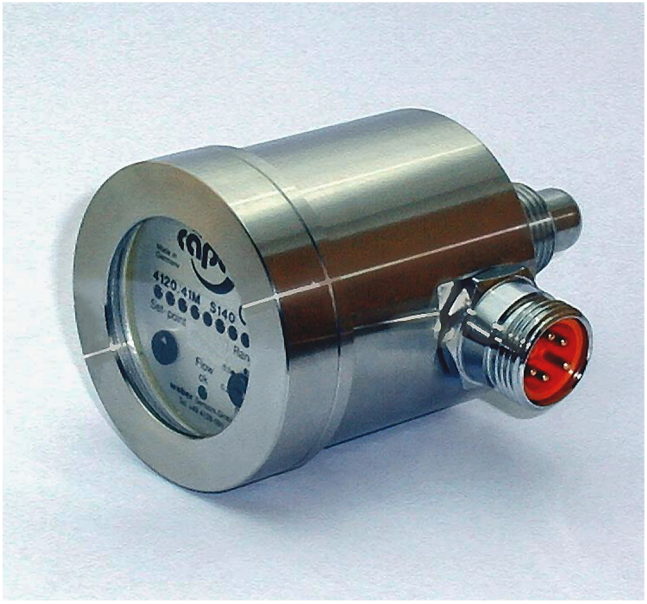
Flow switch for liquid media

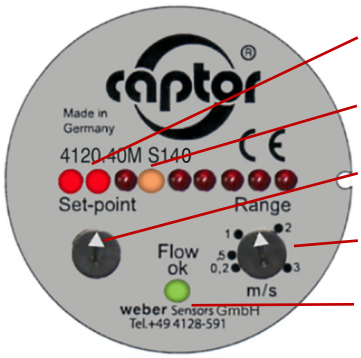
flow-captor 412x.40M/.41M S140

The flow-captor 412x.40M/.41M S140 is ideally suited for use in automation processes or other industrial applications where liquid media must be monitored. The sensor operates according to the calorimetric measuring principle, fully electronically and without mechanically moving parts. The flow-captor records the flow velocity of the medium and converts it into an electrical signal.



- precise switching flow monitor with **relay output**
- version with **Brad-Harrison coupling** (S140)
- high switching accuracy even with slower flows
- separate setting of set-point and range
- display of the flow and the adjusted set-point via LED chain
- LED for switching status
- robust stainless steel design (special potting)
- **ISO 9001:2015**

Control and display panel



LED-chain for display of flow range

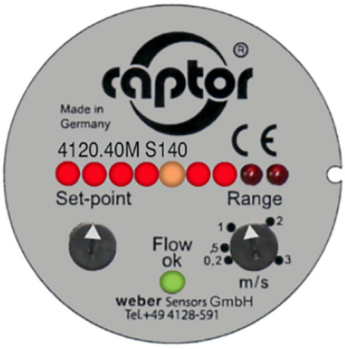
Flashing LED for display of adjusted set-point

Potentiometer for flow set-point

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

LED 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

The flow-captor 412x.40M/.41M S140 is available with different sensor head versions.

- ½“ BSP thread – standard size –
- Extended sensor probes with ½“ BSP thread are available
- NPT thread as option

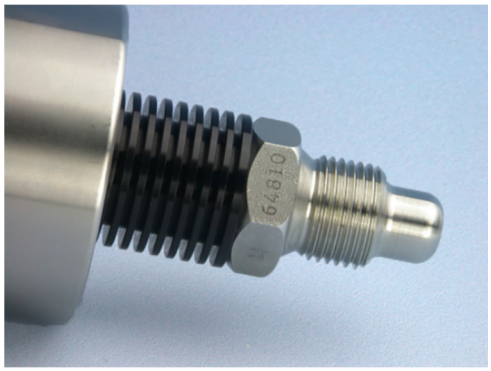
Sensor heads

The sensor head is constructed of only one piece of eletropolished 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 can be offered. The electronics inside is completely epoxy resin encapsulated.

flow-captor 412x.40MK/.41MK S140

Cooling version with heat sink for medium temperature up to 130 °C



weber

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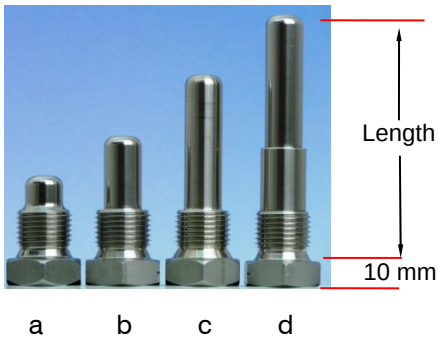
sales@captor.com

Flow switch for liquid media

flow-captor 412x.40M/.41M S140

Technical data		
Type	**4120.40M/.41M S140**	**4121.40M/.41M S140**
Media	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	IP67	
Material of housing	stainless steel AISI 303	
Material of sensor probe	stainless steel AISI 303 (other material on request)	
Sensor probe sizes **(A):** Sensor head AISI 316 **(S110/xx):** Length from hexagon bolt to sensor tip		**a) flow-captor 412x.40M/.41M S140 BSP** Length 30 mm, ½" BSP **b) flow-captor 412x.40MA/.41MA S140 S110/45 BSP** Length 45 mm, ½" BSP **c) flow-captor 412x.40MA/.41MA S140 S110/67 BSP** Length 67 mm, ½" BSP **d) flow-captor 412x.40MA/.41MA S140 S110/90 BSP** Length 90 mm, ½" BSP
Electrical connection	5-pin Brad-Harrison coupling	
Connection cable (**optional**)	2 m oilflex cable with Brad-Harrison coupling (type 4930E)	
Electrical data		
Operating voltage	18 to 30 VDC, incl. residual ripple	
Switching current	≤ 5 A (120 VAC), ≤ 3A (250 VAC), max. 5A 150W at VDC	
Power consumption	approx. 1 W	
Circuit protection	reverse polarity, short circuit and overload	
Ready to operate	approx. 10 sec. after applying the operating voltage	

Electrical output	**412x.40M S140**	**412x.41M S140**
Switching condition with flow < switching point	energized, relay activated	currentless, relay not activated
LED	off	off
Switching condition with flow > switching point	currentless, relay not activated	energized, relay activated
LED	on	on

Cooling version – temperature data		
Type	**412x.40MK/.41MK S140**	
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 related to insulating oil type "Shell Diala S4 ZX-I"

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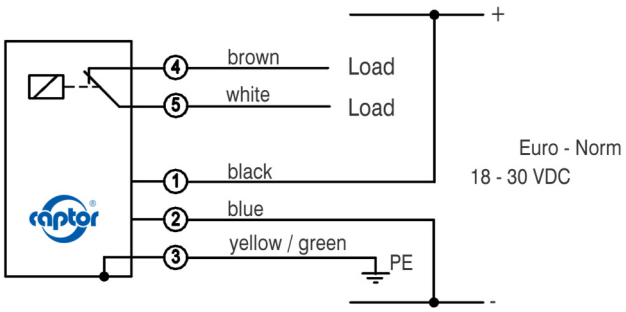
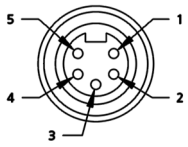
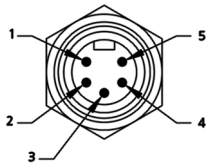
Connection diagram



5 - pin Brad Harrison

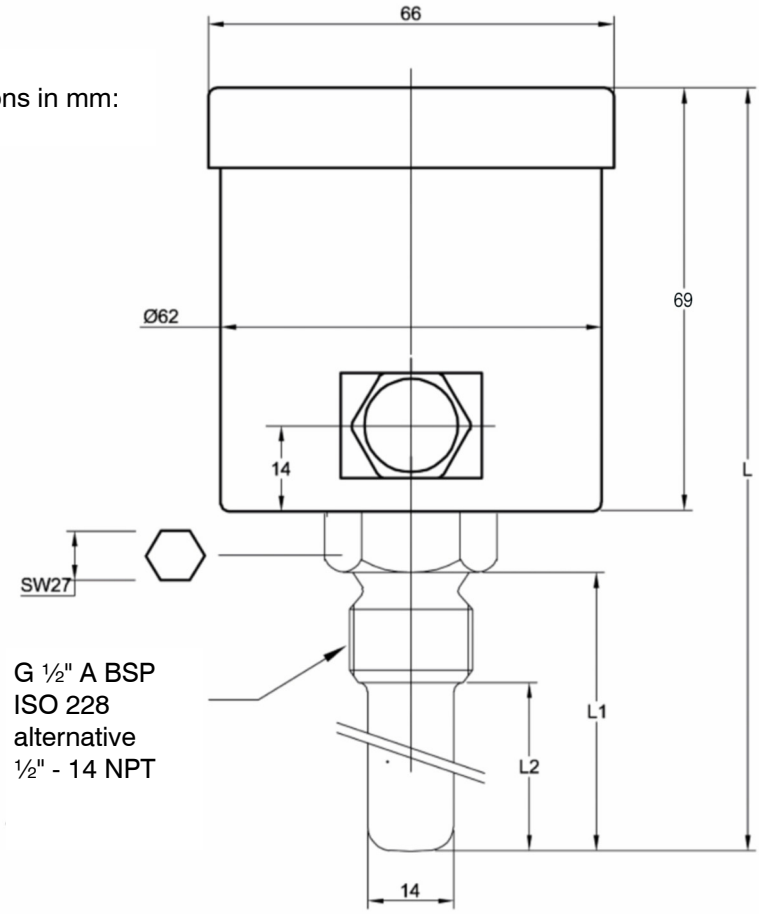


front view of socket



front view connector

Dimensions in mm:



G ½" A BSP
ISO 228
alternative
½" - 14 NPT

Type	L	L1	L2
Standard	119	30	12.5
S110/45	124	45	27.5
S110/67	156	67	49.5
S110/90	179	90	73.0

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