

### FEATURES

- NEMA 4X Splashproof Enclosure
- 3-1/2 Digit User-Rangeable Display
- Available for All Standard Thermocouple Types
- Automatic Cold-Junction Compensation
- Input/Output Isolated
- Urethane-Coated Circuit Boards
- AC or DC Power Options

### DESCRIPTION

The Model FDT5210 Thermocouple Input Transmitter provides an isolated DC output proportional to a thermocouple input. Automatic cold junction compensation and a low-drift input amplifier maintain accuracy under varying ambient conditions.

A rugged NEMA 4X splashproof, corrosion-resistant housing protects the transmitter in outdoor and industrial environments. The circuit boards are urethane coated for protection against condensation and contaminants. FDT5000 Series transmitters include a 3-1/2 digit user-rangeable display to provide local process indication in degrees or other engineering units.

Available options include AC and DC power choices, reverse-acting transmitter (decreasing output with increasing input) and downscale burnout indication (upscale is standard).

For field mount transmitters without a display, select any of our plug-in style transmitters plus our ENCL-1 NEMA-4X enclosure.



### HOW TO ORDER

**Model Number:** FDT5210

**Power:**

Add suffix A ( FDT5210A) for AC power, D for DC power. Specify 115Vac, 230Vac, 12Vdc or 24Vdc.

**Thermocouple Type:**

Specify any standard thermocouple type (E, J, K, T, R, S, B or N). Contact factory for others.

**Input Range:**

Specify range in °C or °F. (See Specifications for capabilities.)

**Burnout Indication:**

Upscale burnout indication is standard. (Output goes high if ther-

mocouple input opens.) If downscale indication is required, specify "Downscale Burnout".

**Output Range:**

Specify any DC voltage or current range allowed by the "Output Capabilities" spec (see back).

**Display Range:**

If not otherwise specified, the display will be calibrated in degrees per your input range (1 degree resolution, 1999 max. display). Other calibrations are possible: see "Display Capabilities" specification on back.

**Reverse-Acting Transmitter:**

Decreasing output with increas-

ing input. Change last digit of the model number to 1 (for example, FDT5211A).

**Loop-Powered Output:**

4/20mA "current sink" output stage for connection to devices whose inputs provide 24Vdc loop excitation. Change the last digit of the model number to 2 (for example, FDT5212A).

**Conduit Connection:**

Standard: A single 1/2 inch NPT conduit fitting (glass-fiber reinforced nylon) is provided at the bottom of the housing. Other options are possible, including no fitting at all. Contact factory.

## INSTALLATION

FDT5000 Series transmitters provide four mounting holes, 0.19 inch/4.8 mm diameter, beneath the cover screws. Remove the cover, mount the transmitter with four screws (#10 or smaller) and reinstall the cover for a NEMA-4X splashproof seal.

## ELECTRICAL CONNECTIONS

Connections are made to 8 terminals within the enclosure:

- 1: Thermocouple plus.
- 2: Thermocouple minus. (Note: On most thermocouples, red is minus.)
- 3: No connection.
- 4: No connection.
- 5: Output plus.
- 6: Output minus.
- 7: Power (AC or, if DC power option, DC plus).
- 8: Power (AC or, if DC power option, DC minus).

## BURNOUT INDICATION

Upscale burnout indication (standard) drives the output offscale high if the thermocouple breaks or burns out. Downscale (optional) drives it low. Upscale is provided unless otherwise specified on your order.

## SPECIFICATIONS

### Input Thermocouple:

Available for types E, J, K, T, R, S, B or N. Contact factory for others.

### Input Capabilities:

Any span 4mV or higher. (4mV equals 100°C for type K thermocouple.) Offset ranges are allowed.

### Voltage Output Capabilities:

1 volt minimum output span, -10 to +15V absolute limit. Offset ranges are allowed. Maximum output load, 10mA (1Kohm at 10V output).

### Current Output Capabilities:

1mA minimum output span, 0 to +25mA absolute limit. Positive offsets are allowed, negative outputs are not. Output drive capability, 24V (1,200 ohms max. at 20mA output).

### Display Capabilities:

Low end and full scale readings may be anywhere between -1999 and +1999 counts. A fixed decimal point may be added in any position. Minimum span (full scale minus low end) is 10 counts. Reverse-acting display is possible (full scale reading downscale from low end). Display may be re-ranged by user. (Display is normally calibrated in degrees per the input range. If other settings are desired, please specify on your order.)

### Endpoint Accuracy:

+/-0.1% of span or better (or, on narrow spans, +/-0.2°C or 20 microvolts, whichever is greater).

### Adjustability:

Zero and span each are adjustable approx. +/-15% of span.

### Response Time:

Under 100 milliseconds.

### Isolation:

3-way (Power/Input/Output) 1,500Vac rms (2,100V peak).

### Operating Temperature:

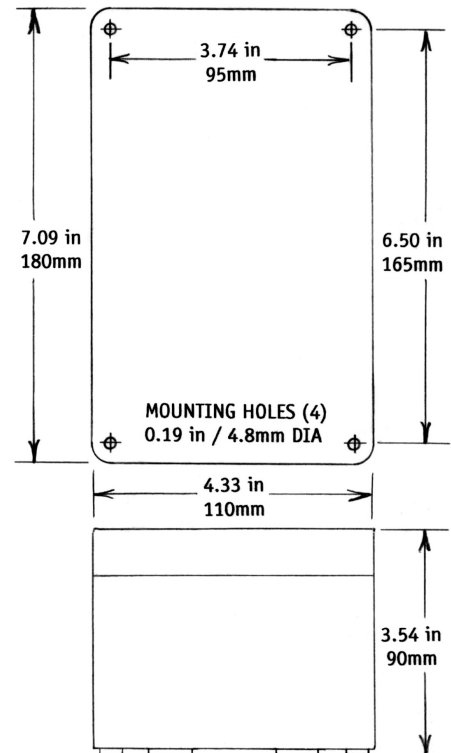
-10 to +60°C (14 to 140°F).

### Temperature Stability:

+/- (0.02% of span plus 1.3 microvolts) per °C, or better.

### Power Requirements:

AC, 115 or 230Vrms, 50/60Hz, 2.5V-A. DC, 12 or 24V, 2.5W.



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