Rotating Vane Flow Meter

for Liquids

Model: DRG-...L

Model: ADI-K...

Model: DRC-...C

- Measuring ranges:
  0.5-12 to 3-80 l/min water
- Measuring accuracy:
  ±3 % f.s.
- p_{max}: 40 bar, t_{max}: 100 °C
- Connection:
  G 1/8, G 1/4, G 1/2,
  G 3/4, G 1 female thread,
  1/8 NPT, 1/4 NPT, 1/2 NPT,
  3/4 NPT, 1 NPT female thread
- Material:
  aluminium bronze,
  stainless steel, PP
- Viscosity range: low viscous
- Output:
  pulses, 4-20 mA, LED display,
  Pointer indicator

KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
☎ (06192) 299-0
Fax (06192) 23398
E-mail: info.de@kobold.com
Internet: www.kobold.com

Model:
DRG

01/1201/Ko/10

Description

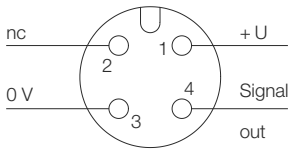
KOBOLD rotating vane flow meters series DRG are used for measuring and monitoring low viscous liquids.
Series DRG flow meters works according the well-known rotating vane principle. A magnet fitted in the vane and hermetically sealed from the medium transfers non-contacting the rotary motion to a Hall-effect sensor mounted in the housing. The sensor converts the rotary motion which is proportional to the flow to a frequency signal. A series-connected electronics unit converts the signal to an analogue output, limit contacts or display.
The devices can be adapted to prevailing plant conditions with the 360° rotatable screw connections.

Fields of application

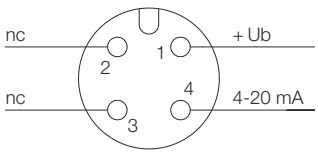
- cooling water monitoring
- agricultural machinery
- PCB board industry

Electrical connection

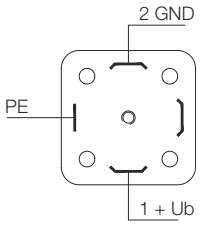
DRG-..F., DRG-..L3.. 3-wire, DRG-..Z..,



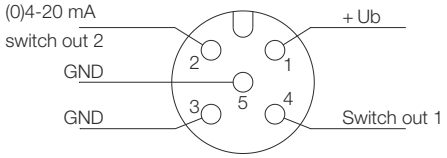
DRG-..L342.. 2-wire



DRG-..L4..



DRG-..C..



Technical details

Material combinations:	see order details
Max. operating pressure:	see order details
Max. temperature:	see order details
Measuring accuracy:	±3 % f. s.
Electrical connection:	plug connector DIN 43 650, plug connector M12x1, cable
Pressure loss:	max. 1 bar at max. range value
Protection:	IP 65
Sensor weight:	see material combination
Electronics weight:	see table

Electronics

- Frequency output

Power supply:	24 V_{DC} ±20 %
Power consumption:	10 mA
Pulse output:	PNP, open collector, max. 25 mA
Electrical connection:	plug connector M12x1

- Frequency output with frequency divider

Power supply:	24 V_{DC} ±20 %
Power consumption:	15 mA
Pulse output:	PNP, open collector, max. 25 mA
Electrical connection:	plug connector M12x1
Division ratio:	1:2, 1:4, others upon request

- Analogue output (plug-on display option)

Power supply:	24 V_{DC} ±20 %
Output:	0 - 20 mA or 4 - 20 mA, 2- or 3-wire
Max. load:	500 ohm
Electrical connection:	plug connector M12x1 or DIN 43 650
Option:	plug-on display (with plug connector DIN 43 650 and 4 - 20 mA output only), 2-wire

- Compact electronics

Display:	3-digit LED
Analogue output:	(0)4 - 20 mA adjustable
Switching outputs:	1 (2) semiconductor PNP or NPN, factory set
Contact operation:	N/C/N/O contact programmable
Setting:	with 2 buttons
Power supply:	24 V_{DC} ±20 %, 3-wire
Electrical connection:	plug connector M12x1

- Pointer indicator with analogue output

Housing:	aluminium
Display:	moving-coil instrument, 240° display
Power supply:	24 V_{DC} ±20 %
Output:	0 - 20 mA or 4 - 20 mA 3-wire
Max. load:	250 ohm
Electrical connection:	plug connector M12x1

01/1201/Ko/10

Order details (example: **DRG-1105 G1 F300**)

Measuring range l/min Water	approx. frequency (Hz) at f.s.	Orifice diameter (mm)	Model	Connection Standard fem. thread	Connection Special fem. thread	Evaluating electronics
0.5-12	120	6	**DRG-1X05...**	**G1**=G 1/8	**N1**=1/8 NPT	**Frequency output** **..F300**=frequency output, plug connector M12x1 **..F320**=frequency divider 1:2, plug connector M12x1 **..F340**=frequency divider 1:4, plug connector M12x1 **Analogue output** **..L303**=0-20 mA output, 3-wire, M12x1 plug connector **..L342**=4-20 mA output, 2-wire, M12x1 plug connector **..L343**=4-20 mA output, 3-wire, M12x1 plug connector **..L442**=4-20 mA output, 2-wire, plug connector DIN 43 650 **Compact electronics** **C30R**=LED display, 2 x open collector, PNP, plug connector M12x1 **C30M**=LED display, 2 x open collector, NPN, plug connector M12x1 **C34P**=LED display, 4-20 mA, 1 x open coll. PNP, plug connector M12x1 **C34N**=LED display, 4-20 mA, 1 x open coll. NPN, plug connector M12x1 **Pointer indicator** **Z300**=240° pointer indicator, 0-20 mA, plug connector M12x1 **Z340**=240° pointer indicator, 4-20 mA, plug connector M12x1
0.5-25	217	6	**DRG-1X10...**	**G2**=G 1/4	**N2**=1/4 NPT	
1-30	217	8 6	**DRG-1X15...**	**G2**=G 1/4 **G4**=G 1/2	**N2**=1/4 NPT **N4**=1/2 NPT	
2-45	215	8	**DRG-1X20...**	**G4**=G 1/2 **G5**=G 3/4 **G6**=G 1	**N4**=1/2 NPT **N5**=3/4 NPT **N6**=1 NPT	
5-90	265	12	**DRG-1X25...**	**G4**=G 1/2 **G5**=G 3/4 **G6**=G 1	**N4**=1/2 NPT **N5**=3/4 NPT **N6**=1 NPT	
5-140	116	16	**DRG-1X30...**	**G5**=G 3/4	**N5**=3/4 NPT	
10-140	180	16	**DRG-1X35...**	**G6**=G 1	**N6**=1 NPT	

Material combinations (Please enter order code instead of **X** for "model")

Device parts	Order code: 1	Order code: 2	Order code: 4	Order code: 5	Order code: 8
Housing	Aluminium bronze	Aluminium bronze	1.4404	1.4404	PP
Housing cover	PMMA	Aluminium bronze	PMMA	1.4404	PP
Seal	NBR	NBR	Viton	Viton	NBR
Rotating vane	Teflon	Teflon	Teflon	Teflon	Teflon
Axle	Ceramic	Ceramic	Ceramic	Ceramic	Ceramic
Bearing	Teflon	Teflon	Teflon	Teflon	Teflon
p_{max}:	16 bar	40 bar	16 bar	40 bar	16 bar
t_{max}:	80 °C	100 °C	80 °C	100 °C	80 °C
Sensor weight	580 g	580 g	480 g	480 g	120 g

Plug-on display

for model DRG...L442 (with 4-20 mA output and DIN plug connector)

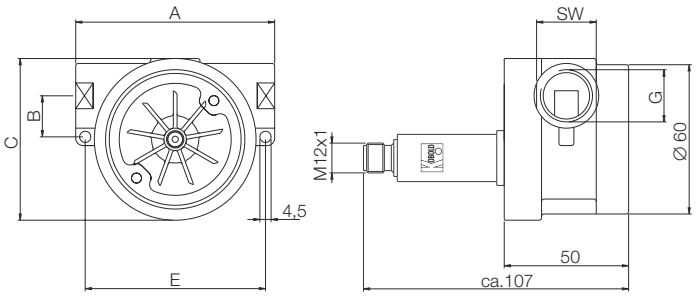
Description	Order number
4-digit LED, connector DIN 43650, 2-wire, supply through analogue output	**AUF-1000**
as above however with additional open collector output	**AUF-1001**

Electronic weight

Frequency output:	app. 35 g
Analogue output (...L3...):	app. 35 g
Analogue output (...L4...):	app. 100 g
Compact electronics:	app. 650 g
Pointer indicator:	app. 450 g

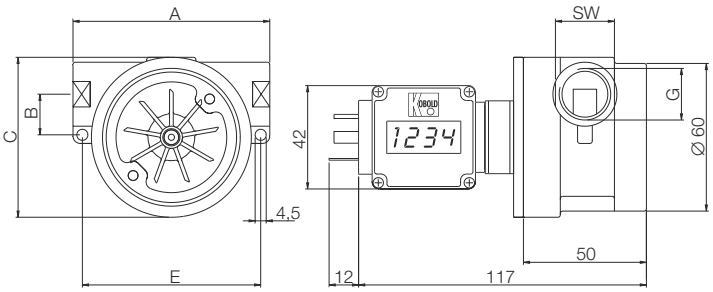
Dimensions

Model: DRG-F.. (Frequency output), **DRG..L3..** (with analogue output)



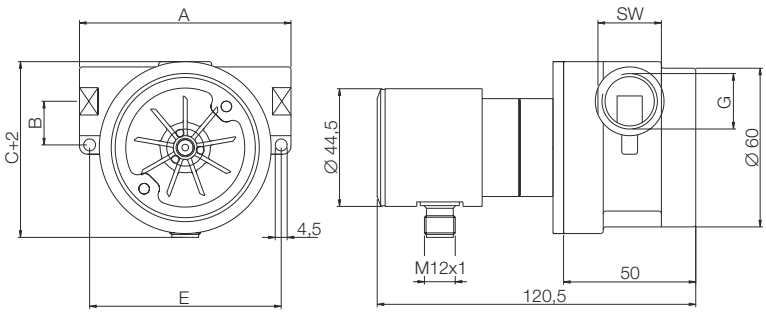
G	A	B	C	E	hex
1/8	80	16.5	63.0	72.5	24
1/4	80	16.5	63.0	72.5	24
1/2	80	16.5	63.0	72.5	24
3/4	100	25.0	69.5	90.0	38
1	100	25.0	69.5	90.0	38

Model: DRG...L342 (Analogue output and plug-on display)



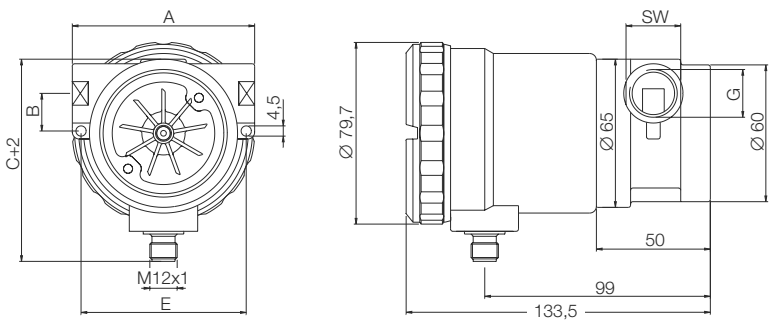
G	A	B	C	E	hex
1/8	80	16.5	63.0	72.5	24
1/4	80	16.5	63.0	72.5	24
1/2	80	16.5	63.0	72.5	24
3/4	100	25.0	69.5	90.0	38
1	100	25.0	69.5	90.0	38

Model: DRG..C.. (Compact electronics)



G	A	B	C	E	hex
1/8	80	16.5	63.0	72.5	24
1/4	80	16.5	63.0	72.5	24
1/2	80	16.5	63.0	72.5	24
3/4	100	25.0	69.5	90.0	38
1	100	25.0	69.5	90.0	38

Model: DRG..Z.. (Pointer indicator)



G	A	B	C	E	hex
1/8	80	16.5	63.0	72.5	24
1/4	80	16.5	63.0	72.5	24
1/2	80	16.5	63.0	72.5	24
3/4	100	25.0	69.5	90.0	38
1	100	25.0	69.5	90.0	38

01/1201/Ko/10