YUA

Fast · Accurate · Managing

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 °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 … +60 °Ctd

Auto-calibration Circuit

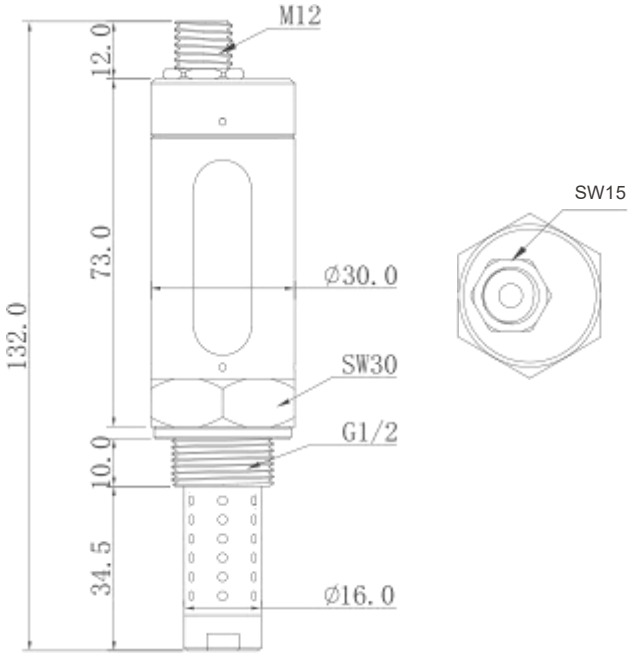
Provides measurement accuracy and stability

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 °Ctd:
  Refrigerant dryers, desiccant dryers, industrial gases
- 10+ points of dew point calibration and multi-point temperature compensation provide accurate measurements up to ±2 °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

Dew point 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



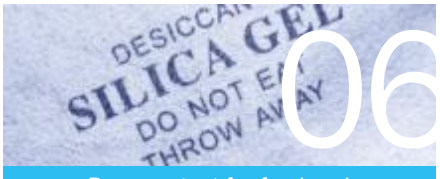
Medical and surgical gas monitoring



Moisture monitoring of industrial gases



Monitoring of dry and clean environments



Dryness test for food and drug additives

Technical Data

Measurement Range

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 (Sustomized) 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	Defualt 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 **YUA Instruments** Product Catalog or consult sales