

# FDT5000/30/60/70

## DC INPUT FIELD MOUNT TRANSMITTERS

### FEATURES

- NEMA 4X Splashproof Enclosure
- 3-1/2 Digit User-Rangeable Display
- Input Ranges from 4mV to 250Volts, 1mA to 5 Amps
- Nonstandard Ranges Available
- Input/Output Isolation is Standard
- Urethane-Coated Circuit Boards
- AC or DC Power Options



### DESCRIPTION

FDT5000 Series Field Mount Transmitters provide an isolated DC output proportional to a DC voltage or current input. They are useful for amplifying, reducing, scaling or offsetting signals, for eliminating ground loops and noise problems and for converting currents to voltages or vice-versa. The model numbers listed below reflect a variety of input choices but all share the same basic circuitry, features and specifications.

A rugged NEMA 4X splashproof, corrosion-resistant housing protects the transmitter in outdoor and industrial environments. The circuit boards are 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.

Model FDT5070 incorporates a low-drift amplifier for millivolt-level inputs. All models use stable, proven circuitry for accurate measurements under varying ambient conditions. Available 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 plug-in style transmitter plus our ENCL-NEMA-4X enclosure.

### HOW TO ORDER

#### Model Numbers:

FDT5000: DC Voltage Inputs, 1V or Greater

FDT5030: DC 4/20mA Input

FDT5060: DC Current Inputs (including 4/20mA)

FDT5070: DC Millivolt Inputs, less than 1V

Also see separate page for:

FDT5040: 4/20mA Input with Loop Excitation Supply

#### Power:

Add suffix A (for example, FDT5000A) 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, including decimal point if required. See "Display Capabilities" specification on back. Note that reverse-acting display is possible – full scale reading downscale from low end. Display may be re-ranged by user.

#### Reverse-Acting Transmitter:

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

FDT5001A).

#### 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, FDT5002A).

#### 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 plus.
- 2: Input 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).

## SPECIFICATIONS

### Input Capabilities, Model

#### FDT5000:

1V minimum span, +/-250V maximum input. Offset ranges are allowed. (Input Impedance: 200kohms or greater.)

#### Input Range, Model FDT5030:

4/20mA dc. (62 ohms input resistance. 1.25V drop at full scale.)

### Input Capabilities, Model

#### FDT5060:

1mA minimum span, +/-5 Amps

maximum input. Offset ranges are allowed. (Input voltage drop typically 0.1V at full scale.)

### Input Capabilities, Model

#### FDT5070:

4mV minimum span, 1V maximum span (specify FDT5000 for spans greater than 1V.) Offset ranges are allowed. (Input Impedance: 200kohms or greater.)

### 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:

+/-0.1% of span or 10 microvolts, whichever is greater.

### Adjustability:

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

### Linearity:

+/-0.05% of span or better.

### Response Time:

Under 100 milliseconds.

### Isolation:

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

### Operating Temperature:

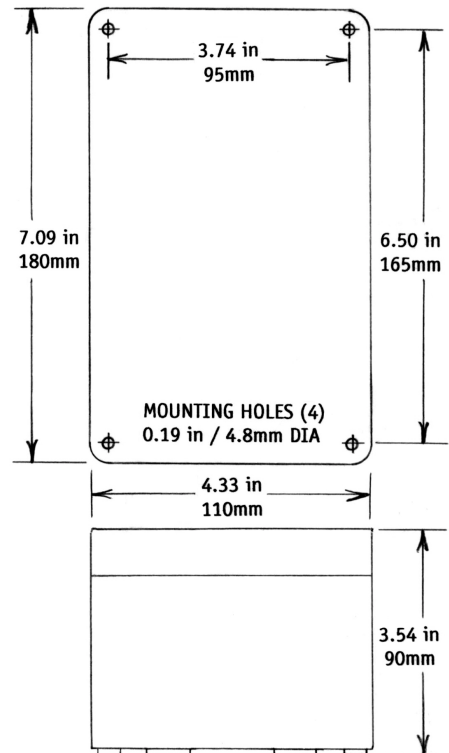
-10 to +60°C (14 to 140°F).

### 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.



# JH TECHNOLOGY, INC.

SARASOTA, FL USA

(800) 808-0300

www.jhtechnology.com

e-mail: jhtek@jhtechnology.com