

# SENSOTEC

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## UNIVERSAL IN-LINE TRANSDUCER AMPLIFIER 2-WIRE CURRENT OUTPUT

The MODEL U2W 2-WIRE IN-LINE amplifier converts a millivolt signal from a high impedance transducer to a current output signal. The amplifier features selectable gain ranges, selectable bridge excitation types, zero and span adjustments, output current test points and lightning protection. The inline is housed in a plastic box with a gasket for NEMA 4X protection and can be mounted to a panel.

### SPECIFICATION:

**Power Requirements:** 8-32 volts DC

#### Bridge Excitation:

**constant voltage:** 5 VDC @ 2.5 ma. max.

**constant current:** 0.5 ma. w/ 3 volts compliance

#### Bridge Resistance:

Constant Voltage: 2000 to 10000 ohms

Constant Current: 2000 to 6000 ohms

**Output:** 4-20 ma. 2-WIRE

**Frequency Response:** 400 Hz @ 3mv/v

**Zero Adjustment Range:** +/- 15 % fine adjustment

**Span Adjustment Range:** Jumper selectable and  
+/- 43% fine adjustment

**Output Test Point:** 10 ohm sense resistor @ TP- and TP+

**Environment Protection:** IP-66 or NEMA 4X

**Lightning Protection:** Yes

**Wiring:**

The universal 2-WIRE in-line can be powered from a 8 to 32 volt single supply. The following diagram shows the wiring to a power supply and a readout. Note the earth ground at the transducer and the in-line, they must be the same ground and of high quality to protect the in-line and transducer from lightning transient.

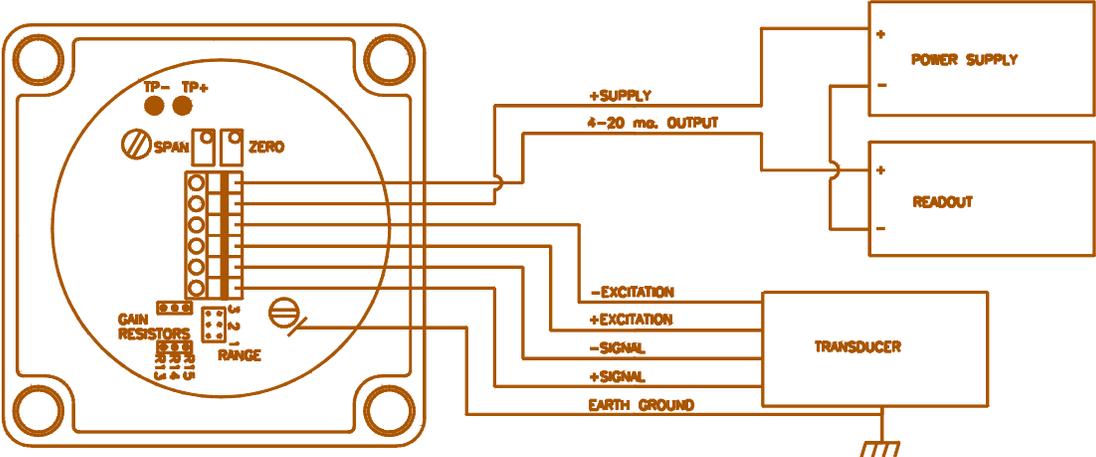


FIG 1

**Excitation Type Selection:**

The inline has two types of bridge excitations available for transducers, constant

volt @ 5 Volts or constant current @ .495 milli-amps. To select constant volt move the shunts from the terminals marked I to the terminals marked V. Both sets must be on either the I terminals or the V terminals for proper operation. These shunt are locate above the span and zero adjustment controls (See Fig 2 for locations).

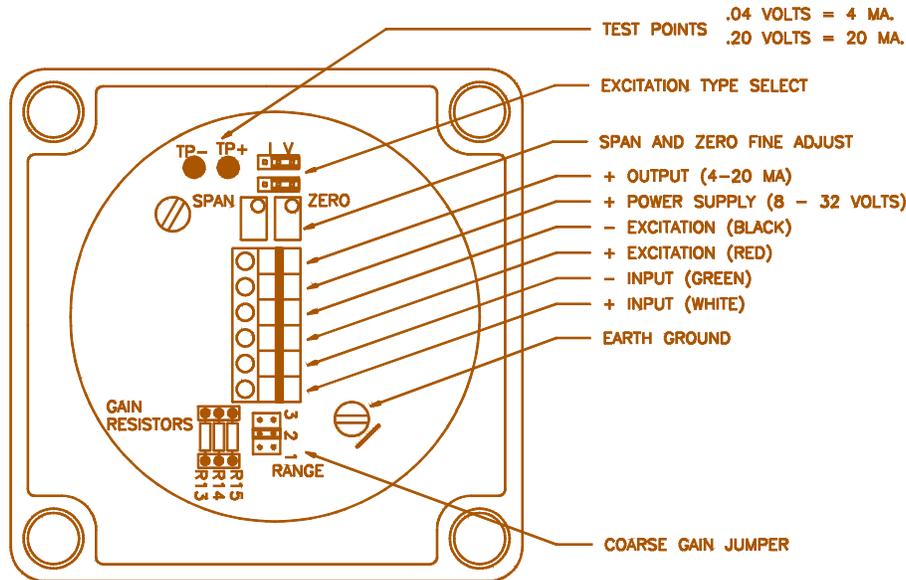


FIG 2

**Coarse Gain Setup:**

These part numbers have a fixed input range as shown below:

PART NUMBER	INPUT RANGE
060-6850-07	3, 5, 10 MV/V
060-6850-XX	

Select the position which is closest to output of the transducer. Place the shunt in that position.

**COARSE GAIN SHUNT POSITIONS**

Part Number	EX Type	Position 1	Position 2	Position 3
060-6850-07	V	5 mv/v	10 mv/v	3 mv/v

		R15 = 3.65K	R14 = 8.06K	R13 = 2.1K
060-6850-XX	-	-	-	-
		-	-	-
060-6850-XX	-	-	-	-
		-	-	-
060-6850-XX	-	-	-	-
		-	-	-
060-6850-XX	-	-	-	-
		-	-	-
060-6850-XX	-	-	-	-
		-	-	-

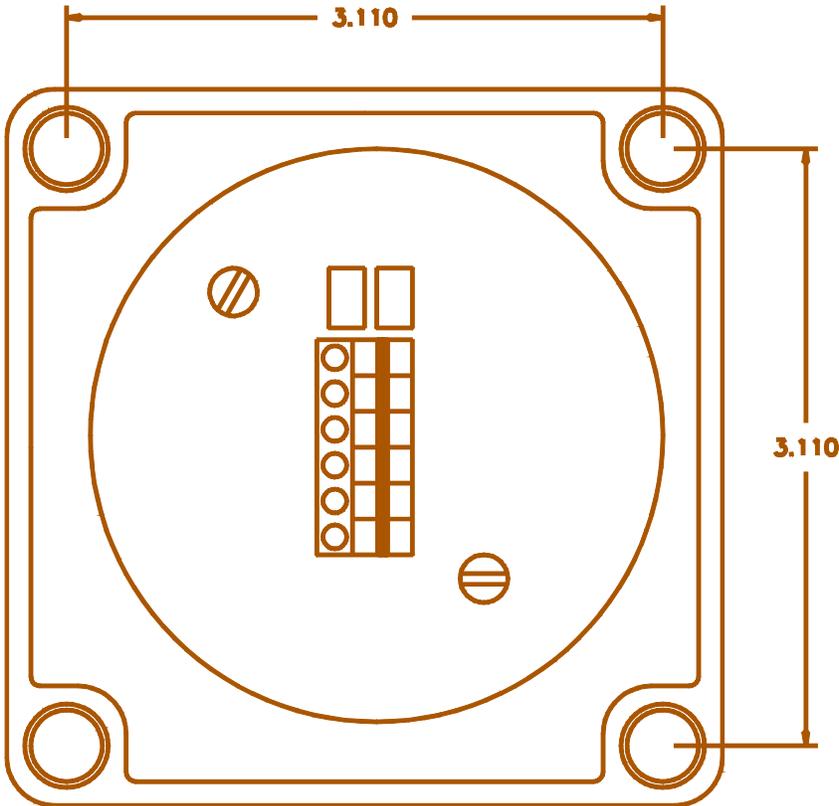
**Custom Gain Setup:**

The maximum signal at the inputs to the two-wire is .300 volts with no gain resistor. To calculate a special gain range use the following equation.

$$R_{\text{gain}} = \frac{200000}{(1.5/(\text{INPUT IN VOLTS}))-5}$$

This resistor can be installed in location R15 and the RANGE shunt moved to position 1. The resistor should be a metal film with a low temperature coefficient such as a RN55D minimum.

**Panel Mounting:**



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