



# Rotating Vane Flow Meter for Liquids



measuring  
•  
monitoring  
•  
analysing

Model: DRG-...L



Model: ADI-K...



Model: DRG-...C



- Measuring ranges:  
0.5-12 to 10-140 L/min water
- Measuring accuracy:  
± 3 % f. s.
- pmax: 40 bar, tmax: 80 °C
- Connection:  
G 1/8, G 1/4, G 1/2, G 3/4, G 1 fem. 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 indicaton



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KOBOLD Messring GmbH  
Nordring 22-24  
D-65719 Hofheim/Ts.  
☎ +49(0)61 92 299-0  
Fax +49(0)61 92 233 98  
E-Mail: info.de@kobold.com  
Internet: www.kobold.com

Model:  
DRG

**Description**

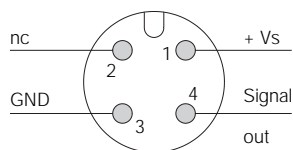
KOBOLD rotating vane flow meters series DRG are used for measuring and monitoring low viscous liquids. Series DRG flow meters are working according the well-known rotating vane principle. A magnet fitted in the vane and hermetically sealed from the medium transfers non-contacting the rotary motion to 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.

**Fields of application**

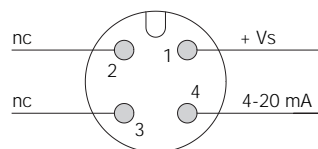
- cooling water monitoring
- agricultural machinery
- PCB board industry

**Electrical connection**

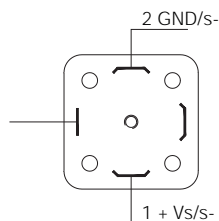
DRG-..F., DRG-..L3.. 3-wire, DRG-..Z..,



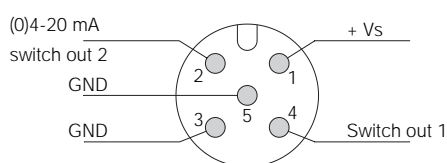
DRG-..L342.. 2-wire



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
Pressure loss:	max. 1 bar at max. range value
Protection:	IP 65

**Electronics**

- **Frequency output (...F300)**
  - Power supply: 12 - 28 V<sub>DC</sub>
  - 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<sub>DC</sub> ± 20 %
  - Power consumption: 15 mA
  - Pulse output: PNP, open collector, max. 25 mA
  - Electrical connection: plug connector M12x1
  - Division ratio: 1...1/128, factory setting
- **Analogue output (plug-on display option)**
  - Power supply: 24 V<sub>DC</sub> ± 20 %
  - Output: 0-20 mA or 4-20 mA, 2-wire or 3-wire
  - Max. load: 500 Ω
  - Electrical connection: plug connector M12x1 or DIN 43 650
  - Option: plug-on display (with plug connector DIN 43 650 and output 4-20 mA only), 2-wire
- **Compact electronics**
  - Display: 3-segment LED
  - Analogue output: (0)4-20 mA adjustable, max. 500 Ω
  - Switching outputs: 1 (2) semiconductor PNP or NPN, factory set
  - Contact operation: N/C / N/O contact frequency programmable
  - Setting: with 2 buttons
  - Supply: 24 V<sub>DC</sub> ± 20 %, 3-wire technology, approx. 100 mA
  - Electrical connection: plug connector M12x1
- **Pointer indicaton with analogue output**
  - Housing: aluminum
  - Display: moving-coil instrument, 240° display
  - Power supply: 24 V<sub>DC</sub> ± 20 %
  - Output: 4-20 mA or 0-20 mA, 3-wire
  - Max. load: 250 Ω
  - Electrical connection: plug connector M12x1

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

Measuring range L/min water	approx. frequency (Hz) at f.s.	Orifice diameter [mm]	Model	Connection		Evaluating electronics
				Standard fem. thread	Special fem. thread	
0.5-12	120	6	DRG-1X05...	..G1..=G 1/8	..N1..=1/8 NPT	<p><b>Frequency output</b></p> <p>..F300=Frequency output, plug connector M12x1                      ..F320=Frequency divider 1:2, plug connector M12x1                      ..F340=Frequency divider 1:4, plug connector M12x1                      ..F390=Frequency divider, 1...<sup>1</sup>/128 plug connector M12x1</p> <p><b>Analogue output</b></p> <p>..L303=0-20 mA output, 3-wire, plug connector M12x1                      ..L342=4-20 mA output, 2-wire, plug connector M12x1                      ..L343=4-20 mA output, 3-wire, plug connector M12x1                      ..L442=4-20 mA output, 2-wire, plug connector DIN 43 650</p> <p><b>Compact electronics*</b></p> <p>..C30R=LED display, 2x open coll., PNP, plug connector M12x1                      ..C30M=LED display, 2x open coll., NPN, plug connector M12x1                      ..C34P=LED display, 4-20 mA, 1x open coll., PNP, plug con. M12x1                      ..C34N=LED display, 4-20 mA, 1x open coll., NPN, plug con. M12x1</p> <p><b>Pointer indication*</b></p> <p>..Z300=240° pointer indication, 0-20 mA, plug con. M12x1                      ..Z340=240° pointer indication, 4-20 mA, plug con. M12x1</p>
0.5-25	217	6	DRG-1X10...	..G2..=G 1/4	..N2..=1/4 NPT	
1-30	217	8	DRG-1X15...	..G2..=G 1/4	..N2..=1/4 NPT	
		7		..G4..=G 1/2	..N4..=1/2 NPT	
2-45	215	8	DRG-1X20...	..G4..=G 1/2	..N4..=1/2 NPT	
				..G5..=G 3/4	..N5..=3/4 NPT	
				..G6..=G 1	..N6..=1 NPT	
5-90	265	12	DRG-1X25...	..G4..=G 1/2	..N4..=1/2 NPT	
				..G5..=G 3/4	..N5..=3/4 NPT	
				..G6..=G 1	..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	

\*Please specify flow direction in writing

**Material combinations** (Please enter order code instead of X "model"; Example: DRG-1105 G1 F300)

Device parts	Order code: <b>1</b>	Order code: <b>2</b>	Order code: <b>4</b>	Order code: <b>5</b>	Order code: <b>8</b>
Housing	Aluminium bronze	Aluminium bronze	1.3955	1.3955	Polypropylene
Housing cover	Polysulfone	Aluminium bronze	Polysulfone	1.4404	Polypropylene
Seal	NBR	NBR	FPM	FPM	NBR
Rotating vane	PTFE	PTFE	PTFE	PTFE	PTFE
Axle	Ceramic	Ceramic	Ceramic	Ceramic	Ceramic
Bearing	PTFE	PTFE	PTFE	PTFE	PTFE
p <sub>max</sub> :	16 bar	40 bar	16 bar	40 bar	7 bar
t <sub>max</sub> :	80 °C	80 °C	80 °C	80 °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)



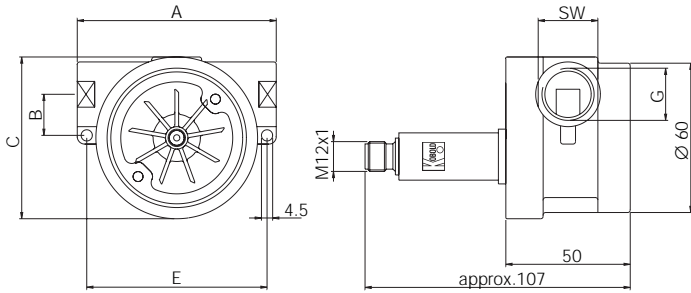
Description	Order number
4-digit LED, connector DIN 43650, 2-wire, supply through analogue output	AUF-1000
as above however with additional open collector output	AUF-1001

**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 indication: app. 450 g

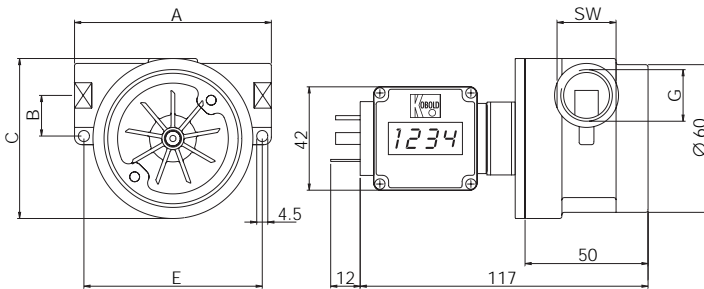
**Dimensions**

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



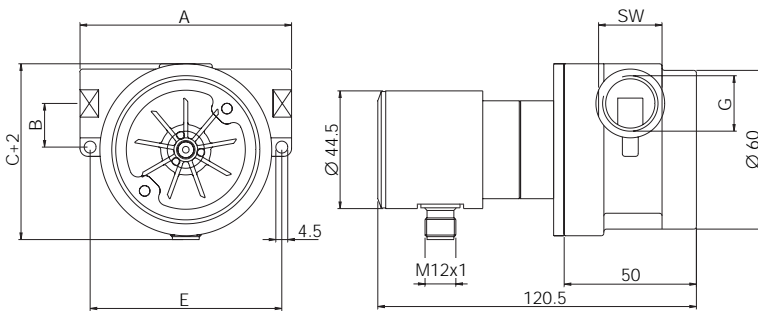
G	A	B	C	E	hex
1/8	80	16.5	63.0	72.5	24
1/4	80	16.5	63.0	72.5	24
1/2	80	16.5	63.0	72.5	24
3/4	100	25.0	69.5	90.0	38
1	100	25.0	69.5	90.0	38

Model: DRG...L442 (analogue output and plug-on display)



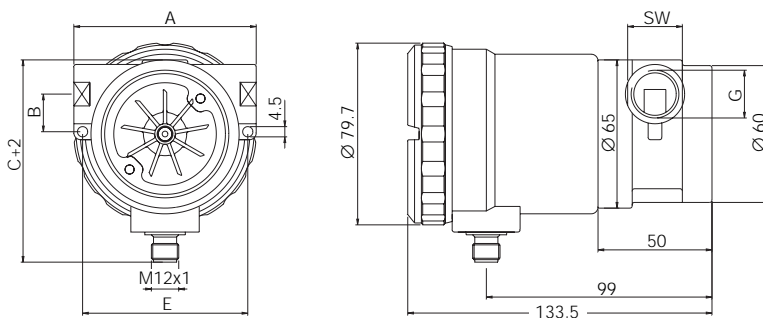
G	A	B	C	E	hex
1/8	80	16.5	63.0	72.5	24
1/4	80	16.5	63.0	72.5	24
1/2	80	16.5	63.0	72.5	24
3/4	100	25.0	69.5	90.0	38
1	100	25.0	69.5	90.0	38

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 indication)



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