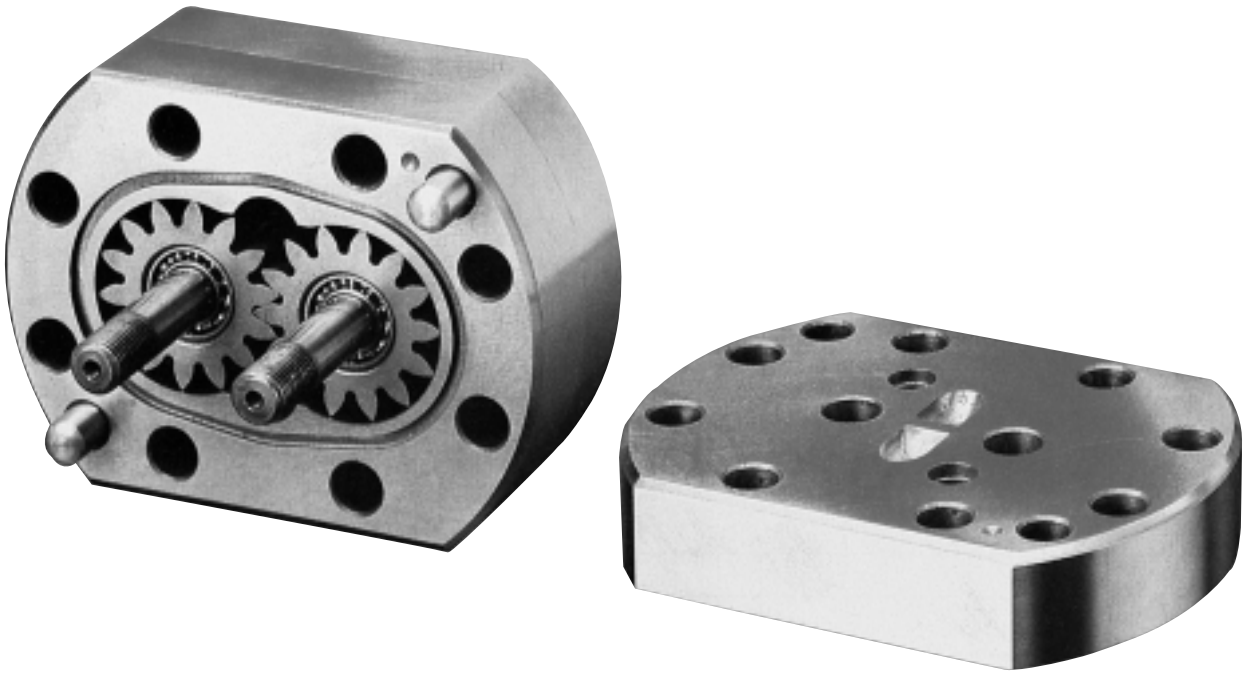
Gearwheel Flow Meter

for Viscous Media's

Model: ZDM

- Measuring ranges: 0,002-2 to 1,0-300 l/min. liquid
- Measuring accuracy: ± 0,3% of measured value
- $p_{max.}$ 630 bar; $t_{max.}$ 150°C
- Viscosity range: 1-100.000 mm²/s
- Connection: G¼ to G 1½ female
- Material: St.St. or continuously cast
- Output: pulses



Description

KOBOLD model ZDM measuring instruments have been developed for measuring and batching highly viscous media with maximum measuring accuracy. They are suited for applications with pressures of up to 630 bar and temperatures up to 150°C, and high viscosities of 1 mm²/s to 100 000 mm²/s.
The devices are based on the well-known principle of positive displacement. The measuring principle comprises a pair of gearwheels fitted in the housing that operate with maximum precision. The tooth spaces along with the housing wall form a fully enclosed measuring chamber. The forced medium causes the gearwheels to rotate uniformly. A precisely defined volume of liquid is transported by the measuring chambers. The rotary motions of the gearwheels are converted to a frequency signal by inductive transducers. A pulse signal proportional to the volume of liquid is generated.
Two transducers, positioned opposite staggered each other by 1/4 tooth pitch, are used as standard. The dual-channel pulse formation gives better resolution of the measured values and allows detection of the direction of flow.
The pulse signals can be displayed by downstream electronics as volumetric flow or converted to an analogue output.

Examples of Suitable Liquids

Petroleum, diesel oil, mineral oil, paints, greases, polyurethane, isocyanate, adhesives, pastes, resins, waxes etc.

Benefits

- Higher viscosity range
- (1 to 100 000 mm²/sec)
- Measuring inaccuracy (±0.3 % of measured value)
- High degree of repeatability

Areas of Application

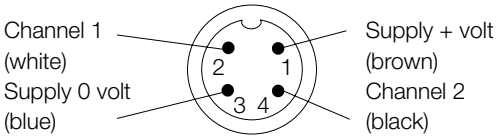
- Car industry
- Hydraulics
- Chemical industry
- Plastics processing

Not suitable for acetone

Technical Specifications

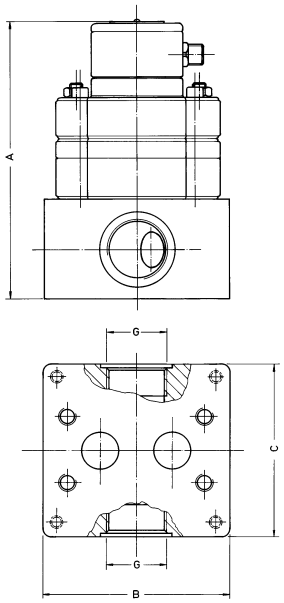
Operating pressure:	315 bar GG; 630 bar St.St.
Case:	GG 40 (continuously cast) alternative St.St. 1.4305
Gaskets:	Viton, alternatives EPDM or PTFE
Temperature range:	-30 to 150°C (from 100°C with separate pre-amplifier)
Gearwheel Bearings:	depending on medium as ball bearings or sliding-contact bearings (also free of non-ferrous metals)
Operating noise:	max. 72 dBA acceptable noise emission
Measuring inaccuracy:	±0,3 % of measured value > 20 mm²/s
Repeatability:	±0,05 % with same volumes
Installation position:	any
Pre-amplifier:	polarized and short-circuit-proof
Supply voltage:	24 VDC/40 mA ±4 VDC alternative: 12 VDC/30 mA -2/+4 VDC
Electrical connection:	connector with separate integrally extruded 4-wire screened line, 5 m long
Protection type:	IP 64
Filtration requirements:	10 µm (models ZDM-0.., ZDM-1.., ZDM-2..) - 20 µm (models ZDM-3.., ZDM-7..) - 50 µm (models ZDM-4.., ZDM-5.., ZDM-6..)

Electrical Connection



Dimensions

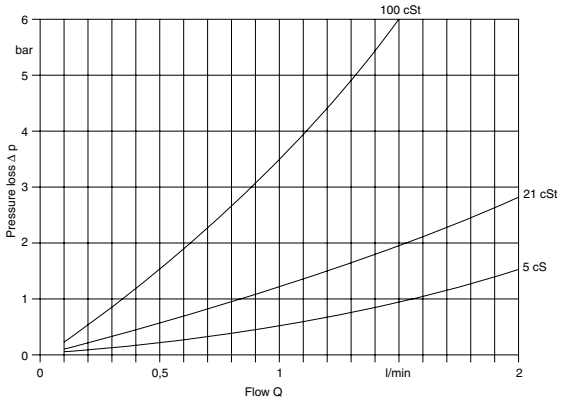
Model	A (mm)	B (mm)	C (mm)	Connection
ZDM-0..	140	80	90	G ¼, G ⅜, G ½
ZDM-1..	140	80	90	G ¼, G ⅜, G ½
ZDM-2..	140	80	90	G ¼, G ⅜, G ½
ZDM-3..	145	80	90	G ¼, G ⅜, G ½
ZDM-41(2)15...	153	100	110	G ½
ZDM-41(2)20...	158	100	110	G ¾
ZDM-51(2)20...	175	110	110	G ¾
ZDM-51(2)25...	190	110	110	G 1
ZDM-6..	249	120	130	G 1 ¼, G 1 ½
ZDM-71(2)15...	155	90	100	G ½
ZDM-71(2)20...	160	90	100	G ¾



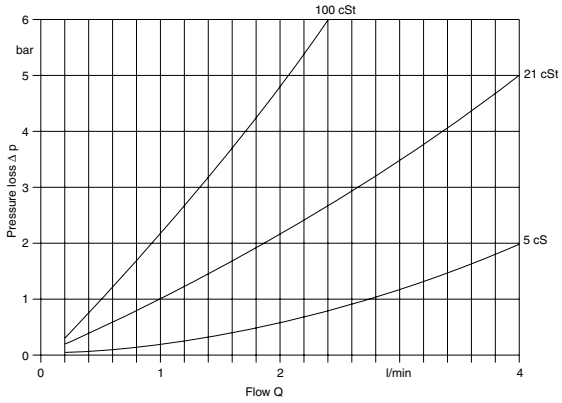
Order Details (Example: ZDM 5120 V1 EG)

Measuring range l/min	Impulses/ liters	Order Numbers: Material cast iron	Order Numbers: Material St.St.	Process Connection (female): Side connection	Process Connection (female): Bottom connection	Supply voltage	Gasket	Option
0,002-2	50000	**ZDM-01..**	**ZDM-02..**	**08**=G ¼	**08B**=G ¼			
0,004-4	25000	**ZDM-11..**	**ZDM-12..**	**10**=G ⅜	**10B**=G ⅜			**O**=ohne
0,01-10	10000	**ZDM-21..**	**ZDM-22..**	**15**=G ½	**15B**=G ½	**V1**=12 VDC	**V**=Viton	**G**=detached
0,02-18	5000	**ZDM-31..**	**ZDM-32..**			**V2**=24 VDC	**E**=EPDM	pre-amplifier
0,03-40	2500	**ZDM-71..**	**ZDM-72..**	**15**=G ½	**15B**=G ½	**E2**=12 VDC, Ex i	**T**=Teflon	**S**=coil-tap
0,05-80	1000	**ZDM-41..**	**ZDM-42..**	**20**=G ¾	**20B**=G ¾	**EX**=24 VDC, Ex i		
0,1-150	500	**ZDM-51..**	**ZDM-52..**	**20**=G ¾	**20**=G ¾			
				25=G 1	**25**=G 1			
1,0-300	250	**ZDM-61..**	**ZDM-62..**	**32**=G 1 ¼	**32B**=G 1 ¼			
				40=G 1 ½	**40B**=G 1 ½			

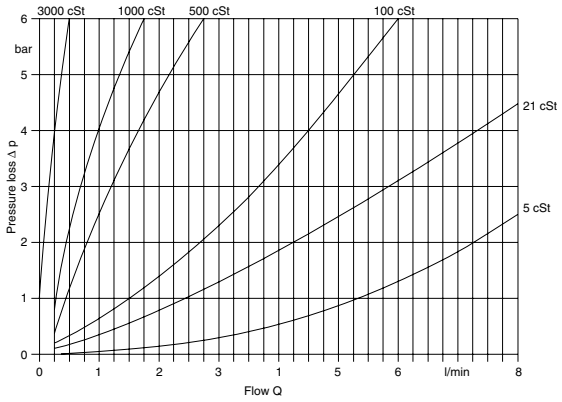
ZDM-0...



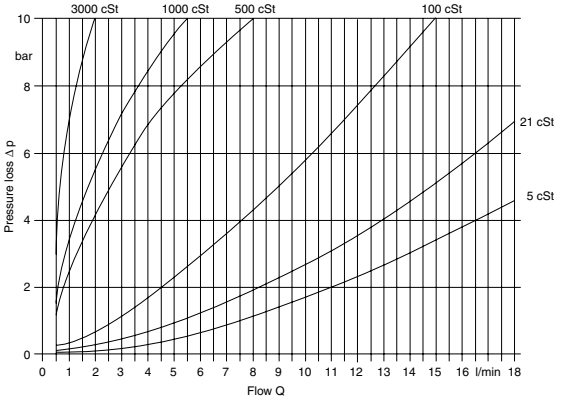
ZDM-1...



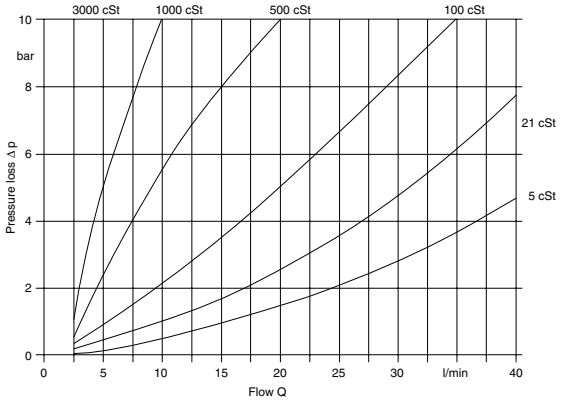
ZDM-2...



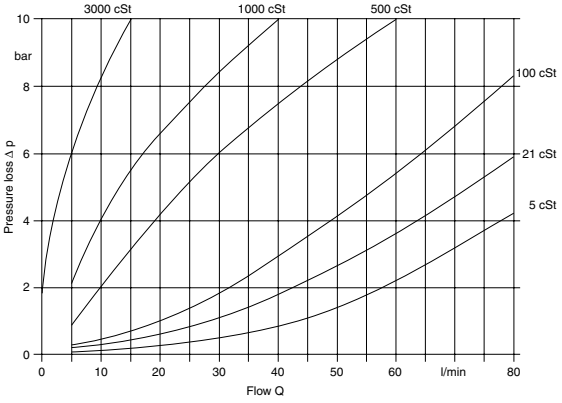
ZDM-3...



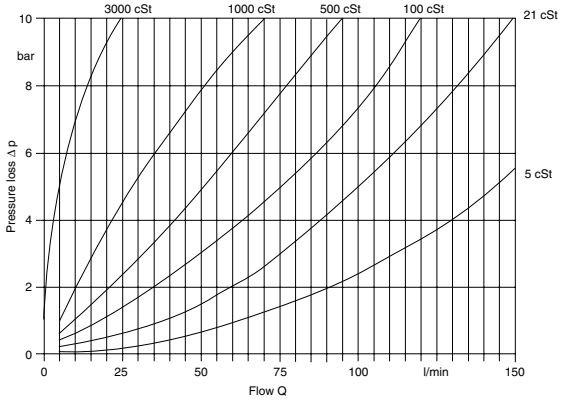
ZDM-7...



ZDM-4...



ZDM-5...



ZDM-6...