- → With pipe tees (inline)
- → Direct installation (insertion)
- → For OEM applications
- → Flow monitors

Including products with:

- UL 508
- UL 353
- CSA C22.2#14-10

FLOW SWITCHES →

# Reliable - Safe - Proven

SIKA has over 45 years of experience in the manufacture of flow switches for liquids. Our expertise in this field, which distinguishes us from other manufacturers, enables us to manufacture highly innovative products based on a modular concept. We offer flow switches to suit many applications and processes. SIKA is not only a market leader in this field, it has also pioneered the springless design concept. Numerous continuous and qualification tests over periods of up to 16 years testify to the quality of our products.

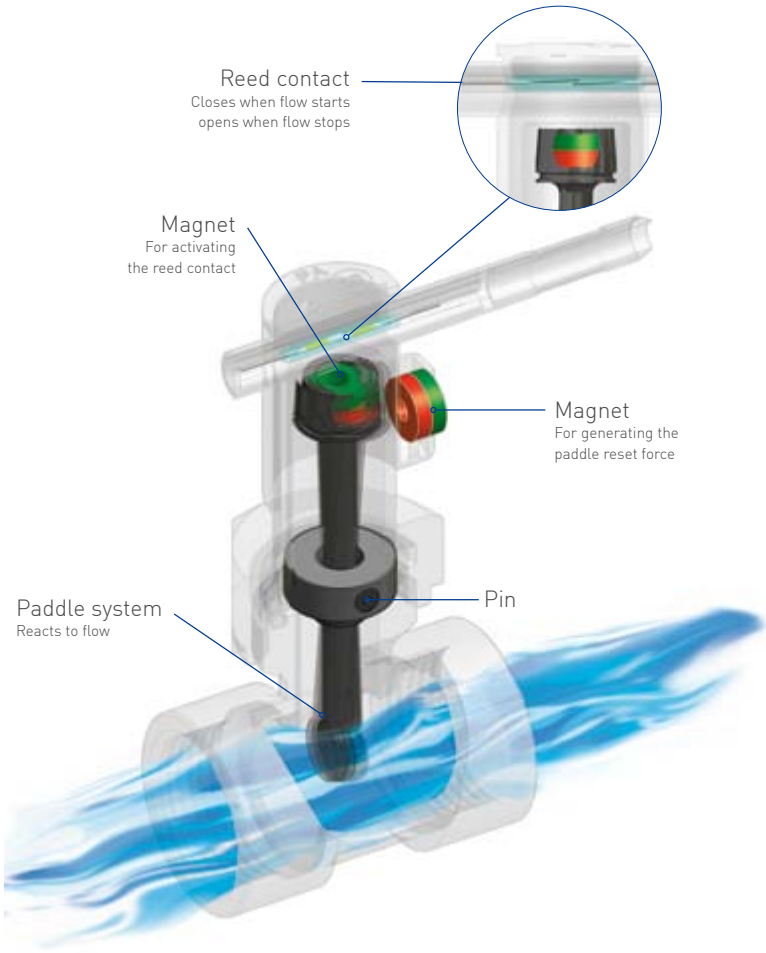
Our range includes six standard series that can be co-engineered and tailored to suit specific customer requirements. Our extensive modular concept also includes a wide range of process connections with diverse pipe tees (inline) or different threads for direct installation (insertion). Our push-in version is the most innovative variant in our range. We modify our switches to suit all requirements regardless of the type of connection required. We also have a wide range of electrical connections – with either non-detachable cable or connector.

## Function

The flow switch comprises a paddle system to whose end a permanent magnet is attached. Above this magnet is a reed contact, located outside the flow of fluid. A second magnet creates the force necessary to reset the switch back to the no flow position.

When the flow being monitored pushes against the paddle system, the paddle swings away. This changes the position of the magnet in relation to the reed contact and actuates the switch.

As soon as the flow is interrupted, the paddle moves back to its starting position, reversing the position of the reed contact. The force necessary to push the magnet back is provided by the two magnets repelling each other. Using magnetic force instead of the usual leaf spring means that the switch is considerably more stable in the long term and much less sensitive to pressure peaks.



# Benefits that convince

We offer flow switches in different materials to suit specific applications and demands. Whether highly rugged and sturdy of stainless steel for industrial applications or cost-optimised of glass fibre reinforced plastic for OEM applications – our product specialists will be happy to help in finding a solution that best suits your application, both technically and economically. Customised serial versions can be provided with special factory-adjusted switching points.

## Main advantages

- Low pressure drop
- Immediate response
- High repeatability
- Setpoint only dependent on flow, not on pressure or temperature
- Long-term stable setpoints as there is no spring fatigue

## Approvals

The following approvals are available as options for various series and types

WRAS Water Regulations Advisory Scheme

BAUART GEPRÜFT TÜV Rheinland Product Safety TYPE APPROVED

Intertek

- UL 508
- UL 353
- CSA C22.2#14-10

GL

# Electrical connection

| Electrical connection | |
|---|---|
| ❶ | Plug connector<br>DIN EN 175301-803-A<br>incl. cable socket |
| ❷ | Plug connector<br>DIN EN 175301-803-A<br>incl. cable socket with two LED<br>for optical flow and power indication<br>for switching voltages 24 V...230 V AC/DC |
| ❸ | 4-pin-sensor plug<br>M12 x 1 acc. IEC 947-5-2 |
| ❹ | Connection cable 1.5 m |


## Versions for use in potentially explosive atmospheres

VH...X flow switches are intended for use in potentially explosive atmospheres with an ignition energy of < 60 µJ. These flow switches have been ignition hazard assessed according to DIN EN 60079-11 and have no potential ignition sources. They are therefore not subject to the directive 94/9/EC.

# Flow switches made of metal

## With threaded pipe tee

**Type** VHS / VH3


| Technical data | |
|---|---|
| **Switching function** | Contact<br>→ closes at increasing flow<br>→ opens at decreasing flow<br>Reversing possible |
| **Pressure rating** | PN 25 |
| **Temperature ranges** | |
| **Medium** | -25...110 °C |
| **Ambient** | -25...80 °C |
| **Electrical data** | |
| **Electrical connection**<br>→ VHS<br><br>→ VH3 | <br>Plug connector DIN EN 175301-803-A incl. cable socket<br>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** | |

WRAS Water Regulations Advisory Scheme

TÜV Rheinland Produkt Safety BAUART GEPRÜFT TYPE APPROVED

### Benefits

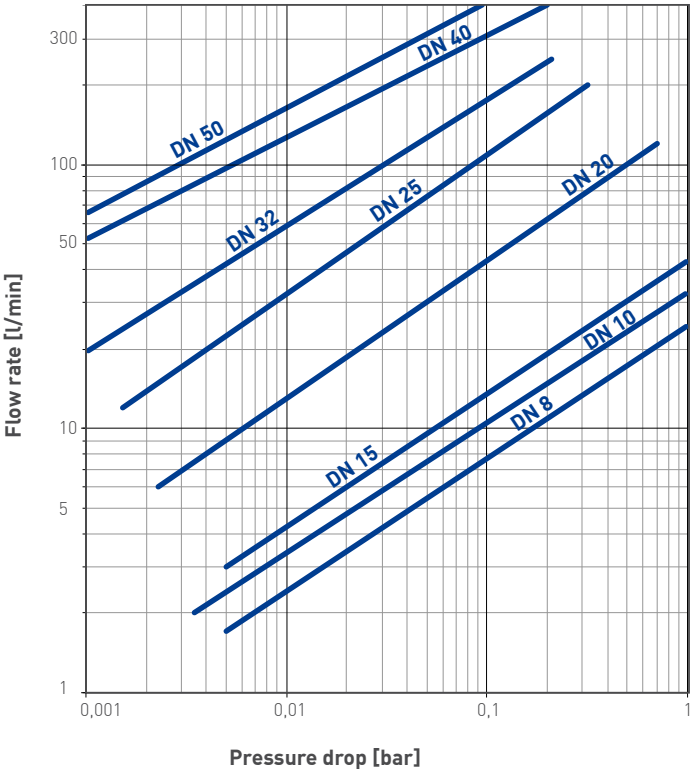
- Flow switches with pipe tees DN 8...50
- Brass or stainless steel
- Various connectors or 1.5 m jacket cable
- Optional high pressure version up to 160 bar

| Options | |
|---|---|
| **Electrical connection (version VHS)** | → 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<br>→ 4-pin-sensor plug M12 x 1 |
| **For use in potentially explosive atmospheres** | Version VH...X |
| **High pressure version made of brass on request** | → Up to 160 bar (incl. certificate) |

# Setpoint ranges and typical pressure drop

| Nominal diameter | Thread connection $D_1$ | Setpoint ranges [l/min]* | | | | Max. flow rate [l/min] |
|---|---|---|---|---|---|---|
| | | VHS | | VH3 | | |
| | | Increasing flow ON | Decreasing flow OFF | Increasing flow ON | Decreasing flow OFF | |
| **DN 8** | G¼ | 2.1...2.7 | 1.8...2.4 | 1.9...2.5 | 1.7...2.3 | 45 |
| **DN 10** | G⅜ | 2.5...3.2 | 2.2...2.9 | 2.4...3.0 | 2.1...2.8 | 60 |
| **DN 15** | G½ | 3.4...4.2 | 3.0...3.8 | 3.2...4.0 | 3.0...3.8 | 67 |
| **DN 15** | G½ male** | 2.5...3.2 | 2.2...2.9 | 2.4...3.0 | 2.1...2.8 | 60 |
| **DN 15** | G¾ male** | 2.5...3.2 | 2.2...2.9 | 2.4...3.0 | 2.1...2.8 | 60 |
| **DN 20** | G¾ | 7.0...9.1 | 6.4...8.2 | 6.6...8.2 | 6.3...7.8 | 120 |
| **DN 25** | G 1 | 13.5...17.0 | 12.0...15.5 | 13.0...15.5 | 12.5...15.0 | 195 |
| **DN 32** | G 1¼ | 15.5...20.5 | 14.5...19.0 | 14.5...18.0 | 13.5...17.0 | 240 |
| **DN 40** | G 1½ | 26.5...34.5 | 25.5...32.5 | 25.0...31.0 | 24.0...30.0 | 400 |
| **DN 50** | G 2 | 39.5...51.0 | 39.0...50.0 | 37.5...47.5 | 36.5...46.5 | 400 |

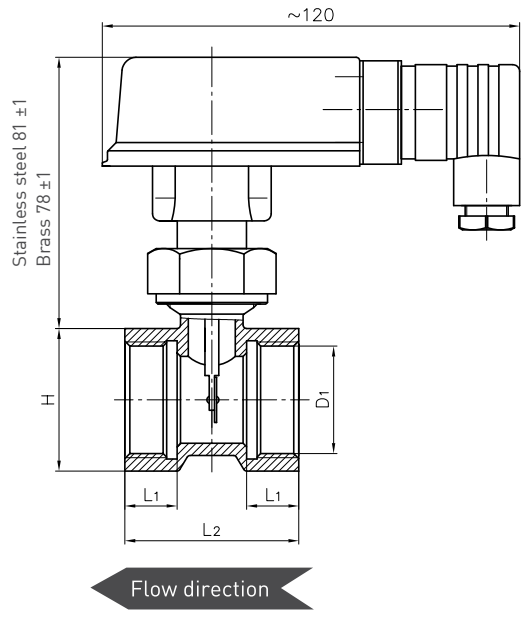
* Water, 20 °C, horizontal pipe, tolerance ±15 %
** Only available as brass version



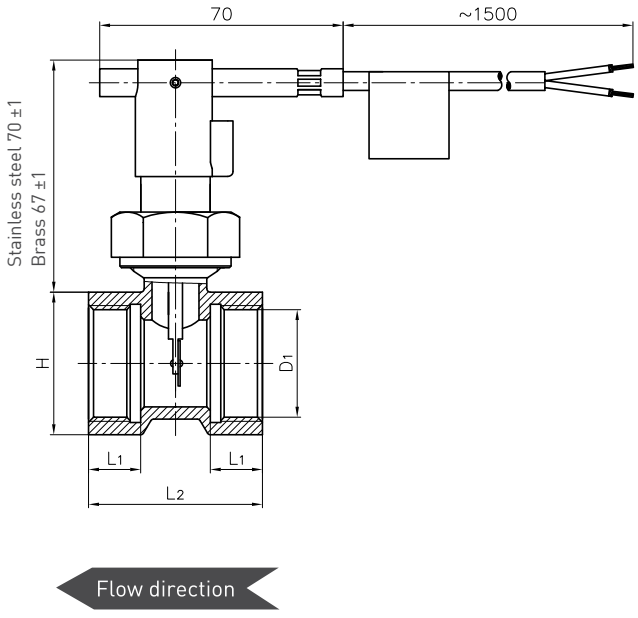
# Dimensions and materials

| Dimensions [mm] | | | | | | |
|---|---|---|---|---|---|---|
| **Thread connection $D_1$** | **$L_1$** | **$L_2$** | **H** | **$L_1$** | **$L_2$** | **H** |
| | **Brass version** | | | **Stainless steel version** | | |
| **G¼** | 11 | 50 | 27 | 11 | 50 | 27 |
| **G⅜** | 11 | 50 | 27 | 11 | 50 | 27 |
| **G½** | 11 | 50 | 27 | 11 | 50 | 27 |
| **G½ (male)** | 10 | 60 | | | | |
| **G¾ (male)** | 11 | 50 | | | | |
| **G¾** | 15 | 50 | 32 | 15 | 50 | 32 |
| **G 1** | 15 | 50 | 41 | 15 | 50 | 41 |
| **G 1¼** | 15 | 50 | 48 | 15 | 50 | 46 |
| **G 1½** | 15 | 50 | 55 | 15 | 50 | 55 |
| **G 2** | 22 | 64 | 70 | 15 | 50 | 70 |

**VHS**




**VH3**




| Materials in contact with fluid | | |
|---|---|---|
| | **Brass version** | **Stainless steel version** |
| **Body, Paddle** | Brass CW614N | Stainless steel 1.4571 |
| **Pipe tee** | Brass CW617N | Stainless steel 1.4571 |
| **Bushing** | PPO Noryl GFN 3 | PVDF |
| **Rivet** | Brass CW508L | Stainless steel 1.4303 |
| **Pin** | Stainless steel 1.4571 | |
| **Magnet** | Hard ferrite | |
| **O-ring** | NBR | |

# Order code

| Order example | | VHS | 08 | M011 | 7 | 1 | I1 | 1 | |
|---|---|---|---|---|---|---|---|---|---|
| **Type** | | | | | | | | | |
| **Flow switches VHS** | | | | | | | | | |
| Plug connector incl. cable socket (standard) | | VHS | | | 7 | | | | |
| Plug connector incl. cable socket with LED (option) | | VHS | | | 9 | | | | |
| 4-pin-sensor plug M12 x 1 (option) | | VHS | | | 8 | | | | |
| **Flow switches VH3** | | | | | | | | | |
| 1.5 m PVC jacket cable | | VH3 | | | 1 | | | | |
| 1.5 m PVC blue jacket cable (only for option „for use in potentially explosive atmospheres“) | | VH3 | | | 3 | | | | |
| **Nominal diameter** | **Thread connection** | | | | | | | | |
| DN 8 | G¼ | | 08 | | | | I1 | | |
| DN 10 | G⅜ | | 10 | | | | I2 | | |
| DN 15 | G½ | | 15 | | | | I3 | | |
| DN 15 | G½ male (only brass version) | | 15 | | | | A3 | | |
| DN 15 | G¾ male (only brass version) | | 15 | | | | A4 | | |
| DN 20 | G¾ | | 20 | | | | I4 | | |
| DN 25 | G 1 | | 25 | | | | I5 | | |
| DN 32 | G 1¼ | | 32 | | | | I6 | | |
| DN 40 | G 1½ | | 40 | | | | I7 | | |
| DN 50 | G 2 | | 50 | | | | I8 | | |
| **Material** | | | | | | | | | |
| Brass | | | | M011 | | 1 | | 1 | |
| Stainless steel | | | | M031 | | 3 | | 3 | |
| **Version** | | | | | | | | | |
| Standard | | | | | | | | | ( )* |
| For use in potentially explosive atmospheres (Option)** | | | | | | | | | X |

* No character

** Only available with blue jacket cable or with plug connector incl. cable socket

# Flow switches made of plastic

## With threaded brass pipe tee

**Type** VK3

| Technical data | |
|---|---|
| **Switching function** | Contact<br>→ closes at increasing flow<br>→ opens at decreasing flow<br>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** | Max. IP65 |
| **Protection class EN 60730-1** | Class II |
| **Approvals** | |

WRAS Water Regulations Advisory Scheme

TÜV Rheinland Produkt Safety BAUART GEPRÜFT TYPE APPROVED

### Benefits

- Flow switches made of glass fibre reinforced plastic
- With threaded brass tee DN 8...50
- Factory set special set points for series applications
- 1.5 m jacket cable or according to customer specification

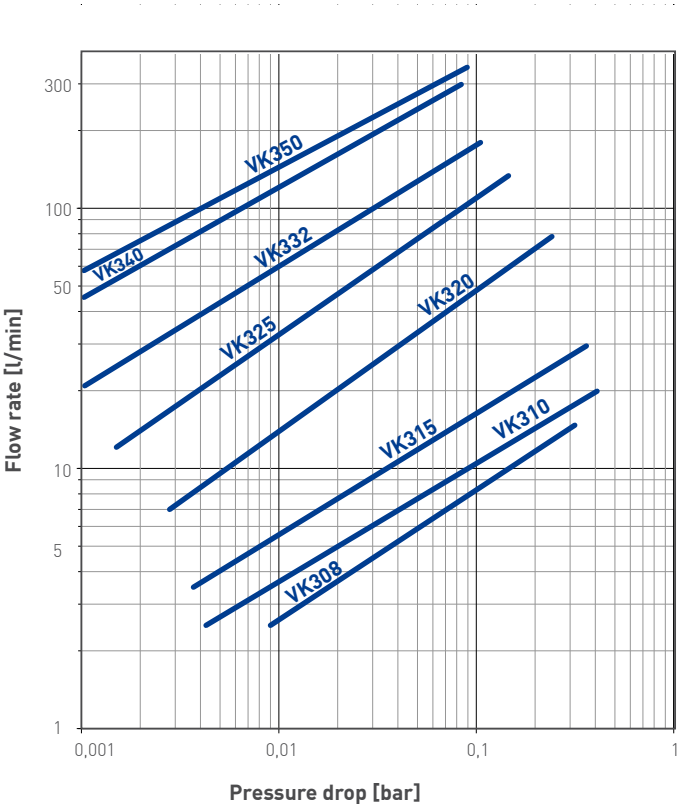
### Options on request

- Special setpoints
- 4 different colours of the union nut for distinction
- Recognized component ETL according to UL & CSA standards

# Setpoint ranges and typical pressure drop

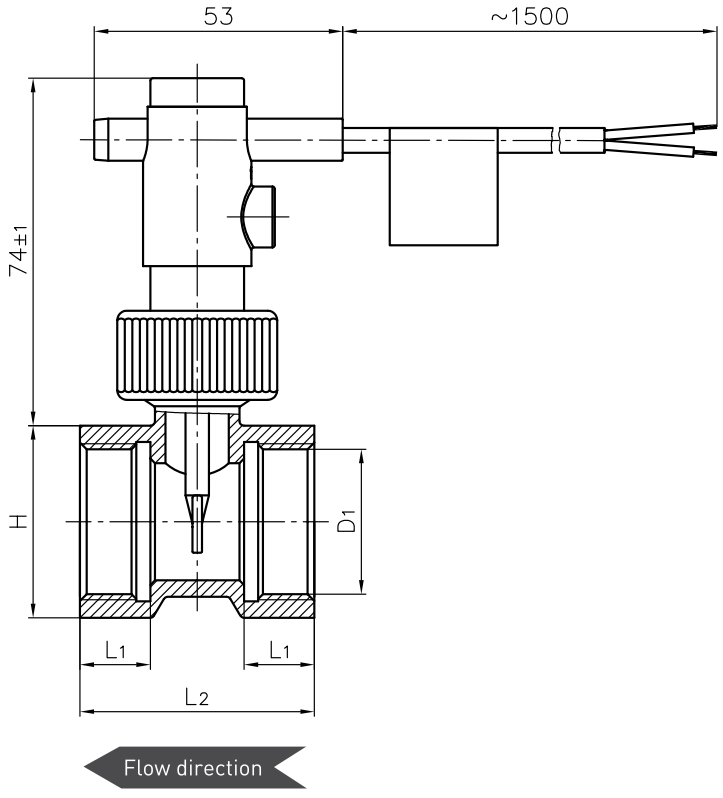
| Order code | Nominal diameter | Thread connection $D_1$ | Setpoint ranges [l/min]* | | Max. flow rate [l/min] |
|---|---|---|---|---|---|
| | | | Increasing flow ON | Decreasing flow OFF | |
| **VK308M0P10PI11** | DN 8 | G¼ | 2.7...3.0 | 2.6...2.9 | 15 |
| **VK310M0P10PI21** | DN 10 | G⅜ | 3.0...3.8 | 2.8...3.7 | 20 |
| **VK315M0P10PI31** | DN 15 | G½ | 3.8...5.1 | 3.6...4.9 | 30 |
| **VK315M0P10PA31** | DN 15 | G½ male | 3.0...3.8 | 2.8...3.7 | 20 |
| **VK315M0P10PA41** | DN 15 | G¾ male | 3.0...3.8 | 2.8...3.7 | 20 |
| **VK320M0P10PI41** | DN 20 | G¾ | 7.2...9.0 | 6.9...8.7 | 80 |
| **VK325M0P10PI51** | DN 25 | G 1 | 13.0...16.5 | 12.3...15.9 | 130 |
| **VK332M0P10PI61** | DN 32 | G 1¼ | 16.5...21.0 | 16.0...20.5 | 180 |
| **VK340M0P10PI71** | DN 40 | G 1½ | 27.0...33.5 | 25.5...32.5 | 300 |
| **VK350M0P10PI81** | DN 50 | G 2 | 41.5...53.5 | 40.6...52.8 | 350 |

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



# Dimensions and materials

| 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 |

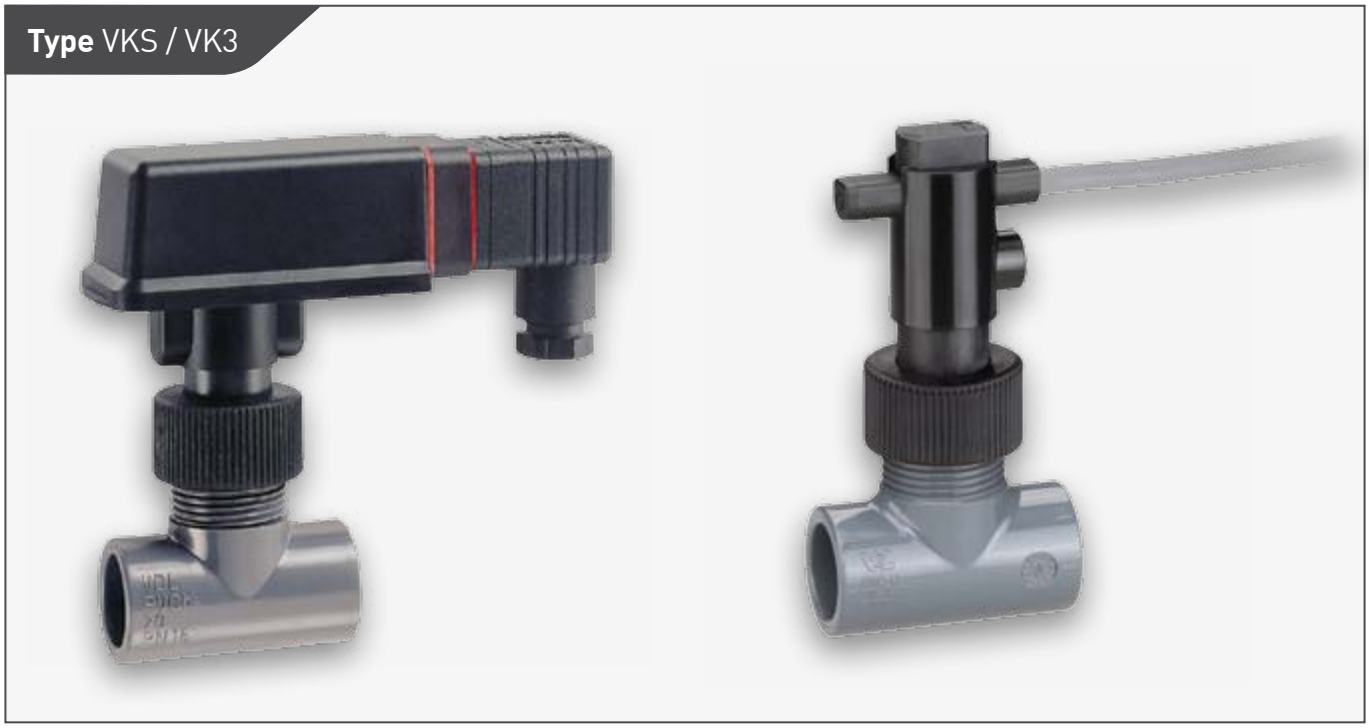



| Materials in contact with fluid | |
|---|---|
| **Body, Paddle** | PPO Noryl GFN 3 |
| **Pipe tee** | Brass CW617N |
| **Magnet** | Hard ferrite |
| **O-ring** | NBR |

# Flow switches made of plastic

## With PVC tee

**Type** VKS / VK3



| Technical data | |
|---|---|
| **Switching function** | Contact<br>→ closes at increasing flow<br>→ opens at decreasing flow<br>Reversing possible |
| **Pressure rating** | PN 10 |
| **Temperature ranges** | |
| **Medium** | 0...20 °C (PN 10)<br>0...60 °C (PN 2.5) |
| **Ambient** | 0...60 °C |
| **Electrical data** | |
| **Electrical connection**<br>→ VKS<br><br>→ VK3 | <br>Plug connector DIN EN 175301-803-A incl. cable socket<br>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** | |

### Benefits

- Flow switches made of glass fibre reinforced plastic
- With PVC tees DN 15...50
- Various connectors or 1.5 m jacket cable

| Options | |
|---|---|
| **Electrical connection (type VKS)** | → 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<br>→ 4-pin-sensor plug M12 x 1 |

### Options on request

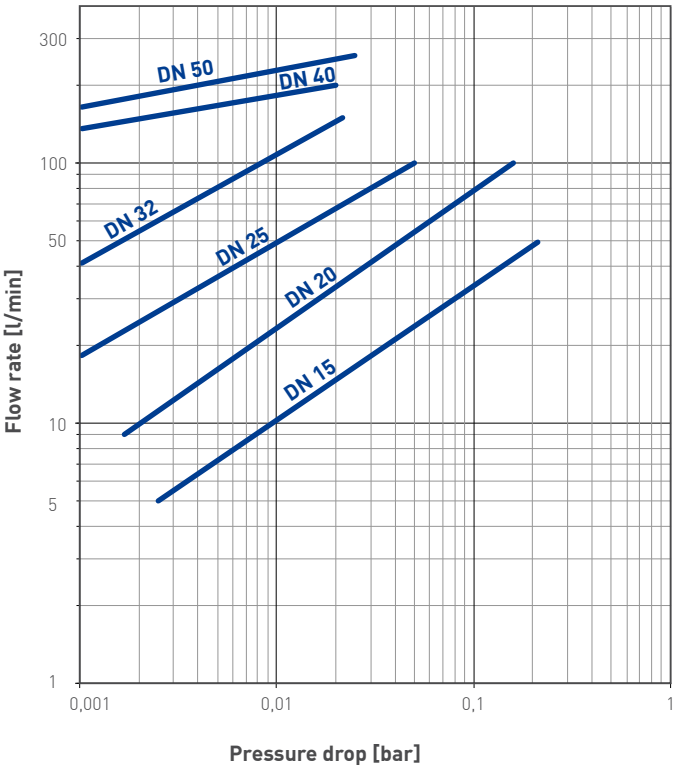
- Special setpoints
- 4 different colours of the union nut for distinction
- Recognized component ETL according to UL & CSA standards (only VK3 version)

# Setpoint ranges and typical pressure drop

| Nominal diameter | Setpoint ranges [l/min]* | | Max. flow rate [l/min] |
|---|---|---|---|
| | Increasing flow ON | Decreasing flow OFF | |
| **DN 15** | 5.1...6.9 | 4.9...6.5 | 50 |
| **DN 20** | 9.4...12.3 | 9.1...11.9 | 100 |
| **DN 25** | 10.7...15.2 | 10.4...14.8 | 100 |
| **DN 32** | 17.0...22.6 | 16.8...22.5 | 150 |
| **DN 40** | 21.8...30.1 (29.6...41.4)** | 21.6...29.9 (29.4...40.8)** | 200 (260)** |
| **DN 50** | 29.0...40.0 (37.6...50.0)** | 28.6...39.9 (37.4...49.8)** | 260 (350)** |

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

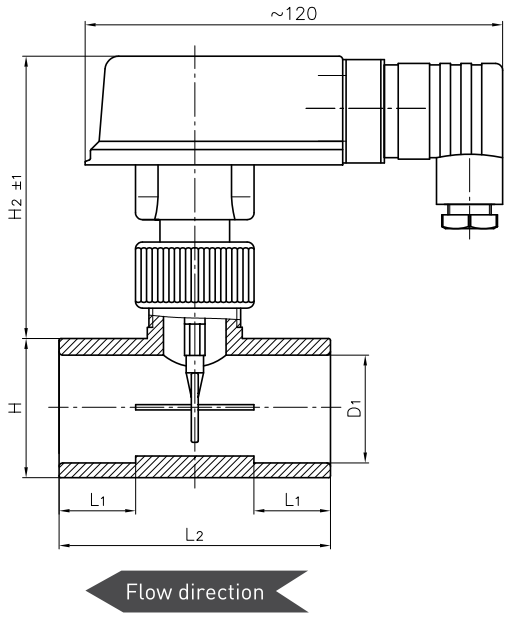
** The values in brackets are valid for shortened paddles



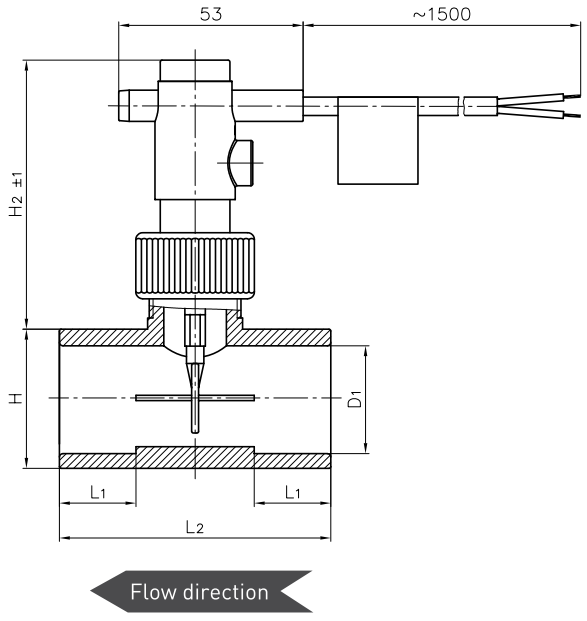
# Dimensions and materials

| Dimensions [mm] | | | | | |
|---|---|---|---|---|---|
| **Nominal diameter $D_1$** | **$L_1$** | **$L_2$** | **$H_1$** | **$H_2$ VKS** | **$H_2$ VK3** |
| **DN 15** | 16 | 54 | 28 | 84 | 80 |
| **DN 20** | 19 | 66 | 34 | 86 | 82 |
| **DN 25** | 22 | 78 | 40 | 86 | 82 |
| **DN 32** | 26 | 98 | 50 | 104 | 100 |
| **DN 40** | 31 | 118 | 62 | 103 | 99 |
| **DN 50** | 38 | 144 | 77 | 101 | 97 |

**VKS**




**VK3**




| Materials in contact with fluid | |
|---|---|
| **Body, Paddle** | PPO Noryl GFN 3 |
| **Pipe tee** | PVC |
| **Magnet** | Hard ferrite |
| **Gasket** | EPDM |

# Order code

| Order example | VKS | 15 | M0P17 | PK3K |
|---|---|---|---|---|
| **Type** | | | | |
| **Flow switches VKS** | | | | |
| Plug connector incl. cable socket (standard) | VKS | | M0P17 | |
| Plug connector incl. cable socket with LED (option) | VKS | | M0P19 | |
| 4-pin-sensor plug M12 x 1 (option) | VKS | | M0P18 | |
| **Flow switches VK3** | | | | |
| 1.5 m PVC jacket cable | VK3 | | M0P10 | |
| **Nominal Diameter** | | | | |
| DN 15 | | 15 | | PK3K |
| DN 20 | | 20 | | PK4K |
| DN 25 | | 25 | | PK5K |
| DN 32 | | 32 | | PK6K |
| DN 40 | | 40 | | PK7K |
| DN 50 | | 50 | | PK8K |

# Flow switches made of metal

## With micro switch

**Type** VH0


| Technical data | |
|---|---|
| **Switching function** | Changeover contact |
| **Switching hysteresis** | 10...30 % |
| **Pressure rating** | PN 25 |
| **Temperature ranges** | |
| **Medium** | -20...110 °C |
| **Ambient** | -20...70 °C |
| **Electrical data** | |
| **Electrical connection** | Plug connector DIN EN 175301-803-A incl. cable socket |
| **Switching current** | Max. 5 A |
| **Switching voltage** | Max. 250 VAC |
| **Rating** | Max. 1250 VA |
| **Degree of protection EN 60529** | IP65 |
| **Protection class EN 60730-1** | Class II |

### Benefits

- Microswitch is used as switching element
- For higher switching currents
- For direct switching of devices, without relay or controller
- With brass pipe section DN 10...50

### Options on request

- Insertion installation using soldering adapter

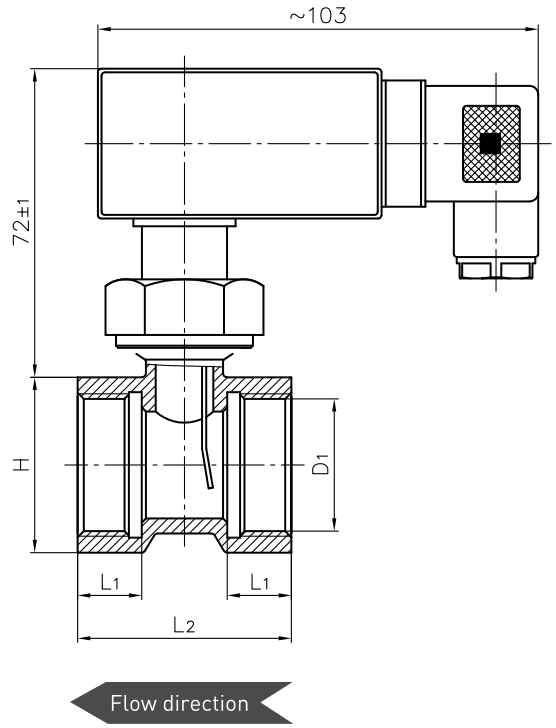
*A micro switch used as switching element allows a higher electrical switching capacity than a reed switch. The resetting force required by the paddle system is produced by a leaf spring.*

# Setpoint ranges

| Order code | Nominal diameter | Thread connection $D_1$ | Setpoint range [l/min]* Decreasing flow OFF | Max. flow rate [l/min] |
|---|---|---|---|---|
| **VH 010I-MS** | DN 10 | G⅜ | 4.0...5.0 | 10 |
| **VH 015I-MS** | DN 15 | G½ | 5.0...6.0 | 20 |
| **VH 015A-MS** | DN 15 | G½ male | 4.0...5.0 | 10 |
| **VH 015B-MS** | DN 15 | G¾ male | 4.0...5.0 | 10 |
| **VH 020I-MS** | DN 20 | G¾ | 8.0...10.0 | 40 |
| **VH 025I-MS** | DN 25 | G 1 | 17.0...20.0 | 60 |
| **VH 032I-MS** | DN 32 | G 1¼ | 24.0...28.0 | 80 |
| **VH 040I-MS** | DN 40 | G 1½ | 43.0...50.0 | 100 |
| **VH 050I-MS** | DN 50 | G 2 | 69.0...83.0 | 150 |

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

**VH0**




| Dimensions [mm] | | | |
|---|---|---|---|
| **Thread connection $D_1$** | **$L_1$** | **$L_2$** | **H** |
| **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** | Brass CW614N, nickel-plated |
| **Pipe tee** | Brass CW617N |
| **Paddle** | Stainless steel 1.4310, 1.4301 |
| **Magnet** | Hard ferrite |
| **O-ring** | NBR |

# Flow switches made of metal

## For insertion installation

**Type** VHS / VH3

| Technical data | |
|---|---|
| **Switching function** | Contact<br>→ closes at increasing flow<br>→ opens at decreasing flow<br>Reversing possible |
| **Pressure rating** | PN 25 |
| **Temperature ranges** | |
| **Medium** | -25...110 °C |
| **Ambient** | -25...80 °C |
| **Electrical data** | |
| **Electrical connection**<br>→ VHS<br><br>→ VH3 | <br>Plug connector DIN EN 175301-803-A incl. cable socket<br>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** | |

### Benefits

- Direct installation into pipe lines DN 50...150
- Threaded adapters for tees and direct insertion into pipes
- Alternatively soldering adapter or welding adapter
- Easy installation due to union nut
- Various connectors or 1.5 m jacket cable

| Options | |
|---|---|
| **Electrical connection (version VHS)** | → 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<br>→ 4-pin-sensor plug M12 x 1 |
| **For use in potentially explosive atmospheres** | Version VH...X |

# Setpoint ranges

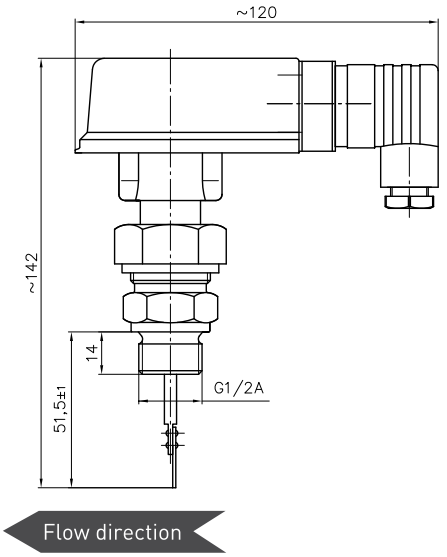
| Type | Process connection | Insert in Nominal diameter | Setpoint ranges [m³/h]* | | Max. flow rate [m³/h] |
|---|---|---|---|---|---|
| | | | Increasing flow ON | Decreasing flow OFF | |
| **VH305 / VHS05** | Threaded adapter G½** | DN 50 | 1.9...2.7 | 1.8...2.6 | 30 |
| | | DN 80 | 5.0...8.0 | 4.9...7.9 | 80 |
| | | DN 100 | 8.3...12.5 | 8.2...12.4 | 150 |
| | | DN 150 | 17.5...25.0 | 17.4...24.9 | 200 |
| **VHS01** | Soldering adapter / welding adapter | DN 50 | 3.8...4.9 | 3.7...4.8 | 30 |
| | | DN 80 | 9.0...14.3 | 8.9...14.2 | 100 |
| | | DN 100 | 13.0...18.8 | 12.7...18.4 | 150 |
| | | DN 150 | 33.0...46.0 | 32.9...45.9 | 200 |

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

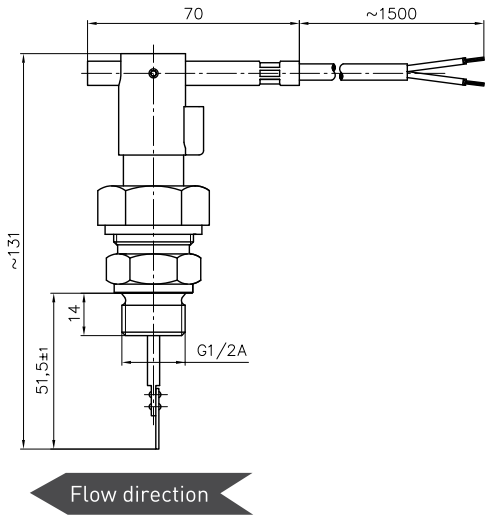
** Installation into welded socket according to EN 10241, G½ female, lenght 15 mm

# Dimensions and materials

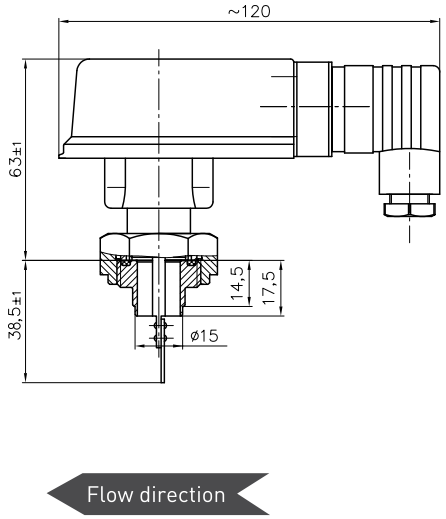
**VHS05**




**VH305**




**VHS01**




| Materials in contact with fluid | | |
|---|---|---|
| | **Brass version** | **Stainless steel version** |
| **Body, Paddle** | Brass CW614N | Stainless steel 1.4571 |
| **Process connection** | Brass CW614N, CW617N | Stainless steel 1.4571 |
| **Bushing** | PPO Noryl GFN 3 | PVDF |
| **Rivet** | Brass CW508L | Stainless steel 1.4303 |
| **Pin** | Stainless steel 1.4571 | |
| **Magnet** | Hard ferrite | |
| **O-ring** | NBR | |

# Order code

| Order example | VHS | 05M0 | 1 | 17 | 1 | R2 | 1 | |
|---|---|---|---|---|---|---|---|---|
| **Type** | | | | | | | | |
| **Flow switches VHS** | | | | | | | | |
| Plug connector incl. cable socket (Standard) | VHS | | | 17 | | | | |
| Plug connector incl. cable socket with LED (option) | VHS | | | 19 | | | | |
| 4-pin-sensor plug M12 x 1 (option) | VHS | | | 18 | | | | |
| **Process connection** | | | | | | | | |
| Threaded Adapter G½ | | 05M0 | | | | R2 | | |
| Soldering adapter (brass) or welding adapter (stainless steel) | | 01M0 | | | | D1 | | |
| **Material** | | | | | | | | |
| Brass | | | 1 | | 1 | | 1 | |
| Stainless steel | | | 3 | | 3 | | 3 | |
| **Version** | | | | | | | | |
| Standard | | | | | | | | ( )* |
| For use in potentially explosive atmospheres (option) | | | | | | | | X |

* No character

** Only available with plug connector incl. cable socket

| Order example | VH305M0 | 1 | 11 | 1 | R2 | 1 | |
|---|---|---|---|---|---|---|---|
| **Type** | | | | | | | |
| **Flow switches VH3** | | | | | | | |
| 1.5 m PVC jacket cable | VH305M0 | | 11 | | R2 | | |
| 1.5 m PVC blue jacket cable (only for option „for use in potentially explosive atmospheres“) | VH305M0 | | 13 | | R2 | | |
| **Material** | | | | | | | |
| Brass | | 1 | | 1 | | 1 | |
| Stainless steel | | 3 | | 3 | | 3 | |
| **Version** | | | | | | | |
| Standard | | | | | | | ( )* |
| For use in potentially explosive atmospheres (option)** | | | | | | | X |

* No character

** Only available with blue jacket cable

# Flow switches for insertion installation

## Threaded adapter with trimmable paddle

**Type** VHS06

**Type** VK306

| Technical data | VHS06 | VK306 |
|---|---|---|
| **Switching function** | Contact<br>→ closes at increasing flow<br>→ opens at decreasing flow<br>Reversing possible | |
| **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*** | | |

WRAS Water Regulations Advisory Scheme

BAUART GEPRÜFT TYPE APPROVED

* Only for flow switches with plastic paddle

## Benefits

- Universal Flow switches for DN 20...200
- The paddle simply to be trimmed to needed length
- Glass fibre reinforced plastic paddle or stainless steel paddle for higher flow rates
- Threaded adapters for tees or for direct insertion into pipes
- Easy installation due to union nut

| Options | |
|---|---|
| **Electrical connection (version 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<br>→ 4-pin-sensor plug M12 x 1 |

## Options on request (version VK306 with plastic paddle)

- Recognized component ETL according to UL & CSA standards

## VHS06 / VK306 with plastic paddle, installation into tees according to EN 10242

| Nominal diameter | Paddle to be trimmed to | | | Setpoints [m³/h]* | | Max. flow rate [m³/h] |
|---|---|---|---|---|---|---|
| | Paddle mark | Dimensions | Installation length $L_1$ | Increasing flow** ON | Decreasing flow OFF | |
| **DN 20** | 9 | 12 x 9 mm | 40 mm | 1.1 | 0.9 | 4 |
| **DN 25** | 9 | 12 x 9 mm | 40 mm | 1.7 | 1.5 | 8.5 |
| | 15 | 12 x 15 mm | 46 mm | 1.3 | 1.1 | 5 |
| **DN 32*** ** | 9 | 12 x 9 mm | 40 mm | 2.9 | 2.6 | 15 |
| | 20 | 12 x 20 mm | 51 mm | 1.9 | 1.6 | 8 |
| **DN 40*** ** | 9 | 12 x 9 mm | 40 mm | 4.2 | 3.8 | 25 |
| | 30 | 12 x 30 mm | 61 mm | 2.1 | 1.8 | 10 |
| **DN 50*** ** | 9 | 12 x 9 mm | 40 mm | 6.5 | 6 | 41 |
| | 40 | 12 x 40 mm | 71 mm | 2.7 | 2.4 | 14 |

* Water, 20 °C, horizontal pipe, tolerance ±15 %
** Typical value
*** Values for min. and max. paddle lengths specified. Values for intermediate paddle lengths, see operating manual

## VHS06 / VK306 with plastic paddle, installation by welded socket according to EN 10241, G½ female, length 15 mm

| Nominal diameter | Paddle to be trimmed to | | | Setpoints [m³/h]* | | Max. flow rate [m³/h] |
|---|---|---|---|---|---|---|
| | Paddle mark | Dimensions | Installation length $L_1$ | Increasing flow** ON | Decreasing flow OFF | |
| **DN65*** ** | 15 | 12 x 15 mm | 46 mm | 8.8 | 8.5 | 50 |
| | 60 | 12 x 60 mm | 91 mm | 3.2 | 3.0 | 18 |
| **DN 80*** ** | 15 | 12 x 15 mm | 46 mm | 13.8 | 11.3 | 80 |
| | 60 | 12 x 60 mm | 91 mm | 5.1 | 4.7 | 30 |
| **DN 100*** ** | 20 | 12 x 20 mm | 51 mm | 18.8 | 16.3 | 110 |
| | 80 (not trimmed) | 12 x 80 mm | 111 mm | 6.4 | 5.8 | 40 |
| **DN 150*** ** | 40 | 12 x 40 mm | 71 mm | 27 | 25 | 160 |
| | 80 (not trimmed) | 12 x 80 mm | 111 mm | 15.5 | 14.2 | 100 |
| **DN 200*** ** | 50 | 12 x 50 mm | 81 mm | 45 | 43.5 | 250 |
| | 80 (not trimmed) | 12 x 80 mm | 111 mm | 30 | 29 | 180 |

* Water, 20 °C, horizontal pipe, tolerance ±15 %
** Typical value
*** Values for min. and max. paddle lengths specified. Values for intermediate paddle lengths, see operating manual

### VHS06 / VK306 with stainless steel paddle, installation into tees according to EN 10242

| Nominal diameter | Paddle to be trimmed to | | | Setpoints [m³/h]* | | Max. flow rate [m³/h] |
|---|---|---|---|---|---|---|
| | Paddle mark | Dimensions | Installation length $L_1$ | Increasing flow** ON | Decreasing flow OFF | |
| DN 25 | 15 | 12 x 15 mm | 46 | 1.2 | 1.1 | 10 |
| | 20 | 12 x 20 mm | 51 | 1.0 | 0.9 | 6 |
| DN 32 | 15 | 12 x 15 mm | 46 | 2.0 | 1.9 | 20 |
| | 20 | 12 x 20 mm | 51 | 1.7 | 1.5 | 15 |
| DN 40 | 15 | 12 x 15 mm | 46 | 3.3 | 3.0 | 34 |
| | 30 | 12 x 30 mm | 61 | 2.0 | 1.8 | 18 |
| DN 50 | 15 | 12 x 15 mm | 46 | 4.8 | 4.6 | 55 |
| | 40 | 12 x 40 mm | 71 | 2.6 | 2.4 | 24 |

* Water, 20 °C, horizontal pipe, tolerance ±15 %
** Typical value
*** Values for min. and max. paddle lengths specified. Values for intermediate paddle lengths, see operating manual

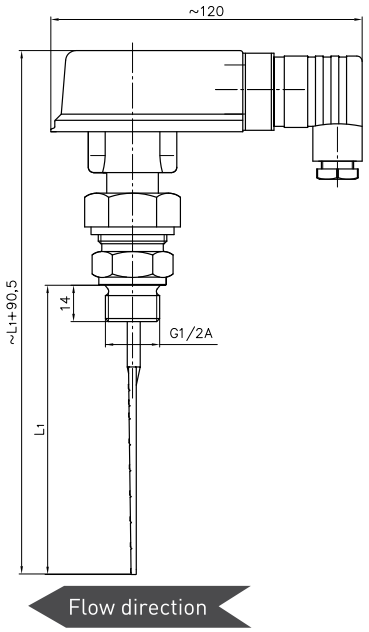
### VHS06 / VK306 with stainless steel paddle, installation by welded socket according to EN 10241, G½ female, length 15 mm

| Nominal diameter | Paddle to be trimmed to | | | Setpoints [m³/h]* | | Max. flow rate [m³/h] |
|---|---|---|---|---|---|---|
| | Paddle mark | Dimensions | Installation length $L_1$ | Increasing flow** ON | Decreasing flow OFF | |
| DN 80 | 15 | 12 x 15 mm | 46 | 11.7 | 11.4 | 150 |
| | 60 | 12 x 60 mm | 91 | 4.6 | 4.2 | 50 |
| DN 100 | 20 | 12 x 20 mm | 51 | 16.0 | 15.9 | 200 |
| | 80 | 12 x 80 mm | 111 | 6.1 | 5.6 | 70 |
| DN 150 | 40 | 12 x 40 mm | 71 | 24.0 | 22.7 | 290 |
| | 80 | 12 x 80 mm | 111 | 14.7 | 13.8 | 170 |
| DN 200 | 50 | 12 x 50 mm | 81 | 41.0 | 38.7 | 450 |
| | 80 | 12 x 80 mm | 111 | 23.3 | 26.7 | 310 |

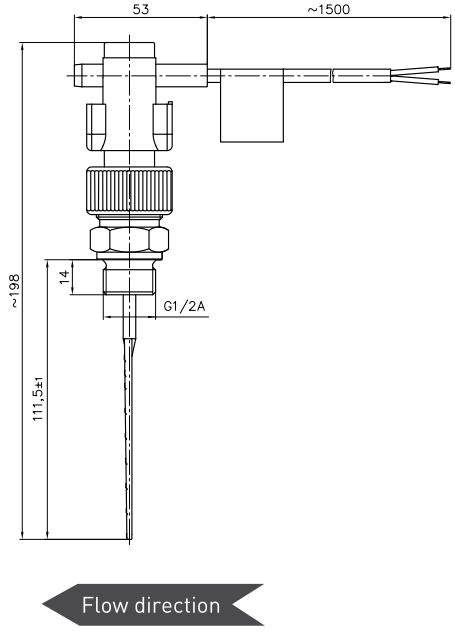
* Water, 20 °C, horizontal pipe, tolerance ±15 %
** Typical value
*** Values for min. and max. paddle lengths specified. Values for intermediate paddle lengths, see operating manual

# Dimensions and materials

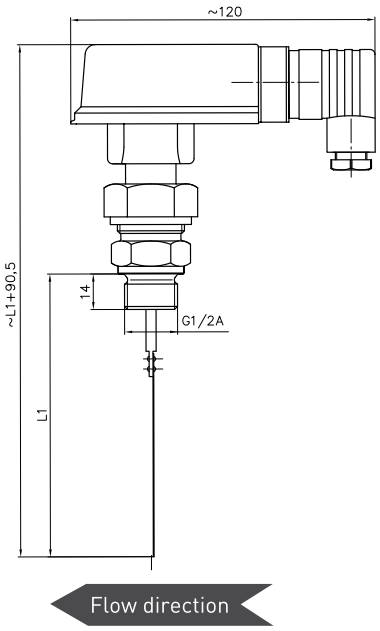
### VHS06 with plastic paddle



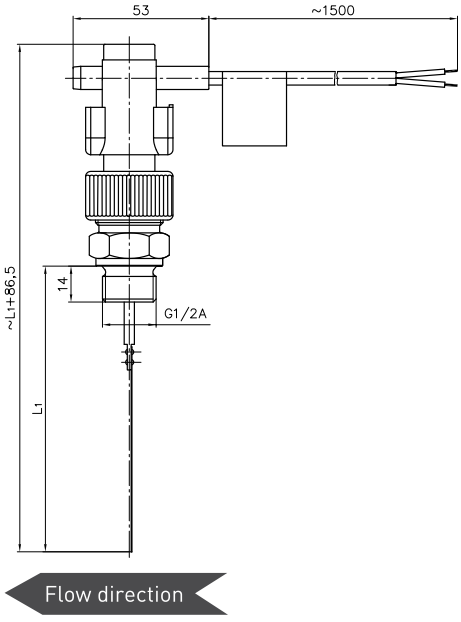

### VK306 with plastic paddle




### VHS06 with stainless steel paddle




### VK306 with stainless steel paddle




**Materials in contact with fluid**

| Type | VHS06 | VK306 |
|---|---|---|
| **Body** | Brass CW614N | Noryl PPO GFN3 |
| **Paddle** | Plastic paddle: Noryl PPO GFN3 / stainless steel<br>Stainless steel paddle: Stainless steel 1.4310 / brass | |
| **Process connection** | Brass CW614N | |
| **Magnet** | Hard ferrite | |
| **O-ring** | NBR | |

# Order code

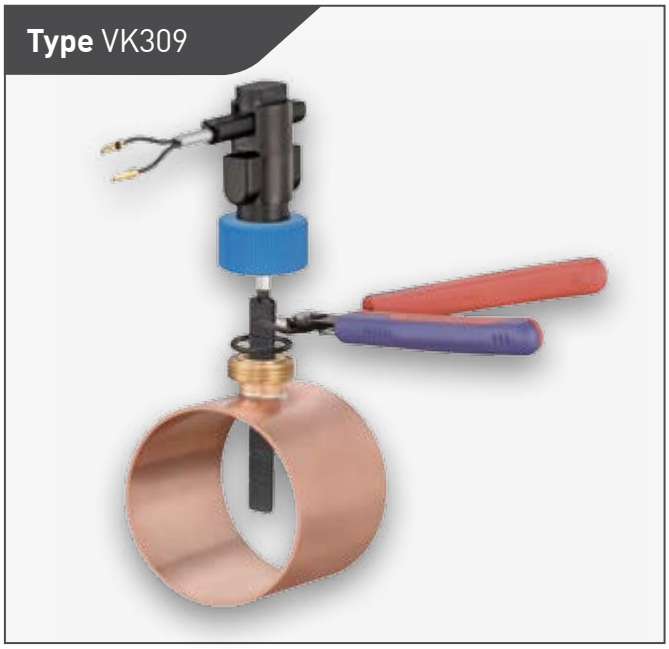
| Order example | VHS06M2 | P | 171R21 |
|---|---|---|---|
| **Type** | | | |
| **Flow switches VHS06** | | | |
| Plug connector incl. cable socket (standard) | VHS06M2 | | 171R21 |
| Plug connector incl. cable socket with LED (option) | VHS06M2 | | 191R21 |
| 4-pin-sensor plug M12 x 1 (option) | VHS06M2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

# Flow switches for insertion installation

## Soldering adapter with trimmable paddle

**Type** VHS09

**Type** VK309



| Technical data | VHS09 | VK309 |
|---|---|---|
| **Switching function** | Contact<br>→ closes at increasing flow<br>→ opens at decreasing flow<br>Reversing possible | |
| **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** | | |

WRAS Water Regulations Advisory Scheme

TÜV Rheinland Product Safety BAUART GEPRÜFT TYPE APPROVED

## Benefits

- Universal Flow switches for copper pipes Ø 32...88.9
- Glass fibre reinforced paddle simply to be trimmed to needed length
- Soldering adapter for copper pipes
- Easy installation due to union nut

| Options | |
|---|---|
| **Electrical connection (version VHS09)** | → 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<br>→ 4-pin-sensor plug M12 x 1 |

## Option on request (version VK309)

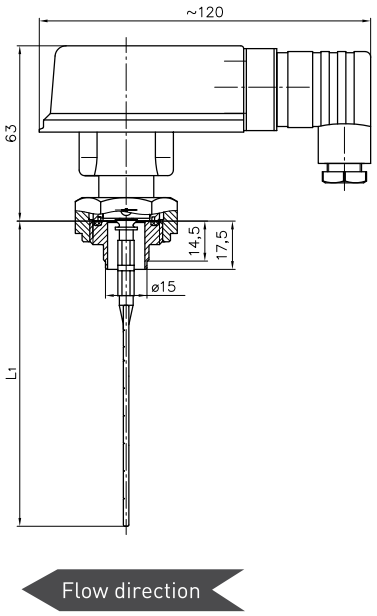
- Recognized component ETL according to UL & CSA standards

| For copper pipes | Paddle to be trimmed to | | | Setpoints [m³/h]* | | Max. flow rate [m³/h] |
|---|---|---|---|---|---|---|
| | Paddle mark | Dimensions | Installation length $L_1$ | Increasing flow ON** | Decreasing flow OFF | |
| **Ø 32 x 1** | 9 | 12 x 9 mm | 39 mm | 2.0 | 1.9 | 10 |
| **Ø 35 x 1** | 9 | 12 x 9 mm | 39 mm | 2.6 | 2.4 | 20 |
| | 15 | 12 x 15 mm | 45 mm | 1.8 | 1.6 | 13 |
| **Ø 35 x 1.5** | 9 | 12 x 9 mm | 39 mm | 2.5 | 2.2 | 18 |
| | 15 | 12 x 15 mm | 45 mm | 1.7 | 1.6 | 12 |
| **Ø 42 x 1.5*** ** | 9 | 12 x 9 mm | 39 mm | 3.9 | 3.7 | 30 |
| | 20 | 12 x 20 mm | 50 mm | 2.2 | 2.1 | 15 |
| **Ø 54 x 1.5** | 30 | 12 x 30 mm | 60 mm | 3.2 | 3.0 | 21 |
| **Ø 54 x 2** | 30 | 12 x 30 mm | 60 mm | 3.0 | 2.9 | 20 |
| **Ø 64 x 2*** ** | 15 | 12 x 15 mm | 45 mm | 8.6 | 7.9 | 53 |
| | 40 | 12 x 40 mm | 70 mm | 4.0 | 3.7 | 24 |
| **Ø 76.1 x 2*** ** | 15 | 12 x 15 mm | 45 mm | 13.6 | 12.1 | 80 |
| | 50 | 12 x 50 mm | 80 mm | 5.2 | 4.7 | 31 |
| **Ø 88.9 x 2*** ** | 30 | 12 x 30 mm | 60 mm | 10.9 | 10.7 | 67 |
| | 60 | 12 x 60 mm | 90 mm | 6.1 | 5.9 | 39 |

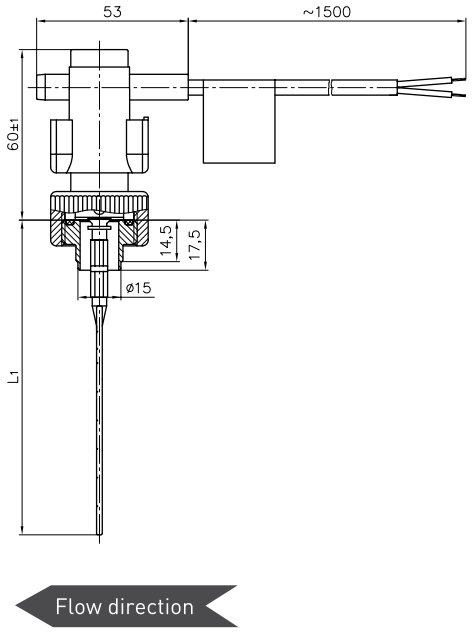
* Water, 20 °C, horizontal pipe, tolerance ±15 %
** Typical value
*** Values for min. and max. paddle lengths specified. Values for intermediate paddle lengths, see operating manual.

# Dimensions and materials

**VHS09**




**VK309**




| Materials in contact with fluid | | |
|---|---|---|
| **Type** | **VHS09** | **VK309** |
| **Body** | Brass CW614N | Noryl PPO GFN3 |
| **Paddle** | Noryl PPO GFN3 / stainless steel | |
| **Process connection** | Brass CW614N | |
| **Magnet** | Hard ferrite | |
| **O-ring** | NBR | |

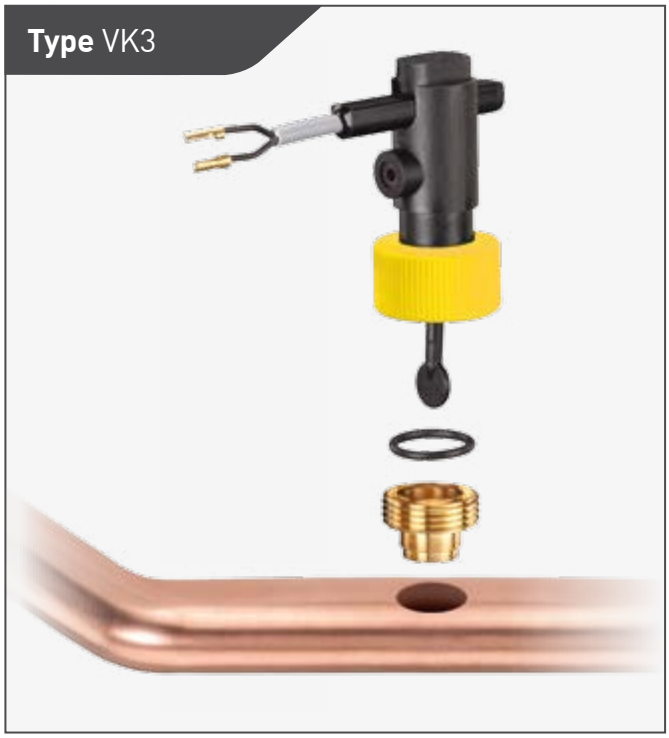
# Order code

| Order code | |
|---|---|
| **Flow switches 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 |
| **Flow switches VK309** | |
| 1.5 m PVC jacket cable | VK309M2P10PD11 |

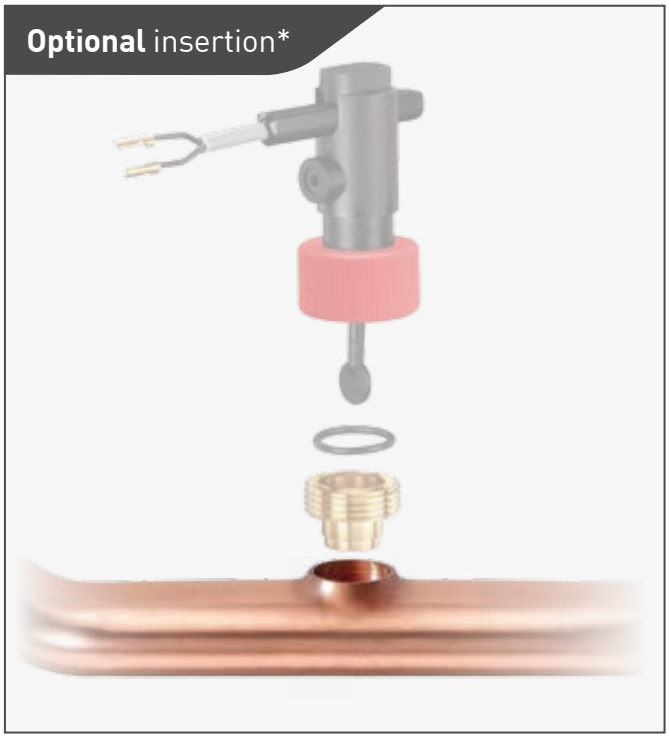
# Flow switches for insertion installation

## Made of plastic, with soldering adapter for copper pipes

**Type** VK3



**Optional** insertion*



| Technical data | |
|---|---|
| **Switching function** | Contact<br>→ closes at increasing flow<br>→ 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** | |

### Benefits

- Direct installation into copper pipes
- Easy installation:
  → Solder the adapter
  → Install the O-ring
  → Tighten the union nut
- Delivery incl. flow switch, O-ring and soldering adapter
- Paddle lengths for copper pipes Ø 22...54
- Different colours of the union nut for an easy distinction

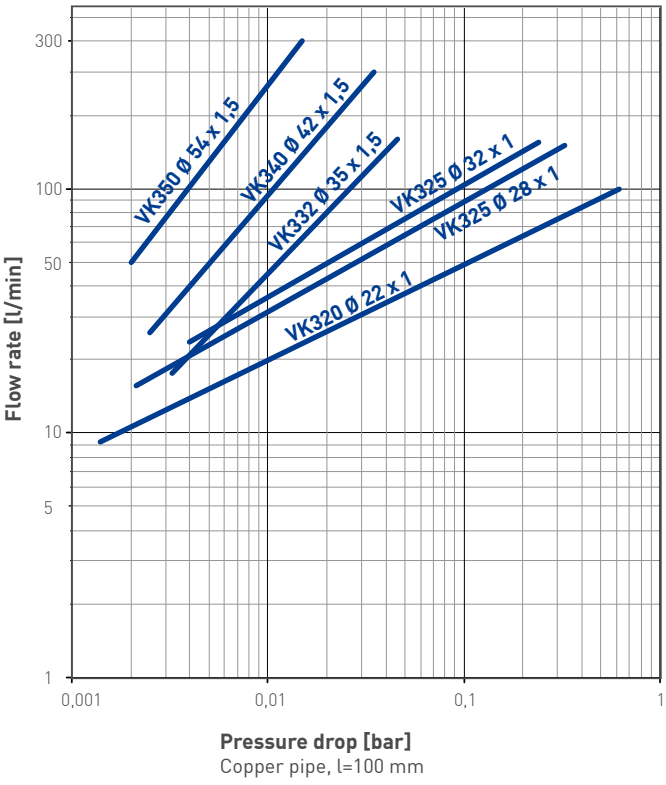
### Options on request

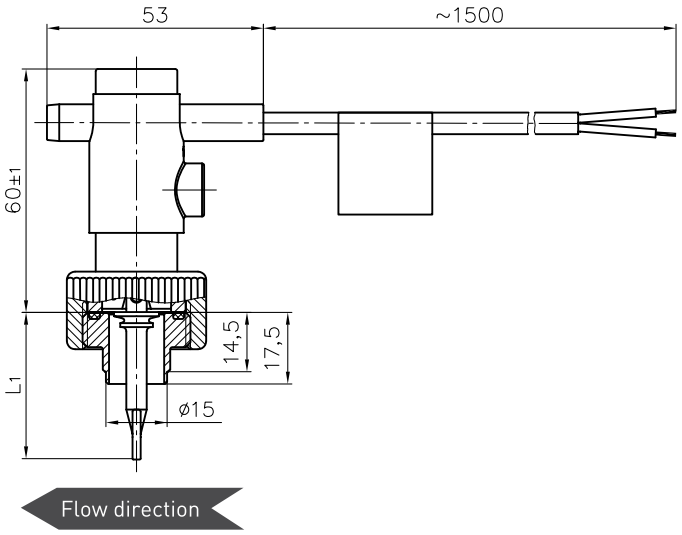
- Special setpoints
- Reversed switching function
- Insertion into *collared copper pipes
- Recognized component ETL according to UL & CSA standards

# Setpoint ranges, typical pressure drop and dimensions

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

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




| Dimensions [mm] | |
|---|---|
| **Order code** | **Paddle length $L_1$** |
| VK320M0P10PD11 | 33.5 |
| VK325M0P10PD11 | 36.0 |
| VK332M0P10PD11 | 44.5 |
| VK340M0P10PD11 | 47.5 |
| VK350M2P10PD11 | 56.5 |

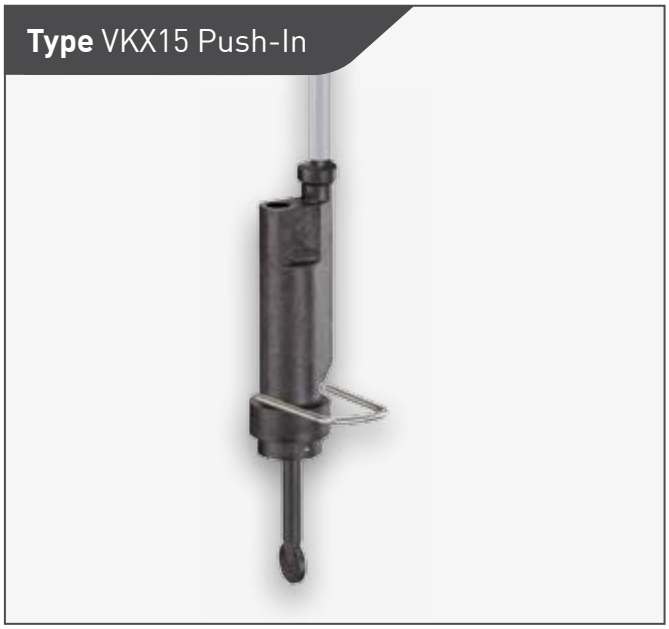
| Materials in contact with fluid | |
|---|---|
| **Body** | Noryl PPO GFN3 |
| **Paddle** | Noryl PPO GFN3 |
| **Soldering adapter** | Brass CW614N |
| **Magnet** | Hard ferrite |
| **O-ring** | NBR |

# Flow switches for OEM applications

## For potable water applications

**Type** VKX15

**Type** VKX15 Push-In



| Technical data | | |
|---|---|---|
| **Switching function** | Contact closes at increasing flow | |
| **Setpoint (others on request)** | 2.5 ±0.5 l/min* | |
| **Flow rate** | Max. 15 l/min | |
| **Nominal diameter** | DN 15 | |
| **Pressure rating** | PN 10 | |
| **Temperature ranges** | | |
| **Medium**<br>→ VKX15<br>→ VKX15 Push-In | <br>-20...100 °C<br>-20...70 °C | |
| **Ambient** | -20...70 °C | |
| **Electrical data** | | |
| **Electrical connection** | 0.5 m PVC jacket cable | |
| **Degree of protection EN 60529** | IP65 | |
| **Switching current** | Max. 1 A | |
| **Rating** | Max. 26 VA, 20 W | |
| **Switching voltage** | Max. 230 VAC, 48 VDC | Max. 24 VAC, 42 VDC |
| **Protection class EN 60730-1** | Class II | Class III |
| **Approvals **** | | |

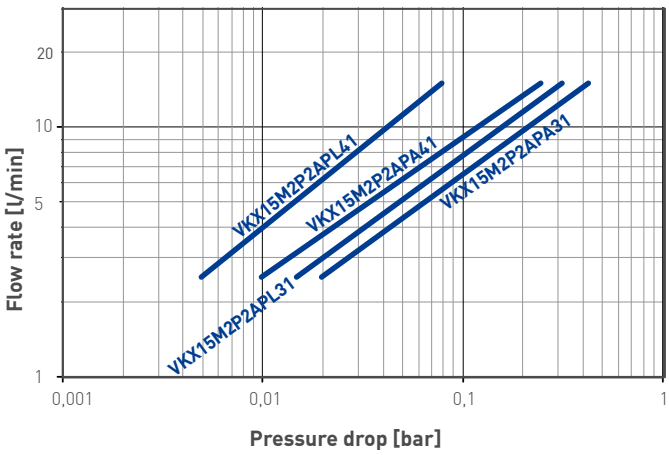
WRAS Water Regulations Advisory Scheme

* Water, 20 °C, horizontal pipe

** Not for VKX15 Push-In

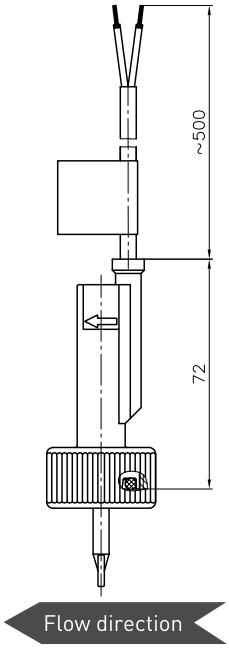
### Benefits

- Flow switches for tap water detection
- Pipe tees with threaded or soldering ends
- Push-in installation into manifolds or armatures
- OEM flow switches, delivery lots from 100 units

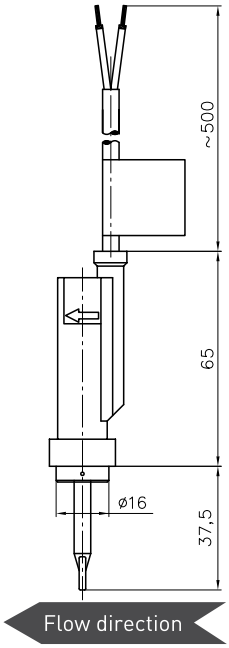


# Dimensions and order code

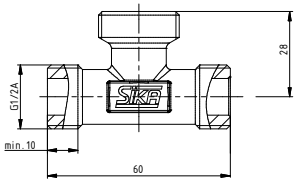
**VKX15**

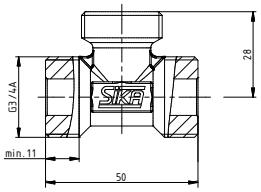


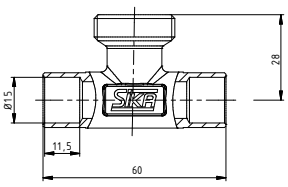

**VKX15 Push-In**

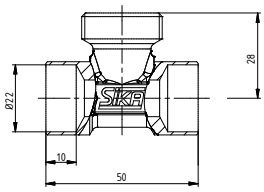



**Female socket design**




| Materials in contact with fluid | | |
|---|---|---|
| **Type** | **VKX15** | **VKX15 Push-In** |
| **Body** | Noryl PPO GFN3 | |
| **Paddle** | Noryl PPO GFN3 | |
| **Pin** | Stainless steel 1.4571 | |
| **Magnet** | Hard ferrite | |
| **O-ring** | EPDM | |
| **Pipe tee** | Brass CW617N | |

| **Order example** | **VKX15M2P2** | **AP** | **A31** |
|---|---|---|---|
| **Type** | | | |
| Flow switches 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 |
| Push-In for manifold mounting | | | H10 |

# Flow switches for OEM applications

## For pool applications

**Type** VKX05

**Type** VKL05 Push-In

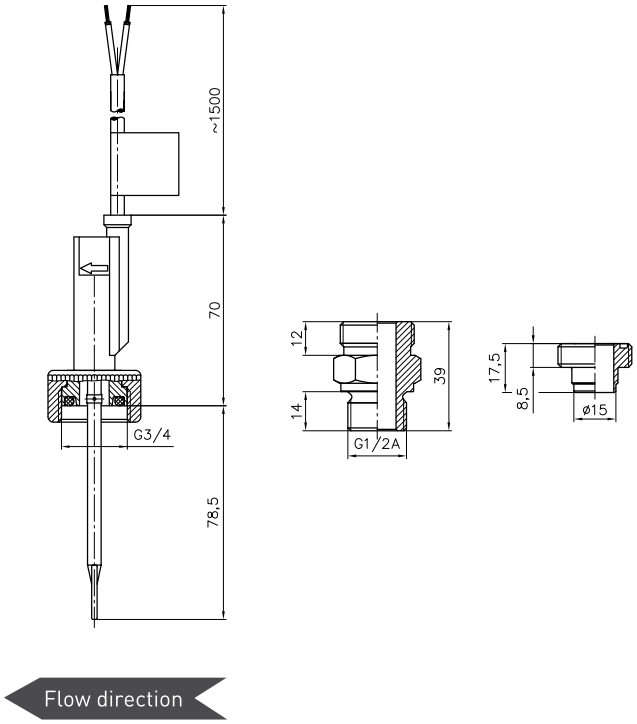
**Benefits**

- Flow switches for pool applications
- Insertion installation into pipelines DN 50...150
- Installation with union nut or Push-In
- With integrated O-ring
- VKL - pin made of plastic
- OEM flow switches, delivery lots from 100 units

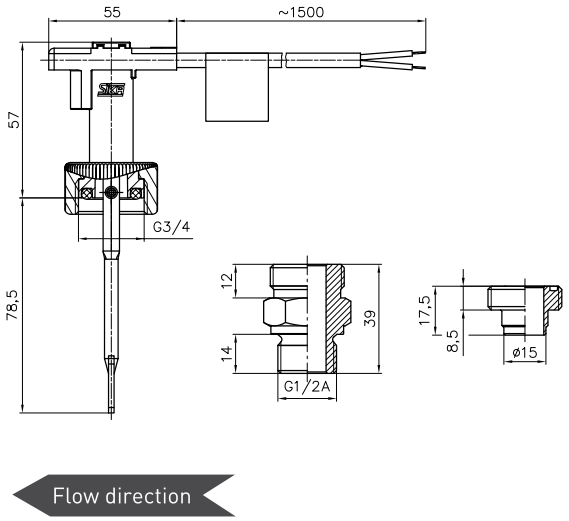
| Technical data | VKX05 | | VKL05 / VKL05 Push-In |
|---|---|---|---|
| **Switching function** | Contact closes at increasing flow | | |
| **Nominal diameter range** | Applicable in DN 50...150 | | |
| **Pressure rating** | PN 10 | | |
| **Temperature ranges** | | | |
| **Medium** | -20...100 °C | | -20...70 °C |
| **Ambient** | -20...70 °C | | |
| **Electrical data** | | | |
| **Electrical connection** | 1.5 m PVC jacket cable | | |
| **Degree of protection EN 60529** | IP65 | | |
| **Switching current** | Max. 1 A | | |
| **Rating** | Max. 26 VA, 20 W | | |
| **Switching voltage** | Max. 230 VAC, 48 VDC | Max. 24 VAC, 42 VDC | Max. 230 VAC, 48 VDC |
| **Protection class EN 60730-1** | Class II | Class III | Class II |
| **Approvals** | | | |
| | WRAS Water Regulations Advisory Scheme; TÜV Rheinland Produkt Safety BAUART GEPRÜFT TYPE APPROVED | | |

# Dimensions

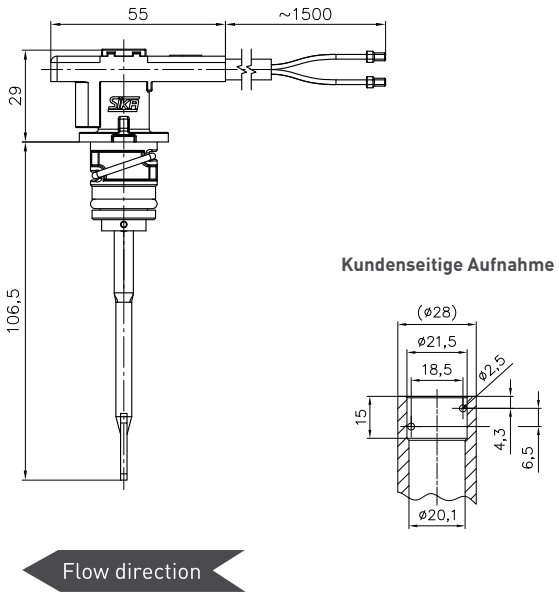
### VKX05




### VKL05




### VKL05 Push-In




| Materials in contact with fluid | | | |
|---|---|---|---|
| **Type** | **VKX05** | **VKL05** | **VKL05 Push-In** |
| **Body** | Noryl PPO GFN3 | Noryl PPO GFN 1630V | |
| **Paddle** | Noryl PPO GFN3 | Noryl PPO GFN 1630V | |
| **Pin** | Stainless steel 1.4571 | Noryl PPO GFN 1630V | |
| **Magnet** | Hard ferrite | | |
| **O-ring** | EPDM | | |
| **Soldering adapter** | Brass CW614N | | |
| **Process connection** | Brass CW614N or stainless steel 1.4571 | | |

# Order code

| Order example | VKX05M2P2 | AP | U10 |
|---|---|---|---|
| **Type** | | | |
| Flow Switches VKX05 | VKX05M2P2 | | |
| **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 |

| Order example | VKL05M1P2BP | U10 |
|---|---|---|
| **Type** | | |
| Flow Switch 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 |

# Flow monitors for insertion installation

## Paddles interchangeable

**Type** VH780

| Technical data | |
|---|---|
| **Switching function** | Change over contact |
| **Pressure rating** | Max. 11 bar (brass)<br>Max. 20 bar (stainless steel) |
| **Temperature ranges** | |
| **Medium** | -40...120 °C |
| **Ambient** | -40...85 °C (10...90 % rH) |
| **Storage and Transportation** | -40...85 °C, < 95 % rH |
| **Electrical data** | |
| **Change over contact max. contact rating** | 250 VAC, max. 15 A,<br>8 A inductive load |
| **Degree of protection EN 60529** | IP65 |
| **Protection class EN 60730-1** | Class I |

### Benefits

- Insertion installation into existing pipes
- One unit covers a wide range of pipe sizes (DN 32...200)
- Two versions (set point ranges)
- Adjustable set point
- Micro switch for high contact rating

# Setpoint ranges, dimensions, order code

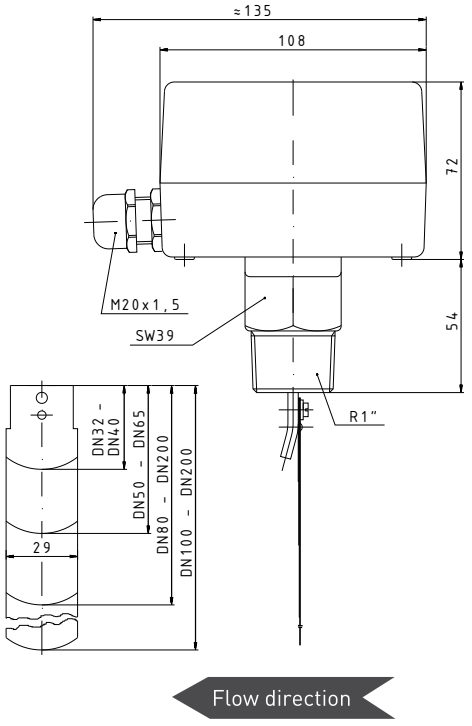
| Nominal diameter | Paddle to select** | Setpoint ranges [m³/h]* | | | | Max. flow rate [m³/h] |
|---|---|---|---|---|---|---|
| | | Standard Setpoint | | Low Setpoint | | |
| | | Increasing flow ON | Decreasing flow OFF | Increasing flow ON | Decreasing flow OFF | |
| **DN 32** | 29 x 34 mm | 1.3...3.0 | 0.8...2.8 | 0.9...1.6 | 0.25...1.4 | 3.6 |
| **DN 40** | 29 x 34 mm | 1.7...4.0 | 1.1...3.7 | 1.2...2.2 | 0.5...1.6 | 4.8 |
| **DN 50** | 29 x 60 mm | 3.1...6.1 | 2.2...5.7 | 2.3...4.1 | 0.9...3.6 | 7.3 |
| **DN 65** | 29 x 60 mm | 4.0...7.0 | 2.7...6.5 | 3.1...5.5 | 1.2...4.9 | 8.4 |
| **DN 80** | 29 x 89 mm | 6.2...11.4 | 4.3...10.7 | 4.9...8.2 | 2.1...7.4 | 13.7 |
| **DN 100** | 29 x 167 mm***[1] | 8.0...18.4 | 6.1...17.3 | 7.7...13.0 | 3.3...11.6 | 22.1 |
| **DN 125** | 29 x 167 mm***[2] | 12.9...26.8 | 9.3...25.2 | 11.5...19.6 | 5.0...17.5 | 32.2 |
| **DN 150** | 29 x 167 mm***[3] | 16.8...32.7 | 12.3...30.6 | 14.1...23.9 | 6.1...21.4 | 39.2 |
| **DN 200** | 29 x 167 mm | 46.5...94.2 | 38.6...90.8 | 36.5...61.8 | 21.7...55.3 | 113 |

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

** Higher setpoints selectable by use of smaller paddle sizes.

***[1]shortened to 29 x 91 mm, ***[2]shortened to 29 x 117 mm, ***[3]shortened to 29 x 144 mm

| Materials in contact with fluid | | |
|---|---|---|
| | **Brass version** | **Stainless steel version** |
| **Body** | Brass CW617N | Stainless steel 1.4404 |
| **Paddle** | Stainless steel 1.4404 | |
| **Lever** | Brass CW617N | Stainless steel 1.4404 |
| **Teeth lock washer** | Stainless steel 1.4301 | |
| **Fastening screw** | Stainless steel 1.4301 | |
| **Bellow** | Bronze CW453 | Stainless steel 1.4404 |




| Order example | VH780J4 | 1 | 1LS10110 |
|---|---|---|---|
| **Type** | | | |
| VH780 | VH780J4 | | |
| **Material** | | | |
| Brass | | 1 | |
| Stainless steel | | 3 | |
| **Setpoint** | | | |
| Standard | | | 1LS10110 |
| Low | | | 2LS10110 |

# Flow monitors for insertion installation

## Paddles interchangeable, for marine applications

**Type** VH500

| Technical data | |
|---|---|
| **Switching function** | Change over contact |
| **Pressure rating (Test pressure)** | Max. 6 bar (10 bar)<br>Max. 10 bar (15 bar) |
| **Temperatures** | |
| **Medium** | Max. 100 °C |
| **Ambient** | Max. 85 °C |
| **Electrical data** | |
| **Max. contact rating** | 24 VDC, 5 A resistance load<br>4 A inductive load<br>60 VDC, 1 A resistance load<br>0.5 A inductive load<br>250 VAC, 10 A resistance load<br>10 A inductive load |
| **Degree of protection EN 60529** | IP54 |
| **Protection class EN 60730-1** | Class I |
| **Approvals** | |
| GL | Germanischer Lloyd, Type Approval<br>Certificate No. 89824-94HH and 94970-10HH |

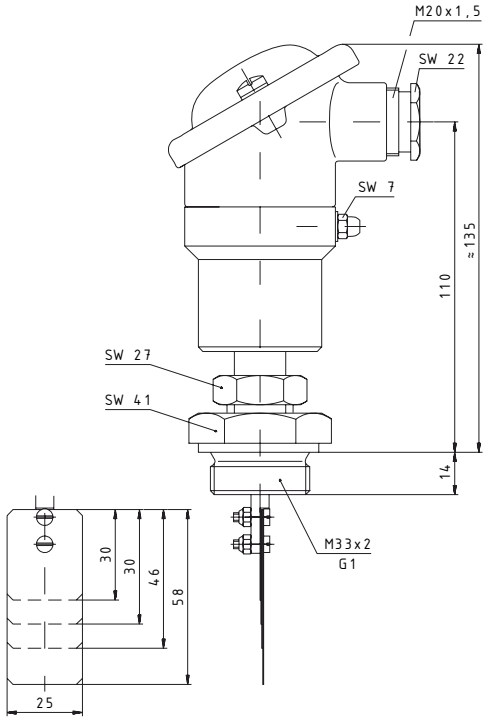
### Benefits

- Germanischer Lloyd Type Approval
- Suitable for water, oil, etc.
- Insertion installation into pipes or pipe tees DN 25...DN 50 or bigger
- Four paddles in different sizes included, selection in accordance to the pipe size
- Robust construction
- Vibration proofed to 4 g
- Wide set point ranges universal applicable
- Set point adjustment by paddle size selection and by adjustment screw
- Micro switch with high contact rating

# Setpoint ranges, dimensions and order code

| Size of pipe tee | Paddle to select** | Set point ranges [m³/h]* | |
|---|---|---|---|
| | | Increasing flow ON | Decreasing flow OFF |
| **DN 25** | 25 x 30 mm | 1.0...1.25 | 1.05...1.2 |
| **DN 32** | 25 x 38 mm | 1.7...2.05 | 1.6...1.95 |
| **DN 40** | 25 x 46 mm | 2.2...2.55 | 2.1...2.45 |
| **DN 50** | 25 x 58 mm | 3.25...3.85 | 3.15...3.75 |

* Water, 20 °C, horizontal pipe, tolerance ±15 %
** Higher set points selectable by use of smaller paddle sizes
Set points for bigger pipe sizes on request

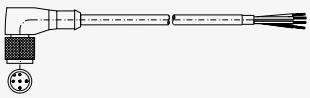



Flow direction

| Materials in contact with fluid | |
|---|---|
| **Body, process connection** | Brass 2.0401 |
| **Bellow system** | Stainless steel 1.4571 |
| **Paddles** | Stainless steel 1.4310 |
| **Flat gasket** | HD 300 |
| **O-ring** | NBR |

| Order example | VH500 | N | I3451R41 |
|---|---|---|---|
| **Type** | | | |
| VH500 | VH500 | | |
| **Pressure rating** | | | |
| 6 bar | | N | |
| 10 bar | | R | |
| **Process connection** | | | |
| G1 | | | I3451R41 |
| M33 x 2 | | | M3451M41 |

# Accessories

| Accessory part | Length | Order code | |
|---|---|---|---|
| **Connection cable with 4-pin cable socket M12 x 1, angle type molded lead, sheathing material PUR, shielded, ($T_{max}$ = 80 °C) - UL-approval** | 3 m<br>5 m<br>10 m | XVT 2053<br>XVT 2009<br>XVT 2070 |  |
| **4 pin cable socket M12 x 1 angle type, unassembled** | | VT 1331 |  |