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

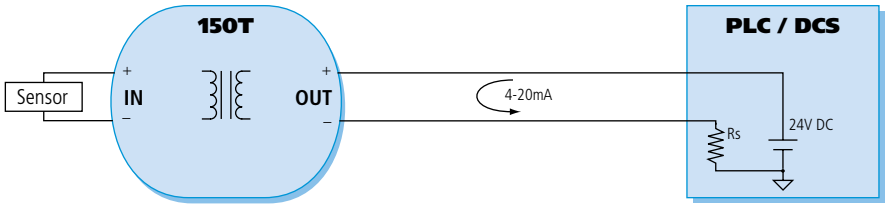
Output Range

4 to 20mA DC

Power requirement

12 to 50V DC, loop-powered

150T Loop-Powered Transmitter



Description

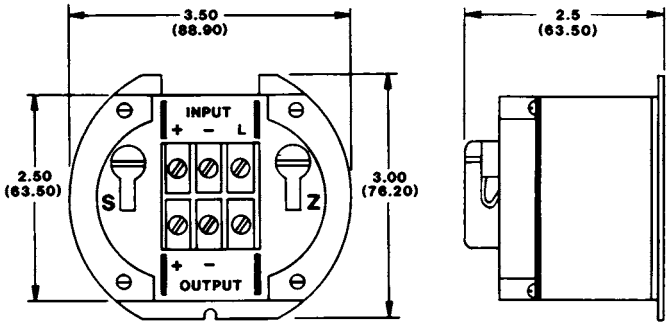
These loop-powered transmitters convert sensor inputs to proportional process current output signals. The output and power share the same pair of wires.

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).

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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 ±0.05% of maximum output span.

-VAC: Less than ±0.5% of maximum output span. Can be reduced to less than 0.1% by adding a 1µf 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 ±0.005% of output span for 100 ohm change.

Accuracy
±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: ±0.001% of output span per volt DC. 60/120Hz ripple: ±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 ±0.01% of output span per °F (±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 ±0.5% of output span with RFI field strengths up to10V/meter at frequencies of 27, 151 and 467 MHz.

EMI Resistance
Less than ±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-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 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 183.

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).

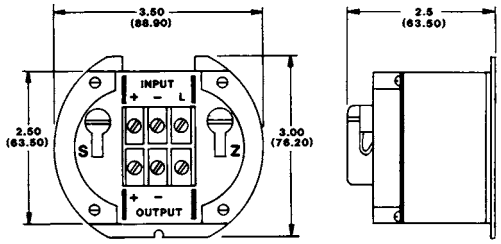
150T-SM-3.5
150T-SM-24
Mounting rail, 3.5" (holds one 150T) or 24" long.

150T-MSM
Metal surface mounting bracket.

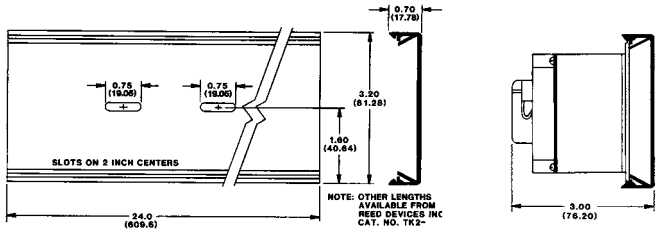
150T-DRA
DIN rail adapter.

100T, 150T, 150I Dimensions

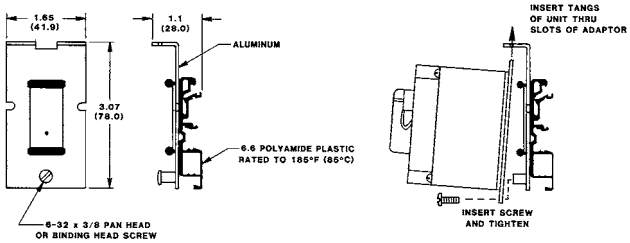
100T/150T/150I Housing



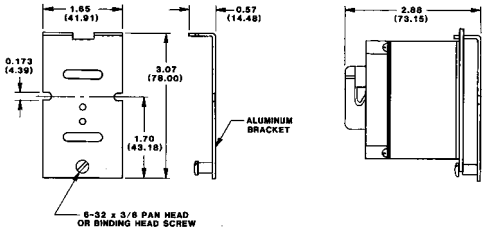
150T-SM-24 Mounting Rail



150T-DRA Adapter



150T-MSM Bracket



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