

GAS MASS FLOWMETER G3/8



- THERMAL MEMS · 20 ... 200 SLPM · G3/8
- STAINLESS STEEL OR ALUMINIUM · 0.8 MPA
- 1 ... 5 V · 4 ... 20 mA · I²C · IP40

KEY DATA

Property	Value	Property	Value
Flow range	20 ... 200 slpm, by version	Process connection	G3/8
Accuracy	± 1.5 % F.S.	Response time	20 ms
Working pressure	0.8 MPa maximum	Protection grade	IP40
Output	1 ... 5 V · 4 ... 20 mA · I ² C	Supply voltage	8 ... 24 Vdc · 50 mA
Medium temperature	-10 ... +65 °C	Ambient temperature	-25 ... +85 °C

A thermal MEMS meter: the chip heats the gas a little and measures how much heat the stream carries away, which gives the mass flow directly — no temperature or pressure compensation is needed, and the meter is calibrated for one gas.



MEASUREMENT

Measuring principle	Thermal MEMS chip · solid-state sensing element, no thin membrane · resists clogging and pressure shock
Compensation	None needed — the principle measures mass, not volume
Full scale	20 · 50 · 100 · 200 slpm
Velocity range	0 ... 60 m/s
Accuracy	± 1.5 % F.S.
Response time	20 ms
Calibration	Air
Linear output	Flow = $(V_{out} - 1 V) / 4 V \times \text{full scale}$ · 2.5 V on a 1000 slpm device is 375 slpm

MATERIALS AND PROCESS

Media	Clean, relatively dry gas · air, nitrogen, carbon dioxide, oxygen, helium, hydrogen or argon — one of them, chosen in the order code
Humidity	0 ... 100 % RH · the sensor withstands condensation
Body	Stainless steel or aluminium alloy — chosen in the order code
Process connection	G3/8
Working pressure	0.8 MPa maximum
Medium temperature	-10 ... +65 °C
Ambient temperature	-25 ... +85 °C · storage -40 ... +90 °C
Shock	100 g
Protection grade	IP40

ELECTRICAL PROPERTIES

Supply voltage	8 ... 24 Vdc · 50 mA
Analogue output	1 ... 5 Vdc, or 4 ... 20 mA in a three-wire circuit
Digital output	I ² C
Wiring	Five leads · 1 SCL, 2 GND, 3 Vin, 4 Vout, 5 SDA

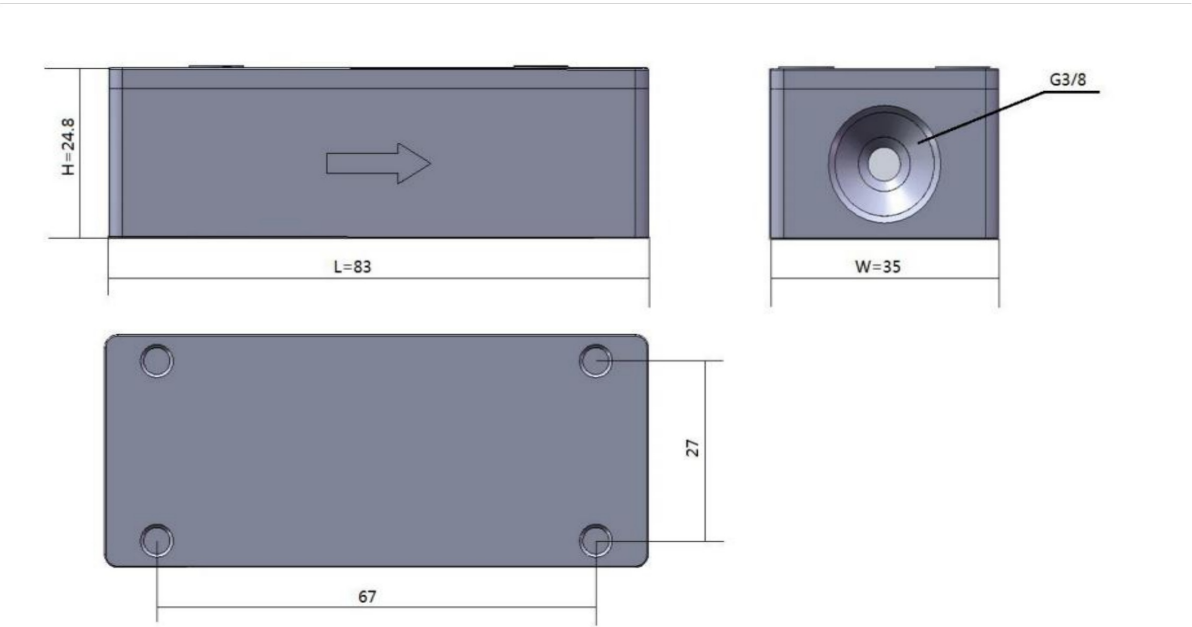
DISPLAY

Display	Integrated display module — last field of the order code
Without display	Code 0 · with display code 1

Every gas has its own coefficient: when a gas other than air is chosen together with a fixed flow rate, this has to be stated in advance. The gas field of the order code is therefore not a switch on the device but part of the enquiry.



DIMENSIONS (mm)



Above the side view with the flow arrow and the view onto the G3/8 connection, below the underside with the two mounting holes.



The five leads on the end face: 1 SCL, 2 GND, 3 Vin, 4 Vout, 5 SDA.

PARAMETER TABLE

Property	Value	Remark
Flow range	20 / 50 / 100 / 200 slpm	customizable
Supply	8 ... 24 Vdc · 50 mA	optional
Accuracy	± 1.5 %	of full scale
Response time	20 ms	optional
Maximum pressure	0.8 MPa	customizable
Communication	I ² C	customizable



PARAMETER TABLE · CONTINUED

Property	Value	Remark
Output	Analogue 1 ... 5 Vdc	—
Temperature	Medium -10 ... +65 °C · ambient -25 ... +85 °C	—
Process connection	G3/8	customizable
Protection grade	IP40	—
Calibration	Air	—
Material	Stainless steel	aluminium alloy — second field of the code



DIMENSION TABLE

A flat block: the length over the two threads, the width and the height over the body, and 27 mm between the two mounting holes on the underside.

OVERALL DIMENSIONS (mm)

Length L	Width W	Height H	Hole spacing	Process connection	Electrical
83	35	24.8	27	G3/8 both ends	Five leads



COMPLIANCE AND CERTIFICATION

Protection grade	IP40
Measuring principle	Thermal MEMS
Accuracy	± 1.5 % of full scale
Wetted materials	Stainless steel or aluminium alloy, chosen in the order code
Pressure rating	0.8 MPa maximum

Example: QGKJ-S-100-2C-0-0. The gas field is not an accessory — the meter is calibrated for the gas chosen there.

ORDER CODE

Field	Code	Meaning
1 Series	QGKJ	QGKJ MEMS gas mass flowmeter
2 Material	S	Stainless steel
	L	Aluminium alloy
3 Full scale	20 ... 200	L/min — 100 means 100 L/min · customizable
4 Output	2C	I ² C
	V15	Analogue 1 ... 5 V
	A	4 ... 20 mA, three-wire
5 Gas	0 · 1 · 2 · 3	Air · nitrogen · carbon dioxide · oxygen
	4 · 5 · 6	Helium · hydrogen · argon
6 Display	0	No display
	1	Integrated display module

