



Ultra-wide Meas.  
Range



Outstanding  
Long-term Stability



Ultra-fast  
Response Time

# F103x Series Dewpoint Meter

FIXINST-P Polymer Capacitor Standard  
Dewpoint Transmitter



# DEWPOINT METER

## Product Overview

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 anti-pollution ability

Anti-Condensation,  
Anti-Particle Contamination



### Ultra-wide Range

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



### Self-calibration circuit

Provides measurement  
accuracy and stability

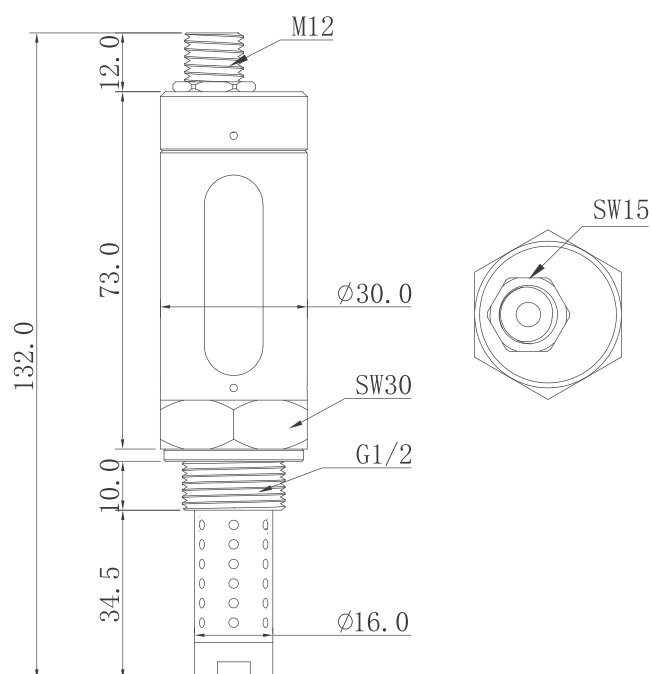





### Fast response time

Fast response to  
moisture changes

- Based on polymer thin film capacitive sensor technology
- 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



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

## Product Applications

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



Gas monitoring of drying equipment

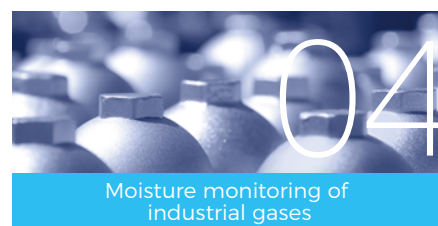
\* Refrigeration Dryer Desiccant dryer  
 Membrane dryer



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

# Technical Data

Measurement Range		
<b>Dewpoint</b>		
F103A	-60 ... +20 °Ctd	
F103B	-60 ... +60 °Ctd	
<b>Temperature</b>	-40 ... +100 °C	

Accuracy		
<b>Dewpoint (Air or Nitrogen)</b>		
+60... -20 °Ctd	±2 °Ctd (Standard)	
	±0.5 °Ctd (Customized)	
-20 ... -60 °Ctd	±2 °Ctd	
<b>Temperature (Customizable)</b>		
0 ... +50 °C	± 0.3 °C (Standard)	
-40 ... 0 °C & +50 ... +100 °C	± 0.5 °C (Standard)	

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

Power		
<b>Measuring State</b>	10 ... 30VDC	Max 1W @ 24VDC

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

Operating Environment	
<b>Operating Temperature</b>	-30 ... +70 °C
<b>Storage Temperature</b>	-40 ... +80 °C
<b>Relative Humidity</b>	0 ... 95 %RH
<b>Sample Gas Flow Rate</b>	> 1 L/min
<b>Pressure</b>	0 ... 5 MPa(a)
	0 ... 35 MPa(a) (Option)

Other	
<b>Process Connection</b>	ISO G1/2" thread (Standard) 3/4" - 16 UNF thread (Customized) 5/8" - 18 UNF thread (Customized)
<b>Protection Code</b>	IP65
<b>Casing Material</b>	SUS304
<b>Sensor Filter</b>	Stainless steel sinter filter (Filtration class 30-45 um)
<b>EMC</b>	Compliant with IEC 61326-1

## Order Information

Model	Digital Output	Analog Output	Sensor Filter	Cable / Connector	Analog Output Unit	Pressure	Withstand Pressure	Description
F103A								-60 ... +20 °Ctd, Polymer film capacitive sensor, Standard stainless steel housing, G1/2" thread
F103A-U1								-60 ... +20 °Ctd, Polymer film capacitive sensor, Standard stainless steel housing, 3/4" -16 UNF thread
F103A-U2								-60 ... +20 °Ctd, Polymer film capacitive sensor, Standard stainless steel housing, 5/8" -18 UNF thread
F103B								-60 ... +60 °Ctd, Polymer film capacitive sensor, Standard stainless steel housing, G1/2" thread
F103B-U1								-60 ... +60 °Ctd, Polymer film capacitive sensor, Standard stainless steel housing, 3/4" -16 UNF thread
F103B-U2								-60 ... +60 °Ctd, Polymer film capacitive sensor, Standard stainless steel housing, 5/8" -18 UNF thread
	1							Modbus RTU (RS485)
		1						4 ... 20 mA
			M1801 0001					Stainless steel sinter filter (Filtration class 30-45 µm, 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
							V0103 0003	Maximum operating pressure: 0 ... 35 MPa(a)
							V0103 0004	Maximum operating pressure: 0 ... 5 MPa(a)

\* 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