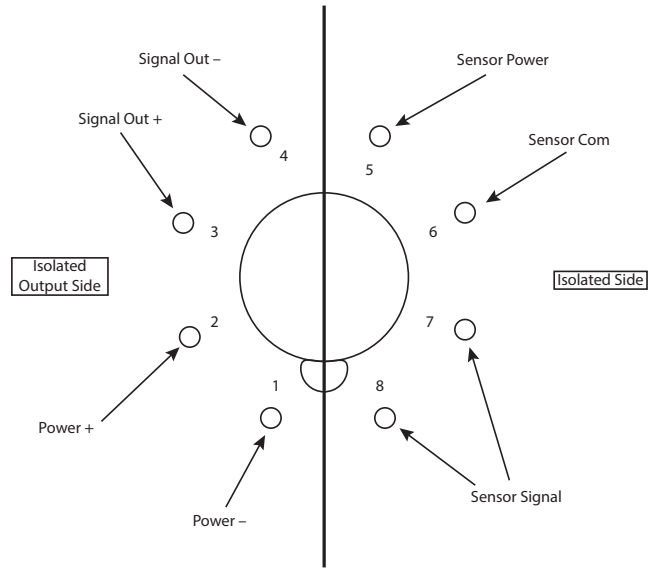
### DIMENSIONS



**A-1018 PIN DIAGRAM**



**A-1018-4026 PIN DIAGRAM**

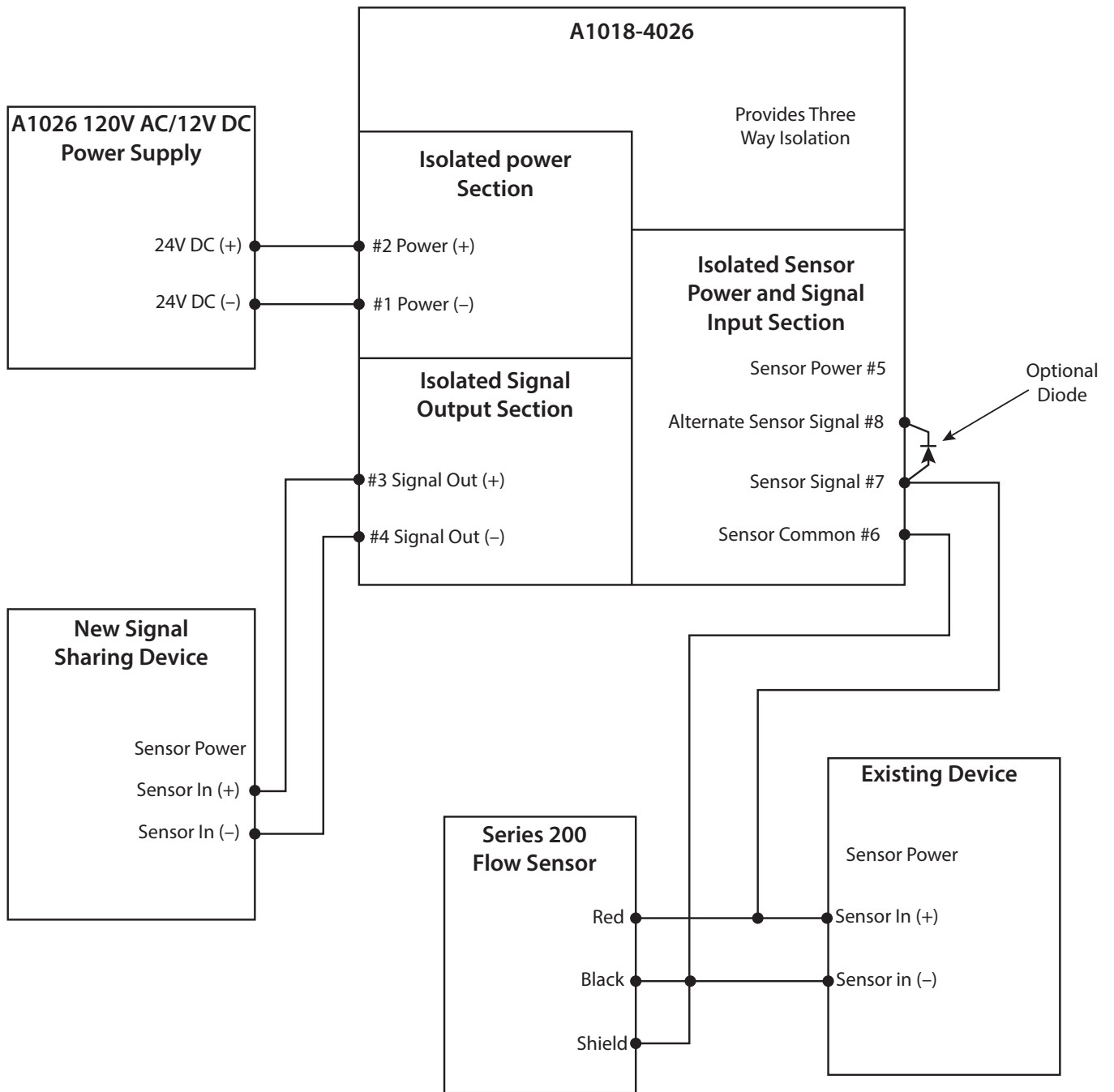


| Pin | Description   | A-1018 Connections   |                    |
|-----|---------------|--|--------------------|
| 1   | Common        | Power/Signal common and cable shield                               |                    |
| 2   | Power +       | + Power input / 12...24V DC  |                    |
| 3   | Signal out +  | Open collector transistor output (requires pull-up to logic level) |                    |
| 4   | Not used      | —  |                    |
| —   | —             | <b>220 series</b>  | <b>4000 series</b> |
| 5   | Sensor power  | Unused   | Red                |
| 6   | Sensor common | Black and drain  | Black and drain    |
| 7   | Sensor Signal | Red  | White              |
| 8*  | Not used      | —  | —                  |

| Pin | Description   | A-1018-4026 Connections  |                    |
|-----|---------------|--|--------------------|
| 1   | Power -       | - Power input  |                    |
| 2   | Power +       | + Power input / 12...24V DC  |                    |
| 3   | Signal out +  | Open collector transistor output (requires pull-up to logic level) |                    |
| 4   | Signal out -  | —  |                    |
| —   | —             | <b>220 series</b>  | <b>4000 series</b> |
| 5   | Sensor power  | Unused   | Red                |
| 6   | Sensor common | Black and drain  | Black and drain    |
| 7   | Sensor Signal | Red  | White              |
| 8   | Not used      | —  | —                  |

\*The normally unused PIN#8 can be used instead of PIN#7 for the Sensor Signal, by adding a 1N4000 Series Diode with its Banded End (Cathode) connected to PIN#8. This provides added isolation, preventing the A-1018 from loading the Host System, if a problem occurs with the A-1018 or its Power Supply.

**WIRING DIAGRAM**



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