OEM Sensors

FOR HVAC MANUFACTURERS

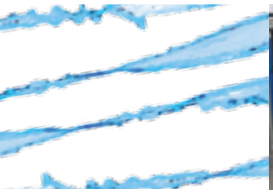
Your Products –

our matching components!

Typical applications

Technical data

Find your sensor solution here –
Whether it's a proven standard component with a short delivery time or a custom mass produced product as a result of successful co-engineering.





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Struthweg 7-9 // 34260 Kaufungen // Germany
www.sika.net

SIKA OEM sensors – what makes the difference?

SIKA TestLabs

40 test benches used by our test engineers conduct more than 250 tests every year. Many of the tests are aimed to fully qualify SIKA sensors for difficult and demanding conditions that can be found in HVAC applications. Inside SIKA TestLabs you will find test equipment including: temperature cycle facilities, water hammer test benches, rusty water endurance flow rigs, climate controlled cabinets, vibration test facilities and many other customer defined rigs. Quality is our tradition, achieved by continuous testing.

Working in close cooperation with our customers the SIKA TestLabs qualify the OEM sensors by conducting a range of agreed tests and specific environmental conditions. Customer subassemblies consisting of pipe sections, heat exchangers, manifolds and other components, can be tested together with SIKA sensors guaranteeing exact simulation, fully proving functionality and specification.

Our highly sophisticated computer based data acquisition system enables our test engineers to issue test reports with a high degree of process detail.

Bespoke sensor Engineering

Standard SIKA products not fully meeting your needs? No problem, we can customise our sensors to achieve your exact requirements.

Experience in HVAC

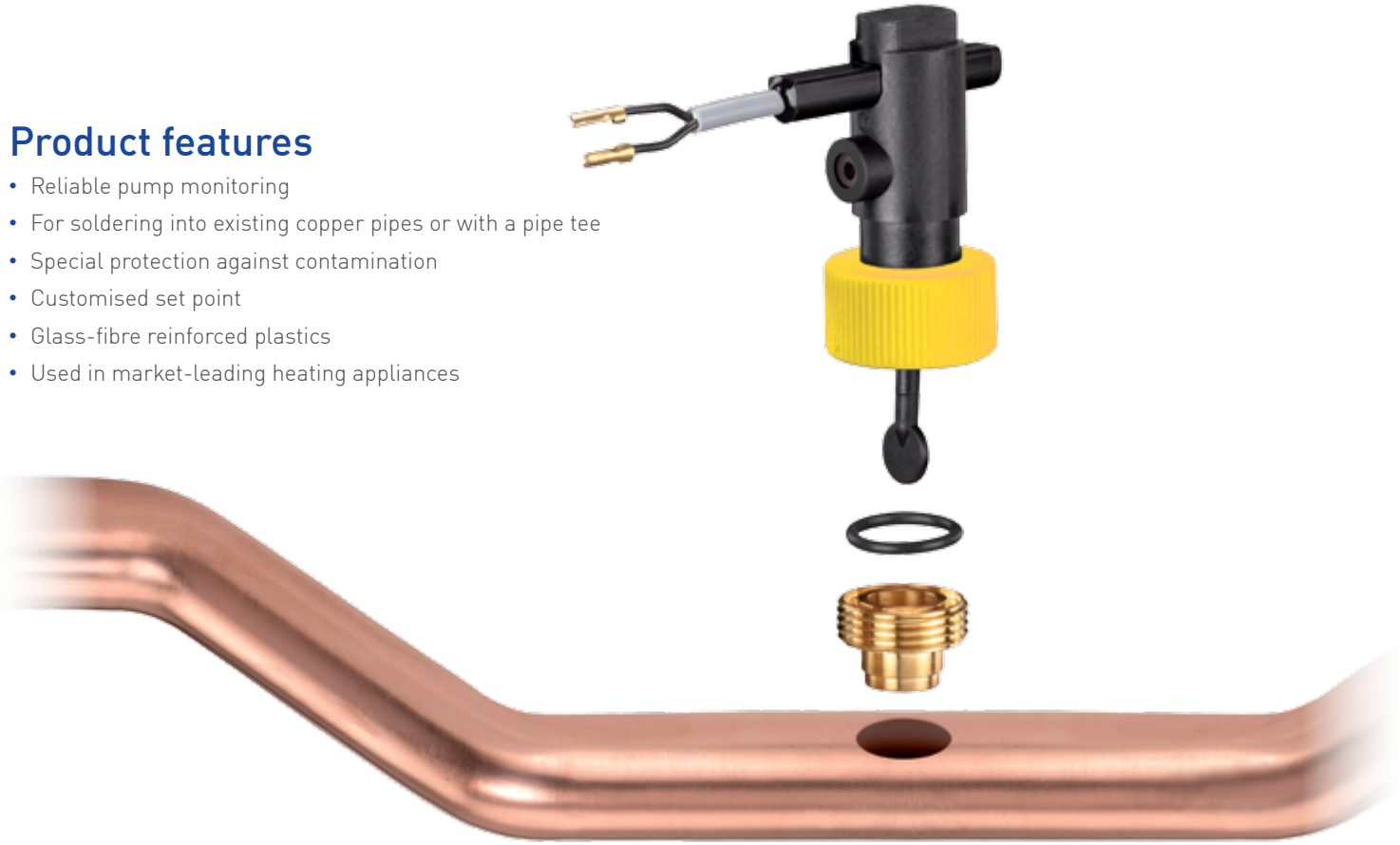
SIKA flow sensors have been utilised in HVAC applications for more than 50 years. Used in high volume market leading appliances as well as innovative systems found in lower volume niche applications.





Heating water

Typical flow switch application



Product features

- Reliable pump monitoring
- For soldering into existing copper pipes or with a pipe tee
- Special protection against contamination
- Customised set point
- Glass-fibre reinforced plastics
- Used in market-leading heating appliances

VK3 in heating circuits

SIKA flow switches are typically utilised in heating circuits. The most common application is in air to water heat pumps. A lack of flow in the heating circuit during chilling or defrosting mode might cause partial freezing of the heat exchanger. SIKA can provide customised flow switches to meet your set point requirements adapted to the individual needs of the heat exchanger, therefore detecting these critical flow values. SIKA flow switches help to prevent freezing in heat exchangers. The installation is highly cost effective since they can be inserted into existing copper pipes.

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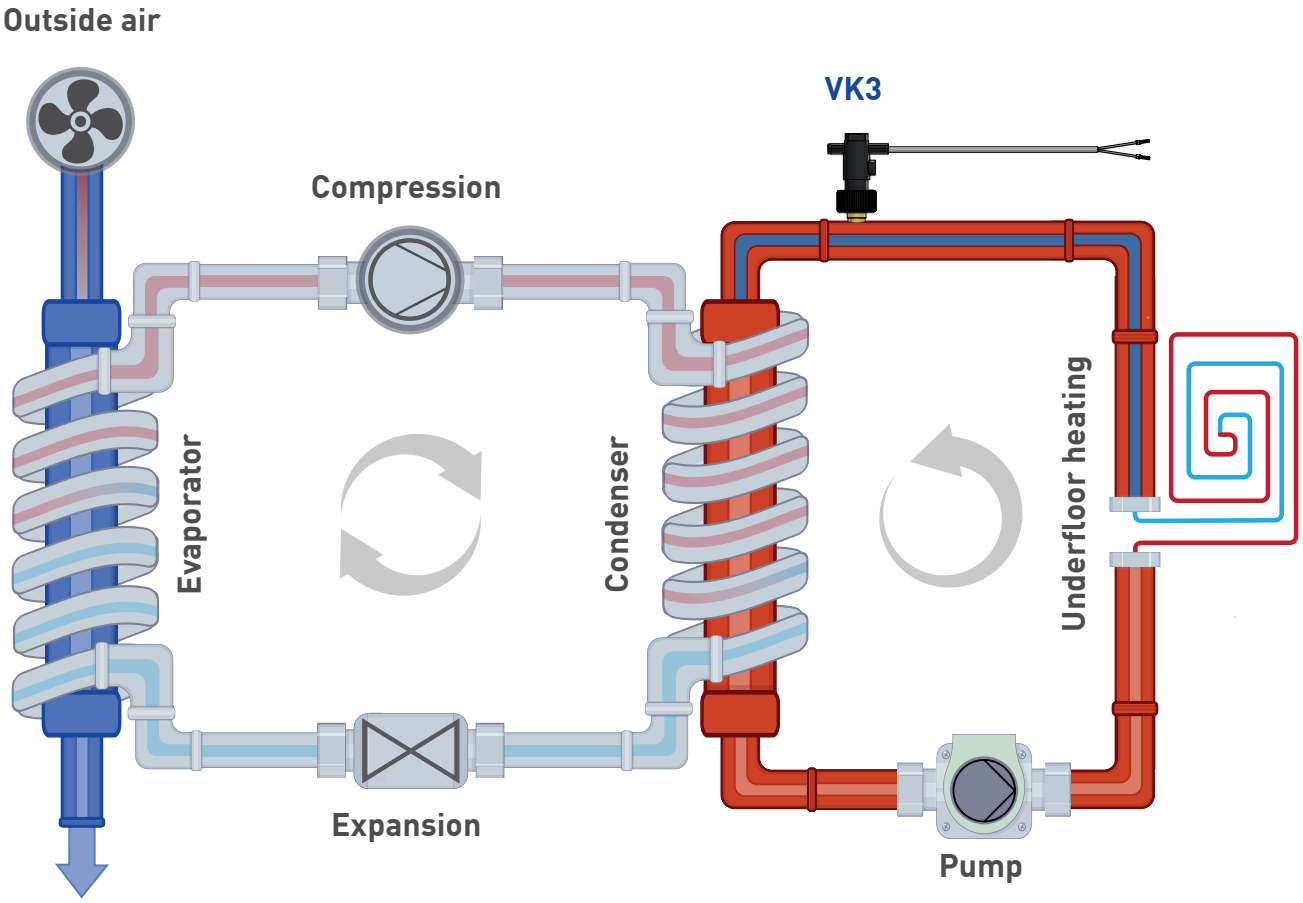
> *A flow switch also gives protection of the electrical back-up heater in the water tank against overheating in case of lack of flow.*



Heating water

Typical vortex flow sensor application

Product features

- For energy balancing and pump control
- Sensor element encapsulated entirely in plastic
- Insensitive to pressure peaks during filling
- Integrated temperature sensor
- Threaded connection or QuickFasten
- Digital or analogue output signal
- Customised setup by parameters

VVX in heating circuits

SIKA Vortex flow sensors are the latest technology in heating circuits of "air to water" heat pumps utilised by the leading global heat pump manufacturers. The flow proportional signal of the flow sensor facilitates a higher efficiency operation of the heat pump, in addition to the prevention of freezing in the heat exchanger

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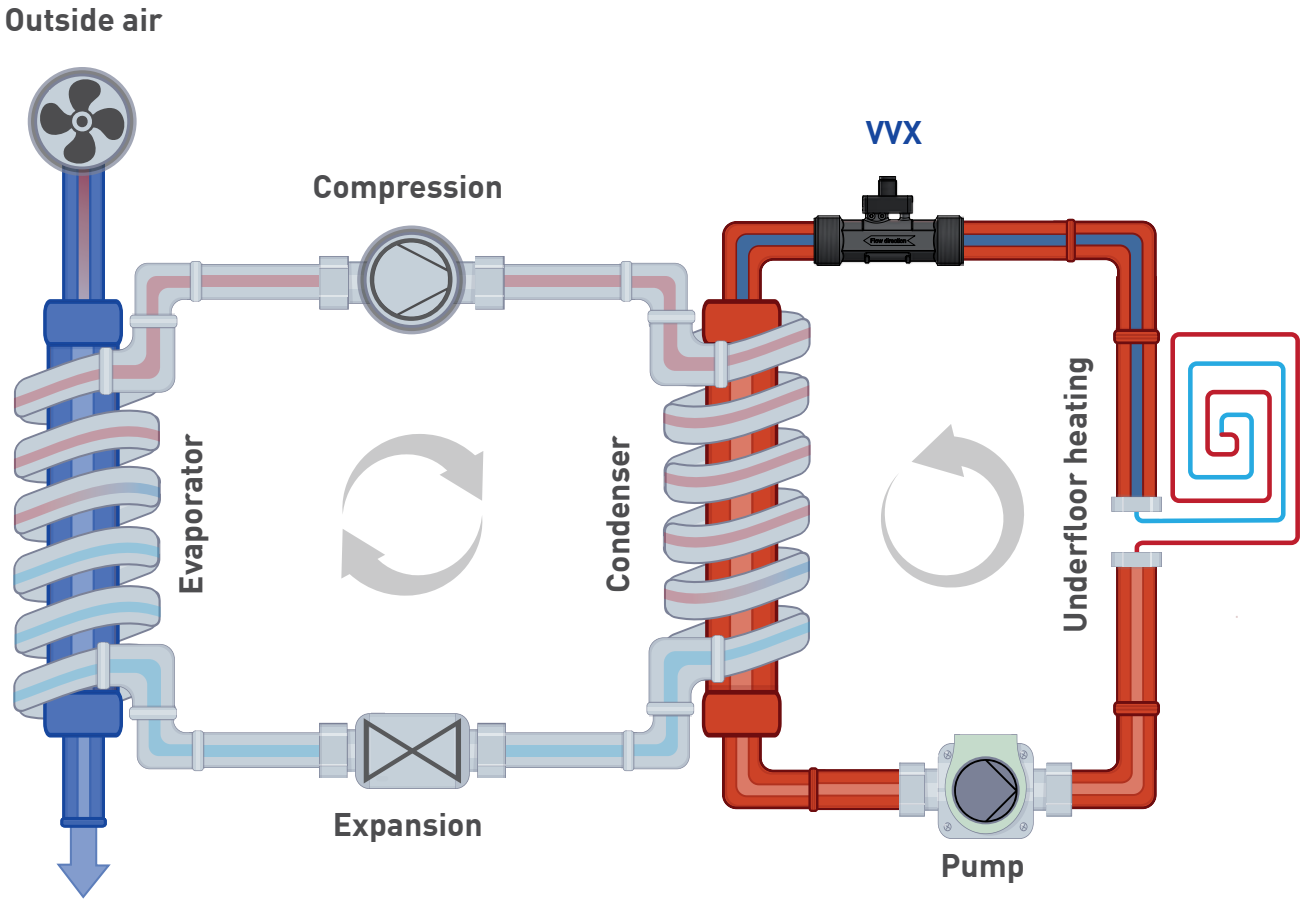
“100 % of SIKA Vortex flow sensors get a 3 or 6 point calibration in a water test bench and are traceable via serial number.”



Potable water

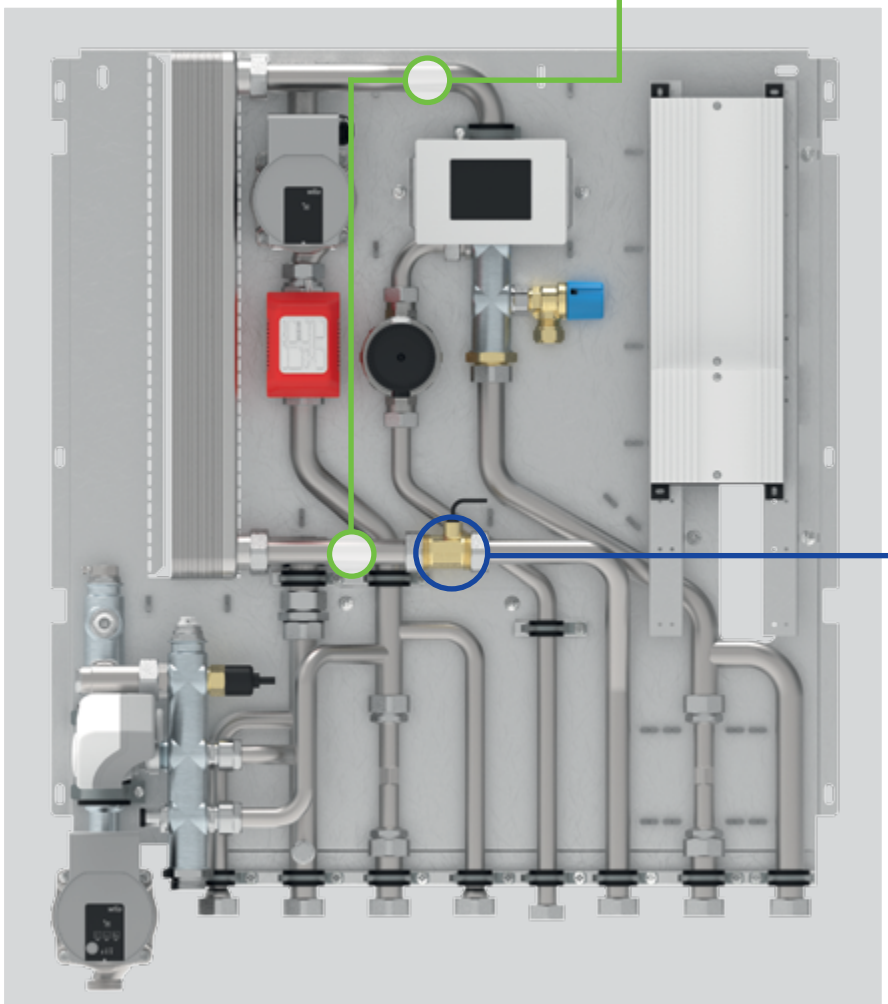
Typical turbine flow & temperature sensor application

Product features VTY20

- Tap water measurement for sanitary hot water
- Turbine body made of brass
- Durable thanks to high-grade sapphire bearings
- Insensitive to pressure peaks

Product features WFI

- Short response time
- Long-term stable
- Proven in temperature cycle tests



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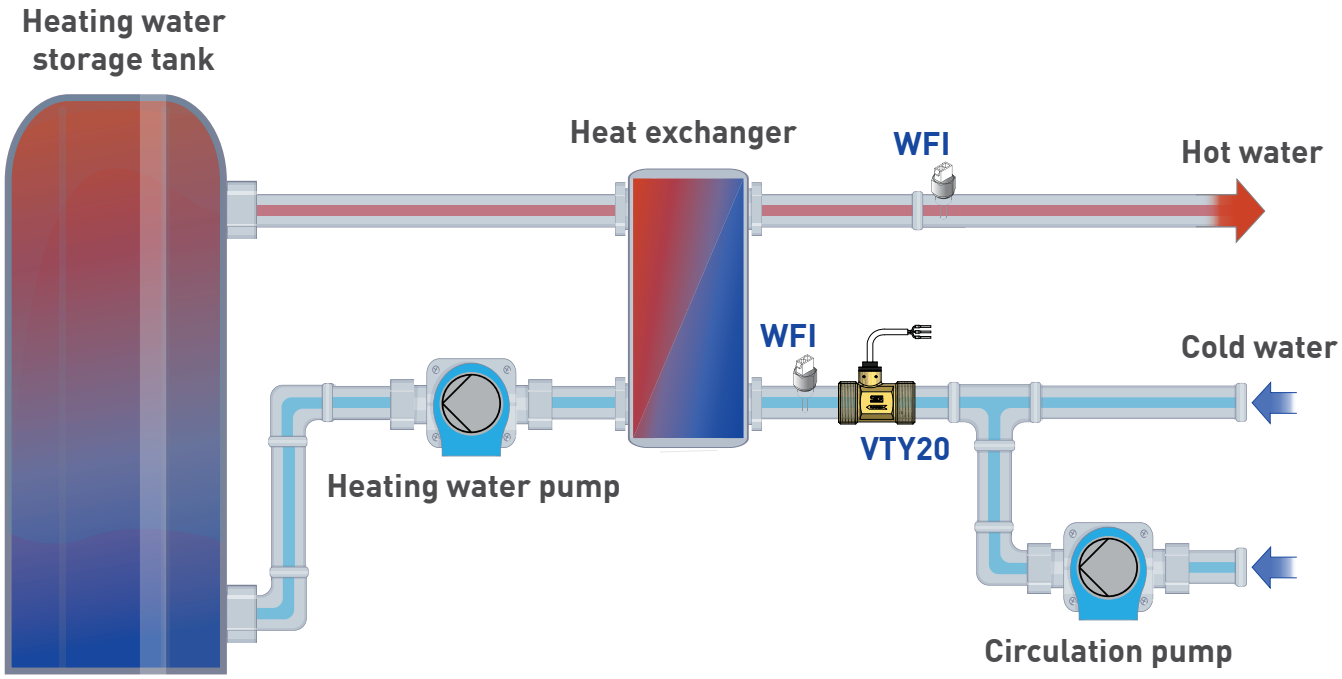
VTY20's excellent low flow performance and its wide flow range are ideal for fresh water modules.



VTY20 for fresh water modules

SIKA flow sensors have a variety of different drinking water approvals. They are typically utilised in water heaters or fresh water modules to detect the demand of sanitary hot water. The most common position of installation is at the mains cold water inlet. Their rugged body provides an ideal interface to the outer plumbing.

WFI for fresh water modules

These very fast responding temperature sensors are ideal for a fast temperature control which means more comfort for the user of the hot water. They can be placed either at the cold water inlet or at the hot water outlet.

Potable water

Typical turbine flow & temperature sensor application

Product features VTY10

- Tap water measurement for potable water heating
- Turbine body made of brass or glass-fibre reinforced plastic
- Durable thanks to high-grade sapphire bearings
- Insensitive to pressure surges

Product features WFI

- Short response time
- Long-term stable
- Proven in temperature cycle tests

WFI for heat interface units (HIU)

These very fast responding temperature sensors are ideal for a fast temperature control which means more comfort for the user of the hot water. They can be placed either at the cold water inlet or at the hot water outlet.

VTY10 for heat interface units (HIU)

SIKA turbine flow sensors are widely used for tap water measurement in heat interface units (HIU). Providing an output signal from low starting flow rates this signal can then be used to control the feed pump to operate with optimal variable speed. The fast response and high resolution output from the flow sensor enables the HIU's to quickly adapt to rapid flow rate changes, which means more comfort for the user of the hot water.

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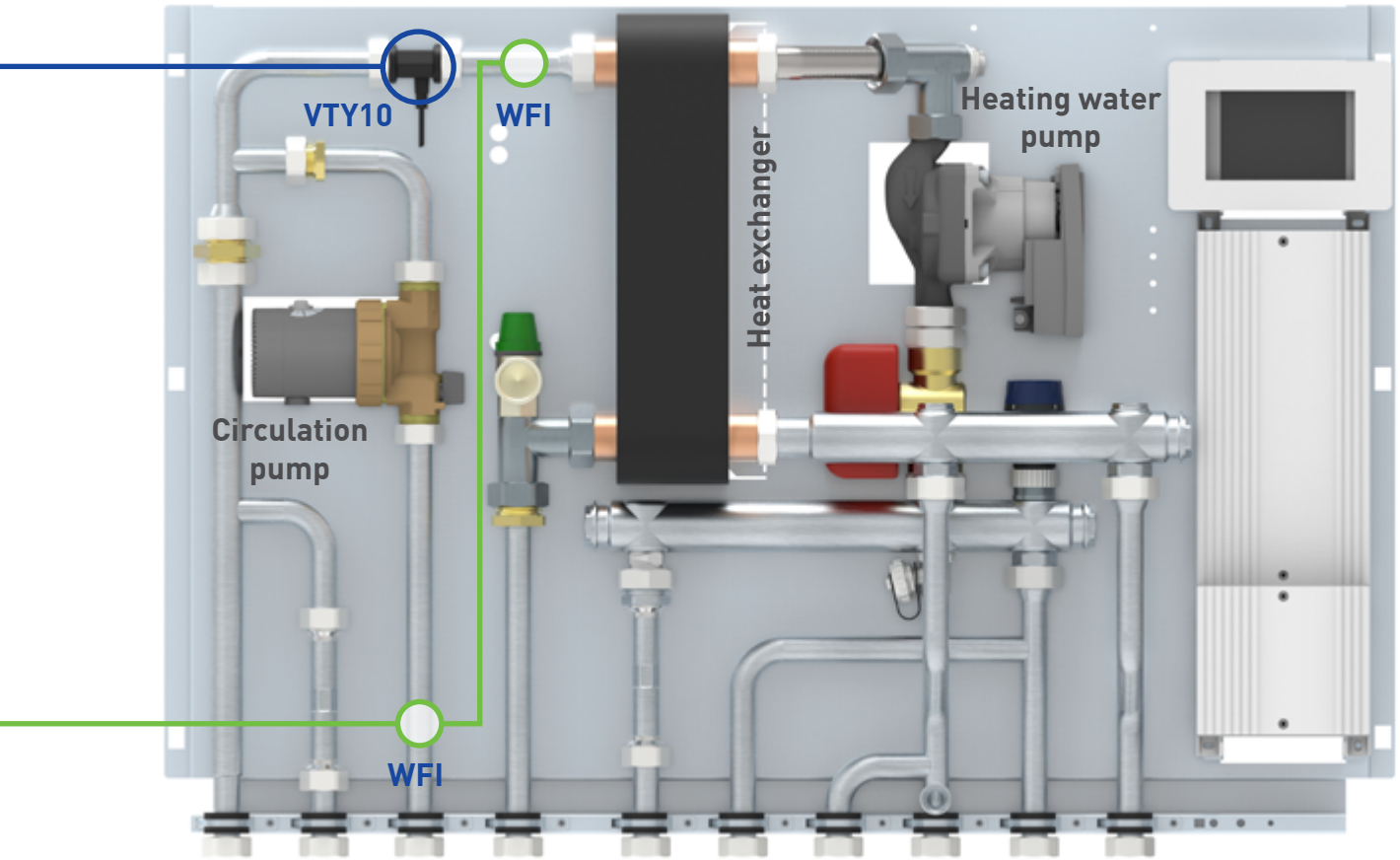
The turbine flow sensor VTY10 is practically independent of inflow section and installation position.



Potable water

Typical push-in turbine flow application

Product features

- Simple integration into valve bodies
- Comprises
  - → Push-in turbine
  - → Hall-effect sensor
- Separation of hydraulic and electrical components
- For water treatment equipment
- Measures lowest flow rates / leak detection

VTY20 capsule for leak detection

These capsule flow sensors are easily integrated into bodies of domestic water treatment units. The most common application is in entry point leak detection units. The turbine flow sensor measures the incoming flow rate to one or two family homes to enable the leak detector to differ between normal consumption and burst pipes.

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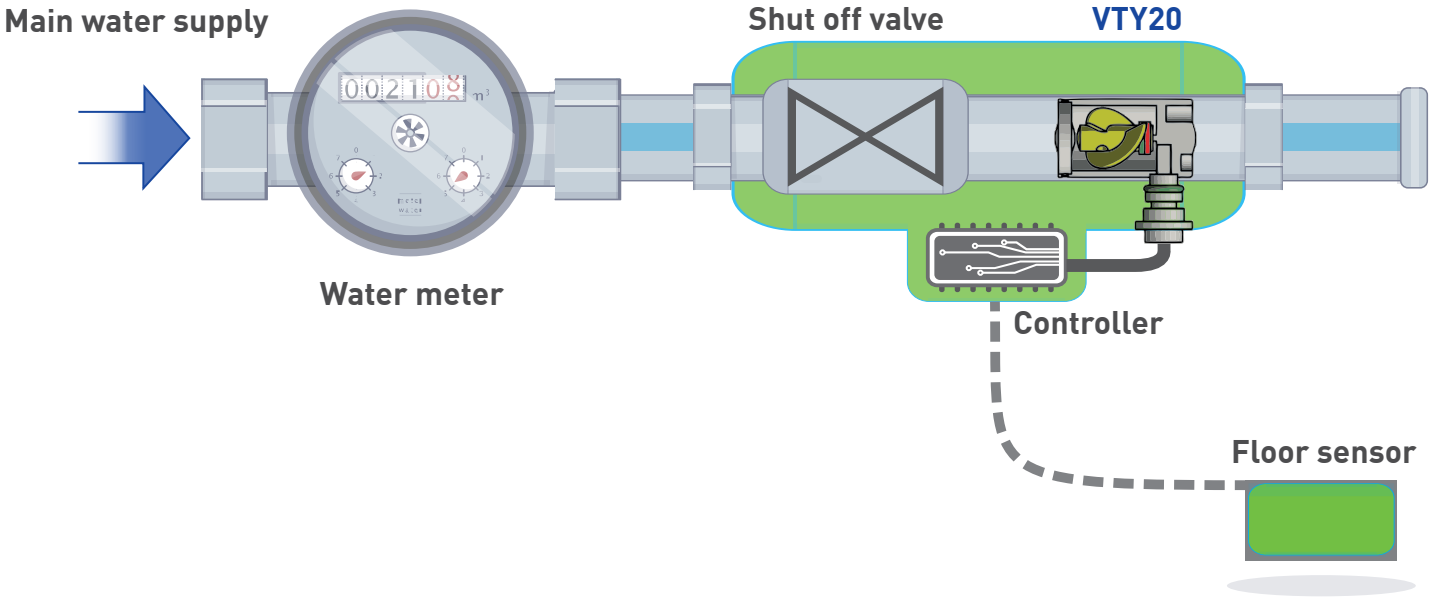
You get the VTY20 capsule flow sensor with durable sapphire bearings and multiple drinking water approvals.



Pool water

Typical flow switch application

Product features

- Pump monitoring
- For pool heaters or water disinfection
- Protection against overheating, dry-running and gas formation
- Installation with union nut or push-in
- Paddle reset with magnetic force
- More than 1 000 000 switching cycles (load-dependent)
- Metal-free for seawater pools
- Proven in the market leader's pool heaters

VKL05 for pool heat pumps

The flow switches are typically utilised in pool heaters or pool water disinfection units. They can prevent overheating (heaters) or overdosing (disinfectors). The flow switch monitors the flow rate and can easily detect pump breakdowns. The inexpensive insertion installation into DN50 or DN65 plastic pipes is the most common kind of installation. Metal free versions are suitable for sea water pools.

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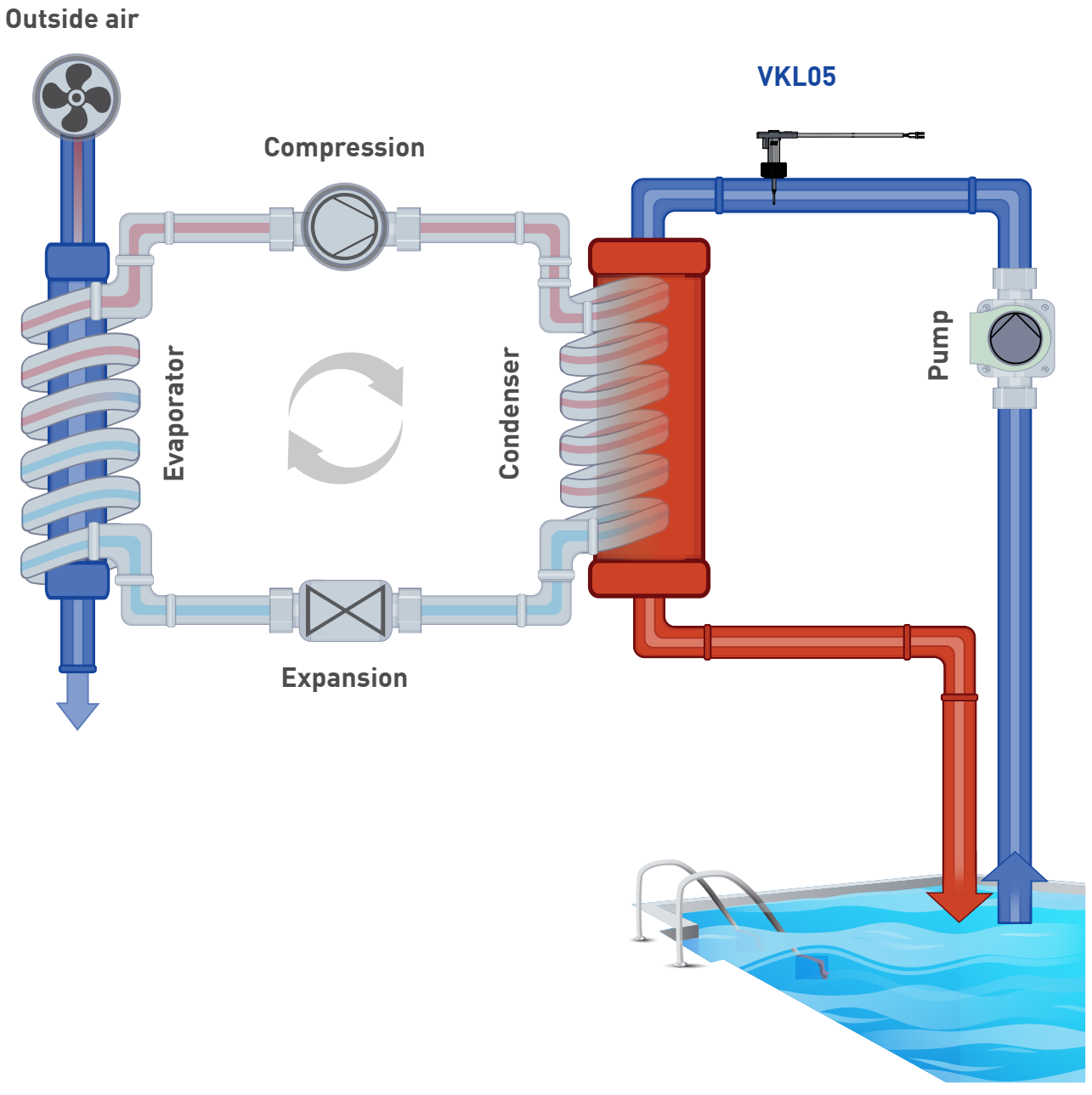
“The pump monitoring is not affected by different vertical hights of pool and heater.”



Heat recovery / Chiller

Typical magnetic-inductive flow sensor application

Product features

- For determining the energy balance
- Measurement signal independent of viscosity changes
- Free pipe cross section, no moving or protruding parts
- No additional pressure drop
- Analogue and digital outputs

VMM for heat recovery units

The flow sensor provides the flow rate signal for pump speed control and for energy measurement.

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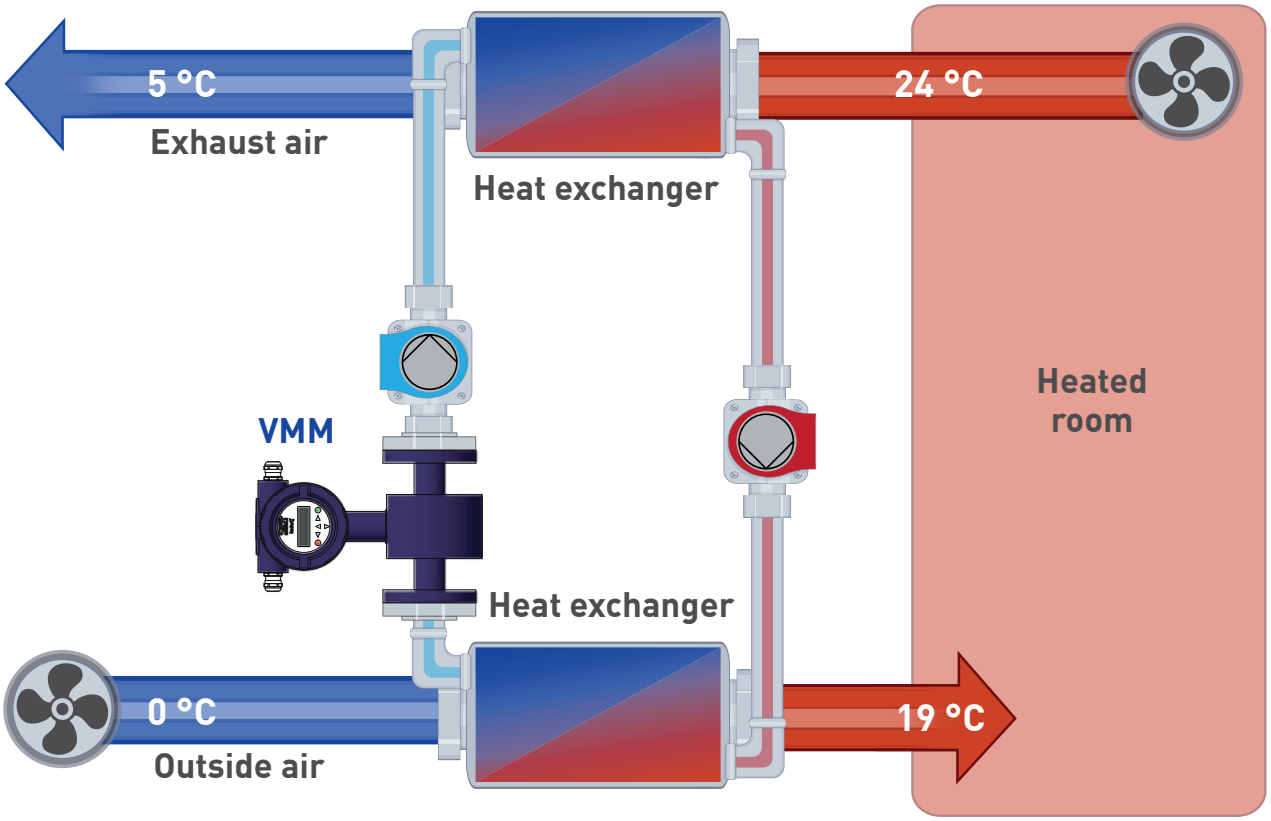
5 °C
Exhaust air
Heat exchanger
24 °C
Heated room
VMM
Heat exchanger
0 °C
Outside air
19 °C

Heat recovery / Chiller

Typical flow switch application

Product features

- Installation into existing pipes
- Threaded, welding or soldering adapter
- Union nut connection for simple installation
- Various plug connectors or connection cables
- TÜV type approved
- No springs, no bellows

VHS06 for chillers

Flow rate monitoring in a chiller. By trimming the paddle length of these in-sertion type flow switches the unit can be both:

- Adapted to the pipe size DN 20...DN 200
- Set point adjusted to meet the individual requirements to protect the heat exchanger against freezing

Male threaded versions are available for steel pipes and versions with soldering adapters are available for copper pipes. Both versions have an integrated union nut for easy installation and orientation.

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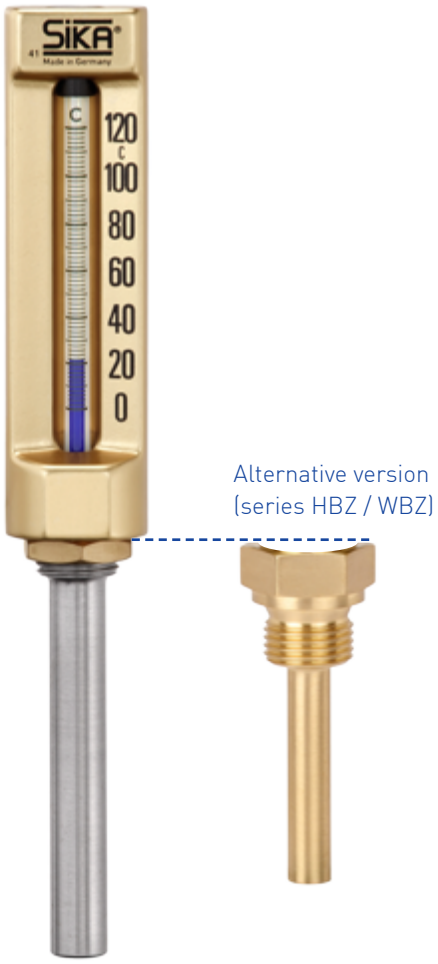
Thanks to the trimmable paddle, one flow switch fits to pipe sizes DN 20...200.

Heat transfer stations

Typical application for industrial thermometers

Product features

- For installation in heat transfer stations
- With immersion tube for welding or screwing in
- Not possible to manipulate
- No auxiliary power required, maintenance free
- Lifelong accuracy according to DIN 16195



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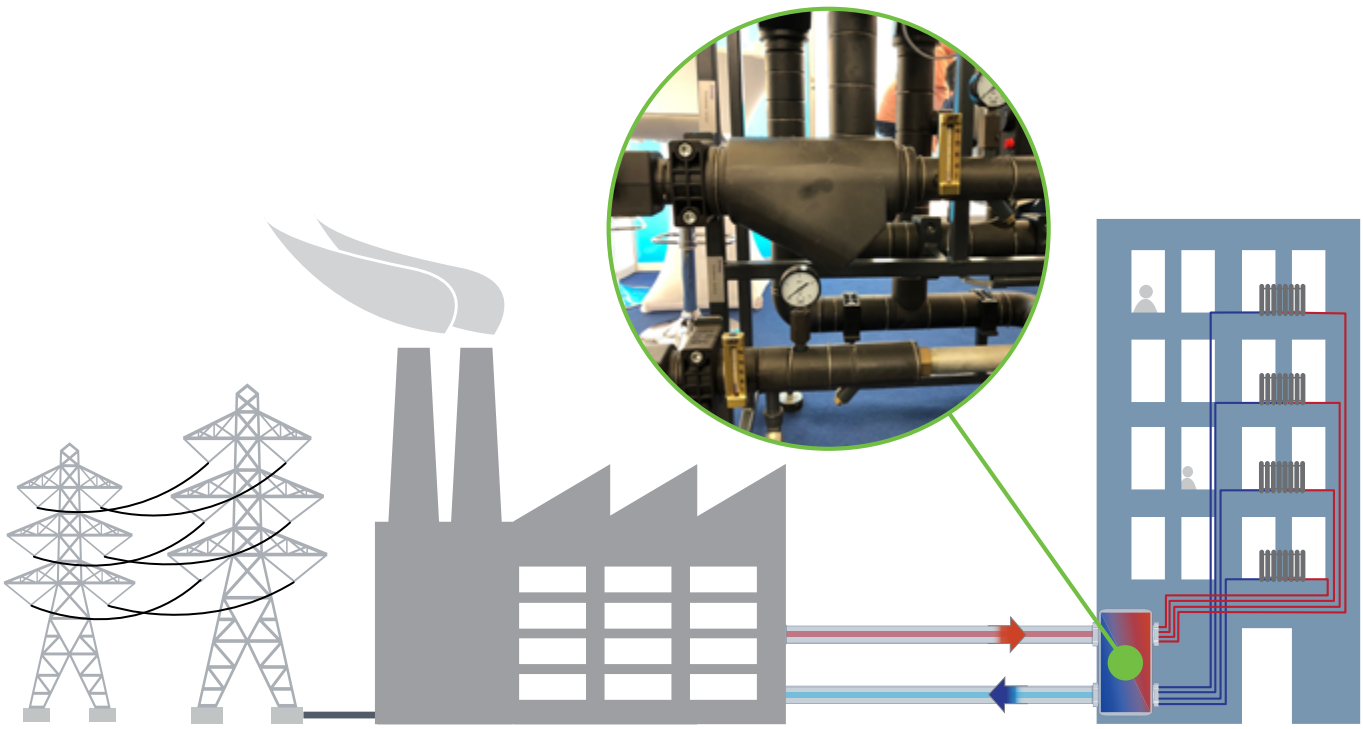
Reliable measurement technology from the inventor of the v-line industrial glass thermometer



Industrial thermometers for heat transfer stations

Reliable temperature indication for inspection and approval.
Maintenance-free and reliable for many years.

- Immersion lengths can be selected according to the nominal diameter and installation conditions
- Special solutions tailored to your applications are possible

For steel pipes, versions are available for welding in, alternatively versions with brass immersion tube and fixed male thread are available.


“
Smart measurement solutions –
For your market success
”

Technical data

For any questions or comprehensive technical consulting, please contact:

Sales Department

Phone: +49 5605 803-0
Email: info@sika.net

VK3 // with pipe tee

VK3

Your advantages	
Series	**VK3**
	• Cost optimized plastic version • Factory set special set points for series applications • Brass tee DN 8...50

Technical data	
Switching function	Contact → closes at increasing flow → opens at decreasing flow Reversing possible
Pressure rating	PN 10
Temperature ranges	
Medium	-25...100 °C
Ambient	-25...70 °C
Electrical data	
Electrical connection	1.5 m PVC jacket cable
Switching current	Max. 1 A
Switching voltage	Max. 230 VAC, 48 VDC
Rating	Max. 26 VA, 20 W
Degree of protection EN 60529	IP65
Protection class EN 60730-1	Class II
Approvals	

Options	
For type	**On request**
VK3	→ Special setpoints → 4 different colours of the union nut for distinction → Recognized component ETL according to UL & CSA standards

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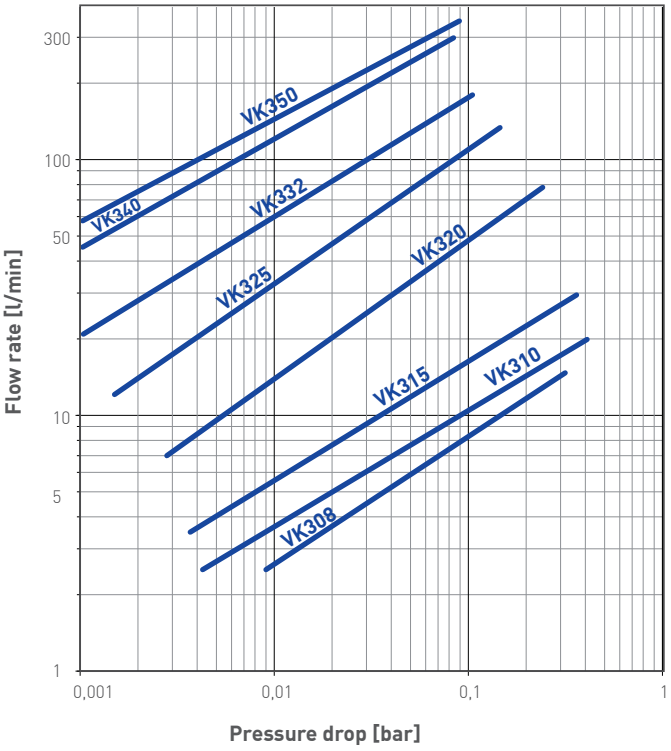
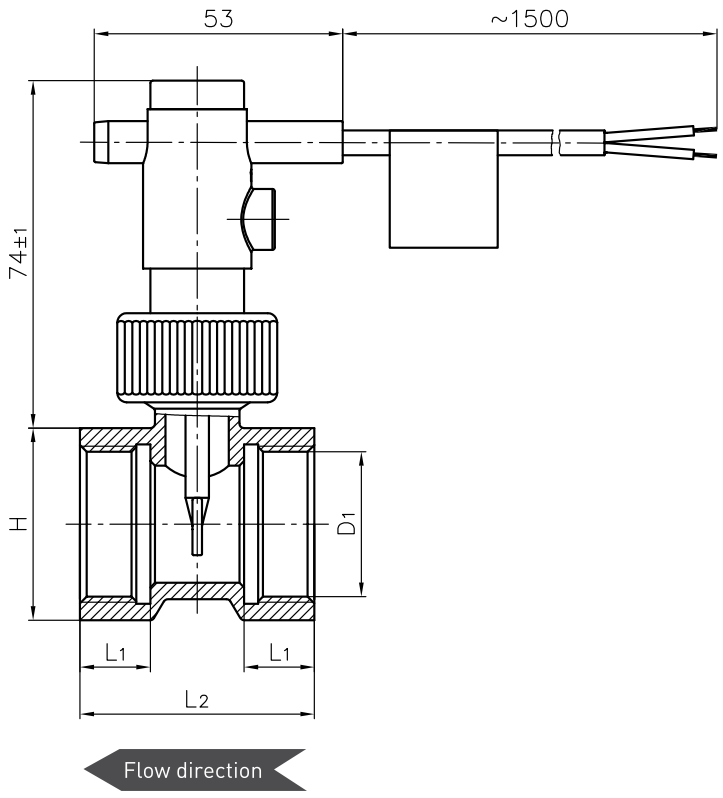
Nominal diameter	Thread connection D_1	Setpoint ranges [l/min]*		Max. flow rate [l/min]
		Increasing flow ON	Decreasing flow OFF	
DN 8	G¼	2.7...3.0	2.6...2.9	15
DN 10	G⅜	3.0...3.8	2.8...3.7	20
DN 15	G½	3.8...5.1	3.6...4.9	30
DN 15	G½ male	3.0...3.8	2.8...3.7	20
DN 15	G¾ male	3.0...3.8	2.8...3.7	20
DN 20	G¾	7.2...9.0	6.9...8.7	80
DN 25	G 1	13.0...16.5	12.3...15.9	130
DN 32	G 1¼	16.5...21.0	16.0...20.5	180
DN 40	G 1½	27.0...33.5	25.5...32.5	300
DN 50	G 2	41.5...53.5	40.6...52.8	350

* Water, 20 °C, horizontal pipe, tolerance ±15 %

Typical pressure drop



Dimensions [mm]			
Thread connection D_1	**L_1**	**L_2**	**H**
G¼	11	50	27
G⅜	11	50	27
G½	11	50	27
G½ male	10	60	
G¾ male	11	50	
G¾	15	50	32
G 1	15	50	41
G 1¼	15	50	48
G 1½	15	50	55
G 2	22	64	70



Materials in contact with fluid	
Body, Paddle	PPE+PS Noryl™ 30 % glass fibre reinforced
Pipe tee	Brass CW617N
Pin*	Stainless steel 1.4571
Magnet	Hard ferrite
O-ring	NBR

* only VK340 and VK350

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Order code		
Nominal diameter	**Thread connection**	**Order number**
DN 8	G¼	VK308M0P10PI11
DN 10	G⅜	VK310M0P10PI21
DN 15	G½	VK315M0P10PI31
DN 15	G½ male	VK315M0P10PA31
DN 15	G¾ male	VK315M0P10PA41
DN 20	G¾	VK320M0P10PI41
DN 25	G 1	VK325M0P10PI51
DN 32	G 1¼	VK332M0P10PI61
DN 40	G 1½	VK340M0P10PI71
DN 50	G 2	VK350M0P10PI81

VK3 // for insertion installation

VK3

Your advantages	
Series	**VK3**
	• Cost optimized plastic version • Factory set special set points for series applications • Paddle lenths for copper pipes Ø 22...54 • Different colours of the union nut for an easy distinction • Soldering adapter for copper pipes

Technical data	
Switching function	Contact → closes at increasing flow → opens at decreasing flow
Pressure rating	PN 10
Temperature ranges	
Medium	-25...100 °C
Ambient	-25...70 °C
Electrical data	
Electrical connection	1.5 m PVC jacket cable
Switching current	Max. 1 A
Switching voltage	Max. 230 VAC, 48 VDC
Rating	Max. 26 VA, 20 W
Degree of protection EN 60529	IP65
Protection class EN 60730-1	Class II
Approvals	

Options	
For type	**On request**
VK3	→ Special setpoints → Reversed switching function → Insertion into collared copper pipes* → Recognized component ETL according to UL & CSA standards

* Set points can differ

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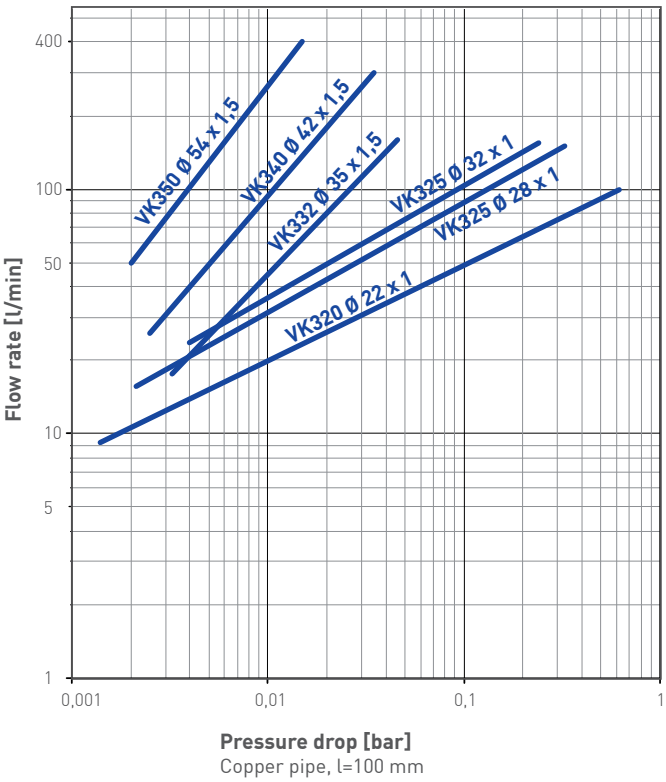
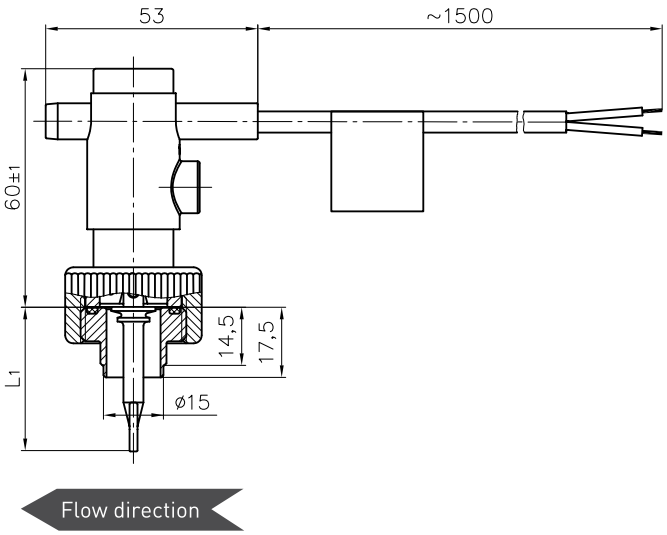
Order code						
Type	Color union nut	For copper pipes	Setpoints [l/min]*		Max. flow rate [l/min]	Order number
			Increasing flow ON**	Decreasing flow OFF		
VK320	●	Ø 22x1	10.5	9.2	100	VK320M0P10PD11
VK325	●	Ø 28x1	17.6	15.7	150	VK325M0P10PD11
		Ø 32x1	25.7	23.6	155	
VK332	●	Ø 35x1.5	20.0	17.5	160	VK332M0P10PD11
VK340	●	Ø 42x1.5	28.0	25.8	300	VK340M0P10PD11
VK350	●	Ø 54x1.5	58.3	50.2	400	VK350M2P10PD11

* Water, 20 °C, horizontal pipe, tolerance ±15 %
** Typical value

Typical pressure drop



Pressure drop [bar]
Copper pipe, l=100 mm



Dimensions [mm]	
Type	Paddle length L_1
VK320	33.5
VK325	36.0
VK332	44.5
VK340	47.5
VK350	56.5

Materials in contact with fluid	
Body	PPE+PS Noryl™ 30 % glass fibre reinforced
Paddle	PPE+PS Noryl™ 30 % glass fibre reinforced
Soldering adapter	Brass CW617N
Magnet	Hard ferrite
O-ring	NBR

VHS06, VK306 // for insertion installation

Your advantages	
Series	**VHS06 / VK306**
	• Universal flow switches for DN 20...200 • Adjustable for pipe size and setpoint by trimming the paddle • Threaded adapters for tees or for direct insertion into pipes

Technical data	VHS06	VK306
Switching function	Contact → closes at increasing flow → opens at decreasing flow Reversing possible	Contact → closes at increasing flow → opens at decreasing flow
Pressure rating	PN 25	PN 10
Temperature ranges		
Medium	-25...110 °C	-25...100 °C
Ambient	-25...80 °C	-25...70 °C
Electrical data		
Electrical connection	Plug connector DIN EN 175301-803-A incl. cable socket	1.5 m PVC jacket cable
Max. Switching current	1 A	
Max. Switching voltage	230 VAC, 48 VDC	
Max. Rating	26 VA, 20 W	
Degree of protection EN 60529	IP65	
Protection class EN 60730-1	Class II	
Approvals*		

WRAS APPROVED PRODUCT

TÜV Rheinland Produkt Safety BAUART GEPRÜFT TYPE APPROVED

* Only for flow switches with plastic paddle

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Options	
For type	**See oder code**
VHS06	→ Plug connector DIN EN 175301-803-A incl.cable socket with two LED for switching voltages 24 V...230 V AC/DC ±20 %, ambient temperature -20...70 °C → or 4-pin-sensor plug M12 x 1
For type	**On request**
VK306	→ Reversed switching function
VK306 with plastic paddle	→ Recognized component ETL according to UL & CSA standards

VHS06 / VK306 with plastic paddle, installation into pipe tees according to EN 10242						
Paddle to be trimmed to						
	Paddle mark	9	15	20	30	40
	Installation length L_1 [mm]	40	46	51	61	71
Setpoints* / Max. flow rate [m³/h]						
DN 20	Increasing flow ON**	1.1				
	Decreasing flow OFF	0.9				
	Max. flow rate	4				
DN 25	Increasing flow ON**	1.7	1,3			
	Decreasing flow OFF	1.5	1.1			
	Max. flow rate	8.5	5			
DN 32	Increasing flow ON**	2.9	2.2	1.9		
	Decreasing flow OFF	2.6	1.9	1.6		
	Max. flow rate	15	10	8		
DN 40	Increasing flow ON**	4.2	3.2	2.8	2.1	
	Decreasing flow OFF	3.8	2.8	2.4	1.8	
	Max. flow rate	25	18	14	10	
DN 50	Increasing flow ON**	6.5	4.9	4.4	3.3	2.7
	Decreasing flow OFF	6	4.5	4	3	2.4
	Max. flow rate	41	29	24	17	13

VHS06 / VK306 with plastic paddle, installation by welded socket according to EN 10241, G½ female, length 15 mm									
Paddle to be trimmed to									
	Paddle mark	15	20	30	40	50	60	70	80
	Installation length L_1 [mm]	46	51	61	71	81	91	101	111
Setpoints* / Max. flow rate [m³/h]									
DN 65	Increasing flow ON**	8.8	7.4	5.6	4.5				
	Decreasing flow OFF	8.5	7	5.2	4.2				
	Max. flow rate	50	45	34	27				
DN 80	Increasing flow ON**	13.8	11.7	9.2	7.5	6.5	5.1		
	Decreasing flow OFF	11.3	9.6	7.7	6.3	5.3	4.7		
	Max. flow rate	80	65	50	40	33	28		
DN 100	Increasing flow ON**		18.8	14.6	12.3	10.2	8	6.9	6.2
	Decreasing flow OFF		16.3	12	10	8	7.1	6.3	5.9
	Max. flow rate		110	80	65	55	50	40	36
DN 150	Increasing flow ON**				27	22.8	19.5	18	15.7
	Decreasing flow OFF				25	19.8	17.8	16	14.3
	Max. flow rate				150	130	110	100	90
DN 200	Increasing flow ON**					45	38	33.5	30
	Decreasing flow OFF					43.5	36	32	29
	Max. flow rate					230	200	175	160

* Water, 20 °C, horizontal pipe, tolerance ±15 %

** Typical value

VHS06 / VK306 with stainless steel paddle, installation into pipe tees according to EN 10242					
Paddle to be trimmed to					
	Paddle mark	15	20	30	40
	Installation length L_1 [mm]	46	51	61	71
Setpoints* / Max. flow rate [m³/h]					
DN 25	Increasing flow ON**	1.2	1		
	Decreasing flow OFF	1	0.9		
	Max. flow rate	10	6		
DN 32	Increasing flow ON**	2	1.7		
	Decreasing flow OFF	1.7	1.5		
	Max. flow rate	20	15		
DN 40	Increasing flow ON**	3.3	2.7	2	
	Decreasing flow OFF	3	2.5	1.8	
	Max. flow rate	34	26	18	
DN 50	Increasing flow ON**	4.8	4	3.2	2.6
	Decreasing flow OFF	4.6	3.8	2.9	2.4
	Max. flow rate	55	45	32	24

VHS06 / VK306 with stainless steel paddle, installation by welded socket according to EN 10241, G½ female, length 15 mm									
Paddle to be trimmed to									
	Paddle mark	15	20	30	40	50	60	70	80
	Installation length L_1 [mm]	46	51	61	71	81	91	101	111
Setpoints* / Max. flow rate [m³/h]									
DN 65	Increasing flow ON**	7.2	6.0	4.5	3.6				
	Decreasing flow OFF	6.8	5.7	4.2	3.3				
	Max. flow rate	100	80	65	50				
DN 80	Increasing flow ON**	11.7	10	7.7	6.4	5.3	4.6		
	Decreasing flow OFF	11.4	9.6	7.5	6	4.9	4.2		
	Max. flow rate	150	125	95	75	60	50		
DN 100	Increasing flow ON**		16	12.4	10.3	8.7	7.7	6.7	6.1
	Decreasing flow OFF		15.9	11.9	9.8	8.1	7.1	6.3	5.6
	Max. flow rate		200	150	120	105	90	75	70
DN 150	Increasing flow ON**				24	20.3	18	16.3	14.7
	Decreasing flow OFF				22.7	19	17.3	15.3	13.8
	Max. flow rate				290	250	210	190	170
DN 200	Increasing flow ON**					41	35.7	31.7	26.7
	Decreasing flow OFF					38.7	34	29.7	23.3
	Max. flow rate					450	390	350	310

* Water, 20 °C, horizontal pipe, tolerance ±15 %

** Typical value

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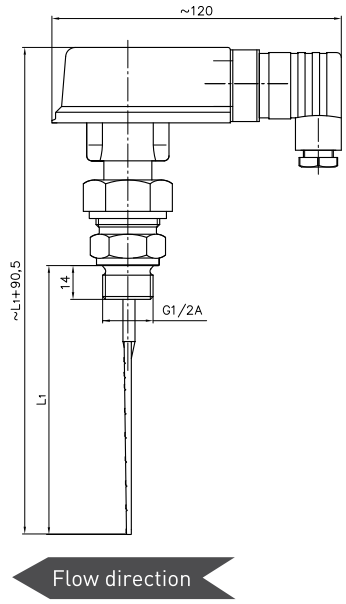
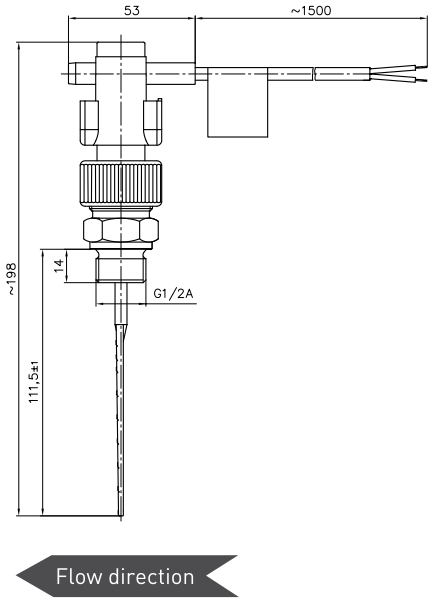
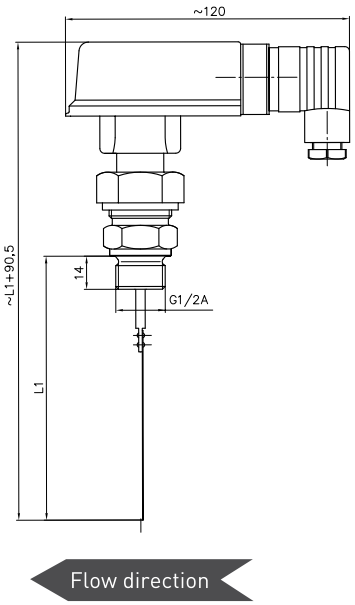
VHS06 with plastic paddle



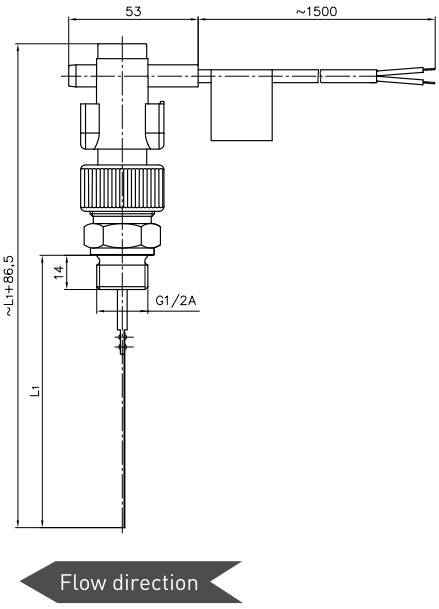
VK306 with plastic paddle



VHS06 with stainless steel paddle



VK306 with stainless steel paddle

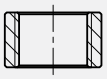


Materials in contact with fluid		
Type	**VHS06**	**VK306**
Body	Brass CW614N	PPE+PS Noryl™ 30 % glass fibre reinforced
Paddle	Plastic paddle: PPE+PS Noryl™ 30 % glass fibre reinforced / stainless steel Stainless steel paddle: Stainless steel 1.4310 / brass	
Pin	Stainless steel 1.4571	
Process connection	Brass CW614N	
Magnet	Hard ferrite	
O-ring	NBR	

Order code			
Type			
VHS06			
Plug connector incl. cable socket (standard)	VHS06M2		171R21
Plug connector incl. cable socket with LED (option)	VHS06M2		191R21
4-pin-sensor plug M12 x 1 (option)	VHS06M2		181R21
VK306			
1.5 m PVC jacket cable	VK306M2		10PR21
Paddle			
Plastic		P	
Stainless steel		5	
Example order number	**VHS06M2**	**P**	**171R21**

BEST SELLER

Type		Order number		
VHS06	Plug connector (standard), paddle plastic	**VHS06M2**	**P**	**171R21**
VHS06	Plug connector (standard), paddle stainless steel	**VHS06M2**	**5**	**171R21**

Order code		
Accessories		**Order number**
	Welding socket according to EN 10241, G½ female thread, lenght 15 mm, steel S 235 JR	XVH1470

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VHS09, VK309 // for insertion installation

Your advantages	
Series	**VHS09 / VK309**
	• Universal flow switches for Kupferrohr Ø 32...88,9 • Adjustable for pipe size and setpoint by trimming the paddle • Soldering adapter for copper pipes

Technical data	VHS09	VK309
Switching function	Contact → closes at increasing flow → opens at decreasing flow Reversing possible	Contact → closes at increasing flow → opens at decreasing flow
Pressure rating	PN 25	PN 10
Temperature ranges		
Medium	-25...110 °C	-25...100 °C
Ambient	-25...80 °C	-25...70 °C
Electrical data		
Electrical connection	Plug connector DIN EN 175301-803-A incl. cable socket	1.5 m PVC jacket cable
Switching current	Max. 1 A	
Switching voltage	Max. 230 VAC, 48 VDC	
Rating	Max. 26 VA, 20 W	
Degree of protection EN 60529	IP65	
Protection class EN 60730-1	Class II	
Approvals		

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Options	
For type	**See order code**
VHS09	→ Plug connector DIN EN 175301-803-Aincl.cable socket with two LED for switching voltages 24 V...230 V AC/DC ±20 %, ambient temperature -20...70 °C → or 4-pin-sensor plug M12 x 1
For type	**On request**
VK309	→ Reversed switching function → Recognized component ETL according to UL & CSA standards

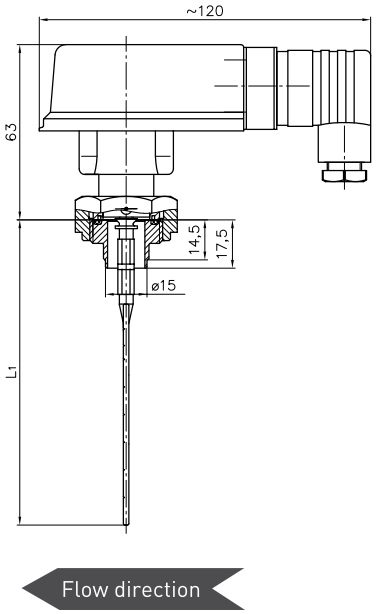
Set point ranges

Paddle to be trimmed to								
	Paddle mark	9	15	20	30	40	50	60
	Installation length L_1 [mm]	39	45	50	60	70	80	90
Setpoints* / Max. flow rate [m³/h]								
Ø 32 x 1	Increasing flow ON**	2						
	Decreasing flow OFF	1.9						
	Max. flow rate	10						
Ø 35 x 1	Increasing flow ON**	2.6	1.8					
	Decreasing flow OFF	2.4	1.6					
	Max. flow rate	20	13					
Ø 35 x 1.5	Increasing flow ON**	2.5	1.7					
	Decreasing flow OFF	2.2	1.6					
	Max. flow rate	18	12					
Ø 42 x 1.5	Increasing flow ON**	3.9	2.8	2.2				
	Decreasing flow OFF	3.7	2.7	2.1				
	Max. flow rate	30	20	15				
Ø 54 x 1.5	Increasing flow ON**				3.2			
	Decreasing flow OFF				3			
	Max. flow rate				21			
Ø 54 x 2	Increasing flow ON**				3			
	Decreasing flow OFF				2.9			
	Max. flow rate				20			
Ø 64 x 2	Increasing flow ON**		8.6	7.2	5.2	4		
	Decreasing flow OFF		7.9	6.6	4,.7	3.7		
	Max. flow rate		53	42	30	24		
Ø 76,1 x 2	Increasing flow ON**		13.6	10.8	8	6.4	5,2	
	Decreasing flow OFF		12.1	10	7.4	5.8	4.7	
	Max. flow rate		80	65	46	35	31	
Ø 88,9 x 2	Increasing flow ON**				10.9	9	7.3	6.1
	Decreasing flow OFF				10.7	8.4	6.9	5.9
	Max. flow rate				67	52	42	39

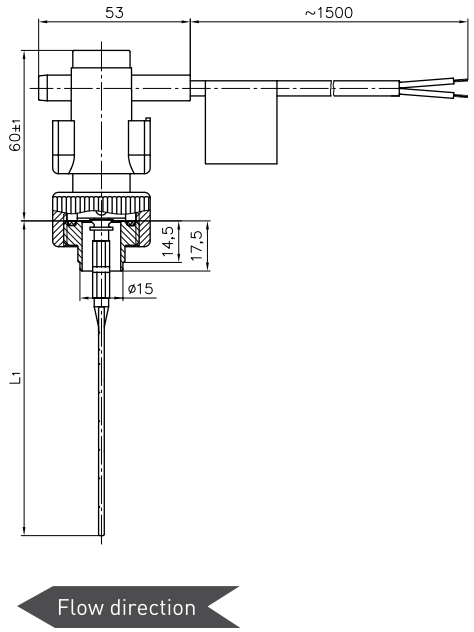
* Water, 20 °C, horizontal pipe, tolerance ±15 %

** Typical value

VHS09



VK309



Materials in contact with fluid		
Type	**VHS09**	**VK309**
Body	Brass CW614N	PPE+PS Noryl™ 30 % glass fibre reinforced
Paddle / Sleeve	PPE+PS Noryl™ 30 % glass fibre reinforced / Stainless steel	
Process connection	Brass CW614N	
Pin	Stainless steel 1.4571	
Magnet	Hard ferrite	
O-ring	NBR	

Order code	
Type	**Order number**
VHS09	
Plug connector incl. cable socket (standard)	VHS09M2P171D11
Plug connector incl. cable socket with LED (option)	VHS09M2P191D11
4-pin-sensor plug M12 x 1 (option)	VHS09M2P181D11
VK309	
1.5 m PVC jacket cable	VK309M2P10PD11

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Type		Order number
VHS09	Plug connector (Standard), Paddle plastic	**VHS09M2P171D11**

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VKX05 // for insertion installation

VKX05

Your advantages	
Series	**VKX05**
	• Direct installation into pipe lines DN 50...150 • Sealed with integrated O-ring

Technical data	**VKX05**
Switching function	Contact closes at increasing flow
Nominal diameter range	Applicable in DN 50...150
Pressure rating	PN 10
Temperature ranges	
Medium	-20...100 °C
Ambient	-20...70 °C
Electrical data	
Electrical connection	1.5 m PVC jacket cable
Degree of protection EN 60529	IP65
Max. Switching current	Max. 1 A
Max. Rating	Max. 26 VA, 20 W
Max. Switching voltage	230 VAC, 48 VDC or 24 VAC, 42 VDC
Protection class EN 60730-1	Class II or Class III
Approvals	

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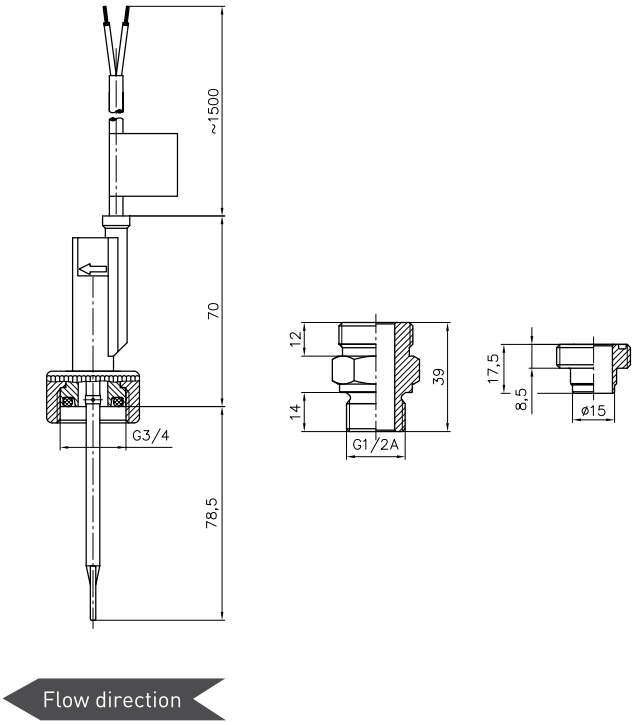

Materials in contact with fluid	
Type	**VKX05**
Body	PPE+PS Noryl™ 30 % glass fibre reinforced
Paddle	PPE+PS Noryl™ 30 % glass fibre reinforced
Pin	Stainless steel 1.4571 or titanium
Magnet	Hard ferrite
O-ring	EPDM
Soldering adapter	Brass CW614N
Process connection	Brass CW614N or stainless steel 1.4571

Order code			
Type			
VKX05	VKX05M2P2		
VKX05 with titanium pin	VKX05M2B2		
Switching voltage			
230 VAC, 48 VDC		AP	
24 VAC, 42 VDC		BP	
Process connection			
Union nut G¾			U10
Threaded adapter G½ brass			R21
Threaded adapter G½ stainless steel			R23
Soldering adapter			D11
Example order number	**VKX05M2P2**	**AP**	**U10**

VKX15 // with pipe tee

VKX15

Your advantages	
Series	**VKX15**
	• Cost optimized version • Pipe tee with threaded or soldering ends

Technical data	
Switching function	Contact closes at increasing flow
Setpoint	2.5 ±0.5 l/min*
Max. flow rate	
→ Pipe tee G½ male	40 l/min
→ Pipe tee G¾ male	18 l/min
→ Pipe tee 15 mm soldering connection	40 l/min
→ Pipe tee 22 mm soldering connection	34 l/min
Nominal diameter	DN 15
Pressure rating	PN 10
Temperature ranges	
Medium	-20...100 °C
Ambient	-20...70 °C
Electrical data	
Electrical connection	0.5 m PVC jacket cable
Degree of protection EN 60529	IP65
Max. Switching current	Max. 1 A
Max. Rating	Max. 26 VA, 20 W
Max. Switching voltage	230 VAC, 48 VDC or 24 VAC, 42 VDC
Protection class EN 60730-1	Class II or Class III
Approvals **	

WRAS APPROVED PRODUCT

TÜV Rheinland Produkt Safety BAUART GEPRÜFT TYPE APPROVED

* Water, 20 °C, horizontal pipe, other setpoints on request

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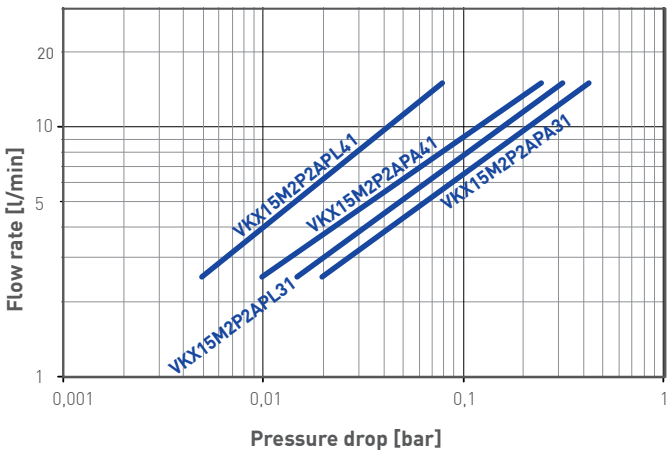
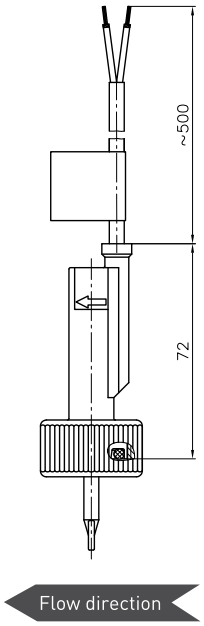
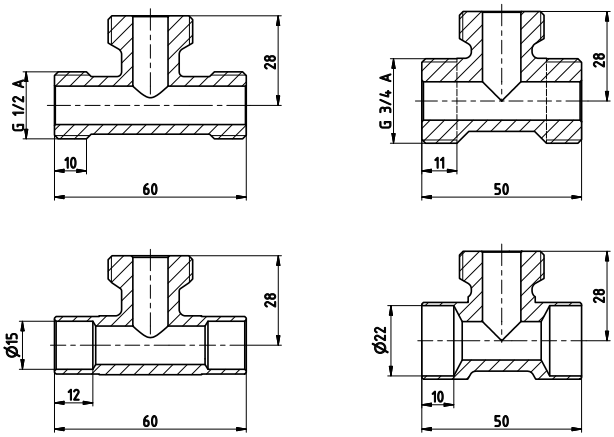
Typical pressure drop





Materials in contact with fluid	
Body	PPE+PS Noryl™ 30 % glass fibre reinforced
Paddle	PPE+PS Noryl™ 30 % glass fibre reinforced
Pin	Stainless steel 1.4571
Magnet	Hard ferrite
O-ring	EPDM
Pipe tee	Brass CW617N



Order code			
Type			
VKX15	VKX15M2P2		
Switching voltage			
230 VAC, 48 VDC		AP	
24 VAC, 42 VDC		BP	
Process connection			
Pipe tee G½ male			A31
Pipe tee G¾ male			A41
Pipe tee 15 mm soldering connection			L31
Pipe tee 22 mm soldering connection			L41
Example order code	**VKX15M2P2**	**AP**	**A31**

VKL05 // for insertion installation

VKL05

Your advantages	
Series	**VKL05 / VKL05 Push-In**
	• Direct installation into pipe lines DN 50...150 • Optional: Push-In installation • Sealed with integrated O-ring

Technical data	VKL05 / VKL05 Push-In
Switching function	Contact closes at increasing flow
Nominal diameter range	Applicable in DN 50...150
Pressure rating	PN 10
Temperature ranges	
Medium	-20...70 °C
Ambient	-20...70 °C
Electrical data	
Electrical connection	1.5 m PVC jacket cable
Degree of protection EN 60529	IP65
Max. Switching current	1 A
Max. Rating	26 VA, 20 W
Max. Switching voltage	230 VAC, 48 VDC
Protection class EN 60730-1	Class II

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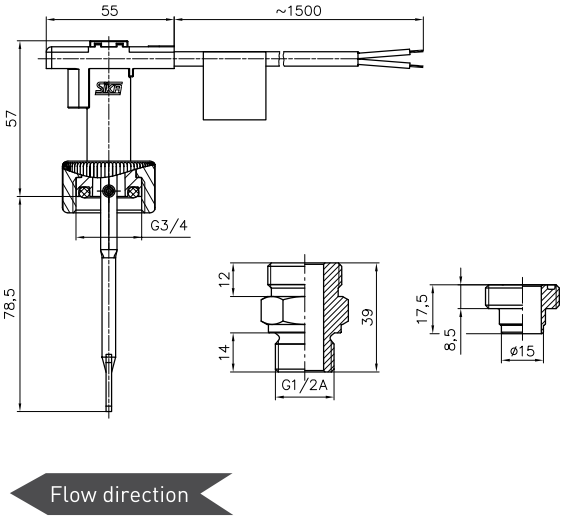
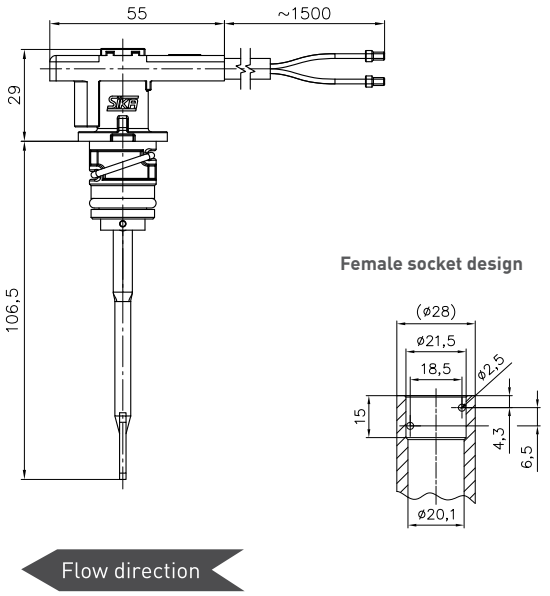
VKL05



VKL05 Push-In



Materials in contact with fluid		
Type	**VKL05**	**VKL05 Push-In**
Body	PPE+PS Noryl™ 30 % glass fibre reinforced	
Paddle	PPE+PS Noryl™ 30 % glass fibre reinforced	
Pin	PPE+PS Noryl™ 30 % glass fibre reinforced	
Magnet	Hard ferrite	
O-ring	EPDM	
Soldering adapter	Brass CW614N	
Process connection	Brass CW614N or stainless steel 1.4571	

Order code		
Type		
VKL05	VKL05M1P2BP	
Process connection		
Union nut G¾		U10
Threaded adapter G½ brass		R21
Threaded adapter G½ stainless steel		R23
Soldering adapter		D11
Push-In for manifold mounting		H20
Example order number	**VKL05M1P2BP**	**U10**

VVX

VVX20

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VVX20 QuickFasten

BEST SELLER

Your advantages	
Series	**VVX**
	• No mechanical wear → Flow sensor for liquids with no moving parts • Highest strength and performance → Rugged glass fibre reinforced plastic • Completely encapsulated piezoceramic sensor to detect the vortices → No direct contact with the medium • Wide measuring span (up to 1:21), integrated temperature sensor, high interference resistance, • wetted parts metal-free, traceability by serial number, thread connection or QuickFasten

Technical data	VVX15	VVX20	VVX25
Nominal diameter	DN 15	DN 20	DN 25
Process connection	G¾-ISO 228 male, incl. O-rings	QuickFasten or G1-ISO 228 male, incl. O-rings	G 1¼-ISO 228 male, incl. O-rings
Inner diameter	Ø 13 mm	Ø 19 mm	Ø 25 mm
Flow range	2...40 l/min	5...80 l/min	7...150 l/min
Accuracy	±2 % of range*, deviations with high viscous media		
Repeatability	±0,5 % or ±1 %, see temperature ranges ambient		
Medium	Water and aqueous solution		
Pressure rating	PN 10		
Degree of protection EN 60529	IP65*** and IP67***		
Temperature ranges			
Medium	5...90 °C, -20...90 °C**		
Ambient	5...70 °C → Repeatability ±0,5 %, -20...5 °C → Repeatability ±1 %		
Electrical data			
Electrical connection	5-pin plug connector M12 x 1		
Power supply	8...30 V DC or 5 V DC (±5 %) or 12...24 VDC****		
Current consumption	< 15 mA		
Approvals			
	WRAS pending		
Option			
	Recognized component ETL according to UL und CSA Standards		

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Three different versions available:
- Frequency output (❶)
- Analogue 0.5...3.5 V and frequency output (❷)
- Analogue 0...10 V or 4...20 mA and frequency output (❸)

Frequency output ❶	**VVX15**	**VVX20**	**VVX25**
Output signal flow	Frequency signal, square wave, pulse duty ratio 50:50, signal current max. 20 mA		
Pulse rate	500 1/l (optional 3...1000 1/l)	200 1/l (optional 2...800 1/l)	100 1/l (optional 1...500 1/l)
Output signal temperature	Pt1000 2 wire, class B or NTC 10.74k, B 0/100 3450 or none		

Analogue output ❷	**VVX15**	**VVX20**	**VVX25**
Output signal flow	0.5...3.5 V		
Scaling	2...40 l/min	5...80 l/min	7...150 l/min
Voltage rate → 0.5...3.5 V	0.07895 V / l/min	0.04000 V / l/min	0.02098 V / l/min
Output signal temperature	Voltage signal 0.5...3.5 V corresponds to 0...90 °C or Pt1000 2 wire, class B or NTC 10.74k, B 0/100 3450 or none		

Analogue output ❸	**VVX15**	**VVX20**	**VVX25**
Output signal flow	0...10 V or 4...20 mA		
Scaling	0...40 l/min	0...80 l/min	0...150 l/min
Voltage rate → 0...10 V	0.25000 V / l/min	0.12500 V / l/min	0.06667 V / l/min
Current rate → 4...20 mA	0.40000 mA / l/min	0.20000 mA / l/min	0.10667 mA / l/min

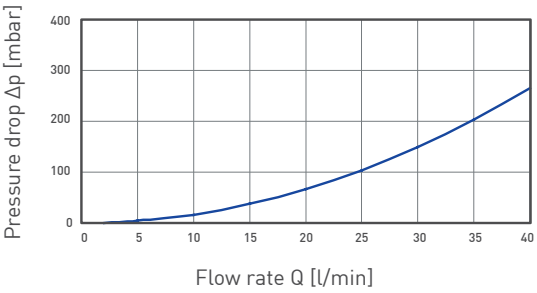
* Test conditions:
→ Test medium water
→ Media temperature 20...30 °C
→ Inlet pressure 7...10 bar
→ Defined inlet and outlet pipes (see operating manual)

** Temperature cycle test: -20 °C / 70 °C, 0 % rH, cycle time 1.5 h, temperature gradient approx. 2.5 K/min, hold time at -20 °C and 70 °C 10 min each, 90 cycles: no failures

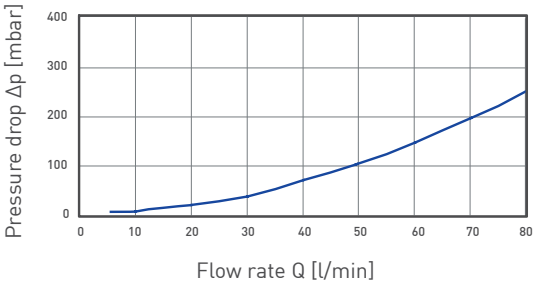
*** With attached cable socket only

**** Only available for output signal flow 4...20 mA and 0...10 V

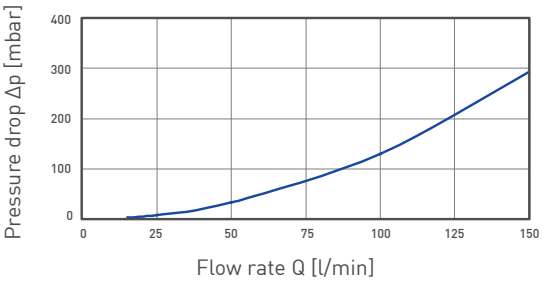
Typical pressure drop VVX15



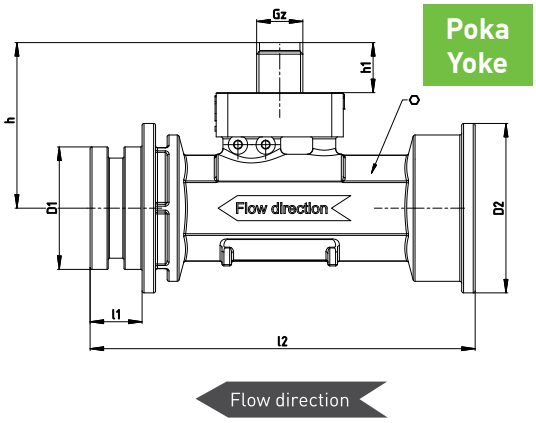
Typical pressure drop VVX20



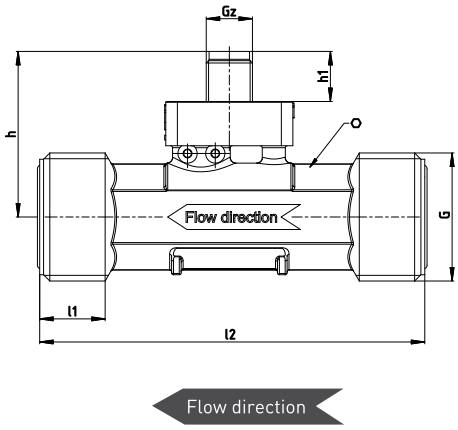
Typical pressure drop VVX25



VVX20 QuickFasten



VVX threaded versions



Dimensions [mm]	h	h1	D1	D2	l1	l2	G	Gz	⬡ Width across flats
Threaded version									
VVX15	40	13			16,5	80	G ¾	M12 x 1	19
VVX20	43	13			16.5	100	G 1	M12 x 1	24
VVX25	46	13			16.5	95	G 1¼	M12 x 1	30
Quickfasten									
VVX20	43	13	31.8	44	13.5	100		M12 x 1	24

Materials in contact with media	
VVX15, VVX20, VVX25	
Body / tube	PPS Fortron® 40 % glass fibre reinforced
Sensor	ETFE Tefzel®
O-rings	EPDM

Version frequency output

Order code						
Nominal diameter						
DN 15	VVXA1S		A			514
DN 20 QuickFasten	VVXC9S		B			52P
DN 20 G1	VVXC9S		B			527
DN 25	VVXB2S		B			516
Power supply						
8...30 V DC		G			1	
5 V DC		P			2	
Output signal temperature						
Pt1000				RRRP		
NTC 10.74K				RRRN		
None				0000		
Example order number	**VVXA1S**	**G**	**A**	**RRRP**	**1**	514

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Type		Order number					
VVX15	DN 15, power supply 8...30 VDC, output signal temperature Pt1000	**VVXA1S**	**G**	**A**	**RRRP**	**1**	**514**
VVX20	DN 20 G1, power supply 5 VDC, without output signal temperature	**VVXC9S**	**P**	**B**	**0000**	**2**	**527**
VVX25	DN 25, power supply 8...30 VDC, output signal temperature Pt1000	**VVXB2S**	**G**	**B**	**RRRP**	**1**	**516**

Version analogue output (0.5...3.5 V) and frequency output

Order code						
Nominal diameter						
DN 15	VVXA1SNA	U1				514
DN 20 QuickFasten	VVXC9SNB	UC				52P
DN 20 G1	VVXC9SNB	UC				527
DN 25	VVXB2SNB	U2				516
Output signal temperature						
0.5...3.5 V*			U1			
Pt1000*			RP			
NTC 10.74K*			RN			
none			00			
Power supply						
8...30 V DC					1	
5 V DC					2	
Example order number	**VVXA1SNA**	**U1**	**U1**		**1**	514

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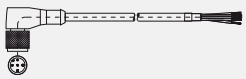
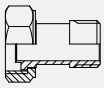
Version analogue output (0...10 V or 4...20 mA) and frequency output

Order code			
Nominal diameter			
DN 15	VVXA1SGA		K003514
DN 20 QuickFasten	VVXC9SGB		N00352P
DN 20 G1	VVXC9SGB		N003527
DN 25	VVXB2SGB		L003516
Output signal flow			
0...10 V		V	
4...20 mA		A	
Example order number	**VVXA1SGA**	**V**	**K003514**

BEST SELLER

Type		**Order number**		
VVX15	DN 15, output signal flow 4...20 mA	**VVXA1SGA**	**A**	**K003514**
VVX20	DN 20 G1, output signal flow 4...20 mA	**VVXC9SGB**	**A**	**N003527**
VVX25	DN 25, output signal flow 4...20 mA	**VVXB2SGB**	**A**	**L003516**

Order code				
Type	**Accessories**		**Length**	**Order number**
VVX15 **VVX20** **VVX25**		Connection cable with 5 pin cable socket M12 x 1, angle type molded lead 5 x 0.34 mm², sheathing material PVC (Tmax = 80 °C)*	1 m 2 m 3 m 5 m 10 m	XVVX040 XVVX051 XVVX039 XVVX041 XVVX042
		Connection cable with 5 pin cable socket M12 x 1, molded lead 5 x 0.34 mm², sheathing material PVC, 4 pin Molex MicroBlade wire-to-board housing, (Tmax = 80 °C)	1.5 m	XVVX065
Type	**Accessories**		**Order number****	
VVX15		Screw coupling G½, brass	BVVX1007	
		Soldering coupling Ø 15 mm, brass	BVVX1008	
VVX20		O-ring for QuickFasten, EPDM	XVVX061	
		Joint clip QuickFasten, stainless steel	XVVX052	
		Soldering coupling for QuickFasten, inlet side	BVVX1012	
		Soldering coupling for QuickFasten, outlet side	BVVX1011	
		Screw coupling G 1***, brass, compatibility type	BVVX1021	
VVX25		Screw coupling R1, brass	BVVX1003	
		Soldering coupling Ø 28 mm, brass	BVVX1004	
		Bonding coupling Ø 25 mm, PVC	BVVX1005	
		Screw coupling G 1, stainless steel 1.4571	BVVX1006	
		Screw coupling G 1¼***, brass, compatibility type	BVVX1022	

* Connection cable with UL approval on request
** Supplied piecewise
*** Two pieces are required for the assembly

VTY10

VTY10, brass

VTY10, plastic

Your advantages	
Series	**VTY10**
	• Low wear and extremely long durability due to high quality bearing • Practically no deviation in mass production due to fixed pulse rate, insensitive against water hammers • Threaded connection or QuickFasten, proven in numerous mass production applications • High measuring accuracy, mostly independent of fitting position due to integrated flow straightener

Technical data	VTY10 threaded		VTY QuickFasten
Material pipe section	Brass	Plastic	Plastic
Flow range	1...30 l/min		
Accuracy	±1 % of range		
Repeatability	±1 %		
Signal output	From 0.7 l/min	From 0.6 l/min	
Medium temperature	0...90 °C (non-freezing), temporary 95 °C	0...85 °C (non-freezing), temporary 95 °C	0...70 °C (non-freezing), temporary 95 °C
Ambient temperature	0...70 °C		
Pressure rating	PN 16	PN 10	
Nominal diameter	DN 10		
Process connection	G½ male thread	G¾ male thread	QuickFasten
Sensor	Hall effect sensor		
Output signal	Square wave frequency signal, NPN open collector		
Pulse duty ratio	50:50		
Pulse rate / K-factor	495 pulses/l	530 pulses/l	
Electrical connection	80 mm (QuickFasten 90 mm) single wire with Molex Mini-Fit® Jr. plug connector (part number 39-01-4036)		
	Optional: PVC-cable (1 m), optional single wires		Optional: Single wires (145 mm)
Power supply	4.5...24 VDC		
Approvals			
WRAS APPROVED PRODUCT			
NSF/ANSI 372 NSF/ANSI 61 IAPMO R&T	**Available for:** VY1030MKHNX1N3, VY1030MKHN10N3 VY1030K5HNX1A4, VY1030K5HN10A4 Version with G-thread on request		

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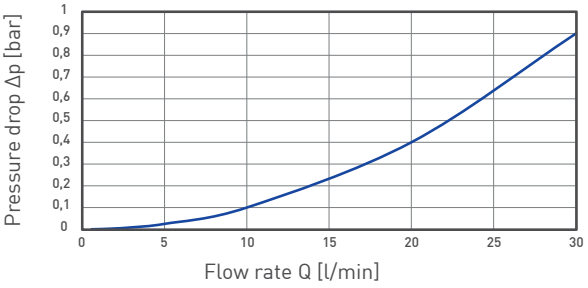
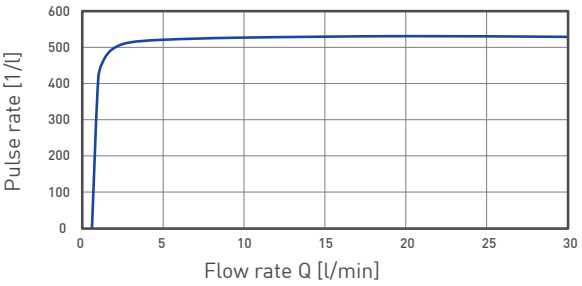
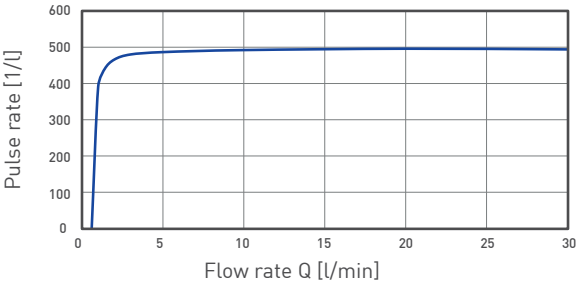
Typical pressure drop



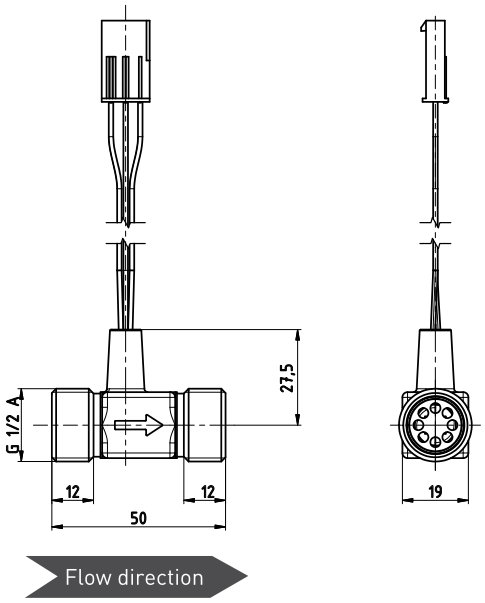
Characteristic curve, plastic



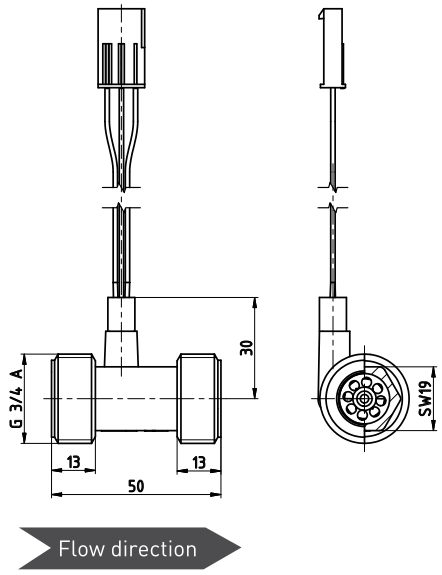
Characteristic curve, brass



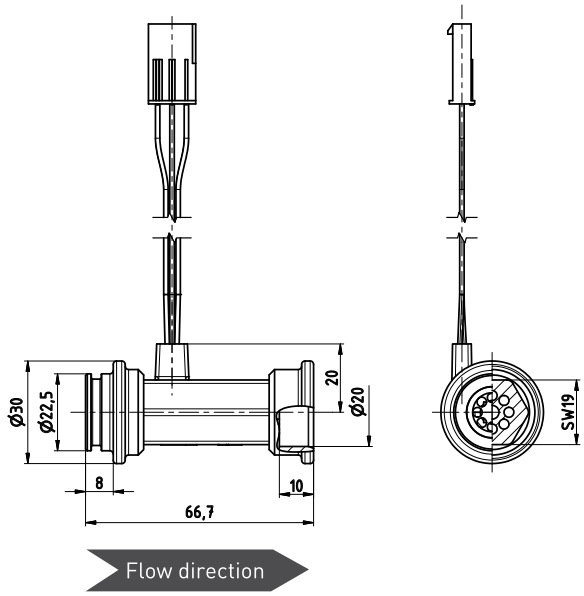
Threaded version, brass



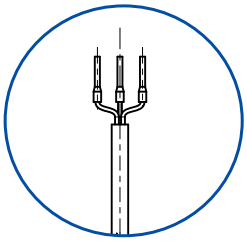
Threaded version, plastic



QuickFasten, plastic



Alternative electrical connection



Materials in contact with fluid		
Type	**VTY10, brass**	**VTY10, plastic**
Pipe section	Brass CW617N	PPE+PS Noryl™ 30 % glass fibre reinforced
Rotor	PPE+PS Noryl™ 30 % glass fibre reinforced	
Magnet	Hard ferrite	
Shaft	Stainless steel / Hard metal	
Axial bearing	Saphir	
Radial bearing	PEEK Victrex™	

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Order code		
Type		
VTY10, brass	VY1030MAHN	
Electrical connection		
80 mm single wire with Molex Mini-Fit® Jr. plug connector		X1A3
1 m PVC-cable		10A3
Example order number	**VY1030MAHN**	**X1A3**

Order code		
Type		
VTY10, plastic	VY1030K5HN	
Electrical connection		
1 m PVC-cable, threaded		10A4
80 mm single wire with Molex Mini-Fit® Jr. plug connector, threaded		X1A4
145 mm single wires, QuickFasten		P0Q1
90 mm single wires mit with Molex Mini-Fit® Jr. plug connector, QuickFasten		X2Q1
Example order number	**VY1030K5HN**	**10A4**

VTY20

VTY20

Your advantages	
Series	**VTY20**
	• Low wear and extremely long durability due to high quality bearing • Practically no deviation in mass production due to fixed pulse rate, wide measuring span (up to 1:60), • Insensitive against water hammers, proven in numerous mass production applications • High measuring accuracy, mostly independent of fitting position due to integrated flow straightener

Technical data		
Material pipe section	Brass	Stainless steel
Flow range	1...60 l/min	
Accuracy	±1 % of range ±1 % of reading	
Repeatability	±1 %	
Signal output	From 0.8 l/min	
Medium temperature	0...90 °C	
Ambient temperature	0...70 °C	
Pressure rating	PN 16	
Nominal diameter	DN 20	
Process connection	G 1 male thread	
Sensor	Hall effect sensor	
Output signal	Square wave - frequency signal, NPN open collector	
Pulse duty ratio	50:50	
Pulse rate / K-factor	119 pulses/l	122 pulses/l
Electrical connection	80 mm single wire with Molex Mini-Fit® Jr. plug connector (part number 39-01-4036) optional: 0.5 m PVC cable	2 m PVC cable
Power supply	4.5...24 VDC	
Pressure drop	0.33 bar (at Q = 60 l/min)	
Approvals		
	WRAS APPROVED PRODUCT	
NSF/ANSI 372 NSF/ANSI 61 IAPMO R&T	**Available for:** VY2060MKHNX1N5 VY2060MKHN05N5 Version with G-thread on request	
Plastic parts and O-Ring comply with KTW-guidance or. the Elastomer Guideline of the German Federal Environmental Agency		

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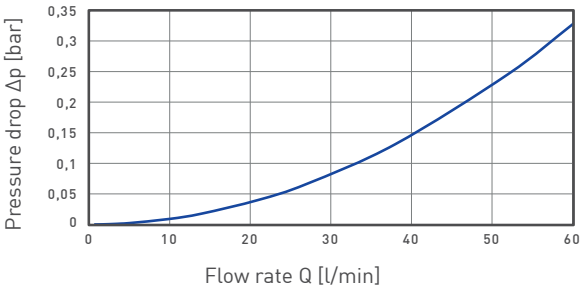
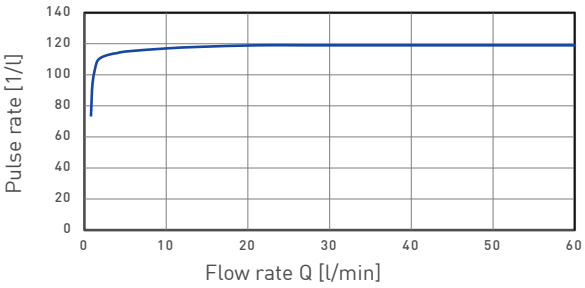
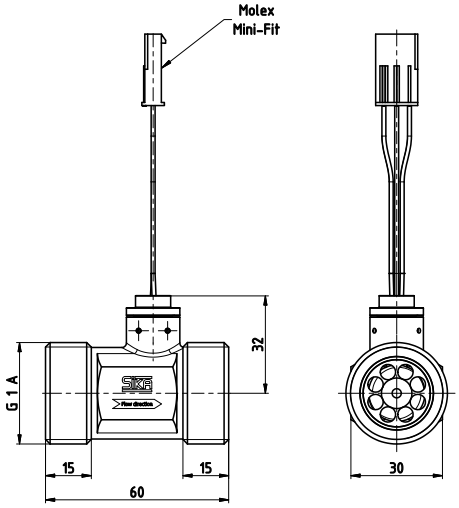
Typical pressure drop



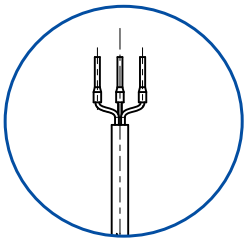
Characteristic curve



VTY20



Alternative electrical connection



Materials in contact with fluid	
Pipe section	Brass CW617N or stainless steel 1.4308
Turbine cage	PPE+PS Noryl™ 30 % glass fibre reinforced
Rotor	PPE+PS Noryl™ 30 % glass fibre reinforced
Magnet	Hard ferrite
Shaft	Stainless steel 1.4305 / Tungsten carbide
Axial bearing	Sapphire
Radial bearing	PEEK Victrex™
O-ring	EPDM

Order code		
Type		
VTY20, brass	VY2060MAHN	
VTY20, stainless steel	VY2060VAHN	
Electrical connection		
80 mm single wire with Molex Mini-Fit® Jr. plug connector		X1A5
0.5 m PVC cable		05A5
2 m PVC cable		20A5
Example order number	**VY2060MAHN**	**X1A5**

Push-in flow sensors // VTY10

VTY10

Your advantages	
Series	**VTY10**
	• Low deviation in mass production, fixed pulse rate • High measuring accuracy • Low wear and extremely long durability due to high quality bearing • Compact dimensions, proven in numerous mass production applications

❶ Push in turbine	
Flow range	1...30 l/min
Accuracy	±1 % of range
Repeatability	±1 %
Signal output	From 0.7 l/min
Medium temperature	Max. 85 °C, temporary 95 °C
Nominal diameter	DN 10
Approvals	
WRAS APPROVED PRODUCT	
NSF/ANSI 372 NSF/ANSI 61 IAPMO R&T	**Available for:** VY1030K50000YY

❷ Hall effect sensor	
Nominal pulse rate **Frequency output**	495 pulses / l NPN open collector
Power supply	4.5...24 VDC
Electrical connection	0.5 m PVC cable optional: 1 m PVC cable

Stated values may vary depending on geometry of fittings.

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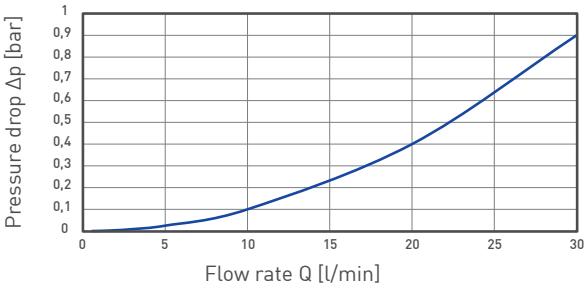
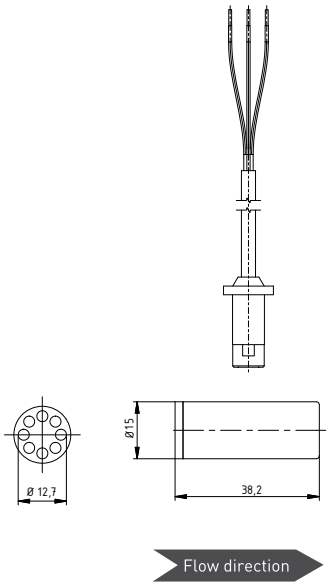
Typical pressure drop*



* determined in SIKA pipe tee

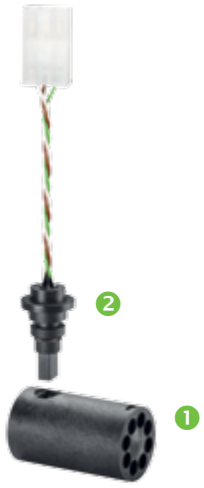
VTY10



Materials in contact with fluid	
Push in turbine	
Turbine body	PPE+PS Noryl™ 30 % glass fibre reinforced
Rotor	PPE+PS Noryl™ 30 % glass fibre reinforced
Magnet	Hard ferrite
Shaft	Stainless steel / Hard metal
Axial bearing	Sapphire
Radial bearing	PEEK
Adapter sleeve for Hall effect sensor	
Adapter sleeve	PS-ST Xarec® 20 % glass fibre reinforced
O-ring	EPDM

Order code	
Component	**Order number**
Push in turbine	VY1030K50000YY
Hall effect sensor	
→ 0.5 m PVC cable	VY1030K8HN05YY
→ 1 m PVC cable	VY1030K8HN10YY

Push-in flow sensors // VTY20



VTY20

Your advantages	
Series	**VTY20**
	• Low deviation in mass production, fixed pulse rate • High measuring accuracy • Low wear and extremely long durability due to high quality bearing • Compact dimensions, proven in numerous mass production applications

❶ Push in turbine	
Flow range	1...60 l/min
Accuracy	±1 % of range ±1 % of reading
Repeatability	±1 %
Signal output	From 0.8 l/min
Medium temperature	0...90 °C
Nominal diameter	DN 20
Approvals	
WRAS APPROVED PRODUCT	
NSF/ANSI 372 NSF/ANSI 61 IAPMO R&T	**Available for:** VY2060K50000YY
Plastic parts and O-Ring comply with KTW-guidance or. the Elastomer Guideline of the German Federal Environmental Agency	

❷ Hall effect sensor*	
Nominal pulse rate **Frequency output**	119 Pulse/l NPN open collector
Power supply	4.5...24 VDC
Electrical connection	80 mm single wire with Molex Mini-Fit® Jr. plug connector (part number 39-01-4036) optional: 0.5 m PVC cable
Pressure rating	PN 16
Approvals	
WRAS APPROVED PRODUCT	
NSF/ANSI 372 NSF/ANSI 61 IAPMO R&T	**Available for:** VY2060K5HNX1YY VY2060K5HN05YY
Plastic parts and O-Ring comply with KTW-guidance or. the Elastomer Guideline of the German Federal Environmental Agency	

Stated values may vary depending on geometry of fittings.
* O-ring included

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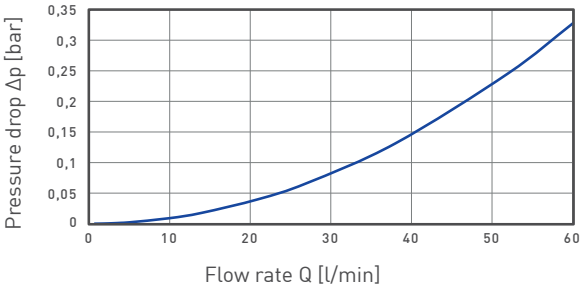
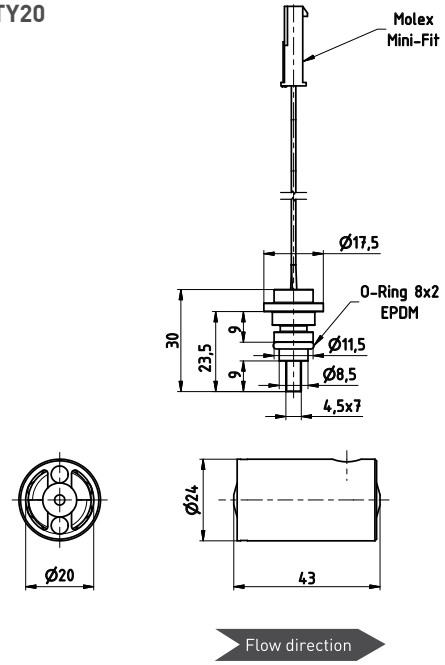
Typical pressure drop*



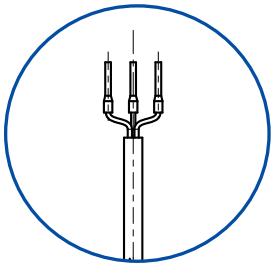
* determined in SIKA pipe tee

VTY20



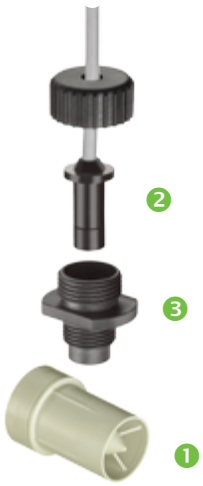
Materials in contact with fluid	
Push in turbine	
Turbine body	PPE+PS Noryl™ 30 % glass fibre reinforced
Rotor	PPE+PS Noryl™ 30 % glass fibre reinforced
Magnet	Hard ferrite
Shaft	Stainless steel 1.4305 / Hard metal
Axial bearing	Sapphire
Radial bearing	PEEK Victrex™
Adapter sleeve for Hall effect sensor	
Adapter sleeve	PPE+PS Noryl™ 30 % glass fibre reinforced
O-ring	EPDM

Alternative electrical connection



Order code	
Component	**Order number**
Push in turbine	VY2060K50000YY
Hall effect sensor	
→ 80 mm single wire with Molex Mini-Fit® Jr. plug connector	VY2060K5HNX1YY
→ 0.5 m PVC cable	VY2060K5HN05YY
→ 1 m PVC cable	VY2060K5HN10YY

Push-in flow sensors // VTH20



VTH20

Your advantages	
Series	**VTH20**
	• Low deviation in mass production, fixed pulse rate, low start-up • High measuring accuracy, compact dimensions • Proven in numerous mass production applications

❶ Push in turbine	
Flow range	1...42 l/min*
Accuracy	±1 % of range, ±3 % of reading (from 15 l/min)
Repeatability	±0.2 %
Signal output	From 0.33 l/min
Medium temperature	Max. 85 °C
Nominal diameter	DN 20
Approvals	
Plastic parts and O-Ring comply with KTW-guidance or. the Elastomer Guideline of the German Federal Environmental Agency	

❷ Hall effect sensor**	
Nominal pulse rate	232 Pulse/l
Frequency output	NPN open collector
Power supply	4.5...24 VDC
Electrical connection	0.5 m PVC-cable

❸ Adapter sleeve for hall effect sensor***	
Pressure rating	PN 10
Process connection	G⅜ A
Approvals	
Plastic parts and O-Ring comply with KTW-guidance or. the Elastomer Guideline of the German Federal Environmental Agency	

Stated values may vary depending on geometry of fittings.
* not suitable for continuous operation
** Union nut included
*** O-ring included

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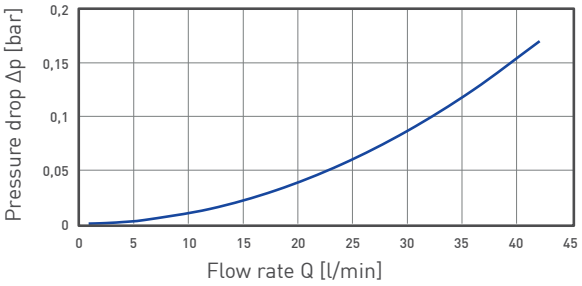
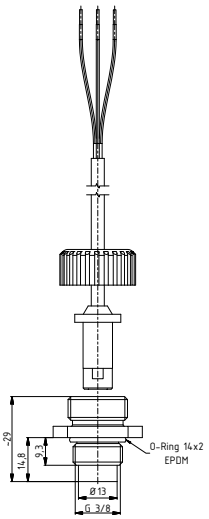
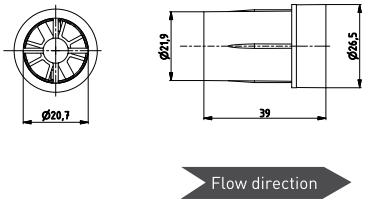
Typical pressure drop*



* determined in SIKA pipe tee

VTH20





Flow direction

Materials in contact with fluid	
Push in turbine	
Turbine body	PS-ST Xarec® 20 % glass fibre reinforced
Rotor	PS-ST Xarec® 20 % glass fibre reinforced
Shaft	Stainless steel 1.4539
Axial bearing	Sapphire
Radial bearing	PA
Adapter sleeve for Hall effect sensor	
Adapter sleeve	PS-ST Xarec® 20 % glass fibre reinforced
O-ring	EPDM

Order code	
Component	**Order number**
Push in turbine	VT2042020000YY
Hall effect sensor	VT2307
Adapter sleeve for Hall effect sensor	XVT1205

Push-in flow sensors // VTH25

VTH25

Your advantages	
Series	**VTH25**
	• Low deviation in mass production, fixed pulse rate, low start-up • High measuring accuracy, compact dimensions • Proven in numerous mass production applications

❶ Push in turbine	
Flow range	4...160 l/min*
Accuracy	±5 % of range (up to 5 l/min ±7 % of reading)
Repeatability	±0.5 %
Signal output	From 1 l/min
Medium temperature	Max. 85 °C
Nominal diameter	DN 25
Approvals	
Plastic parts and O-Ring comply with KTW-guidance or. the Elastomer Guideline of the German Federal Environmental Agency	

❷ Hall effect sensor**	
Nominal pulse rate **Frequency output**	65 Pulse/l NPN open collector
Power supply	4.5...24 VDC
Electrical connection	0.5 m PVC-cable

❸ Adapter sleeve for hall effect sensor***	
Pressure rating	PN 10
Process connection	G⅜ A
Approvals	
Plastic parts and O-Ring comply with KTW-guidance or. the Elastomer Guideline of the German Federal Environmental Agency	

Stated values may vary depending on geometry of fittings.
* not suitable for continuous operation
** Union nut included
*** O-ring included

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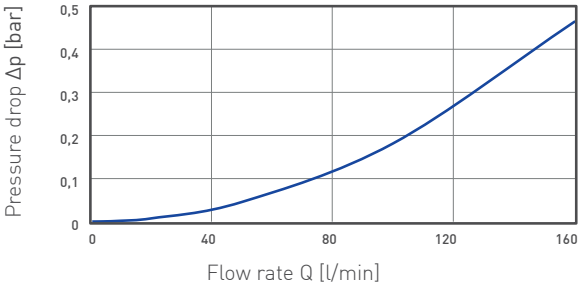
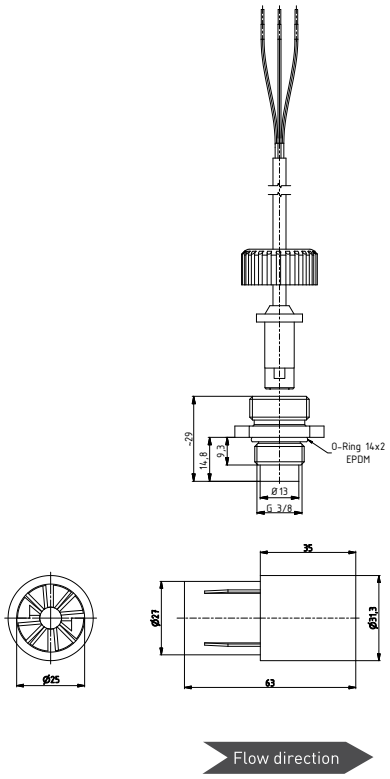
Typical pressure drop



* determined in SIKA pipe tee

VTH25



Materials in contact with fluid	
Push in turbine	
Turbine body	PS-ST Xarec® 20 % glass fibre reinforced
Rotor	PS-ST Xarec® 20 % glass fibre reinforced
Shaft	Stainless steel 1.4539
Axial bearing	Sapphire
Radial bearing	PA
Adapter sleeve for Hall effect sensor	
Adapter sleeve	PS-ST Xarec® 20 % glass fibre reinforced
O-ring	EPDM

Order code	
Component	**Order number**
Push in turbine	VT2511020000YY
Hall effect sensor	VT2307
Adapter sleeve for Hall effect sensor	XVT1205

VMM induQ®

Your advantages	
Series	**VMM**
	• Magnetic inductive flow sensors for nominal sizes DN15...200 • No mechanical wear • Robust industrial design • Easy menu-driven operation and programming by display • Delivery inlcuding works calibration certificate

Outputs

- Analogue output (0)4...20 mA
- Frequency or Impulse output
- 2 alarm / status outputs

Units

- Divers, e.g. m³/h, l/s, USG/min, kg/h (density programmed)

Displays

- Flow rate, several total flows
- Flow velocity
- Relative flow rate [%]
- Mass and mass flow (enter density)

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Type	VMM15	VMM25	VMM32	VMM40	VMM50	VMM65	VMM80	VMM100	VMM125	VMM150	VMM200
Characteristics											
Nominal diameter	DN 15	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
Process connection	Flange connection in accordance with EN 1092-1, JIS B2220 10K or ANSI B16.5										
Inner diameter											
→ Hard rubber	14.0	27.0	33.3	38.0	48.5	64.3	76.9	102.5	127.7	156.3	205.1
→ PTFE	14.0	27.0	33.3	38.0	48.5	63.3	75.9	102.5	124.7	152.3	201.1
Flow range											
→ Flow velocity [m/s]	0...10										
→ Volumetric flow [m³/h]	0...6.3	0...17.6	0...28.9	0...45.2	0...70.6	0...119.4	0...180.9	0...282.7	0...441.7	0...636.1	0...1130
Accuracy*											
v = 1...10 m/s	±0.5 % of reading										
v < 1 m/s	±0.4 % of reading ±1 mm/s										
additionally											
Frequency output	±0.05 % per 10 K										
Analogue output	±0.1 % per 10 K										
Repeatability	±0.15 %										
Response time	< 100 ms**										
Signal output starting from	> 0 m/s										
Medium / min. conductivity of medium	Water and other conductive liquids / 50 µS/cm										
Medium temperature											
→ Hard rubber	0...90 °C										
→ PTFE	-20...100 °C at 40 bar -20...150 °C at 25 bar -20...180 °C at 16 bar										
→ Process connections	Min. -10 °C (steel)										
→ Process connections	Min. -20 °C (stainless steel)										
Ambient temperature											
→ Hard rubber	0...80 °C										
→ PTFE	-20...100 °C										
→ Process connections	Min. -10 °C (steel)										
→ Process connections	Min. -20 °C (stainless steel)										
→ Display	-20...50 °C***										
Storage and transport temperature	-20...60 °C										
Pressure rating											
→ EN1092-1	PN 40	PN 40	PN 40	PN 40	PN 40	PN 16**** PN 40	PN 16 PN 40	PN 16 PN 40	PN 16 PN 40	PN 16 PN 40	PN 10 PN 16 PN 25 PN 40
→ JIS B2220 10K	9.8 bar										
→ ANSI B16.5 150 RF	19.6 bar (Process connection, steel) 15.9 bar (Process connection, stainless steel)										
Display	LCD two-line, backlight										
Operation	6 keys, menu-driven										
Degree of protection EN 60529	IP67										

* Reference conditions: Media temperature 10...30 °C; Ambient temperature 20...30 °C; warm-up period 30 min.; straight pipe lengths; inlet 5 x DN, outlet 2 x DN, regularly centered and earthed

** Depending on the electronics settings

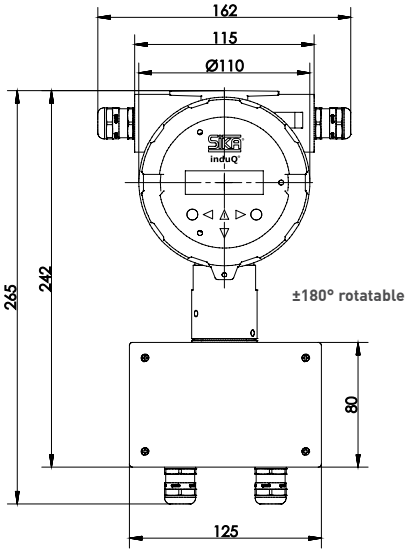
*** The readability of the LCD display is restricted below 0 °C

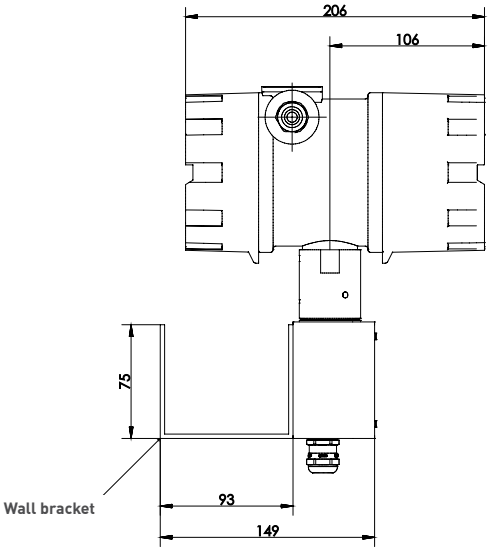
**** 8 bolt flanges

Output signals											
Type	**VMM15**	**VMM25**	**VMM32**	**VMM40**	**VMM50**	**VMM65**	**VMM80**	**VMM100**	**VMM125**	**VMM150**	**VMM200**
Pulse / frequency output											
→ Configuration	Pulse signal or frequency signal selectable										
Pulse output											
→ Pulse rate (factory-set) [pulses/m³]	1000	1000	1000	1000	1000	1000	1000	1000	100	100	100
→ Pulses/Time	⩽ 1000 Pulses/s										
→ Pulse width	⩾ 0.1 ms (max. 2 s), adjustable										
→ Signal shape	Squarewave signal										
Frequency output											
→ Factory-scaled measuring range [m³/h] corresponds to 0...1 kHz	0...3	0...10	0...10	0...10	0...20	0...50	0...50	0...70	0...100	0...150	0...250
→ Frequency	0...1 kHz										
→ Signal shape	Squarewave signal										
Analogue output											
→ Factory-scaled measuring range [m³/h] corresponds to 4...20 mA	0...3	0...10	0...10	0...10	0...20	0...50	0...50	0...70	0...100	0...150	0...250
→ Operating range	0 ... 20 mA / 4 ... 20 mA, selectable										
→ Current limitation	21.6 mA										
→ Max. burden	600 Ω										
→ Short-circuit proof	Permanent										
Alarm output											
→ Quantity	2										
→ Version	Optocoupler										
→ Functions	Status output: Preflow, backflow, MIN flow rate, MAX flow rate, alarm (adjustable)										
→ Switching values	U_{max}: 30 V; I_{max}: 60 mA; P_{max}: 1,8 W										

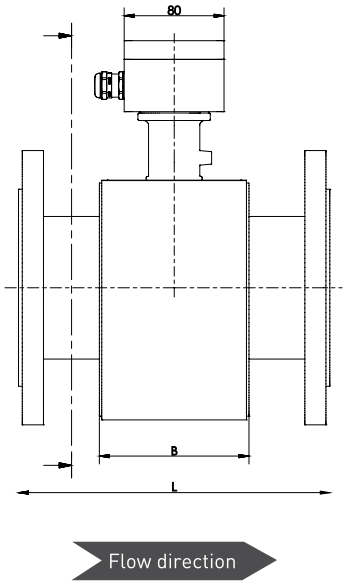
Electrical data	
Electrical connection	Cable gland M20 x 1.5
Power supply	230 VAC (-15 % / +10 %), 50/60 Hz or 115 VAC (-15 % / +10 %), 50/60 Hz or 18...36 VDC
Power consumption	15 VA

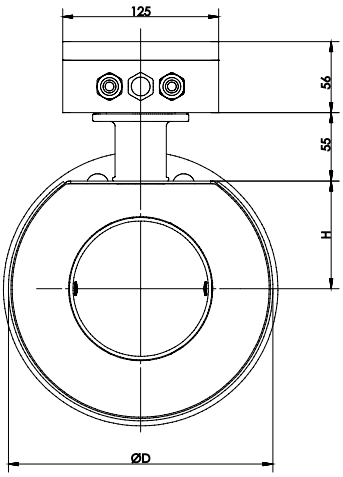
Separate version (Display)



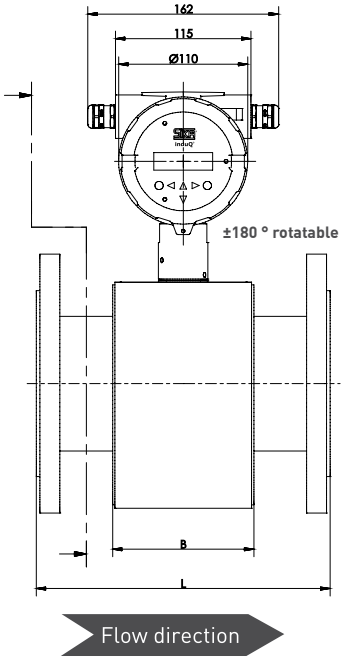


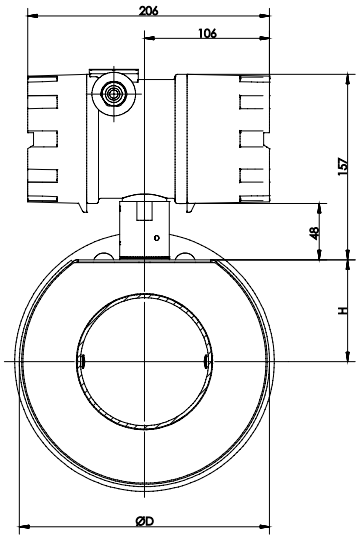
Separate version (Sensor)





Compact type





Dimensions [mm]

Process connection		Installation length L							Weight EN 1092-1 [kg]*	
EN 1092-1 JIS B2220 10K	ANSI B16.5	Hard rubber	PTFE		Tolerance	B	D	H	Sensor	Compact type
			Without protection rings	With protection rings						
DN 15	½"	200	200	206	+0 / -3	80	130	53	5	8
DN 25	1"	200	200	206	+0 / -3	80	130	53	6	9
DN 32	1¼"	200	200	206	+0 / -3	80	130	53	7	10
DN 40	1½"	200	200	206	+0 / -3	80	130	53	7.5	10.5
DN 50	2"	200	200	206	+0 / -3	80	140	57	9	12
DN 65	2½"	200	200	206	+0 / -3	80	155	63	10	13
DN 80	3"	200	200	206	+0 / -3	80	170	70	13	16
DN 100	4"	250	250	256	+0 / -3	120	210	86	15	18
DN 125	5"	250	250	256	+0 / -3	120	240	98	19	22
DN 150	6"	300	300	306	+0 / -3	120	285	117	23	26
DN 200	8"	350	350	360	+0 / -3	200	350	143	36	39

* valid for DN 15...DN 50 (PN 40), DN 65...DN 150 (PN 16), DN 200 (PN 10)

Materials	
Not in contact with fluid	
Display housing	Casted aluminium
Sensor housing	Steel
Measuring pipe	Stainless steel
Process connection	Steel 1.0460 or stainless steel 1.4404
In contact with fluid	
Electrodes	Stainless steel 1.4571 or Hastelloy C276
Measuring pipe lining	PTFE or Hard rubber

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Order code								
Nominal diameter								
DN 15 / ½"	VMM15							
DN 25 / 1"	VMM25							
DN 32 / 1¼"	VMM32							
DN 40 / 1½"	VMM40							
DN 50 / 2"	VMM50							
DN 65 / 2½"	VMM65							
DN 80 / 3"	VMM80							
DN 100 / 4"	VMM1C							
DN 125 / 5"	VMMV3							
DN 150 / 6"	VMM3L							
DN 200 / 8"	VMM2C							
Process connection								
EN 1092-1 PN 10 starting from DN 200		A						
EN 1092-1 PN 16 starting from DN 65		B						
EN 1092-1 PN 25 starting from DN 200		C						
EN 1092-1 PN 40 starting from DN 15		D						
JIS B2220 10K		J						
ANSI B16.5 150 RF		I						
Material process connection								
Steel 1.0460			1					
Stainless steel 1.4404			2					
Lining								
PTFE				0				
Hard rubber				1				
Material electrodes								
Stainless steel 1.4571					1			
Hastelloy C276					2			
Earth electrode								
Without						0		
One						1		
Two						2		
Type								
Compact type with display							KAMA	
Separate type with display							GAMA	
Power supply								
230 VAC, 50/60 Hz								20
115 VAC, 50/60 Hz								40
19...36 VDC								30
Example order number	**VMM15**	**A**	**1**	**0**	**1**	**0**	**KAMA**	**20**

BEST SELLER

Type	Nominal Diameter	Pressure rating		Order number							
VMM	DN 15	PN 40	Material process connection: Steel Lining: Hard rubber Material electrodes: Stainless steel Without earth electrode, compact type Power supply: 230 VAC 50/60 Hz	**VMM15**	**D**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 25	PN 40		**VMM25**	**D**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 32	PN 40		**VMM32**	**D**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 40	PN 40		**VMM40**	**D**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 50	PN 40		**VMM50**	**D**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 65	PN 16		**VMM65**	**B**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 80	PN 16		**VMM80**	**B**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 100	PN 16		**VMM1C**	**B**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 125	PN 16		**VMMV3**	**B**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 150	PN 16		**VMM3L**	**B**	**1**	**0**	**1**	**0**	**KAMA**	**20**
	DN 200	PN 10		**VMM2C**	**A**	**1**	**0**	**1**	**0**	**KAMA**	**20**

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Accessories

Earthing ring

Protection ring

Earthing ring

An earthing ring is used for the electrical reference and earthing of the medium being measured. It is necessary if the pipes are not electrically conductive or lined (plastic or concrete pipes, etc.). The earthing ring must be connected to the provided earthing screw of the sensor. Retrofitting is possible. Material stainless steel 1.4571.

Sensor cable set

Sensor cable between sensor and display unit (separate design) consisting of magnetic power cable and electrode cable for configuration of M16 x 1.5 screw connection.

Pair of protection rings

Protection rings protect the inlet and outlet edges of the sensor against mechanical damage, in particular when abrasive media such as gravel, sand, etc. are concerned. At the same time, they also serve as earthing rings. The protection rings are firmly screwed to the sensor. Material stainless steel 1.4571.

Order example				
Type				
Earthing ring	VMMZEW			
Protection rings (pair)	VMMZPR			
Nominal diameter				
DN 15 / ½"		15		
DN 25 / 1"		25		
DN 32 / 1¼"		32		
DN 40 / 1½"		40		
DN 50 / 2"		50		
DN 65 / 2½"		65		
DN 80 / 3"		80		
DN 100 / 4"		1C		
DN 125 / 5"		V3		
DN 150 / 6"		3L		
DN 200 / 8"		2C		
Process connection				
EN 1092-1			E	
JIS B2220 10K			J	
ANSI B16.5 150 RF			A	
Lining				
PTFE				0
Hard rubber				1
Example order number	**VMMZEW**	**15**	**E**	**1**

Order code		
Accessories	**Cable length**	**Order number**
Sensor cable set	5 m	VMMZSC000Z0005
	10 m	VMMZSC000Z0010

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WFI// with Mini-Fit plug // -40...125 °C

WFI

Your advantages	
Series	**WFI**
	• Cost-effective electrical connection by Mini-Fit plug • Effective regulation thanks to short response times • Application-specific installation lengths and screw-in threads possible • High reliability thanks to special internal construction • Measured values reproducible for years thanks to very low long-term drift

Technical data	
Version	Temperature sensor with Mini-Fit plug
Measuring range	-40...125 °C
Medium / Application	Water and aqueous liquids, non-aggressive gases
Immersion tube length	15 mm, 19.5 mm, 30 mm or 35 mm
Immersion tube diameter	3.2 mm
Process connection	G⅛
Nominal pressure	PN 25
Medium temperature	-40...125 °C
Ambient temperature	-40...105 °C
Storage temperature	-25...70 °C
Degree of protection EN 60529	IP30

Electrical data	
Measuring element	1 x Pt1000 / 2-wire 1 x NTC 5k 1 x NTC 10k
Measuring insert	Not interchangeable
Accuracy	Class B / ±(0.30 K + 0.005 x |t|) NTC 5k ±0.5 °C (Beta 1 %) NTC 10k ±1.0 °C (Beta 2 %)
Electrical connection	Plug Mini-Fit, 2-pin

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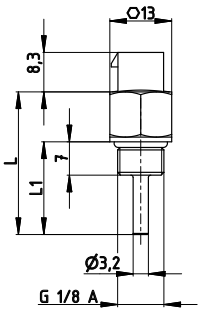
WFI



Material	
In contact with media	
Process connection	Stainless steel 1.4571
Immersion tube	Stainless steel 1.4571
Sealing	E7108; WRAS, KTW, W270 Approval

Order code								
Type								
Resistance thermometer	W							
Diameter								
3.2 mm		32						
Material								
Stainless steel 1.4571			3					
Sensor element								
1 x Pt1000 2-wire / class B				P12				
1 x NTC 5k				N01				
1 x NTC 10k				N02				
Nominla length L1								
15 mm					015			
19.5 mm					019			
30 mm					030			
35 mm					035			
Measring insert								
Not interchangeable						0		
Electrical connection								
Mini-Fit, 2-pin							X0	
Process connection d1*								
G⅛								M
Example order number	**W**	**32**	**3**	**P12**	**019**	**0**	**X0**	**M**

* Andere Spezifikationen auf Anfrage erhältlich

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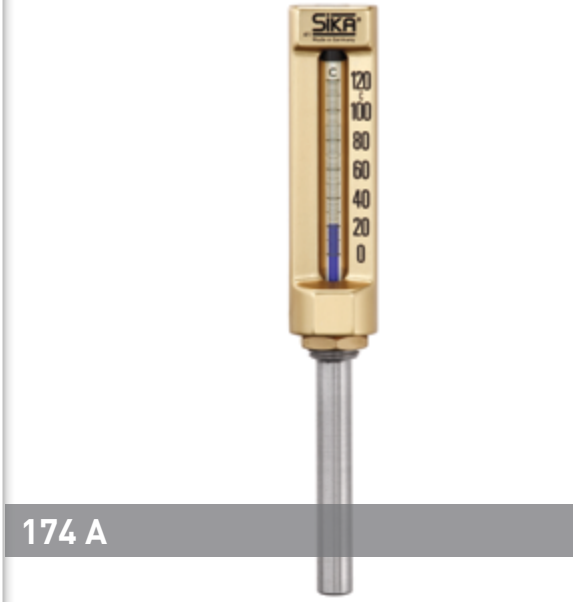
Weld-in immersion tube // Nominal size 110 // Aluminium anodized



174 A

175 A

Your advantages	
Type	**174 /175 A**
	• Accuracy according to DIN 16195 • No aging - no moving parts and no mechanical wear • Lifetime warranty* • Completely without electrical auxiliary energy

Technical data		
Type	174 A	175 A
Standard	DIN 16181 B, B1 and DIN 16182 S, S1	
Version	Straight	Angle 90°
Dimensions Housing	110 x 30 mm	
Measuring range according to DIN	Between 60...120 °C	
Error limits according to DIN 16195	2 °C	
Medium / Application	Liquid and gaseous media	
Immersion tube length	78, 115, 175 mm	
Immersion tube diameter	Ø 12 mm	
Process connection	Weld-in immersion tube	
Pressure rating**	PN 35	
Medium temperature	See selected measurement range	
Ambient temperature	-20...60 °C (only indoors)	
Storage temperature	-40...100 °C	

* Except glass breakage and improper installation.
** Non-binding guideline - For higher pressure loads, additional protection tubes have to be used.

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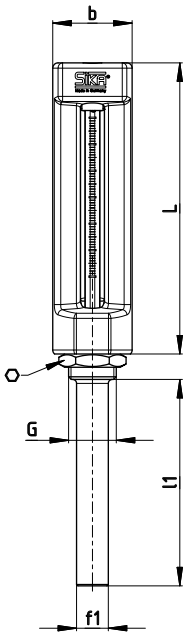
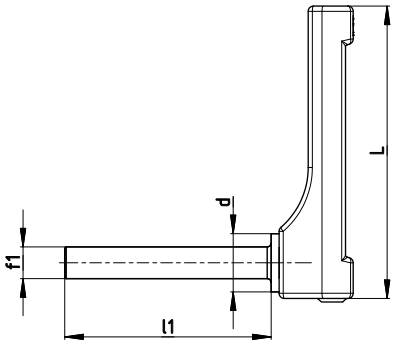
Type 174 A



Type 175 A



Dimensions [mm]	L	f_1	b	l_1
174 A	110	Ø 12	30	78 115 175
175 A				

Material	
Housing	Warm pressed aluminium part, gold anodized
Thermometer capillary	Prismatic capillary tube of solid glass, bar-shaped, diameter approx. Ø 6 mm, scale permanently burnt in
Thermometer filling → Blue	Petroleum
Material in contact with media	
Process connection	see immersion tube material
Immersion tube material → Standard	steel, welded

Order code								
Version								
Straight	174							
Angle 90 °	175							
Immersion tube type								
Type A - plain immersion tube		1						
Display ranges								
0...120 °C			12					
0...160 °C			16					
Scale								
Celsius °C				1				
Thermometer filling								
Blue					1			
Immersion tube length (L)								
78 mm						078		
115 mm						115		
175 mm						175		
Process connection								
Weld-in immersion tube							0	
Immersion tube material								
Steel								2
Example order number	**174**	**1**	**12**	**1**	**1**	**078**	**0**	**2**

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