SF82 Transmitter

Industrial Dew-Point Transmitter

Simple to install and maintain, the SF82 transmitter series measures dew point and moisture content and is available with a range of industry standard process connections and electrical connectors. The SF82 features analog and digital outputs providing compatibility with any electronic controller. All models are available with our service exchange program which minimises process downtime reducing maintenance costs.

Highlights

- Dew point or ppm_V moisture content output
- Accuracy ±2 °C dew point
- Modbus RTU over RS485 digital communication
- 4 to 20 mA 2 wire
- Traceable 9 point calibration certificate
- Power supply 5 to 28 V DC
- Ultra fast response to moisture change
- Low cost of ownership and easy maintenance with sensor exchange program
- 316 stainless steel sensor and sample blocks
- 5/8" UNF, 3/4" UNF, G 1/2" process connections
- MiniDIN 43650 C, M12 electrical connectors

Applications

- Refrigeration dryers
- Membrane dryers
- Adsorption dryers
- Medical and surgical air
- Breathing air
- Additive manufacturing
- Plastic injection moulding
- Portable dew point checkers

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The Flexible Moisture Transmitter

The SF82 has been designed to operate in compressor room type applications where temperatures can reach +50 °C where fast, accurate dew points measurements are needed beyond -60 °C dew point.

The SF82 industrial transmitter incorporates the latest Process Sensing Technologies advanced thick film technology to provide fast, stable and repeatable moisture measurements for all dew point dryer applications.

Ease of Installation

Flexible product design ensures the unit can be quickly and economically installed.

- MiniDIN 43650 form C or M12 5 pin electrical connector
- 5/8" UNF, 3/4" UNF, G1/2" BSP process connections
- 316 stainless steel sample blocks
- Optional Quick Fit sampler system
- On site configuration and diagnostic communication kit

Service Exchange/Recalibration Program

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

- **Sensor Exchange** - Customers place an order for a guaranteed reconditioned sensor. 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 they are inspected, checked and re-calibrated before being returned. This provides on-going sensor traceability for the process.

Global Certifications

The SF82 series has a targeted range of certifications to ensure the sensor can be used in any challenging dew point application.

- CE certified
- EN61373 railway rolling stock
- EN50121-3-2 railway EMC/RFI
- North American NRTL 61010 approvals

Michell has a large team of experienced field and factory based application engineers and approval experts who are available to assist with any dew point sensor application.

Safety and Integrity

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

- 450 barg pressure rating
- Optional BS EN 10204 3.1 Material Certificates
- 9 point calibration: -60 °C to +20 °C dew point

Measurement Performance

The transmitter uses a proven thick film measurement technology coupled with the latest generation, sophisticated microcontroller electronics to provide accurate and stable measurement across the transmitters product life.

- Accuracy ±2 °C dew point
- Ultra fast response to moisture changes

Flexibility of Ownership

The SF82 transmitter has a RS485 communication system, which gives customers the opportunity to re-range and re-scale with a communication kit for a wide variety of moisture measurements.

- Re-ranging 4–20 mA within the -80 °C to +60 °C dew point range
- Measured parameter - dew point, ppm_V

Speed of Supply

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

- Manufacturing calibration system traceable to NPL and NIST

Installation Accessories

Transmitters are available with a range of practical accessories.

- 5/8" UNF, 3/4" UNF, G1/2" BSP sample blocks
- Compact simple sampler systems
- Process connection adaptors

Customisation

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

Technical Specifications

Product	SF82 MiniDIN 43650 C	SF82 M12
Performance Specifications		
Measurement range	-60 °C to +60 °C dew point	
Accuracy	±2 °C dew point*	
Response time	63% at room temperature at 1 bara -60 °C to -20 °C dew point: 6 s -20 °C to -60 °C dew point: 40 s	
Repeatability	0.5 °C dew point	
Calibration	9 point calibration certificate traceable to national standards	
Electrical Specifications		
Output signal	User configurable over range; 4-20 mA (2 wire connection, current source)	User configurable over range; 4-20 mA (2 wire connection, current source) Modbus RTU over RS485 digital communications
Moisture Output	Dew point or moisture content	
Temperature Output	Not available	Data via Modbus RTU
Analog output scaled range 4-20 mA (Dew point)	-60 °C to +60 °C dew point -50 °C to +50 °C dew point -50 °C to +30 °C dew point -80 °C to +20 °C dew point -20 °C to +50 °C dew point (Non standard ranges available on request)	
Analog output scaled range 4-20 mA (Moisture content in gas)	0 to 24000 ppm_v (Non standard ranges available on request)	
Supply voltage	6.5 to 28 V DC	5 to 28 V DC
Load resistance	Max 250 Ω @ 12 V (500 Ω @ 24 V)	
Current consumption	23 mA max	Analog only 23 mA max, Digital only 6 mA max
Electrical Safety	IEC61010-1, UL61010-1 & CAN/CSA C22.2 No. 61010	IEC61010-1, UL61010-1 & CAN/CSA C22.2 No. 61010 EN61373 Rail Rolling Stock EN50121-3-2 Rail EMC/RFI
Operating Specifications		
Operating temperature	-20 °C to +60 °C	
Compensated temperature range	-20 °C to +50 °C	
Storage Temperature	-40 °C to +60 °C	
Maximum Operating pressure	10 MPag (100 barg) maximum	
Pressure Safety Rating	45 MPag (450 barg) maximum	
Flow rate	1 to 5 Nl/min mounted in standard sampling block; 0 to 10 m/sec direct insertion	
Mechanical Specifications		
Ingress protection	IP66 in accordance with BS EN 60529 (current version); NEMA 4 ingress protection in accordance with NEMA 250 (current version)	IP65
Housing material	316 stainless steel	
Dimensions	L = 133 mm x ø45 mm (with connector cable)	L = 156 mm x ø45 mm (with connector cable)
Filter (sensor protection)	**Standard:** HMWPE <10 µm **Optional:** 316 stainless steel sintered guard <80 µm	
Process connection	5/8" 18 UNF 3/4" 16 UNF G1/2" BSP	
Weight	150 g (excluding connector cable)	
Electrical connections	MiniDIN 43650 form C	M12 5 pin (A coded)
Mating Electrical Connectors	Mating connector supplied as standard Optional 0.8, 2, 5, 10 metre MiniDIN connector/cable available	Optional 0.8 , 2, 5, 10 meter M12 A coded connector/ cable available
Analog Output Diagnostic conditions (factory programmed)	Sensor fault: 23 mA Under-range dew point: mA Over-range dew point: mA	

NOTES * Over Compensated Temperature Range

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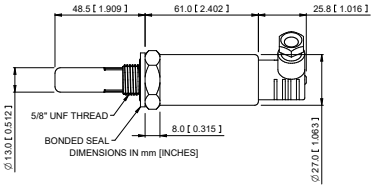
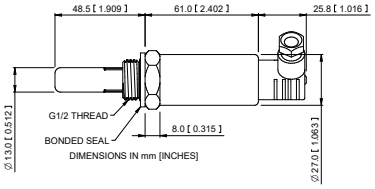
Product Dimensions

SF82 MiniDIN 43650 C

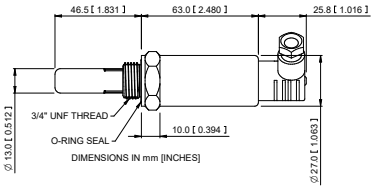
MiniDIN, 5/8" UNF



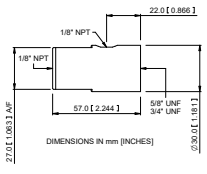
MiniDIN, G1/2

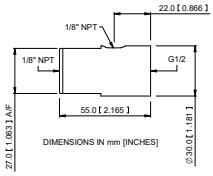


MiniDIN, 3/4" UNF



5/8" UNF
3/4" UNF

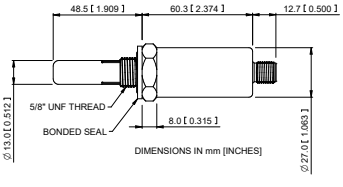




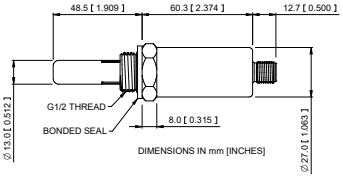
Optional Sample Block
(see accessories and spare parts)

SF82 M12

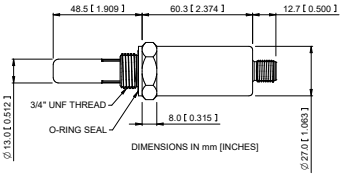
M12, 5/8" UNF

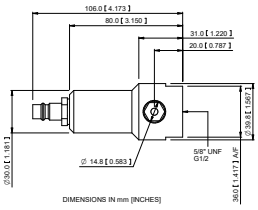


M12, G1/2



M12, 3/4" UNF





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

Related Industrial Products

SF52
Economical Dew-Point Transmitter

Easidew
Industrial Dew-Point Transmitter

Senz-TX
Oxygen Sensor Transmitter

SF82 Online
Dew-Point Hygrometer

RMS Data Monitoring
Continuous Data Monitoring System

MDM50
Portable Hygrometer

MDM300
Dew-Point Hygrometer

S8000 RS
High Precision Chilled Mirror Hygrometer

Michell Instruments 48 Lancaster Way Business Park, Ely, Cambridgeshire, CB6 3NW
Tel: +44 (0) 1353 658000, Fax: +44 (0) 1353 658199, Email: info@michell.com, Web: www.michell.com/uk

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