

MFS flow sensors		MFS1	MFS2	MFS3	MFS4	MFS5	MFS6				
Sensor type available		MFS1 classic	MFS2 classic	MFS3 classic	MFS4 classic	MFS5 classic	n.a.				
		MFS1+ water resistant	MFS2+ water resistant	MFS3+ water resistant	MFS4+ water resistant	MFS5+ water resistant	MFS6+ water resistant				
Instrument compatibility (1)		OB1 MK3+ / OB1 MK4 / MSR					OB1 MK4 / MSR				
Ingress protection	MFS	No certification					n.a.				
	MFS+	IP54 (2)									
Sensor Performance Flow Measurement											
Media calibration		Water	Water	IPA	Water	IPA	Water	IPA	Water	Water	IPA
Flow rate range		0 to ± 1.5 µl/min	0 to ± 7 µl/min	0 to ± 70 µl/min	0 to ± 80 µl/min	0 to ± 500 µl/min	0 to ± 1 ml/min	0 to ± 10 ml/min	0 to ± 5 ml/min	0 to ± 40 ml/min	0 to ± 40 ml/min
Sensor output limit (3)		± 1.7 µl/min	± 8 µl/min	± 100 µl/min	± 120 µl/min	± 600 µl/min	± 1.1 ml/min	± 11 ml/min	± 5.5 ml/min	± 65 ml/min	± 65 ml/min
Accuracy (4) (whichever error is		±10 % of measured value	±5 % of measure	±20 % of	±5 % of measured	±20 % of measured	±5 % of measured	±20 % of	±5 % of measured value	±5 % of measured	±10 % of measured

larger)	or 0.0075 µl/min	d value or 0.02 µl/min	measure d value or 0.21 µl/min	value or 0.12 µl/min	value or 5 µl/min	value or 2 µl/min	measure d value or 100 µl/min	or 10 µl/min	value or 50 µl/min	value or 200 µl/min
Repeatability (whichever error is larger)	<1 % of measured value or 0.0009 µl/min	±0.5 % of measure d value or 0.0035 µl/min	±1 % of measure d value or 0.007 µl/min	±0.5 % of measured value or 0.008 µl/min	±1 % of measured value or 0.25 µl/min	±0.5 % of measured value or 0.2 µl/min	±1 % of measure d value or 5 µl/min	±0.5 % of measured value or 1 µl/min	±0.5 % of measured value or 10 µl/min	±0.5 % of measured value or 10 µl/min
Fluidic Specifications and Connections										
Sensor inner diameter	25 µm	150 µm		430 µm		1.0 mm		1.8 mm	1.4 mm	
Sensor internal volume	1 µL	1.5 µL		5 µL		25 µL		80 µL	58 µl	
Microfluidic fitting type	UNF ¼-28 flat bottom using 6-40 to ¼-28 connectors					UNF ¼-28 flat bottom				
Recommended torque for fitting connection	0.5 Nm ± 10%									
Minimum recommended tubing ID	25 µm	150 µm		430 µm		1 mm		2 mm	2 mm	
Pressure drop at full	1 bar	3 mbar	60 mbar	1 mbar	7 mbar	< 1 mbar	5 mbar	< 1 mbar	< 4 mbar	

scale flow rate, 23°C								
Wetted materials		Quartz Glass (Fused Silica) / PEEK			Borosilicate Glass 3.3 / PEEK / FEP			Polyphenylene sulfide (PPS) / stainless steel 316L / epoxy-based adhesive
Mechanical Specifications								
Largest dimensions	MFS	52 x 58 x 23 mm						n.a.
	MFS +	52 x 58 x 29 mm						47 x 58 x 29 mm
Weight	MFS	102 g						n.a.
	MFS +	145 g						130 g
Maximum recommended operating pressure (5)		200 bar		100 bar		15 bar		12 bar
Burst pressure		400 bar		200 bar		30 bar		25 bar
Fixation holes	MFS	No						n.a.
	MFS +	2 x M3						2 x M3

Electric Specifications and Connections		
Supply voltage	5V	3.3 V
Supply current (in measurement conditions)	6.8 mA	6 mA
Connector format	M8	

(1) Check with your sales contact for firmware compatibility

(2) IP54 code definition:

First digit 5: Dust protected - Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the safe operation of the equipment.

Second digit 4: Splashing of water - Water splashing against the enclosure from any direction shall have no harmful effect, utilizing either: a) an oscillating fixture, or b) A spray nozzle with no shield. Test a) is conducted for 10 minutes. b) is conducted (without shield) for 5 minutes minimum.

(3) Flow rate at which the sensor output saturates.

(4) Accuracy and repeatability specifications valid for flow rates below full scale (for MFS1 to MFS5) and below ± 20 ml/min for MFS6.

(5) Pressure ratings at 23°C, apply to the sensor only; pressure rating of the fitting interface has to be assessed separately.

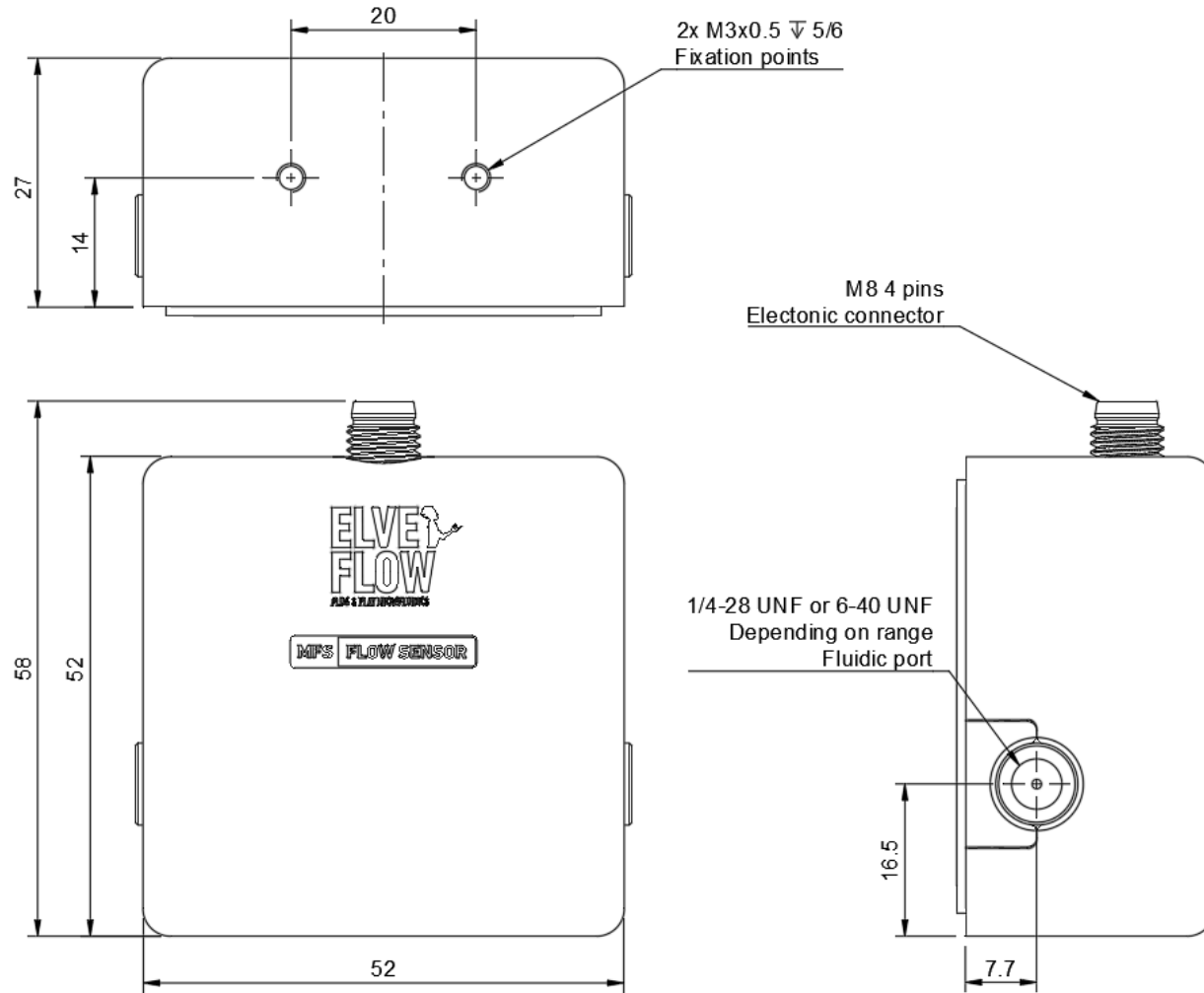
The recommended storage temperature range is -10°C to +60°C.

The operating temperatures are +10°C to +50 °C.

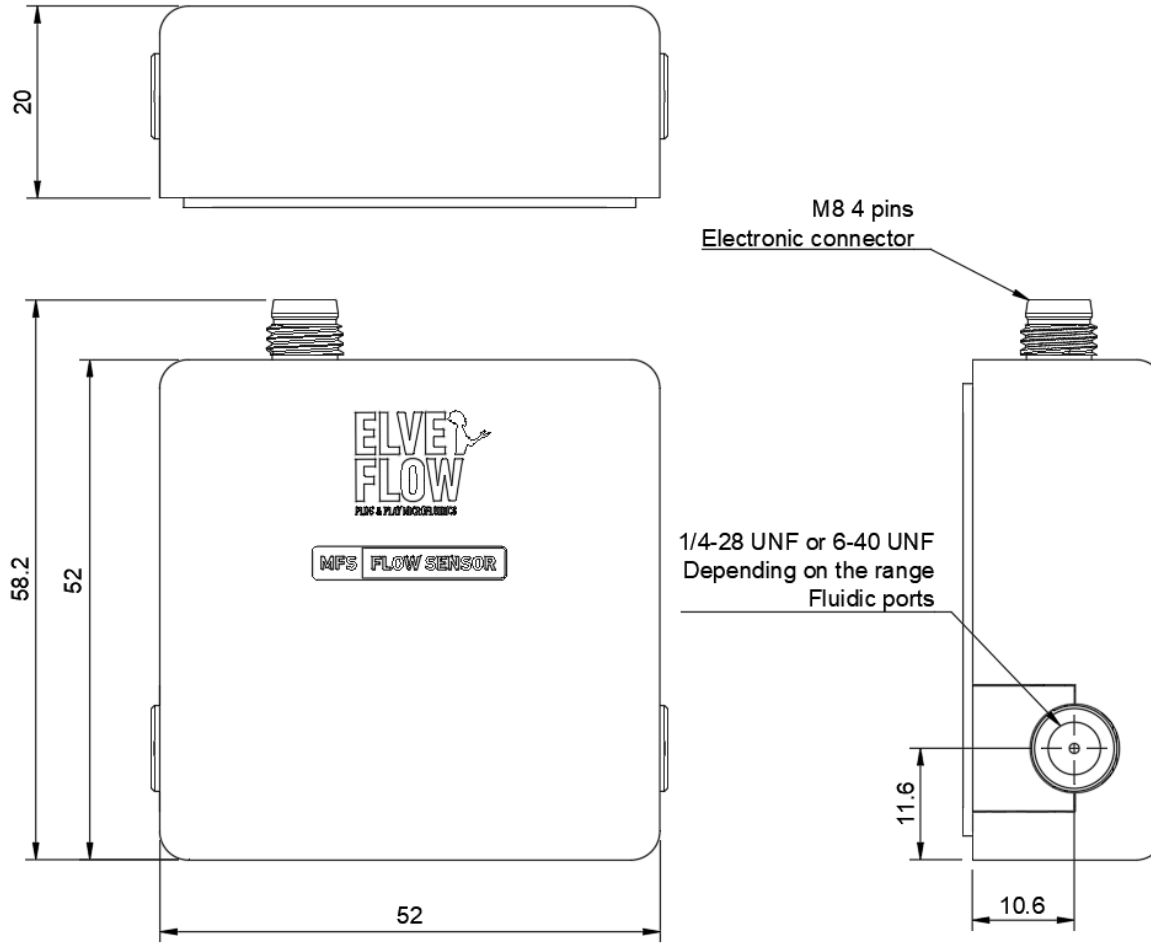
Dimensional drawing

(Dimensions in mm)

MFS+



MFS



MFS6+

