

Flow monitor for liquid media with temperature set-point



flow-captor 4220.xx F/.xx T xx° C

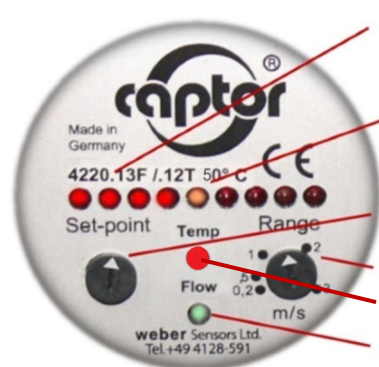
The **flow-captor** type 4220.xx is a unique, precise “metering” flow switch. This highly accurate flow switch is used in every industry where flow and temperature monitoring of waterbased liquid media is of importance. It works accordingly to the calorimetric principle, which is evaluated by using microprocessor technology. With this flow-captor it is possible to adjust an exact flow set-point and simultaneously to measure the flow speed, even up to very low flow conditions.

- precise switching sensor pressure resistant up to 100 bar
- high accuracy even under low flow conditions
- separate adjustment for range and set-point
- analog display of actual flow speed and display of the adjusted set-point
- The temperature set-point will be factory set according to the customer's request.
- LED-display for output status
- **ISO 9001 : 2008**



Control and Display Panel

Example of operation

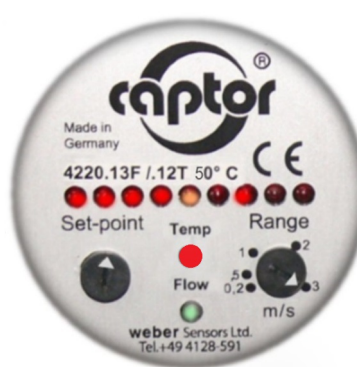


LED-string for display of flow range

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/red) for display of output status “temp”
LED (green/red) for display of output status “flow”



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)

Flow LED is **green**:
Flow rate is above the adjusted set-point.

Temp LED is **red**:
Flow rate is above the adjusted set-point.



**G 1/2" BSP thread
Standard size**



**G 1/4" BSP thread
For smaller pipe diameter**

The **flow-captor** 4220.xx is available with different sensor head versions:

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

Sensor heads

The sensor head is constructed of only one piece of electro-polished 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 epoxy resin encapsulated.

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www.fae.it
e-mail: fae@fae.it

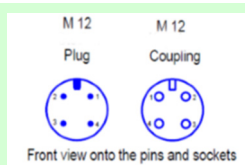
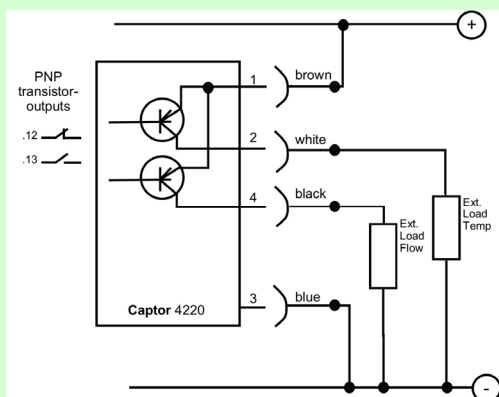
FAE S.R.L. • Via Tertulliano, 41 • 20137 Milano
Tel. +39 02 55187133 • Fax +39 02 55187399

flow-captor 4220.xxF/.xxT xx° C



Technical Data		
Type	4220.xx F/.xx T xx° C	
Medium	water-based media (other media on request)	
General Sensor Data		
Medium temperature	-20° C to +80° C / -4° F to +176° F	
Ambient temperature	-20° C to +70° C / -4° F to +158° F	
Pressure	max. 100 bar (1450 PSI)	
Sensor Flow		
Measuring range	0-20 cm/s to 0-300 cm/s, continuously adjustable	
Set-point range	approx. 15% - 90% of range setting	
Response time	2 s - 10 s depending on range setting	
Linearity deviation	< 5%	
Repeatability tolerance	< 2%	
Hysteresis	ca. 10%	
Temperature drift	< 0,3% K	
Sensor Data Temperature		
Set-point	50° C, 70° C, 80° C / 122° F, 158° F, 176° F (other set-points on request) (please indicate when placing the order)	
Set-point accuracy	± 3°	
Response time	ca. 5s	
Hysteresis	5° C / 41° F	
Mechanical Data		
Protection class	IP 65	
Material of housing	PBTP, glass fibre reinforced (Ultradur ®)	
Material of sensor probe	stainless steel AISI 303	
Electrical connection	M12 4-pin, 2 m oilflex cable 4 x 0,34 mm² type 4941 inclusive	
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	
Output	flow and temperature	PNP n.o. and n.c.

Connection diagram:



types / function table 4220.XXF/.XXT XX° C				
Flow	pnp output .12F	Flow LED	pnp output .13F	Flow LED
flow > switch point	○	red	●	green
flow < switch point	●	green	○	red
Temperatur	pnp output .12T	Temp. LED	pnp output .13T	Temp. LED
Temperature > switch point	○	red	●	green
Temperature < switch point	●	green	○	red

- = Standard Series (other combinations on request)
- Switching state semiconductor output :
 - energized
 - dead

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Technical data subject to change Rev. AF / 04.07.16