

# Model SADP $\mu$ and SADP-D

**Intrinsically Safe Portable Dewpoint Hygrometers with ranges available between -110°C to +20°C (-166°F to +68°F) dewpoint**

**SHAW Automatic Dewpoint Hygrometer** - the worlds leading portable hygrometer is now manufactured, under licence, by Alpha Moisture Systems.

Having been in production for nearly 50 years, this unit has stood the test of time and its 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.

**Fast Response - Stable - Reliable - Accurate - Easy to Use.** 



## FEATURES

- 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
- Illustrated manual included

## Desiccant Dry Down Technology

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

Designed to operate at atmospheric pressure, this 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 Hygrometer 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 precise 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, 4 1/2 digit LCD display.

The **SHAW** Automatic Dewpoint Hygrometer 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.

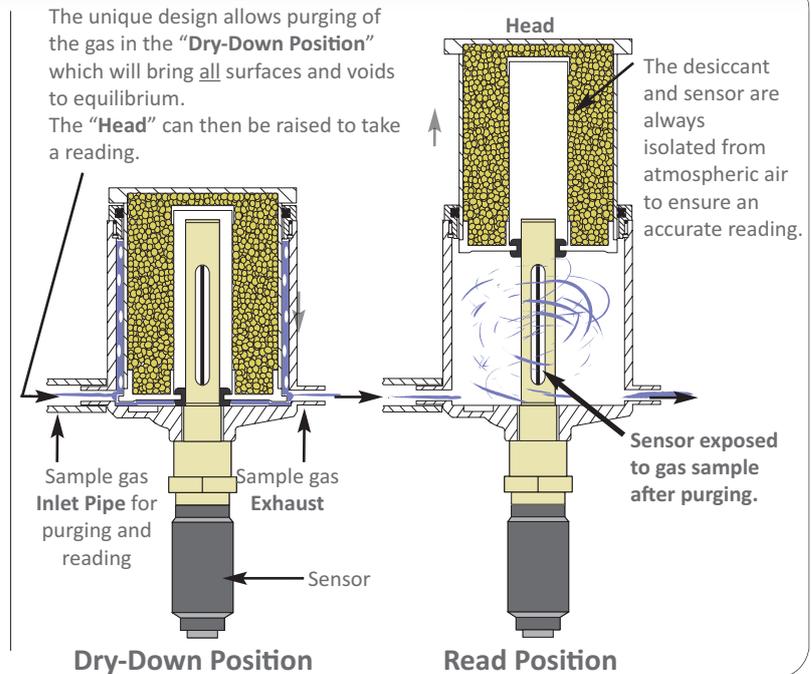
The unit is supplied ready for use with batteries installed and a certificate of calibration traceable to National and International Standards. Standard accessories supplied with the unit include a specially designed carrying case with shoulder strap, operational tools, 2m PTFE sampling hose and a pressure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

## Desiccant Dry Down Technology

### The Desiccant Head Assembly

Keeping the sensor dry between tests ensures that the SADP $\mu$  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, before exposure of the sensor, so giving faster, more accurate and reliable results.



## Specifications

### MODEL SADP $\mu$ Automatic Dewpoint Hygrometer

#### SENSOR TYPE

**SHAW** Ultra High Capacitance Aluminium Oxide Type.

#### RANGE

**Analogue** - Seven different ranges encompassing an overall range from  $-110^{\circ}\text{C}$  to  $+20^{\circ}\text{C}$  dewpoint ( $-166^{\circ}\text{F}$  to  $+68^{\circ}\text{F}$ ), with corresponding range in ppm(v). Certain models come standard with expanded linear range 0-1 or 0-10ppm(v).

**Digital** - Seven different ranges encompassing an overall range from  $-110^{\circ}\text{C}$  to  $+20^{\circ}\text{C}$  dewpoint ( $-166^{\circ}\text{F}$  to  $+68^{\circ}\text{F}$ ). Factory set to either  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$ .

#### DISPLAY

**Analogue** - 120mm, taut band, precision analogue indicator scaled linear in  $^{\circ}\text{C}$  &  $^{\circ}\text{F}$  and logarithmic ppm(v). Expanded range 0-10 ppm(v) scaled linear and selected by a rotary switch on front panel. (Expanded range available as standard with ranges **SR** (0 - 1ppm(v)), **GY**, and **RD**)

**Digital** - 4 $\frac{1}{2}$  digit, LCD display. Factory set to read in either  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$

#### INTRINSIC SAFETY CERTIFICATION

Code:  II 1G  
Ex ia IIC T3 Ga (Ta =  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ )  
Ex ia IIC T4 Ga (Ta =  $-20^{\circ}\text{C}$  to  $+37^{\circ}\text{C}$ )

Certificate No.: Sira 02ATEX2133X

#### AUTOMATIC CALIBRATION

Via potentiometer adjustment on front panel.

#### CALIBRATION ACCURACY

Better than  $\pm 2^{\circ}\text{C}$  dewpoint (dewpoint scale) &  $\pm 1\text{ppm}$  (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

$\pm 0.5^{\circ}\text{C}$  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  $\pm 1\%$  of range.

#### WARM UP TIME

Less than 5 seconds.

#### OPERATING CONDITIONS

Temperature:  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$

Humidity: 0-98% RH, Non-condensing

Storage: Temperature:  $-50^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

Operating pressure: Atmospheric to 0.5 barg

#### ELECTROMAGNETIC COMPATIBILITY

Complies with BS EN 61326-1

#### 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

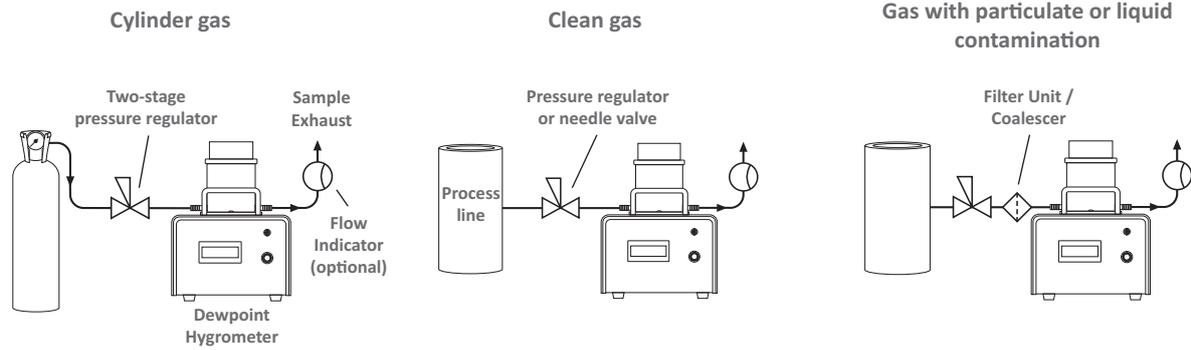
Anti-static carrying case, operational tools, 2m PTFE sampling hose and pressure dewpoint calculator.

## 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.

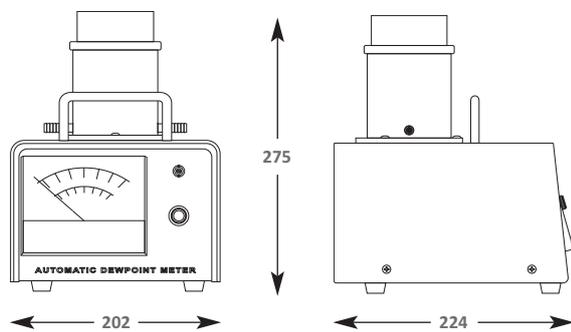
This forms the basis of Automatic Calibration. The **SHAW** sensor can be calibrated by simply exposing it to any atmosphere which is wetter than the operating range of the sensor - usually room air is sufficient - and adjusting the calibration control on the front panel of the instrument. That's it! 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.

## Guide to Installation



For more details on additional accessories please see our website at [www.amsystems.co.uk](http://www.amsystems.co.uk)

## Weights and Dimensions



All dimensions are in millimetres

Overall height when head is fully extended = 326mm.

## How to Order - Step 1 of 2

Select a Range Below

Model SADP $\mu$  + [XX] + [XXX]

## INDICATION

Analogue	[A]
Digital °C	[D]
Digital °F	[DF]

PURPLE	-100 to 0°C	(-148°F to +32°F)	[PL1]
PURPLE	-100 to +20°C	(-148°F to +68°F)	[PL2]
SILVER	-110 to -20°C	(-166°F to -4°F)	[SR]
BLUE	-80 to +20°C	(-112°F to +68°F)	[BL]
GREY	-80 to 0°C	(-112°F to +32°F)	[GY]
RED	-80 to -20°C	(-112°F to -4°F)	[RD]

Example: If your requirement is for an automatic dewpoint hygrometer with analogue indication and range -80°C to 0°C dewpoint then please order:- Model SADP $\mu$ -A-GY.

## How to Order - Step 2 of 2

Order accessories - Below is a small selection, please see website for more at [www.amsystems.co.uk](http://www.amsystems.co.uk)



Flow Meter  
Order  
Part No. AFM



Flow Indicator  
Order  
Part No. AFI



Standard Filter Unit  
Order  
Part No. AFU



Needle Valve  
Order  
Part No. PPE016

**Corrosive Gases:** The Sensor should not be exposed to corrosive gases (or corrosive contaminants in the gas sample) as these can chemically attack the sensor, impairing calibration accuracy and/or damaging it beyond economic repair. Examples of such gases are mercury (Hg), ammonia (NH<sub>3</sub>), chlorine (Cl<sub>2</sub>) etc. Strong oxidising agents such as ozone (O<sub>3</sub>) should also be prevented from coming into contact with the sensor.

For more information on our ATEX Certified Ex product range please contact us on +44 (0) 1274 733 100 or Email: [info@amsystems.co.uk](mailto:info@amsystems.co.uk)

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