

# Model SADP<sub>mini</sub>Ex

Intrinsically Safe Hand-Held Dewpoint Hygrometer

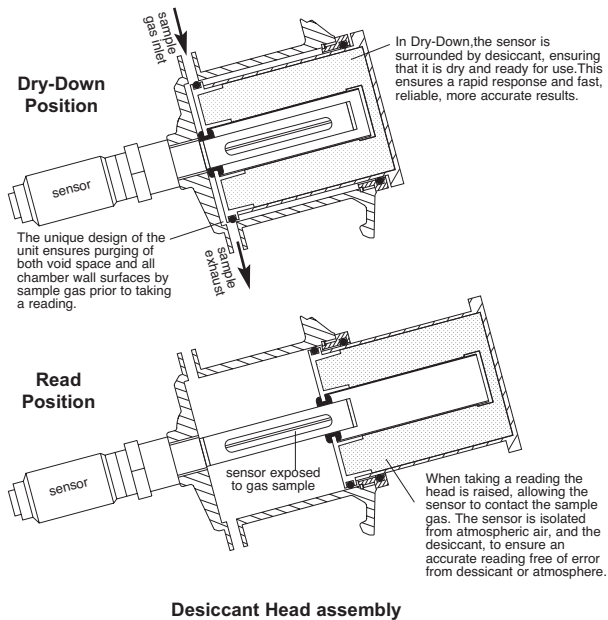


- **Certified Intrinsically Safe for use in explosive atmospheres:**



- **User Selectable Units - °C, °F, ppm(v), ppb(v), ppm(w), g/m<sup>3</sup>, lbs/MMSCF**
- **Desiccant Dry Down Assembly for Quick Measurements**
- **Real Time Graphic Logging to PC**
- **Advanced DATA Logging & PC Download**
- **RS485 Serial Communication**
- **4-20mA Analogue Output**
- **Electronic Automatic Calibration**
- **Pressure Correction Computation**
- **Various Ranges between -110°C to +20°C dewpoint**
- **True Hand Held Portable Device**
- **Fully Self-Contained**
- **User Friendly**
- **Multi-Level Security to Prevent Unauthorised Tamper**
- **Robust Ergonomically Designed Custom Housing**

## Desiccant Dry Down Technology



Keeping the sensor dry between tests ensures that the SADPmini is always ready to carry out rapid spot checks. The unique design of the Desiccant Head achieves this by surrounding the sensor with desiccant when taking a measurement. 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.

## Alpha Moisture Systems

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**MODEL SADP<sup>miniEx</sup>** - Intrinsically Safe Hand-Held Dewpoint Hygrometer Specifications

**TYPE B**

**SENSING ELEMENT:** Ultra Hi-Capacitance Aluminium Oxide Type

**INTRINSIC SAFETY:**

Standard : EN 60079-0:2006 / EN 60079-11:2007 / EN 60079-26:2007

Code :  II 1G Ex ia IIC T4 (T<sub>a</sub> -20°C to +50°C)

**RANGE IN DEW POINT:**

- SR: -110°C to -20°C (-166°F to -4°F) dew point
- PL: -100°C to 0°C (-148°F to +32°F) dew point
- RD: -80°C to -20°C (-112°F to -4°F) dew point
- GY: -80°C to 0°C (-112°F to +32°F) dew point
- BL: -80°C to +20°C (-112°F to +68°F) dew point

**DISPLAY UNITS:**

- °C - Degrees Centigrade Dew / Frost Point
- °F - Degrees Fahrenheit Dew / Frost Point
- ppm(v) - Parts per million (volume)
- ppb(v) - Parts per billion (volume)
- ppm(w) - Parts per million (weight)
- g/m<sup>3</sup> - Grams per cubic metre
- lbs/MMSCF - Pounds per million standard cubic feet

**DISPLAY:** Blue on Green, 128 x 64 pixel, Graphical LCD with LED backlight.

**SENSOR CALIBRATION ACCURACY:** ± 2°C Dew point. Each unit supplied with a Certificate of Calibration, traceable to National & International Standards - National Physical Laboratory (UK) / NIST (USA).

**AUTOMATIC CALIBRATION:** Electronic "Span Check". Performed by user following simple menu driven instructions. Can be password protected to avoid unauthorised tamper.

**REPEATABILITY:** Better than ±0.2°C dew point

**POWER SUPPLY:** 3.6v, 2.3Ah Rechargeable Li-Ion Battery. Battery charger included.

**BATTERY LIFE:** In excess of 80 hours of continuous use on full charge at 20°C/68°F.

**TIME TO FULL CHARGE:** 14 hours

**KEYBOARD:** 5 Membrane covered, metallic dome tactile keys.

**PRESSURE CORRECTION:** Integral calculator to display pressure dew points. Gauge pressure can be entered in kPa, kg/cm<sup>2</sup>, bar or psi.

**TEMPERATURE COEFFICIENT:** Temperature compensated for operating range.

**GAS SAMPLE CONNECTIONS:** Ports accept Swagelok® VCO type coupling (9/16" x 18 UNF). Supplied with either 6mm or 1/4" Swagelok® SS compression fitting on one side. The other side is fitted with a stainless steel push-on, "fir tree" type, hose connector for 6mm ID tube. Each unit is supplied with 2m length, 6mm ID, PTFE tube.

**ELECTRICAL CONNECTIONS:** 9 Pin "D" type for 4-20mA analogue output, RS485 Serial Communications and PC interface. Separate socket for battery charger.

**OPERATING TEMPERATURE:** -10°C to +50°C

**STORAGE TEMPERATURE & HUMIDITY:** -40°C to +80°C / 95% RH Non-condensing

**OPERATING PRESSURE:** Maximum 30kPag ( 0.3barg / 4 psig).

**OPERATING HUMIDITY (External):** 95% RH Non-condensing

**TYPICAL RESPONSE TIMES:**

- Wet to Dry: -10°C to -60°C - less than 120 seconds
- Dry to Wet: -110°C to -20°C - less than 20 seconds

**SAMPLE FLOW RATE:** Flow independent, but ideally 2 to 5 litres per minute. Max: 10 litres/min.

**REPLACEMENT DESICCANT:** Field Interchangeable.

**SENSOR LIFE:** Between 5 & 10 years - depending on application.

**REPLACEMENT SENSOR:** Field Interchangeable.

**ELECTROMAGNETIC COMPATIBILITY (EMC):** Product complies with the objectives and requirements of EMC Directive 2004/108/EC.

**SECURITY:** Multi level password protection.

**WARM UP TIME:** 10 seconds

**WEATHERPROOF CLASSIFICATION:** IP54 / NEMA12

**WARRANTY:** 2 years for faulty workmanship and defective parts.

**WEIGHT:** 1.2kgs (2.6lbs)

**DIMENSIONS:** 192 x 97 x 115 mms (7.5 x 3.8 x 4.5 inches)

**MATERIALS OF CONSTRUCTION:** Sensor in metal housing. Outer case custom manufactured in, stainless steel impregnated, high impact Polybutylene Terephthalate (PBT).

**ACCESSORIES INCLUDED:** Anti-static carrying case for use in Hazardous areas, 2m PTFE Sampling pipe, Universal Battery Charger, User Manual.

**TYPE F**

As TYPE B plus following additional specifications & features:

**ANALOGUE OUTPUT:** Externally powered 4-20mA loop. Linear output with unit selected. Span easily configured by user.

Max. load = 50 x (V<sub>EXT</sub> - 0.6) - 105

V<sub>EXT</sub> = Supply voltage.

(Eg. For 24V supply, Max. load = 1065Ω)

**ACCESSORIES INCLUDED:** 4-20mA Connector for analogue output.

**TYPE L**

As TYPE B plus following additional specifications and features:

**DATA LOGGING:** 16,000 samples. Date and time stamped data, stored in chosen units of measurement, for download to PC.

**DATA LOCATION:** 20 separate locations (Tags) can be entered (alpha-numerical) by user for data collection at pre-programmed locations.

**SAMPLING RATES:** User selectable (in intervals of 6 seconds) from once every 6 seconds to once a day.

**DATA DISPLAY:** Numerical and Graphical display of data on SADPmini screen.

**REAL TIME RECORDING:** Device can be programmed to monitor, record and graphically present data in real time directly to PC.

**SERIAL COMMUNICATIONS:** RS485, baud rate 9600 - half duplex.

**ANALOGUE OUTPUT:** Externally powered 4-20mA loop. Linear output with unit selected. Span easily configured by user.

Max. load = 50 x (V<sub>EXT</sub> - 0.6) - 105

V<sub>EXT</sub> = Supply voltage.

(Eg. For 24V supply, Max. load = 1065Ω)

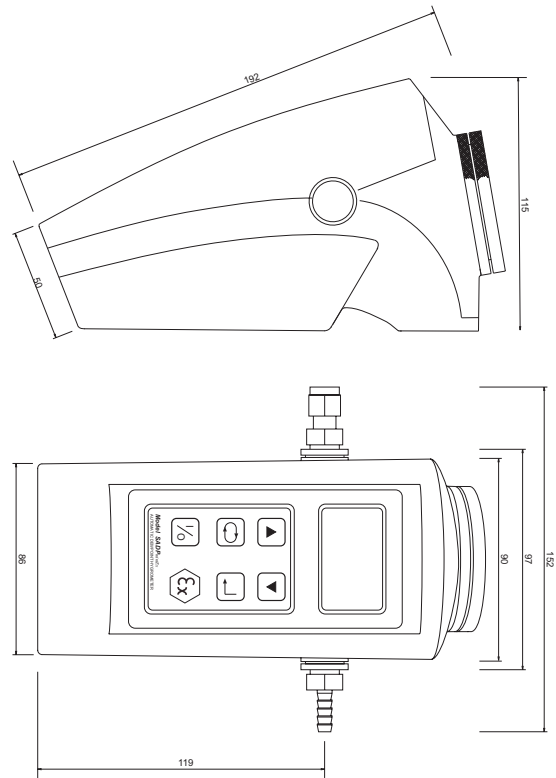
**ACCESSORIES INCLUDED:** 4-20mA / RS485 Connector for analogue output and serial communications. Serial or USB (Isolated / self powered) interface, with cables, for "Real Time Logging" and data download to PC. Software supplied on CD.

**SYSTEM REQUIREMENT:** Windows® XP or later for Serial USB connection to PC.

**Hazardous Area Carrying Case**

Hard wearing, padded nylon anti-static carrying case, custom manufactured with carry handle, belt loop and adjustable shoulder strap designed for use in hazardous areas.

**DIMENSIONS**



**MODEL SADP<sub>miniEx</sub>**  
**Intrinsically Safe Hand-Held Dewpoint Hygrometer**  
**Ordering Information**

**Model SADP<sub>miniEx</sub> - [XX] - [X] - [X] - [XX] - [X]**

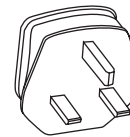
**RANGE = XX**  
**SR:** -110°C to -20°C (-166°F to -4°F) dewpoint  
**PL:** -100°C to 0°C (-148°F to +32°F) dewpoint  
**RD:** -80°C to -20°C (-112°F to -4°F) dewpoint  
**GY:** -80°C to 0°C (-112°F to +32°F) dewpoint  
**BL:** -80°C to +20°C (-112°F to +68°F) dewpoint

**TYPE = X**  
**B:** Standard  
**F:** With 4-20mA Analogue Output  
**L:** With logging, RS485 Comms. & 4-20mA Output

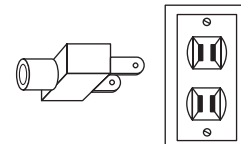
**SAMPLE CONNECTION = X**  
**4:** 0.25" Swagelok® SS Compression Type  
**6:** 0.6 mm Swagelok® SS Compression Type

**PC CONNECTION = XX**  
**U:** USB (Windows®XP or later)  
 (Choose only for Type L. Leave blank for Type B or Type F)

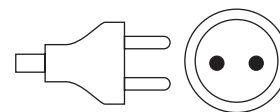
**MAINS PLUG TYPE- For Battery Charger = XX**  
**UK:** Standard UK, 3 Square pin  
**US:** 2 Vertical Flat Blade  
**EU:** 2 Round Pins  
**AU:** 2 Oblique FlatBlades with Ground  
 (see diagram below)



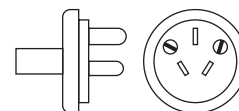
UK Type



US Type



EU Type



Australian Type

**Example:**

To order device with range -80°C to 0°C dewpoint, with logging capabilities, 6mm pipe connection, for use in UK and to be used with a USB type PC port, order as:

**Model SADP<sub>miniEx</sub> - GY-L-6-UK-U**