Product announcement

SiKA

Stainless steel - DN15, DN20, DN25

Multi-sensors - flow and temperature

Digital communication

Vortex flow sensors
Stainless steel

Vortex flow sensors // VVX // Stainless steel

for fluids

Patented design

VVX20
Stainless steel

Highlights

- Cost-saving IO-link
- Robust stainless steel design DN15 up to DN25
- Fast and accurate temperature measurement

Technical data	VVX15	VVX20	VVX25
Nominal diameter	DN 15	DN 20	DN 25
Process connection	G¾-ISO 228 male	G1-ISO 228 male	G 1¼-ISO 228 male
Inner diameter [mm]	Ø 13	Ø 19	Ø 25
Medium	Water and aqueous solution		
Pressure rating	PN 16		
Degree of protection EN 60529 with attached cable socket	IP65 and IP67		
Flow measuring			
Flow measuring range*	1.5...35 l/min 90...2,100 l/h	4...80 l/min 240...4,800 l/h	6.5...150 l/min 390...9,000 l/h
Accuracy* → at < 50 % of range → at > 50 % of range	±1 % of range ±2 % of reading		
Repeatability	±0.5 % or ±1 %, see temperature ranges ambient		
Temperature measuring			
Measuring range	0...100 °C		
Accuracy	±1 k		
Response time → t_{50} → t_{90}	approx. 1 s approx. 3 s		
Temperature ranges			
Medium	-20...90 °C (100 °C @ max. 80 % Qmax and 60 °C ambient)		
Ambient	-20...70 °C		
Storage	-20...70 °C		

The VVX15, VVX20 and VVX25 with stainless steel body is still under development, but we do not want to withhold our new product from you. Deviations and changes may occur, therefore please contact our product manager Andreas Sieber (a.sieber@sika.net) for up-to-date technical data.

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Technical data

Electrical data	
Electrical connection	4- or 5-pin plug connector M12 x 1
Power supply for output signal → Push Pull or NPN → NPN → 4...20 mA or 0...10 V → IO-Link with Push Pull	8...30 V DC 5 V DC (±5 %) 12...24 V DC (±10 %) 24 V DC (±10 %)
Current consumption	< 15 mA
Approvals	

*   Test conditions:
    → Test medium water
    → Media temperature 20...30 °C
    → Defined inlet and outlet pipes (see operating manual)
    Deviations with media of higher viscosity

Output signals

Four different versions available:

• Frequency output (❶)

• Analogue 0.5...3.5 V and frequency output (❶ + ❷)

• Analogue 0...10 V or 4...20 mA and frequency output (❶ + ❸)

• Frequency output with IO-Link (❶ + ❹)

Frequency output ❶	**VVX15**	**VVX20**	**VVX25**
Output signal flow for power supply → 8...30 V DC → 5 V DC	Frequency signal, square wave, pulse duty ratio 50:50, signal current max. 20 mA Push Pull or NPN open collector		
Pulse rate [1/l]	500	200	200
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 [l/min]	1.5...35	4...80	6.5...150
Voltage rate [V / l/min] → 0.5 V	0.08955	0.03947	0.02091
Output signal temperature	Voltage signal 0.5...3.5 V corresponds to 0...90 °C or none		

Analogue output ❸	**VVX15**	**VVX20**	**VVX25**
Output signal flow	0...10 V or 4...20 mA		
Scaling [l/min]	0...35	0...80	0...150
Voltage rate [V / l/min] → 0...10 V	0.28571	0.12500	0.06667
Current rate [mA / l/min] → 4...20 mA	0.45714	0.20000	0.10667

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Output signals

IO-Link ④	VVX15	VVX20	VVX25
IO-Link specification	Version 1.1		
IO-Link Device ID:	2		
Transmission type	COM2 (38.4 kBaud)		
Ready for operation	2 seconds after supply voltage is applied		
Min. cycle time	103 ms		
SIO mode:	Yes		
Profiles:	Device Identification, Device Diagnosis		
SDCI standard:	IEC 61131-9		
Required master port:	Class A		
Process data analog:	3		
Download IODD device description	https://www.sika.net or https://ioddfinder.io-link.com		

IO-Link functions

IO-Link functions	

Process data	Flow rate
	Temperature
	Device status
	    Device OK
	    Test sequence active
	    Flow rate out of specification
	    Temperature out of specification
	Average flow rate
	Cumulative volume
	max. flow rate
	min. and max. temperature

Other functions	Parameterisation of the flow and volume units Parameterisation of the pulse rate of the frequency output Setting an offset for the frequency output - "Lifesignal" (e.g. 4 Hz without flow) Creep suppression - shifting the start of the measuring range Test sequence - Simulates flow rate and temperature Reset to factory settings

Materials

Materials in contact with media	
VVX15, VVX20, VVX25	
Body / tube	Stainless steel 1.4581
Sensor	PFA
O-rings	EPDM
Immersion sleeve	Stainless steel 1.4571
Bluff body	PPS GF40

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SIKA Systemtechnik GmbH
Struthweg 7-9 // 34260 Kaufungen // Germany

www.sika.net

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