



Rotating Vane Flow Meter for liquids



measuring
•
monitoring
•
analysing

DRH

Model: DRH-...L



Model: ADI-1



Model: DRH-...C



- Measuring ranges:
0.2 - 0.8 ... 2.5 - 50 l/min water
- Measuring accuracy:
 $\pm 2.5\%$ of full scale
- p_{\max} : 100 bar; t_{\max} : 80 °C
- Connection:
G $\frac{3}{8}$, G 1 female,
 $\frac{3}{8}$ " NPT, 1" NPT female
- Material:
brass, stainless steel, POM, PVDF
- Viscosity range: low viscous
- Output:
pulses, 4 - 20 mA,
switching outputs



S4

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Description

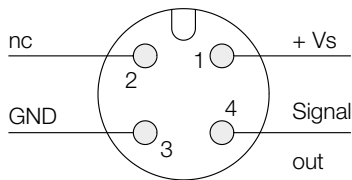
KOBOLD rotating vane flow meters series DRH are used for measuring and monitoring low viscous liquids. Series DRH flow meters are working according the well-known rotating vane principle. A magnet fitted in the vane and hermetically sealed from the medium transfers non-contacting the rotary motion to 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. These devices can be adapted to prevailing plant conditions with the 360° rotatable screw connections.

Fields of Application

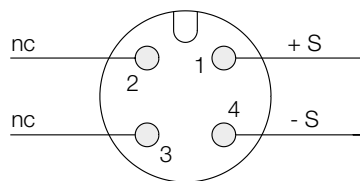
- Cooling water monitoring
- Agricultural machinery
- PCB board industry

Electrical Connection

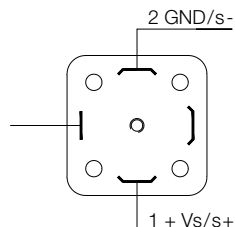
DRH-...F., DRH-...Z..., DRH-...L3... 3-wire



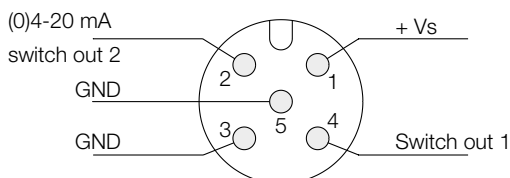
DRH-...L342... 2-wire



DRH-...L4...



DRH-...C...



Technical Details

Material combinations: see order details
 Max. operating pressure: see order details
 Max. temperature: see order details
 Measuring accuracy: ±2.5% of full scale
 ±5% of full scale (DRH-...F300)
 Electrical connection: plug connector DIN 43 650, plug connector M12x1, cable max. 1 bar at max. range
 Pressure loss:
 Protection: IP 65

Electronics

● **Frequency output (...F300)**

Power supply: 12-28 V_{DC}
 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 ... 1/128, factory set

● **Analogue output (Option plug-on display)**

Power supply: 24 V_{DC} ±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 43650
 Option: plug-on display (with plug connector DIN 43650 and output 4-20 mA only), 2-wire

● **Compact electronics**

Display: 3-segment LED
 Analogue output: (0)4...20 mA adjustable, max. 500 W
 Switching outputs: 1 (2) semiconductor PNP or NPN factory set
 Contact operation: N/C / N/O contact frequency programmable
 Setting: with 2 buttons
 Power supply: 24 V_{DC} ±20%, 3-wire technology approx. 100 mA
 Electrical connection: plug connector M12x1

● **Pointer indication 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 Ω
 Electrical connection: plug connector M12x1



Order Details (Example: DRH-1 1 05 N3 F300)

Measuring range		Orifice diameter [mm]	Model	Connection		Evaluating electronics
Water [l/min]	approx. frequency [Hz] at F.S.			Standard female	Special female	
0.2-0.8	63	1	DRH-1X05..	..G3..=G%	..N3..=3/8" NPT	Evaluating electronics Frequency output ..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...1/128, plug connector M12x 1 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 Collector PNP, plug connector M12x1 ..C34N = LED display, 4-20 mA, 1 x open Collector 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
0.2-2.0	50	2	DRH-1X10..	..G6..=G1	..N6..=1" NPT	
0.3-2.8	123	2	DRH-1X15..	..G3..=G%	..N3..=3/8" NPT	
0.25-5.0	78	3	DRH-1X20..	..G6..=G1	..N6..=1" NPT	
0.5-6.0	166	3	DRH-1X25..	..G3..=G%	..N3..=3/8" NPT	
1.0-15	145	5	DRH-1X30..	..G6..=G1	..N6..=1" NPT	
1.0-16	225	5	DRH-1X35..	..G3..=G%	..N3..=3/8" NPT	
1.0-26	240	7	DRH-1X40..	..G3..=G%	..N3..=3/8" NPT	
2.0-36	228	9	DRH-1X45..	..G6..=G1	..N6..=1" NPT	
2.5-50	220	10	DRH-1X50..	..G6..=G1	..N6..=1" NPT	

* Please specify flow direction in writing.

Material Combinations (Please enter order code instead of X "model")

Device parts	Order code: 1	Order code: 2	Order code: 4	Order code: 5	Order code: 7	Order code: 8	Order code: 9
Housing	Brass, nickel-pl.	Brass, nickel-pl.	1.4404	1.4404	POM	POM	PVDF
Housing cover	PMMA	Brass, nickel-pl.	PMMA	1.4404	PMMA	POM	PVDF
Seal	NBR	NBR	FPM	FPM	NBR	NBR	FPM
Rotating vane	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
Axle	Ceramic	Ceramic	Ceramic	Ceramic	Ceramic	Ceramic	Ceramic
Bearing	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
p _{max} *	16 bar	100 bar	16 bar	100 bar	16 bar	16 bar	16 bar
t _{max} *	80°C	80°C	80°C	80°C	80°C	80°C	80°C
Weight (3/4")	850 g	1000 g	900 g	1050 g	250 g	250 g	300 g
Weight (1")	1600 g	2000 g	1600 g	2000 g	400 g	400 g	500 g

Weight

Weight (Sensor)
+ Weight (electronics)
Total weight

Sensor Weight

See material combination

Electronic Weight

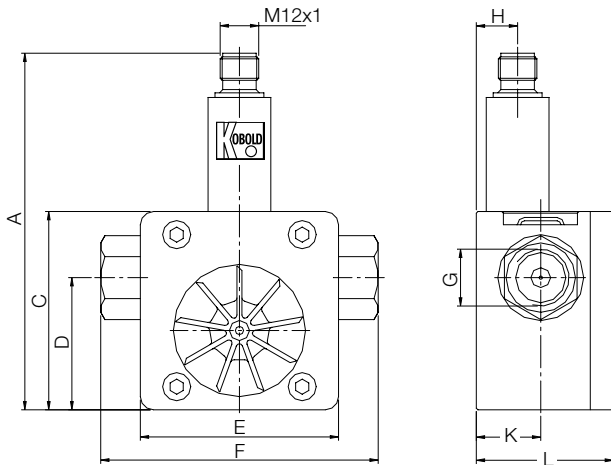
Frequency output: approx. 35 g
 Analogue output (...L3...): approx. 35 g
 Analogue output (...L4...): approx. 100 g
 Compact electronics: approx. 650 g
 Pointer indication: approx. 450 g



Rotating Vane Flow Meter Model DRH

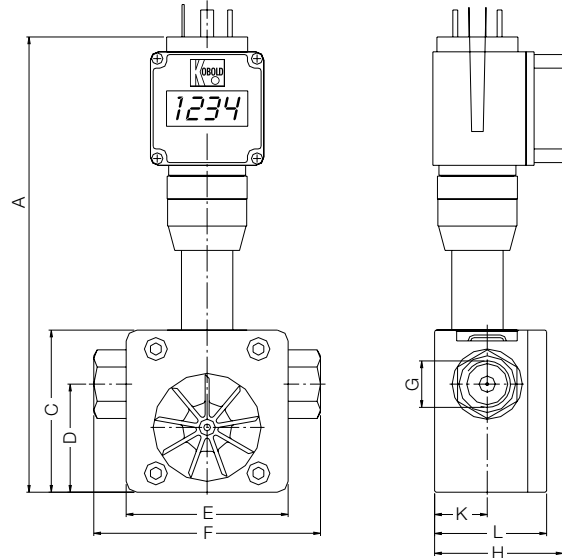
Dimensions

Model: DRH-F3..., DRH-...L (with analogue output)



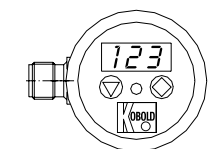
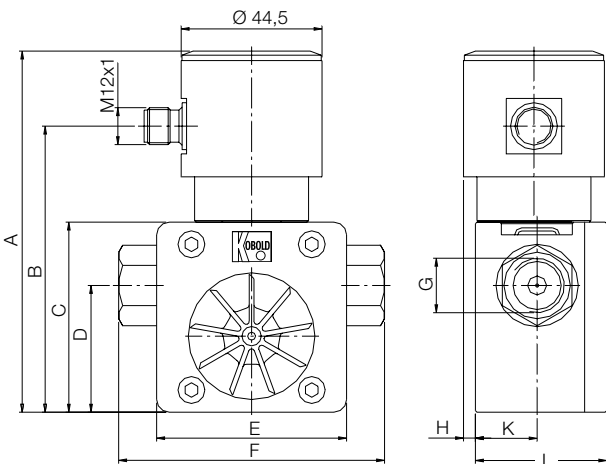
G	A	C	D	E	F	H	K	L
3/8	108	60	40	60	84	12.5	19.5	41.5
1	118	70	42	70	110	15.8	22.5	53

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



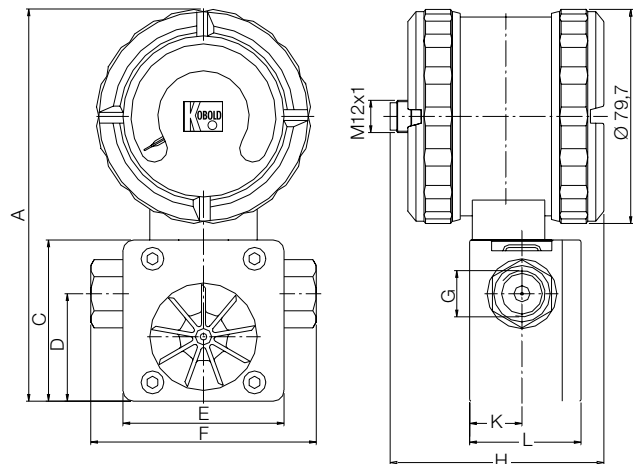
G	A	C	D	E	F	H	K	L
3/8	168.5	60	40	60	84	47.5	19.5	41.5
1	178.5	70	42	70	110	-	22.5	53

Model: DRH-...C (with compact electronics)



G	A	B	C	D	E	F	H	K	L
3/8	114	90.3	60	40	60	84	3.8	19.5	41.5
1	124	100.3	70	42	70	110	1.8	22.5	53

Model: DRH-...Z (with pointer indication)



G	A	C	D	E	F	H	K	L
3/8	146	60	40	60	84	79.6	19.5	41.5
1	156	70	42	70	110	79.6	22.5	53