The Series TDT is an excellent alternative to turbine and paddlewheel insertion flow meters, with the ability to deliver high accuracy over a wide range of pipe sizes. This unit has the same insertion mounting into a 1-1/2” NPT but no moving parts to wear, break, or clog. This transmitter has available extensions that can be used for pipes sized up to 75" in diameter. The TDT Dispersion Transmitter measures even very low flow rates due to the applied calorimetric principle, and can be used for the metering of all fluid media such as: water, oil, aggressive media, paste, glue, sludge, grease, etc. Optional titanium allows this transmitter to be used with an even wider range of corrosive media, and the optional output allows the user to measure both flow and temperature. When deciding on the correct length, use the 1/7th law (the TDT’s probe length needs to measure 1/7th of the pipe diameter).

**PRINCIPLES OF OPERATION**

The sensor head of the Thermal Dispersion Transmitter contains two PT-resistors. One of them is measuring the temperature of the media, while the other is heated by an attached heating resistor. The temperature difference between the two PT-resistors is predetermined and a control circuit keeps this temperature difference constant. The flow of the media cools the heated PT-resistor proportional to the speed of the flow, this results in a linear output signal proportional to the flow speed.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>TDT-WS-301</td>
<td>Water base, 316 SS, 0 to 6.66 ft/s (0 to 2 m/s)</td>
</tr>
<tr>
<td>TDT-WS-401</td>
<td>Water base, 316 SS, 0 to 9.84 ft/s (0 to 3 m/s)</td>
</tr>
</tbody>
</table>

**FEATURES**

- No moving parts
- Low pressure drop
- Base model works for pipe sizes of 1 to 24" inner diameter, with adjustable insertion mounting
- Adjustable zero and span
- Weatherproof construction for wide application usage
- 316 SS for excellent chemical compatibility
- Optional titanium for high corrosive media
- Optional secondary output for temperature

**SPECIFICATIONS**

- **Service:** Water, oil, compatible liquids, paste, glue, sludge and grease.
- **Wetted Materials:** 316 SS, optional titanium.
- **Flow Range:**
  - Min: 0 to 0.66 ft/s (0 to 20 cm/s); Max: See model chart.
- **Temperature Range:**
  - For optional output only: 32 to 212°F (0 to 100°C).
- **Accuracy:** <3% of full range.
- **Repeatability:** <1%.
- **Response Time:** 10 seconds.
- **Temperature Limits:**
  - Process: 32 to 176°F (0 to 80°C); Ambient: -4 to 160°F (-20 to 70°C).
- **Pressure Limits:** 261 psi (18 bar).
- **Process Connections:** 1-1/2˝ male NPT.
- **Output Signal:** 4 to 20 mA for flow, optional 4 to 20 mA for temperature.
- **Power Requirements:** 24 VDC +10 to 15%.
- **Resistive Load:** 0 to 600 Ω.
- **Current Consumption:** Approx. 100 to 200 mA (max. flow).
- **Electrical Connection:** 6.5 ft (2 m) moulded oilflex cable with three 21 AWG (0.5 sq mm) wires.
- **Enclosure Rating:** NEMA 4X (IP65).
- **Shipping Weight:** 2 lb (907 g).