The Modus Series T family of differential pressure transmitters measure low pressures and feature low power consumption and a variety of analog signal outputs. A wide selection of standard pressure ranges and electrical ratings is available.

These transmitters feature: no moving parts to wear out, reliable long term stability, and are virtually position insensitive.

The Series T Transmitters are an excellent choice for many HVAC, process and automation monitoring requirements. These transmitters monitor: filter differential pressures, fan static pressures, clean room pressures, variable air volume systems and velocity pressures. They have been used for bubbler level systems, leak detection and in medical and analytical instruments.

The transmitters are housed in a flame retardant, glass-reinforced polyphenylene oxide (NORYL™) case. Electrical connections are made by means of a 3/8 in terminal strip with #6 screws.

The Series T includes three models: Model T10, Model T20, and Model T30. These three models incorporate a variety of power and signal options.

The span or zero adjustment is performed with a 20-turn potentiometer for fine resolution.

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<table>
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<tbody>
<tr>
<td>T10</td>
<td>Three-wire</td>
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<tr>
<td></td>
<td>DC Voltage In</td>
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<td>DC Voltage Out</td>
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<tbody>
<tr>
<td>T20</td>
<td>Four-wire</td>
</tr>
<tr>
<td></td>
<td>24, 120, or 240 VAC In</td>
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<tr>
<td></td>
<td>DC Voltage Out</td>
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<tbody>
<tr>
<td>T30</td>
<td>Two-wire</td>
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<tr>
<td></td>
<td>DC Voltage In</td>
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<tr>
<td></td>
<td>4 to 20 mA Out</td>
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</tbody>
</table>

The piezoresistive sensor is a solid state device designed in a Wheatstone bridge configuration. When pressure is applied to the device, the resistance of the bridge changes by a small amount. This resistance change is converted to a voltage and amplified.
Series T Specifications

General

• Measures differential, gage pressure, or vacuum
• Suitable for air or inert gases
• Maximum safe momentary overpressure: see reference table A

Performance

Accuracy
± 1% of span (including non-linearity and hysteresis)

Calibration
(Traceable to NIST)

Environmental

Operating Temperature Range
32°F to 115°F (0°C to 45°C)

Storage Temperature
-20°F to 160°F (-30°C to 70°C)

Effect of Temperature
• on zero: ±0.05%/°C
• on span: ±0.02%/°C

Operating Humidity Range
10% to 90% RH
non-condensing

Shock Resistance
10 G (11 ms)

Vibration Resistance
5 G to 50 Hz

Electrical Connections

Connections
External 3/8 in terminal strip with #6 screws

Physical

Pressure Port Connections
3/16 in diameter suitable for:
• 1/8 in ID Tygon™ or polyurethane tubing
0.11 in to 0.15 in (3 mm to 4 mm)
• 1/4 in OD polyethylene tubing (6 mm)
Integral filters at both ports

Dimensions (W x L x H)
3.00 in x 5.15 in x 1.40 in
(76 mm x 131 mm x 36 mm)

Material
Flame retardant, glass-reinforced polyphenylene oxide (NORYL) case

Weight
0.42 lbs (190 g) maximum
Model T10 Specifications

DC Power Input/Voltage Output
Diagram shows area of detail.
Please see inset diagrams for wiring.

Electrical

Supply Voltage
11 to 32 VDC (14.5 to 32 VDC for 10 Volts output)
Protected against reversal of polarity

Supply Current
10 mA

Output
• 0 to 5 Volts, linear
• 0 to 10 Volts, linear
• Sink or source 3.5 mA
• Protected against short circuit

Ordering Information

Order Number
(See Table below and Reference Table A)
T10 - PPP - V - O
Example: T10 - 04E - 5 - A
PPP=Pressure Range  V=Voltage Output  O=Offset
See Reference Table A  5=0 to 5 Volts  0=No offset
X=0 to 10 Volts  A=1/4 offset  B=1/2 offset

If the measured differential pressure is expected to go from positive to negative, a transmitter with offset (elevated zero) should be ordered.

Three options are available:

“0”  No offset. At zero differential pressure, the output signal is:
0 V (0 to 5 V range)
0 V (0 to 10 V range)
Pressure excursion: 0% to 100% of Range, see Table A.

“A”  1/4 span offset. At zero differential pressure, the output signal is:
1.25 V (0 to 5 V range)
2.5 V (0 to 10 V range)
Pressure excursion: -33% to 100% of Range, see Table A.

“B”  1/2 span offset. At zero differential pressure, the output signal is:
2.5 V (0 to 5 V range)
5 V (0 to 10 V range)
Pressure excursion: -100% to 100% of Range, see Table A.

To order: Determine the positive pressure range; from Table A find the corresponding pressure code. Then add the required offset (none, A, or B).

For example, T30 05E A is a transmitter with a maximum range of 1 in (25.40 mm) of H₂O at 20 mA and a minimum range of -0.33 in of H₂O at 4 mA.
Model T20 Specifications

AC Power Input/Voltage Output

**Electrical**
Transformer isolation between power supply and output is 2500 Vrms

**Output Voltage**
- 0 to 5 Volts
- 0 to 10 Volts
- Sink or source 3.5 mA
- Protected against short circuit

**Ordering Information**

**Order Number**
(See Table below and Reference Table A)

T20 - PPP - S - V - O
Example: T20 - 07P - C - X - B

PPP=Pressure Range  S=Supply Voltage  V=Voltage Output  O=Offset
(See Note)

See Table Reference A
C=24 VAC  S=0 to 5 Volts  0=No offset
D=120 VAC  X=0 to 10 Volt  A=1/4 offset
E=40 VAC
B=1/2 offset

If the measured differential pressure is expected to go from positive to negative, a transmitter with offset (elevated zero) should be ordered.

Three options are available:

"0"  No offset. At zero differential pressure, the output signal is:
    0 V (0 to 5 V range)
    0 V (0 to 10 V range)
    Pressure excursion: 0% to 100% of Range, see Table A.

"A"  1/4 span offset. At zero differential pressure the output signal is:
    1.25 V (0 to 5 V range)
    2.5 V (0 to 10 V range)
    Pressure excursion: -33% to 100% of Range, see Table A.

"B"  1/2 span offset. At zero differential pressure, the output signal is:
    2.5 V (0 to 5 V range)
    5 V (0 to 10 V range)
    Pressure excursion: -100% to 100% of Range see Table A.

To order: Determine the positive pressure range; from Table A, find the corresponding pressure code. Then add the required offset (none, A, or B).

For example, T30 05E A is a transmitter with a maximum range of 1 in (25.40 mm) of H₂O at 20 mA and a minimum range of -0.33 in of H₂O at 4 mA.
Model T30 Specifications

Two Wire / 4 to 20 mA Output

Electrical
- Supply Voltage: 11 to 32 VDC (See diagram right for maximum loop resistance)
- Protected against reversal of polarity
- Output limited to approx. 3.85 mA at low end of span and approx. 25 mA at upper end of span

Ordering Information

Order Number (See Table below and Reference Table A)

T30 - PPP - O

Example: T30 - 06E - B

PPP= pressure Range  
O=Offset  
(See Note)  
See Reference Table A  
0=No offset  
A=1/4 offset  
B=1/2 offset

If the measured differential pressure is expected to go from positive to negative, a transmitter with offset (elevated zero) should be ordered.

Three options are available:

“O”  No offset. At zero differential pressure, the output signal is:
4 mA (4 to 20 mA range)
Pressure excursion: 0% to 100% of Range, see Table A.

“A”  1/4 span offset. At zero differential pressure, the output signal is:
8 mA (4 to 20 mA range)
Pressure excursion: -33% to 100% of Range, see Table A.

“B”  1/2 span offset. At zero differential pressure, the output signal is:
12 mA (4 to 20 mA range)
Pressure excursion: -100% to 100% of Range see Table A.

To order: Determine the positive pressure range; from Table A, find the corresponding pressure code. Then add the required offset (none, A, or B).

For example, T30 05E A is a transmitter with a maximum range of 1 in (25.40 mm) of H₂O at 20 mA and a minimum range of -0.33 in of H₂O at 4 mA.
### Table A - Standard Pressure Ranges

<table>
<thead>
<tr>
<th>Pressure Code</th>
<th>Pressure Range English</th>
<th>Maximum Safe Momentary Overpressure</th>
<th>Pressure Code</th>
<th>Pressure Range Pascals</th>
<th>Maximum Safe Momentary Overpressure</th>
<th>Pressure Code</th>
<th>Pressure Safe Momentary Pascals</th>
<th>Maximum Overpressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>03E*</td>
<td>0 to 0.300 in H₂O</td>
<td>03P 0 to 75.0 Pa</td>
<td>03M</td>
<td>0 to 7.50 mm H₂O</td>
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<tr>
<td>04E</td>
<td>0 to 0.500 in H₂O</td>
<td>04P 0 to 100.0 Pa</td>
<td>04M</td>
<td>0 to 10.00 mm H₂O</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05E</td>
<td>0 to 1.00 in H₂O</td>
<td>05P 0 to 250 Pa</td>
<td>05M</td>
<td>0 to 25.0 mm H₂O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06E</td>
<td>0 to 2.00 in H₂O</td>
<td>06P 0 to 500 Pa</td>
<td>06M</td>
<td>0 to 50.0 mm H₂O</td>
<td>500 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07E</td>
<td>0 to 3.00 in H₂O</td>
<td>07P 0 to 750 Pa</td>
<td>07M</td>
<td>0 to 75.0 mm H₂O</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08E</td>
<td>0 to 5.00 in H₂O</td>
<td>08P 0 to 1,000 Pa</td>
<td>08M</td>
<td>0 to 100 mm H₂O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09E</td>
<td>0 to 10.0 in H₂O</td>
<td>09P 0 to 2,500 Pa</td>
<td>09M</td>
<td>0 to 250 mm H₂O</td>
<td>3.5 m</td>
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<td></td>
</tr>
</tbody>
</table>

*T30 Only*