

Push-in flow sensors // VTY

Push-in turbine with Hall effect sensor



Product

- Flow sensor with high-quality sapphire bearing
→ Long-term stability
- 100% final test in water flow test bench
→ Guarantees a high level of operational safety
- Compact dimensions
→ Easy to integrate
- Flow straighteners
→ Hardly any requirement for inlet and outlet sections
- Clever bearing system
→ Excellent signal-output at low flow
- Sophisticated bearing flushing
→ Particularly insensitive to contamination

Flushing bore



The wet bearing resulting from the increase in centrifugal forces ensures cooling and flushing out of any contaminants and thus a long service life.

Co-Engineering

- Product adaptation to customer requirements
- Provision of 2D and 3D data
- Provision of material test certificates acc. to customer product approvals in drinking water applications
- Test with the real customer hydraulics on SIKA test bench
→ Best possible measurement performance
→ Test reports available for customers

Can be integrated



Quality

- SIKA's application experience about 25 years with approx. 2.5 million VTY turbine sensors in field
- OEM product developed and produced in Germany

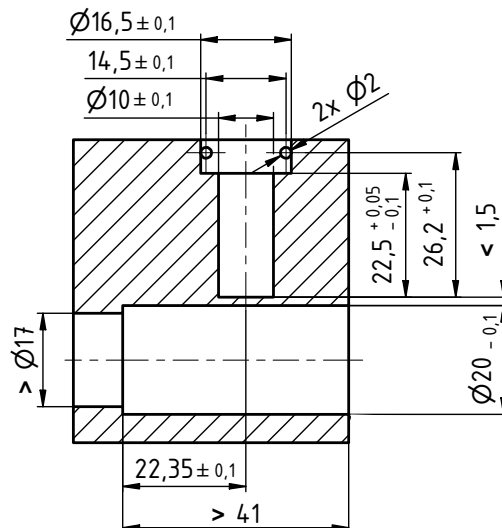
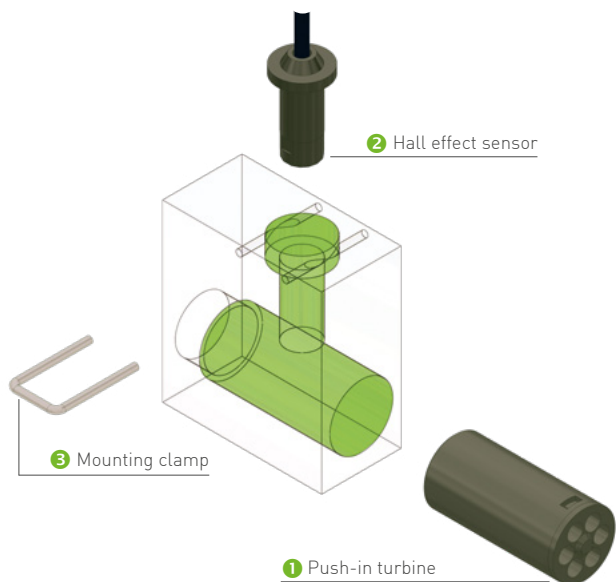
Service

- SIKA flow lab - various endurance tests
→ Test reports can be shared with our customers
- VTY is ideal for usage in drinking water applications




At the beginning of the project, the requirements for the flow sensor technology are coordinated. Based on this, the possibilities of clever integration concerning the flow sensor technology will be presented by SIKA via 2D and 3D data.



After the successful implementation of the project, SIKA supplies the components turbine capsule, hall-effect-sensor and mounting bracket. The OEM customer integrates these components into his fitting. From now on, the customer has an optimally adjusted and compact sensor unit

Installation space example VTY15



Technical data

① Push in turbine				
Type	VTY10	VTY15	VTY20	
Flow range [l/min]	1...30	1...45	1...60	
Flow range [US gpm]	0.26...7.9	0.26...11.9	0.26...16	
Accuracy	±1 % of range	±(1 % of range + 0.5 % of reading)	±(1 % of range ±1 % of reading)	
Repeatability	±1 %			
Signal output	From 0.7 l/min	From 0.8 l/min	From 0.8 l/min	
Signal output	From 0.18 US gpm	From 0.21 US gpm	From 0.21 US gpm	
Medium temperature	0...85 °C (non-freezing), temporary 95 °C	0...90 °C (non-freezing)		
Medium temperature	32...185 °F (non freezing), temporary 203 °F	32...194 °F (non-freezing)		
Nominal diameter	DN 10	DN15	DN20	
Nominal pipe size	3/8"	1/2"	3/4"	
Approvals				
				
NSF/ANSI 372 NSF/ANSI 61 		Available for: VY1030K50000YY	NSF/ANSI 372 NSF/ANSI 61 	
Plastics and O-ring meet the requirements of the KTW guideline or the elastomer guideline of the Federal Environment Agency.				

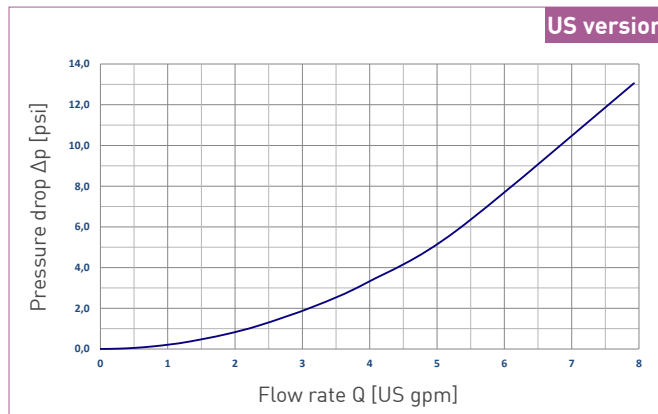
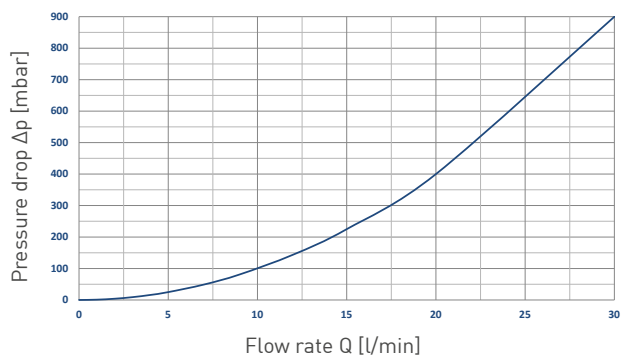
② Hall effect sensor			
Typ	VTY10	VTY15	VTY20
Nominal pulse rate	495 pulses/l	234 pulses/l	119 pulses/l
Nominal pulse rate	1874 pulses/gallon	886 pulses/gallon	450 pulses/gallon
Frequency output	NPN open collector	Square wave frequency signal, NPN open collector	Square wave frequency signal, NPN open collector
Power supply	4.5...24 VDC		
Electrical connection	80 mm PVC cable with Molex Mini-Fit® Jr. plug connector (part number 0039014036) optional: 0.5 m PVC cable or 1 m PVC cable		3.2 inch single wire with Molex Mini-Fit® Jr. plug connector (part number 0039014036) optional: 19.7 inch PVC cable or 39.4 inch PVC cable
Pressure rating			PN 16
Pressure rating			Max. 145 psi
Approvals			
Not in contact with fluid			
			
		NSF/ANSI 372 NSF/ANSI 61 	Available for: VY2060K5HNX1YY VY2060K5HN05YY
Plastics and O-ring meet the requirements of the KTW guideline or the elastomer guideline of the Federal Environment Agency.			

Stated values may vary depending on geometry of fittings.

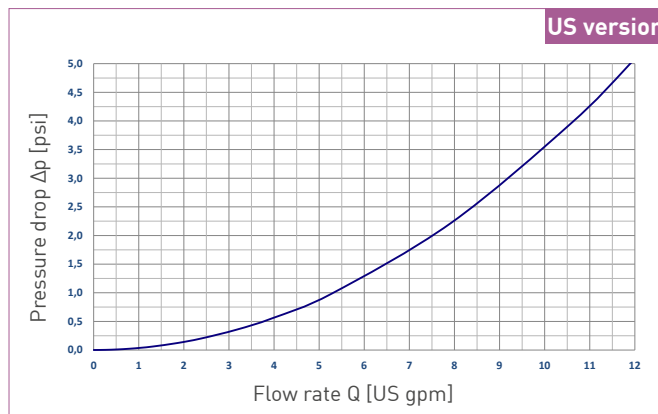
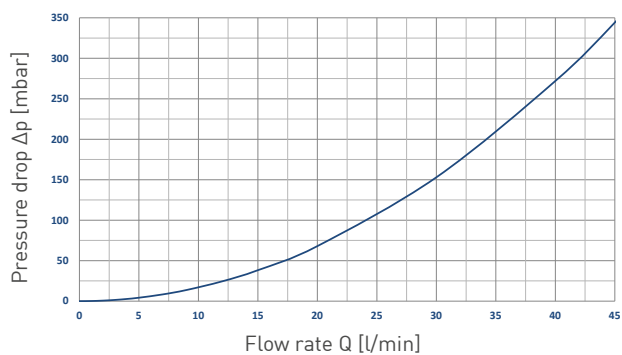
③ Mounting clamp			
Type	VTY10	VTY15	VTY20
Dimensions [mm]	16.5 x 25, Ø 2		11x18, Ø 1.5
Dimensions [inch]	0.65 x 0.98, Ø 0.08		0.43 x 0.71, Ø 0.06
Material	Stainless steel		

Typical pressure drop

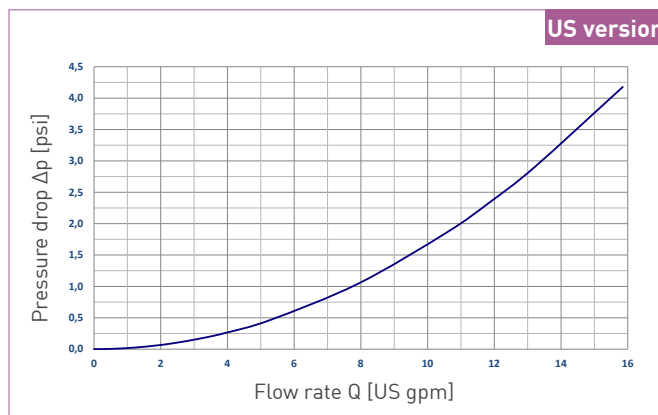
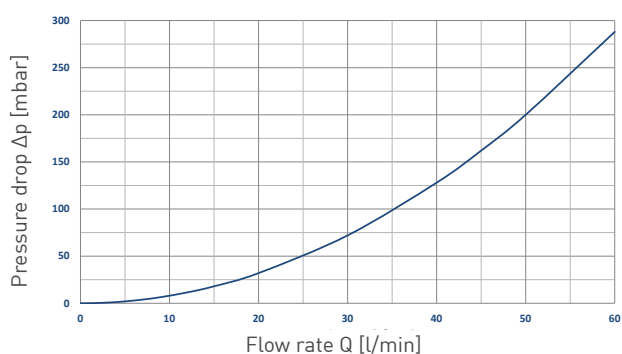
VTY10



VTY15



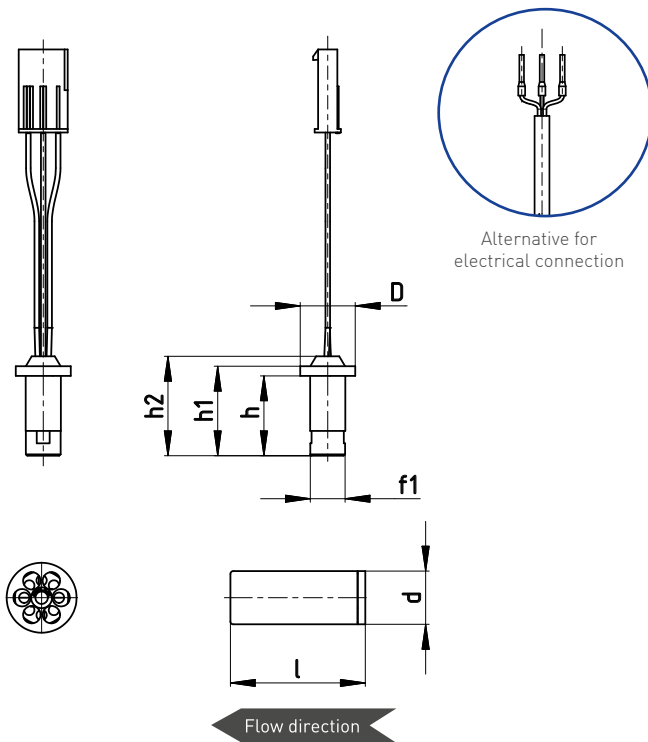
VTY20



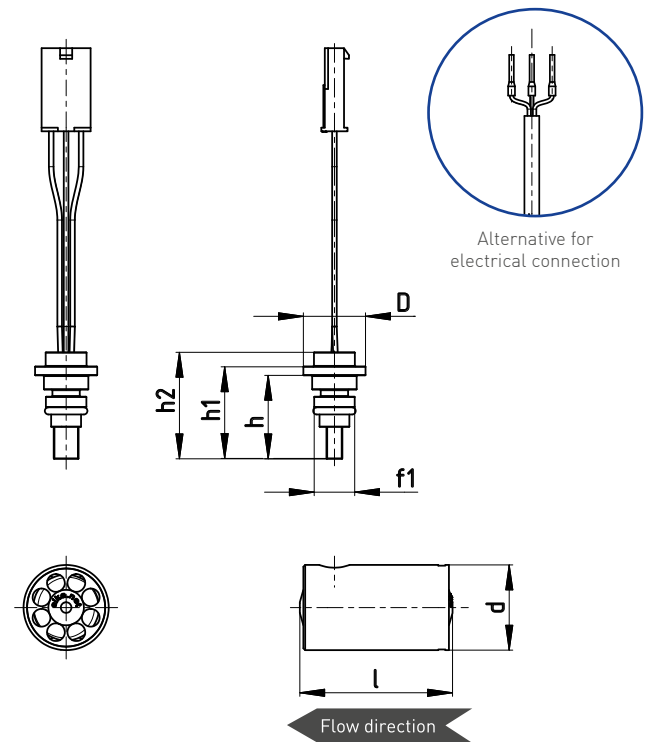
Pressure drop determined in SIKA standard pipe tee

Dimensions

VTY10 / VTY15



VTY20



Dimensions (mm)

VTY	D	h	h1	h2	f1	l	d
10	Ø 15.5	22.5	25.2	28	Ø 9.8	38	Ø 15
15	Ø 15.5	22.5	25.2	28	Ø 9.8	43	Ø 19.7

Dimensions (mm)

VTY	D	h	h1	h2	f1	l	d
20	Ø 17.5	23.5	25.8	30	Ø 11.4	43	Ø 24

Dimensions (inch)

VTY	D	h	h1	h2	f1	l	d
10	Ø 0.61	0.89	0.99	1.10	Ø 0.39	1.50	Ø 0.59
15	Ø 0.61	0.89	0.99	1.10	Ø 0.39	1.69	Ø 0.78

Dimensions (inch)

VTY	D	h	h1	h2	f1	l	d
20	Ø 0.69	0.93	1.02	1.18	Ø 0.45	1.69	Ø 0.94

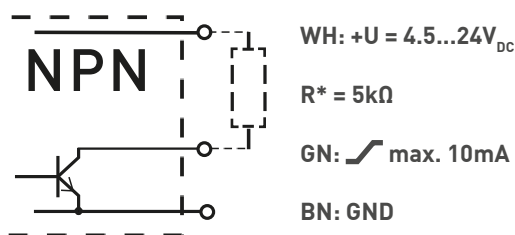
Materials

Materials in contact with fluid

Type	VTY10	VTY15	VTY20
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 Victrex™		
Hall effect sensor			
Sensor	Not in contact with fluid		PPE+PS Noryl™ 30 % glass fibre reinforced
O-ring	Not in contact with fluid		EPDM

Wiring and pin assignment

Wiring



* Recommended pull-up resistance R ~ 5kΩ

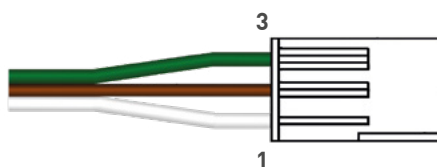
Colour code

WH = white
 GN = green
 BN = brown
 R = resistance

Pin assignment Molex Mini-Fit® plug



PIN3 = GN: max. 10mA
 PIN2 = BN: GND
 PIN1 = WH +U = 4.5...24V_{DC}



Article numbers

VTY10	
Component	Article number
VTY10 push-in turbine	VY1030K50000YY
Hall effect sensor	
80 mm (3.2 inch) PVC cable with Molex Mini-Fit® Jr. connector	VY1030K8HNX6YY
0.5 m (19.7 inch) PVC cable	VY1030K8HN05YY
1 m (39.4 inch) PVC cable	VY1030K8HN10YY
Mounting clamp	
Mounting clamp for VTY10 and VTY15	XVT3214
VTY15	
Component	Article number
VTY15 push-in turbine	VY1545K50000YY
Hall effect sensor	
80 mm (3.2 inch) PVC cable with Molex Mini-Fit® Jr. connector	VY1030K8HNX6YY
0.5 m (19.7 inch) PVC cable	VY1030K8HN05YY
1 m (39.4 inch) PVC cable	VY1030K8HN10YY
Mounting clamp	
Mounting clamp for VTY10 and VTY15	XVT3214
VTY20	
Component	Article number
VTY20 push-in turbine	VY2060K50000YY
Hall effect sensor	
80 mm (3.2 inch) PVC cable with Molex Mini-Fit® Jr. connector	VY2060K5HNX1YY
0.5 m (19.7 inch) PVC cable	VY2060K5HN05YY
1 m (39.4 inch) PVC cable	VY2060K5HN10YY
Mounting clamp	
Mounting clamp for VTY20	XVT3220
Service - Test in the test bench	
Article	Article number
Tests in provided customer hydraulics including a test report	VTYTESTREPORT01

Note minimum order quantities.