

Low Volume Rotating Vane Flow Meter



- Measuring ranges:
0.015 - 0.7 to 0.05 - 5 L/min water
- Measuring accuracy:
±1% (±2.5%) f. s.
- p_{max}: 16 bar, t_{max}: 80 °C
- Connection:
G 1/8, G 1/4 female thread
1/8 NPT, 1/4 NPT female thread
- Material: brass nickel-plated
or stainless steel
- Medium: Infrared light transmissive

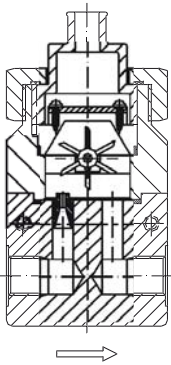


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Model:
 DPM



Application

The KOBOLD model DPM flow meters are used for measuring and monitoring liquids. Due to its compact construction the measuring instrument is suitable for use with machines with minimum available space. The system can be used in a wide variety of applications because the output pulses can be analysed in many different ways.

Areas of Application

- low viscosity liquids
- non-conductive liquids
- volume dosing with external electronics
- filter aid

Technical Details

Measuring accuracy:	
DPM...000, F300:	±2.5% f. s.
DPM...L, DPM...C, DPM...Z:	±1% f. s.
Linearity:	±1% f. s.
Repeatability:	0.5%
Medium temperature:	-40 to +80 °C
Ambient temperature:	-30 to +60 °C
Max. operating pressure:	16 bar
Protection:	IP 65
Materials:	
Housing:	brass nickel-plated stainless steel 1.4404
Upper part:	brass nickel-plated stainless steel 1.4404
Union nut:	brass nickel-plated or stainless steel 1.4305
Orifice:	1.4404
Axle:	sapphire
Rotating vane:	polypropylene
Vane mount:	polysulfone
Gasket:	NBR (standard) FPM or EPDM (optional)

Working principle

The medium flows through a specially shaped fluidic casing and causes a vane to rotate. This rotary motion is sensed by optoelectronics in a non-contacting manner, and converted to an asymmetric frequency signal or an analogue signal. A frequency divider with symmetrical output is available as an option. The frequency is proportional to the flow velocity.

The vane is sapphire-supported: this ensures a high degree of linearity and long service life.

Electronics

● Frequency output (OEM) without CE-sign

Power supply:	4.5-12 V _{DC}
Supply current:	typ. 7 mA
Signal amplitude high:	approx. power supply
Signal amplitude low:	≤ 0.2 V
Transmitter cut-off voltage:	3 V max.
Transmitter supply current:	15 mA-25 mA
Output loss:	max. 2.5 mWatt
Pulse output:	NPN, open collector, max. 10 mA
Electrical connection:	solder pins

● Frequency output (option frequency divider)

Power supply:	24 V _{DC} ± 20%
Supply current:	40-50 mA
Signal amplitude high:	approx. power supply
Signal amplitude low:	≤ 0.2 V
Output loss:	max. 2.5 mWatt
Pulse output:	PNP, open collector, max. 20 mA
Electrical connection:	plug connector M12 x 1 (option: 2 m PVC cable)
Division ratio (option):	1 ... 1/128 factory set

● Analogue output (option plug-on display)

Power supply:	24 V _{DC} ± 20%
Output:	0-20 mA or 4-20 mA, 3-wire technology
Max. load:	500 Ω
Electrical connection:	plug connector M12 x 1 or DIN 43 650
Option:	plug-on display (with plug connector DIN 43 650 only)

● Compact electronics

Display:	3-position LED
Analogue output:	(0)4...20 mA adjustable, max. 500 Ω
Switching outputs:	1 (2) semiconductor PNP or NPN, set at the factory
Contact operation:	N/C / N/O / contact programmable
Setting:	via 2 buttons
Power supply:	24 V _{DC} ± 20%, 3-wire technology
Power input:	approx. 100 mA
Electrical connection:	plug connector M12 x 1

● Pointer indication with analogue output

Housing:	aluminium (PA6 GF30)
Display:	moving coil instrument, 240° display
Power supply:	24 V _{DC} ± 20%
Output:	(0)4...20 mA, set at the factory, 3-wire technology
Max. load:	250 Ω
Electrical connection:	plug connector M12 x 1



Order Details (Example: **DPM-1107 G1 0000**)

Meas. range [L/min] water	approx. frequency [Hz] at max. value	approx. pressure loss [bar] at max. value	Model		Connection	Electronic analyser
			Material brass	Material st. steel		
0.015 - 0.7	228	1.16	DPM-1107..	DPM-1507..	G1..= G 1/8 fem. G2..= G 1/4 fem. N1..= 1/8 NPT fem. N2..= 1/4 NPT fem.	Frequency output ..0000 = Frequency output, without cable (OEM), NPN, without CE ..F300 = Frequency output, plug connector M12x1, PNP ..F320 = Frequency divider 1:2, plug connector M12x1, PNP ..F340 = Frequency divider 1:4, plug connector M12x1, PNP ..F390 = divider 1...1/128, plug connector M12x1, PNP Analogue output ..L303 = 0-20 mA output, 3-wire, M12x1 plug connector ..L343 = 4-20 mA output, 3-wire, M12x1 plug connector ..L403 = 0-20 mA output, 3-wire, plug connector DIN 43 650 ..L443 = 4-20 mA output, 3-wire, plug connector DIN 43 650 Compact electronics* C30R = LED display, 2x open collector, PNP, plug connector M12x1 C30M = LED display, 2x open collector, NPN, plug connector M12x1 C34P = LED display, 4-20 mA, 1x open coll., PNP, plug connector M12x1 C34N = LED display, 4-20 mA, 1x open coll., NPN, plug connector M12x1 Pointer indication* Z300 = 240° Pointer indication, 0-20 mA, plug connector M12x1 Z340 = 240° Pointer indication, 4-20 mA, plug connector M12x1
0.05 - 1.0	217	0.53	DPM-1110..	DPM-1510..		
0.05 - 2.0	344	0.91	DPM-1120..	DPM-1520..		
0.05 - 3.0	372	0.61	DPM-1130..	DPM-1530..		
0.05 - 4.0	415	0.57	DPM-1140..	DPM-1540..		
0.05 - 5.0	439	0.57	DPM-1150..	DPM-1550..		

* Please specify flow direction in writing

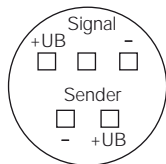
Plug-on display

for model DPM...L443 (with 4-20 mA output and DIN plug connector)

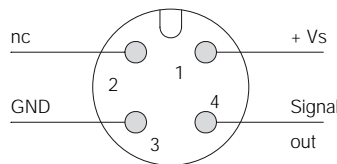
Description	Order number
4-position LED, Plug connector DIN 43 650, 3-wire, Power supply through analogue output	AUF-3000

Electrical connection

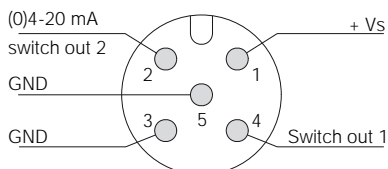
DPM...0000



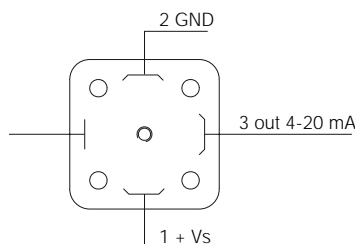
DPM...L3 / DPM...Z / DPM...F



DPM...C

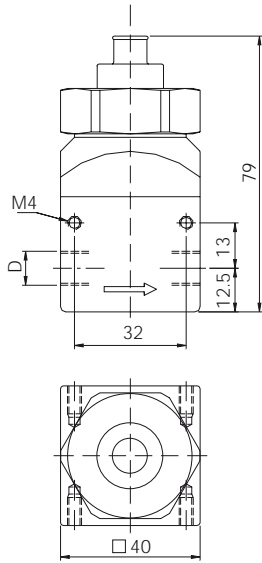


DPM...L4

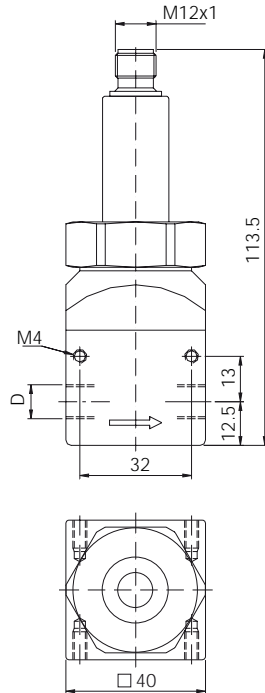


Dimensions

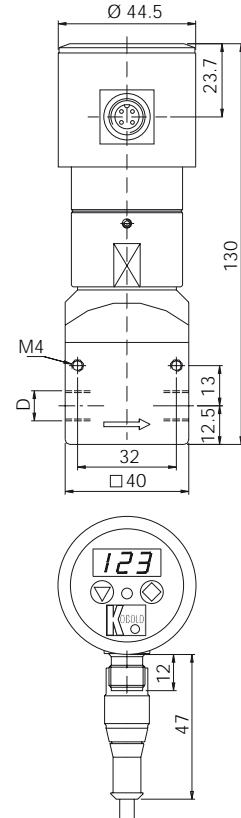
DPM-...0000 (OEM)



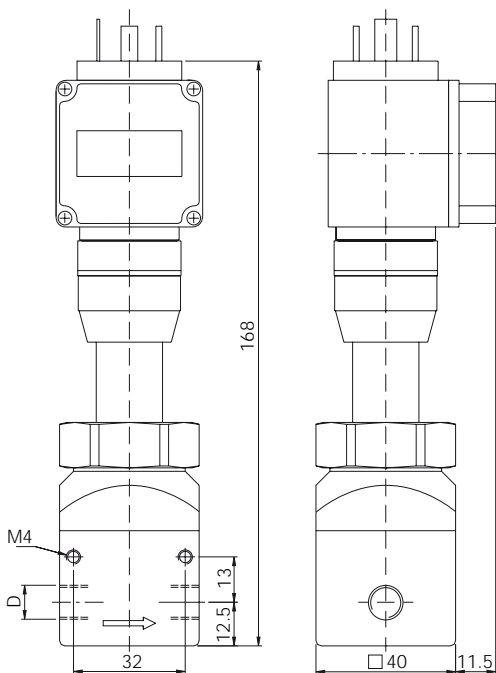
DPM-...F with frequency output



DPM-...C with compact electronics



DPM-...L with analogue output and plug-on display



DPM-...Z with analogue output and pointer indication

