VM-01

Gear-Wheel Volume Sensor for Viscous Fluids, for OEM Applications

Features

/ For media with viscosities between 20. . .4000 cSt
/ Excellent price/performance ratio
/ Aluminium housing, steel gear-wheels
/ Low pressure drop
/ High pressure resistance
/ Convenient dim. for assembly

Description:

The VM-01 series of the flowmeter measuring sensor consists of a par of toothed wheels which is driven by the flow of fluid according to the working principle of a gear-wheel pump. The bearing for the measuring sensor is designed as a radial and axial sliding contact bearing (VM-01.2: ball bearing). The gear-wheel movement is scanned by means of a magneto-resistive sensor that is hermetically separated from the measuring chamber. The gear-wheel diameter of the VM-01 is ideal due to its low resistance to flow and especially low sound level.

Application:

The gear-wheel flowmeters of the VM-01 series are mainly used for measuring consumption, control of filling operations and for monitoring lubrication points. Due to their small dimensions and, particularly, due to the low pricing, they are suitable for OEM applications.

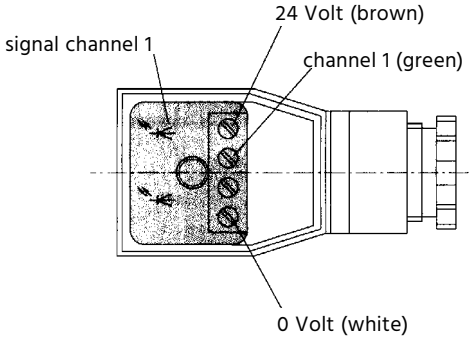
Versions and Ranges:

Type	Op. range (l/min)	Viscosity range (cSt)	Connection	Geo. tooth volume cm^3	Resolution (pulse/l)
VM-01.0	0.02. . .4	20. . .4000	G 1/4" IG	0.04	25,000
VM-01.1	0.25. . .10	20. . .4000	G 3/8" IG	0.2	5,000
VM-01.2	0.16. . .16	20. . .3000	G 3/8" IG	0.245	4,082
VM-01.3	1. . .65	20. . .4000	G 3/4" IG	2	500
VM-01.4	1. . .200	20. . .4000	G 1" IG	5.222	191.5

Materials:

Type	Housing	Gear-wheels	Bearing
VM-01.0.1	aluminium	st. steel 1.4462	ball bearing
VM-01.0.2	st. steel 1.4404	st. steel 1.4462	ball bearing
VM-01.1.1	aluminium (hartcoated)	st. steel 1.4462	plastic sliding bearing
VM-01.1.2	st. steel 1.4404	st. steel 1.4462	plastic sliding bearing
VM-01.2	aluminium	steel	ball bearing
VM-01.3	aluminium (hartcoated)	steel 1.7139	multi-layer sliding bearing
VM-01.4	aluminium (hartcoated)	steel 1.7139	ball bearing

Electrical Connection:



Technical Specifications:

Pressure /

	max. Pressure	Pressure peak
VM-01.0.1:	200 bar	240 bar
VM-01.0.2:	160 bar	190 bar
VM-01.1:	160 bar	200 bar
VM-01.2:	160 bar	200 bar
VM-01.3:	160 bar	200 bar
VM-01.4:	80 bar	100 bar

Temperature range / -10. . .+80°C

Accuracy /

VM-01.0:	± 2.0% ab 20mm^2/s
VM-01.1:	± 3.0% ab 20mm^2/s
VM-01.2:	± 0.3% ab 20mm^2/s
VM-01.3:	± 2.5% ab 20mm^2/s
VM-01.4:	± 1.0% ab 20mm^2/s

Weight /

VM-01.0.1:	0.5 kg
VM-01.0.2:	1.2 kg
VM-01.1.1:	0.5 kg
VM-01.1.2:	1.2 kg
VM-01.2:	0.7 kg
VM-01.3:	1.9 kg
VM-01.4:	6.0 kg

Supply voltage / 12. . .30 VDC, polarity-reversal-proof

Output signal / rectangular pulses, ≥ 0,8 U_B, scan ratio 1:1 (± 15%)

Protection class / IP 65

Power consumption / 0.9 $W_{max.}$

Mounting position / beliebig

Sound pressure level / L_A = < 60dB (A)

Ordering Codes:

Order number | **VM-01.** | **1.** | **2**

VM-01 Gear-Wheel Volume Sensor

Operating ranges /
0 = 0.02. . .4 l/min
1 = 0.25. . .10 l/min
2 = 0.16. . .16 l/min
3 = 1. . .65 l/min
4 = 1. . .200 l/min

Material /
1 = aluminium
2 = stainless steel (VM-01.0 and VM-01.1 only)

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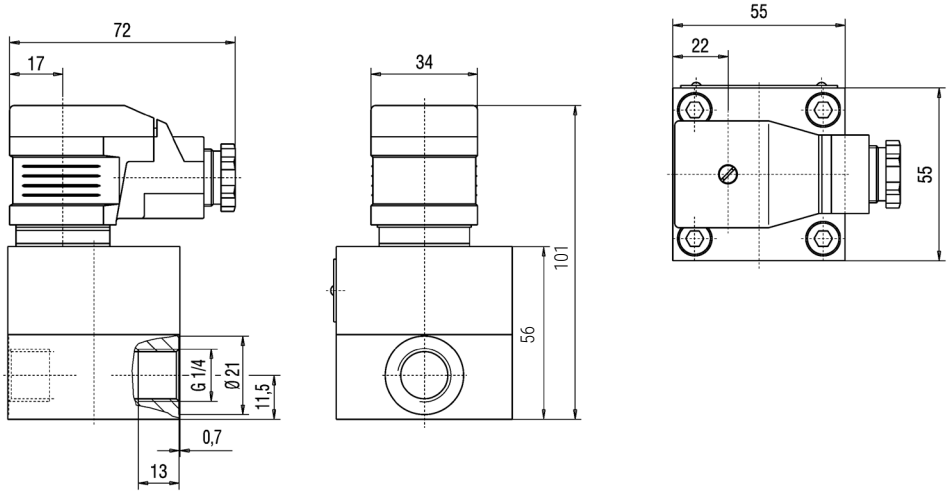
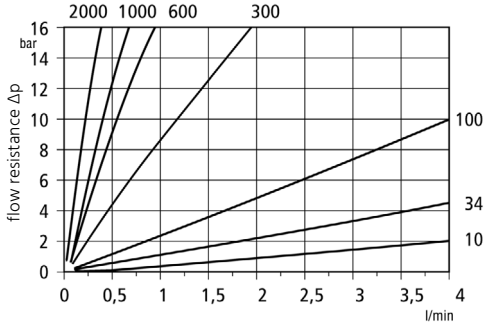
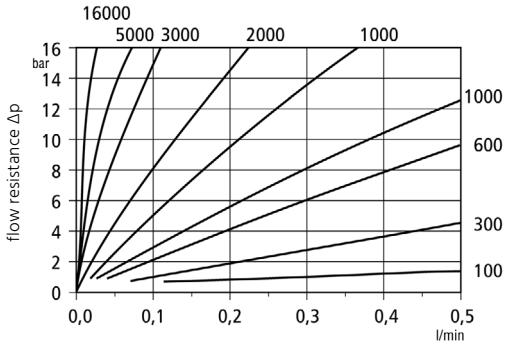
Dimensions in mm:

VM-01.0

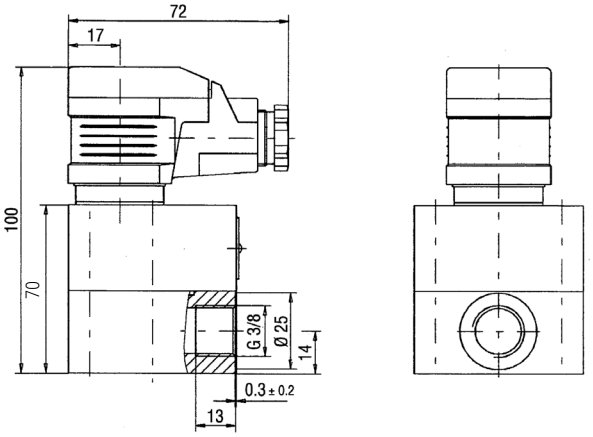


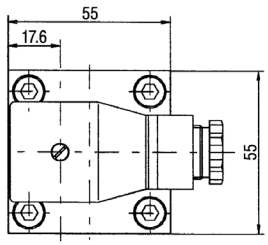
VM-01.0 Δp-curve – flow resistance at viscosity





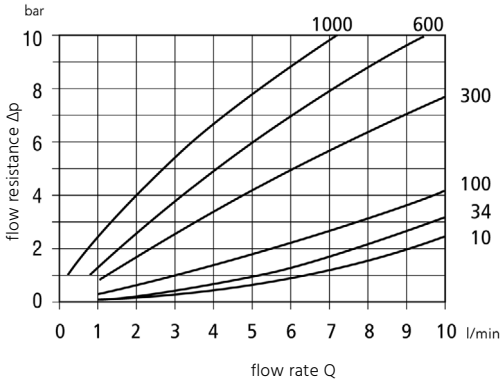
VM-01.1
VM-01.2



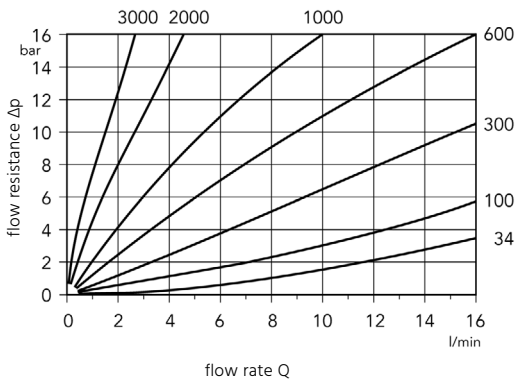


VM-01.2: same as VM-01.1, however, housing 55 x 65 mm, height 108 mm

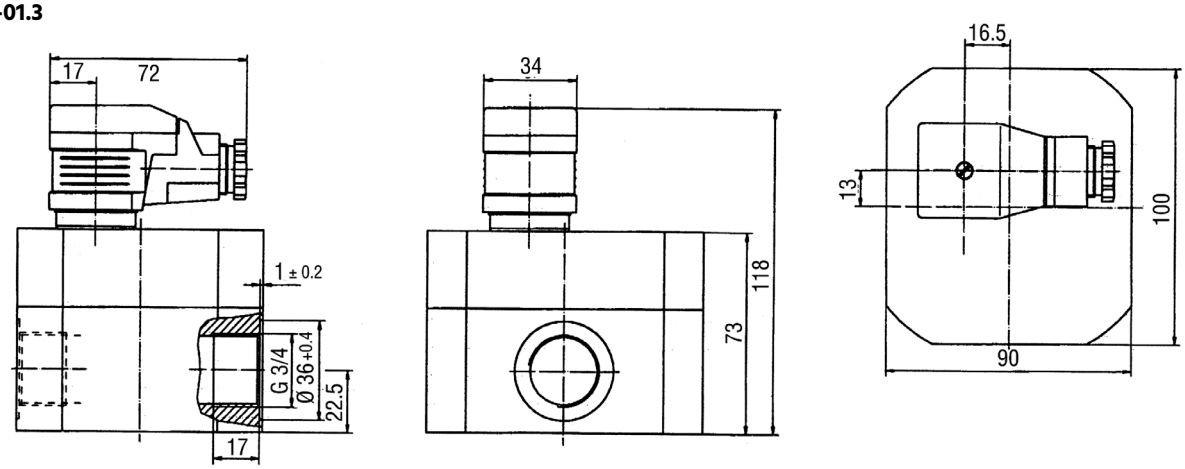
VM-01.1 Δp-curve – flow resistance at viscosity



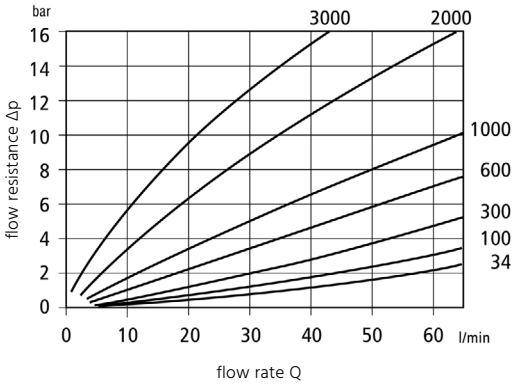
VM-01.2 Δp-curve – flow resistance at viscosity



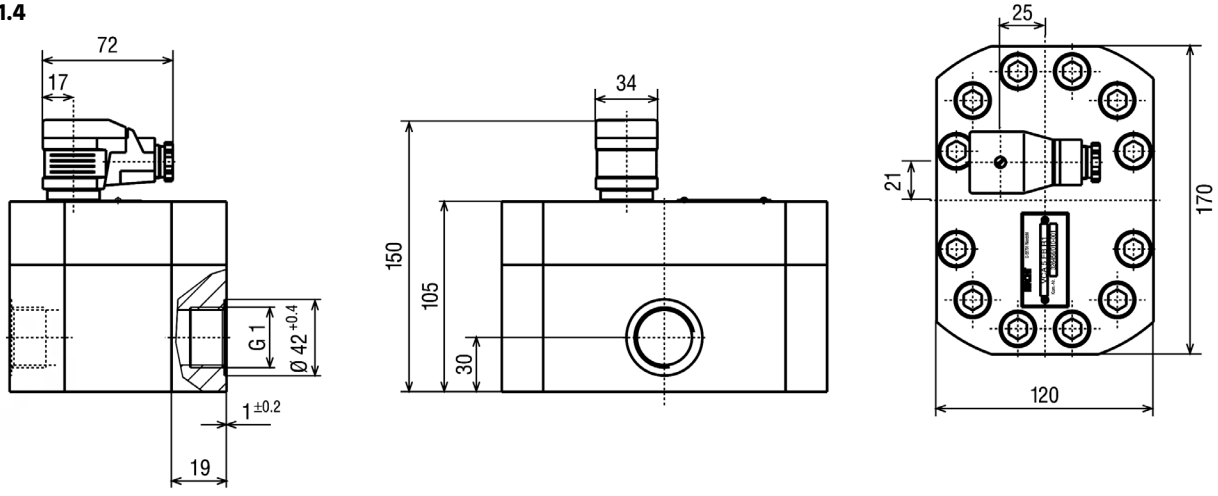
VM-01.3



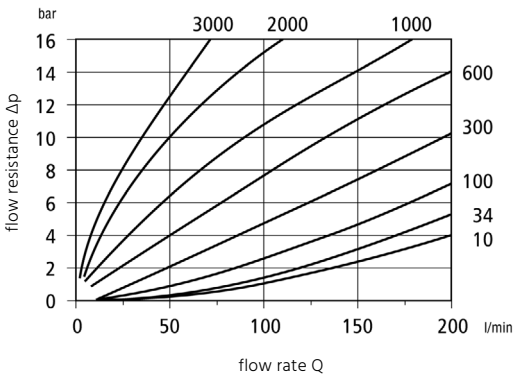
VM-01.3 Δp-curve – flow resistance at viscosity



VM-01.4



VM-01.4 Δp-curve – flow resistance at viscosity



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