



Ultra-wide Meas.
Range



Outstanding
Long-term Stability



Ultra-fast
Response Time

F133x Series Dewpoint Meter

Polymer Capacitor Dewpoint &
Pressure Multi-Parameter Transmitter



DEWPOINT METER

Product Overview

The F133x series integrates 3 sensors: temperature, humidity and pressure in a very compact space. It measures the dew point and simultaneously monitors the online pressure and outputs both the pressure dewpoint and the atmospheric dew point at the same time.

Compared with other types of sensors, polymer capacitive sensors are the best in terms of accuracy, response times, long-term stability, and price performance when the dewpoint of the measurement medium is above $-40\text{ }^{\circ}\text{Ctd}$.

Revolutionary auto-calibration circuit design automatically compensates for circuit drift caused by temperature, contamination, and aging, providing long-term stability and high accuracy measurements

Innovative temperature compensation algorithm and multi-point temperature compensation calibration, greatly improving the sensor's temperature drift and ensuring high-precision dew point measurement over a wide temperature range

Product Advantages



Excellent Pollution Resistance

Anti-Condensation,
Anti-Particle Contamination



Ultra-wide Range

$-60 \dots +60\text{ }^{\circ}\text{Ctd}$



Auto-calibration Circuit

Provides measurement
accuracy and stability

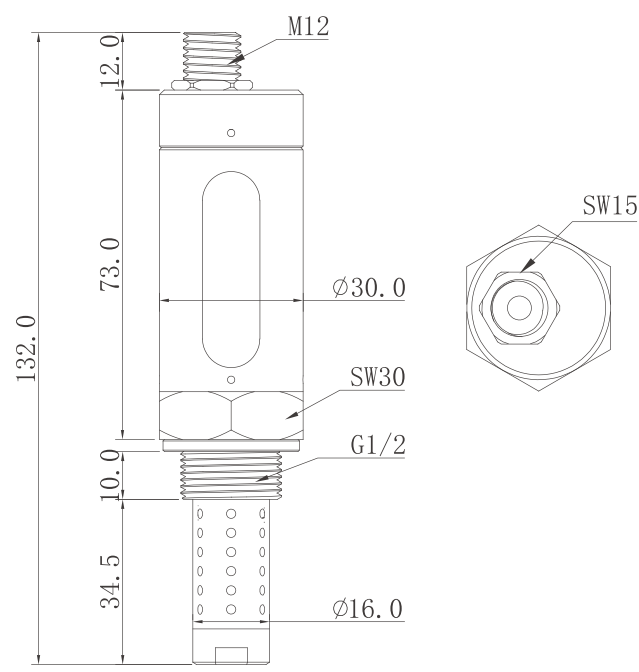


Fast Response Time

Fast response to
moisture changes

- Based on polymer thin film capacitive sensor technology
- MEMS based pressure sensor for simultaneous monitoring of dewpoint and pressure
- Application in dewpoint $> -60\text{ }^{\circ}\text{Ctd}$:
Refrigerant dryers, desiccant dryers, industrial gases
- 10+ points of dew point calibration and multi-point temperature compensation provide accurate measurements up to $\pm 2\text{ }^{\circ}\text{Ctd}$ (Refer to "Technical Data")
- Ultra-fast response time and outstanding long-term stability
- Anti-condensation, resistant to particulate contamination, oil vapor and most chemicals
- Excellent immunity to interference
- IP65 protection class, providing good protection even in harsh environments
- Provides comprehensive sensor setup, data transfer, software upgrades, and maintenance via Modbus RTU (RS485) interface and powerful service APP
- Calibration is valid for two years, reducing maintenance

Product Dimensions



Product Applications

Dewpoint meters are widely used in dry purification, chemical, petrochemical, power engineering, and food & medicine etc.



Gas monitoring of drying equipment

* Refrigeration Dryer Desiccant dryer
Membrane dryer



Vessel and pipeline gas monitoring



Medical and surgical gas monitoring






Moisture monitoring of industrial gases



Monitoring of dry and clean environments



Dryness test for food and drug additives

| Sensor Model | FixInst-P | FIXINST-A | FIXINST-Q |
|---|---|---|---|
| Sensor Type | Polymer Capacitive Sensors | Aluminum Oxide Sensors | QCM Sensor |
| Sensor View |  |  |  |
| Application in > -60 °Ctd : Refrigerant Dryer, Desiccant Dryer, Industrial Gas | ✓ | | |
| Application in -80 ... -60 °Ctd : Desiccant Dryer, Nitrogen Generators, Industrial Gas | | ✓ | |
| Application in -120 ... -80 °Ctd : High-purity industrial gas | | ○ | ✓ |
| Containing contaminated particles | ✓ | ✓ | |

* Sensor FIXINST-A FIXINST-Q have obtained relevant patents
○ Model F139C-Puri, F305B

Technical Data

Measurement Range

| | |
|--------------------|------------------|
| Dewpoint | |
| F133A | -60 ... +20 °Ctd |
| F133B | -60 ... +60 °Ctd |
| Temperature | -40 ... +100 °C |
| Pressure | 0 ... 1.7 MPa(a) |

Accuracy

| | |
|--|--|
| Dewpoint (Air or Nitrogen) | |
| +60... -20 °Ctd | ±2 °Ctd (Standard) ±0.5 °Ctd (Customized) |
| -20 ... -60 °Ctd | ±2 °Ctd |
| Temperature (Customizable) | |
| 0 ... +50 °C | ± 0.3 °C (Standard) |
| -40 ... 0 °C & +50 ... +100 °C | ± 0.5 °C (Standard) |
| Pressure Accuracy @23 °C | ± 0.3 %FS |
| Pressure Drift With Temperature | ± 0.001 MPa/10 °C |

Response Time

| | |
|---|-----------------|
| Dewpoint: 63% [90%], Reference: 20 °C, 1bar(a), 4L/min | |
| -50 → +20 °Ctd | 20 sec [40 sec] |
| +20 → -50 °Ctd | 1 min [3 min] |
| Pressure | < 1 sec |

Output

| | |
|-----------------------------------|----------------------|
| Analog Output (Customized) | 4 ... 20 mA (3-wire) |
| Analog Resolution | 0.002 mA |
| Analog Drift | 0.01 % of span/°C |
| Digital Output | Max. 500 ohm |
| Digital Output | Modbus RTU (RS485) |
| Connector | 5pin M12, Female |

Operating Environment

| | |
|------------------------------|-----------------|
| Operating Temperature | -30 ... +70 °C |
| Storage Temperature | -40 ... +80 °C |
| Relative Humidity | 0 ... 95 %RH |
| Sample Gas Flow Rate | > 1 L/min |
| Pressure | 0 ... 1.7MPa(a) |

Other

| | |
|---------------------------|---|
| Process Connection | ISO G1/2" thread (Standard) 3/4" - 16 UNF thread (Customized) 5/8" - 18 UNF thread (Customized) |
| Protection Code | IP65 |
| Casing Material | SUS304 |
| Sensor Filter | Stainless steel mesh filter (Filtration class 70 um) |
| EMC | Compliant with IEC 61326-1 |

Power

| | |
|------------------------|--------------------------------|
| Measuring State | 10 ... 30VDC Max 1W @ 24VDC |
|------------------------|--------------------------------|

Order Information

| Model | Digital Output | Analog Output | Sensor Filter | Cable / Connector | Analog Output Unit | Pressure | Description |
|----------|----------------|---------------|---------------|-------------------|--------------------|------------|---|
| F133A | | | | | | | -60 ... +20 °Ctd, Polymer film capacitive sensor, Integrated pressure sensor, Standard stainless steel housing, G1/2" thread |
| F133A-U1 | | | | | | | -60 ... +20 °Ctd, Polymer film capacitive sensor, Integrated pressure sensor, Standard stainless steel housing, 3/4" -16 UNF thread |
| F133A-U2 | | | | | | | -60 ... +20 °Ctd, Polymer film capacitive sensor, Integrated pressure sensor, Standard stainless steel housing, 5/8" -18 UNF thread |
| F133B | | | | | | | -60 ... +60 °Ctd, Polymer film capacitive sensor, Integrated pressure sensor, Standard stainless steel housing, G1/2" thread |
| F133B-U1 | | | | | | | -60 ... +60 °Ctd, Polymer film capacitive sensor, Integrated pressure sensor, Standard stainless steel housing, 3/4" -16 UNF thread |
| F133B-U2 | | | | | | | -60 ... +60 °Ctd, Polymer film capacitive sensor, Integrated pressure sensor, Standard stainless steel housing, 5/8" -18 UNF thread |
| | 1 | | | | | | Modbus RTU (RS485) |
| | | 1 | | | | | 4 ... 20 mA |
| | | | S0301 0005 | | | | Stainless steel mesh filter (Filtration class 70 um, Default) |
| | | | | M2701 0004 | | | M12 female straight connectors, IP67, With 2m cable (Default) |
| | | | | | V0101 0001 | | Default output unit |
| | | | | | V0101 0002 | | Output unit (Customized) |
| | | | | | | V0103 0001 | Default 0 bar(g) |
| | | | | | | V0103 0002 | Customized |

* Wi-SUN wireless is available as an option. Please consult sales staff for details

* For other accessories please refer to FixInst Product Catalog or consult sales