

# SHAW SUPERDEW 3 Dewpoint Meter



## SUPERDEW 3 - Dewpoint Meter

### Features:

- User selectable indication in °C, °F, ppm(v) or lbs/MMSCF
- Fully interchangeable Shaw sensors & ranges
- Overall range -100 to 20 °C (-148 to 68 °F) dewpoint temperature
- Accuracy  $\pm 2^{\circ}\text{C}$  ( $\pm 3.6^{\circ}\text{F}$ ) dewpoint temperature
- Isolated scalable output 0 / 4 – 20 mA – active (source)
- Two alarms – wet and dry; hardwired relays
- “AUTOCAL” calibration feature
- Stainless Steel sensor holder included and with ¼” compression fittings
- Universal supply voltage 90 – 250 Vac (24Vdc optional)
- Calibration certificate traceable to international standards

The SUPERDEW 3 is a single channel on-line hygrometer designed to measure dewpoint in process gases and compressed air. The panel mounted enclosure provides panel protection to IP54.

The combination of the highly accurate and repeatable SHAW sensor and advanced digital electronics, make this the instrument of choice for a wide range of applications where precise measurement, control and monitoring is critical.

Each sensor is calibrated to provide overall system accuracy of better than  $\pm 2^{\circ}\text{C}$  ( $\pm 3.6^{\circ}\text{F}$ ) dewpoint and supplied with a calibration certificate, traceable to international standards.

The SUPERDEW 3 can be user configured to display in °C, °F, ppm(v) or lbs/MMSCF.

The instrument offers two fully programmable alarm relays, which can be independently set across the full operating range of the sensor. The isolated 0 / 4 - 20mA analogue output is fully scalable over the range of the sensor.

The SUPERDEW 3 Dewpoint Meter is fully configured according to the customer's specifications and consists of the SUPERDEW indicator, SHAW sensor, Sensor Holder, 2 meter of sensor cable and circular Shaw Pressure Dewpoint Calculator.

## Specifications

### DEWPOINT SENSOR

**SENSING ELEMENT:** Shaw Ultra High Capacitance Aluminum Oxide Sensor

**RANGES:**

**Purple (P):** -100 to 0 °C (-148 to +32 °F); 0 – 6000 ppm(v)  
**Silver (S):** -100 to -20 °C (-148 to -4 °F); 0 – 1000 ppm(v)  
**Gray (G):** -80 to 0 °C (-112 to +32 °F); 0 – 6000 ppm(v)  
**Red: (R):** -80 to -20 °C (-112 to -4 °F); 0 – 1000 ppm(v)  
**Blue (B):** -80 to +20 °C (-112 to +68 °F); 0 – 23,000 ppm(v)

**ACCURACY:** ± 2 °C (±3.6 °F); NPL traceable between -90 to +20 °C (-130 to +68 °F)

**RESOLUTION:** 0.1 °C, 0.1 °F or 0.1 ppm(v)

**REPEATABILITY:** Better than ±0.3 °C (±0.54 °F)

**AUTOCAL:** Field calibration / span check facility. Activated and operated via potentiometer on front of the panel.

**FACTORY CALIBRATION:** Certificate of calibration traceable to National Physics Laboratory (NPL) and international standards.

**OPERATING TEMP.:** -20 to 60 °C (-4 to 140 °F)

**STORAGE TEMP.:** -20 to 70 °C (-4 to 158 °F)

**RESPONSE TIMES:**

**Wet to Dry:** -20 to -60 °C (-4 to -76 °F) < 120 sec.

**Dry to Wet:** -120 to -20 °C (-184 to -4 °F) < 20 sec.

**SAMPLE FLOW RATE:** Flow independent but ideally 2 to 5 lpm (0.5 to 1.5 gpm). Max: 25 lpm (6.5 gpm)

**CALIBRATION WARRANTY:** 12 months after shipment

### ELECTRICAL

**ELECTROMAGNETIC COMPATIBILITY (EMC):**

**Immunity:** Complies with EN 61326:2006

**Emissions:** Complies with EN 61326: 2006

**WARM UP TIME:** 5 second

**FAULT CONDITIONS:**

**Short Circuit/Over Range:** Display reads "Short" and output drives to 24.0 mA

**OUTPUT SIGNAL:** Isolated 0 / 4 – 20 mA linear

**OPERATING VOLTAGE:** 90 to 250 Vac, 50/60 HZ or 24 Vdc

**DISPLAY:** 5 character LED

**ALARMS:** Two single pole changeover contacts (NO/C/NC), rated at 10A at 240VAC. Alarm trip at set point with 0.1°C (or equivalent) hysteresis to eliminate relay chatter.

**CABLE:** Supplied with 2m (6 ft.) low loss co-axial cable

### MECHANICAL

**OPERATING PRESSURE:** From full vacuum to maximum 35,000 kPa (5075 psia)

**EXTERNAL HUMIDITY:** Maximum 95 %RH Non-condensing

**ENCLOSURE:** DIN, w x h x d = 144 x 72 x 116mm; ABS

**MOUNTING:** Panel, cutout -138.0 x 68.0mm (DIN 43700)

**SENSOR PROTECTION:** 316 Sintered st.st. filter - 50 micron

**PROBE MATERIAL (WETTED PARTS):** 316 Stainless Steel

**PROTECTION CLASS:** Front Panel Only - IP65 / NEMA4X

**MECHANICAL WARRANTY:** 24 months in case of faulty workmanship and defective parts.

**WEIGHT:** 175grams (0.385 lbs.) includes connector

### ORDERING INFORMATION

Dewpoint Meter Model **SUPERDEW 3 –(R)-(U)-(V)**

**R – Range:**

**(P) Purple:** -100 to 0 °C (-148 to +32 °F); 0 – 6000 ppm(v)  
**(S) Silver:** -100 to -20 °C (-148 to -4 °F); 0 – 1000 ppm(v)  
**(G) Gray:** -80 to 0 °C (-112 to +32 °F); 0 – 6000 ppm(v)  
**(R) Red:** -80 to -20 °C (-112 to -4 °F); 0 – 1000 ppm(v)  
**(B) Blue:** -80 to +20 °C (-112 to +68 °F); 0 – 23,000 ppm(v)

**U – Engineering Unit:**

**(C)** - °C dewpoint temperature

**(F)** - °F dewpoint temperature

**(p)** – ppm(v) moisture content

**(L)** – lbs/MMSCF moisture content mass per volume

**V – Supply Voltage:**

**(AC)** - 90 to 250 VAC 50/60 Hz

**(DC)** - 24V DC

Note: The menu, accessible from the front panel, allows for setting different engineering units and scaling within the range of the connected sensor.



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