

Product innovations 2013

Flow Sensors



Overview of flow sensors with plug-in union

- Thermodynamic working principle
- Plug-in installation
- Measuring probes and compact models
- Can be used universally with an adapter for M18x1.5

Measuring probes

ST 418 S-A4	-20...+80 °C • M12-plug
ST 418 K-A4	-20...+80 °C • PVC-cable
ST 418 KH-A4	+10...+120 °C • FEP-cable

Compact models

with analog output 4...20 mA

SNS 450 GA	5...150 cm/s • linear
SNS 450 GA-3M	5...300 cm/s • linear
SNS 450 GAN-S	1...300 cm/s • non linear

with switching output

SCS 440-A4-GSP	24 VDC • PNP-NO
SNS 450-A4-GSP-S	24 VDC • PNP-NO
SNS 450 GPP	24 VDC • 2 x PNP-NO
SNS 450-A4-GR	24 VDC • Relay-NO/NC
SNS 450-A4-GRS	24 VDC • Relay-NO
SNS 450-A4-WR1	115 VAC • Relay-NO/NC
SNS 450-A4-WR2	230 VAC • Relay-NO/NC

with additional temperature monitoring

SNTS 450-A4-GSP-S	24 VDC • 2 x PNP-NO
SNTS 450-A4-WR1	115 VAC • 2 x Relay-NO
SNTS 450-A4-WR2	230 VAC • 2 x Relay-NO

with additional switch-off delay 0...25 s

SNS 450 GR-VA	24 VDC • Relay-NO/NC
SNS 450 WR1-VA	115 VAC • Relay-NO/NC
SNS 450 WR2-VA	230 VAC • Relay-NO/NC

Further models are available on request.

Installation

The adapter is screwed into a T-piece or a welding sleeve. The probe is secured in this adapter using a union nut. The connection is reliably sealed up to 100 bar.



Various designs of the screw-in adapter allow the universal use of the flow sensors.

Screw-in adapter

SDA-SCS-G1/4	G1/4 • L = 39
SDA-SCS-G1/2	G1/2 • L = 31
SDA-SCS-G1/2-37	G1/2 • L = 37

Further models are available on request.

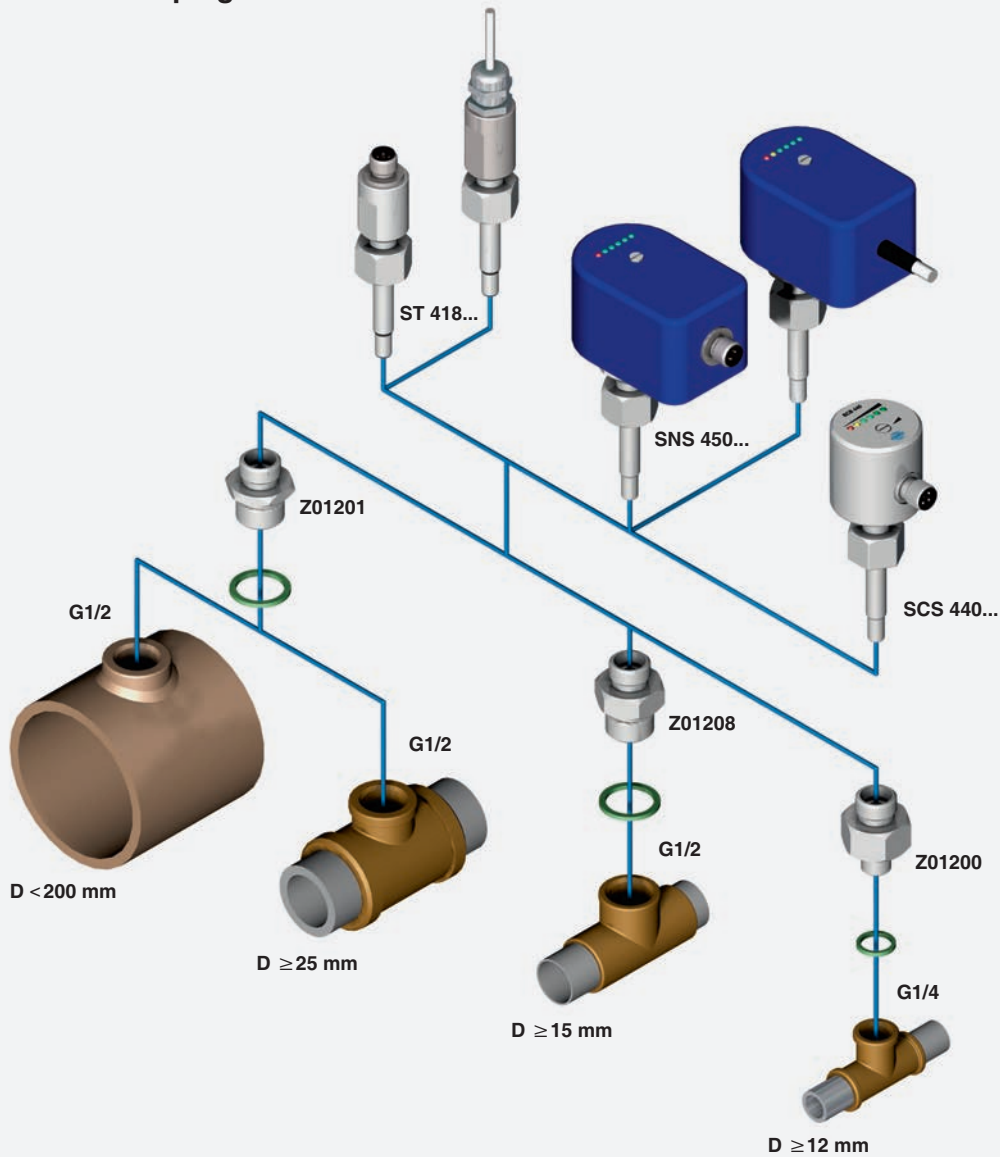
More information

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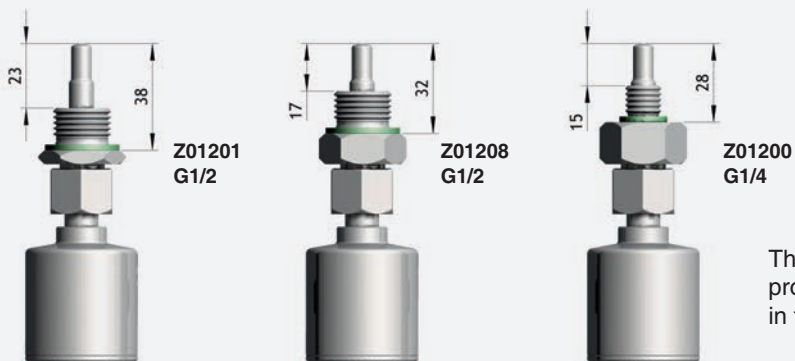


Application

Sensors with plug-in union



Immersion depths of adapter



The measuring tip of the probe must be fully immersed in the flowing medium.

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Flow Sensors



Securely attached – easy to setup

- Thermodynamic working principle
- Robust one piece stainless steel probe
- Plug-in installation
- Can be used universally with an adapter for M18x1.5

Application

In connection with a flow amplifier the probes monitor the speed of a liquid media up to 300 cm/s. They quickly provide information about the flow condition or the flow speed.

The plug-in installation allows the free orientation in the flow channel. That makes mounting of probes with cable connection much easier.

Probes

ST 418 S-A4	- 20...+80 °C • M12-plug
ST 418 K-A4	- 20...+80 °C • PVC-cable
ST 418 KH-A4	+10...+120 °C • FEP-cable

Screw-in adapter

SDA-SCS-G1/4	G1/4 • L = 39
SDA-SCS-G1/2	G1/2 • L = 31
SDA-SCS-G1/2-37	G1/2 • L = 37

Further models are available on request.

Installation

The adapter is screwed into a T-piece or a welding sleeve. The probe is secured in this adapter using a union nut. The connection is reliably sealed up to 100 bar.



Various designs of the screw-in adapter allow the universal use of the flow sensor.

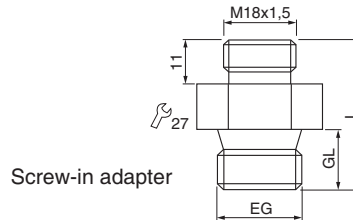
Amplifiers

SKM 420 GR	24 VDC • Relay
SKM 420 GA	24 VDC • Analog 4...20 mA
SKM 522 GR	24 VDC • Relay • Button
SKM 522 WR	85...260 VAC • Relay • Button
SKZ 400 GR	24 VDC • Temp. • Relay
SKZ 400 WR1	115 VAC • Temp. • Relay
SKZ 400 WR2	230 VAC • Temp. • Relay

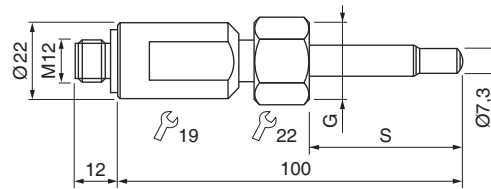
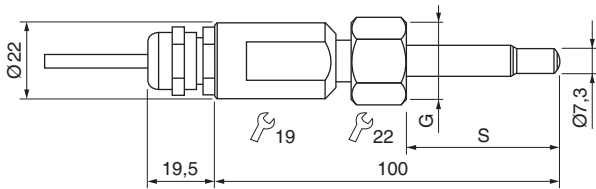
More information

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Screw-in adapter



Technical data

Detection range				
Water	[cm/s]	1...150	1...150	1...150
Oil	[cm/s]	3...300	3...300	3...300
Probe length S	[mm]	47	47	47
Connection thread G		M18x1.5	M18x1.5	M18x1.5

ID-No.	P11354	P11355	P11356
Type	ST 418 S-A4	ST 418 K-A4	ST 418 KH-A4

Medium temperature	[°C]	-20...+80	-20...+80	+10...+120
Temperature gradient	[K/min]	250	250	250
Start-up time typ.	[s]	8 (2...15)	8 (2...15)	8 (2...15)
Reaction time typ.	[s]	2 (1...13)	2 (1...13)	2 (1...13)
Compressive strength	[bar]	100	100	100
Sensor material		AISI 316 Ti	AISI 316 Ti	AISI 316 Ti
O-ring material		FPM	FPM	FPM
Protection	[EN 60529]	IP 67	IP 68	IP 68
Connection		M12 connector 4-pin	2 m PVC-cable 4x0.25 mm ²	2 m FEP-cable 4x0.25 mm ²

Accessories

ID-No.	Z01200	Z01201	Z01208
Type	SDA-SCS-G1/4	SDA-SCS-G1/2	SDA-SCS-G1/2-37
Screw-in thread EG	G1/4	G1/2	G1/2
Length thread GL	[mm]	13	15
Overall length L	[mm]	39	37
Material		AISI 316 Ti	AISI 316 Ti

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Flow Sensors



Securely attached – easy to setup

- Thermodynamic working principle
- Compact models with relay or PNP output
- Plug-in installation
- Can be used universally with an adapter for M18x1.5

Application

Compact flow sensors with switching output monitor the speed of liquid media up to 300 cm/s. They quickly provide information about the flow condition.

The installation allows the easy alignment of the supply connection and the LED display. The switching point is set intuitively with the potentiometer. That saves time and costs.

Compact models switching output

SNS 450-A4-GSP-S	24 VDC • PNP-NO
SNS 450-A4-GR	24 VDC • Relay-NO/NC
SNS 450-A4-WR1	115 VAC • Relay-NO/NC
SNS 450-A4-WR2	230 VAC • Relay-NO/NC

Further models with switch-off delay or temperature monitoring are available.

Screw-in adapter

SDA-SCS-G1/4	G1/4 • L = 39
SDA-SCS-G1/2	G1/2 • L = 31
SDA-SCS-G1/2-37	G1/2 • L = 37

Further models are available on request.

Installation

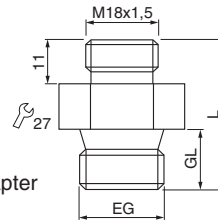
The adapter is screwed into a T-piece or a welding sleeve. The probe is secured in this adapter using a union nut. The connection is reliably sealed up to 100 bar.



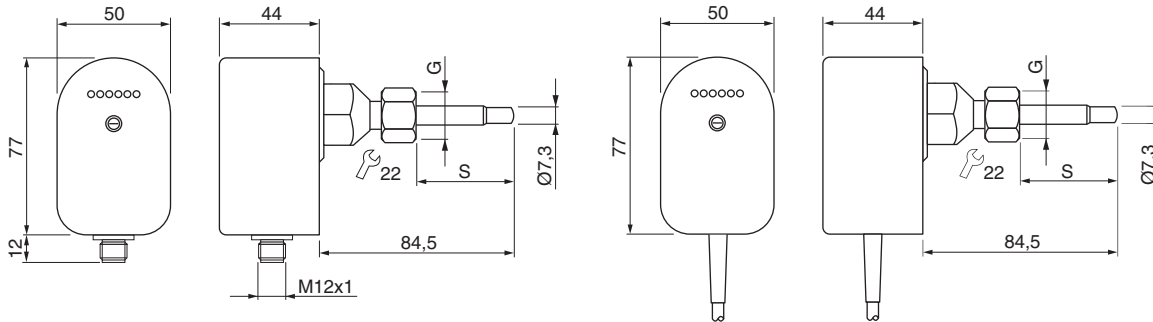
Various designs of the screw-in adapter allow the universal use of the flow sensor.

More information

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Screw-in adapter



Technical data

Detection range					
Water	[cm/s]	1...150	1...150	1...150	1...150
Oil	[cm/s]	3...300	3...300	3...300	3...300
Probe length S	[mm]	47	47	47	47
Connection thread G		M18x1.5	M18x1.5	M18x1.5	M18x1.5

ID-No.	P11360	P11362	P11364	P11365
Type	SNS 450-A4-GSP-S	SNS 450-A4-GR	SNS 450-A4-WR2	SNS 450-A4-WR1

Supply voltage	[V]	24 DC ±20%	24 DC ±20%	230 AC ±10%	115 AC ±10%
Current consumption	[mA]	< 100	< 100	< 35	< 65
Output		PNP-NO	relay / change-over	relay / change-over	relay / change-over
Switching voltage max.	[V]	–	250 AC / 60 DC	250 AC / 60 DC	250 AC / 60 DC
Switching current max.	[A]	0.4	4 AC / 4 DC	4 AC / 4 DC	4 AC / 4 DC
Switching power max.		–	1000 VA / 60 W	1000 VA / 60 W	1000 VA / 60 W
Ambient temperature	[°C]	–20...+70	–20...+70	–20...+70	–20...+70
Medium temperature	[°C]	–20...+80	–20...+80	–20...+80	–20...+80
Temperature gradient	[K/min]	250	250	250	250
Start-up time typ.	[s]	8 (2...15)	8 (2...15)	8 (2...15)	8 (2...15)
Reaction time typ.	[s]	2 (1...13)	2 (1...13)	2 (1...13)	2 (1...13)
Compressive strength	[bar]	100	100	100	100
Sensor material		AISI 316 Ti	AISI 316 Ti	AISI 316 Ti	AISI 316 Ti
O-ring material		FPM	FPM	FPM	FPM
Housing material		PBT	PBT	PBT	PBT
Display flow		LED array	LED array	LED array	LED array
Protection	[EN60529]	IP 67	IP 67	IP 67	IP 67
Connection		M12 connector	2 m PVC-cable 5x0.5 mm ²	2 m PVC-cable 5x0.5 mm ²	2 m PVC-cable 5x0.5 mm ²

Accessories

ID-No.	Z01200	Z01201	Z01208
Type	SDA-SCS-G1/4	SDA-SCS-G1/2	SDA-SCS-G1/2-37
Screw-in thread EG	G1/4	G1/2	G1/2
Length thread GL	[mm]	13	15
Overall length L	[mm]	39	37
Material		AISI 316 Ti	AISI 316 Ti

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Flow Sensors



Securely attached – easy to setup

- Thermodynamic working principle
- Compact models with linear / non linear analog output
- Plug-in installation
- Can be used universally with an adapter for M18x1.5

Application

Compact flow sensors with analog output monitor the speed of liquid media up to 300 cm/s. They quickly provide information about the flow condition or the flow speed. Sensors with a linear output are suitable for water only, devices with a non linear output are adaptable to the medium.

The plug-in installation allows the free orientation of the supply connection and the LED display. The adjustment of the detection range is made with potentiometers. That saves time and costs.

Compact models 4...20 mA

SNS 450 GA	5...150 cm/s • linear
SNS 450 GA-3M	5...300 cm/s • linear
SNS 450 GAN-S	1...300 cm/s • non linear

Screw-in adapter

SDA-SCS-G1/4	G1/4 • L = 39
SDA-SCS-G1/2	G1/2 • L = 31
SDA-SCS-G1/2-37	G1/2 • L = 37

Further models are available on request.

Installation

The adapter is screwed into a T-piece or a welding sleeve. The probe is secured in this adapter using a union nut. The connection is reliably sealed up to 100 bar.

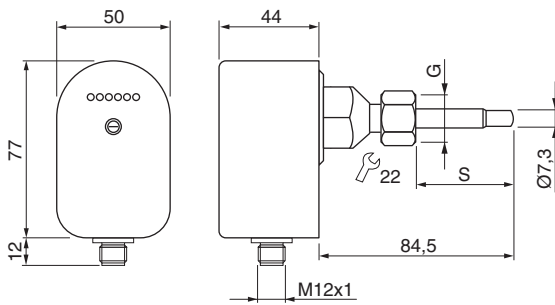


Various designs of the screw-in adapter allow the universal use of the flow sensor.

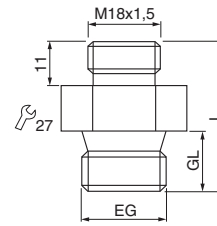


More information

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Screw-in adapter



Technical data

Detection range				
Water	[cm/s]	5...150	5...300	1...150
Oil	[cm/s]	–	–	3...300
Output		linear for water	linear for water	non linear
Probe length S	[mm]	47	47	47
Connection thread G		M18x1.5	M18x1.5	M18x1.5
ID-No.		P11357	P11358	P11359
Type		SNS 450 GA	SNS 450 GA-3M	SNS 450 GAN-S
Current output	[mA]	4...20	4...20	4...20
Current consumption	[mA]	<100	<100	<100
Supply voltage	[V]	24 DC ±10%	24 DC ±10%	24 DC ±10%
Load R _L	[Ω]	200...500	200...500	200...500
Ambient temperature	[°C]	–20...+70	–20...+70	–20...+70
Medium temperature	[°C]	–20...+80	–20...+80	–20...+80
Start-up time	[s]	8...60	8...60	8...60
Reaction time typ.	[s]	3	3	3
Compressive strength	[bar]	100	100	100
Sensor material		AISI 316 Ti	AISI 316 Ti	AISI 316 Ti
O-ring material		FPM	FPM	FPM
Housing material		PBT	PBT	PBT
Display flow		LED array	LED array	LED array
Protection	[EN60529]	IP 67	IP 67	IP 67
Connection		M12 connector	M12 connector	M12 connector
Accessories				
ID-No.		Z01200	Z01201	Z01208
Type		SDA-SCS-G1/4	SDA-SCS-G1/2	SDA-SCS-G1/2-37
Screw-in thread EG		G1/4	G1/2	G1/2
Length thread GL	[mm]	13	15	15
Overall length L	[mm]	39	31	37
Material		AISI 316 Ti	AISI 316 Ti	AISI 316 Ti