T761-0000

TRANSPAK™ T761

AC Input Isolating Field Configurable Two-Wire Transmitter

Provides an Isolated Current Loop in Proportion to an AC Input

- Field Configurable Input Ranges
- Eliminates Ground Loops
- Wide Ranging Zero and Span Adjustability
- 600V Input-to-Output Isolation

Description

The T761 has 12 widely adjustable input ranges and 2 output ranges, all of which are field selectable via top-accessed DIP switches. The T761 provides 600 VDC of isolation with outputs of either 4-20mA or 10-50mA. The current outputs are in proportion to selected AC voltage or current input.

The T761 measures the average value of the AC input signal and is calibrated for sine wave signals over a frequency range of 20Hz to 3KHz. For other wave forms, the calibration may be different, but the T761 will remain linear for the same wave form. For example, if the unit is calibrated using a square wave, the calibration will be valid for all square wave inputs in that range. The maximum DC component of the input signal is 50% of the range (e.g., 75VDC is half of a 0-150VAC range).

The T761 has 80% zero and span adjustability within most user-selected input ranges. For example, Range 3 of Table 1 specifies 0 to 25V with a minimum span of 5V (25V-5V = 20V, or 80%). This 80% adjustability allows the user to field calibrate the unit from the maximum (0 to 25V) down to any minimum (5V) span (e.g. 10V to 15V) as long as that adjusted span remains within the selected 0 to 25V range.

Application

The T761 is useful in any application requiring the isolation of a 2-wire loop current from an AC signal source. Typical applications include AC motor status and energy management. The output of the T761 can be used to drive a digital meter for direct display or interface with a computer for monitoring and control.

Options

U Urethane coating of internal circuitry for protection from corrosive atmospheres.

C620 Factory calibration to customer's specifications.

Calibration

1. Open the access lid on the top of the unit (see Top View Diagram).

2. Select the output range using switch S1. The CLOSED position selects a 10-50mA output. The OPEN position selects a 4-20mA output.

3. Select the input range from Table 1 and configure switches S2 through S6.

4. Connect the input to a calibrated AC voltage or current source. Connect the output loop to a voltage supply and monitor the output current (refer to terminal wiring).

5. Set the calibrator to the desired minimum.

6. Adjust the coarse zero rotary switch to either 4mA or 10mA. Adjust the fine zero for exact calibration. Note that it may be necessary to switch coarse zero up or down one position.

7. Set the calibrator to the desired maximum and adjust the fine span to obtain an output of either 20mA or 50mA. Repeat steps 5-7, if necessary for best accuracy.

Field Mounting

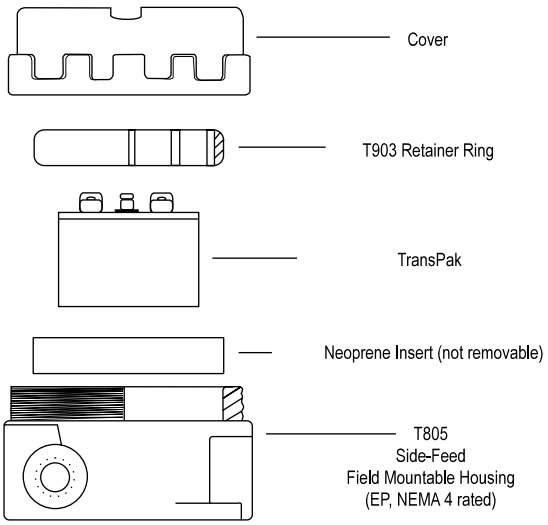
The T761 is designed for installation in industrial field environments. A sealed, diecast aluminum housing protects against corrosion, moisture, dust and electrical noise such as radio-frequency (RFI) and electromagnetic (EMI) interference.

For protection against extreme moisture, hose-directed water (NEMA 4) or hazardous environments, use the T805 explosion-proof housing. The T805 provides a 1/2" and 3/4" FPT port for operation in harsh process environments. The T805 is FM and CSA certified for use in Class I, Groups B, C & D and Class II, Groups E, F & G hazardous locations.

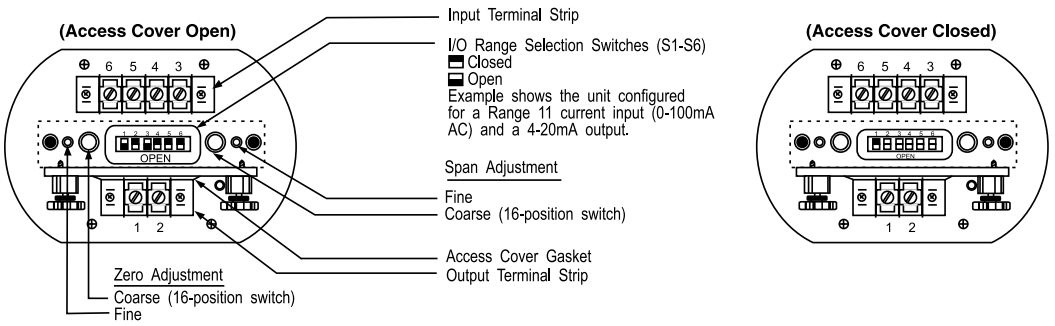
Table 1: T761 Input Ranges

Range			Switch Position				
	Input Limits	Minimum Span	2	3	4	5	6
1	0 to 250VAC	100VAC		■			■
2	0 to 100VAC	20VAC		■			
3	0 to 25VAC	5VAC		■		■	■
4	0 to 5VAC	1VAC		■		■	
5	0 to 1VAC	200mVAC			■		■
6	0 to 200mVAC	40mVAC			■		
7	0 to 50mVAC	10mVAC			■	■	■
8	0 to 10mVAC	2mVAC			■	■	
9	0 to 2A AC	400mA AC	■		■		■
10	0 to 4mA AC	80uA AC	■		■		
11	0 to 100mA AC	20mA AC	■		■	■	■
12	0 to 20mA AC	4mA AC	■		■	■	
Key: ■ = 1 = ON or Closed							

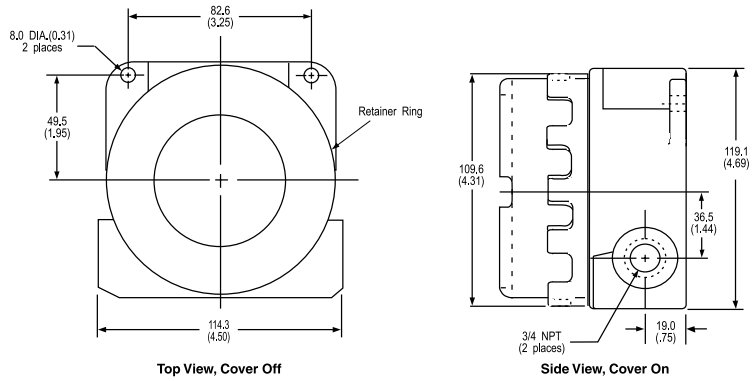
T805 Explosion Proof Housing (Optional)



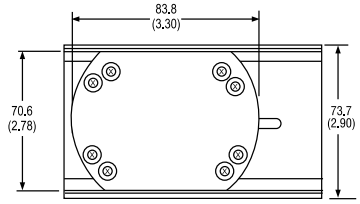
Top View Diagram



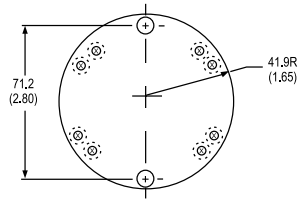
Mounting Hardware



T805 Field Mountable Housing (EP, NEMA 4 rated) 3/4" Hub
(Includes T903 Retainer Ring & NEMA 4 Gasket)



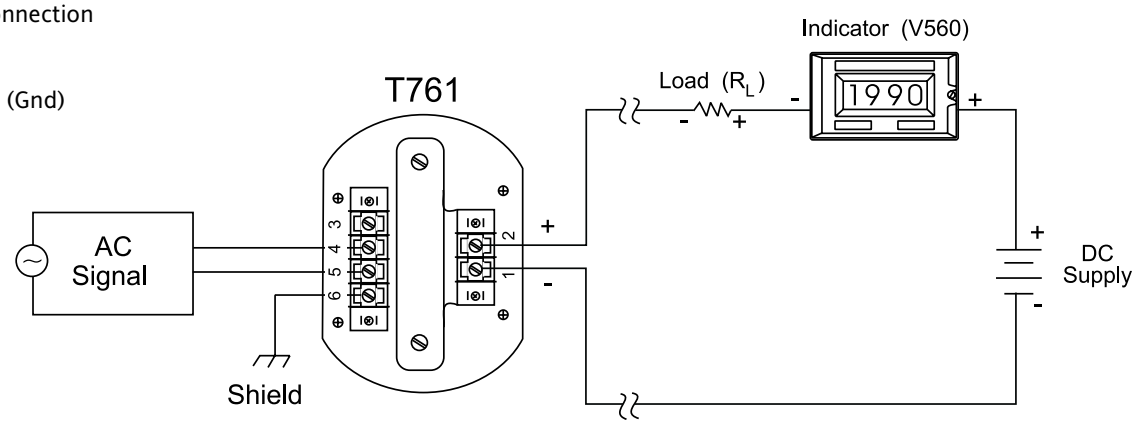
T902 MOUNTING PLATE
(For snap-track mounting;
includes snap track)
Aluminum Alloy #6061 (0.06in, thick)



T910 MOUNTING PLATE
(For bulkhead mounting)
Aluminum Alloy #6061 (0.06in, thick)

T761 Terminal Connections

1. Loop Output (-)
2. Loop Output (+)
3. No Connection
4. Input
5. Input
6. Shield (Gnd)



Note 1: *For best RF & common mode rejection, ground the case (pin 6).*
Note 2: *R_L represents any other device loads in the current loop.*

Specifications

Input Span Range (Max/Min):
See table 1

Leadwire Resistance Effect:
<0.25 uV/Ohm

Input Impedance:
Ranges 1-8: >1M Ohm
Ranges 9-12: 0.5 Ohm shunt

Output Span:
4-20mA/10-50mA, switch selectable

Minimum Output Current:
3.3mA, typical

Maximum Output Current:
4-20mA: 24mA, typical
10-50mA: 58mA, typical

Supply-Voltage Range:
4-20mA: 12 to 80VDC
10-50mA: 12 to 60VDC

Maximum Change in supply Voltage Effect:
0.05% of span

Maximum Change in Load Effect:
0.05% of span

Loop Voltage Drop:
12VDC @ 20mA

Stability:
Zero: ±0.02% of span/°C, typical, or 10uV/°C, whichever is greater
Span: ±0.02% of span/°C, typical

Overall Accuracy (Includes Linearity, Hysteresis and Stability):
±0.5% of any adjusted span
(50-400Hz sine wave input), max.

Frequency Response (±0.5dB):
20Hz to 3KHz; average reading calibrated to sine wave input

Maximum DC Input Component:
50% of range

Zero and Span Adjustability:
80% of any selected range

Repeatability:
±0.05% of span, typical

Response Time:
500ms, typical

Output Ripple:
0.5% of span, rms, typical

RFI Effect (5W, 470MHz at 3 Ft.):
<1% of span error

Isolation:
600V DC maximum, input to output

Temperature Range:
Operating: -40 to 80°C (-40 to 176°F)

Weight:
0.64lbs

Ordering Information

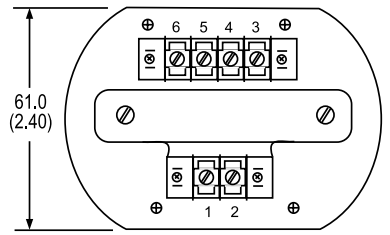
Models & Accessories
Specify:
1. Model: **T761-0000**
2. Options: U (Urethane coating)
3. Optional Custom Factory Calibration: Specify **C620** with desired input and output range.

Accessories

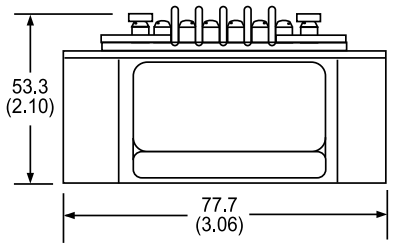
M004	Snap-in Channel Track, 4 feet.
T902	Mounting plate for M004, includes 4" track.
T910	Bulkhead (flat surface) Mounting plate.
T805	Side feed field-mountable housing (EP & NEMA 4 rated), uncoated (specify Option P for white polyester powder coat).
C006	0.1W, 5W, 1% shunt resistor
AP9046	Action Pak 24/40VDC 65mA Power Supply.
V565	3-1/2 digit remote loop-powered indicator, wide-ranging display, NEMA 4X enclosure, CSA & FM approval standard, specify Option C to house TransPak

Dimensions

Dimensions in millimeters (inches)



Top View



Front View

invensys EUROTHERM action instruments

Eurotherm, Inc
741-F Miller Drive
Leesburg, VA 20175-8993
703-443-0000
info@eurotherm.com or www.eurotherm.com/actionio

Printed on recycled paper

Factory Assistance

For additional information on calibration, operation and installation contact our Technical Services Group:

703-669-1318

actionsupport@eurotherm.com