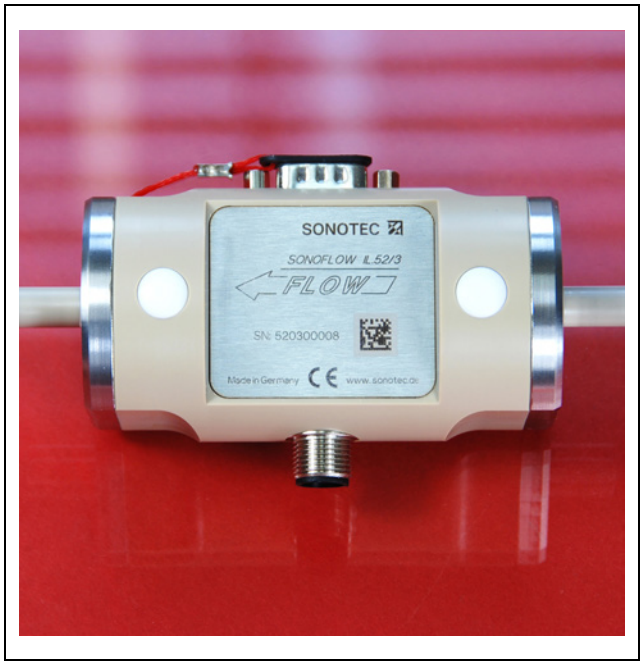


The inline compact sensor SONOFLOW IL.52 serves to detect smallest flow rates of liquids quickly.

Constructed as a built-in component for machines and apparatus, the sensor could be easily mechanically installed and electrically integrated into the control system.

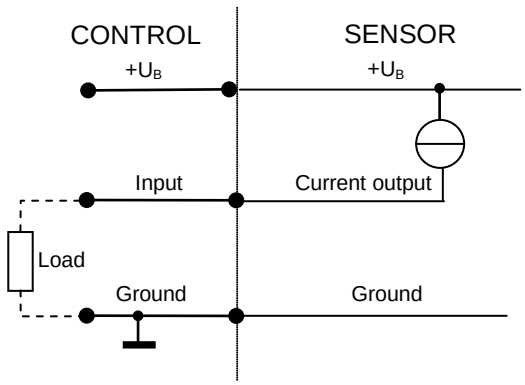
Two current outputs or pulse outputs respectively are available. The service interface allows an easy parameterization, calibration and readout of measuring values.

Specifically designed for the use in areas with rigorous hygiene requirements, the sensor is suitable for circulation cleaning and steam sterilization.

Technical Data

SONOFLOW IL.52 **Ultrasonic Flow Sensor for Liquids**		
Measuring method	Ultrasound	
Measuring cycle	Typical 20 ms (4 ms min)	
Specification	**IL52/3**	**IL52/4**
Order number	200010228	200010227
Diameter of the Measuring channel	3.0 mm	4.0 mm
Upper range value	3 l/min	6 l/min
Accuracy for water	0 ... 0.03 l/min: ± 0.3 ml/min	0 ... 0.06 l/min: ± 0.6 ml/min
At 23° C ± 2 K and 1 bar	0.03 ... 3.0 l/min: ± 1.0 %	0.06 ... 6.0 l/min: ± 1.0 %
Zero stability	0.375 ml/min	0.75 ml/min
Pressure drop at nominal flow rate	0.95 bar	3.00 bar
Media	Sound transparent, low-viscosity liquids*	
Pressure rating	PN16	
Calibration	Factory calibrated for water at 23 °C ±2 K, outlet of the tubes depressurized (0 bar)	

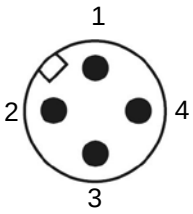
* For industrial applications with high-viscosity liquids (e.g. fats/special paints), screening tests must be made.

Dimensions L x W x H	122 x 64 x 46 mm
Weight (without cable)	350 g
Protection type	IP65
Cleaning and sterilization	• Maximum liquid temperature: temporarily +145 °C; • Resistant to cleaning agents (e.g. caustic soda or 3 percent nitric acid)
Adaptor for tube connection	Outer diameter 8 mm Inner diameter 4 mm
Mounting	At any position; 4 x recessed M5 threaded holes, depth: 10 mm
Material (In contact with fluid)	Measuring channel and measuring cell: PEEK Seals: Viton (optional FFKM)
Temperature measurement	Integrated sensor at the inlet (±1 °C)
Operating voltage	12 … 30 VDC, ripple max. 10 %, protection against reverse polarity
Power requirements	Max. 80 mA (current outputs open)
Sensor connections	4-pin M12 connector, service: 9-pin D-Sub connector
Outputs	2 outputs, configurable as: • 0/4 ... 20 mA for flow rate (default assignment: output 1), • 0/4 ... 20 mA for temperature (default assignment: output 2), • Pulse output – flow rate (max. 22 mA)
	
Media temperature	0 ... +100 °C (temporarily +145 °C)
Ambient temperature	0 ... +70 °C
Storage temperature	-20 ... +70 °C
Directives/Standards/CE	CE certification based on EMC directive 2004/108/EG

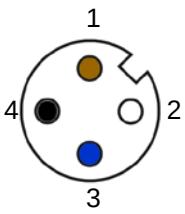
Scope of delivery	• Sensor SONOFLOW IL.52 • Operating manual
Accessories	SONOFLOW Monitor for parameterization and diagnosis, consisting of • USB Data Converter, Type 002 for connection to the computer • Power Supply Unit • 4-pin M12 connector • Terminal block • CD with Software SONOFLOW Monitor and driver for Windows XP
Optional accessories	• M12 4-pin connecting cable (2 m or 5 m) • Calibration protocol

Table 1: Technical Data SONOFLOW IL.52

Electrical connections

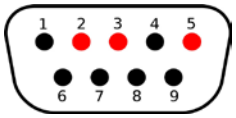


Male connector:
on the Sensor

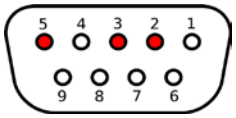


Female connector:
on the cable

4-pin M12 connector	Contact	Color	Connection
Assignment	1	Brown	Operating voltage +12 ... 30 VDC
(Process interface)	2	White	Output 1: current output (0/4 ... 20 mA) and pulse output respectively
	3	Blue	Ground
	4	Black	Output 2: current output (0/4 ... 20 mA) and pulse output respectively
	Shielding		If available: ground on one side of the control



Male connector:
on the Sensor



Female connector
on the cable

9-pin D-Sub connector	Contact	Connection
Assignment	Pin 2	Service interface (TTL-Output)
(Service interface)	Pin 3	Service interface (TTL-Input)
	Pin 5	Ground

Technical Drawings

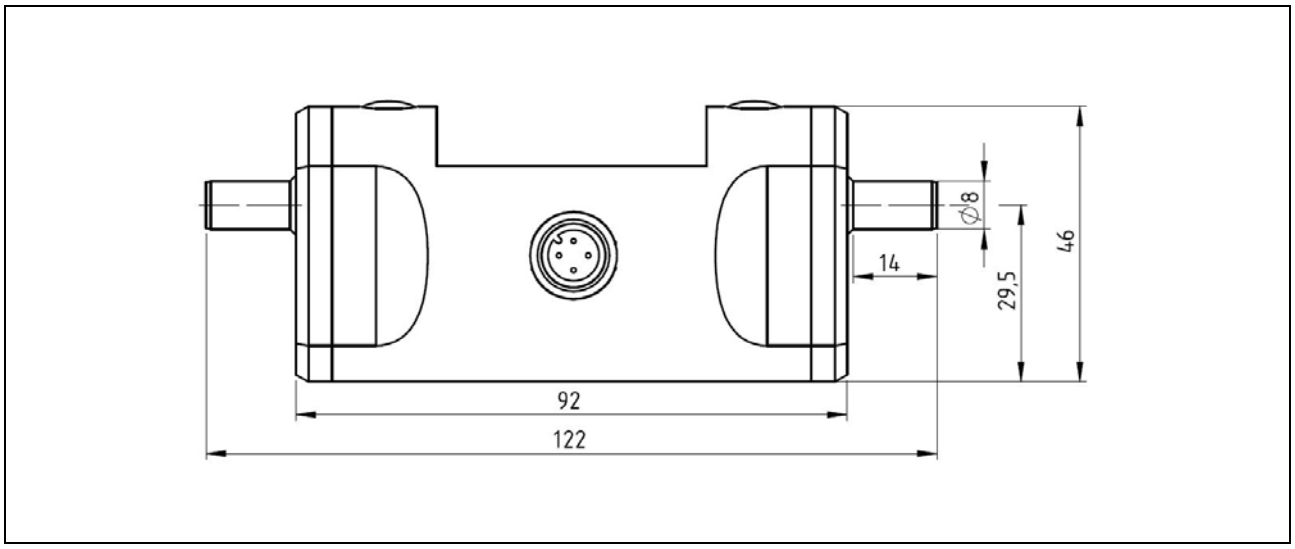


Figure 1: Dimensions SONOFLOW IL.52 – Side view

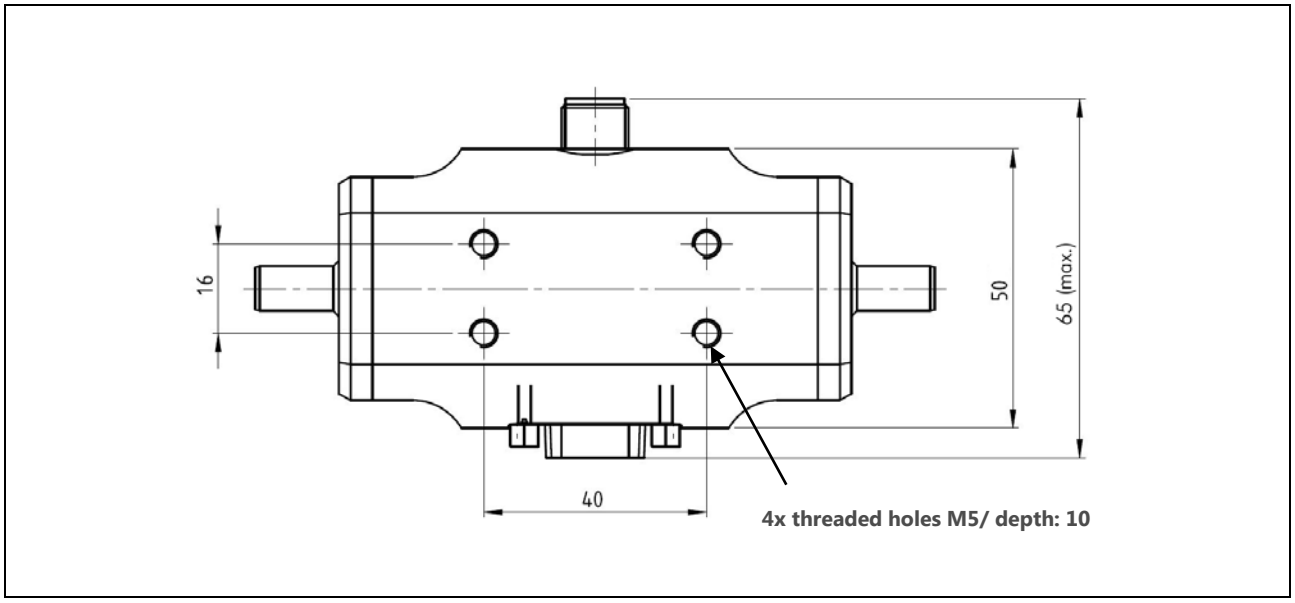


Figure 2: Rear side with drill holes for mounting

Should you have any questions, please do not hesitate to contact us.

Information is subject to change without notice!

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