

CURRENT LOOP INDICATING TRANSMITTER
For: RTD · Thermocouple · Strain-Gage and mV Inputs
With 4½ Digit Display in an Explosion Proof Case

MODEL
530



EXPLOSION PROOF

Features

- Loop Powered
- Backlight Option
- 4½ Digits (19999)
- .5" High LCD
- Built-in Excitation for Strain-Gage

CURRENT LOOP

DESCRIPTION: The series 530 is a 4½ digit (19999 count) indicating transmitter housed in an explosion proof case with capabilities of accepting inputs from Thermocouple (see note 1 under Specifications), RTD's, Strain-Gage, and Volts DC, then displaying them and transmitting their data via a two-wire 4-20mA Current Loop.

EXCITATION: The 530 can power (excite) a monolithic strain-gage resistance bridge with its internal high accuracy excitation source. The only limitation is that the strain-gage must have a resistance of between 2500 and 6500 ohms. Other strain-gages (300 or 350 ohms type) must be externally powered. In any case, customer is to specify the strain-gage resistance, its sensitivity in mV/V and the mV at 4mA and mV at 20mA (field adjustable) at time of ordering.

CONNECTIONS: A screw terminal barrier strip is located at the bottom of the aluminum barrel assembly. Inside the explosion proof housing, it accepts 16-22GA wires or lugs that can be routed through the "NPT" ports.

HOUSING: EXPLOSION PROOF meets Class I, Div. 1 & 2, Groups B, C, D; Class II, Div. 1 & 2, Groups E, F, G; Class III, NEMA 3, 4, 7, 9, FM, CSA, CENELEC, and BASEEFA.

BACKLIGHT: Standard display is reflective black digits over a silver background. When the backlight option is ordered, the digits are black over a red illuminated background. The intensity is adjustable. The backlight is powered externally, (see Specifications).

SPECIFICATIONS AT 25°C

Compliance Voltage	16-40VDC
Output	4-20mA
Accuracy & Linearity	0.05% FS
CMRR	90dB
Output Current Limit	3mA, 36mA
Response Time	15ms
Operating Temperature	-40 to +80°C
Storage Temperature	-55 to +85°C
Common Mode Input Range	4-6V
Warm-up Time	5 min.
Stability (zero)	0.02%/°C
Stability (span)	0.01%/°C
Excitation:	
Model 5302-XXXX	1mADC
Model 5303-XXXX	1mADC
Model 5304-XXXX	6.9VDC
Backlight Operating Range	30mA at 5VDC
Humidity	5-95% RH N.C.

NOTES:

1. Thermocouple signals are NOT LINEARIZED.
2. Display has independent adjustments. (Can be scaled without affecting the 4-20mA output.)
3. Common mode voltage is measured with respect to terminal 2.
4. RTD unit (model 5302-XXX) is configured in the 2-wire mode unless otherwise specified.

ADJUSTMENT AND CALIBRATION NOTES: Otek will send all units calibrated per standard, or customer requirements. If readjustments are necessary follow the steps below:

1. Remove cover and unit from housing. The adjustments for the transmitter are in the back of unit while the adjustments for the receiver (display) are in the front.
2. Monitoring the current in the loop, apply signal "0" as required and adjust zero pot. of transmitter for 4mA.
3. Apply full scale signal and adjust F.S. pot. of transmitter for 20mA. Repeat step 2 and 3 if necessary.
4. Now adjust zero pot. on display for desired reading at 4mA and F.S. pot. on display for desired reading at 20mA. Repeat this step if necessary.
5. Replace the transceiver in housing and cover.

ORDERING INFORMATION (1/1/97)

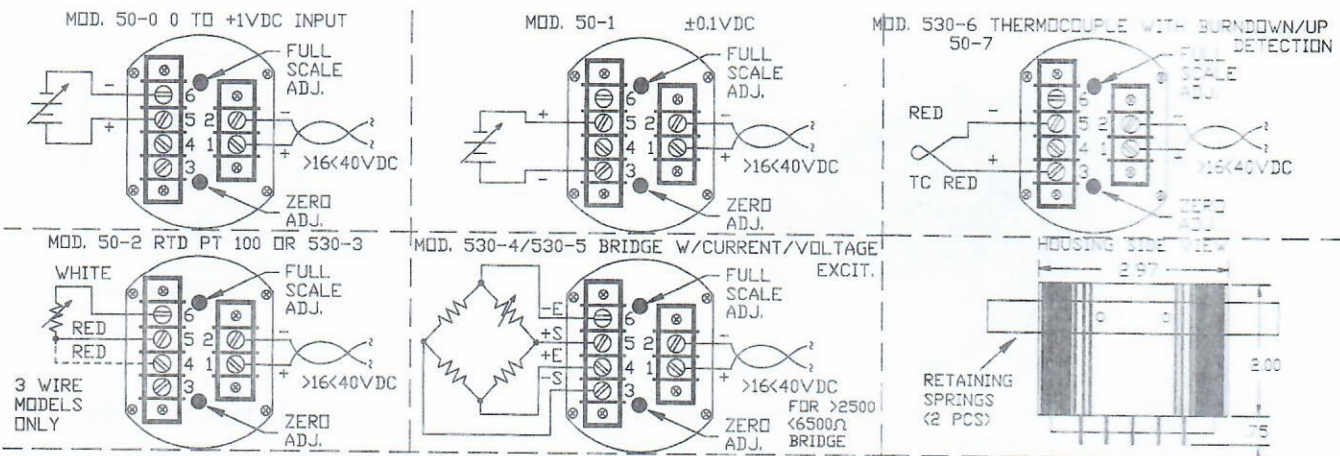
MODEL **5** **3** **0** **0** **0** **0**

INPUT SIGNAL		DEC. POINT	
0	0 to +1VDC	0	None
1	±100mVDC	1	1.XXXX
2	RTD PT-100 (0-1000°F)	2	1X.XXX
3	Resistance (0-500 Ω)	3	1XX.XX
4	Strain-Gage w/Current Excitation	4	1XXX.X
6	TC Type "K" (0-1000°F)		
7	TC Type "J" (0-1000°F)		
8	TC Type "K" (0-1000°C)		
9	TC Type "J" (0-1000°C)		
A	RTD PT-100 (0-1000°C)		
BACKLIGHT		POWER INPUT (2)	
0	No Backlight	0	16-40VDC
1	Red Backlight	1	120/240VAC
		2	120VAC

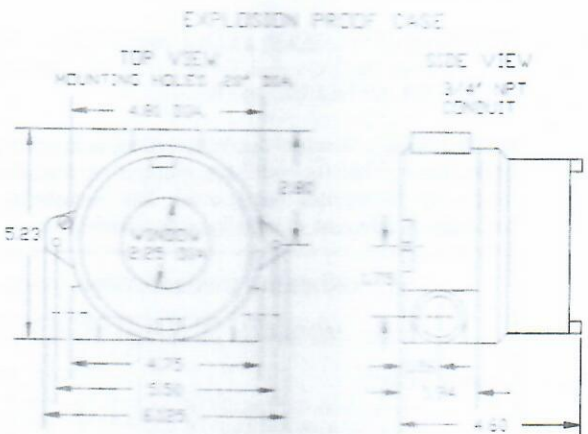
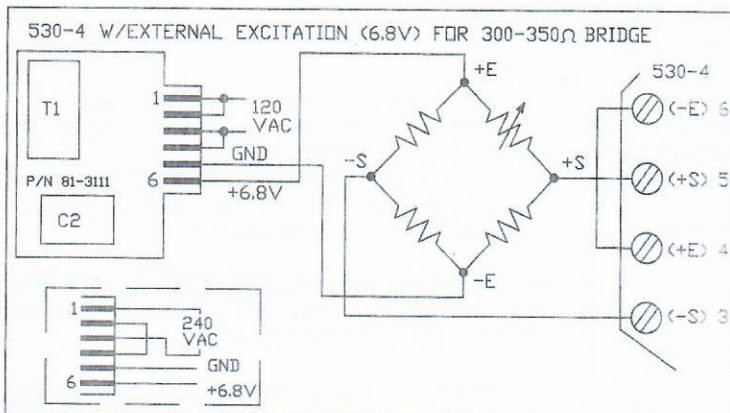
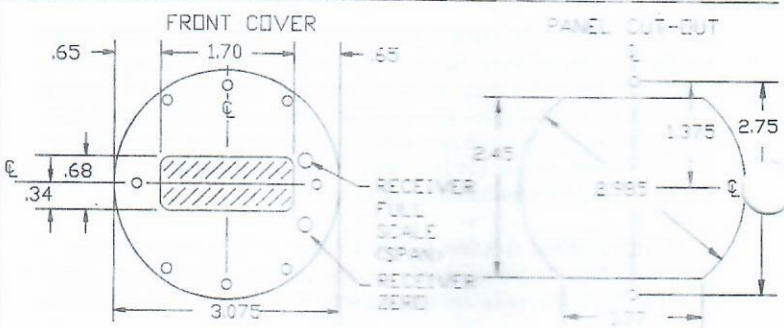
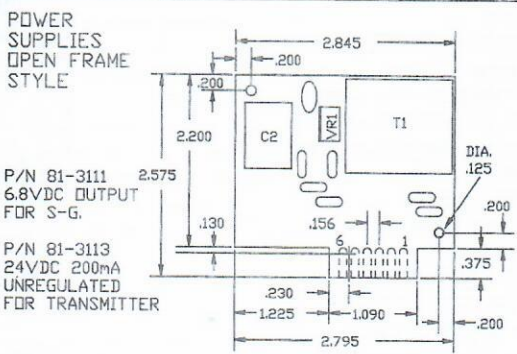
- (1) For S-G of >2500 <6KΩ resistance only.
- (2) The 530 operates from 16-40VDC, if 120AC/24DC (external power supply, open frame type) is desired order option 1 or option 2 for power pack.

530 MECHANICALS & TYPICAL CONNECTIONS CONNECTION DIAGRAMS

ALL SERIES 530 UNITS OPERATE WITH AN INTERNALLY GENERATED 5V CMV WITH RESPECT TO TERMINAL 2 OF THE DEVICE AND ITS INPUTS. THEREFORE, NEVER GROUND AN INPUT TO ANY POINT IN THE SYSTEM THAT IS NOT ELECTRICALLY ISOLATED FROM THE POWER/SIGNAL LINES. INPUTS MUST BE FLOATING.



ABOVE ADJUSTMENTS ARE FOR TRANSMITTER SECTION ONLY. FOR DISPLAY ADJUSTMENTS SEE BELOW.



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