

ATO

Industrial Handheld Dew Point Meter

User Manual

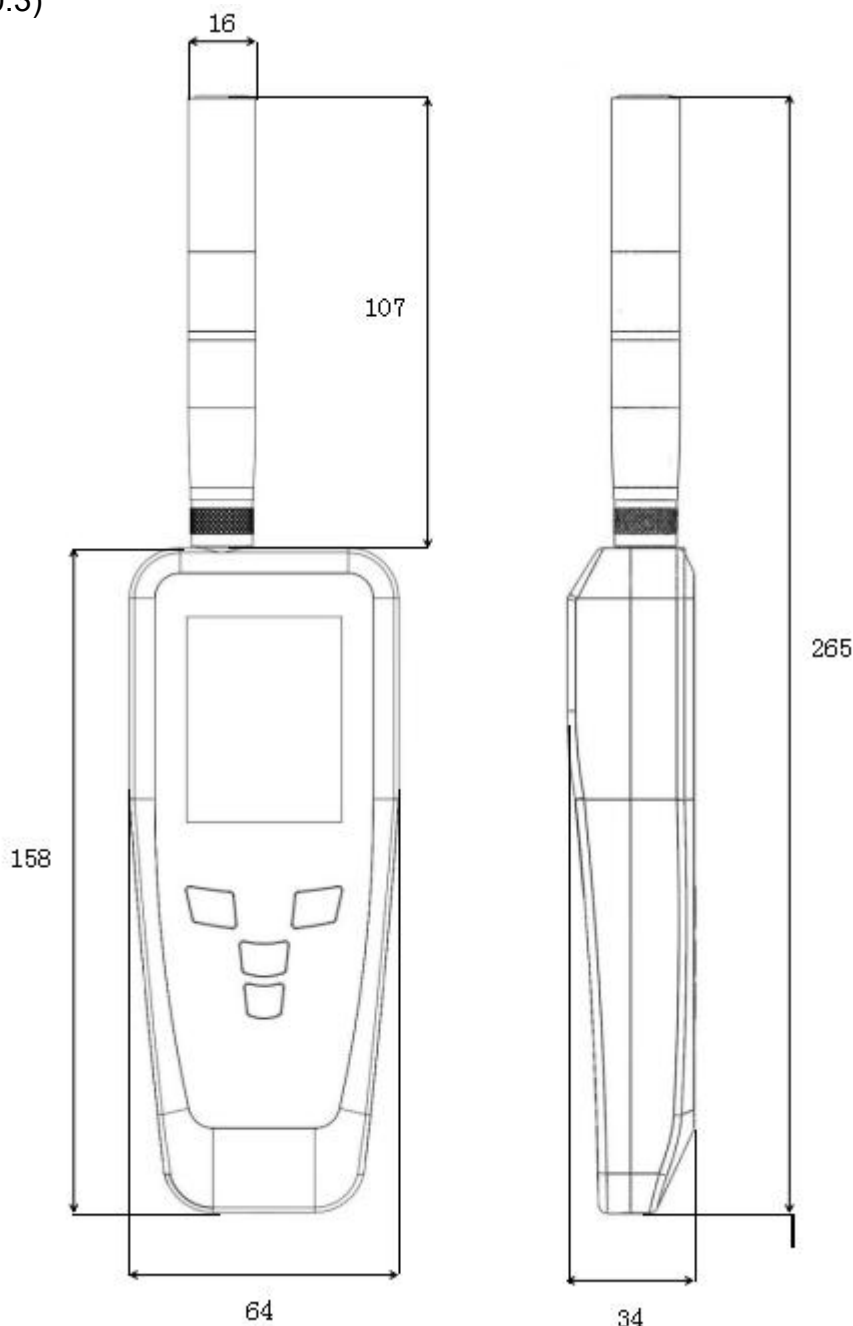


1. Product Overview

This product is an industrial handheld dew point meter with calibrated digital signal output. It adopts high precision and high stability thin film capacitors as sensing elements. After data acquisition and processing by a single chip microcomputer, measured values are displayed on an LCD screen. Featuring long term stability, high reliability, high accuracy and low power consumption, it is resistant to interferences such as power supply noise and voltage fluctuations, and can be applied in factories, clean rooms, medical rooms and other environments.

2. Dimension Drawing

Unit: mm (± 0.3)



3. Main Features

- Real-time on-site display of temperature and humidity changes
- Equipped with digital sensors for high precision and reliability
- Large color display with simple operation
- Low power consumption with temperature drift calibration
- Switchable temperature units (°C/°F)
- Multiple brightness levels available
- Selectable constant-on mode and automatic sleep mode

4. Performance Specifications

Table 1 Relative Humidity

Parameters	Conditions	Minimum	Typical	Maximum	Unit
Resolution			0.1		%RH
Measurement range		0		100	%RH
Accuracy	25°C & 20%~90%		HC24-L:±3.0 HC24-S:±1.5 HC24-H:±0.8		%RH
Repeatability			±0.1		
Response time	1/e (63%)		<3		S
Hysteresis			±0.5		%RH
Drift	Typical value		< 3		%RH/y

Table 2: Temperature

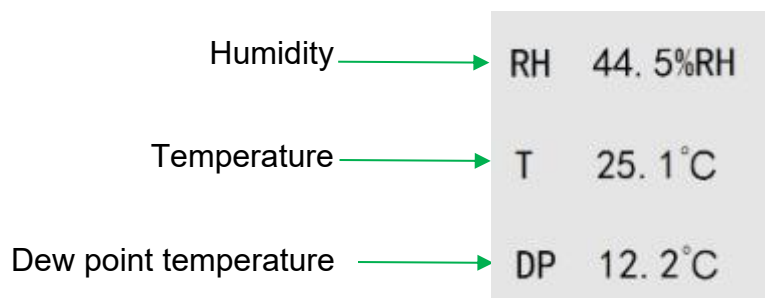
Parameters	Conditions	Minimum	Typical	Maximum	Unit
Resolution			0.1		°C
Operating range		-20		85	°C
Accuracy			±0.2		°C
Repeatability			±0.2		°C
Response time	1/e (63%)	1	2		S
Hysteresis			±0.1		
Drift			< 0.2		°C/y

1. Product measurement accuracy depends on selected probe accuracy.

5. Electrical Characteristics

	Temperature	Humidity
Measuring range	-20~85°C	0~100%RH
Accuracy	±0.2°C (0°C~50°C)	Humidity: HC24-L:±3.0%RH (20%~90%) HC24-S:±1.5%RH (20%~90%) HC24-H:±0.8%RH (20%~90%)
Long-term stability	<0.2°C/year (under normal operating conditions)	<2% RH per year (under normal operating conditions)
Temperature & humidity resolution	0.1°C	0.1%RH
Power supply	5V 500mA DC	
Operating temperature	-20~85°C	
Storage environment	-40~80°C (No condensation; prevent corrosion damage)	
Total power consumption	≤0.15W	
Battery life	8~10 hours	

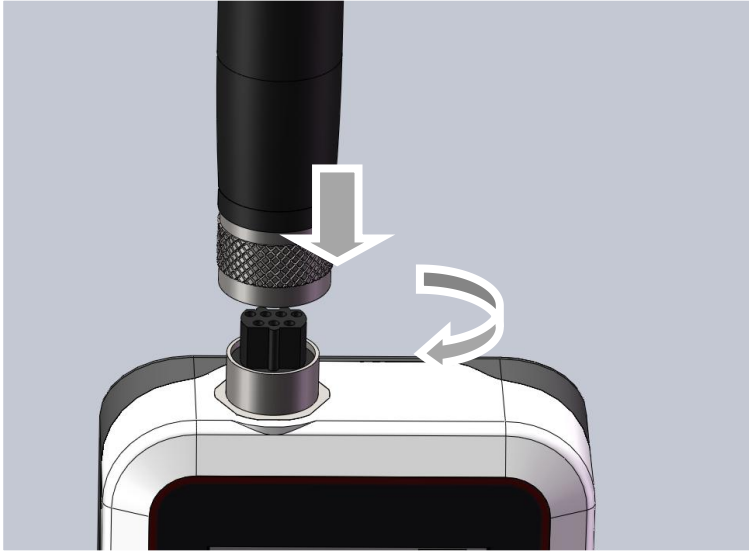
6. Key Functions



Main interface parameters

7. Probe Installation

1. Insert the probe into the seven-core connector
2. Tighten the nut ring manually until fully secured



8. Error and Sources

The temperature and humidity measurement values may be affected by the following factors:

1. Temperature Error
 - 1) Insufficient stabilization time in the test environment.
 - 2) Close to heat/cold sources or direct sunlight.
2. Contamination
Regular cleaning is required when used in dusty or polluted surroundings.

9. Notes

1. Please read this manual carefully before use to ensure correct wiring.
2. Install in a well-ventilated area, away from sources of localized heat.
3. Protect the sensor from direct contact with chemicals, oil, dust, and other contaminants.
4. The transmitter may drift over time. To ensure measurement accuracy, it is recommended to calibrate it once a year.
5. Keep the device as far as possible from high-power interference sources, such as variable frequency drives and motors, to avoid measurement errors.

Warning

Use and Personal Injury

Do not use this product in safety protection devices or emergency stop systems, or in any application where a malfunction of this product could result in personal injury; please read this manual carefully before using this product;

Do not use near flammable gases

Do not use in areas where flammable or explosive gases are present;

Do not touch the sensor directly

Avoid direct finger contact with component surface to protect humidity-sensitive film. Sweat contamination causes performance drift. Wear anti-static finger cots when handling the sensor.

Avoid chemical reactions

Do not use in environments containing salt, sulfur dioxide, halogen gas, ammonia, alcohol, glycol ether, aldehyde and other gases.

Operating Environment

The recommended operating temperature range is -10°C to 50°C , and the humidity range is 0–100% RH. Operating outside these recommended ranges may cause temporary measurement drift. Although this product is not sensitive to light, prolonged exposure to sunlight or ultraviolet radiation will accelerate aging;