

Flow monitor for oil-based media

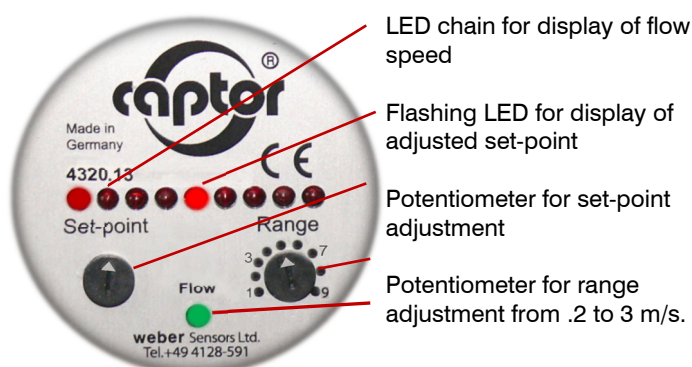
flow-captor 4321.1x

The inline flow-captor type 4321.1x is a unique, precise metering flow switch. The inline flow-captor can be applied in all areas of industries where exact flow set-points are required. At the same time it "measures" the flow speed, even up to very low flows.

- precise switching sensor for oil-based media up to 30 bar
- high accuracy even at low flow rates
- separate adjustments for range and set-point
- analog display of actual flow and display of the adjusted set-point
- LED display of output status
- ISO 9001 : 2008



Control and display panel



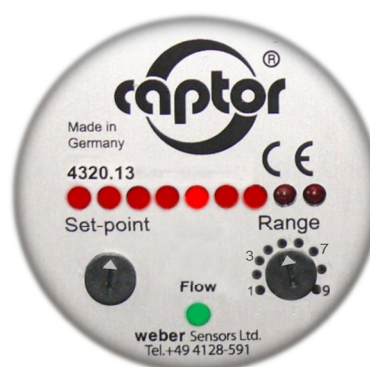
LED chain for display of flow speed

Flashing LED for display of adjusted set-point

Potentiometer for set-point adjustment

Potentiometer for range adjustment from .2 to 3 m/s.

example of operation

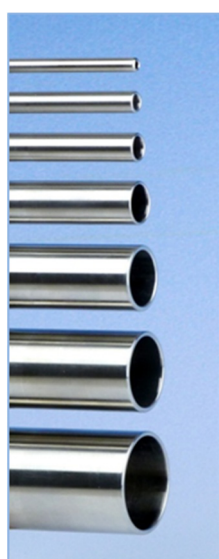


Measuring range adjusted to 3 m/s = 100% (9. LED)

Set-point adjusted to 50% of end value (5. LED)

Flow speed equates 75% (7. LED)

Green LED is **ON**:
Flow rate is above the adjusted set-point



The sensor tube

The sensor tube (length 200 mm) is made of stainless steel 316Ti and is an integral part of the inline flow-captor.

This series is available with sensor tubes in different sizes as 6 x 1, 8 x 1, 12 x 1, 18 x 1,5, 22 x 1,5 as well as 28 x 1,5 mm.

For aggressive media special sensor tube materials as Titanium and Hastelloy can be offered.



Mechanical connection

Cutting ring couplings, to be ordered separately, have proven their value when mounting the sensor into pipe systems. By slightly tightening the swivel nut the v-shaped ring inside of the coupling cuts into the sensor tube wall and thus ensures a dense and reliable form closure.

Free flow

The sensor element of the inline flow-captor is fitted to the out-side of the sensor tube. Since there is no element inside the tube, the sensor is non-intrusive to the flow. The robust housing is constructed of glass fibre reinforced PBTP (Ultradur®). The electronics housing includes a full resin encapsulation.



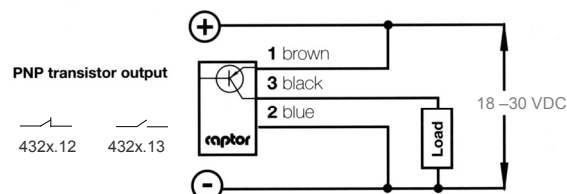
Flow monitor for oil-based media

flow-captor 4321.1x



Technical Data						
Type	flow-captor 4321.1x					
Medium	oil-based media					
Sensor Data						
Measuring range	0 - 30 cm/s to 0 - 300 cm/s, cont. adjustable *1					
Flow volume at 300 cm/s	8 x 1 mm 5,1 l/min	12 x 1 mm 14,1 l/min	18 x 1,5 mm 31,8 l/min	22 x 1,5 mm 51 l/min	28 x 1,5 mm 88,4 l/min	
Measuring range 6 x 1 mm	0 - 20 cm/s to 0 - 200 cm/s, cont. adjustable *1					
Flow volume at 200 cm/s	6 x 1 mm 1,5 l/m					
Set-point range	approx. 15% - 90% of measuring range setting					
Medium temperature	-20 °C to +80 °C					
Ambient temperature	-20 °C to +70 °C					
Pressure	max. 30 bar (3000 kPa)					
Response time	2 s to 10 s (according to range setting)					
Linearity deviation	< 5% *1					
Repeatability	< 2%					
Hysteresis	ca. 10%					
Temperature drift	< 0,3% K					
Mechanical Data						
Protection rate	IP65					
Housing material	electronics: PBTP, glass fibre reinforced (Ultradur ®)					
Sensor material	stainless steel 316Ti (B: Titanium; C: Hastelloy ® C4)					
Pipe sizes OD x wall thickness	6 x 1 mm	8 x 1 mm	12 x 1 mm	18 x 1,5 mm	22 x 1,5 mm	28 x 1,5 mm
Connection	Integrated plug connection with PG9 coupling, 2 m oilflex cable 3 x 0,5 mm ² (M12-coupling on request)					
Dimensions of housing	D 60 x L 200					
Electrical Data						
Operating voltage	18 to 30 VDC, incl. residual ripple					
Current consumption	max. 150 mA (pulsed)					
Power consumption	approx. 1 W					
Switching current	≤ 400 mA					
Circuit protection	reverse polarity / short circuit / overload					
Voltage drop	< 2 V at max. load					
State of readiness	approx. 10 s after connection of power					
Electrical output	4321.12 PNP current-carrying (opener / n. c.)					
Without flow:	4321.13 PNP currentless (closer / n. o.)					
High temperature version						
Type	flow-captor 432x.1x S107					
Medium temperature in relation to ambient temperature	Medium temperature max.			Ambient temperature max.		
	130 °C			30 °C		
	120 °C			40 °C		
	110 °C			50 °C		
	100 °C			60 °C		
	90 °C			70 °C		
	Medium temperature min.			Ambient temperature min.		
	- 20 °C			- 20 °C		
	- 30 °C			- 10 °C		

*1 calibrated with insulation oil type "Shell Diala"



weber