SF82 Online

Fast-Response Dew-Point Hygrometer

Easy to install and maintain, the SF82 Online Hygrometer measures and displays dew point and moisture content for use in a wide range of moisture applications. The SF82 Online display provides analog, digital, and dual relay alarm outputs.

Highlights

- Measurement range -60 to +60 °C (-76 to +140 °F) dew point
- Accuracy ±2 °C (±3.6 °F) dew point
- 4 to 20 mA output
- Modbus RTU over RS485 output
- Dual configurable alarm outputs
- Sample block and cable included
- Traceable 9-point calibration certificate
- Ultra-fast response to moisture change

Applications

- Membrane dryers
- Adsorption dryers
- Medical and surgical air
- Breathing air
- Additive manufacturing
- Glove boxes
- Plastic injection molding

SF82 Online

Fast-Response Hygrometer

The SF82 Online has been developed as a fast-response, quick-to-install hygrometer system for the complete dew-point measurement range of -60 up to +60 °C (-76 up to +140 °F) dew point, which covers many moisture measurement applications.

This hygrometer incorporates the latest Process Sensing Technologies advanced thick film technology, providing stable, reliable and repeatable moisture measurements.

Ease of Installation

The SF82 Online is supplied complete with all the parts required to install the sensor in a gas stream and start measuring quickly and easily.

- SF82 2-wire sensor
- Configurable display with 1/8 DIN mount format
- Stainless-steel sensor sample block with 1/8" NPT inlet and outlets
- Sensor cable – selectable length

The system is supplied with a 9-point calibration certificate from -60 to +20 °C (-76 to +68 °F) dew point, traceable to national standards.

Service Exchange/Recalibration Program

Michell offers 2 services for customers who want minimum downtime and sensor traceability, while maintaining the reliability of their online system:

- **Sensor Exchange** – Customers place an order for a guaranteed, reconditioned sensor, supplied with a 9-point traceable calibration. When this arrives, they exchange it for the installed sensor which is returned to Michell, resulting in zero process downtime.
- **Recalibration** – Customers return their installed sensor to Michell, where it is inspected, checked, and re-calibrated before being returned. This provides on-going sensor traceability for the process.

Flexible Output Signals

The SF82 Online includes 3 digital and analog output signals, which can be reconfigured as required within the display menu system:

- 4–20 mA or 0–20 mA
- Modbus RTU over RS485
- 2 programmable relay alarms

Safety and Integrity

The mechanical design of the sensor considers the health and safety quality requirements of the end user, offering an ultra-high process pressure barrier, along with meticulous levels of product traceability and quality.

- 450 barg (6527 psig) pressure rating
- Optional gas wetted parts BS EN 10204 3.1 material certified
- 9-point calibration certificate

Measurement Performance

The online system uses PST's market-leading thick film measurement technology coupled with the latest-generation, sophisticated microcontroller electronics to provide accurate and stable measurement across the transmitter's product life.

- Accuracy ±2 °C (±3.6 °F) dew point
- Fast response to moisture changes

Flexibility of Ownership

The SF82 sensor used within the online system has a built-in diagnostic interface, which can be interrogated via the Michell Sensor Communications Kit.

Sensor information includes:

- Last calibration date
- Sensor health diagnostics

Speed of Supply

The online system is manufactured within Michell's world-leading high-volume moisture transmitter manufacturing center in the United Kingdom, which ensures reliability and repeatability of delivery and field supported by a network of Michell's global service centers.

- Manufacturing calibration system traceable to NPL and NIST
- ISO17025 UKAS accredited calibration available on request

Customization

If your application requires a customized online system, we have specialized design and manufacturing capability to cover your requirements.

Technical Specifications

Performance Specifications

Measurement Range	-60 to +60°C (-76 to +140°F) dew point; -50 to +50°C (-58 to +122°F) dew point; -50 to +30°C (-58 to +86°F) dew point; non-standard dp ranges and ppm_V ranges available on request
Accuracy	±2°C (±3.6°F) dew point*
Response Time	T95 to -60°C (-76°F) dew point in <3 minutes
Repeatability	0.5°C (0.9°F) dew point
Sensor Calibration	Traceable 9-point calibration certificate

Electrical Specifications

Online Output Signals	4–20 mA or 0–20 mA; Modbus RTU over RS485; dual programmable relay alarms
Online Output	Dew point
Maximum Analog Output Scaled Range	Dew point: -80 to +20°C (-112 to +68°F)
Online Supply Voltage	AC: 85 to 264V AC
Online Current Consumption	60 mA maximum
Electrical Safety	EN61010-1

Operating Specifications

Operating Temperature	Sensor: -20 to +60°C (-4 to +140°F); Monitor: 0 to +50°C (+32 to +122°F)
Compensated Temperature Range	Sensor: -20 to +50°C (-4 to +122°F); Monitor: not applicable
Storage Temperature	Sensor: -40 to +60°C (-40 to +140°F); Monitor: -10 to +60°C (+14 to +140°F)
Operating Pressure	10 MPa (100 barg / 1450 psig) maximum
Sensor Flow Rate	1 to 5 Nl/min mounted in standard sampling block; 0 to 10 m/sec direct insertion

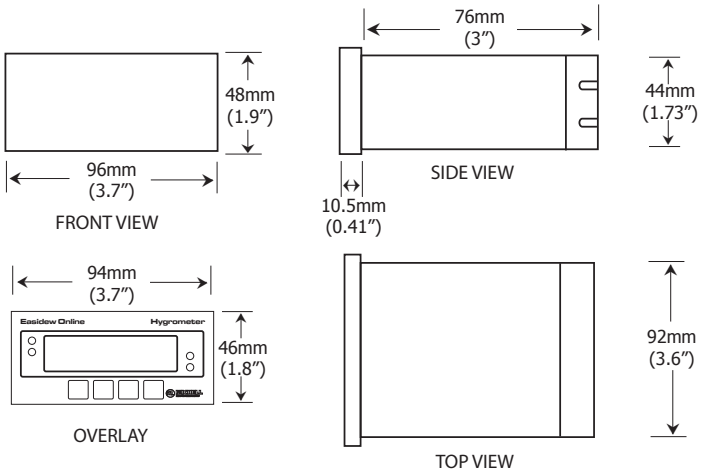
Mechanical Specifications

Ingress Protection	**Sensor MiniDIN**: IP66 in accordance with standard BS EN 60529:1992+A2:2013; NEMA 4 protection in accordance with standard NEMA 250–2014 **Sensor M12**: IP65 **Monitor**: IP65 (NEMA 4X) front panel only
Sensor Housing Material	316 stainless steel
Dimensions	**Sensor MiniDIN**: L=133mm x ø45mm / L=5.24" x ø1.77" (with connector cable) **Sensor M12**: L=156mm x ø45mm / L=6.14" x ø1.77" (with connector cable) **Monitor**: 1/8 DIN Case, 96 x 48 x 85mm / 3.78 x 1.89 x 3.35" (w x h x d)
Filter (Sensor Protection)	Standard: HMWPE <10µm
Sensor Process Connection	5/8" - 18 UNF, 3/4" - 16 UNF, G1/2" BSP
KF40 Flange Accessories	Flange for 5/8" 18 UNF and 3/4" 16 UNF process connections
Sensor Weight	150 g (5.29 oz)
Sensor Electrical Connections	MiniDIN 43650 form C, M12 5 pin (A coded)
Online Sensor Cable	0.8, 2, 5, 10 meter (2.62, 6.5, 16.4, 32.81 ft) connector/cable available
Sensor Diagnostic Conditions (factory programmed)	Sensor fault: 23 mA Under-range dew point: 4 mA Over-range dew point: 20 mA

NOTES * Over Compensated Temperature Range

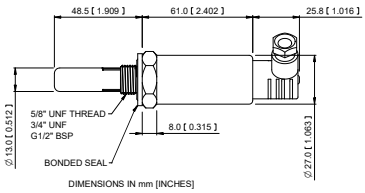
SF82 Online

Product Dimensions

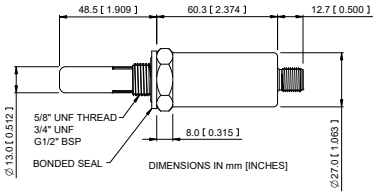


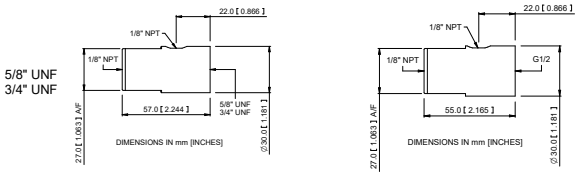
SF82 Online Monitor

SF82 MiniDIN

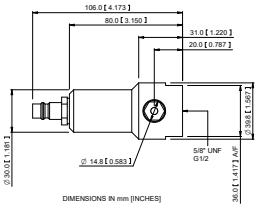


SF82 M12





Optional Sample Block
(see accessories and spare parts)



Optional Quick-Fit Sample Block
(see accessories and spare parts)

Related Process Products

Easidew
Industrial Dew-Point Transmitter

Optidew 501
Chilled Mirror Hygrometer

Easidew PRO X.P.
Explosion Proof Moisture Transmitter

Senz-TX
Oxygen Transmitter

MDM50
Portable Hygrometer

MDM300 I.S.
Dew-Point Hygrometer

ES20
Compact Sampling System

YellowBox Portable
Portable Oxygen Analyzer

Michell Instruments Ltd, Rotronic Instruments Corp. 135 Engineers Road, Suite 150, Hauppauge NY 11788
Tel: 631 427 3898, Email: us.info@michell.com, Web: www.michell.com/us

Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
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