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# FDT5140/5150

## MULTIPLY/DIVIDE FIELD MOUNT TRANSMITTERS

### FEATURES

- NEMA 4X Splashproof Enclosure
- 3-1/2 Digit User-Rangeable Display
- Multiply or Divide Two DC Inputs
- Input and Output Ranges Need Not be the Same
- Input/Output Isolation Standard
- Urethane-Coated Circuit Boards
- AC or DC Power Options



### DESCRIPTION

FDT5140/FDT5150 Multiply/Divide Transmitters respond to the product or ratio of two DC inputs and provide a proportional, isolated DC output. 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 engineering units.

Standard calibration calculates the inputs and outputs on a percent-of-span basis. For example, in an FDT5140 multiplying transmitter with 4/20mA inputs and a 0/10V output, when both inputs are at 12mA (50%) the output will be 2.5V (25%). The equation is:  $0.5 \times 0.5 = 0.25$ . Nonstandard calibrations are available, including dissimilar input ranges and input-to-output offsets. We also can, as a special, create the function,  $\text{Output} = (A \times B)/C$ . Contact us with your requirements.

Options include AC and DC power choices and reverse-acting transmitter (decreasing output with increasing input)

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

### HOW TO ORDER

**Model Numbers:**

FDT5140: A x B

FDT5150: A/B

**Power:**

Add suffix A (for example, FDT5140A) for AC power, D for DC power. Specify 115Vac, 230Vac, 12Vdc or 24Vdc.

**Input Range:**

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

**Output Range:**

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

**Display Range:**

Specify display reading at low end and at full scale output, including decimal point if required. See "Display Capabilities" specification on back.

**Reverse-Acting Transmitter:**

Decreasing output with increasing input. Change the last digit of the model number to 1 (for example, FDT5141A).

**Loop-Powered Output:**

4/20mA "current sink" output stage for connection to devices whose inputs provide 24Vdc loop excitation. Change last digit of the model number to 2 (for example, FDT5142A).

**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: Input A (positive).
- 2: Input common (negative).
- 3: Input B (positive).
- 4: No connection.
- 5: Output positive.
- 6: Output negative.
- 7: Power (AC or, if DC power option, DC plus).
- 8: Power (AC or, if DC power option, DC minus).

## SPECIFICATIONS

### Voltage Input Capabilities:

100mV minimum span, +/-20V maximum input. Offset ranges are allowed. (Input Impedance: 200kohms or greater.)

### Current Input Capabilities:

1mA minimum span, +/-100mA

maximum input. Offset ranges are allowed. (Input Resistance: Varies with input range. Contact factory for details. 62 ohms for 4/20mA input.)

### 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.

### Accuracy:

+/-0.2% of span. (For divider, input B must be greater than 20% of span to achieve rated accuracy.)

### 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). (The inputs are not isolated from each other.)

### Operating Temperature:

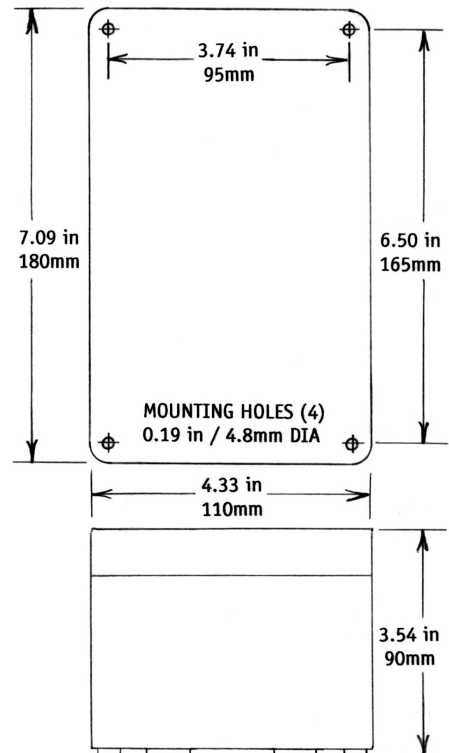
-10 to +60°C (14 to 140°F).

### Temperature Stability:

+/-0.02% of span 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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