The SHAW Moisture Sensor

The SHAW Moisture Sensor is an ultra high capacitance aluminium oxide dewpoint sensor for the measurement of trace moisture in gases and compressed air.

With decades of performance excellence, the SHAW Moisture Sensor has proven to be both reliable and accurate and can be used for the toughest industrial applications. The sensing element has been designed and refined to provide the most stable aluminium oxide sensor available today.

The Shaw Moisture Sensor is certified intrinsically safe and suitable for use in hazardous environments. The sensor is supplied as standard, with a calibration certificate traceable to recognized national/international humidity standards (i.e. NPL, NIST).

When used in conjunction with a Shaw Moisture Meters hygrometer, the system will provide many years of accurate and reliable dewpoint measurement.

Advantages of the SHAW Sensor

- Wide dynamic range from 0.001 ppm to 0.2 percent by volume
- Stability, low hysteresis and temperature coefficients
- Flow independent
- High selectivity for moisture
- Can be intrinsically safe (when used in conjunction with a Zener Barrier)
- Operates over a wide range of temperature and pressure
- Requires little or no maintenance

Intrinsic Safety

The SHAW sensor is certified intrinsically safe and can be used in either hazardous or non-hazardous areas.

A Zener Barrier (shunt diode safety barrier) should be used when installing the sensor in a hazardous area.

Where the sensor is to operate in an area where a flammability hazard may exist, the sensor is located in the Hazardous Zone and the Zener Barrier and Display Unit are installed in the Safe Area. The distance from Sensor to Zener Barrier can be up to 1,000m.

Below is a simple drawing highlighting the location of a Zener Barrier Unit or an Isolator.

Hazardous area | Safe area

Sensor

Coaxial cable | Zener barrier unit | Hygrometer
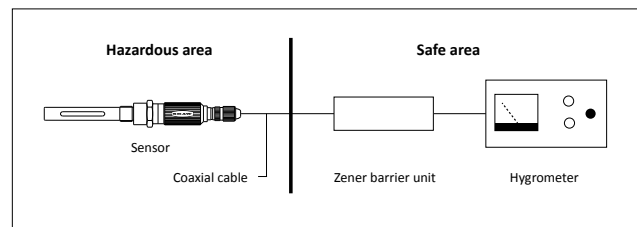
Ordering Information

Sensor Type {r}: **Sensor Range:**

P (Purple): -100 to 0 °C (-148 to +32 °F) DP, 0 - 6,000 ppm

S (Silver): -100 to -20 °C (-148 to -4 °F) DP, 0 -,1,000 ppm

R (Red): -80 to -20 °C (-112 to -4 °F) DP, 0 - 1,000 ppm

G (Grey): -80 to 0 °C (-112 to +32 °F) DP, 0 - 6,000 ppm

B (Blue): -80 to +20 °C (-112 to +68 °F) DP, 0 - 23,000 ppm

To order

Example: To order a sensor with a measuring range of -80 to 0 °C (-112 to +32 °F) dewpoint (grey sensor) please order **SE-G**.
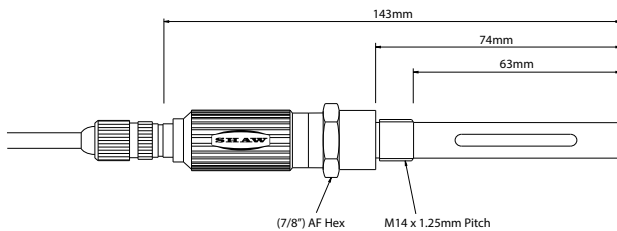All sensors are supplied with universal guards.

NOTE:

This is the range of SHAW Moisture Sensors. All SHAW Moisture Sensors must be used in conjunction with a SHAW hygrometer.
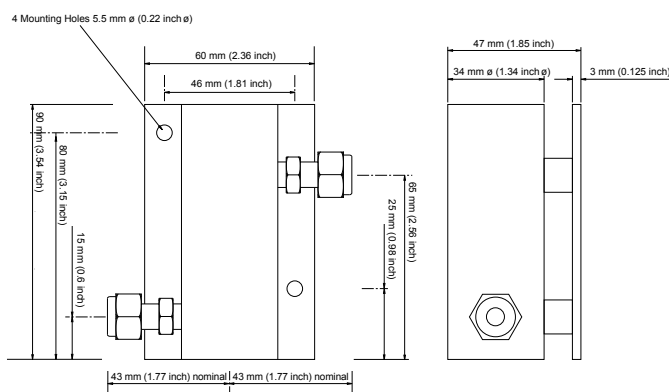
Specifications

Certification:	II 1G, Ex ia IIC T6 Ga (Ta = -20°C to + 50°C)
Calibration:	National Physical Laboratory (NPL) traceable calibration available
Accuracy:	Better than ± 2°C over full range
Operating Temperature:	-20°C to + 50°C
Storage Temperature:	-50°C to +70°C
Operating Humidity:	0-90% RH non-condensing
Mechanical Connections:	M14 x 1.25mm pitch
Electrical Connection:	Male coaxial plug
Approvals:	CE certified
Dimensions:	Overall length: 141 mm, protruding 68 mm
Weight:	Approximately 100 g
Sensor Materials:	High purity aluminium, gold, nylon, silver and stainless steel

Sensor Diagram

143mm
74mm
63mm
(7/8") AF Hex — M14 x 1.25mm Pitch

Sensor Holder Assembly Diagram

4 Mounting Holes 5.5 mm ø (0.22 inch ø)
60 mm (2.36 inch)
46 mm (1.81 inch)
47 mm (1.85 inch)
34 mm ø (1.34 inch ø)
3 mm (0.125 inch)
90 mm (3.54 inch)
80 mm (3.15 inch)
15 mm (0.6 inch)
65 mm (2.56 inch)
25 mm (0.98 inch)
43 mm (1.77 inch) nominal   43 mm (1.77 inch) nominal

NOTE: The assembly is shown with ¼ inch OD tube fittings. The dimension across the tube fittings will vary for all other size fittings.

For Use With

Model SADP

World renowned, portable dewpoint meter. Easy to use for fast, reliable trace moisture measurement. Operates at atmospheric pressure.

SDHmini Range

Portable, hand held hygrometer. Available as standard, logging and intrinsically safe.

Model Superdew 3

Single channel inline hygrometer designed to measure dewpoint in process gases and compressed air.

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