

# 2-Channel Temperature SWICHGAGE®

TD-92102B  
Revised 03-02  
Catalog Section 10  
(00-02-0760)

FWMurphy



Model TD35

## TD35 Series

- Microprocessor-Based SWICHGAGE®
- Simultaneously Monitors Two, Grounded† or Ungrounded Thermocouples (Type J or K)
- Readings in Degrees Fahrenheit or Celsius
- High Visibility LCD Display Is Back Lit
- Field Adjustable Trip Points Can Be Selected To Open or Close
- Activate Alarms or Shut Down Equipment

### Description

The TD35 is a microprocessor-based, dual-channel temperature SWICHGAGE®, that can simultaneously monitor two grounded† or ungrounded thermocouples type “J” or “K”.

The TD35 scans both channels. A back lit, LCD screen alternates between displaying the temperature of the 2 thermocouples in either °F or °C. The screen can be locked, for a length of time, to view one channel exclusively.

The TD35 has adjustable trip points that can be used as control signals or to initiate alarms and/or shut down equipment. Access to trip point settings is password protected.

A built-in LED alerts the user of a set point tripped condition.

Membrane switch buttons, located on the dial face, are provided to select the thermocouple channel to be displayed and to adjust trip point values. The switch buttons are also used for selecting the units of measurement (°F or °C).

The TD35 will operate from 8 to 35 VDC and has isolated sinking transistor outputs.

### Applications

The TD35 is designed to interface with other Murphy products. Some of its applications are:

- Marine
- Vehicles and Farm Equipment
- Construction Equipment
- Industrial Engines
- Engine Room Temperature Monitoring

### Outstanding Features

- Two Sinking Transistor Outputs Can Be Selected to Open or Close at High set point.
- During Normal Operation Both Trip Points Are Always Active.
- Field Adjustable Trip Points
- Trip Point Setting Access Is Password Protected.
- Compact Design, 3-1/2 in. (89 mm) dia.
- For “J” or “K”, Grounded† or Ungrounded Thermocouples.
- Can Be Powered From 8 to 35 VDC
- Easy-to-Read, Back Lit, LCD Display.

### Thermocouple Type

TD35 accepts grounded† or ungrounded thermocouples types “J” or “K”. Specify type in the model number. (Refer to How to Order information on back page.)

### Automatic Cold Junction Reference

The compensator circuit monitors the TD35 internal temperature and automatically compensates for any changes in ambient temperatures resulting in a more accurate reading.

### Open Thermocouple Input

An open thermocouple input forces the TD35 monitor into upscale overrange. The display will show *OPEN* and the high trip point output will be turned ON. The Set point tripped LED is lit, alerting the operator of this condition.

### Trip Point Operation

Both monitored trip points are always active and password protected. When either thermocouple temperature reaches the trip point setting, its corresponding isolated transistor output is immediately turned on causing an alarm and/or shutdown condition, and the Set point tripped LED light is lit.

The trip point settings can be changed at any time by entering the password and depressing the corresponding membrane switch until the desired trip point temperature is displayed.

### Trip Point Display

The “CH1” and “CH2” membrane switches are used to select the channel and temperature to be displayed.

The selected channel can be continuously displayed for 15 seconds by depressing the corresponding membrane switch.

† Using grounded thermocouples introduces the risk of odd currents or voltages being imposed on the thermocouple signal which can affect the accuracy of the reading. This is an inherent problem of grounded thermocouples, the reason why we prefer ungrounded thermocouples.



## Specifications

**Input Voltage:** 8 to 35 VDC.

**Maximum Current:** 60 mA @ 8 VDC.

**Outputs:** Two isolated sinking transistors; 2 A @ 50 VDC.

Trip points can be selected to turn ON when signal reaches High trip point, turn OFF when signal reaches Low trip point; or turn ON when signal reaches Low trip point, turn OFF when signal reaches High trip point.

**Accuracy:**  $\pm 2\%$  of reading or  $\pm 2^\circ\text{C}$ ; whichever is greater.

**Ranges:** J-type thermocouple: 50 to 1400°F (10 to 760°C).

K-type thermocouple: 50 to 2000°F (10 to 1093°C).

**Ambient Temperature Compensation Range:**

32 to 158°F (0 to 70°C).

**Temperature Coefficient:** 0.070°C/°C over compensation range.

**Operating Temperature:** 32 to 158°F (0 to 70°C).

**Storage Temperature:** -40 to 176°F (-40 to 80°C).

**Display:** LCD (Liquid Crystal Display).

**Trip Point Output:** Sinks to negative.

**Trip Point Accuracy:**  $\pm 2^\circ\text{F}$  ( $\pm 1.1^\circ\text{C}$ ) of reading.

**Minimum Reset Differential:** When reading falls 1 degree below the trip point setting, the switch will reset.

**Bezel:** 430 Stainless Steel; standard polished; optional black.

**Case:** 1018 Polycarbonate/Polyester blend.

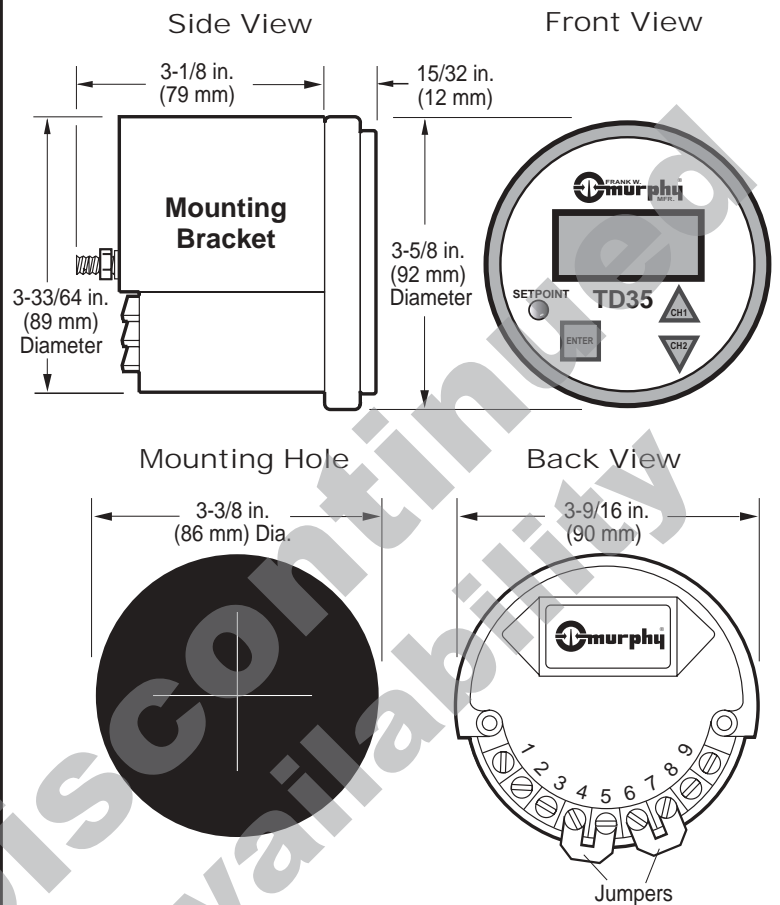
**Dial:** 3-1/2 in. (89 mm) diameter.

**Mounting Hole:** 3-3/8 in. (86 mm) diameter.

Shipping Weight: 14 oz. (0.4 kg).

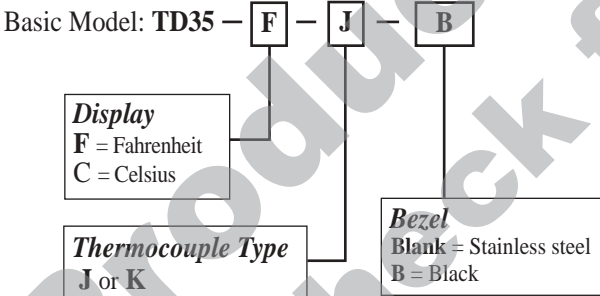
Shipping Dimensions: 5-1/2 x 5-1/2 x 5-1/2 in.  
(140 x 140 x 140 mm).

## Dimensions

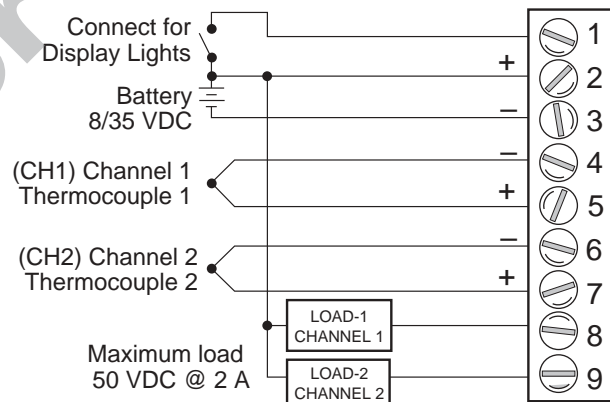


## How to Order

Specify model number using the diagram below.



## Typical Wiring Diagram



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