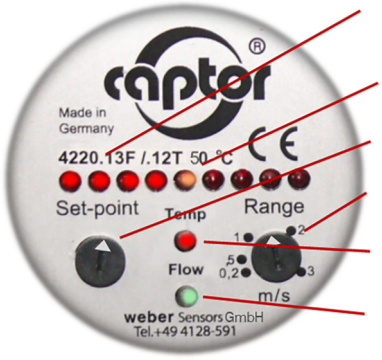
flow switch for water-based fluids with simultaneous temperature monitoring
flow-captor 4220.1xF/.1xT xx °C

The flow-captor type 4220.1xF/.1xT xx °C is ideally suited for use in automation processes and other industrial applications where both the flow and the temperature of the medium must be monitored. The sensor operates according to the calorimetric measuring principle and without mechanically moved parts. The sensor detects the flow velocity and the medium temperature and converts both into electrical signals.

- precise switching sensor
- separate adjustment of flow range and flow set-point
- factory setting of the temperature switch-point according to customer's specification
- analog display of present flow speed and display of adjusted flow set-point via LED chain
- LED display of operating status
- **ISO 9001:2015**

Control and Display Panel



LED-string for display of flow range

Flashing LED for display of adjusted set-point

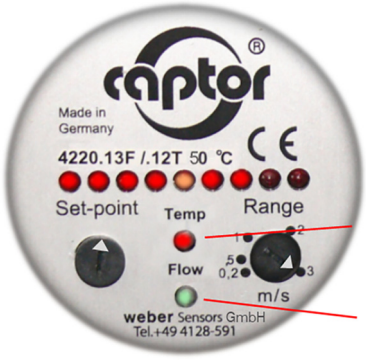
Potentiometer for flow set-point

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"

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)

Temp LED is **red:**
Medium temperature is above the adjusted set-point.

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

G 1/2" BSP thread
the standard version

1/2" - 14NPT thread alternatively

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 material such as titanium or Hastelloy can be offered on request.

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

weber

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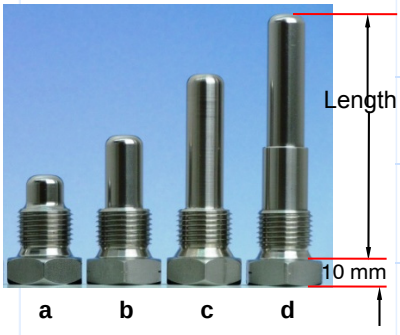
Technical data	
Type	**4220.1xF/.1xT xx °C**
Medium	water-based
General sensor data	
Medium temperature	-20 °C to +80 °C / -4 °F to +176 °F
Ambient temperature	-20 °C to +70 °C / -4 °F to +158 °F
Pressure	max. 100 bar (1450 PSI)
Sensor flow	
Measuring range	0 - 20 cm/s to 0 - 300 cm/s, continuously adjustable
Set-point range	approx. 15 % - 90 % of range setting
Response time	2 sec. - 10 sec. 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) (should be specified on the order)
Set-point tolerance	± 3 °C
Response time	approx. 5 sec.
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
Sensor probe sizes	 a.) flow-captor 4220.1xF/.1xT xx °C BSP Length 30 mm, 1/2" BSP b) flow-captor 4220.1xF/.1xT xx °C S110/45 BSP Length 45 mm, 1/2" BSP c) flow-captor 4220.1xF/.1xT xx °C S110/67 BSP Length 67 mm, 1/2" BSP d) flow-captor 4220.1xF/.1xT xx °C S110/90 BSP Length 90 mm, 1/2" BSP
Electrical connection	4-pin M12 plug with 2 m oilflex cable 4 x 0,34 mm² cable type 4941
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	10 sec. after connecting the power supply
Output	flow and temperature — PNP n. o. or PNP n. c.

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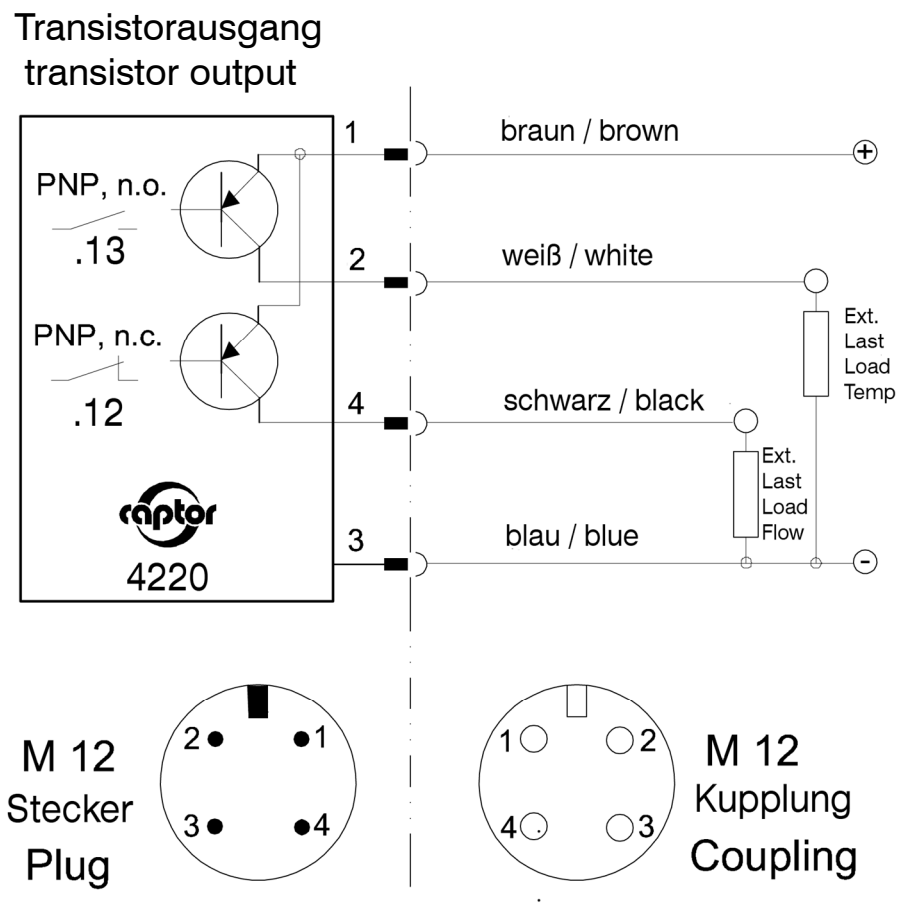
types / function table 4220.1xF/.1xT xx° C				
Flow	pnp output .12F	Flow LED	pnp output .13F	Flow LED
flow > switch point	○	red	●	green
flow < switch point	●	green	○	red
Temperatur	pnp output .12T	Temp. LED	pnp output .13T	Temp. LED
Temperature > switch point	○	red	●	green
Temperature < switch point	●	green	○	red

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

Connection diagram:



Blick von vorn auf die Stifte und Buchsen
Front view onto the pins and sockets

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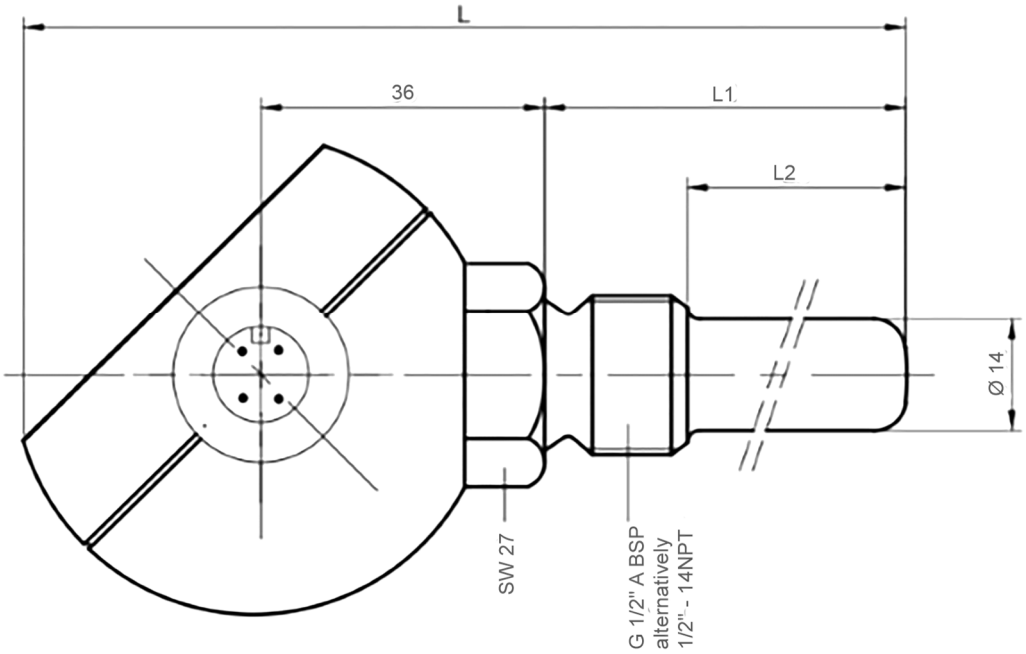

Type	L	L1	L2
Standard	95	30	12,5
S110/45	110	45	27,5
S110/67	132	67	49,5
S110/90	155	90	73,0

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