



Isolated Transmitters



150T Series

AC Voltage and AC Current Input

Input Ranges

- AC voltage,
0 to 150V AC, 50/60Hz
- AC current,
0 to 5A AC, 50/60Hz

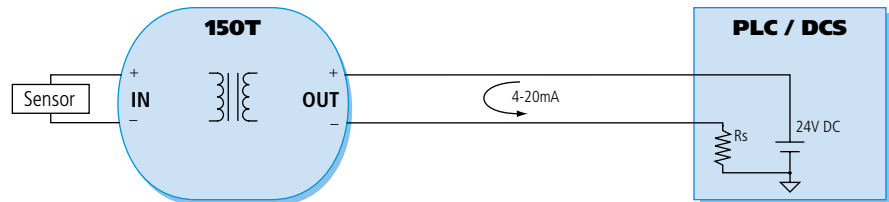
Output Range

4 to 20mA DC

Power requirement

12 to 50V DC, loop-powered

150T Loop-Powered Transmitter



Description

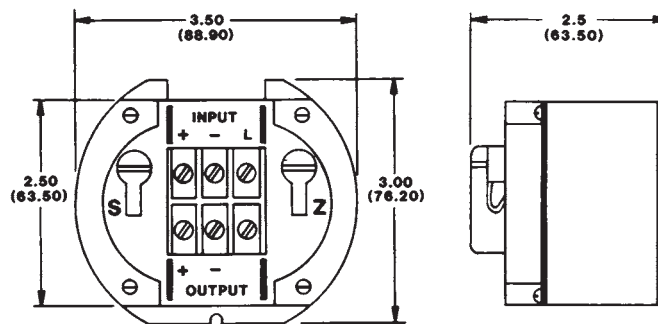
These loop-powered transmitters convert sensor inputs to proportional process current output signals. The output and power share the same pair of wires.

150T 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.
- Isolated inputs prevent ground loops.
- Wide range zero and span adjustment enable precise calibration.

150T Dimensions



Dimensions are in inches (millimeters).



■ Performance

Reference Test Conditions

-CAC input: 0 to 5 Amps, 60 Hz.

-VAC input: 0 to 150 volts AC, 60 Hz.

Output: 4 to 20 mA into 500 ohm load.

Ambient temperature: 77°F(25°C).

Power supply: 24V DC supply.

■ Input

Input Range

-CAC: 0 to 5 amps AC, 50/60 Hz nominal.

Withstands 100 ampere overload for 0.01 second, a 50 ampere overload for 0.1 second and a 25 ampere overload for 1 second. Input span range is 2 to 5 amperes; zero range is 0 to 3 amperes, full scale maximum is 5 amperes. Input impedance is 0.03 ohms; burden is 0.15 volt-amperes.

-VAC: AC voltage, 50/60 Hz; spans 60 to 150V AC, zero offset from 0 to 90V AC, both continuous adjustments. Withstands 1.2 times full-scale continuously; 2 times full-scale for 1-second. Input impedance 100K ohms, nominal; input burden is 3.0 volt-amps.

■ 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

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

-VAC: Less than $\pm 0.5\%$ of maximum output span. Can be reduced to less than 0.1% by adding a 1 μ f capacitor across the load resistor.

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

$\pm 0.5\%$ of calibrated span. Includes combined effects of transmitter repeatability, hysteresis, terminal point linearity and adjustment resolution.

Response Time

For a step input the output reaches 98% span in 500mS, 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.

60/120Hz 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

Input circuit is electrically isolated from output/ power circuits allowing the input to operate at up to 250V AC or 354V DC off ground on a continuous basis (will withstand 1500V AC dielectric strength test for 1 minute without breakdown), complies with test requirements outlined in ANSI C39.5-1974 for the voltage rating specified.

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: 120 dB at 60 Hz, 1 ohm unbalance, typical.

Normal Mode: Not applicable.

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.

■ Physical

Case

Self-extinguishing polypropylene UL94 V-0, 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 Models

150T-VAC-I-20

Transmitter, AC voltage input.

To add factory calibration, append "-C" to end of model number.

150T-CAC-I-20-C

Transmitter, AC current input.

Unit includes factory calibration.

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.

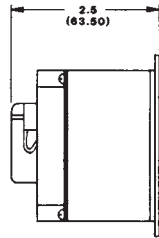
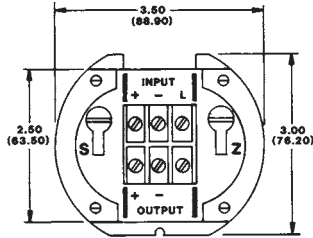
150T-DRA

DIN rail adapter.

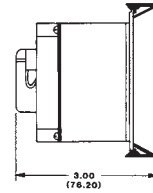
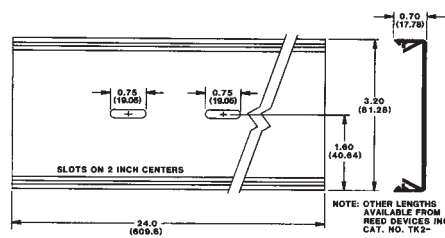


100T, 150T, 150I Dimensions

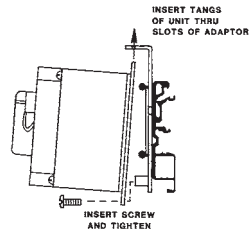
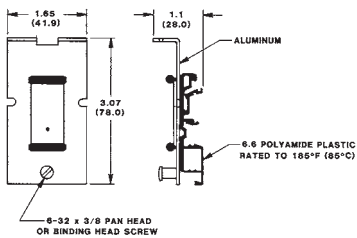
100T/150T/150I Housing



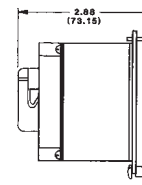
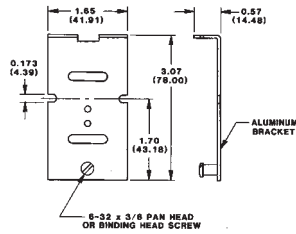
150T-SM-24 Mounting Rail



150T-DRA Adapter



150T-MSM Bracket



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

