

→ VVX 15

→ VVX 25



VORTEX FLOW SENSORS



Contains products with:



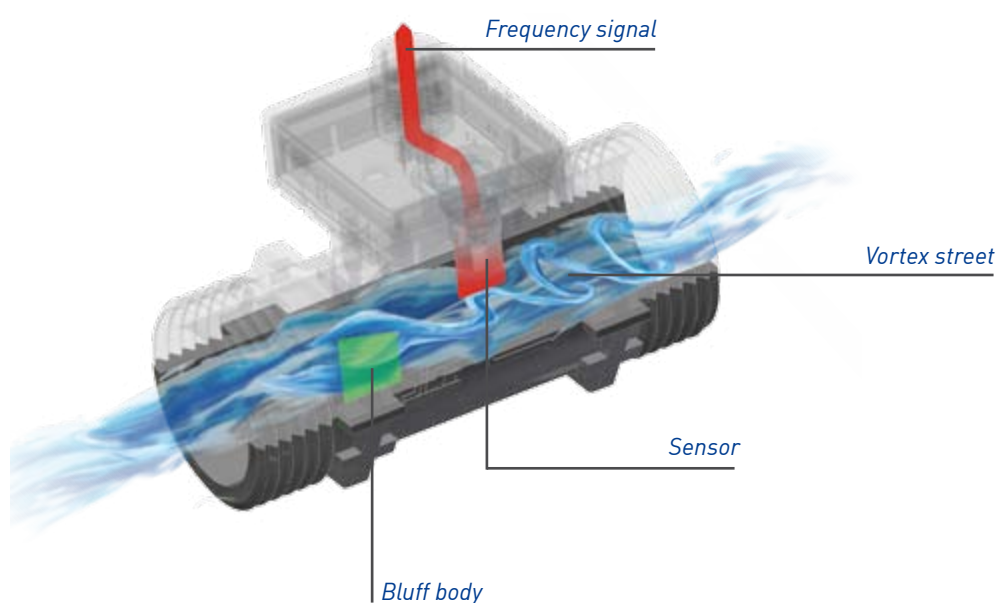
Vortices for precise flow measurement

Function

Alternate vortices rotating in opposite directions are generated behind a bluff body immersed in a flow. The vortices detach from the edges of the bluff body and form a Kármán vortex street in the fluid stream. The distance between the single vortices is constant. The frequency of the vortices flowing past a sensor depends on the flow rate and is proportional to the flow. The sensor detects these vortices which are then converted to an electrical frequency signal.

Some of the advantages of this measuring principle

- Minimal flow obstruction → low pressure drop
- Wide range of applications in terms of pressure, temperature and density
- Independent of the conductivity of the medium
- High long-term stability / no zero drift



SIKA Vortex flow sensors

Advantages



- Solid state flow sensor for liquids with no moving parts
→ no mechanical wear
- Rugged glass fibre reinforced plastic ensures highest strength and performance
- Completely encapsulated piezoceramic sensor to detect the vortices
→ thus no direct contact with the medium
- Wide measuring span (1:20)
- Temperature sensor integrated
- Output signals: an analogue voltage signal and / or pulse signal is available for the flow, and a resistance or analogue signal is available for the temperature.
- High interference resistance
- Wetted parts metal-free
- Thread connection or QuickFasten



Vortex flow sensors

Series VVX



Technical data	VVX15	VVX20	VVX25
Nominal diameter	DN 15	DN 20	DN 25
Flow range	2...40 l/min	5...80 l/min	7...150 l/min
Process connection	G¾-ISO 228 male, optional G½	QuickFasten	G 1¼-ISO 228 male, optional G 1
Inner diameter	Ø 13 mm	Ø 19 mm	Ø 25 mm
Accuracy	±2 % of full scale*		
Repeatability	±0.5 % of full scale**		
Pressure rating	PN 10		
Media temperature	Max. 90 °C		
Materials			
Body /tube	PPS Fortron® 40 % GF		
Sensor	ETFE Tefzel®		
Cover plate	PA 6.6		
O-ring	EPDM		
Approvals			
			
Option	Recognized component ETL according to UL & CSA standards		Recognized component ETL according to UL & CSA standards

Electrical data	Pulse output	Analogue output	
Output signal flow	Square wave signal pulse duty ratio 50:50 signal current max. 20 mA	Voltage signal 0.5...3.5 V	
	Pulse rate	Voltage rate	Scaling 0.5...3.5 V
→ VVX15	500 l/l (optional 3...1000 l/l)	0.07895 V/l/min	2...40 l/min
→ VVX20	200 l/l (optional 2...800 l/l)	0.04000 V/l/min	5...80 l/min
→ VVX25	100 l/l (optional 1...500 l/l)	0.02098 V/l/min	7...150 l/min
Output signal temperature	Pt1000 2 wire, class B NTC 10.74k, B 0/100 3450 none	Voltage signal 0.5...3.5 V corresponds to 0...90 °C Pt1000 2 wire, class B NTC 10.74k, B 0/100 3450 none	
Power supply	8...30 V DC or 5 V DC (±5 %)		
Current consumption	< 15 mA		
Electrical connection	5 pin plug M12 x 1 or RAST 2.5 plug		
Degree of protection EN 60529	M12 x 1 RAST 2.5	➔ IP 65***	➔ IP 20***

* Test conditions:

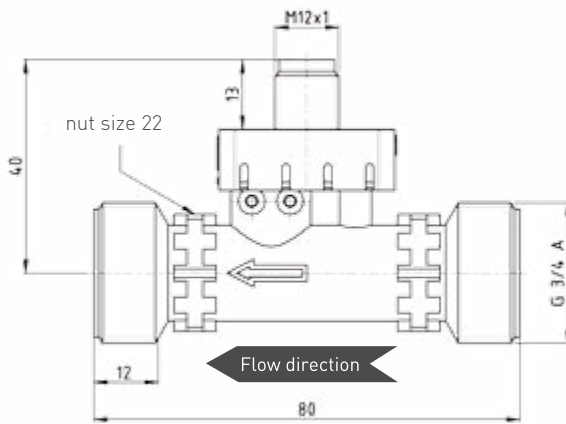
- Test medium water
- Media temperature 20...30 °C
- Inlet pressure 7...10 bar
- Defined inlet and outlet pipes (see operating manual)

** Measuring duration: 1 second

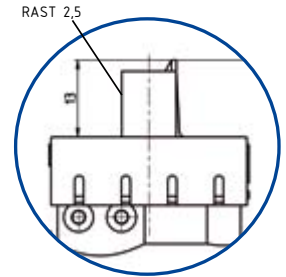
*** With attached cable socket

Dimensions

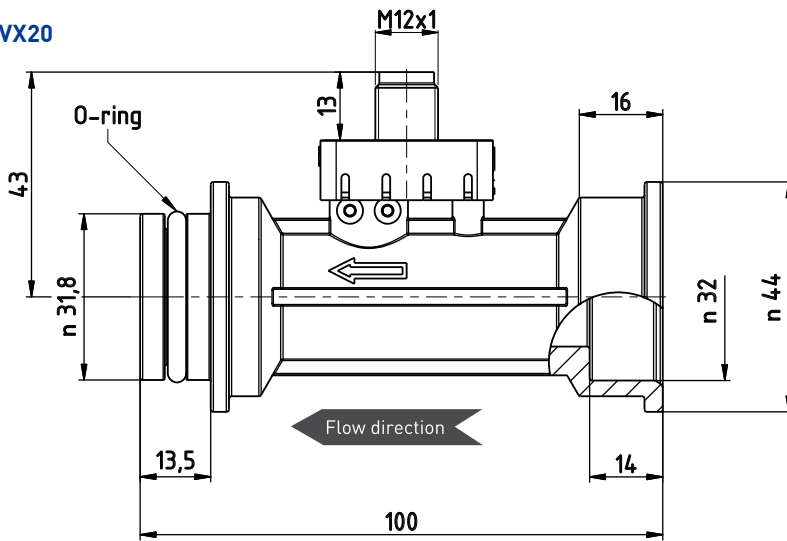
VVX15



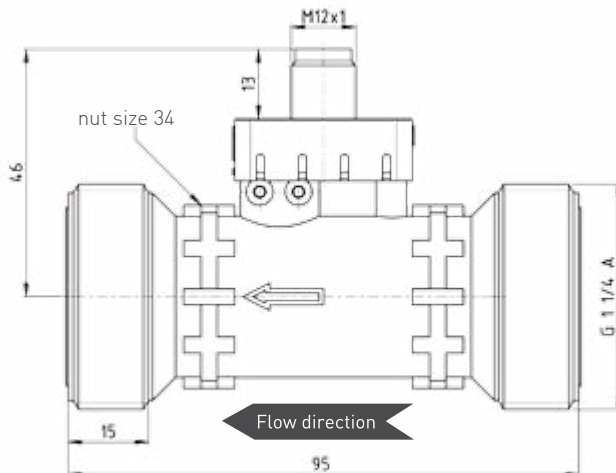
Alternative electrical connection



VVX20

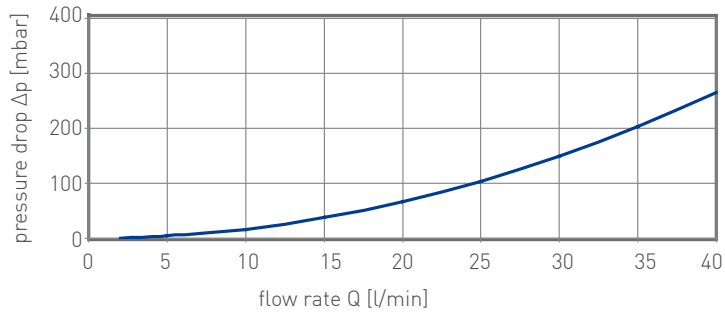


VVX25

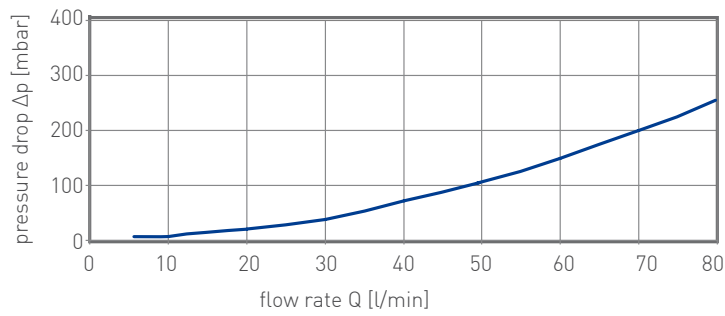


Typical pressure drop

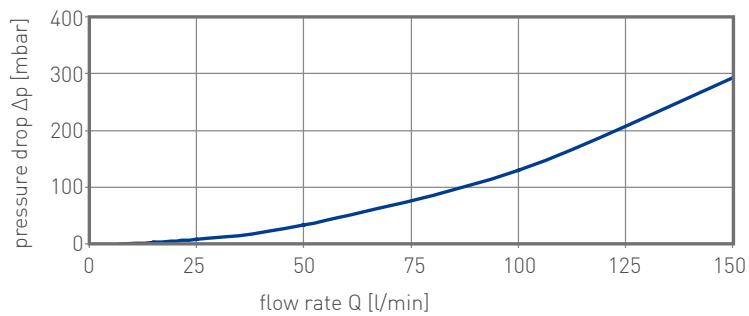
VX15



VX20



VX25



Order code

Pulse output

Order example	VVXA1S	G	A	RRRP	1	5	14
Nominal diameter							
DN 15	VXA1S		A				14
DN 20	VXC9S		B				2P
DN 25	VXB2S		B				16
Power supply							
8...30 V DC		G			1		
5 V DC		P			2		
Output signal temperature							
Pt1000				RRRP			
NTC 10.74K				RRRN			
none				0000			
Electrical connection							
5 pin plug M12 x 1						5	
RAST 2.5 plug						2	

Analogue output

Order example	VVXA1SNAU1	RP	1	5	14
Nominal diameter					
DN 15	VXA1SNAU1				14
DN 20	VXC9SNBUC				2P
DN 25	VXB2SNBU2				16
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		
Electrical connection					
5 pin plug M12 x 1				5	
RAST 2.5 plug				2	

Accessories

Accessories	Length	Order code	
Connection cable with 5 pin cable socket M12 x 1, angle type molded lead 5 x 0.34 mm ² , sheathing material PVC (T _{max} = 80 °C)*	1 m	XVWX 040	
	2 m	XVWX 051	
	3 m	XVWX 039	
	5 m	XVWX 041	
	10 m	XVWX 042	
Connection cable with 5 pin cable socket M12 x 1, molded lead 5 x 0.34 mm ² , sheathing material PVC, 4 pin Molex MicroBlade wire-to-board housing, (T _{max} = 80 °C)	1.5 m	XVWX 065	
PVC-Ribbon cable 5 x AWG24 with RAST 2.5 duomodul	1 m	XVWX 031	
	2 m	XVWX 021	

* Connection cable with UL approval on request

Accessories VVX15	Order code**	
Screw coupling G ¹ / ₂ , brass	BVWX1007	
Soldering coupling Ø 15 mm, brass	BVWX1008	

Accessories VVX25	Order code**	
Screw coupling R1, brass	BVWX1003	
Soldering coupling Ø 28 mm, brass	BVWX1004	
Bonding coupling Ø 25 mm, PVC	BVWX1005	
Screw coupling G 1, stainless steel 1.4571	BVWX1006	

** Supplied piecewise

