

DN 15 - DN 20 - DN 25 - DN 32 - DN 40

Stainless steel - Brass - Plastic

Multi-sensors - flow and temperature





# Vortex flow sensors

for flow measuring

MADE  
IN  
GERMANY

# Technical data

Common Technical data	
<b>Medium</b>	Water and aqueous solution
<b>Degree of protection EN 60529 with attached cable socket</b>	IP65 and IP67
Electrical data	
<b>Electrical connection</b>	4- or 5-pin plug connector M12 x 1
<b>Power supply for output signal</b> → 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 %)
<b>Current consumption</b>	< 15 mA
Temperature ranges	
<b>Medium</b>	-20...90 °C (non-freezing)      -4...194 °F (non-freezing)
<b>Ambient</b>	-20...70 °C      -4...158 °F
<b>Storage</b>	-20...70 °C      -4...158 °F
Approvals	
  <ul style="list-style-type: none"> <li>• Conforms to ANSI UL Std.61010-1</li> <li>• Cert. to CAN/CSA C22.2 No.61010-1</li> </ul>	

## VVX15 // VVX20 // VVX25 // Plastic

Technical data	VVX15	VVX20	VVX20 LowFlow	VVX20 Low Delta p	VVX25
<b>Nominal diameter</b>	DN 15	DN 20			DN 25
<b>Nominal pipe size</b>	½"	¾"			1"
<b>Process connection</b>	G¾-ISO 228 male	G1-ISO 228 male, incl. O-rings or QuickFasten without O-rings			G 1¼-ISO 228 male
<b>Process connection</b>	½" NPT	¾" NPT or QuickFasten			1" NPT
<b>Pressure rating</b>	PN 10			Max. 145 psi	
<b>Inner diameter</b>	Ø 13 mm    0.5"	Ø 19 mm		0.75"	Ø 25 mm    1"
Flow measuring					
<b>Flow range*</b>	2...40 l/min	5...80 l/min	2...65 l/min	2.5...85 l/min	7...150 l/min
<b>Flow range*</b>	0.53...10 US gpm	1.3...21 US gpm	0.53...17.2 US gpm	0.66...22.4 US gpm	2...40 US gpm
<b>Accuracy*</b>					
→ at < 50 % of range	±2 % of range	±0.75 % of range	±(1 % of range + 0.5 % of reading)	±0.8 % of range	±2 % of range
→ at > 50 % of range	±2 % of range	±1.5 % of reading	±(1 % of range + 0.5 % of reading)	±1.6 % of reading	±2 % of range
<b>Repeatability</b>	±1 % at -20...5 °C (-4...41 °F) ambient temperature, ±0.5 % at 5...70 °C (41...158 °F) ambient temperature				
Frequency output					
<b>Pulse rate [1/l]</b>	500 (optional 3...1000)	200 (optional 2...800)			200 (optional 1...500)
<b>Pulse rate [pulses/US Gallon]</b>	2000 (optional 12...4000)	750 (optional 8...3000)			400 (optional 4...2000)
Temperature measuring					
<b>Measuring range</b>	-20...90 °C				
<b>Measuring range</b>	-4...194 °F				
<b>Accuracy</b>	±1 k				
<b>Response time</b>	t <sub>50</sub> : approx. 10 s, t <sub>90</sub> : approx. 21 s				
Materials in contact with media					
<b>Body / tube</b>	PPS GF40				
<b>Sensor</b>	ETFE or PFA (VVX20 LowFlow and VVX20 Low Delta p)				
<b>O-rings</b>	EPDM				

## VVX15 // VVX20 // VVX25 // Stainless steel

Technical data	VVX15		VVX20		VVX25	
Nominal diameter / pipe size	DN 15	½"	DN 20	¾"	DN 25	1"
Process connection	G¾-ISO 228 male	½" NPT	G1-ISO 228 male	¾" NPT	G 1¼-ISO 228 male	1" NPT
Inner diameter	Ø 13mm	0.5"	Ø 19mm	0.75"	Ø 25mm	1"
Pressure rating	PN 16	Max. 232 psi	PN 16	Max. 232 psi	PN 16	Max. 232 psi
<b>Flow measuring</b>						
Flow measuring range*	1.5...35 l/min		3.5...85 l/min		6...145 l/min	
Flow measuring range*	0.4...9.2 US gpm		0.9...22.4 US gpm		1.6...38.3 US gpm	
Accuracy*	±1 % of range at < 50 % of range, ±2 % of reading at > 50 % of range					
Repeatability	±0.5 % or ±1 %					
<b>Frequency output</b>						
Pulse rate [1/l]	500		200		200	
Pulse rate [pulses/US Gallon]	2000		750		400	
<b>Temperature measuring</b>						
Measuring range	0...100 °C	32...212 °F	0...100 °C	32...212 °F	0...100 °C	32...212 °F
Accuracy	±1 k					
Response time	t <sub>50</sub> : approx. 1 s, t <sub>90</sub> : approx. 3 s					
<b>Materials in contact with media</b>						
Body / tube	Stainless steel 1.4581					
Sensor	PFA					
O-rings	EPDM					
Immersion sleeve	Stainless steel 1.4571					
Bluff body	PPS GF40					

## VVX32 // VVX40 // Brass // Stainless steel

Technical Data	VVX32		VVX40	
Nom. diameter / pipe size	DN 32	1¼"	DN 40	1½"
Process connection	G 1½-ISO 228 male	1½" NPT	G 2-ISO 228 male	2" NPT
Inner diameter	Ø 32mm	1.3"	Ø 40mm	1.6"
Pressure rating	PN 16	Max. 232 psi	PN 16	Max. 232 psi
<b>Flow measuring</b>				
Flow measuring range*	12...250 l/min		22...400 l/min	
Flow measuring range*	3.2...66 US gpm		5.8...106 US gpm	
Accuracy*	±2 % of range			
Repeatability	±1 % at -20...5 °C (-4...41 °F) ambient temperature, ±0.5 % at 5...70 °C (41...158 °F) ambient temperature			
<b>Frequency output</b>				
Pulse rate [1/l]	100		50	
Pulse rate [pulses/US Gallon]	400		200	
<b>Temperature measuring</b>				
Measuring range	0...90 °C	32...194 °F	0...90 °C	32...194 °F
Accuracy	±1 k			
Response time	t <sub>50</sub> : approx. 1 s, t <sub>90</sub> : approx. 3 s			
<b>Materials in contact with media</b>				
Body / tube	Brass CW617N-DW or stainless steel 1.4581			
Sensor	ETFE			
O-rings	EPDM			
Immersion sleeve	Brass CW724R or stainless steel 1.4571			
Bluff body	PPS GF40			

- \* Test conditions:  
 → Test medium water  
 → Media temperature 20...30 °C / 68...86 °F  
 → Defined inlet and outlet pipes (see operating manual)  
 Deviations with media of higher viscosity

# VVX Model selection form

Nominal Diameter / Nominal pipe size	Material	Process Connection
<input type="checkbox"/> DN15 (2-40 l/min) <input type="checkbox"/> ½" (0.53...10 US gpm)	<input type="checkbox"/> PPS-GF40	<input type="checkbox"/> G¾ male thread, including O-rings <input type="checkbox"/> ½" NPT
<input type="checkbox"/> DN15 (1.5-35 l/min) <input type="checkbox"/> ½" (0.4...9.2 US gpm)	<input type="checkbox"/> Stainless Steel	
<input type="checkbox"/> DN20 (5-80 l/min) <input type="checkbox"/> ¾" (1.3...21 US gpm)	<input type="checkbox"/> PPS-GF40	<input type="checkbox"/> G1 male thread, including O-rings <input type="checkbox"/> Quickfasten without O-rings <input type="checkbox"/> ¾" NPT
<input type="checkbox"/> DN20 (2-65 l/min) <input type="checkbox"/> ¾" (0.53...17.2 US gpm)		
<input type="checkbox"/> DN20 (2.5-85 l/min) <input type="checkbox"/> ¾" (0.66...22.4 US gpm)		
<input type="checkbox"/> DN20 (3.5-85 l/min) <input type="checkbox"/> ¾" (0.9...22.4 US gpm)	<input type="checkbox"/> Stainless Steel	<input type="checkbox"/> G1 male thread, including O-rings <input type="checkbox"/> ¾" NPT
<input type="checkbox"/> DN25 (7-150 l/min) <input type="checkbox"/> 1" (2...40 US gpm)	<input type="checkbox"/> PPS-GF40	<input type="checkbox"/> G1¼ male thread, including O-rings <input type="checkbox"/> 1" NPT
<input type="checkbox"/> DN25 (6-145 l/min) <input type="checkbox"/> 1" (1.6...38.3 US gpm)	<input type="checkbox"/> Stainless Steel	
<input type="checkbox"/> DN32 (12-250 l/min) <input type="checkbox"/> 1¼" (3.2...66 US gpm)	<input type="checkbox"/> Brass <input type="checkbox"/> Stainless Steel	<input type="checkbox"/> G1½ male thread, including O-rings <input type="checkbox"/> 1½" NPT
<input type="checkbox"/> DN40 (22-400 l/min) <input type="checkbox"/> 1½" (5.8...106 US gpm)	<input type="checkbox"/> Brass <input type="checkbox"/> Stainless Steel	<input type="checkbox"/> G2 male thread, including O-rings <input type="checkbox"/> 2" NPT

## Four different variants available

- Variant I: Frequency output (1)
- Variant II: Analogue 0.5...3.5 V and frequency output (1 + 2)
- Variant III: Analogue 0...10 V or 4...20 mA and frequency output (1 + 3)
- Variant IV: Frequency output with IO-Link (1 + 4)

	<input type="checkbox"/> Variant I (1)	<input type="checkbox"/> Variant II (1+2)	<input type="checkbox"/> Variant III (1+3)	<input type="checkbox"/> Variant IV (1+4)
<b>Flow output signal</b>	Frequency output 1	0.5...3.5V 2 Frequency NPN 1	<input type="checkbox"/> 4...20mA 3 + Frequency Push-pull 1 <input type="checkbox"/> 0...10V 3 + Frequency Push-pull 1	IO-Link 4 Frequency Push-pull 1
<b>Temperature output signal</b>	<input type="checkbox"/> Pt 1000* <input type="checkbox"/> NTC 10.74K* <input type="checkbox"/> None	<input type="checkbox"/> 0.5...3.5V* <input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> IO-Link
<b>Power supply</b>	<input type="checkbox"/> 8...30VDC, output Push-pull <input type="checkbox"/> 5VDC, output NPN	<input type="checkbox"/> 8...30VDC <input type="checkbox"/> 5VDC	<input type="checkbox"/> 12...24VDC	<input type="checkbox"/> 24VDC
<b>Version</b>	<input type="checkbox"/> Standard version <input type="checkbox"/> ETL-approval version	<input type="checkbox"/> Standard version <input type="checkbox"/> ETL-approval version	<input type="checkbox"/> Standard version <input type="checkbox"/> ETL-approval version	<input type="checkbox"/> Standard version <input type="checkbox"/> ETL-approval version

\* Not available for VVX20 QuickFasten and VVX20 LowFlow