

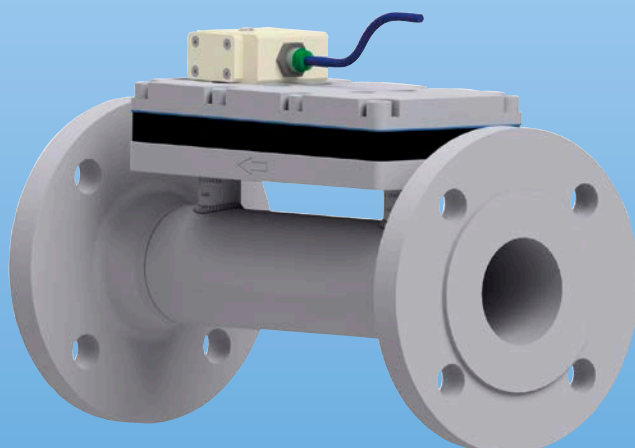


## Oscillation Flowmeter for liquids



measuring  
•  
monitoring  
•  
analysing

### DOG-5



DOG-5

- Measuring ranges:  
0.075-3.75 ... 70-3500 m<sup>3</sup>/h water
- p<sub>max</sub>: PN 40; t<sub>max</sub>: 120 °C
- Connection:  
flange DIN DN 25 ... DN 200  
ASME NPS 1" ... NPS 8"
- Material: stainless steel
- Accuracy:  
±0.5 % of measured value
- Long-term stability



ZOK-



ADI-1

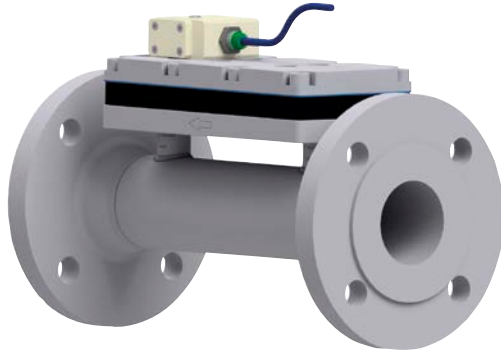


SS

KOBOLD companies worldwide:

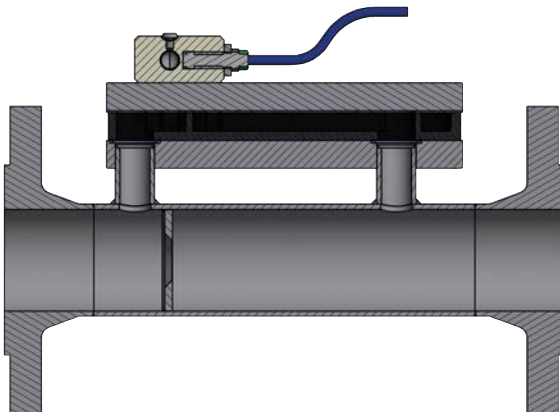
ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHILE, CHINA, COLOMBIA, CZECHIA, EGYPT, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, NETHERLANDS, PERU, POLAND, REPUBLIC OF KOREA, ROMANIA, SINGAPORE, SPAIN, SWITZERLAND, TAIWAN, THAILAND, TUNISIA, TURKEY, USA, VIETNAM

KOBOLD Messring GmbH  
Nordring 22-24  
D-65719 Hofheim/Ts.  
Head Office:  
+49(0)6192 299-0  
+49(0)6192 23398  
info.de@kobold.com  
www.kobold.com



### Description

The KOBOLD flowmeter DOG-5 is used for non-contact flow measurement of low viscosity liquids. The medium flows through an orifice in a tube and side bypass bores. The dynamic pressure at the orifice causes part of the liquid to flow through the bypass. The division ratio remains constant over the whole measuring range.



The bypass channel contains the Oscillator – the measuring cell itself. When the medium flows through the measuring cell, a liquid column oscillates in a U-shaped channel mounted to the left and right. This oscillation frequency is proportional to the flow velocity.

A chamber with a hollow ball is situated over this channel. It is connected with the lower channel by two bore holes. The oscillation of the liquid column is thus transferred to the ball, which in turn moves back and forth with the same frequency. The ball movement is sensed by an initiator. An electrical alternating signal is generated that is displayed in the seriesconnected electronics.

### Application

The inner, connected flow channels are generously dimensioned. The constant changes of direction of the flow in the channels have a self-cleaning effect. The devices are therefore extremely dirt resistant and have no consumables. The unit may be conditionally installed horizontally or vertically, be chosen at will. When the liquid contains air bubbles, the horizontal mounting position with the sensing element pointing upwards is recommended. To avoid air bubbles the device should not be mounted at the highest point in a plant. Pulsating flow must be avoided. The recommended inlet pipe section is 10xDN and the outlet pipe section 5xDN.

### Areas of Application

- Hot water in district heat supply
- Non-conductive liquid

### Technical Details

Measuring accuracy:  $\pm 0.5\%$  of measured value (5...100%\*)  
 $\pm 2\%$  of measured value (at 2...5%)  
 \*These values relate to viscosities of  $\leq 1$  mm<sup>2</sup>/s

Repeatability: 0.2% of measured value

Temperature: max. 0... +120 °C

Ambient temperature: max. 60 °C

Operating pressure: DOG-52xxE PN10  
 DOG-52xxF PN16  
 DOG-52xxS PN40

Span: 1:70 (at 0.5 mm<sup>2</sup>/s)  
 1: 50 (at 1 mm<sup>2</sup>/s)  
 1: 25 (at 2 mm<sup>2</sup>/s)  
 1: 12 (at 3 mm<sup>2</sup>/s)

Max. viscosity: 3 mm<sup>2</sup>/s

Connection: cable, 2 m PVC

Protection: IP65

### Materials

Case: DOG-5 ...: stainless steel 1.4404

Orifice: stainless steel 1.4404

Sensing element: polyphenylene sulfide (PPS)

Sensor: hollow ball/1.4401 (AISI 316)  
 proximity switch

Gaskets: Klinger SIL® 4265, FKM

Frequency output: initiator, 2 wire, NAMUR (A/B)  
 3 wire PNP (C)

Frequency output may be combined with following evaluating electronics ZOK-Zx, ZED-x and ADI-1



Order Details (Example: DOG-52 00 E 25 0 A Y)

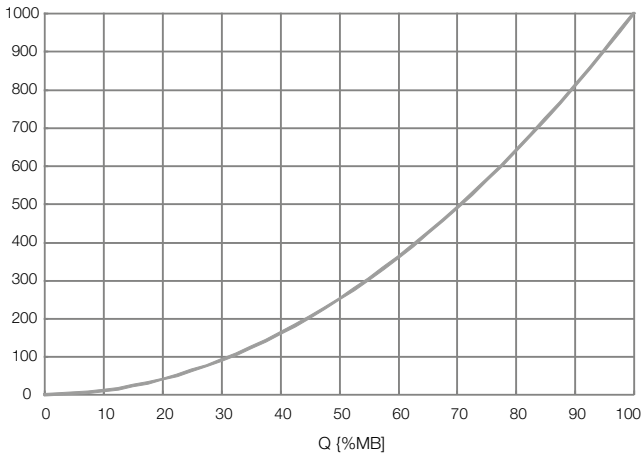
Model	Measuring range
DOG-52	<b>00</b> = 1.25 ... 62.5 lpm or 0.075 ... 3.75m <sup>3</sup> /h
	<b>50</b> = 2 ... 100 lpm or 0.12 ... 6.m <sup>3</sup> /h
	<b>A0</b> = 2.17 ... 110 lpm or 0.13... 6.6 m <sup>3</sup> /h
	<b>A5</b> = 3.34 ... 116.6 lpm or 0.2 ... 10 m <sup>3</sup> /h
	<b>B0</b> = 4.34 ... 216.6 lpm or 0.26 ... 13 m <sup>3</sup> /h
	<b>B5</b> = 4.67 ... 233.3 lpm or 0.28 ... 14 m <sup>3</sup> /h
	<b>C0</b> = 7.67 ... 383.3 lpm or 0.46 ... 23 m <sup>3</sup> /h
	<b>C5</b> = 9.3 ... 466.6 lpm or 0.56 ... 28 m <sup>3</sup> /h
	<b>D0</b> = 10 ... 500 lpm or 0.6 bis ... m <sup>3</sup> /h
	<b>D5</b> = 16 ... 800 lpm or 0.96 ... 48 m <sup>3</sup> /h
	<b>E0</b> = 20 ... 1000 lpm or 1.2 ... 60 m <sup>3</sup> /h
	<b>E5</b> = 22 ... 1100 lpm or 1.32 ... 66 m <sup>3</sup> /h
	<b>F0</b> = 31.67 ... 1566.6 lpm or 1.9 ... 94 m <sup>3</sup> /h
	<b>F5</b> = 33.34 ... 1666.6 lpm or 2 ... 100 m <sup>3</sup> /h
	<b>G0</b> = 43.34 ... 2166.6 lpm or 2.6 ... 130 m <sup>3</sup> /h
	<b>G5</b> = 53.34 ... 2666.6 lpm or 3.2 ... 160 m <sup>3</sup> /h
	<b>H0</b> = 56.67 ... 2833.3 lpm or 3.4 ... 170 m <sup>3</sup> /h
<b>H5</b> = 66.67 ... 3333.3 lpm or 4 ... 200 m <sup>3</sup> /h	
<b>I0</b> = 113.34 ... 5666.6 lpm or 6.8 ... 340 m <sup>3</sup> /h	
<b>I5</b> = 166.67 ... 8333.3 lpm or 10 ... 500 m <sup>3</sup> /h	
<b>J0</b> = 3266.67 ... 16333.3 lpm or 19.6 ... 980 m <sup>3</sup> /h	

Order Details (continued)

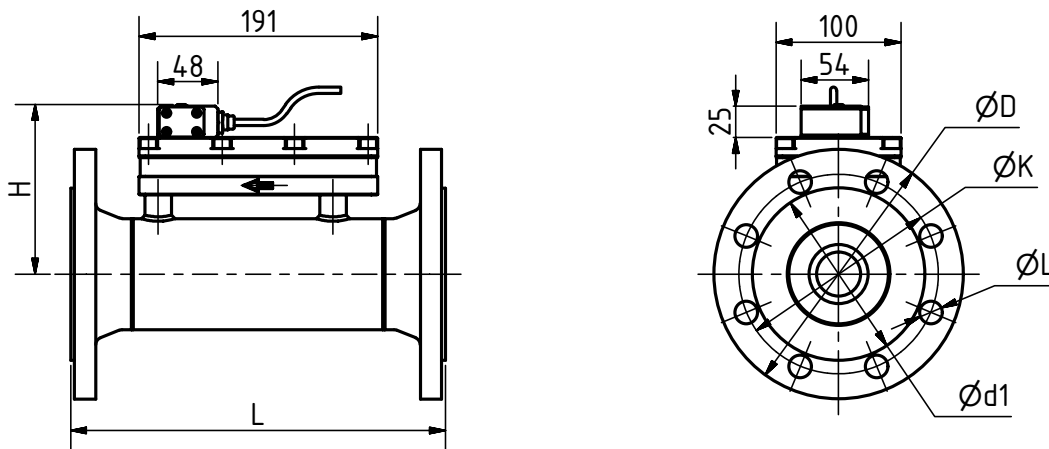
Pressure stage	Flange	Ball valve	Electronics	Options
<b>E</b> = DIN flange PN 10 <b>F</b> = DIN flange PN 16 <b>S</b> = DIN flange PN 40 <b>A</b> = ANSI flange, 150 lbs <b>B</b> = ANSI flange, 300 lbs	<b>25</b> = DN 25, 1" <b>40</b> = DN 40, 1½" <b>50</b> = DN 50, 2" <b>80</b> = DN 80, 3" <b>1H</b> = DN 100, 4" <b>1F</b> = DN 150, 6" <b>2H</b> = DN 200, 8"	<b>0</b> = without ball valve	<b>A</b> = frequency output, 2 wire Namur, analogue (standard) <b>B</b> = frequency output, 2 wire Namur, digital (on request) <b>C</b> = frequency output, PNP, digital (on request) <b>Y</b> = special version	<b>Y</b> = special version acc. to description

Pressure Loss/Flow

Pressure loss



Dimensions and Weight



DN [mm]	L [mm]	H [mm]	ØD [mm]	ØK [mm]	ØL [mm]	Ød1 [mm]	Number of holes	Screw size	Weight [kg]
25	300	109	115	85	14	68	4	M12	7,97
40	300	116	150	110	18	88	4	M16	9,86
50	300	122	165	125	18	102	4	M16	11,46
80	300	136	200	160	18	138	8	M16	14,25
100	320	149	220	180	18	158	8	M16	16,39
150	320	176	285	240	22	212	8	M20	24,64
200	320	201	340	295	22	268	8	M20	35,56