



T752-0000

TRANSPAK™ T752

Potentiometer Input Isolating, Field Configurable Two-Wire Transmitter

Provides an Isolated Current Loop in Proportion to a 3-Wire Potentiometer Input



- Accepts 0-50 Ohm to 0-200k Ohm Potentiometers
- Protects Equipment with 600V Input-to-Output Isolation

- Eliminates Ground Loops
- Wide Ranging Zero and Span Adjustability
- FM Safety Approval for Hazardous Installations

Description

The T752 accepts potentiometer inputs from 0 to 50 Ohms to 0 to 200k Ohms (end to end). The T752 provides 600 VDC of isolation with outputs of either 4-20mA or 10-50mA which are field selectable via top accessed DIP switch. The current outputs are in proportion to the potentiometer input. Urethane coating of internal circuitry for protection from corrosive atmospheres is included as standard.

The T752 has 80% zero and span adjustability within the input range of the potentiometer. This allows the user to field calibrate the unit for a wide variety of input spans from the maximum (100%) down to any minimum (20%) span (e.g., 4% to 24%) as long as the adjusted span remains within the input range of the potentiometer.

Application

The T752 is useful in any application requiring isolation of a 2-wire loop current from a 3-wire potentiometer. Typical applications include tank level data acquisition and position sensor conditioning. The output of the T752 can be used to drive a digital meter for direct display or interface with a computer for monitoring or control.

The T752 is FM approved for intrinsically safe operation in Class I, Division 1, Groups A, B, C, and D; Nonincendive Class I Division 2, Groups A, B, C and D, and Classes II & III, Division 2, Group G hazardous locations when installed per manufacturer's drawing 790-0024-00.

Calibration

Factory settings are:

Input Range: 0-100%
Output Range: 4-20mA

1. Open the access lid on the top of the unit (see Top View Diagram).
2. Select the output range using switch 1. The CLOSED position selects a 10-50mA output. The OPEN position selects a 4-20mA output. (Switches 2-6 are not used.)
3. Connect the input to a potentiometer. Connect the output loop to a voltage supply and monitor the output current (refer to the terminal wiring).
4. Set the potentiometer to the desired minimum.
5. Adjust the coarse zero rotary switch to obtain an output of either 4mA or 10mA. Adjust the fine zero for exact calibration. Note that it may be necessary to switch the coarse zero up or down one position.
6. Set the potentiometer to the desired maximum and perform similar adjustments using the coarse and fine span potentiometer.

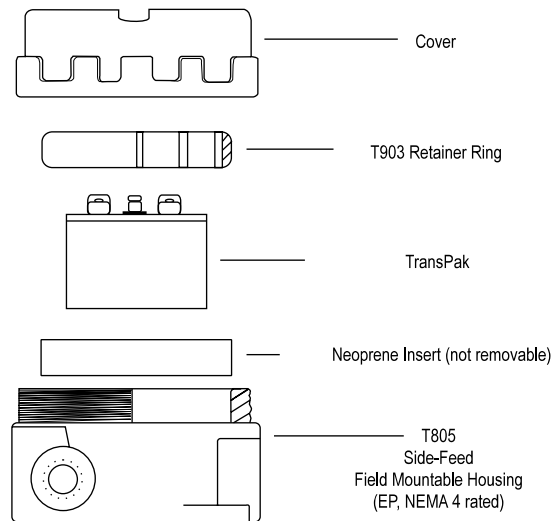
It may be necessary to repeat steps 4, 5, and 6 for best accuracy.

Field Mounting

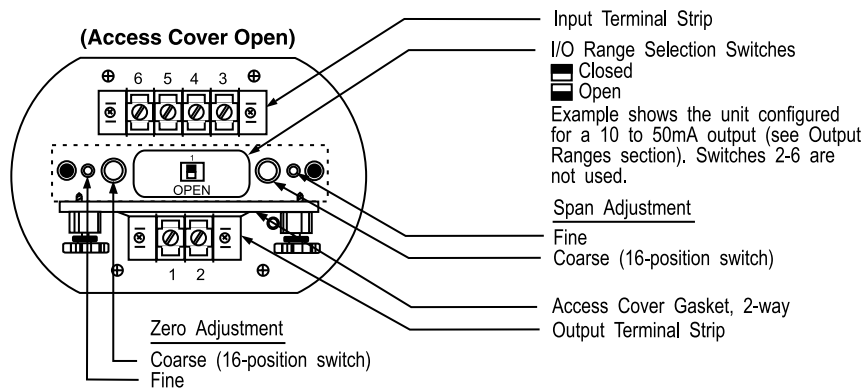
The T752 is designed for installation in industrial field environments. A sealed, diecast aluminum housing protects against corrosion, moisture, dust and electrical noise such as radio-frequency (RFI) and electromagnetic (EMI) interference. All circuit boards are urethane coated for environmental protection and FM approval.

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

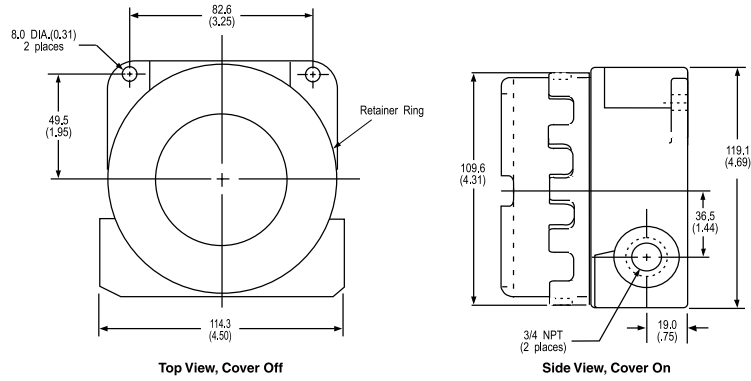
T805 Explosion Proof Housing (Optional)



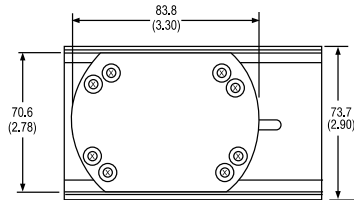
Top View Diagram



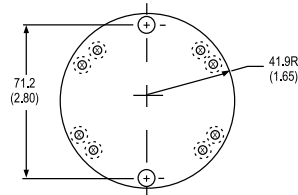
Mounting Hardware



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



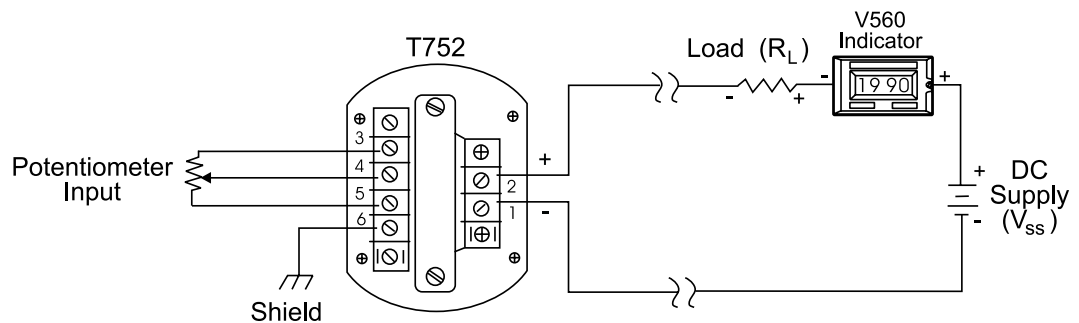
T902 MOUNTING PLATE
(For snap-track mounting;
includes snap track)
Aluminum Alloy #6061 (0.06in. thick)



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

T752 Terminal Connections

1. Loop Output (-)
2. Loop Output (+)
3. Pot (CW)
4. Pot wiper
5. Pot (CCW)
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: 0 to 100% of potentiometer

Min: 0 to 20% of potentiometer

Excitation Voltage:

50mV typical

Potentiometer Resistance (End to End):

50 Ohms to 200k Ohms

Leadwire Resistance Effect:

<0.25 uV/Ohm

Input Impedance:

5M Ohms, typical

Output Span:

4-20mA or 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: $\pm 0.02\%$ of span/ $^{\circ}\text{C}$ typical,

or 2uV, whichever is greater

Span: $\pm 0.01\%$ of span/ $^{\circ}\text{C}$ typical

Overall Accuracy (Includes Linearity, Hysteresis, Repeatability):

$\pm 0.05\%$ of any adjusted span maximum

Zero and Span Adjustability:

80% of input

Repeatability:

$\pm 0.05\%$ of span

Response Time:

50ms, max.

Output Ripple:

0.1% of span rms, typical

RFI Effect (5W, 470MHz at 3 Ft.):

<1% of span error

Isolation:

600V DC maximum, input to output to case

Temperature Range:

Operating: -40 to 80 $^{\circ}\text{C}$ (-40 to 176F)

Weight:

0.62lbs

Agency Approval:

FM approved intrinsically safe for hazardous location, certificate No. J.I. 2M2A5.AX.

Ordering Information

Models & Accessories

Specify:

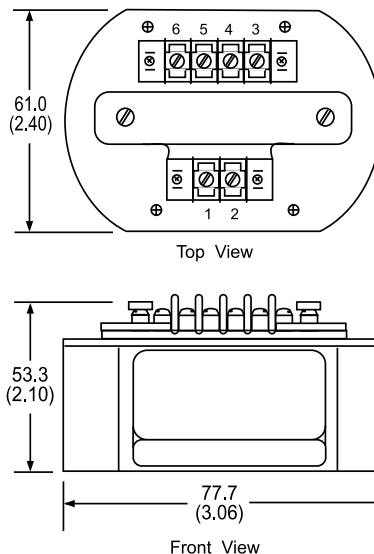
1. Model: **T752-0000**
2. Optional Custom Factory Calibration: Specify **C620** with desired input and output range.

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 explosion-proof housing (NEMA 4 rated), uncoated (specify Option P for white polyester coating).
- 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)



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Printed on recycled paper

Factory Assistance

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

703-669-1318

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