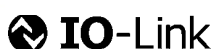# Flow transmitter Gear wheel meter OMNIPLUS-VHZ

IO-Link

- Measures and monitors viscous media (oil)
- Measurement ranges 0.02...150 l/min
- High accuracy
- Low viscosity dependence
- Can be used up to 40,000 mm²/s (cSt)
- Nominal diameter DN8...DN25
- Analog output and two limit switches

Characteristics

The flow transmitters of the OMNIPLUS-VHZ series are suitable for liquid, viscous, lubricating media (e.g. lubricating oil). The measurement is carried out volumetrically by two interlocking gears, which rotate in opposite directions driven by the flowing medium. Due to the volumetric measuring method, the devices work almost viscosity-independent.

A sensor located outside the flow chamber detects the tooth flanks and generates a flow-proportional frequency signal. A pulse thus corresponds to a certain measuring volume. There are no magnets in the flow chamber. The devices can be operated bi-directionally. The flow direction is detected by the electronics and shown in the display (not at nominal diameter DN8!). The integrated totals counter works adding or subtracting depending on the flow direction.

The integrated electronics have an LCD display as well as an analog output and two switching outputs and are easily configurable by the user.

The bodies of the devices are made of aluminum or stainless steel.

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

LABO-VHZ   without display, adjustable analog output
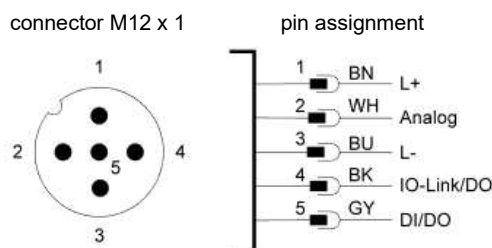**VHZ**   direct frequency output, not adjustable

Specifications

Measuring principle	Gear wheel meter (volumetric)
Nominal size	DN8...DN25
Connection type	Female thread G ¼...G 1
Ranges	see table
Measurement uncertainty	±3 % of reading at 20 mm²/s in the specified measuring range
Compressive strength	see table

Media	Oil or other non-aggressive, lubricating fluids	
Particle size	max. 20 µm (VHZ-008) max. 30 µm (VHZ(O)-010 / 020 / 025)	
Media temperature	-10...+80 °C	
Ambient temp.	-10...+70 °C	
Storage temperature	-30...+80 °C	
Materials wetted with media	Housing	Aluminium or stainless steel 1.4404
	Gear wheels	Stainless st. 1.4462
	Bearing	Iglidur X (OMNIPLUS-VHZ-008GK: stainless st. 1.4037 / 1.4016 / PVD coated)
	Gaskets	FKM
	Sight window	Glass (VHZO-020GA only)
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

Pin	Color	Signal
1	BN	L+
2	WH	Analog
3	BU	L-
4	BK	IO-Link/DO
5	GY	DI/DO

ZUBOVÝ PRŮTOKOMĚR
OMNIPLUS-VHZ

Ranges, compressive strengths and weights

OMNIPLUS-		Nominal size	Ranges Q_{nom} l/min	Start-up l/min	Resolution Volume/Pulse cm³	Resolution Pulses/Liter	Compressive strength	Weight kg	Housing material
...VHZ-008GA	●	DN 8	0.02… 2	0.004	0.04	25000	PN240	0.7	Aluminium
...VHZ-008GK	❍						PN190	1.7	Stainless steel
...VHZ-010GA	●	DN 10	0.10… 6	0.01	0.20	5000	PN200	0.7	Aluminium
...VHZ-010GK	❍						PN200	1.7	Stainless steel
...VHZ-020GA	●	DN 20	0.50… 50	0.04	2.00	500	PN200	1.8	Aluminium
...VHZO-020GA	❍						PN100	1.8	Aluminium
...VHZ-025GA	●	DN 25	3.00...150	0.1	5.222	191.5	PN100	6.7	Aluminium

● = standard ❍ = option

Dimensions

VHZ-008/010

VHZ(O)-020

VHZ-025

	H	G	X
VHZ-008	56	G1/4	15,5
VHZ-010	50	G3/8	14
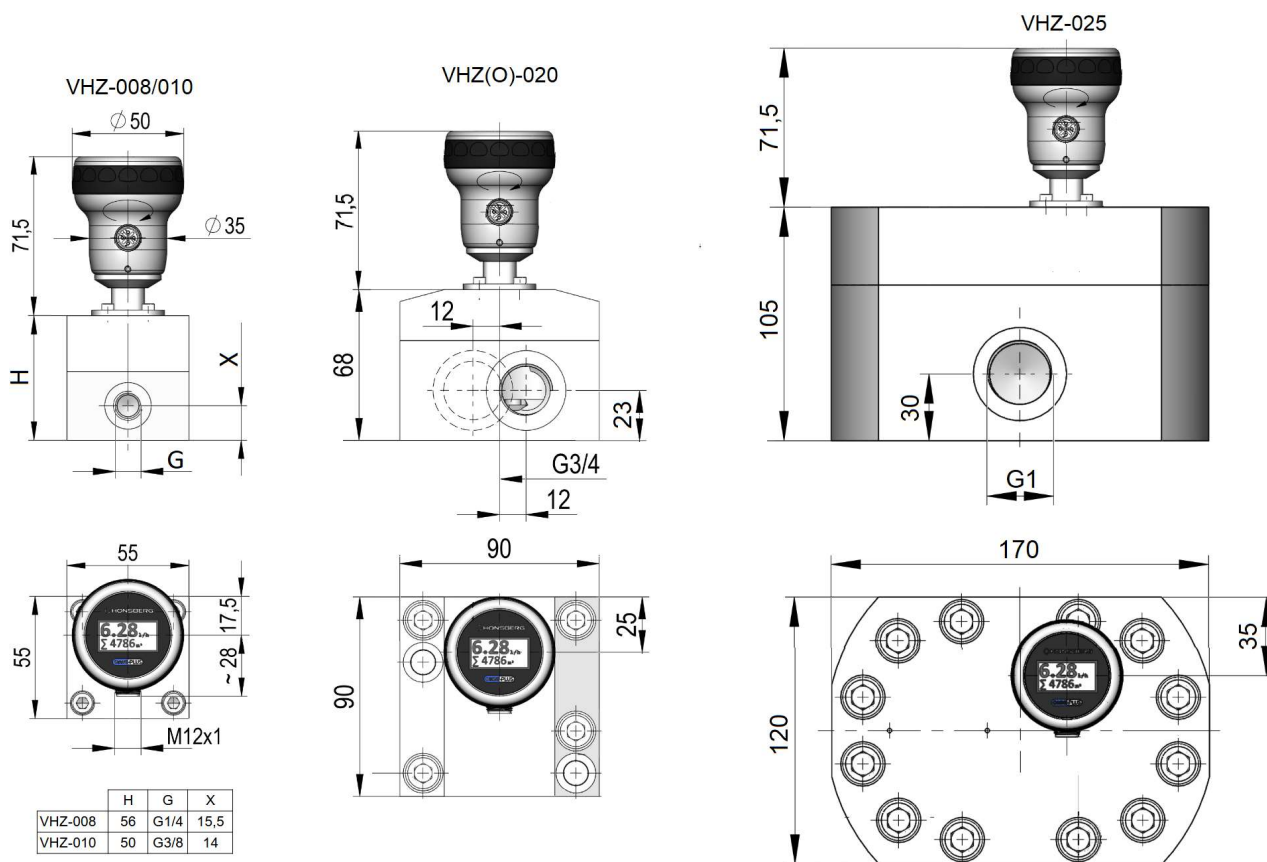
Order codes

Designation		Nominal size	Housing material	Q_{max}
OMNIPLUS-VHZX-008GA004	●	DN8	aluminium	2 l/min
OMNIPLUS-VHZX-008GK004	❍	DN8	stainless steel	2 l/min
OMNIPLUS-VHZX-010GA010	●	DN10	aluminium	6 l/min
OMNIPLUS-VHZX-010GK010	❍	DN10	stainless steel	6 l/min
OMNIPLUS-VHZX-020GA065	●	DN20	aluminium	50 l/min
OMNIPLUS-VHZXO-020GA065	❍	DN20	aluminium (with sight glass)	50 l/min
OMNIPLUS-VHZX-025GA150	●	DN25	aluminium	150 l/min

● = standard ❍ = option

Accessories

Cable with circular connector M12x1 (not included)