



Transmitters



150T Series

Pot/Slidewire Input

Input Range

100 ohm to 10K ohm 3-wire pot or slidewire,
span: 25 to 100% of slidewire resistance
zero: 0 to 75% of slidewire resistance

Output Range

4 to 20mA DC

Power requirement

12 to 50V DC, loop-powered

Approvals

CSA and FM

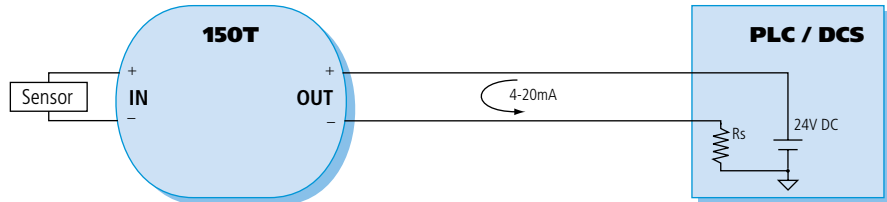
Intrinsically Safe

Class I; Division 1; Groups A, B, C, D

Hazardous Location

Class I; Division 2; Groups A, B, C, D

150T Loop-Powered Transmitter



Description

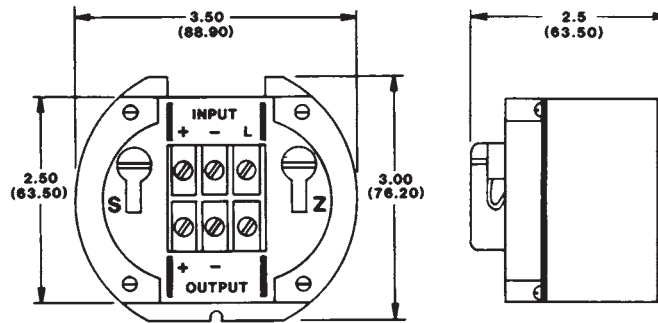
These loop-powered transmitters convert sensor inputs to proportional process current output signals. The output and power share the same pair of wires.

These two-wire transmitters deliver outstanding performance and a broad range of flexibility. They are ideal for remote or control room mounting. They feature rugged construction and remain stable even in harsh industrial environments.

Special Features

- Excellent accuracy and stability ensure reliable measurements in harsh industrial environments.
- RFI and EMI resistance minimize the effects of noise.
- Wide range zero and span adjustment enable precise calibration.

150T Dimensions



Dimensions are in inches (millimeters).



■ Performance

Reference Test Conditions

Input: 100 ohm slidewire with a 100 ohm span;
Output 4 to 20 mA into 500 ohm load;
Ambient temperature: 77°F (25°C);
Power supply: 24V DC supply.

■ Input

Input Range

100 ohm to 10,000 ohm three-wire potentiometer or slidewire.

Zero Adjustment

0 to 75% of slidewire resistance.

Span Adjustment

25 to 100% of slidewire resistance.

Excitation

0.2V DC nominal, constant voltage;
current limited, 3.0 mA nominal.

■ Output

Output Range

4 to 20 mA DC output, linear with input voltage signal.

Output Limits (Approximate)

3.8 mA DC to 30 mA DC.

Output Ripple

Less than $\pm 0.05\%$ of maximum output span.

Current Drive Capability

$R_{LOAD} (max.) = (V_{SUPPLY} - 12V)/20mA.$
At $V_{SUPPLY} = 24V, R_{LOAD} = 0$ to 600 ohms

Load Resistance Effect

Less than $\pm 0.005\%$ of output span for 100 ohm change.

Accuracy

$\pm 0.1\%$ of calibrated span. Includes combined effects of transmitter repeatability, hysteresis, terminal point linearity and adjustment resolution. Does not include sensor error.

Response Time

For a step input the output reaches 98% of output span in 300mS, typical.

Bandwidth

-3 dB at 3 Hz, typical.

■ Power

Power Supply

External loop power supply required, minimum 12V DC, maximum 50V DC. Unit has reverse polarity protection.

Power Supply Effect

DC Volts: $\pm 0.001\%$ of output span per volt DC.
60/120 Hz ripple: $\pm 0.01\%$ of span per volt peak to peak of power supply ripple.

■ Environmental

Ambient Temperature Range

-15 to 185°F (-25 to 85°C).

Ambient Temperature Effect

(Combined effects of zero and span over temperature). Less than $\pm 0.01\%$ of output span per °F ($\pm 0.018\%$ per °C) over ambient temperature range for reference test conditions.

Isolation

No input circuit isolation, input sensor must be isolated from ground if the output circuit is grounded.

RFI Resistance

Less than $\pm 0.5\%$ of output span with RFI field strengths up to 10V/meter at frequencies of 27, 151 and 467 MHz.

EMI Resistance

Less than $\pm 0.25\%$ of output span effect with switching solenoids or commutator motors.

Noise Rejection

Common Mode: Not applicable, non-isolated.
Normal Mode: 26 dB at 60 Hz, 100 ohm source.

Surge Withstand Capability (SWC)

Input/Output terminations rated per ANSI/IEEE C37.90-1978. Unit is tested to a standardized test waveform that is representative of surges (high frequency transient electrical interference), observed in actual installations.

Approvals (CSA, FM)

Intrinsically Safe
Class I; Division 1; Groups A, B, C, D.
Hazardous Location
Class I; Division 2; Groups A, B, C, D.

■ Physical

Case

Self-extinguishing polypropylene UL94 V-O, recognized by CSA, color blue.

Printed Circuit Boards

Military grade FR-4 epoxy glass circuit board.

Connections

Barrier-type terminal strip using No. 6 screw & clamp plates. Wire range 12-26 AWG.

Environmental Protection

Water resistant enclosures, PC Boards are coated with fungus resistant acrylic conformal coating. Gasket material: silicon rubber.

Mounting Position Effect

Position insensitive.

Shipping Weight

One (1) pound (0.45 kg.) packed.

■ Ordering Information

Transmitter Model

NOTE 1: Factory calibration not available on this unit.

NOTE 2: For agency approvals, add "CSA-" or "FM-" prefix to model number (e.g. FM-150T-P-X-20).

150T-P-X-20

Transmitter, pot/slidewire input, nonisolated.

Accessories

Power supplies

See Power Supplies on page 213.

150T-N4

NEMA 4 enclosure, water-tight.

150T-N12

NEMA 12 enclosure, oil-tight.

150T-XJSM-WM

150T-XJSM-PM

Explosion-proof enclosure (-WM for wall-mount or -PM w/pipe-mount hardware).

150T-SM-3.5

150T-SM-24

Mounting rail, 3.5" (holds one 150T) or 24" long.

150T-MSM

Metal surface mounting bracket.

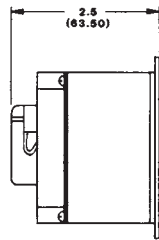
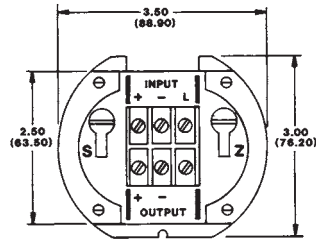
150T-DR A

DIN rail adapter.

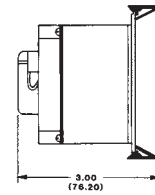
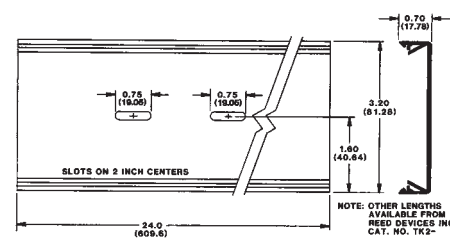


100T, 150T, 150I Dimensions

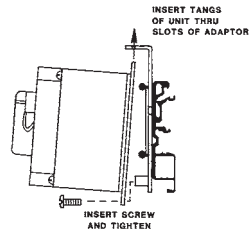
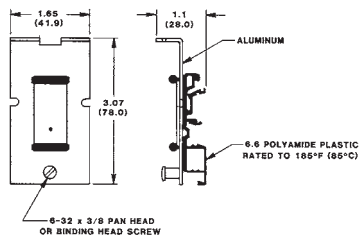
100T/150T/150I Housing



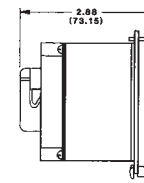
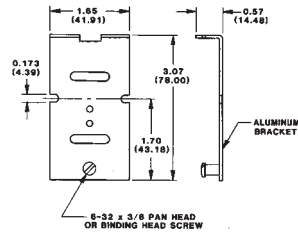
150T-SM-24 Mounting Rail



150T-DRA Adapter



150T-MSM Bracket



150T-N4, NEMA4 150T-N12, NEMA12

