

Portable Dew Point Hygrometer



The Automatic Dewpoint Hygrometer is designed to be used for measurement of moisture in a process gas or compressed air, which is a battery operated portable unit designed for spot check or continuous use, and which will display dewpoint temperature in °C compatible with 4-20 mA LCD Digital Display.

It also consists of ultra high capacitance sensing element, which is long lasting and offers excellent sensitivity, repeatability and response speed. Each unit is calibrated, traceable Humidity Standards, and is supplied with a Certificate of Calibration guaranteeing accuracy to $\pm 2^{\circ}\text{C}$ dew point.

The transmitter incorporates microprocessor circuitry of the AMT Sensor allows high resolution with advanced self-diagnostics for fault conditions. It also enables periodic re-calibration of the moisture sensor, storing calibration data within the fully self-contained unit, powered by a 12V DC charged battery. In normal use these charge will last for 5-6 months.

The Dewpoint Hygrometer can withstand up to 8 Barg maximum pressures designed to cope with extreme environmental conditions. However it is limited to operate at 1 Barg pressure.

The instrument may be used to give a continuous reading - as long as sample gas is flowing through the test chamber (head) of the instrument, a reading will be given of the gas moisture content. Alternatively results are obtained in a few minutes when making spot checks.

Ranges

Model DP-5000 HDP	-65 to +20°C Dewpoint
Model DP-5000 SDP	-100 to +20°C Dewpoint
Model DP-5000 LDP	-120 to +20°C Dewpoint

Enclosure

ABS, plastic with Aluminium mounting plate size about 202mm wide x 225mm deep x 276mm high, typical weight 5kgs. Four feet fitted for bench use. The rugged ABS plastic construction offers a good weather protection. The instrument is provided as standard with a carrying case, battery charger, 1 meter length of flexible PTFE (Teflon) sample pipe, and spar filter element 1 micron size.

AMT Sensor Specification

Output Signal	: 4 to 20mA Linear
Operating Voltage	: 7V - 28V DC Reverse polarity protected
Maximum Series Resistance	: = {40 x (Supply Voltage - 7)} Ω
Sensing element	: Ultra High Capacitance - Aluminium Oxide Type
Autocal	: Field calibration / Span check facility.
Factory calibration	: Supplied with Certificate of Calibration traceable to NPL / NIST
Accuracy	: $\pm 2^{\circ}\text{C}$ dewpoint (NPL / NIST traceable for range -90°C to 20°C)
Temperature compensation	: Temperature compensated for operating range.
Resolution	: 5 μA
Repeatability	: Better than $\pm 0.3^{\circ}\text{C}$ dewpoint
Operating temperature	: -20°C to +60°C
Storage Temperature	: -20°C to +70°C
Operating Pressure	: From 1kPa (0.01 barA) to Maximum 35,000kPa (350 barA)
Operating Humidity (External)	: Maximum - 95% RH Non-condensing
Sample Flow Rate	: Independent but ideally 2 to 5 litres per minute. Max: 25 litres/min.
Cable Terminations	: IP66 (NEMA4X) rated, size C, DIN EN 175301 connector at the transmitter and other end terminated with bootlace ferrules.
Cable	: Supplied with 2m standard cable. Nominal diameter 3.4mm, 92 Ω /km.
Warm Up Time	: 10 seconds
Fault Conditions	: Sensor Open Circuit
Sensor Short Circuit	: Output drives to 20.50mA : Output drives to 20.75mA
Isolation	: Sensing Element connected to the 4-20mA loop but isolated from body.
Transmitter Enclosure	: 316 Stainless steel body with size C, DIN EN 175301 connector.
Sensor Protection	: 316 Sintered stainless steel filter - 50 micron
Probe Material (Wetted Parts)	: 316 Stainless Steel
Weatherproof Classification	: IP66 / NEMA4X when Connector mated to Transmitter.
Mechanical Warranty	: 24 months in case of faulty workmanship and defective parts.
Calibration Warranty	: 12 months subject to usage.
Weight	: 175grams (includes connector)