F302x

Wall-mounted Dewpoint Monitor

· Instrucion Manual ·

Version: 1.01

Experts in Compressed Air & Gas Measurement

Fast · Accurate · Management

Preface

- Dear customer, thank you for choosing our products.
- This manual is a description of the use range, functions, allation and operation methods, troubleshooting, and maintenance of the product.
- The user must read this operation manual completely before using the device to properly use the product.
- After you read it, keep it in an accessible place for the next operational reference.

Notice

- YUA ruments is not responsible for damage caused by unauthorized changes to the equipment without reviewing the operation manual or violating the provisions of this operation manual, and the rument guarantee will be automatically voided.
- YUA ruments is not responsible for incidental damage caused by transportation, equipment performance, or mishandling.
- YUA ruments do not promise the suitability of this equipment for any application not described herein.
- YUA ruments have tried to make the information in this manual correct. If you find any problems, you are welcome to contact us.
- The contents of this manual are forbidden to be reproduced, copied, or modified without permission

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1. Safety ructions

1.1. General safety ructions

Warning signs indicate the necessity of special attention when alling or using



Warning!

Compressed Air!

Any contact with rapid air leaks or pressurized parts of the compressed air system can lead to significant injury or even death!

- Use only pressure-resistant allation materials.
- Avoid personal contact with rapid air leaks or parts of the rument with pressure.
- You must ensure that the system is not under pressure when performing maintenance operations.



Warning!

Power Voltage!

Any contact with the electrical parts of the product can lead to significant injury or even death.

- Consider all electrical allation-related regulations.
- Any power connections must be disconnected when performing repair and maintenance operations.
- Any electrical work on the system is to be performed by authorized personnel only.

Attention signs indicate the necessity of attention when alling or using



Attention!

The permissible range of operating conditions

Please check the permitted operating conditions. Any operation outside these permits may cause equipment failure or even damage to the rument or the entire system.

- Please check the national regulations, and remarks during the preparation, allation, and use.
- Use of this product is prohibited in explosive areas.
- Do not operate outside the permitted operating range.
- Make sure that the product operates within the permitted conditions.
- Do not exceed or fall below allowable storage/operating temperatures and pressures.
- Do not disassemble the product without permission.
- Use the correct and appropriate tools when the product is in working condition.



Attention!

The product must be properly alled and regularly maintained, otherwise incorrect measurement data will lead to incorrect measurement results.

- Please contact the relevant technician for any malfunction

1.2. Storage and transport safety

- Ensure that the product is transported at a temperature of -30 ... +70 °C.
- It is recommended to use the product's original packaging for storage and transport.
- Make sure that the product is stored at a temperature of 0 ... +40 °C.
- Avoid exposure to sunlight and UV rays.
- The storage humidity must be < 90% and free of condensation.

2. Overview

This product is a dewpoint monitor integrating measurement and display, integrated pressure sensor, alarm light, and buzzer, (specific description can be found in "Chapter 4 Technical Parameters").

This product is designed to measure the following data:

- ✓ **Dewpoint of compressed air or industrial gases**
- ✓ **Relative humidity of compressed air or industrial gases**
- ✓ **Temperature of compressed air or industrial gases**
- ✓ **Pressure of compressed air or industrial gases**

Factory setting of measuring units:

Temperature (°C), Humidity (%), Dewpoint (°Ctd), Pressure (bar)

This product is widely used in compressed air systems of dry purification, chemical, petrochemical, power engineering, and food & drug fields. This product cannot be used in explosive areas. For use in explosive areas, please contact the manufacturer.

3. Performance & Advantages

This rument is a wall-mounted device and has a touchscreen display to monitor each measurement parameter centrally. According to the customer's requirements, the product can be customized with or without a built-in sensor, sensor type, whether with alarm function, whether to integrate pressure sensor and output pressure dewpoint and atmospheric dewpoint, etc. (Please refer to "Order Information" for detailed selection)

- ✓ **Optional polymer thin-film capacitive sensors, ultra-fast response alumina sensors, or QCM sensors**
- ✓ **MEMS-based pressure sensor for simultaneous dew point and in-line pressure monitoring (optional)**
- ✓ **Application:**

  -60 °Ctd Dewpoint - Chillers, suction dryers, industrial gases

  -80 °Ctd Dewpoint - Suction dryers, nitrogen generators, industrial gases

  -100 °Ctd Dewpoint - High-purity industrial gas
- ✓ **Up to 10+ points of dew point calibration and multi-point temperature compensation for measuring accuracy up to ±2 °Ctd (see technical data sheet)**
- ✓ **Dual alarm system: buzzer alarm and flashing red & green light alarms ensure the safe operation of the equipment**
- ✓ **Ultra-fast response time and excellent long-term stability**
- ✓ **Anti-cold condensation, resistant to particulate contamination, oil vapor, and most chemicals**
- ✓ **Excellent immunity to interference**
- ✓ **Easy to all, with a 6 mm quick-connect gas connector**
- ✓ **4.3" wide viewing angle LCD for data viewing, touch screen operation**

4. Technical Data

Measurement Range	
Dewpoint	
F302Ax	-60 ··· +60 °Ctd
F302Bx	-80 ··· +20 °Ctd
Temperature	-40 ··· +100 °C
Pressure	0 ··· 1.7 MPa(a) (Optional)

Accuracy	
Dewpoint (Air or Nitrogen)	
+20 ··· -60 °Ctd	±2 °Ctd
-60 ··· -80 °Ctd	±3 °Ctd
Temperature (Customized)	
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 (Reference: 63% [90%], 20 °C, 1bar(a), 4L / min)	
-50 → +20 °Ctd	20 sec [40 sec]
+50 → -50 °Ctd	1 min [3 min]
Pressure	< 1 sec

Display	
Display	4.3" LCD Touchscreen

Output	
Alarm	Red & green flashing alarm light and buzzer
Connector	2x PG Plug

Operating Environment	
Operating Temperature	0 ··· +50 °C
Storage Temperature	-40 ··· +80 °C
Relative Humidity	0 ··· 95% RH
Measuring Gas Flow Rate	> 1 L / min
Pressure	0 ··· 1.7 MPa(a)

Other	
Process Connection	φ6mm Stainless steel quick connector
Stainless Steel Sintered Filter	Filtration level 30-45 um
EMC	According to IEC 61326-1

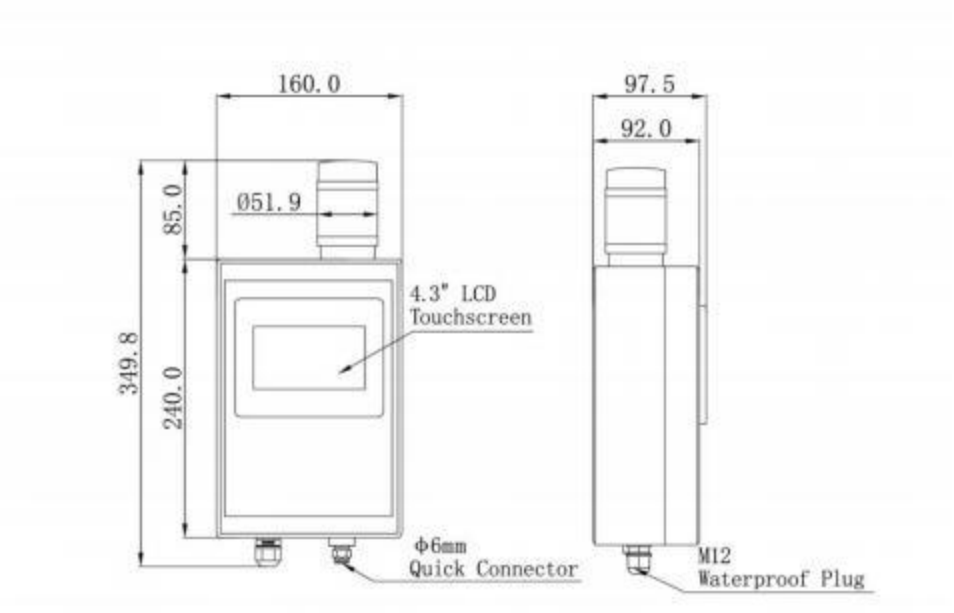
5. Order Information

Model	
F302A	-60 ... +60 °Ctd, 4.3" Capacitive touch screen, wall-mounted
F302A-P	-60 ... +60 °Ctd , 4.3" Capacitive touch screen, wall-mounted , integrated pressure sensor, simultaneous output pressure dewpoint and atmospheric dewpoint
F302A-A	-60 ... +60 °Ctd, 4.3" Capacitive touch screen, wall-mounted, with red & green alarm light and buzzer
F302A-P-A	-60 ... +60 °Ctd, 4.3" Capacitive touch screen, wall-mounted, with red & green alarm light and buzzer, integrated pressure sensor, simultaneous output pressure dewpoint, and atmospheric dewpoint
F302B	-80 ... +20 °Ctd, 4.3" Capacitive touch screen, wall-mounted
F302B-P	-80 ... +20 °Ctd , 4.3" Capacitive touch screen, wall-mounted , integrated pressure sensor, simultaneous output pressure dewpoint, and atmospheric dewpoint
F302B-A	-80 ... +20 °Ctd, 4.3" Capacitive touch screen, wall-mounted, with red & green alarm light and buzzer
F302B-P-A	-80 ... +20 °Ctd, 4.3" Capacitive touch screen, wall-mounted, with red & green alarm light and buzzer, integrated pressure sensor, simultaneous output pressure dewpoint, and atmospheric dewpoint

6. Dimensional Drawings

Different models have slightly different outlines, this diagram takes model F302B-P-A as an example, please consult the relevant sale agents for other model dimensions

* Unit: mm



F302X Dimensional Diagram

7. allation

7.1. Confirmation of packing list

Before alling the product, please check the packing list to confirm whether the items are complete, and contact the manufacturer if there are any missing items.

(The packing list varies by model)

Item	Quantity
F302 Wall-mounted Dewpoint Monitor	1
M12 Connector with 2 m Cable	1
1 m Teflon Hose	1
Quick Guide	1
Calibration Certificate	1

Optional: Red & green alarm lights and buzzer alarm

7.2. Selecting the allation location

In order to maintain the accuracy specified in the technical parameters, the product must be alled correctly.

Before alling the product, please confirm whether there is enough allation space on site to ensure that the product can be used normally after allation.

This product is not recommended to be alled in a humid environment (e.g., air compressor outlet).

Warning: This product is not explosion-proof, do not all in flammable and explosive and other high-risk places. The manufacturer will not be responsible for any consequences caused by the non-compliant operation.

7.3. Installation steps

Different models are alled slightly different, this diagram takes model F302B-P-A as an example, please consult the relevant sale agents for other model allations. Products that already have snaps alled start directly from step 5.



Step 1

Check the packing list



Step 2

Use a screwdriver to pry open sealing clips in four corners (a total of 8)



Step 3

Open the cover and place the four mounting corners on the back at the four corner gaps



Step 4

Put the expansion screws into the back cover mounting holes and YUA the mounting corners with screws



Step 5

Use expansion screws to mount the product on the wall through the corner



Step 6

The left side cable is connected to 220V AC and the right side is inserted into the Teflon tube (gas conduction)

8. Function Settings

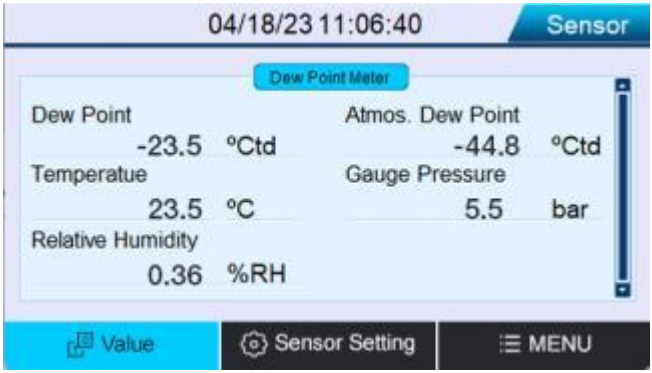
After the product is alled and powered on, the display lights up and runs according to the settings before the last power off.

(1) Boot interface



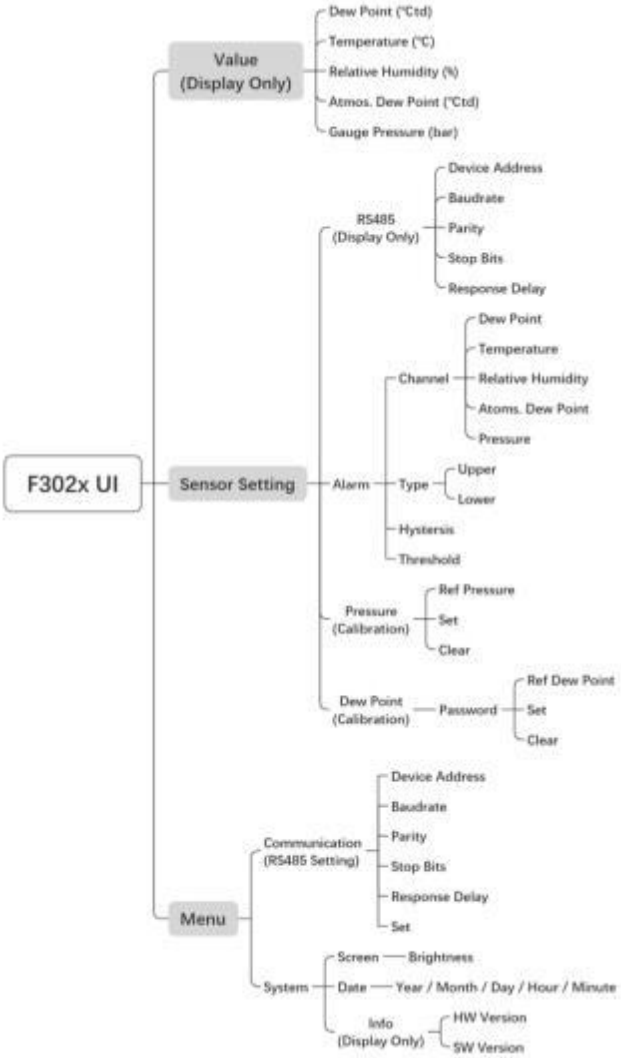
(2) Main interface

Basic parameter settings are set at the factory



(3) Functions Setting

Note: The content of this menu is limited to the current version, due to software upgrades, there will be some differences, the actual conditions shall prevail or consult the manufacturer.



9. Calibration

The product is factory calibrated and the calibration certificate is attached to the product. Since the measurement accuracy of the product is affected by the on-site environment (oil, high humidity, or other impurities can affect the accuracy), we recommend the user perform calibration once a year.

Calibration service is not covered by the product guarantee. Please contact the manufacturer in case calibration is required.



CALIBRATION CERTIFICATE

Instrument	F133C
Series number	113850133000
Manufacturer	Fix Instruments
Calibration date	30 Aug 2018

CALIBRATION RESULTS:

Description	Units	Reference value	Measured value	Evaluation
Dew point	°Ctd	10.52	10.32	Passed
		9.74	9.84	Passed
		-0.42	-0.73	Passed
		-10.80	-10.80	Passed
		-20.12	-20.42	Passed
		-30.58	-31.16	Passed
		-40.10	-40.40	Passed
		-50.38	-50.46	Passed
		-60.06	-61.06	Passed
		-70.04	-70.74	Passed
Temperature	°C	5.00	5.00	Passed
		25.00	25.00	Passed
		35.00	35.00	Passed
Pressure	bar(a)	0	0	Passed
		5.00	5.00	Passed
		9.00	9.00	Passed

EQUIPMENT USED IN CALIBRATION:

Type	Serial number	Uncertainty
MBW 373LX	18-0437	±0.1 °C
PT100	JD170620170	±0.1 °C
P3000	18060000736	±0.212 bar

Ambient condition: Humidity 30...60 %RH / Temperature 20...28 C / Pressure 1013±30 hPa / Flow 2...4 L/min

Modbus RTU setting: Address: 1 / Baudrate: 9600 / Framing,Parity,Stop bit: 8, None, 1

The above instruments was calibrated by comparing the dewpoint output to MBW 373LX dewpoint mirror in the Fix Instruments Humidity Calibration Laboratory. The calibration is according to Fix's internal working standard and traceability chain for dew point, temperature and pressure calibrations.

Checked By

This report is the test result of Fix's laboratory, it is real and effective.

Dewpoint meter calibration certificate style

10. Maintenance & Disposal



Attention!

Recommend using a wet wipe for surface cleaning

Do not use alcohol to clean the display!



Electronic equipment is a recyclable material and is not considered household waste. Disposal of equipment, accessories, and outer boxes must comply with local regulations.

11.Guarantee Clause

The product is covered by a **12-month guarantee** under normal use from the date of delivery. If there is any problem with the product within the guaranteed date, please contact us in time. If the rument is damaged during the guarantee period, our company will be responsible for the repair cost of this product, and the customer is responsible for the shipping and packaging costs.

The following conditions are not covered by or void the guarantee:

- Improper use or non-compliance with the ructions in the operating manual
- Use of unsuitable accessories.
- Serial number has been changed, damaged or removed.
- External influences (e.g. damage caused by vibration and transport or excessive heat and humidity in the environment)
- Unauthorized disassembly of the measuring rument by the user without direct ructions in the operating manual.
- Modification or repair of the rument by a third party or unauthorized personnel.

1

Note: Except as provided by statutory provisions, the manufacturer will not be responsible for other losses of the user (e.g., losses occurring outside the rument). The guarantee period can not be extended for warranty repairs.