WISE AIR 4.0®
MEASURE TO MANAGE

2026 · PRODUCT BROCHURE

Pressure Sensors

WAPS-501

Pressure Sensor

CERAMIC CELL · MODBUS RTU OR 4–20 MA

Accurate line pressure at every point that matters — from the compressor discharge to the last machine.

Pressure | Pressure drop | Pressure profile



±0.5 %
accuracy

0–40 bar
16 or 40 bar(g) ranges

2 outputs
Modbus RTU or 4–20 mA

G ½"
process connection

OVERVIEW

Find the pressure losses you pay for.

The WAPS-501 and WAPS-502 measure the gauge pressure of compressed air and non-corrosive industrial gases with a moisture-resistant ceramic measuring cell in a stainless-steel housing. The WAPS-501 sends its reading over RS485 Modbus RTU, so several sensors can share one cable; the WAPS-502 gives a 2-wire 4–20 mA signal for any PLC, display or controller input. Fit sensors at the compressor discharge, after the dryer and filters, and at the far ends of the network, then record them together on a WADL-301 or WASM-604. The pressure profile shows exactly where pressure is lost — often fixed with a filter element or a pipe, not a new compressor.



MEASURES AND SHOWS

- Pressure
- Pressure drop
- Pressure profile

±0.5 % accuracy

Ceramic measuring cell for ±0.5 % accuracy — far better than the typical 2.5 % of a general-purpose gauge.

16 or 40 bar

0–16 bar(g) for plant air, 0–40 bar(g) for high-pressure and booster systems, both with a G ½" connection.

Modbus or 4–20 mA

WAPS-501: RS485 Modbus RTU, several sensors on one bus. WAPS-502: 2-wire, loop-powered 4–20 mA.

Moisture-resistant cell

Ceramic sensing element in a stainless-steel housing for long-term stability in industrial compressed air.

9–30 VDC supply

Runs from the same 24 VDC supply as WiseAir flow and dew point sensors, data loggers and PLCs.

Built for pressure profiles

Record many points on one time base with WADL-301 or WASM-604 and see every pressure drop in the network.

APPLICATIONS

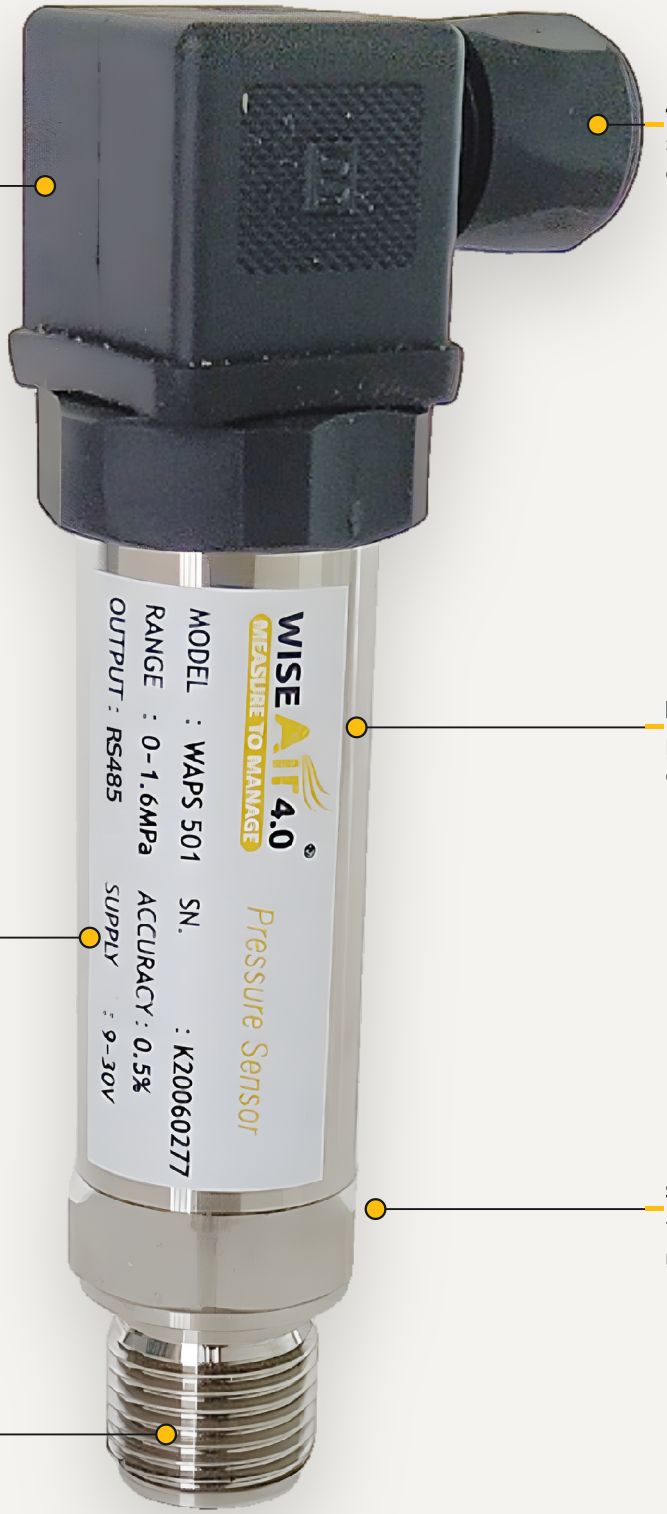
- Compressor discharge and header pressure
- Pressure drop across dryers and filters
- Pressure profile of the distribution network
- Pressure at critical points of use
- Compressor set-point optimisation and energy studies
- Permanent monitoring or temporary audits

WHY IT PAYS

Each extra bar of generation pressure costs about 7 % more compressor energy. A pressure profile shows how far the set-point can safely come down.

PRODUCT ANATOMY

Inside the WAPS-501



4-pin plug with cable gland
Sealed cable entry; use screened cable for RS485 and 4–20 mA.

Removable cable socket
Unscrew the centre screw to lift off the socket and wire the terminals.

Rating label
Model, measuring range, output and supply printed on every sensor.

Stainless-steel housing
Moisture-resistant ceramic measuring cell inside.

Spanner hexagon
Tighten on the hexagon only — never by the housing or connector.

G ½ process connection
BSPP male thread; with a ball valve, remove the sensor without shutdown.

TECHNICAL DATA

Specifications

MEASUREMENT

Measured value	Pressure (gauge)
Measuring range	0–16 bar(g) [0–1.6 MPa] or 0–40 bar(g) [0–4.0 MPa]
Accuracy	±0.5 %
Sensing element	Ceramic measuring cell, moisture-resistant
Media	Compressed air and non-corrosive industrial gases

OUTPUT AND SUPPLY

WAPS-501	RS485, Modbus RTU
WAPS-502	4–20 mA, 2-wire, loop-powered
Signal scaling	4 mA = 0 bar(g), 20 mA = full scale
Supply voltage	9–30 VDC

ELECTRICAL CONNECTION

Connector	4-pin square plug with cable gland
Pin 1	V+ (9–30 VDC)
Pin 2	V− / 4–20 mA signal (502); 0 V (501)
Pins 3 / 4	RS485 D+ (A) / D− (B) (501)

MECHANICAL

Process connection	G ½ (BSPP) male thread
Housing	Stainless steel
Mounting	Upright, on top of a horizontal pipe

ENVIRONMENT

Ambient temperature	−20 … +80 °C
Storage	−10 … +50 °C, < 90 % RH, non-condensing
Installation	Dry compressed air (< 80 % RH); not for hazardous areas

COMPLIANCE AND SERVICE

EMC	IEC 61326-1
Calibration interval	12 months (recommended)
Warranty	12 months from delivery
Units	1 bar = 0.1 MPa = 14.5 psi

ACCURACY
±0.5 %
ceramic measuring cell

RANGE
0–40 bar
16 or 40 bar(g) ranges

POWER
9–30 V
DC supply

Calibration Every sensor is calibrated before dispatch and ships with a calibration certificate. Recalibrate every 12 months; a ball valve at the measuring point lets you remove the sensor without shutting down the line.

SELECTION AND INSTALLATION

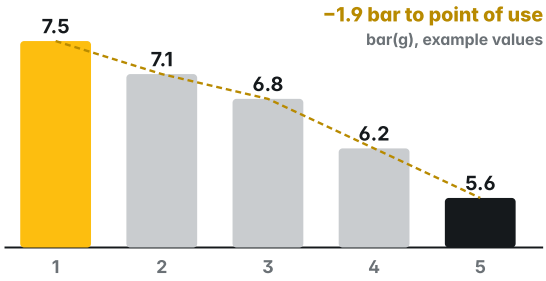
Pick the range. Measure where it matters.

Model selection

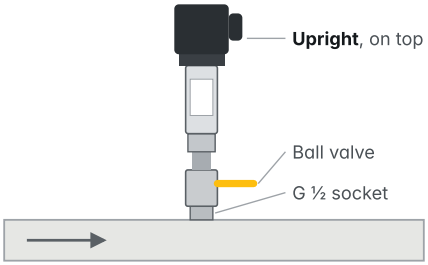
MODEL	RANGE	MPA	OUTPUT
WAPS-501-A	0–16 bar(g)	0–1.6	**Modbus RTU**
WAPS-501-B	0–40 bar(g)	0–4.0	**Modbus RTU**
WAPS-502-A	0–16 bar(g)	0–1.6	**4–20 mA**
WAPS-502-B	0–40 bar(g)	0–4.0	**4–20 mA**

All models: ±0.5 %, G ½ (BSPP) male, 9–30 VDC, stainless-steel housing.

Example pressure profile

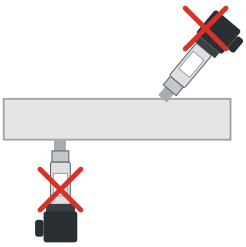


Fit it right



Horizontal pipe, dry air after the dryer

Avoid
upside down, at an angle, or before the dryer



Where to measure

- **1 · Compressor discharge** — the pressure the compressor works to
- **2 · After dryer and filters** — the drop across treatment
- **3 · Main header** — the pressure delivered to the network
- **4 · Department branches** — losses in distribution
- **5 · Farthest point of use** — the pressure machines really get

Modbus RTU
WAPS-501

Several sensors on one RS485 cable to a WADL-301, WASM-604 or PLC.

4–20 mA
WAPS-502

For a PLC, display or compressor controller with a spare analogue input.

1

Choose the point
Horizontal pipe in dry air after the dryer; sensor upright on top of the pipe.

2

Prepare the tapping
G ½ female socket or nipple; a ball valve is recommended for later removal.

3

Fit the sensor
Seal the thread and tighten with a spanner on the hexagon only.

4

Wire and check
9–30 VDC, Modbus or 4–20 mA as ordered. Open the valve slowly and leak-test.

ORDERING INFORMATION

WAPS-501-A	Pressure transmitter, G ½, RS485 Modbus RTU, 0–16 bar(g)
WAPS-501-B	Pressure transmitter, G ½, RS485 Modbus RTU, 0–40 bar(g)
WAPS-502-A	Pressure transmitter, G ½, 4–20 mA, 0–16 bar(g)
WAPS-502-B	Pressure transmitter, G ½, 4–20 mA, 0–40 bar(g)
WAPS-DSA2	Wall-mount display meter, 24 VDC, 2 alarm relays

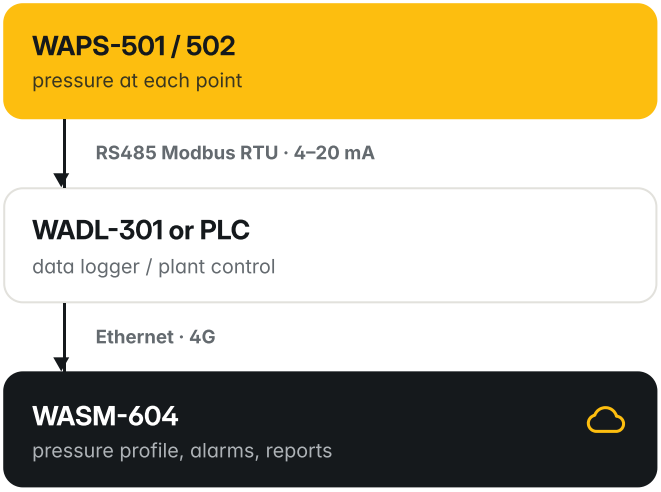
OPTIONS AND ACCESSORIES

WADL-301 data logger	Displays and records several WiseAir sensors
WASM-604 Smart Monitoring	Online pressure profile, alarms and reports
WAPS-DSA2 display meter	Wall-mount display for the sensor signal, 2 alarm relays
Y-type connector	Links several Modbus sensors on one RS485 bus
Ball valve and quick coupler	For the G ½ connection; remove without shutdown

IN THE BOX

- WAPS-501 or WAPS-502 pressure sensor (as ordered)
- Calibration certificate
- User manual

CONNECT TO WISEAIR 4.0



WISEAIR 4.0 MEASURE TO MANAGE

Every bar you save is energy you keep.

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