

# Flow meter for liquid media

## flow-captor 4511.30/x

The flow-captor type 4511.30/x is a non-reactive flow meter, ideal for all measuring and control tasks in automation processes or other industrial applications. This “micro” flow-captor has been specially designed to detect extremely small flow rates, up to < 0.1 ml/min.

The sensor operates according to the calorimetric measuring principle. Detection takes place in the inline tube, whereby the sensor measures the heat flow dependent on the flow velocity of the medium and converts it into a linear, flow-proportional, electrical signal.

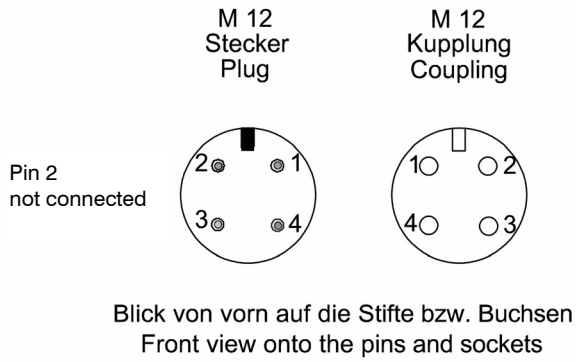
- for smallest pipe diameters: 4 x 1 mm and 6 x 1 mm
- no flow obstruction due to elements projecting into the pipe.
- analogue current output 4 - 20 mA
- electronic function - without mechanically moved parts
- robust industrial design (special potting)
- **ISO 9001:2015**



Technical data		
Type	4511.30/4	4511.30/6
Pipe diameter	4 x 1mm (ID 2)	6 x 1mm (ID 4)
Measuring range	min. linear range 0.1 - 1 ml/min ( $\approx 0.05 - 0.5$ cm/s)	min. linear range 0.4 - 4 ml/min ( $\approx 0.05 - 0.5$ cm/s)
'With increased linearity deviation	max. linear range 1 - 20ml/min ( $\approx 0.5 - 10$ cm/s)	max. linear range 4 - 75 ml/min ( $\approx 0.5 - 10$ cm/s)
	extended range 1 - 47 ml/min( $\approx 0.5 - 25$ cm /s) <sup>1</sup>	extended range 4 - 190 ml/min( $\approx 0.5 - 25$ cm /s) <sup>1</sup>
Sensor data <sup>1</sup>		
Range adjustment	by means of 2 potentiometers for zero point and range	
Medium	water (other media on request)	
Medium temperature	-10 °C to +80 °C	
Ambient temperature	-10 °C to +60 °C	
Linearity deviation	< 5 % (best fitting slope)	
Repeatability tolerance	< 3 %	
Temperature drift	< 0.3 % / K	
Mechanical data		
Protection class	IP65	
Operating pressure	max. 10 bar	
Material housing	Makrolon®	
Material sensor pipe	stainless steel AISI 316Ti (other material on request)	
Torsion	no twisting pipe against housing permissible	
Electrical connection	4-pin M12-coupling and 2 m cable 3 x 0,34 mm <sup>2</sup> (type 4950) with 4-pin M12 plug	
Electrical data		
Voltage supply	24 VDC $\pm 10\%$	
Current consumption	max. 100mA	
Output current	4 - 20 mA	
Resistive load	0 - 600 $\Omega$	

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Connection diagram

