

### GENERAL CHARACTERISTICS

The Flowmeter VHZ was especially developed for the metering of viscous liquids. The units work volumetrically as gear transmitters with high accuracy and full viscosity stability.

Gear wheel flow meter, with provides a linear frequency signal by flow proportional revolution of a gear wheel and sensing by a field biased Hall sensor. Viscosity compensated by volumetric operation.

- \* operation independent of viscosity
- \* light and compact design
- \* for cost sensitive application

Female thread G1/4 - G1 aluminium / stainless steel



### TECHNICAL DATA

	G	Type	PN bar	metering range l/min	frequency	weight kg
aluminium	G1/4	VHZ-008GA	200	0.02 - 2	0.04cm <sup>3</sup> =1Puls - max.833 Hz at 2l/min	0.5
	G3/8	VHZ-010GA	200	0.1 - 6	0.20cm <sup>3</sup> =1Puls - max.500 Hz at 6l/min	0.5
	G3/4	VHZ-020GA	200	0.5 - 50	2.00cm <sup>3</sup> =1Puls - max.417 Hz at 50l/min	1.6
	G3/4	VHZO-020GA	100	0.5 - 50	2.00cm <sup>3</sup> =1Puls - max.417 Hz at 50l/min	1.6
	G1	VHZ-025GA	100	3.0 - 150	5.22cm <sup>3</sup> =1Puls - max.479 Hz at 150l/min	6.3
s.s.	G1/4	VHZ-008GK	160	0.02 - 2	0.02cm <sup>3</sup> =1Puls - max.833 Hz at 2l/min	1.5
	G3/8	VHZ-010GK	200	0.1 - 6	0.20cm <sup>3</sup> =1Puls - max.500 Hz at 6l/min	1.5

accuracy	±3 % full scale (in reference to 20 mm <sup>2</sup> /s)
reproducebility	±0.3%
media temperature	-25..80°C optionally -25..120°C (only 2-wire-execution DN10-25)

### MOUNTING

Any installation position is possible and the the flow direction is independent.

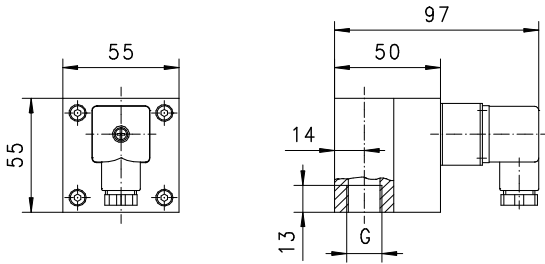
Take care of a clean pipe line. With larger particles in flow the employment of a filter of 30µm for protection is recommended.

### MATERIALS

	VHZ-...GA	VHZ-010-025GK	VHZ-008GK
housing	aluminium anodized	stainless steel 1.4404	stainless steel 1.4404
gear and axle	stainless steel 1.4462	stainless steel 1.4462	stainless steel 1.4462
bearings	Iglidur X	Iglidur X	stainless steel 1.4037/1.4016 /PVD plated
seal	viton	viton	Viton
sight glass	glass ( only VHZO )		

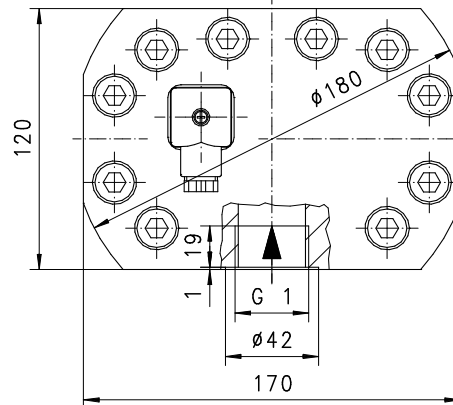
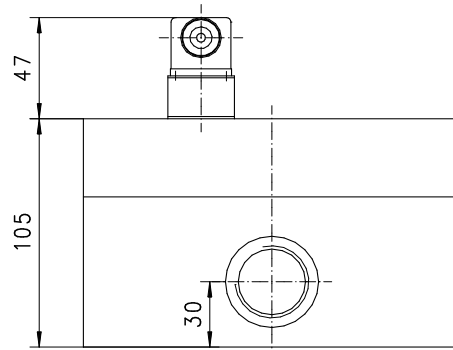
**DIMENSIONS**

**VHZ-008 / VHZ-010**

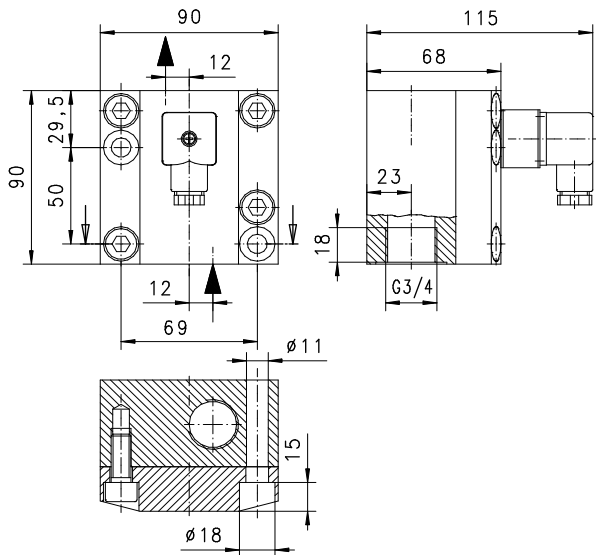


VHZ-008 G1/4  
VHZ-010 G3/8

**VHZ-025**



**VHZ-020**



**FUNCTIONAL DIAGRAMS**

**Noise level / flow rate**

**VHZ-008**

The noise level of the VHZ-008 is <50db (A) in case of 2 l/min.

**VHZ-010**

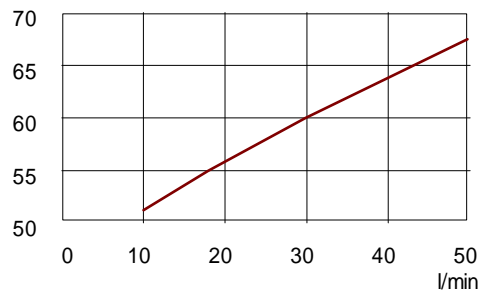
The noise level of the VHZ-010 is <50db (A) in case of 6 l/min.

**VHZ-025**

The noise level of the VHZ-025 is <70db (A) in case of 150 l/min.

**VHZ-020**

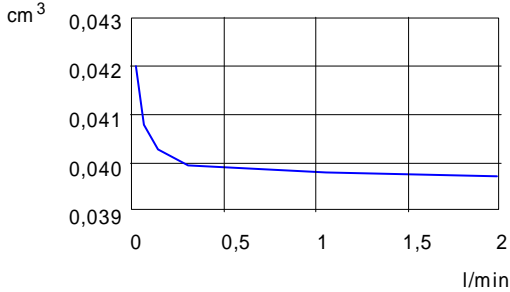
db (A)



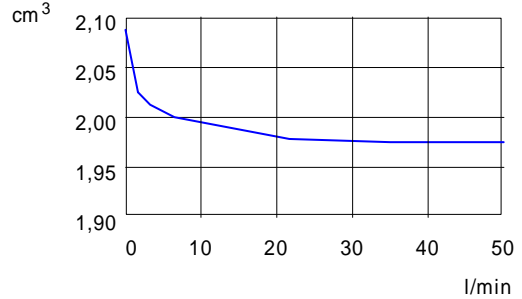
**Gearwheel volume / flow rate**

The volumetric displacement per gearwheel is a dimension for the for the functional accuracy of the unit. The max. tolerance related to full range is  $\pm 3\%$ . All diagrams are based on a viscosity of  $20\text{mm}^2/\text{s}$ .

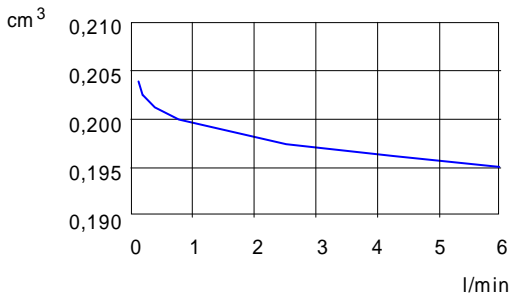
**VHZ-008**



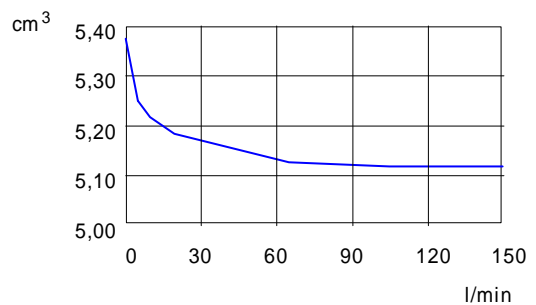
**VHZ-020**



**VHZ-010**

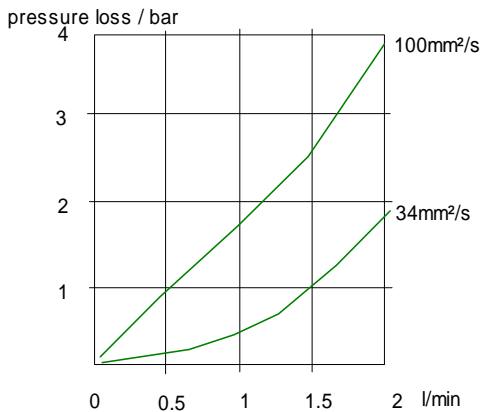


**VHZ-025**

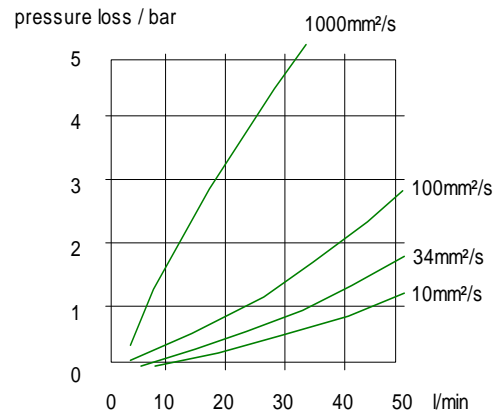


**pressure loss / viscosity / flow rate**

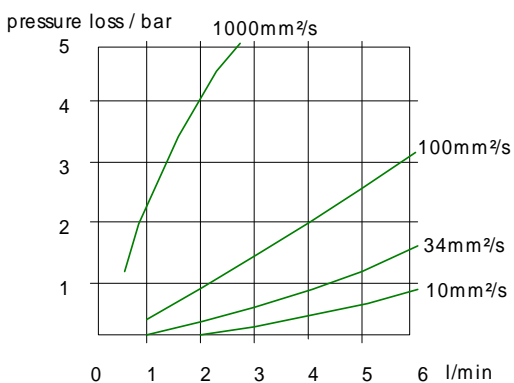
**VHZ-008**



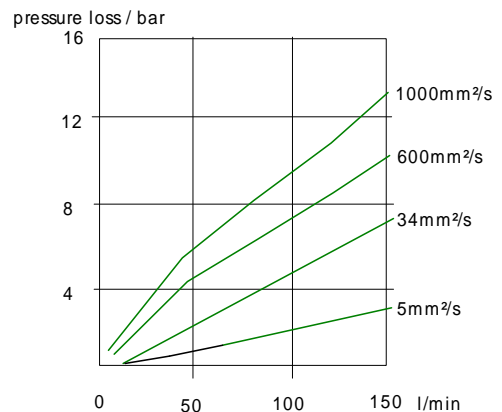
**VHZ-020**



**VHZ-010**



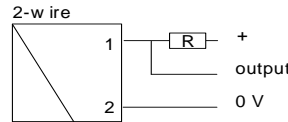
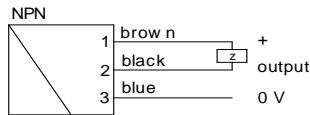
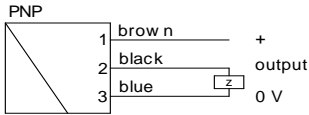
**VHZ-025**



**ELECTRICAL DATA**

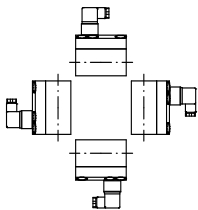
PNP/NPN-Execution	VHZ-010 to 025	VHZ-008
supply voltage	10..30 V DC	24V±10%
quiescent current	<25mA without load	<30mA without load
short-circuit proof	yes	yes
Kurzschlussfest	yes	ja
connection	plug DIN 43650-A	
Schutzart	IP 65	

2-Wire-Execution	VHZ-010 to 025	VHZ-008
supply voltage	4,5..24 VDC (V <sub>12</sub> )	12 VDC
quiescent current	low 6mA exemplary high 6mA + V <sub>12</sub> /330Ohm	7mA 14mA
short-circuit proof	yes	no
connection	plug DIN 43650-A	
Schutzart	IP 65	

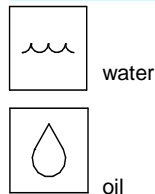


Please be sure that there is the right power supply before you connect the device.

**MOUNTING POSITION**



**METERING SUBSTANCES**



**NOMENCLATURE**

For combination see table "technical data"

VHZ-	008	G	A	002	P	basic type specification
VHZ-						● Flowmeter
VHZO-						● Flowmeter with sight glass ( only VHZO-020 - 100 bar )
	008					● nominal diameter DN 8 - G1/4
	010					● nominal diameter DN 10 - G3/8
	020					● nominal diameter DN 20 - G3/4
	025					● nominal diameter DN 25 - G1
		G				● female thread
			A			● aluminium
			K			○ stainless steel DN 8 (160 bar) and DN 10
				002		● 0.02 - 2 l/min (VHZ-008)
				006		● 0.1 - 6 l/min (VHZ-010)
				050		● 0.5 - 50 l/min (VHZ-020)
				150		● 3 - 150 l/min (VHZ-025)
					P	● PNP output
					N	● NPN output
					Z	○ 2-wire
					E	● output at suburb electronics (for axamples omni-VHZ)
Sonderoption						○ media temperature -20°C..120°C
VARIO						(only 2-Wire-Execution VHZ-010 and VHZ-020 without sight glass)
Zubehör						⊕ EX amplifier EEV1 product information 80.1.EEV1.
PLUS						Universal preset counter EEZ904 product information 83.1.EEZ904.

special applications: Switching output, frequency converter, current output and omni/flex processor

**COMBINATIONS**

**omni-VHZ**

local electronic unit,  
2xNPN and PNP switch  
4(0)..20mA output  
graphical LCD display  
with flashing LED  
program ring



**further transformers**

- Flex switching and frequency exit, 0..10V or 4..20mA, pnp, npn
- ESA1 electronic monitoring unit
- ESK2 2 switchpoints - supply 24 V DC
- ESK3 1 switchpoint - supply 230 V AC  
conceived for safety-relevant applications
- EFFS switch output
- EFFI current output 4(0)..20mA
- EFFF frequency output



All technical changes reserved

●BASIC Standard ○BASIC Programme option □VARIO Special option ⊕ PLUS Accessories ✗ not recommendable