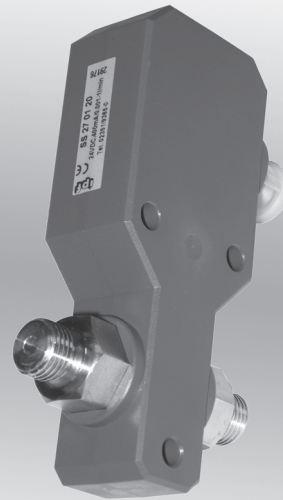


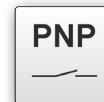
design	G1/4"	27 x 70 x 112mm
	hose	27 x 125 x 112mm
	G1/2"	38 x 107.5 x 118mm
	G3/4"	38 x 118 x 118mm
	tri clamp	27 x 67 x 112mm

thermodynamic operating distance 0.015 to 30l/min



- ✓ monitor for water
- ✓ LED alignment indicator
- ✓ various tube diameters
- ✓ pressure-resistant up to 20 bar
- ✓ short reaction time
- ✓ connection with M12-connector

**inline compact  
switching and analog output**



### description

The flow sensor's function is based on the thermodynamic principle. The meter tube is heated to a few degrees Celsius above the temperature of the medium that is flowing through it.

When the medium is flowing the heat produced is dissipated, i.e. the meter tube will be cooled. The temperature inside the tube is measured and compared to the temperature of the medium that is also measured. It is possible to derive the flow status of any medium from the temperature difference that is obtained.

Flow sensors monitor the flow of liquids on a continuous basis. Flow sensors are frequently applied in the monitoring

of cooling systems, as a protection for pumps against dry running, in manufacturing processes, ventilation systems, cleaning plants, canning and dosage measurement, in medical and laboratory systems.

The meter tube has been manufactured in one part from stainless steel, ensuring absolute leak-tightness and high pressure resistance. Moreover this material can be used in a great variety of applications.

### application examples

- ▶ cooling water in welding machines
- ▶ protection against the dry running of pumps

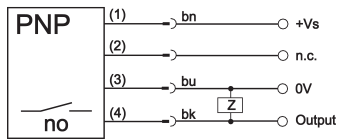
article-no.	SS270020	SS270021	SS4270023
version	G1/4", Ø4mm	hose	G1/4", Ø9mm
detection range <sup>1</sup>	0.001 ... 1l/min	0.1 ... 500ml/min	0.01 ... 6l/min
output	4 ... 20mA, R <sub>L</sub> ≤ 500Ω	4 ... 20mA, R <sub>L</sub> ≤ 500Ω	4 ... 20mA, R <sub>L</sub> ≤ 500Ω
article-no.	SS270120	SS270121	SS270123
version	G1/4", Ø4mm	hose	G1/4", Ø9mm
detection range <sup>1</sup>	0.001 ... 1l/min	0.1 ... 500ml/min	0.01 ... 6l/min
output	pnp, no	pnp, no	pnp, no
<b>TECHNICAL DATA</b>			
operating range	0.015 ... 1l/min	1 ... 200ml/min	0.1 ... 6l/min
flow rate (max.)	300l/h	100l/h	1800l/h
pressure resistance	20bar	1bar	20bar
output	see above	see above	see above
operating voltage	24V DC ±10%	24V DC ±10%	24V DC ±10%
output current (max. load)	pnp: 200mA	pnp: 200mA	pnp: 200mA
current consumption (w/o load)	< 50mA	< 50mA	< 50mA
voltage drop (max. load)	< 2V DC	< 2V DC	< 2V DC
stand-by time <sup>2</sup>	0 ... 15sec	0 ... 20sec	5 ... 15sec
reaction time <sup>3</sup>	0.5 ... 1sec	0.5 ... 3sec	0.5 ... 1sec
flow display	LED array	LED array	LED array
sensitivity	potentiometer	potentiometer	potentiometer
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
housing material	plastic	plastic	plastic
sensor material	stainless steel	stainless steel	stainless steel
design	27x67x112mm	27x125x112mm	27x67x112mm
temperature range	0 ... +60°C	0 ... +60°C	0 ... +60°C
temperature range medium	0 ... +80°C	0 ... +60°C	0 ... +80°C
temperature gradient	400K/min	400K/min	400K/min
system of protection (EN 60529)	IP67	IP67	IP67
connection	M12-connector 4-pin (3 assigned)	M12-connector 4-pin (3 assigned)	M12-connector 4-pin (3 assigned)
connection accessories	e.g. VK200021, 2m, PUR	e.g. VK200021, 2m, PUR	e.g. VK200021, 2m, PUR
mounting accessories	-	-	-
1 for optimal and constant environmental and fitting conditions			
2 depending on medium temperature			
3 depending on medium and setting of the switch-point			



article-no.	SS270024	SS270025	SS4270026
version	G1/2"	G3/4"	tri clamp
detection range <sup>1</sup>	2 ... 25l/min	3 ... 40l/min	0.01 ... 6l/min
output	4 ... 20mA	4 ... 20mA	4 ... 20mA
article-no.	SS270124	SS270125	SS270126
version	G1/2"	G3/4"	tri clamp
detection range <sup>1</sup>	2 ... 25l/min	3 ... 40l/min	0.01 ... 6l/min
output	pnp, no	pnp, no	pnp, no
<b>TECHNICAL DATA</b>			
operating range	3 ... 20l/min	4 ... 30l/min	0.1 ... 6l/min
flow rate (max.)	4000l/h	7500l/h	1800l/h
pressure resistance	20bar	20bar	20bar
output	see above	see above	see above
operating voltage	24V DC ±10%	24V DC ±10%	24V DC ±10%
output current (max. load)	pnp: 200mA	pnp: 200mA	pnp: 200mA
current consumption (w/o load)	< 60mA	< 60mA	< 50mA
voltage drop (max. load)	< 2V DC	< 2V DC	< 2V DC
stand-by time <sup>2</sup>	5 ... 15sec	5 ... 15sec	5 ... 15sec
reaction time <sup>3</sup>	0.5 ... 3sec	0.5 ... 3sec	0.5 ... 1sec
flow display	LED array	LED array	LED array
sensitivity	potentiometer	potentiometer	potentiometer
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
housing material	plastic	plastic	plastic
sensor material	stainless steel	stainless steel	stainless steel
design	38x107.5x118mm	38x118x118mm	27x67x112mm
temperature range	0 ... +60°C	0 ... +60°C	0 ... +60°C
temperature range medium	0 ... +80°C	0 ... +80°C	-20 ... +60°C
temperature gradient	400K/min.	400K/min.	400K/min.
system of protection (EN 60529)	IP67	IP67	IP67
connection	M12-connector 4-pin (3 assigned)	M12-connector 4-pin (3 assigned)	M12-connector 4-pin (3 assigned)
connection accessories	e.g. <b>VK200021</b> , 2m, PUR	e.g. <b>VK200021</b> , 2m, PUR	e.g. <b>VK200021</b> , 2m, PUR
mounting accessories	-	-	-
1 for optimal and constant environmental and fitting conditions			
2 depending on medium temperature			
3 depending on medium and setting of the switch-point			

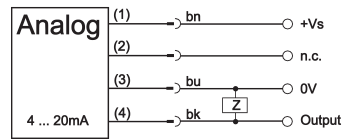
### connection

devices with switching output



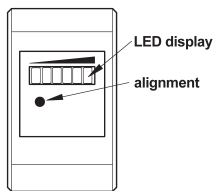
wire colors: bn = brown (1), bu = blue (3), bk =black (4)

devices with analog output

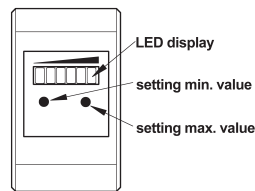


### LED display

devices with switching output



devices with analog output



### setting instructions

#### devices with switching output

Using a potentiometer, the setting of the switch-point can be done with a static or flowing medium.

#### LED displays

- red flow value falls short of set value, switching output inactive
- yellow flow value reaches the set value, switching output is active
- green flow value exceeds set value, the number of illuminated LEDs is a measure for the flow reserve

#### devices with analog output

Using a potentiometer, the bar graph display may be adjusted to the minimum and the maximum of the flow.

#### LED display

red	=	4mA
1. green	>	4mA
2. green	>	8mA
3. green	>	12mA
4. green	>	16mA
5. green	=	20mA

This data sheet contains the standard versions only. Kindly request the availability of other output- and connection functions.

We will be pleased to supply the matching cable socket for your devices with connector. Please refer to the list in catalog chapter "accessories" under "cable sockets ipf-SENSORFLEX®" or search our website for "VK".

**Warning:** Never use these devices in applications where the safety of a person depends on their functionality.