Model SADPμ

Automatic Dewpoint Meter

- Analogue or Digital Display
- Intrinsically Safe for use in Hazardous Areas
- Automatic Calibration
- Desiccant Dry-Down Chamber for rapid measurements
- Over 150 hours continuous operation
- Self Contained and fully portable
- Simple to operate

SHAW Automatic Dewpoint Meter - the worlds leading portable hygrometer is now manufactured, under license, by Alpha Moisture Systems.

Having been in production for nearly 50 years, this unit has stood the test of time and it's popularity is demonstrated by the fact that it can be found in every industrialised country in the world. It remains the benchmark in portable hygrometry for measuring absolute humidities down to one part per million and below.

Built to the exacting demands stipulated by ***SHAW,*** the robust and easy to use Model SADP Dewpoint Hygrometer has, at its heart, the world renown ***SHAW*** *High Capacitance Sensor* with the unique ***Automatic Calibration*** feature (see overleaf).

Designed to operate at atmospheric pressure, the instrument is available in a variety of sensor ranges, covering an overall range of -110°C to +20°C dewpoint.

Analogue versions of the ***SHAW*** *Automatic Dewpoint Meter* offer the 0-10ppm(v) range expanded over the full scale, which is selected by means of a rotary switch on the front panel. This allows for accurate measurements below 10ppm(v).

Digital versions of Model SADP can be configured to display dewpoint in either °C or °F on a large, easy to read, 4½ digit LCD display.

The ***SHAW*** *Automatic Dewpoint Meter* is fully self-contained and is also certified as intrinsically safe for use in hazardous areas, without the need for any additional accessories such as zener barriers etc.

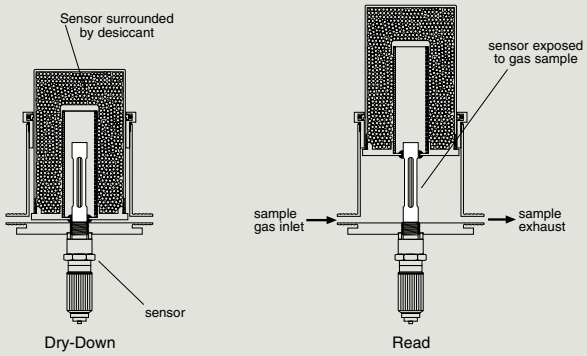
The unit is supplied ready for use with batteries installed and a calibration certificate traceable to National and international standards. Standard accessories supplied with the unit include a specially designed carrying case with shoulder strap, operational tools, 2m PTFE sampling hose and a pressure dewpoint calculator.

How it works

The key to operation of the ***SHAW*** *Dewpoint Meter* is the unique head/sensor assembly. By keeping the sensor dry between tests, the head assembly ensures that the hygrometer is always ready to use for rapid spot checks of moisture in dry air or gas. The head assembly consists of two chambers with a telescopic action as shown in figure 1. The left-hand image demonstrates the head assembly in the closed or **dry-down** position, where the sensor is completely surrounded by the desiccant, hence it is dry and ready for use.

The innovative design also allows the void space in the chamber to be purged with the sample gas without the gas coming into contact with the sensor. By placing a finger over the outlet of the head assembly, the sample gas pressure extends the inner chamber to the **read** position hence exposing the sensor to the sample gas, as shown in the right-hand image in figure 1.

An accurate reading of the moisture content of the sample gas will be displayed on the indicator of the hygrometer. If continuous readings are required, simply leave the head in the raised position and as long as the sample gas is passing through the head, the moisture content can be read on the indicator. After each test the head assembly is left in the dry-down position and the sensor will then be ready for use time and time again. The unique design also ensures that the desiccant is not exposed to ambient room air, nor does it come into contact with the test gas, this allows the SHAW Automatic Dewpoint Meter to be used for years without the need for frequent regeneration or replacement of the desiccant.



Desiccant Head assembly

figure 1

Model SADPµ Automatic dewpoint Meter

Specifications

SENSOR TYPE
SHAW Ultra High Capacitance Aluminium Oxide Type.

RANGE
Analogue - Eight different ranges encompassing an overall range from -110 °C to +20 °C dewpoint (-148 °F to +68 °F), with corresponding range in ppm(v). Certain models come standard with expanded linear range 0-10ppm(v).

Digital - Eight different ranges encompassing an overall range from -110 °C to +20 °C dewpoint (-148 °F to +68 °F). Factory set to either °C or °F

DISPLAY
Analogue - 120mm, taut band, precision analogue indicator scaled linear in °C & °F and logarithmic ppm(v). Expanded range 0-10 ppm(v) scaled linear and selected by rotary switch on front panel. (Expanded range available as standard with ranges **PL**, **SR**, **BL**, **GY**, and **RD**)

Digital - 4½ digit, LCD display. Factory set to read in either °C or °F

INTRINSIC SAFETY CERTIFICATION
Code: EEx ia IIC T3 / EEx ia IIC T4
Certificate No.: Sira 02ATEX2133X CE 0518

AUTOMATIC CALIBRATION
Via potentiometer adjustment on front panel.

CALIBRATION ACCURACY
±2 °C dewpoint (dewpoint scale) & ±1ppm (0-10 ppm scale). All Automatic Dewpoint Meters supplied with Certificate of calibration, documenting factory calibration against known moisture levels traceable to National and International Standards.

REPEATABILITY
±0.5 °C dewpoint.

TYPICAL RESPONSE TIME
95% of reading within 20 seconds in normal operation.

POWER SUPPLY
9V DC - six "C" type disposable batteries (included).

BATTERY LIFE
In excess of 150 hours during continuous operation.

ELECTRONIC ACCURACY
Better than ±1% of range.

WARM UP TIME
Less than 5 seconds.

OPERATING CONDITIONS
Temperature: -20 °C to +50 °C
Humidity: 0-98% RH, Non-condensing
Storage: Temperature: -50 °C to +70 °C
Operating pressure: Atmospheric to 0.5 barg

ELECTROMAGNETIC COMPATIBILITY
Immunity: Complies with EN50082-1:1992
Emissions: Complies with EN50081-1:1992

FLOW RATE TO SENSOR
2 to 20 litres/minute.

CONNECTIONS
Two fir tree type on either side of desiccant chamber.

WARRANTY
Two years from date of delivery against faulty materials or workmanship.

ACCESSORIES INCLUDED
Carrying case, operational tools, 2m PTFE sampling hose and pressure dewpoint calculator.

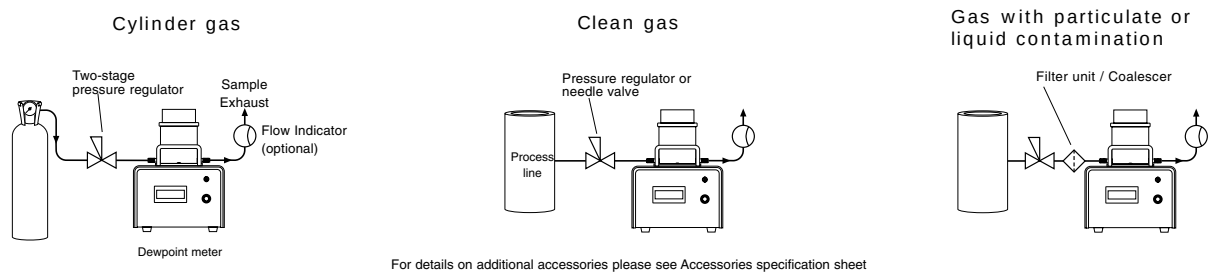
Automatic Calibration

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 to equilibrium and cease to respond to any further increase in moisture. This forms the basis of **Automatic Calibration**.

The *SHAW* sensor can be calibrated 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. ***That's it!*** The sensor is now calibrated and ready for use.

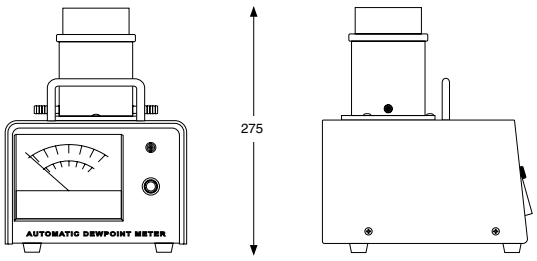
Automatic Calibration can, hence, be carried out *in-situ* and without the need for any special equipment or skilled personnel. The net result is reduced downtime, minimal calibration costs and immediate verification of the system.

Installation



For details on additional accessories please see Accessories specification sheet

Weights and Dimensions



Overall height with head fully extended: 326mm.

Weight: 6.0Kg (net) / 7.5Kg (packed).
Packed dimensions: 340 x 330 x 400 mm

Ordering Information

Model SADPµ-□-□□

INDICATION

Analogue	A
Digital °C	D
Digital °F	DF

RANGE

PURPLE	-110 to +20°C	PL
SILVER	-110 to -20°C	SR
BLUE	-80 to +20°C	BL
GREY	-80 to 0°C	GY
RED	-80 to -20°C	RD
YELLOW	-60 to 0°C	YW
GOLD	-50 to +20°C	GD
GREEN	-30 to +20°C	GN

Example: If your requirement is for an automatic dewpoint meter with **analogue** indication and range **-80°C to -20°C** dewpoint then please order: **Model SADPµ-A-RD.**

CERTIFICATE No. FM35600
BS EN ISO9001 : 2000

COMPANION COMPANY

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Product specification may be subject to change, without prior notice, as part of our ongoing product development programme.