

Analog Input Loop and Differential Modules

The Analog Input Loop and Analog Input Differential modules plug into a ROC300-Series Remote Operations Controller or FloBoss™ 407 Flow Manager and are used for monitoring current loop and voltage output devices. Each module can accommodate one analog input, and each uses a scaling resistor for converting loop current to input voltage.

The loop module provides a current source for powering current loop devices. The differential

module monitors loop current or voltage input from externally-powered devices and is semi-isolated from the ROC power supplies.

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

Loop Module Specifications

FIELD WIRING TERMINALS

- A:** Loop Power (+T)
- B:** Analog Input (+)
- C:** Common (-)

INPUT

Type: Single-ended, voltage sense. Current loop with scaling resistor (R1).

Loop Current: 0 to 25 mA maximum range. Actual range depends on scaling resistor used.

Voltage Sensing: 0 to 5 Volts dc, software configured.

Accuracy: 0.1% of full scale (20 to 30°C). 0.5% of full scale (-40 to 70°C)

INPUT (CONTINUED)

Impedance: Greater than 400K ohms (without scaling resistor).

Normal Mode Rejection: 50 dB @ 60 Hz.

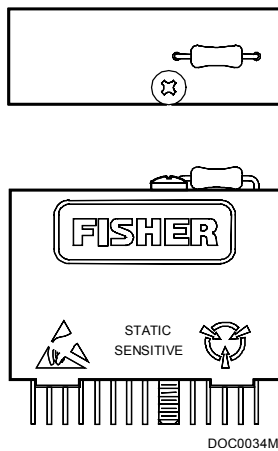
POWER REQUIREMENTS

Loop Source: 25 mA maximum, from ROC or FloBoss power circuits or I/O converter card ($V_s = 11$ to 30 Vdc).

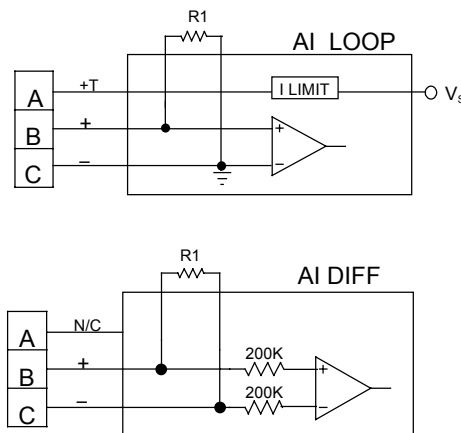
Module: 4.9 to 5.1 Volts dc, 6 mA maximum; -4.5 to -5.5 Volts dc, 2 mA maximum (supplied by ROC).

ISOLATION

Not isolated. Terminal C tied to power supply common.



Typical Analog Input Module



Simplified Input Schematics



Differential Module Specifications

<p>FIELD WIRING TERMINALS</p> <p>A: Not used.</p> <p>B: Positive Analog Input (+)</p> <p>C: Negative Analog Input (-)</p> <p>INPUT</p> <p>Type: Voltage sense. Externally-powered current loop sensing with scaling resistor (R1).</p> <p>Voltage: 0 to 5 Volts dc, software configured.</p> <p>Accuracy: 0.1% of full scale (20 to 30°C). 0.5% of full scale (-40 to 70°C).</p>	<p>INPUT (CONTINUED)</p> <p>Normal Mode Rejection: 50 dB @ 60 Hz.</p> <p>Impedance: Greater than 400 Kohms (without scaling resistor).</p> <p>POWER REQUIREMENTS</p> <p>4.9 to 5.1 Volts dc, 6 mA maximum; -4.5 to -5.5 Volts dc, 2 mA maximum (supplied by ROC).</p> <p>INPUT ISOLATION</p> <p>Greater than 400 Kohms input to power supply common.</p>
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Common Specifications

<p>SCALING RESISTOR</p> <p>250 ohm (supplied) for 0 to 20 mA full scale. 100 ohm for 0 to 50 mA (externally-powered only).</p> <p>RESOLUTION</p> <p>12 bits.</p> <p>FILTER</p> <p>Single pole, low-pass, 40 millisecond time constant.</p> <p>CONVERSION TIME</p> <p>30 microseconds typical.</p> <p>VIBRATION</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>MECHANICAL SHOCK</p> <p>1500 Gs 0.5 mS half sine per MIL-STD-202, method 213, condition F.</p>	<p>CASE</p> <p>Solvent-resistant thermoplastic polyester, meets UL94V-0. Dimensions are 15 mm D by 32 mm H by 43 mm W (0.60 in. D by 1.265 in. H by 1.69 in. W), not including pins.</p> <p>ENVIRONMENTAL</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>WEIGHT</p> <p>37 grams (1.3 ounces).</p> <p>APPROVALS</p> <p>Approved by CSA for hazardous locations Class I, Division 2, Groups A, B, C, and D.</p>
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