

Flow monitor for liquid media

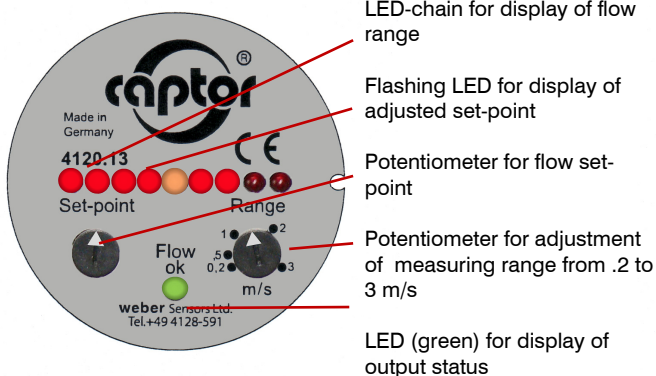
flow-captor 4120.1x / 4121.1x

The **flow-captor** 412x.1x is a further development with an additional pressure resistance. This highly accurate metering - flow switch is used in every industry where flow monitoring - measuring and displaying liquid media is of importance. With this flow-captor it is possible to set an exact flow set-point and simultaneously measure the flow speed, even up to very low flow conditions.

- Precise switching sensor for water- and oil-based media up to 100 bar
- High accuracy even under low flow condition
- Separate adjustment for range and set-point
- Analog display of actual flow and display of the adjusted set-point
- LED-display of output status
- ISO 9001 : 2015



Control and Display Panel



LED-chain for display of flow range

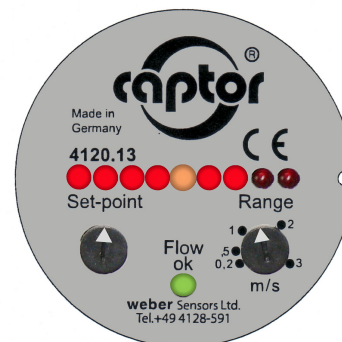
Flashing LED for display of adjusted set-point

Potentiometer for flow set-point

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

LED (green) for display of output status

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.



1/2" BSP thread
Standard size



1/4" BSP thread
For smaller pipe diameter

The **flow-captor** 412x.1x is available with different sensor head versions.

- 1/2" BSP thread – standard size –
- Extended sensor probes with 1/2" BSP thread are available
- NPT thread as option
- 1/4" BSP thread for smaller pipes

Sensor heads

The sensor head is constructed of only one piece of electropolished stainless steel and without any sensor element intruding into the medium. Easy installation by means of T-piece or welded fitting.

For aggressive media special materials as Titanium, Hastelloy, Monel or a special sensor coating can be offered.

The housing is constructed of glass fibre reinforced PBTP (Ultradur®). The electronics inside is completely



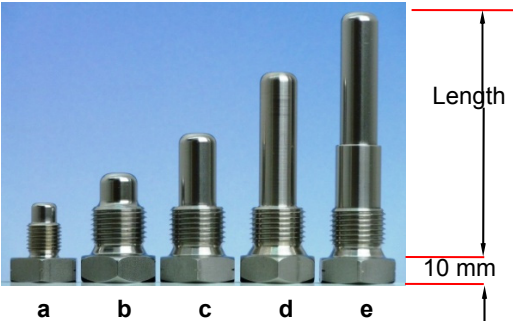
flow-captor 412-.1 S101

Cooling version for medium temperature up to 130 °C

Flow monitor for liquid media

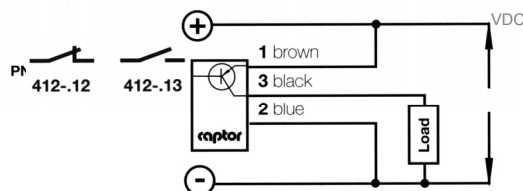


flow-captor 4120.1x / 4121.1x

Technical Data		
Type	flow-captor 4120.1x	flow-captor 4121.1x
Medium	water-based media	oil-based media
Sensor Data		
Measuring range	0-20 cm/s to 0-300 cm/s, continuously adjust. *1	0-30 cm/s to 0-300 cm/s, continuously adjust. *2
Set-point range	approx. 15%-90% of range setting	approx. 15%-90% of range setting
Medium temperature	-20 °C to +80 °C	
Ambient temperature	-20 °C to +70 °C	
Pressure	max. 100 bar (1450 PSI)	
Response time	2 s - 10 s depending on range setting	2 s - 15 s depending on range setting
Linearity deviation	< 5% *1	< 5% *2
Repeatability tolerance	< 2%	
Hysteresis	ca. 10%	
Temperature drift	< 0,3% K	
Mechanical Data		
Protection class	IP 65	
Material: Housing	PBTP, glass fibre reinforced (Ultradur ®)	
Material: Sensor probe	stainless steel AISI 303 (A: AISI 316Ti; B: Titanium; C: Hastelloy ® C4; D: Hastelloy ® C22)	
Sensor probe sizes		<p>a) flow-captor 412-.1/ 1/4" BSP Length 20 mm, 1/4" BSP</p> <p>b) flow-captor 412-.1/ 1/2" BSP Length 30 mm, 1/2" BSP</p> <p>c) flow-captor 412-.1/ 1/2" BSP S110/45 Length 45 mm, 1/2" BSP</p> <p>d) flow-captor 412-.1/ 1/2" BSP S110/67 Length 67 mm, 1/2" BSP</p> <p>e) flow-captor 412-.1/ 1/2" BSP S110/90 Length 90 mm, 1/2" BSP</p>
Electrical connection	integrated plug connection with PG9 fitting, 2 m oilflex cable 3 x 0,5 mm ²	
Body dimensions	D 60 x L sensor head – (drawing K70301B)	
Electrical Data		
Operating voltage	18 to 30 V DC, incl. residual ripple	
Current consumption	max. 150 mA (pulsed)	
Power consumption	approx. 1 W	
Switching current	≤ 400 mA	
Circuit protection	reverse polarity, short circuit and overload	
Voltage drop	< 2,5 V at max. load	
Initial operation	approx. 10 s after connection of power	
Electrical output without flow:	4120.12 PNP n.c. (opener) current-carrying 4120.13 PNP n.o. (closer) currentless	4121.12 PNP n.c. (opener) current-carrying 4121.13 PNP n.o. (closer) currentless
Cooling version – Temperature Data		
Type	flow-captor 412x.1x S101	
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 relate to water

*2 calibrated with insulation oil type "Shell Diala"



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