

Flow switch for liquid media



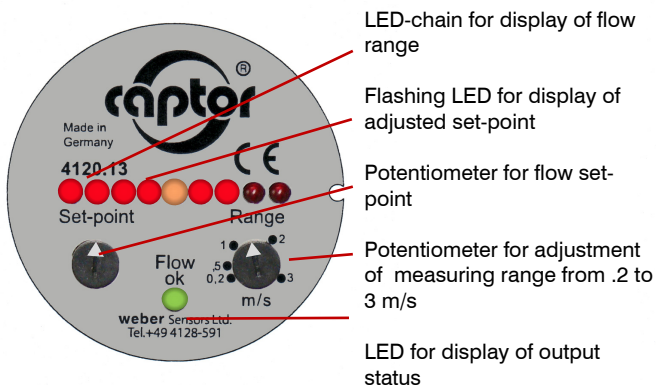
flow-captor 412x.1x

The flow-captor 412x.1x is ideally suited for use in automation processes or other industrial applications where liquid media must be monitored. The sensor works according to the calorimetric measuring principle, fully electronic and without mechanically moving parts. The flow-captor detects the flow velocity of the medium and converts it into an electrical signal.

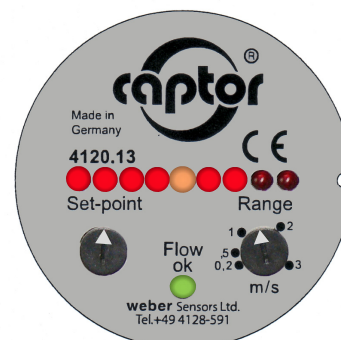
- precise switching flow monitor
- high switching accuracy even with slower flows
- separate adjustment of set point and range
- display of the flow and the switching point via LED chain
- LED for output status
- robust industrial design (special encapsulation)
- ISO 9001:2015



Control and Display Panel



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 other materials can be offered on request.

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



flow-captor 412x.1x S101

Cooling version for medium temperature up to 130 °C

weber

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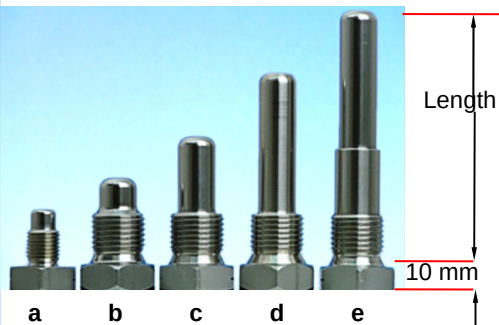
Technical data subject to alteration! Rev. AM 19.12.18

flow-captor 412x.1x

Technical data

Type	4120.1x	4121.1x
Medium	water-based	oil-based
Sensor data		
Measuring range	0 - 20 cm/s to 0 - 300 cm/s, continuously adjustable *1	0 - 30 cm/s to 0 - 300 cm/s, continuously adjustable *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 sec. - 10 sec. depending on range setting	2 sec. - 15 sec. depending on range setting
Linearity deviation	< 5 % *1	< 5 % *2
Repeatability tolerance	< 2 %	
Hysteresis	approx. 10 %	
Temperature drift	< 0,3 % K	

Mechanical data

Protection class	IP65	
Material: Housing	PBTP, glass fibre reinforced (Ultradur ®)	
Material: Sensor probe	stainless steel AISI 303 (other material on request)	
Sensor probe sizes		a) flow-captor 412x.1xA / 1/4" BSP Length 20 mm, 1/4" BSP
(A): Sensor head AISI 316		b) flow-captor 412x.1x / 1/2" BSP Length 30 mm, 1/2" BSP
(S110/xx): Length from hexagon bolt to sensor tip		c) flow-captor 412x.1xA / 1/2" BSP S110/45 Length 45 mm, 1/2" BSP
		d) flow-captor 412x.1xA / 1/2" BSP S110/67 Length 67 mm, 1/2" BSP
		e) flow-captor 412x.1xA / 1/2" BSP S110/90 Length 90 mm, 1/2" BSP
Electrical connection	integrated plug connection with PG9 fitting, 2 m oilflex cable 3 x 0,5 mm ²	
Body dimensions	see drawing	

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 and overload	
Voltage drop	< 2,5 V at max. load	
Initial operation	approx. 10 sec. after connection of power	

Electrical output	.12	.13
Switching condition with flow < switching point	energized, switched	currentless, not switched
LED	off	off
Switching condition with flow > switching point	currentless, not switched	energized, switched
LED	green	green

Temperature data

Type	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 related to water

*2 calibrated with insulation oil type "Shell Diala S4 ZX-I"

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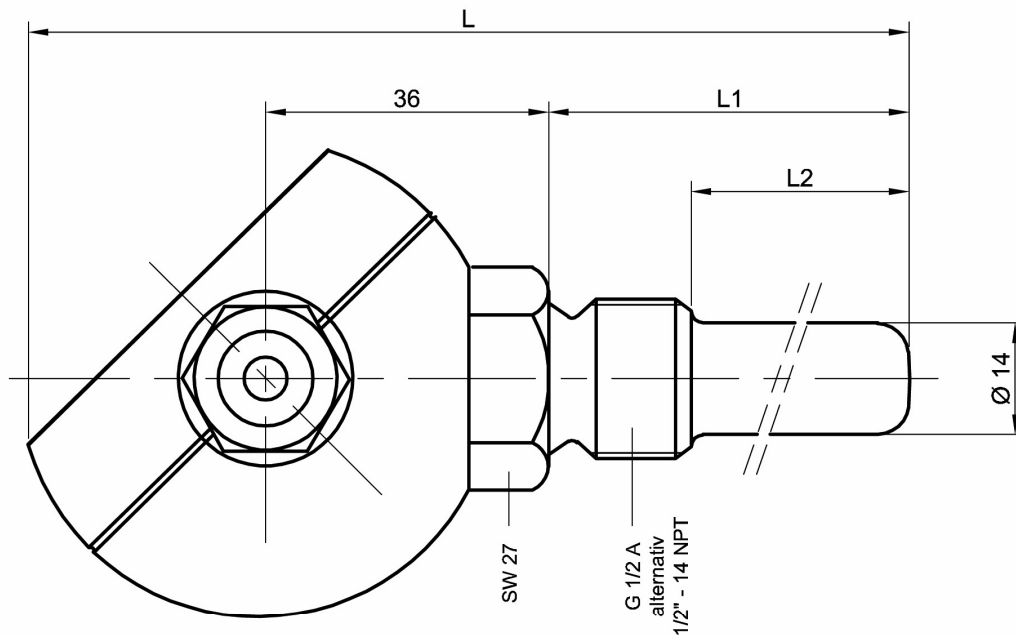
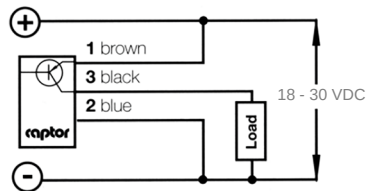
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Connection diagram:



Typ	L	L1	L2
Standard	95	30	12,5
S110/45	110	45	27,5
S110/67	132	67	49,5
S110/90	155	90	73,0