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Flow transmitter Screw volumeter OMNIPLUS-VHSX

IO-Link

- **Measures and monitors viscous media (oil) 1.4..1500 l/min**
- **High accuracy**
- **Low viscosity dependence**
- **Can be used up to 40,000 mm²/s (cSt)**
- **Analogue output and two limit switches**

Characteristics

The flow transmitters of the OMNIPLUS-VHSX series are suitable for liquid, viscous, lubricating media (e.g. lubricating oil).
The measurement is carried out volumetrically by two interlocking screws, which rotate in opposite directions driven by the flowing medium.
Due to the volumetric measurement method, the devices operate almost independently of viscosity.
A sensor located outside the flow chamber detects the screw flanks and generates a flow-proportional frequency signal.A pulse thus corresponds to a certain measuring volume. There are no magnets in the flow space. The devices can be operated bi-directionally. The flow direction is detected by the electronics and shown on the display. The integrated totalizer works adding or subtracting depending on the direction of flow.
The integrated electronics have an LCD display as well as an analog output and two switching outputs and can be easily configured by the user.
The bodies of the devices are made of aluminum, the connections are made of either aluminum or steel. SAE flanges, which simplify installation in the pipeline, are available as accessories.

In addition to the version presented here, other versions are available:

LABO-VHSX	without display, adjustable analog output
VHSX	direct frequency output, not adjustable

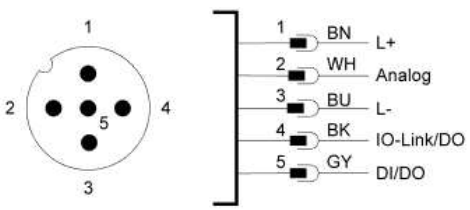
Specifications

Meas. principle	Screw volumeter
Nominal size	DN25...DN50
Connection type	Female thread G 1...G 2
Ranges	see table
Measurement uncertainty	±1 % of reading at 20 mm²/s in the specified measuring range

Compressive strength	with aluminium ports	PN160
	with aluminium ports and SAE flange	PN350
	with steel port with or without SAE flange	PN350
Media	Oil or other non-aggressive, lubricating fluids	
Media temperature	-20...+85 °C	
Ambient temp.	-20...+70 °C	
Storage temperature	-25...+85 °C	
Materials wetted with media	Housing	aluminium
	Ports	aluminium optional steel
	Measuring screws	steel
	Gaskets	FKM
Supply voltage	18...30 V DC	
Current consumption	< 130 mA (SIO mode, unloaded outputs)	
IO-Link specification	IO-Link revision	V1.1
	Bit rate	COM2 (38400 bit/s)
	Minimum cycle time	20 ms
	SIO mode	yes
	Port class	A compatible
	Block para-meterization	yes
	Data storage	yes
Analog output	Current:	4...20 mA 0...20 mA
	Voltage:	0...10 V 2...10 V 0...5 V 1...5 V 0.5...4.5 V
Switching outputs	2 transistor outputs push-pull, parameterizable as NPN o.C. Short-circuit and reverse polarity resistant Iout = 100 mA max per output Configurable on the device as ● Limit switch ● Frequency output ● Pulse output ● Signal output for preset counter	
Display	1.2" graphic LCD (transflective) 128 x 64 pixels backlight white, red on alarm message	
Electr. connection	M12x1 circular connector, 5-pin	
Protection class	IP65 / IP67	
Conformity	CE	

Connection diagram

connector M12 x 1 pin assignment



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Product information

OMNIPLUS-VHSX

Ranges

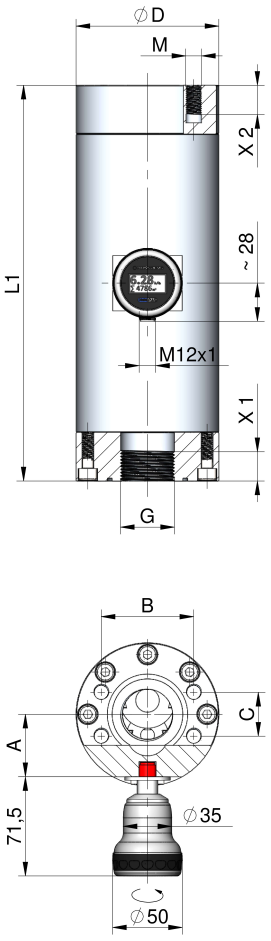
OMNIPLUS-VHSX-		Nominal size	Range 1...100 % Q_{nom}	Q_{max}	Primary signal		Pressure loss appr. at Q_{nom} in bar				
					Volume/Pulse	Pulses/Liter	at viscosity in mm²/s				
			l/min	l/min	cm³		2	22	50	170	1000
...025...0140	●	DN 25	1.4... 140	200	13.10	76.340	0.5	0.9	1.5	3.0	15
...032...0350	●	DN 32	3.5... 350	500	29.00	34.480	0.8	2.0	2.8	5.8	26
...040...0550	❍	DN 40	5.5... 550	800	48.58	20.590	1.4	2.6	4.2	8.4	30
...040...0800	●		8.0... 800	1200	72.00	13.890	1.7	3.1	4.8	9.7	32
...050...1000	❍	DN 50	10.0...1000	1600	103.63	9.650	2.0	3.5	5.3	11	35
...050...1500	●		15.0...1500	2200	133.00	7.519	2.5	4.5	6.4	14	48

● = standard ❍ = option

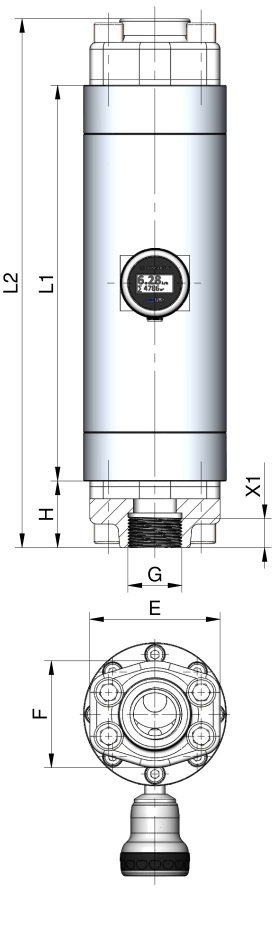
Dimensions and weights

OMNIPLUS-VHSX-		G	X1	L1	ØD	A	M	X2	B	C	L2	H	E	F	Weight with ports made of aluminium kg	Weight with ports made of steel kg
...025...0140	●	G 1	20	220	88	49.0	12	20	57.1	27.8	324	52	80	69	3.74	5.06
...032...0350	●	G 1¼	22	285	103	55.0	14	22	66.7	31.6	381	48	94	77	6.65	8.80
...040...0550	❍	G 1½	24	332	122	58.8	16	24	79.4	36.5	448	58	106	89	10.80	13.90
...040...0800	●			340	138	66.5					456				14.50	18.80
...050...1000	❍	G 2	33	396	155	71.0	20	35	96.8	44.4	544	74	135	116	21.00	28.00
...050...1500	●			405	168	77.3					553				25.30	33.50

without SAE flange



with SAE flange



Order codes

OMNIPLUS-VHSX - [1.] [2.] [3.]

● = standard ❍ = option

1.	**Nominal size**						
	025		DN 25 - G 1				
	032		DN 32 - G 1¼				
	040		DN 40 - G 1½				
	050		DN 50 - G 2				
2.	**Port material**						
	A	●	aluminium anodized				
	S	❍	steel				
3.	**Measurement range**						
	0140	●	1.4... 140 l/min				●
	0350	●	3.5... 350 l/min			●	
	0550	❍	5.5... 550 l/min		●		
	0800	●	8.0... 800 l/min		●		
	1000	❍	10.0...1000 l/min	●			
	1500	●	15.0...1500 l/min	●			

Accessories

SAE flanges

Order code		Weight (per pair)
SAE-VHSX-025	1 Paar für VHSX-025	2.3 kg
SAE-VHSX-032	1 Paar für VHSX-032	3.2 kg
SAE-VHSX-040	1 Paar für VHSX-040	4.6 kg
SAE-VHSX-050	1 Paar für VHSX-050	9.6 kg

Cable with circular connector M12x1 (not included)