

Loop-Powered Dewpoint Transmitter

Model LPDT



Xentaur

Fully Functional Instrument

Xentaur's model LPDT is the world's smallest loop powered (2-wire) dewpoint transmitter.

The LPDT is also a fully functional instrument, featuring the well proven easy to use user interface of all other Xentaur dewpoint instruments, by now familiar to many. Set-up functions, result display of dewpoint, temperature and optionally pressure are accommodated by a miniature custom LCD display and three programming buttons.

The LPDT is also the world's only loop-powered dewpoint transmitter featuring both, analog as well as digital outputs.

Analog Output Loop

4 - 20 mA is drawn by the instrument from the power supply, with the current being linear to the selected engineering units. The range of the output is programmable. The output resolution is 0.1°C(dp)

Digital Output Loop

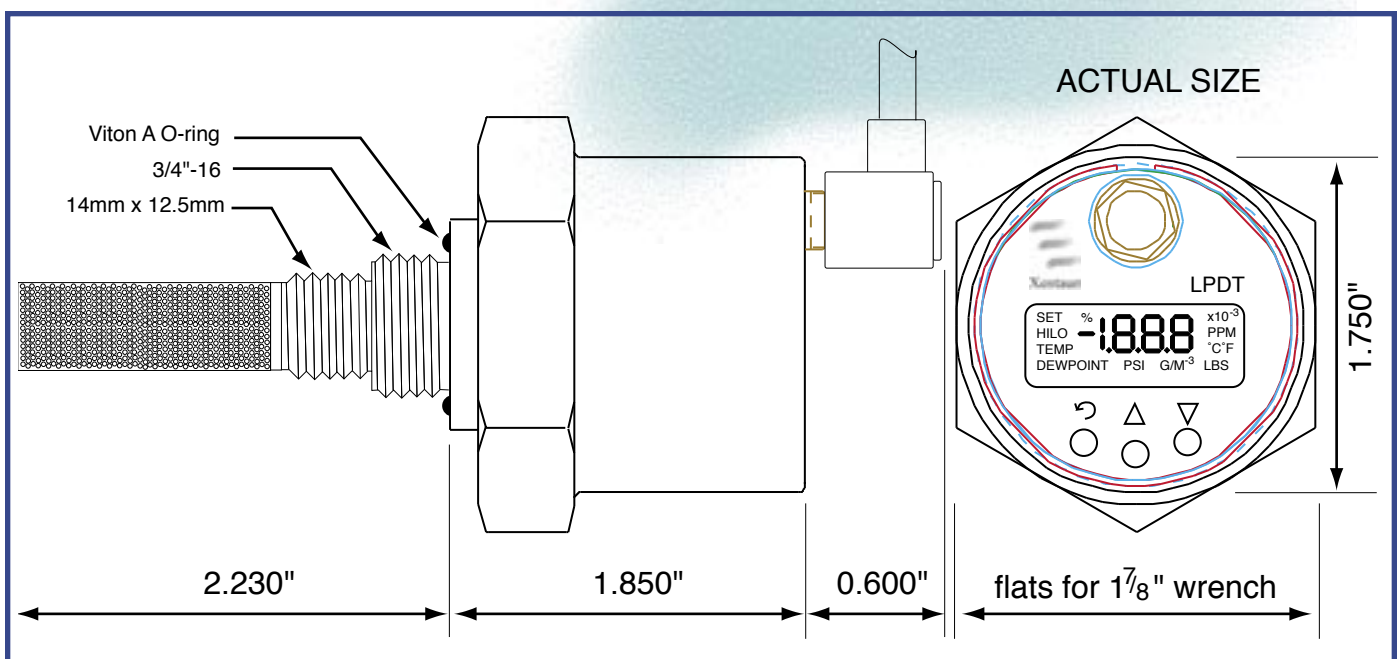
The instrument can supply digital output by modulating the 4 - 20 mA loop line. The timing and format of the data conforms to RS-232, and the output can be interfaced to a PC or other RS-232 devices with an optional adapter.

In the digital mode, the LPDT can be remotely operated and dewpoint as well as temperature (and pressure if installed) can be read.

In the digital mode, multiple units can operate on the same loop cable as a multi-channel instrument.

HTF High Capacitance Aluminum Oxide Sensor

The LPDT uses a Xentaur HTF high capacitance aluminum oxide sensor and therefore provides a degree of accuracy, speed of response and stability unavailable from instruments using conventional sensors.



Specifications:

Dewpoint Sensor Element

- Type Hyper Thin Film high capacitance Al₂O₃
- Dewpoint range:
 - XTR-100: -148°F to +68°F (-100°C to +20°C)
 - XTR-65 -85°F to +68°F (-65°C to +20°C)
- Capacitance: 15nF to 200nF
- Accuracy: ±5.5°F (±3°C)
- Repeatability: ±0.9°F(±0.5°C)
- Temperature Range: -14°F-158°F (-10°C to +70°C)
- Sample flow range:
 - (linear vel. @ 1atm): Static to 100 m/s
 - Storage temperature: -40°F to +176°F (-40°C to +80°C)
- Calibration method: Autocal, sensor saturates at dewpoint above +68°F (+20°C). NIST/NPL traceable factory multipoint calibration available optionally

Temperature and Pressure Measurement

The instrument measures the sample temperature with a precision integrated circuit sensor. Units may be optionally fitted with a pressure sensor.

Electronics

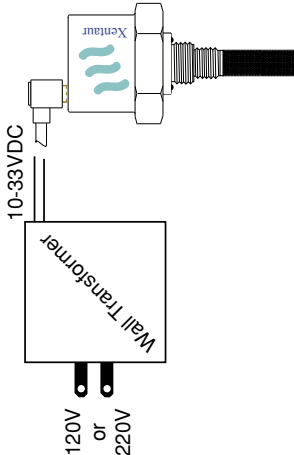
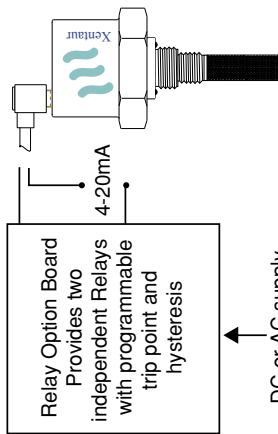
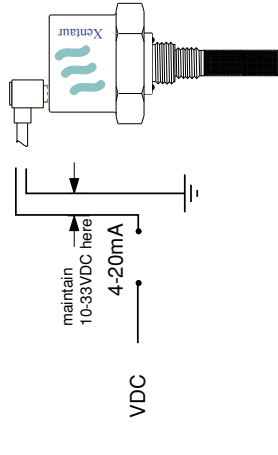
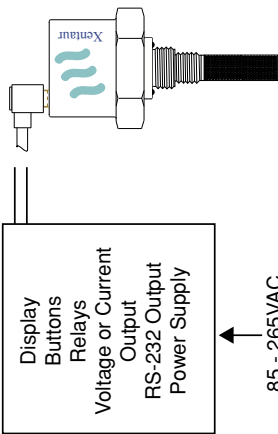
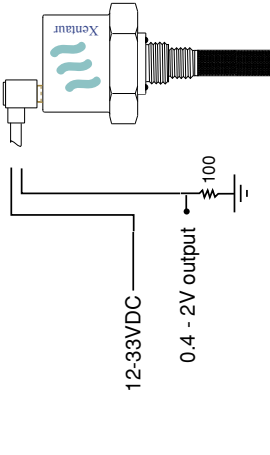
- Input resolution: 0.1°C(dp)
- Indicators: 3.5 digit LCD with custom legends
- Engineering units: °C, °F, PPM, LBS H₂O/mm scf, gm H₂O/M³
- Controls 3 push buttons, all settings stored in EPROM
- Outputs: Analog: 4 - 20mA
- Alarms: Digital: RS-232 (bi-directional)
- Isolation The 4 - 20mA or the digital output may be used by an external device to operate relays
- Isolation Sensor and case are isolated from the current loop and shunted with 33V transorbs.

Mechanical

- Enclosure Stainless Steel
- Weatherproof cover optionally available
- Pressure operating range: Standard: 500 PSI (34 bar)
- Optional: 5,000 PSI (340 bar)
- Electrical connections: 2.1 mm power jack with retainer
- Mechanical connections: 14 mm x 1.25 mm and 3/4" x 16 threads
- Cable; Two conductor cable
- Power requirements: 10 to 33 VDC, the instrument draws 4-20mA depending on measured dewpoint.

Warranty:1 year

Methods of Using and Interfacing the LPDT:

<p>Operation with Wall Transformer Dewpoint viewed on Instrument Display</p> 	<p>Operation with Relay Option Board Dewpoint viewed on Instrument Display and available as 4-20mA output</p> 
<p>Operation with DC Power Supply Dewpoint viewed on Instrument Display and available as 4-20mA output</p> 	<p>Operation with Remote Option Board Dewpoint viewed on Instrument Display and available on remote</p> 
<p>Operation with DC Power Supply Dewpoint viewed on Instrument Display and available as Voltage output</p> 	<p>Operation with Multichannel Option Board Dewpoint viewed on each Instrument Display and available on remote interface</p> 