



Isolated Transmitters



DC Voltage and DC Current Input

These models convert sensor inputs to proportional process current or voltage output signals.

Models

250T: Loop-powered transmitter series

350T: DC-powered transmitter series

450T: AC-powered transmitter series

Input Ranges

- DC voltage, $\pm 100\text{mV}$ to $\pm 100.0\text{V DC}$
- DC current, 0 to 20mA (10 ohm input load)

Output Ranges

- DC current: 4 to 20mA
- DC voltage: 0 to 5V or 0 to 10V

Power Requirements

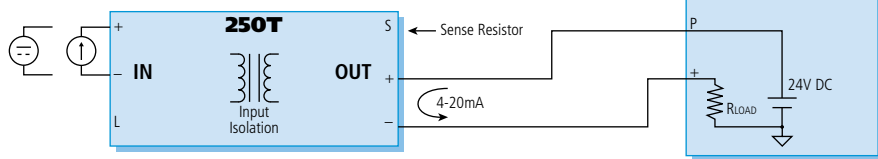
- 250T: 12 to 50V DC @ 20mA (loop-powered)
- 350T: DC voltage source (see table below)

| Output range | Power |
|--------------|----------------------|
| 4 to 20mA | 10 to 36V DC @ 30mA |
| 0 to 5V | 10 to 36V DC @ 9mA |
| 0 to 10V | 12.5 to 36V DC @ 9mA |

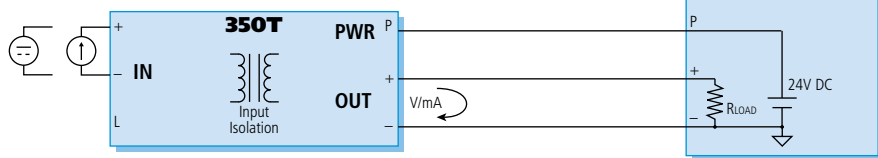
- 450T: 115V or 230V AC, $\pm 10\%$, 50 to 60Hz

| Output range | Power |
|-------------------|------------------|
| 4 to 20mA | 115V AC @ 0.050A |
| 4 to 20mA | 230V AC @ 0.025A |
| 0 to 5V, 0 to 10V | 115V AC @ 0.020A |
| 0 to 5V, 0 to 10V | 230V AC @ 0.010A |

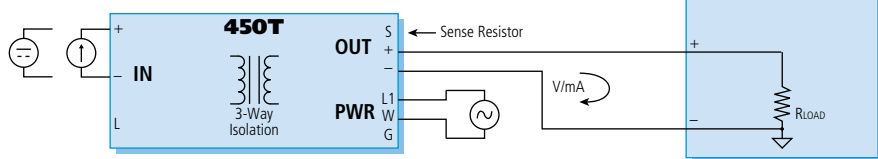
250T Loop-Powered (2-wire) Transmitter



350T DC-Powered (3-wire) Transmitter



450T AC-Powered (4-wire) Transmitter



Special Features

- Excellent accuracy and stability ensure reliable measurements in harsh industrial environments.
- RFI and EMI resistance minimize the effects of environmental noise.
- 90% span adjustment enables precise application calibration.
- Compact, 1-inch wide housing uses less space for easier installation in control panels.
- Low power consumption. 350T units operate on currents as low as 9mA to help prevent expensive upgrades to larger power supplies.
- 1500V AC peak isolation (250V AC or 354V DC continuous) prevents ground loops.

250T models:

Input isolated from output/power.

350T models:

Input isolated from output and power. Output and power share a common.

450T models:

3-way isolation. Input, output, and power circuits are isolated from each other.

Performance

Ambient Temperature Range

Operating: -13 to 185°F (-25 to 85°C).
Storage: -40 to 185°F (-40 to 85°C).

Accuracy

$\pm 0.1\%$ of calibrated span or ± 0.25 mV, whichever is greater. Includes repeatability, hysteresis, terminal point linearity, and adjustment resolution.

Ambient Temperature Effect

Less than $\pm 0.01\%$ of output span per $^{\circ}\text{F}$ ($\pm 0.018\%$ per $^{\circ}\text{C}$). (Specification includes the combined effects of zero and span over temperature).

Noise Resistance

RFI: Less than $\pm 0.5\%$ of output span effect.
EMI: Less than $\pm 0.25\%$ of output span effect.

Noise Rejection

Common Mode: 120dB at 60Hz, 100 ohm unbalance.
Normal Mode: 30dB at 60Hz, 100 ohm source.

Response Time

Output reaches 98% of output span in 300mS.

Bandwidth

-3dB at 3 Hz, typical.

Output Compliance

250T: $R_{LOAD}(\text{max.}) = (V_{SUPPLY} - 12\text{V}) / 20\text{mA}$.
350T: $R_{LOAD}(\text{max.}) = (V_{SUPPLY} - 2.5\text{V}) / 20\text{mA}$.
450T: $R_{LOAD} = 600$ ohms.



Ordering Information

Select one option from each column. Example: 450T-V4-V0-2-DIN-NCR-C
To order factory calibration, append "-C" to end of model number. Specify ranges on order.

| Base | Input | | Mounting | | Approval |
|------|-------|-----|----------|------|----------|
| 250T | -C1 | -V4 | -DIN | -N4 | -NCR |
| | -V1 | -V5 | -ST | -N12 | -DT1 |
| | -V2 | -V6 | -SM | -XP | |
| | -V3 | | | | |

Note:
All 250Ts have 4 to 20mA output and are loop-powered.

| Base | Input | | Output | Mounting | Approval |
|------|-------|-----|--------|----------|----------|
| 350T | -C1 | -V4 | -Y | -DIN | -NCR |
| | -V1 | -V5 | -V0 | | |
| | -V2 | -V6 | -V5 | | |
| | -V3 | | | | |

Note:
All 350Ts accept 10 to 36V DC power supply.

| Base | Input | | Output | Power | Mounting | Approval |
|------|-------|-----|--------|-------|----------|----------|
| 450T | -C1 | -V4 | -Y | -1 | -DIN | -NCR |
| | -V1 | -V5 | -V0 | -2 | | |
| | -V2 | -V6 | -V5 | | | |
| | -V3 | | | | | |

Input Options

- C1: Current range 0 to 20mA
Span adjust: 4.0 to 20.0mA DC
Zero adjust: 0.0 to 16.0mA DC
Input impedance: 10 ohms.
- V1: Voltage range 0 to 1V DC
Span adjust: 0.1 to 1.0V DC
Zero adjust: 0 to 25% of input span
Input impedance: 40M ohms at 0.4V span.
- V2: Voltage range 0 to 10V DC
Span adjust: 1.0 to 10.0V DC
Zero adjust: 0 to 25% of input span
Input impedance: 100K ohms.
- V3: Voltage range 0 to 100V DC
Span adjust: 10.0 to 100.0V DC
Zero adjust: 0 to 25% of input span
Input impedance: 500K ohms.
- V4: Voltage range $\pm 1V$ DC
Span adjust: ± 0.1 to $\pm 1.0V$ DC
Zero adjust: symmetrical around 0V
Input impedance: 80M ohms at 0.8V span.
- V5: Voltage range $\pm 10V$ DC
Span adjust: ± 1.0 to $\pm 10.0V$ DC
Zero adjust: symmetrical around 0V
Input impedance: 100K ohms.
- V6: Voltage range $\pm 100V$ DC
Span adjust: ± 10.0 to $\pm 100.0V$ DC
Zero adjust: symmetrical around 0V
Input impedance: 500K ohms.

Output Options (350T, 450T only)

- Y: 4 to 20mA DC.
- V0: 0 to 10V DC into 10K ohms or greater
- V5: 0 to 5V DC into 5K ohms or greater

Power Options (450T only)

- 1: 115V AC power
- 2: 230V AC power

Mounting Options

Mountings

- DIN: DIN rail G or T mount
- ST: SNAPTRACK mount [250T only]
- SM: Surface-mount [250T only]

External housings

- N4: NEMA 4, water-tight [250T only], holds two
- N12: NEMA 12, oil-tight [250T only], holds two
- XP: Explosion-proof NEMA 4 [250T only], holds one

Approval Options

- NCR: No certification/approval required.

- DT1[†]: CSA approval, Div. 2 hazardous locations:
Class I; Div. 2; Groups A, B, C, D [250T only].

Ordering Notes

- * Unit requires factory calibration. Append "-C" to end of model number. Specify ranges on order.
- † Units are shipped separately from any optional enclosures (i.e. units are not installed in any external housing).

Accessories

Power supplies

See Power Supplies on Page 199.

DIN RAIL 3.0

DIN RAIL 16.7

DIN rail strip, Type T, 3 inches (75mm) or 16.7 inches (425mm)

20RM-16-DIN

19" rack-mount kit with DIN rail. Holds sixteen 250T/350Ts or ten 450T transmitters.

350T-N4-WM

NEMA 4 water-tight enclosure, wall-mount. Holds two 350Ts or one 450T transmitter.

350T-N12-WM

NEMA 12 oil-tight enclosure, wall-mount. Holds two 350Ts or one 450T transmitter.

Retired models

- 250T-C1-SM-DT1
- 250T-C1-SM-NCR-C

Click the notes icon for the full list

