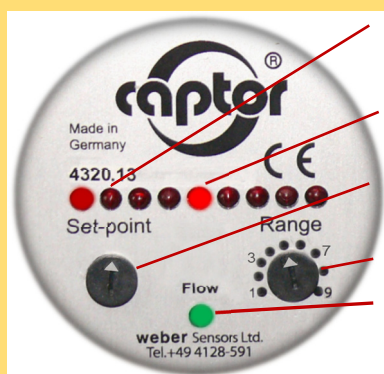


The Inline **flow-captor** type 4321.1xM is a unique, compact, metering flow switch with adjustable set-point and analog display for industrial applications in stainless steel housing. The functionality is based on the calorimetric principle. The inline flow-captor allows to set an exact flow set-point while simultaneously displaying the flow velocity down to the smallest values.

- Accurate switching flow monitor for water or oil-based solutions
- Rugged industrial version
- High accuracy also under low flow conditions
- Separate adjustment for "range" and "set-point"
- Analog display of actual flow rate and display of adjusted set-point value
- LED for output status
- ISO 9001 : 2015



### Control and display panel



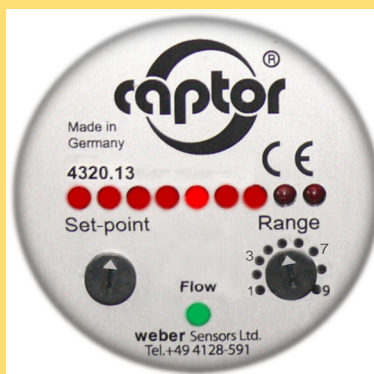
LED chain for display of flow speed

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

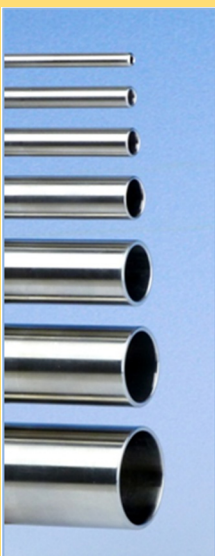


Measuring range adjusted to 3 m/s = 100% (9. LED)

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 stainless steel 316 Ti (V4A). The electronics housing includes a full resin encapsulation.

## Technical Data

Type	flow-captor 4321.1xM					
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	IP67					
Housing material	stainless steel 316 Ti (V4A)					
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	Plug M12x1, 4-pin					
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.)					

\*1 calibrated with insulation oil type "Shell Diala"

