

physical. chemical. biological.



MFS02



Thermal Mass Flow Sensor Optimal for ultra fast measuring of gas flow and



direction



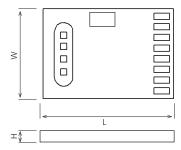
Benefits & Characteristics



- Excellent solution for applications with high flow rates and fast response time in CTA mode
- Very high measuring dynamic with CTA mode (10'000'000 : 1) without bypass
- Detection of flow direction

- Excellent for very low flow rates and leakage detection with bridge mode
- High chemical resistance against aggressive gases and vapors

Illustration¹⁾



1) For actual size, see dimensions

Technical Data

Dimensions (L / L2 x W x H / H2 in mm):	5.0 x 3.4 x 0.5	
Operating measuring range:	0 m/s to 1.5 m/s (full bridge mode)	
	0 ml/min to 100 ml/min (full bridge mode)	
	0 m/s to 150 m/s (CTA mode)	
	0 l/min to 10 l/min (CTA mode)	
Minimum operating range:	0 ml/min to 1 ml/min	
Response sensitivity:	0.0003 m/s (20 microliter/min)	
Accuracy:	< 2 % of the measured value (dependent on the electronics and calibration)	
Response time t ₆₃ :	< 10 ms	
Temperature range (chip):	-40 °C to +160 °C	
Temperature range (gas):	-40 °C to +80 °C (maximal +80 °C less than chip temperature)	
Temperature sensitivity:	< 0.1 % / K (dependent on the electronics)	
Connection:	bonding pads	
2 elements:	$R_{high}(0 \text{ °C}) = 710 \Omega \pm 10 \% R_{A}, R_{D}$	
2 elements:	$R_{low}(0 \text{ °C}) = 530 \Omega \pm 10 \% R_{B}, R_{C}$	



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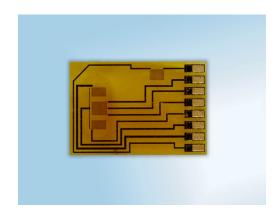




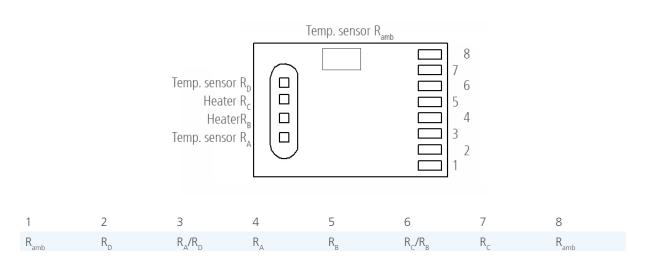


Matching between elements:	< 2 %
1 element:	$R_{amb}(0 \text{ °C}) = 825 \Omega \pm 10 \%$
Voltage range (nominal):	2 V to 6 V (full bridge mode)
Bridge offset (full bridge mode):	Maximal ± 50 mV at $V_{CC} = 5$ V; typical ± 10 mV
TCR bridge offset (full bridge mode):	Maximal ±50 ppm/K x V _{cc} /2
Power consumption (no flow):	10 mW to 50 mW (resp. chip temperature +50 °C to +160 °C)

Product Photo



Pin Assignment





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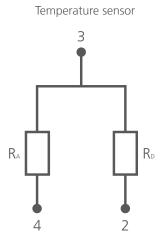


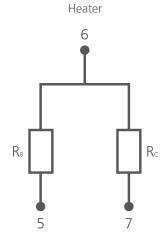


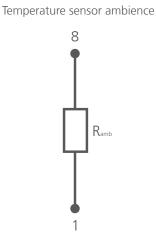




Electrical Equivalent Circuit







Order Information

Description:	Item number:	Former main reference:
MFS02	103743	050.00263

Additional Electronics

Description:	Item number:	Former main reference:
MFS02.PSTD.0	103745	050.00266
MFS02.PEXP.0	103746	050.00267
MicroFlowSens Amplifier Module	104955	350.00097



