



-120 ... +20 °Ctd Ultra Low
Dewpoint Measurement



Advanced QCM Technology
Automatic compensation
contamination



Ultra-fast
Response Time

F138x Series Dewpoint Meter

QCM Dewpoint & Pressure
Multi-Parameter Transmitter



DEWPOINT METER

Product Overview

The F138x 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.

QCM sensor technology is a revolutionary humidity measurement technology. Combined with the newly developed moisture sensitive material, it has excellent signal sensitivity in ultra-low humidity conditions and can measure humidity down to ppb level stably

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



FixInst-Q Sensor Tech

Automatic compensation for signal drift due to contamination



PPb Class Ultra Low Dewpoint Measurement

-120 ... 0 °Ctd



Auto-calibration Circuit

Provides accurate and stable measurements

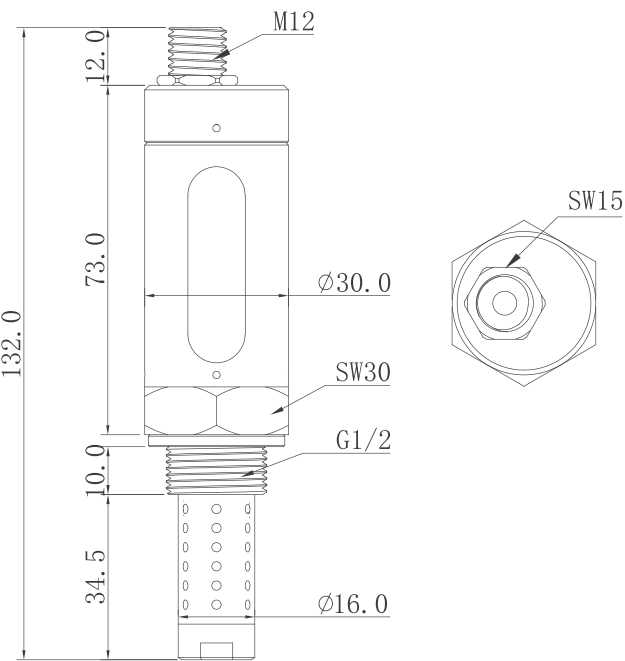





Fast Response Time

Fast response to moisture changes

- Revolutionary FixInst-Q QCM humidity sensitive material, lower limit of dewpoint down to -120 °Ctd, ppb level of humidity
- Application in dewpoint < -80 °Ctd: High-purity industrial gas, clean gas
- MEMS based pressure sensor for simultaneous monitoring of dewpoint and pressure
- Accurate measurements up to ± 2 °Ctd
- Ultra-fast response time and outstanding long-term stability
- High resistance to electrical disturbance
- 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

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



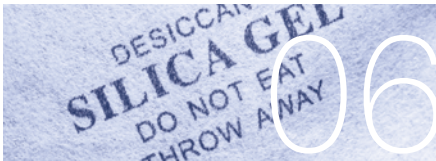
Medical and surgical gas monitoring



Moisture monitoring of industrial gases



Monitoring of dry and clean environments



Dryness test for food and drug additives

Technical Data

Measurement Range		Output	
Dewpoint		Analog Output (Customized)	4 ... 20 mA (3-wire)
F138B	-110 ... 0 °Ctd	Analog Resolution	0.002 mA
F138C	-120 ... 0 °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	-20 ... +70 °C
-20 ... -80°Ctd	±2 °Ctd	Storage Temperature	-30 ... +80 °C
-80 ... -110°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 and +50 ... +100 °C	± 0.5 °C (Standard)		
Pressure Accuracy @23 °C	± 0.3 %FS		
Pressure Drift With Temperature	± 0.01 bar/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)
-80 → -30 °Ctd	20 sec [40 sec]	Protection Code	IP65
-30 → -70 °Ctd	5 min [20 min]	Casing Material	SUS304
Pressure	< 1 sec	Sensor Filter	Stainless steel mesh filter (Filtration class 70 um)
Power		EMC	Compliant with IEC 61326-1
Measuring State	10 ... 30VDC Max 1.5W @ 24VDC		

Order Information

Model	Digital Output	Analog Output	Sensor Filter	Cable / Connector	Analog Output Unit	Pressure	Description
F138B							-110 ... 0 °Ctd, QCM sensor, Integrated pressure sensor, Standard stainless steel housing, G1/2" thread
F138B-U1							-110 ... 0 °Ctd, QCM sensor, Integrated pressure sensor, Standard stainless steel housing, 3/4" -16 UNF thread
F138B-U2							-110 ... 0 °Ctd, QCM sensor, Integrated pressure sensor, Standard stainless steel housing, 5/8" -18 UNF thread
F138C							-120 ... 0 °Ctd, QCM sensor, Integrated pressure sensor, Standard stainless steel housing, G1/2" thread
F138C-U1							-120 ... 0 °Ctd, QCM sensor, Integrated pressure sensor, Standard stainless steel housing, 3/4" -16 UNF thread
F138C-U2							-120 ... 0 °Ctd, QCM 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