WISE AIR 4.0®
MEASURE TO MANAGE

2026 · PRODUCT BROCHURE

Flow Sensors

WAFS-107

Thermal Mass Flow Sensor

INLINE TYPE · THERMAL MASS

Sensor head and calibrated measuring pipe in one unit — accurate flow for branches and machines, DN15 to DN80.

Flow | Mass flow | Consumption | Temperature



DN15–80
inline meter sizes

±1 %
of reading + 0.3 % FS

1:2500
turndown, 0.1–250 Nm/s

0–16 bar
operating pressure

OVERVIEW

Its own measuring pipe. No guesswork on the bore.

The WAFS-107 is a thermal mass flow sensor supplied on its own measuring pipe. Head and pipe are calibrated together, so the bore is known exactly and the flow profile is fixed — the surest route to accurate readings on small and medium lines from DN15 to DN80. It measures standard flow directly by thermal dispersion, with no pressure or temperature compensation and no moving parts. A 1:2500 turndown covers everything from idle leakage to full production. Fit it into a branch line or machine supply, read flow, consumption and temperature on the 2.8" touch display, and send the data to your PLC or to WiseAir's WASM-604 monitoring platform.



MEASURES

- Flow
- Mass flow
- Consumption
- Temperature

Calibrated with its pipe

Head and measuring pipe are calibrated as one unit, so the inner diameter is known exactly.

1:2500 turndown

0.1 to 250 Nm/s sensor range covers idle leakage and full production on one meter.

Full digital processing

Digital signal processing and full electrical isolation give a stable, repeatable signal.

No moving parts

Nothing to wear or stick; very low pressure drop and a vibration-proof design.

2.8" IPS touch display

Wide-angle colour screen readable from the floor; optional logger for 10 million readings.

Ready to connect

RS485 Modbus RTU, isolated 4–20 mA and pulse output as standard, plus Bluetooth for wireless set-up.

APPLICATIONS

- Consumption of single machines and production lines
- Department and branch-line sub-metering
- Leak detection and leakage rate measurement
- Air cost allocation by department or product
- Temporary or permanent energy audits
- Nitrogen, oxygen, CO_2, argon and other dry gases

FLOW REFERENCE

Readings are standard (normal) flow at the reference you set — factory setting 20 °C, 1 bar(a) per ISO 1217.

PRODUCT ANATOMY

Inside the WAFS-107



Bluetooth set-up
Configure and read the meter wirelessly from a phone.

2.8" IPS colour touch display
Wide viewing angle, readable from the floor. Optional 10-million-reading logger.

Digital, fully isolated electronics
Stable signal; Modbus RTU, 4–20 mA and pulse outputs.

CONNECTIONS (UNDERSIDE)

1. **M12 A** Power 18–30 VDC + RS485 Modbus RTU
2. **M12 B** Isolated 4–20 mA + pulse output
3. **Micro USB** Service port
4. **Flow arrows** Point them in the direction of flow



Calibrated measuring pipe
R-thread ends, DN15 to DN50; flanged DN65 and DN80 on request.

TECHNICAL DATA

Specifications

MEASUREMENT

Principle	Thermal mass flow (thermal dispersion), inline
Velocity range	0.1 … 250 Nm/s (turndown 1:2500)
Measured values	Normal flow, mass flow, normal velocity, consumption, gas temperature
Flow reference	20 °C, 1 bar(a) per ISO 1217; user-programmable

ACCURACY

Flow	±(1 % of reading + 0.3 % FS)

MEDIA

Gases	Air, N_2, O_2, CO_2, Ar, He, H_2, N_2O, natural gas; others on request
Condition	Dry, non-corrosive, non-explosive gases

OUTPUTS AND INTERFACE

Digital	RS485, Modbus RTU
Analogue	4–20 mA, isolated
Pulse	Consumption pulse, settable volume
Wireless	Bluetooth (standard); LoRa (option)

DISPLAY AND LOGGING

Display	2.8" IPS colour LCD, capacitive touch
Data logger	10,000,000 readings (option)

POWER AND ENVIRONMENT

Supply	18 … 30 VDC
Consumption	5 W max.
Ambient	−30 … +70 °C, indoor
Medium temperature	−40 … +150 °C
EMC	IEC 61326-1

MECHANICAL

Meter sizes	DN15 … DN50 threaded; DN65 and DN80 on request
Process connection	R (taper) male thread; flanges EN 1092-1 / ANSI B16.5 on request
Operating pressure	0 … 1.6 MPa (16 bar(g)); 4.0 MPa (40 bar(g)) option
Electrical connection	2 × M12, 5-pin, female; micro USB
Calibration interval	Every 2 years

FLOW
±1 %
of reading + 0.3 % FS

TURNDOWN
1:2500
0.1 … 250 Nm/s

PRESSURE
16 bar
40 bar option

Calibration Every meter is calibrated together with its measuring pipe before dispatch and ships with a calibration certificate. Recalibrate every 2 years.

SIZING AND INSTALLATION

Pick the line size. Fit it right.

Sizes and flow ranges (meter bore, normal conditions)

MODEL	DN	THREAD	MIN NM³/H	MAX NM³/H	MAX CFM
107-A	15	R ½"	**0.06**	76	45
107-B	20	R ¾"	**0.11**	136	80
107-C	25	R 1"	**0.18**	212	125
107-D	32	R 1¼"	**0.29**	347	204
107-E	40	R 1½"	**0.45**	543	320
107-F	50	R 2"	**0.71**	848	499
On req.	65	Flange	**1.2**	1,434	844
On req.	80	Flange	**1.8**	2,171	1,278

Model codes WAFS-107-A ... F. Minimum at 0.1 Nm/s, maximum at 120 Nm/s, from the meter bore.

Installation and wiring guidelines

- Straight section of pipe, away from bends, reducers, valves and regulators
- Pipe of the same inner diameter as the meter bore; no gasket or sealant in the bore
- After the first filter or water separator, not directly on the compressor outlet
- Green arrows on the display head point in the direction of flow
- Support the pipe on both sides so no stress or vibration reaches the meter
- Indoor use; outdoors, protect the meter from sun and rain
- Cut the pipe to the meter length; remove burrs, swarf and dirt before fitting
- Flanged meters: gaskets that match the flange standard and pressure rating
- Always power through M12 A (18–30 VDC), even when only the analogue output is used
- Shielded twisted-pair cable for RS485; terminate long buses at both ends
- Route signal cables away from power cables and variable-speed drives

1

Isolate the line

Close the branch valve and vent it; the rest of the plant keeps running.

2

Cut in the meter

Replace a pipe section with the meter, arrows pointing with the flow.

3

Seal and tighten

PTFE tape or sealant on the threads; hold the meter body, never the head.

4

Pressurise and connect

Raise the pressure slowly, check for leaks, plug in the M12 cable.

ORDERING INFORMATION

WAFS-107-A	Inline thermal mass flow sensor with measuring pipe, DN15, R ½", 0–16 bar(g), 2.8" IPS touch display, Modbus RTU / 4–20 mA / pulse, Bluetooth
WAFS-107-B	As WAFS-107-A, DN20, R ¾"
WAFS-107-C	As WAFS-107-A, DN25, R 1"
WAFS-107-D	As WAFS-107-A, DN32, R 1¼"
WAFS-107-E	As WAFS-107-A, DN40, R 1½"
WAFS-107-F	As WAFS-107-A, DN50, R 2"
DN65 / DN80	Flanged versions, EN 1092-1 or ANSI B16.5 — on request

OPTIONS AND ACCESSORIES

40 bar version	Operating pressure up to 4.0 MPa (40 bar(g))
Data logger	On-board logging of 10 million readings
Y-type M12 splitter	Several sensors on one RS485 bus
WADL-301 data logger	Collects data from several WiseAir sensors
WASM-604 Smart Monitoring	Online dashboards, analysis and reports

IN THE BOX

- WAFS-107 flow sensor with measuring pipe
- M12 connection cable, 2 m
- Power adapter
- Calibration certificate
- User manual

CONNECT TO WISEAIR 4.0

WAFS-107
flow · consumption · temperature

↓ RS485 Modbus RTU · 4–20 mA · pulse

WADL-301 or PLC
data logger / plant control

↓ Ethernet · 4G

WASM-604
dashboards, alerts, energy reports

WISEAIR 4.0 MEASURE TO MANAGE

Give every branch its own number.

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