SHAW
MOISTURE METERS

Model SADP
Portable Dewpoint Meter

The world renowned Model SADP portable dewpoint meter from Shaw Moisture Meters offers an easy to use hygrometer for fast and reliable trace moisture measurement.

Designed to operate at atmospheric pressure, the Model SADP features a large, easy to read analogue indicator scaled in °C dewpoint, °F dewpoint and corresponding parts per million (ppm(v)) range. The TR versions of the Shaw SADP offer the 0-10 ppm(v) range expanded over the full scale, which is selected by means of the rotary switch on the front panel. This allows for accurate measurement below 10 ppm(v).

The key to the Shaw automatic dewpoint meter is the unique desiccant head and sensor assembly which allows the sensor to be kept dry between tests. This ensures that the instrument is always available for rapid spot checks of moisture in gases and compressed air.

Certified intrinsically safe for use in hazardous environments to ATEX: Intrinsically Safe to II I G Ex ia IIC T6 Ga, FM: Intrinsically Safe Class 1, Division 1, Groups A&B, C, D, T6.

The Model SADP is fully self contained and comes complete and ready for use with batteries installed, Calibration Certificate traceable to National & International Humidity Standards, two meters of PTFE sampling hose, instruction manual and a specially designed heavy duty leather case with shoulder strap.

Features

- Guaranteed accuracy ±3 °C to ±4 °C (±5.4 °F to ±7.2 °F) dewpoint
- Intrinsically safe for use in hazardous areas ATEX: Intrinsically Safe to II I G Ex ia IIC T6 Ga, FM: Intrinsically Safe Class 1, Division 1, Groups A&B, C, D, T6.
- Various ranges: overall range -100 °C to +20 °C (-148 °F to +68 °F) dewpoint
- Extended range for 0 - 10 ppm (TR version only)
- Analogue display, indication in °C, °F and ppm(v)
- “AutoCal” calibration feature
- Desiccant dry-down chamber for instantaneous readings
- Standard “C” type battery operation
- Self-contained, robust and reliable
- Fully portable
- Simple to operate
- Over 150 hours continuous operation
- Supplied with Calibration Certificate traceable to National & International Humidity Standards

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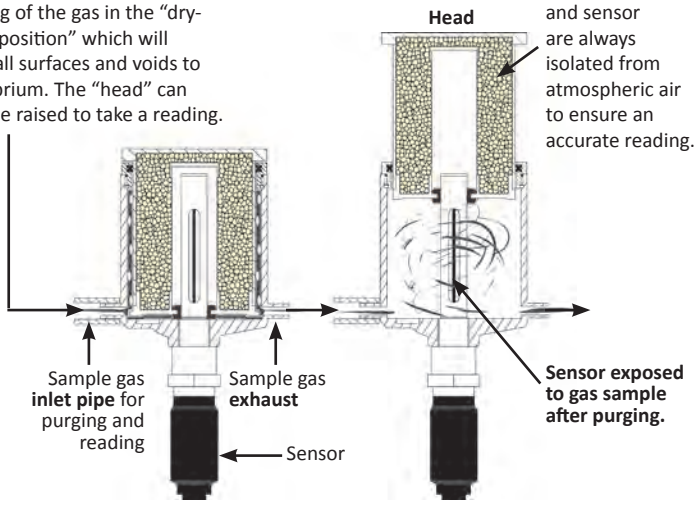
Desiccant Dry-Down Technology

The unique design allows purging of the gas in the "dry-down position" which will bring all surfaces and voids to equilibrium. The "head" can then be raised to take a reading.



The Desiccant Head Assembly

Keeping the sensor dry between tests ensures that the SADP is always ready to carry out rapid spot checks. The unique design of the *desiccant head* achieves this by surrounding the sensor with desiccant before the head is lifted for sampling.

At no time is the sensor allowed to come into contact with ambient air. The chamber is also designed so that the void space and chamber wall surfaces are purged with sample gas, prior to exposure of the sensor, giving faster, more accurate and reliable results.

Automatic Calibration

The most important and unique feature of the Shaw system is the **automatic calibration** facility. Each Shaw sensor is precisely manufactured to saturate with water vapour at its design maximum. Hence, when the sensor is exposed to moisture above its maximum operating range, it will rapidly come into equilibrium and cease to respond to any further increase in moisture. This forms the basis of automatic calibration.

The Shaw sensor can be checked by simply exposing it to any atmosphere which is wetter than the operating range of the sensor (usually room air is sufficient) and adjusting the calibration control on the front panel of the instrument. The sensor is now set up with the instrument and ready for use.

Automatic calibration can be carried out in-situ and without the need for any special equipment or skilled personnel. The net result is reduced downtime, minimal calibration costs and immediate verification of the system.

SADP complete with two meters of PTFE sampling hose, pressure calculator, instruction manual and heavy duty leather case with shoulder strap.

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Specifications

DEWPOINT SENSOR

- **Sensing Element**
  Shaw Ultra High Capacitance - Aluminium Oxide Sensor
- **Ranges**

Purple (P):	-100 to 0 °C dewpoint, 0 - 6000 ppm(v)
Silver (S):	-100 to -20 °C dewpoint, 0 - 1000 ppm(v)
Grey (G):	-80 to 0 °C dewpoint, 0 - 6000 ppm(v)
Red (R):	-80 to -20 °C dewpoint, 0 - 1000 ppm(v)
Blue (Bl):	-80 to +20 °C dewpoint, 0 - 23,000 ppm(v)

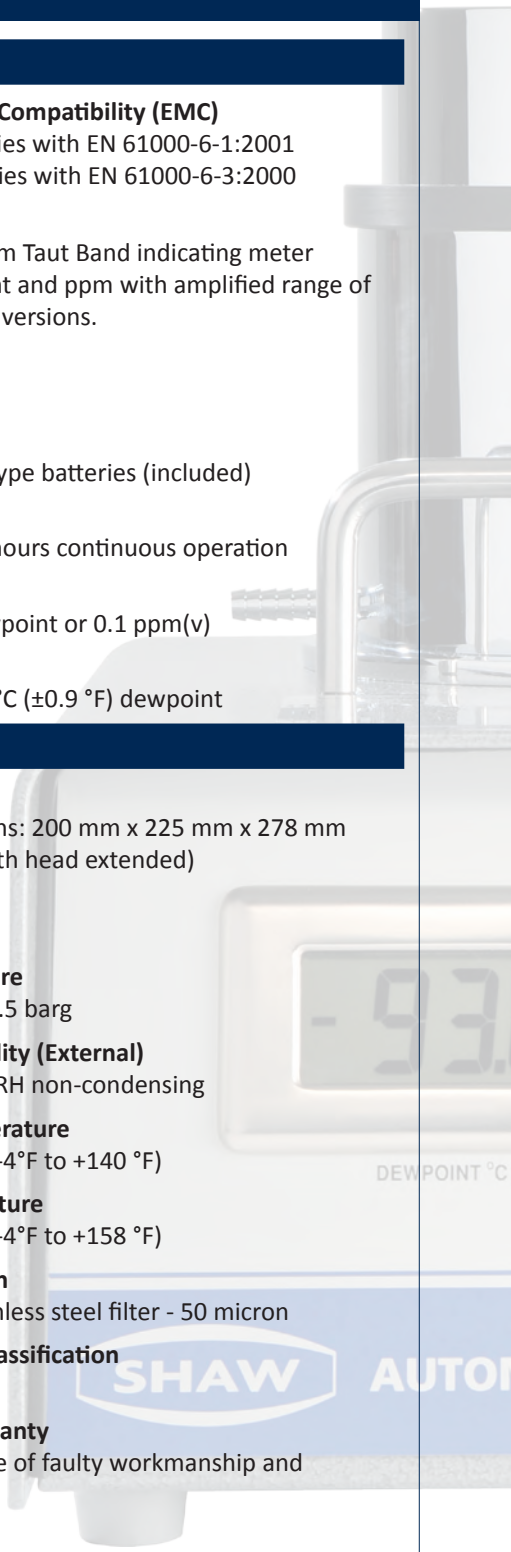
- **AutoCal**
  Field calibration/span check facility. Activated and operated via potentiometer on the front of the instrument
- **Factory Calibration**
  Supplied with Certificate of Calibration traceable to National Physics Laboratory (NPL)
- **Accuracy**
  ± 3 °C/ ± 4 °C (± 5.4 °F/ ± 7.2 °F) dewpoint
  NPL traceable -90 °C to +20 °C (-130 °F to +68 °F)
- **Response Times**
  Wet to dry: -20 °C to -60 °C - less than 120 secs
  Dry to wet: -100 °C to -20 °C - less than 20 secs
- **Sample Flow Rate**
  Flow independent but ideally 2 to 5 litres per minute
  Max: 25 litres/min
- **Calibration Warranty**
  12 months from date of dispatch

ELECTRICAL

- **Electromagnetic Compatibility (EMC)**
  Immunity: complies with EN 61000-6-1:2001
  Emissions: complies with EN 61000-6-3:2000
- **Display**
  Analogue: 120 mm Taut Band indicating meter showing dewpoint and ppm with amplified range of 0 - 10 ppm on TR versions.
- **Warm Up Time**
  5 seconds
- **Power Supply**
  9 V DC – six “C” type batteries (included)
- **Battery Life**
  In excess of 150 hours continuous operation
- **Resolution**
  0.1 °C, 0.2 °F dewpoint or 0.1 ppm(v)
- **Repeatability**
  Better than ±0.5 °C (±0.9 °F) dewpoint

MECHANICAL

- **Dimensions**
  Overall dimensions: 200 mm x 225 mm x 278 mm
  High (328 mm with head extended)
- **Weight**
  4.5 kg
- **Operating Pressure**
  Atmospheric to 0.5 barg
- **Operating Humidity (External)**
  Maximum - 95% RH non-condensing
- **Operating Temperature**
  -20 °C to +60 °C (-4°F to +140 °F)
- **Storage Temperature**
  -20 °C to +70 °C (-4°F to +158 °F)
- **Sensor Protection**
  316 sintered stainless steel filter - 50 micron
- **Weatherproof Classification**
  IP66/NEMA 4X
- **Mechanical Warranty**
  24 months in case of faulty workmanship and defective parts



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Ordering Information

Model SADP

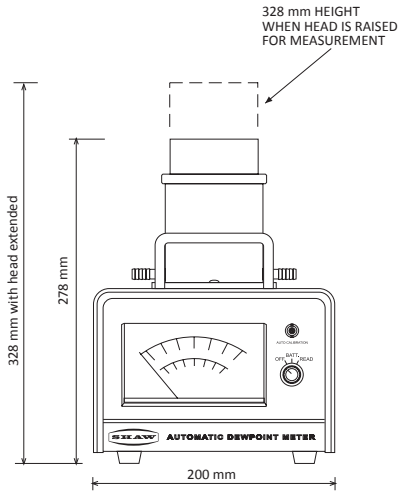
SADP - (R)

(R) - Choose required range:

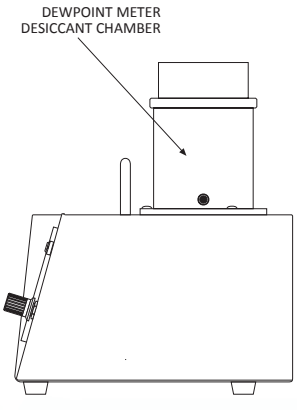
Purple (P):	-100 to 0 °C dewpoint, 0 - 6000 ppm(v)
Silver (S):	-100 to -20 °C dewpoint, 0 - 1000 ppm(v)
Grey (G):	-80 to 0 °C dewpoint, 0 - 6000 ppm(v)
Red (R):	-80 to -20 °C dewpoint, 0 - 1000 ppm(v)
Blue (Bl):	-80 to +20 °C dewpoint, 0 - 23,000 ppm(v)
TR - GREY (TR-G)	-80 to +20 °C dewpoint, 0 - 10 ppm(v)
TR - RED (TR-R)	-80 to -20 °C dewpoint, 0 - 10 ppm(v)

Example:
To order a Model SADP with a measuring range of -100 to 0 °C dewpoint (purple sensor) please order as **SADP-P**

SADP General Assembly Diagram



FRONT VIEW



SIDE VIEW

Related Products

SU3 Sample Plate
for mounting on the side of the SADP, comprising flow meter, pressure gauge, filter unit and pressure regulator (210 bar).

SU2 Sample Plate for mounting on top of SADP, comprising flow meter, pressure gauge and pressure regulator (210 bar).

Pressure Regulator
Pressure regulators (Model PRV) are used for accurate control of pressure at all important points in a sample system.

Flow Indicator
This compact flow meter (Model FLMET) is used to provide a visual indication and fine control of sample flow.

Service Kit
Includes desiccant, head seal kit, grommet, silicone grease and batteries.

Includes as standard:
Batteries installed, Calibration Certificate, two meters PTFE sampling hose, instruction manual, leather case/fabric case, pressure calculator, screw driver and allen key.

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