



Ultra-fast  
response time



Outstanding  
Long-term Stability



Fixinst-A Patented  $\text{Al}_2\text{O}_3$   
Sensor Technology



# F139x Series Dewpoint Meter

$\text{Al}_2\text{O}_3$  Dewpoint & Pressure  
Multi-Parameter Transmitter



# DEWPOINT METER

## Product Overview

The F139x 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.

When the dewpoint of the measuring medium is below  $-40^{\circ}\text{Ctd}$ , the aluminum oxide sensor is the most accurate, responsive and long-term stable in comparison with other types of sensors. Meanwhile, it has excellent anti-pollution ability

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



### Innovative Sensor Tech

Low dewpoint, high humidity resistance, long-term stability



### Excellent anti-pollution ability

Anti-Condensation, Anti-Particle Contamination



### Ultra-wide Range

$-100 \dots +20^{\circ}\text{Ctd}$



### Self-calibration circuit

Provides measurement accuracy and stability

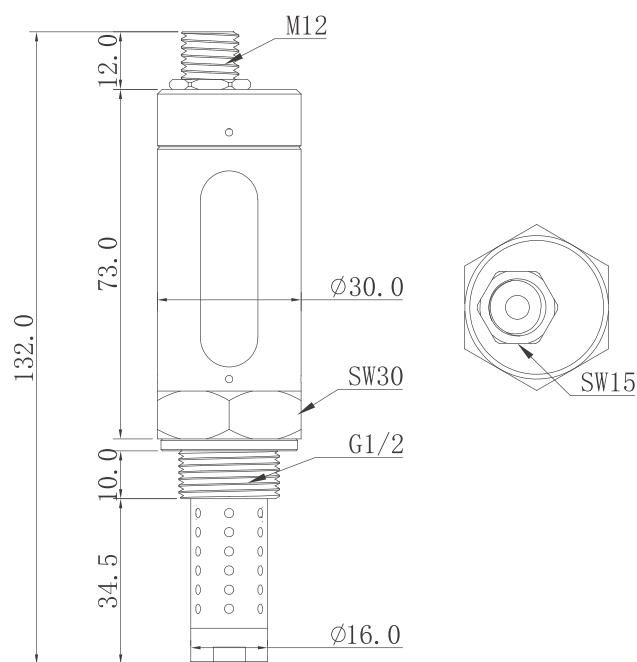





### Fast Response Time

Dewpoint can be down to  $-70^{\circ}\text{Ctd}$  or lower within 30 min

- FixInst new generation ultra-fast response aluminum oxide sensor technology
- MEMS based pressure sensor for simultaneous monitoring of dewpoint and pressure
- Application in dewpoint  $> -60^{\circ}\text{Ctd}$ : Cold dryers, suction dryers, industrial gases
- 10+ points of dew point calibration and multi-point temperature compensation provide accurate measurements up to  $\pm 2^{\circ}\text{Ctd}$  (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.



01

Gas monitoring of drying equipment

\* Refrigeration Dryer    Desiccant dryer  
 Membrane dryer



02



03

Medical and surgical gas monitoring



04

Moisture monitoring of industrial gases



05

Monitoring of dry and clean environments



06

Dryness test for food and drug additives

# Technical Data

Measurement Range		Output	
Dewpoint		Analog Output (Customized)	4 ... 20 mA (3-wire)
F139A	-80 ... +20 °Ctd	Analog Resolution	0.002 mA
F139B	-110 ... +20 °Ctd	Analog Drift	0.01% of span/°C
Temperature	-40 ... +100 °C	Analog Load	Max. 500 ohm
Pressure	0 ... 1.7 MPa(a)	Digital Output	Modbus RTU (RS485)
		Connector	5pin M12, Female
Accuracy		Operating Environment	
Dewpoint (Air or Nitrogen)		Operating Temperature	-30 ... +70 °C
+60 ... -20 °Ctd	±2 °Ctd	Storage Temperature	-40 ... +80 °C
-20 ... -60 °Ctd	±3 °Ctd	Relative Humidity	0 ... 95% RH
Temperature (Customizable)		Sample Gas Flow Rate	> 1 L/min
0 ... +50 °C	± 0.3 °C (Standard)	Pressure	0 ... 1.7 MPa(a)
-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		Other	
Dewpoint: 63% [90%], Reference: 20 °C, 1bar(a), 4L/min		Process Connection	ISO G1/2" thread (Standard) 3/4" - 16 UNF thread (Customized) 5/8" - 18 UNF thread (Customized)
-50 → +20 °Ctd	20 sec [40 sec]	Protection Code	IP65
+20 → -50 °Ctd	1 min [3 min]	Housing Material	SUS304
Pressure	< 1 sec	Sensor Filter	Stainless steel mesh filter (Filtration class 70 um)
		EMC	Compliant with IEC 61326-1
Power			
Measuring State	10 ... 30VDC    Max 1.5W @ 24VDC		

# Order Information

Model	Digital Output	Analog Output	Sensor Filter	Cable / Connector	Analog Output Unit	Pressure	Description
F139A							-80 ... +20 °Ctd, Al <sub>2</sub> O <sub>3</sub> sensor, Integrated pressure sensor, Standard stainless steel housing, G1/2" thread
F139A-U1							-80 ... +20 °Ctd, Al <sub>2</sub> O <sub>3</sub> sensor, Integrated pressure sensor, Standard stainless steel housing, 3/4" -16 UNF thread
F139A-U2							-80 ... +20 °Ctd, Al <sub>2</sub> O <sub>3</sub> sensor, Integrated pressure sensor, Standard stainless steel housing, 5/8" -18 UNF thread
F139B							-110 ... +20 °Ctd, Al <sub>2</sub> O <sub>3</sub> sensor, Integrated pressure sensor, Standard stainless steel housing, G1/2" thread
F139B-U1							-110 ... +20 °Ctd, Al <sub>2</sub> O <sub>3</sub> sensor, Integrated pressure sensor, Standard stainless steel housing, 3/4" -16 UNF thread
F139B-U2							-110 ... +20 °Ctd, Al <sub>2</sub> O <sub>3</sub> 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