

# Flow monitor for liquid and pasty media

## flow-captor 4120.1- / 4121.1-

The **flow-captor** type 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 for output status
- DIN EN ISO 9001 : 2008 - manufacturing



### Control and Display Panel



- LED-string for display of flow range
- Flashing LED for display of adjusted set-point
- Potentiometer for flow set-point
- Poti for adjustment of measuring range from 0,2 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** 412-.1- is available with different sensor head versions.

- 1/2" BSP thread – standard size –
- Extended sensor lengths with 1/2" BSP thread available
- NPT thread as option
- 1/4" BSP thread for smaller pipe diameter

### Sensor heads

The sensor head is constructed of only one piece of electro-polished stainless steel and without any sensor elements intruding into the medium. Easy installation by means of T-piece or welded nipple.

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 epoxy resin encapsulated.



**flow-captor 412-.1 S101**

Cooling version for medium temperature up to 130 °C

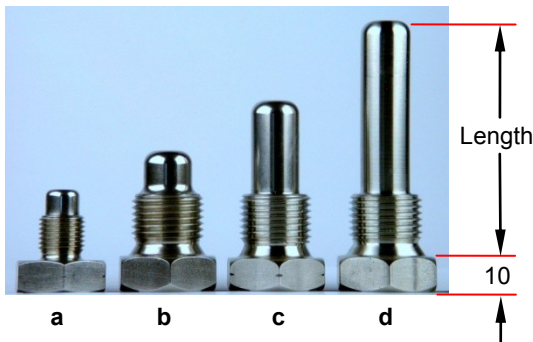
## Techninal Data

Type	<b>flow-captor 4120.12/.13</b>	<b>flow-captor 4121.12/.13</b>
Medium	water-based media	oil-based media
<b>Sensor Data</b>		
Measuring range	0-20 cm/s to 0-300 cm/s, continuously adjust. * <sup>1</sup>	0-30 cm/s to 0-300 cm/s, continuously adjust. * <sup>2</sup>
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% * <sup>1</sup>	< 5% * <sup>2</sup>
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



a) **flow-captor 412-.1- / ¼" BSP**  
Length 20 mm, ¼" BSP

b) **flow-captor 412-.1- / ½" BSP**  
Length 30 mm, ½" BSP

c) **flow-captor 412-.1-A S110/45**  
Length 45 mm, ½" BSP

d) **flow-captor 412-.1- A S110/67**  
Length 67 mm, ½" BSP

Electrical connection	integrated plug connection with PG9 fitting, 2 m oilflex cable 3 x 0,5 mm <sup>2</sup>	
Body dimensions	D 60 x L sensor head – (drawing. K70301)	

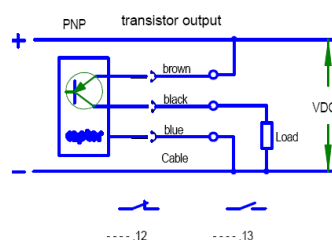
## Electrical Data

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 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	<b>flow-captor 412-.1- S101</b>	
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	

\*<sup>1</sup> data relate to water \*<sup>2</sup> depends on oil grade



REV: AE –Technical data subject to change