Innovative Sensor Technology
physical. chemical. biological.

MIDAS M1.x

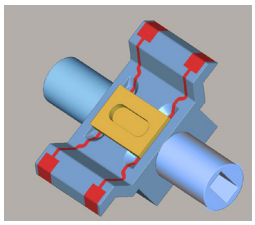
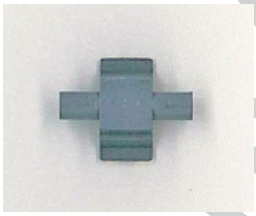
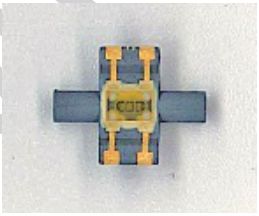
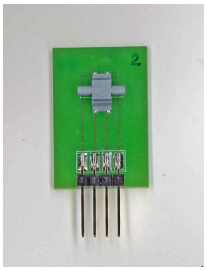
Thermal Mass Flow Sensor

Optimal for ultra fast measuring of gas flow and direction; Sensor chip in MID housing with integrated flow channel

Benefits & Characteristics

- Detection of flow direction
- Ultra fast response time
- Excellent for low mass flow
- Low power consumption
- Small thermal mass
- Excellent symmetry, low offset
- Excellent long term stability
- MID housing with integrated flow channel and solderable contact pads
- A built-in flow channel provides for simple system integration
- Could be soldered directly to a PC board
- Suitable for automated pick-and-place PCB assembly
- Three different flow channel geometries available
- Low temperature dependence also under non-isothermal conditions

Illustration

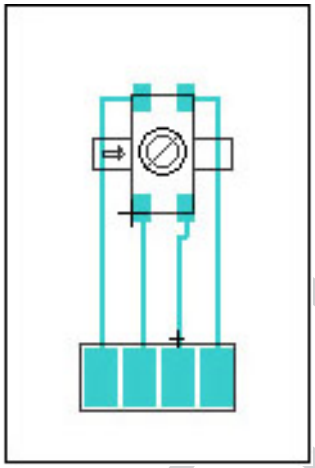
Technical Data

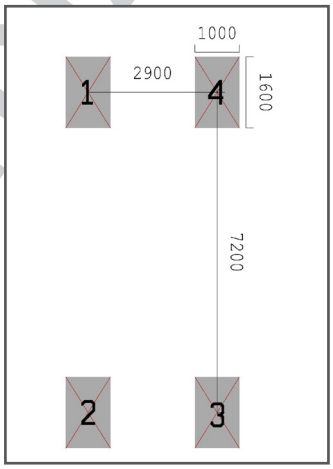
Dimensions (in mm):	Sensor incl. hose nipples (L x W x H):	10.0 x 10.0 x 4.0
	Hose nipple (L x Ø) (2 hose nipples L / R available)	3.0 x 2.0
	Sensor on PC board without plug pins (L x W x H)	20.0 x 10.0 x 5.0
	Plug pins (length / pitch)	10.0 / 1.0
Operating measuring range (air):	MIDAS M1.0: 0 to 100 sccm (extendable to 200 sccm)*	
	MIDAS M1.1: 0 to 50 sccm (extendable to 120 sccm)*	
	MIDAS M1.2: 0 to 25 sccm (extendable to 50 sccm)*	
Minimum operating range:	0 to 1 sccm (MIDAS M1.2)	
Accuracy:	< 2 % of the measured value (depending on the electronics and calibration)	
Response time t63:	< 10 ms	
Temperature range (sensor):	-40 °C to +80 °C	
Temperature range (gas):	-40 °C to +80 °C	

Allowed gas humidity	up to 95% RH, non condensed
Temperature sensitivity:	< 0.05 % / K (depending on the electronics)
Connection:	soldering pads (sensor), 4-pin plug (sensor on PC board)
Bridge resistance 1	Rbr (0 °C) = 600 Ω ±10 % AD to BC (preferred mode)*
Bridge resistance 2	Rbr (0 °C) = 550 Ω ±10 % AC to BD*
Matching between elements:	< 2 %*
Current range	Ibr = 3 to 6 mA
Bridge offset	±8 mV at Ibr = 5 mA; typical ±4 mV *
TCR bridge offset	max. ±200 ppm/K
Power consumption:	10 mW to 50 mW depending on Ibr, 20mW typ.

* Customer-specific alternatives available for OEM quantities

Pin assignmen / Footprint





1	2	3	4
AD	AC	BC	BD

AD-BC: bridge current supply AC-BD: signal oupput

Order Information

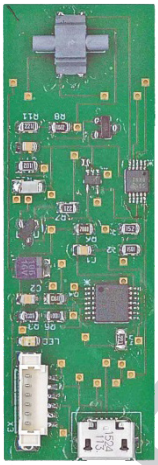
	Without PCB	On PCB
Sensor	MIDAS M1.0	MIDAS M1.0 on PCB
Order code (preliminary)	M1.0	M1.0B
Sensor	MIDAS M1.1	MIDAS M1.1 on PCB
Order code (preliminary)	M1.1	M1.1B
Sensor	MIDAS M1.2	MIDAS M1.2 on PCB
Order code (preliminary)	M1.2	M1.2B

Additional Documents

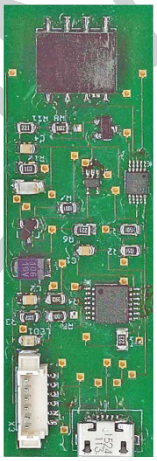
Application Notes:	coming soon
Software for signal processing:	coming soon

Related Products

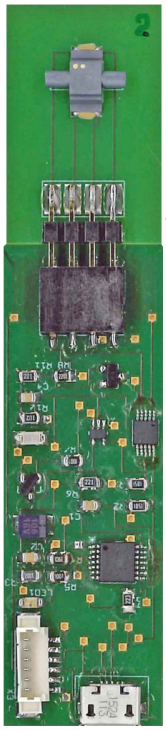
Electronics with on-board sensor	coming soon
USB Module with an on-board sensor	coming soon
USB Module with a socket for 4-pin plug	coming soon
Evaluation kit (USB module + 3 pluggable sensors)	coming soon
Calibration tool (hardware / software)	coming soon



USB Module with an on-board sensor



USB Module with a sensor socket



Evaluation kit (3 pluggable sensors available)

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