WISE AIR 4.0®
MEASURE TO MANAGE

USER MANUAL · 2026 EDITION

WADS-205

Dew Point Monitor

Models covered: WADS-205, WADS-206 (variants -A, -B, -C)



−80…+60 °C td
Range (205 / 206)

±2 °C td
Dew point accuracy

0–15 bar
Pressure rating

220 V AC
Power supply, 10 W

INSTALLATION · OPERATION · CONFIGURATION · MAINTENANCE

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ABOUT WISEAIR

WiseAir Technologies India LLP designs and supplies smart measurement instruments for compressed air and industrial gases — flow, dew point, pressure and power sensors, data loggers, smart drains and leak detection tools. Every WiseAir product is built to make compressed-air energy use **visible, measurable and manageable**.

WiseAir sensors work on their own or as part of the **WiseAir WASM-604 Smart Monitoring platform**, which collects data over Modbus / 4–20 mA, analyses it and reports energy, demand and leakage in real time.

DOCUMENT

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01 Safety and general information

Read this manual completely before you install, operate or service the WADS-205 / WADS-206 dew point monitor. Keep it with the instrument and make it available to everyone who works with it.

Only trained, qualified personnel may install, commission and maintain the instrument. WiseAir Technologies is not liable for damage caused by failure to follow this manual. Opening or modifying the instrument in any way not described here cancels the warranty.

Intended use

The instrument measures the dew point (moisture content) of compressed air and of the technical gases listed under *Product overview*. Use it only within the operating limits given in *Technical specifications*. Any other use is not intended.

Symbols used in this manual

Symbol	Meaning
Danger	Hazard that can cause death or serious injury.
Warning	Hazard that can cause injury or serious damage to equipment.
Caution	Situation that can damage the instrument or give wrong readings.
Note / Tip	Useful information for correct installation and use.

! **COMPRESSED AIR**

- Escaping air or bursting parts can cause serious injury or death.
- Never exceed the maximum permitted pressure of the instrument.
- Use only pressure-tight installation material.
- Depressurise the pipe or sampling line before any installation or maintenance work.
- Keep your face and body away from escaping air.

! **ELECTRICAL SAFETY**

- Contact with live parts can cause electric shock.
- Follow all national regulations for electrical installations.
- Disconnect the power supply before any maintenance work.
- Only authorised, qualified personnel may carry out electrical work.

INSTALLATION AND OPERATION

- Do not use the instrument in explosive (hazardous) areas.
- Do not exceed the permitted gas temperature, pressure or ambient limits.
- Avoid condensation or liquid water on the sensor element – it seriously affects accuracy and can damage the sensor.
- Do not dismantle the instrument.
- Tighten threaded parts with a spanner on the spanner flats only; never turn the housing.

STORAGE AND TRANSPORT

- Storage temperature: −40 to +80 °C, non-condensing.
- Keep away from direct sunlight and UV radiation.
- Store and transport in the original packaging with the protective cap fitted.

02 Product overview

The WiseAir WADS-205 and WADS-206 are wall-mounted dew point monitors with a touch-screen display. They measure the dew point of a sample taken from the compressed air line and show it locally, with an optional red/green status light and buzzer alarm.

Why monitor pressure dew point?

Moisture in compressed air causes corrosion in pipes, shortens the life of pneumatic components, makes actuators fail and can contaminate products. Once water has entered the network, it takes a long time to dry out again.

The indicator on a refrigerant dryer shows only the refrigerant temperature – it does not measure the dew point of the air entering your plant. Faults before or after the dryer (for example a blocked condensate drain) are not shown on the dryer display. A dew point sensor measures the actual moisture in the air and warns you before water reaches the plant.

PRESSURE DEW POINT VS ATMOSPHERIC DEW POINT

Dew point depends on pressure. When air is compressed, the partial pressure of water vapour rises and the dew point rises with it. Example: air at 1013 mbar with a dew point of −10 °C td has a water-vapour partial pressure of about 2.8 mbar. Compressed to 2026 mbar (absolute), the partial pressure doubles to about 5.6 mbar and the dew point rises to about −1 °C td. Always state whether a value is a **pressure dew point (PDP)** or an **atmospheric dew point**.

Key features

Polymer film sensor
Precision design compensates for drift caused by temperature, contamination and ageing.

Accurate to ±2 °C td
Up to 9-point dew point calibration and multi-point temperature compensation.

Integrated pressure sensor
MEMS pressure sensor (variants -A and -C) for simultaneous dew point and line pressure (up to 15 bar).

Fast response
Wet-to-dry and dry-to-wet response specified in the technical data.

Robust
Resistant to condensation, particles, oil and most chemicals; high immunity to electrical interference.

Local alarm
Red/green light and buzzer alarm (variants -B and -C) with adjustable threshold.

Measured media: compressed air and the following gases: nitrogen (N_2), oxygen (O_2), hydrogen (H_2), carbon monoxide (CO), carbon dioxide (CO_2), argon (Ar) and helium (He). The instrument is not approved for hazardous areas – contact WiseAir support before using it with flammable gases such as hydrogen or carbon monoxide.

03 What's in the box



1. Dew point monitor (WADS-205 or WADS-206, as ordered)
2. User manual
3. Calibration certificate
4. Power cable

Optional accessories

- WASM-604 Smart Monitoring (online data acquisition and alarms)
- WiseAir WADL-301 data logger

Ask your WiseAir dealer for prices and other accessories.

04 Technical specifications

MEASURING RANGE	
Dew point – WADS-205	−60 … +60 °C td
Dew point – WADS-206	−80 … +20 °C td
Temperature	−40 … +100 °C
Pressure (variants -A, -C)	0 … 15 bar

DEW POINT ACCURACY (AIR AND NITROGEN)	
+20 … −60 °C td	±2 °C td
−60 … −80 °C td	±3 °C td

TEMPERATURE ACCURACY (STANDARD; HIGHER ACCURACY ON REQUEST)	
0 … +50 °C	±3 °C
−40 … 0 °C and +50 … +100 °C	±5 °C

PRESSURE ACCURACY (VARIANTS -A, -C)	
At 23 °C	±3 % FS
Temperature dependence	±0.01 bar / 10 °C

RESPONSE TIME (63 % / 90 %; 20 °C, 1 BAR(G), 4 L/MIN)	
−50 → +20 °C td (dry to wet)	20 … 40 s
+20 → −50 °C td (wet to dry)	1 … 3 min
Pressure sensor	< 1 s

DISPLAY AND ALARM	
Display	Colour touch screen
Status light	Red / green (variants -B, -C)
Alarm	Buzzer (variants -B, -C)

POWER	
Supply	220 V AC
Power consumption	10 W

OPERATING CONDITIONS	
Ambient temperature	−30 … +70 °C
Storage temperature	−40 … +80 °C
Ambient humidity	0 … 95 % RH
Sample gas flow	> 1 L/min
Pressure rating	0 … 15 bar

OTHER	
Process connection	Ø 6 mm stainless-steel quick connector
Sensor protection	Stainless-steel sinter filter, 30 … 45 µm
EMC	IEC 61326-1

Ordering codes

Ordering code	Range	Pressure sensor (PDP and atmospheric DP)	Red/green light and buzzer
WADS-205	−60 … +60 °C td	–	–
WADS-205-A	−60 … +60 °C td	✓	–
WADS-205-B	−60 … +60 °C td	–	✓
WADS-205-C	−60 … +60 °C td	✓	✓
WADS-206	−80 … +20 °C td	–	–
WADS-206-A	−80 … +20 °C td	✓	–
WADS-206-B	−80 … +20 °C td	–	✓
WADS-206-C	−80 … +20 °C td	✓	✓

05 Installation

WARNING

Depressurise the sampling point before you connect the sample line. Make sure the mains supply is switched off before you connect the power cable.

Mounting

- Mount the monitor upright on a flat, vibration-free wall, with the cable glands and the gas connection at the bottom.
- Choose a location close to the sampling point, protected from direct sunlight, rain and heat sources, within the ambient limits (−30 … +70 °C).
- Make sure the display is easy to read and the alarm light is visible.

Gas connection

1. Take the sample from the top of a horizontal pipe, **downstream of the dryer**, using a valve. Never sample upstream of a dryer or from the bottom of a pipe.
2. Run a clean, short 6 mm stainless-steel or PTFE sample line from the valve to the Ø 6 mm quick connector. Avoid long or plastic lines that absorb moisture.
3. Open the valve slowly and set a sample flow of more than 1 L/min.
4. Check all fittings for leaks – a leak lets in ambient air and gives a falsely high dew point.
5. Allow the reading to stabilise before you record it.

Electrical connection

Connect the supplied power cable to a 220 V AC supply with protective earth. The power consumption is 10 W.

NOTE

For RS485 (Modbus) wiring inside the enclosure, use the terminal diagram supplied with your unit or contact WiseAir support (details on the back cover).

06 Display and alarm settings

The touch screen has three tabs at the bottom:

Tab	Function
Value	Live readings: dew point (°C td), temperature (°C) and relative humidity (% RH). Variants -A and -C also show pressure dew point and atmospheric dew point.
Sensor Setting	Alarm threshold and sensor settings.
MENU	General settings.



WADS-205 with the Value screen.

Set the dew point alarm (variants -B and -C)

1. **Open the settings**
   Tap **Sensor Setting** (the second tab from the bottom of the screen).

2. **Enter the threshold**
   Enter the alarm threshold with the on-screen keypad and press **Enter**.

3. **Check the alarm**
   While the reading is within the threshold, the status light is green. When the reading crosses the threshold, the light changes to red and the buzzer sounds.



Alarm set-up: settings screen, threshold entry, and alarm active (red light).

07 Communication (RS485 Modbus RTU)

NOTE

This section applies to units supplied with an RS485 output. Confirm the output option with WiseAir before ordering.

The sensor communicates as a Modbus RTU slave over RS485. Connect it to the **WiseAir WADL-301 data logger**, to the **WASM-604 Smart Monitoring** platform (smartmonitoring.wiseair.asia) or to any Modbus RTU master (PLC, SCADA, BMS).

Default RS485 / Modbus RTU settings

Parameter	Default
Slave address	Factory-set – confirm with WiseAir support before commissioning
Baud rate	9600
Data bits / parity / stop bits	8 / None / 1 (8N1)
Response time-out	1 s
Response delay	0 ms
Frame spacing	7 characters

Settings can be changed on request to suit your system.

Modbus register map (function code 03, read holding registers)

Register (1-based)	Address (0-based)	Data type	Bytes	Value	Unit	Access
1	0	Float	4	Temperature	°C / °F	Read
3	2	Float	4	Relative humidity	% RH	Read
5	4	Float	4	Pressure dew point	°C td / °F td	Read

Each 32-bit float occupies two consecutive 16-bit registers. Read 2 registers per value.

08 Maintenance and calibration

Every sensor is calibrated before delivery. The calibration date is printed on the calibration certificate supplied with the sensor.

Recommended calibration interval	Every **2 years**
Earlier check needed	If the sensor has been exposed to relative humidity above 85 %, to liquid water or to oil
Calibration service	Return the sensor to WiseAir or your local dealer. Calibration is not covered by the warranty.

Cleaning and care

- Clean the housing with a soft, dry or slightly damp cloth. Do not use solvents.

- Do not touch the sensor element or the sinter filter with your fingers or tools.
- If the sinter filter is contaminated with oil or dirt, contact WiseAir support; do not try to clean the sensor element yourself.
- Check the condition of seals, the sampling line and the pilot flow at every service visit.

09 Troubleshooting

Symptom	Possible cause	Action
No reading / instrument dead	No power; wrong wiring; damaged connector	Check the supply voltage and wiring against the pin-out. Check the connector for bent pins.
No Modbus communication	Wrong address, baud rate or frame setting; Data+ / Data– swapped; missing bus termination	Check the settings in *Communication*. Swap the Data+ and Data– wires as a test. Check the RS485 network termination.
Dew point too high (wet)	Dryer fault; blocked condensate drains; sensor installed upstream of the dryer	Check the dryer and the condensate drains. Check that the sensor is installed downstream of the dryer, in dry air.
Dew point too high after installation	Sensor not yet dried down; leak in the sampling line letting in ambient air	Allow time to stabilise (dry-down to low dew points can take several minutes or longer). Check all fittings for leaks.
Slow or no response to changes	No sample flow; sampling line too long or blocked	Set a sample flow of more than 1 L/min. Keep the sampling line short. Check for blockages.
Water or oil on the sensor tip	Sensor installed upside down, at an angle or in wet air	Depressurise, remove and dry the sensor. Re-install vertically on top of the pipe. Contact WiseAir support if readings remain wrong.
Reading drifts over time	Calibration overdue; contaminated sensor	Check the calibration date. Send the sensor for calibration.
Reading not plausible for the dryer type	Wrong sensor model for the application	Check the dryer suitability table in *Technical specifications*.

If the problem remains, contact your local dealer or WiseAir support (details on the back cover).

10 Warranty and service

WiseAir Technologies provides a **12-month warranty** on the dew point sensor from the date of delivery. The warranty covers defects in material and workmanship when the instrument is used under the stated operating conditions. Report any defect immediately and within the warranty period.

During the warranty period WiseAir Technologies will repair or replace a defective unit free of charge for parts and repair labour. Other services – such as removal and re-installation, travel and transport – are charged. A warranty repair does not extend the warranty period.

Not covered by the warranty

- Improper use or failure to follow this manual.
- Use of unsuitable accessories.
- External influences, e.g. vibration, transport damage, excess heat, moisture or liquid water on the sensor.
- Cosmetic damage to the outside of the instrument (dents, marks).
- Calibration (calibration is a service and is charged separately).

The warranty is cancelled if

- the instrument has been opened, except where this manual tells you to;
- repairs or modifications have been made by third parties or unauthorised persons;
- the serial number has been changed, damaged or removed.

NEED HELP?

Contact your local WiseAir dealer or WiseAir support (details on the back cover). Have the model, serial number and calibration date ready.

11 Commissioning report

Complete this report at commissioning and keep a copy with the instrument.

SENSOR	
Model (WADS-205 / 206, variant)	
Part number / ordering code	
Serial number	
Calibration valid until	
Installed by / date	
COMPRESSED AIR SYSTEM	
Customer / site / location	
Dryer type (refrigerant / desiccant / membrane / other)	
Line pressure (bar)	
Dew point reading at commissioning (°C td)	

Installation checks

#	Check	Yes	N/A	No	Comments
1	Monitor mounted upright, display and alarm light visible	☐	☐	☐	
2	Sample taken downstream of the dryer, from the top of the pipe	☐	☐	☐	
3	Sample line connected; no leaks	☐	☐	☐	
4	Sample flow set (> 1 L/min)	☐	☐	☐	
5	Power supply connected and earthed	☐	☐	☐	
6	Alarm threshold set and tested (variants -B, -C)	☐	☐	☐	
7	Dryer and condensate drains working correctly	☐	☐	☐	
8	Reading stable and plausible for the dryer type	☐	☐	☐	

WiseAir representative (name and signature) _____

Customer representative (name and signature) _____

Date _____

WISE AIR 4.0®
MEASURE TO MANAGE

Need help with your WADS-205?

Our product specialists support installation, commissioning, configuration and calibration — remotely or on site.

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> When you contact support, please keep the sensor serial number, firmware version and a photo of the installation ready.

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Specifications are subject to change without notice.