

# Pulse Input Source and Isolated Modules

The Pulse Input Source and Pulse Input Isolated Modules plug into a ROC300-Series Remote Operations Controller or FloBoss™ 407 Flow Manager and are used for monitoring the pulses from pulse-generating devices. Each module can accommodate one pulse input (PI).

Both types of modules provide an LED to show when the input is active and use a scaling resistor for scaling the input range. Input pulses are counted by a 16-bit counter.

The source module provides a source voltage for dry relay contacts or for an open-collector solid-state switch. The isolated module accepts an external voltage from a powered device while maintaining electrical isolation from the ROC or FloBoss power circuits.

Field wiring connections are made through a separate terminal block, which plugs in next to the module. This design facilitates replacement of the module without disconnecting field wiring.

## Source Module Specifications

### FIELD WIRING TERMINALS

- A: Not used
- B: Pulse input/source voltage
- C: Common

### INPUT

**Type:** Contact sense.

#### Input Signal

**Low-speed:** 10 Hz.

**High-speed:** 12 kHz

**Source Voltage:** 11 to 30 V dc.

**Range:** Inactive, 0 to 0.5 mA. Active, 3 to 12 mA.

### INPUT (continued)

**Source Current:** Determined by source voltage (Vs), loop resistance (RI) and scaling resistor (Rs):

$$I = (Vs - 1)/(2.2K + RI + Rs)$$

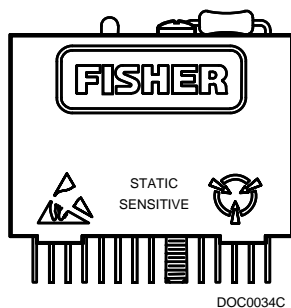
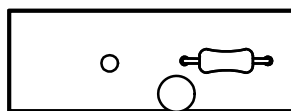
### POWER REQUIREMENTS

**Source Input:** 11 to 30 V dc, 6 mA maximum from ROC power supplier I/O converter card.

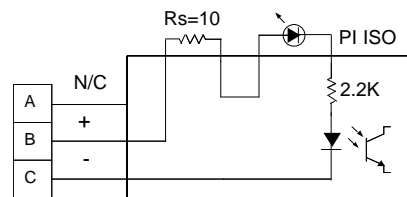
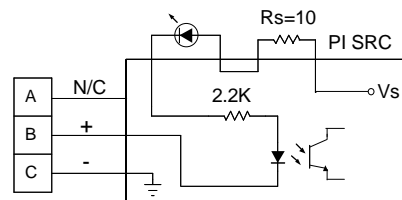
**Module:** 4.9 to 5.1 V dc, 1 mA maximum (supplied by ROC or FloBoss).

### INPUT ISOLATION

Not isolated. Terminal C tied to power supply common.



Typical Pulse Input Module



Simplified Schematics

D301011X012

**Isolated Module Specifications**

<p><b>FIELD WIRING TERMINALS</b></p> <p><b>A:</b> Not used  <b>B:</b> Positive pulse input  <b>C:</b> Negative pulse input</p> <p><b>INPUT</b></p> <p><b>Type:</b> Two-state, current-pulse sense.  <b>Range:</b> Inactive; 0 to 0.5 mA. Active; 3 to 12 mA.  <b>Input Current:</b> Determined by input voltage (Vi), loop resistance (RI) and scaling resistor (Rs):  <math>I = (V_i - 1)/(2.2K + R_I + R_s)</math></p>	<p><b>POWER REQUIREMENTS</b></p> <p>4.9 to 5.1 V dc, 2 mA maximum (supplied by ROC or FloBoss).</p> <p><b>INPUT ISOLATION</b></p> <p><b>Insulation:</b> 100 MΩ minimum, input to output, and input or output to case.  <b>Voltage:</b> 4,000 V ac (RMS) minimum, input to output.  <b>Capacitance:</b> 6 pF typical, input to output.</p>
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**Common Specifications**

<p><b>INPUT</b></p> <p><b>Scaling Resistor (Rs):</b> 10 Ω supplied (see Input Current equation to compute other value).  <b>Frequency Response:</b> 0 to 12 KHz maximum, 50% duty cycle.  <b>Input Filter:</b> Single-pole low-pass, 10 microsecond time constant.</p> <p><b>VIBRATION</b></p> <p>20 Gs peak or 0.06 in. double amplitude, 10 to 2,000 Hz, per MIL-STD-202, method 204, condition F.</p> <p><b>MECHANICAL SHOCK</b></p> <p>1500 Gs 0.5 millisecond half sine per MIL-STD-202, method 213, condition F.</p> <p><b>WEIGHT</b></p> <p>37 grams (1.3 oz.).</p>	<p><b>CASE</b></p> <p>Solvent-resistant thermoplastic polyester, meets UL94V-0.</p> <p>Dimensions are 15 mm D by 32 mm H by 43 mm W (0.60 in. D by 1.27 in. H by 1.69 in. W), not including pins.</p> <p><b>ENVIRONMENTAL</b></p> <p>Meets the environmental specifications of the ROC or FloBoss unit in which the module is installed, including temperature, humidity, and transient protection.</p> <p><b>APPROVALS</b></p> <p>Approved by CSA for hazardous locations Class I, Division 2, Groups A, B, C, and D.</p>
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