



## Electronic Low Volume Flowmeter

for liquids and gases



measuring  
•  
monitoring  
•  
analysing

KFF / KFG



Model: KFF-3...



Model: KFF-1...

- Measuring ranges:  
15-100 ml/min...1-10 l/min water  
25-100 ml/min...100-500 l/min air
- Measuring accuracy:  $\pm 3\%$  f.s.
- $p_{\max}$ : 35 bar;  $t_{\max}$ : 50 °C
- Viscosity range: low viscosity
- Compression fittings:  $\frac{1}{8}$ " ...  $\frac{1}{2}$ "
- Material: Ryton, brass, PTFE
- Output: 0-5 V<sub>DC</sub> or pulses
- No zero drift
- Very sturdy
- Medium: infrared light transmissive

S4



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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



### Areas of Application

KOBOLD KFF/KFG flowmeters are used for measuring low and smaller, volumetric flow rates of gases (KFG) and liquids (KFF). The media must be transmissive for infrared light.

Series KFF/KFG 1000 flowmeters are available in Ryton®, brass and PTFE materials; therefore suitable for many applications in industry, in laboratories, and so forth. The new PTFE sensor of the 1000 series is delivered as standard with (0...5 V<sub>DC</sub>) analogue output and frequency output. The frequency output is optional on other models.

Series KFF/KFG 3000 flowmeters are available in Ryton® and in brass.

### Technical Data

- Accuracy: ± 3 % f. s.
- Linearity: ± 3 % f. s.
- Repeatability:
  - KFF: ± 0.2 % f. s.
  - KFG: ± 1 % f. s.
- Installation position: horizontal
- Temperature range: 0...50°C
- Temperature drift: 0.2%/°C
- Max. pressure:
  - KFF:
    - Ryton®: 7 bar
    - Brass: 35 bar
    - PTFE: 4 bar
  - KFG: 2.5 bar
- Supply voltage: 12.5 V<sub>DC</sub> ± 2 V<sub>DC</sub>  
PTFE version: 12.5 V<sub>DC</sub> ± 1 V<sub>DC</sub>
- Current consumption: 50 mA (typically)
- Output:
  - KFF-1../KFG-1...:
    - Standard: 0...5 V<sub>DC</sub>
    - Option T (KFF-1.. only): 0...5 V<sub>DC</sub> and frequency output
    - PTFE version: 0...5 V<sub>DC</sub> and frequency output
  - Max. frequency: 500 Hz
  - KFF-3../KFG-3...: 0...5 V<sub>DC</sub>

### Material

Version	Ryton®	Brass	PTFE
Housing	60% Ryton®/ 40% glass	brass/glass	PTFE
Turbine	60% Ryton®/ 40% glass	60% Ryton®/ 40% glass	PTFE
Bearings	sapphire	sapphire	sapphire
Bearing shell	st. steel (316)	st. steel (316)	PTFE
Gasket	FPM	FPM	Kalrez®
Connection	Acetal	brass	PFA

### Function Principle

The flowmeter is based on the Pelton Principle, that is, the flowing medium causes a vane to rotate. The rotary motion is converted to electrical impulses by means of photodiodes. The flow rate is output as a frequency signal or a linear analogue (0...5 V<sub>DC</sub>).

### KFF-1.../KFG-1...



### KFF-3.../KFG-3...





**Order Details**

**Model KFF-1.../KFG-1... sensor**

Water						Air			
Measuring range [ml/min]	Pressure loss [bar]	Connection	Ryton®	Brass	PTFE	Measuring range [ml/min]	Pressure loss [mbar]	Connection	Ryton®
15-100	1	1/8"	KFF-1003	KFF-1103	KFF-1503	10-50	100	1/8"	-
50-500	0.7	1/4"	KFF-1005	KFF-1105	KFF-1505	25-100	50	1/8"	KFG-1003
60-1000	0.5	1/4"	KFF-1006	KFF-1106	KFF-1506	40-200	25	1/8"	KFG-1004
100-2000	0.5	1/4"	KFF-1007	KFF-1107	KFF-1507	100-500	7.5	1/8"	KFG-1005
200-5000	0.7	3/8"	KFF-1008	KFF-1108	KFF-1508	200-1000	5	1/8"	KFG-1006
1-10 l/min	0.7	3/8"	KFF-1009	KFF-1109	KFF-1509	400-2000	5	1/4"	KFG-1007
						[l/min]			
						1-5	5	1/4"	KFG-1008
						2-10	5	1/4"	KFG-1009
						4-20	5	3/8"	KFG-1010
						10-50	5	3/8"	KFG-1011
Option T: Frequency output (for KFF-1.. only)						20-100	5	1/2"	KFG-1012
KF-8000: Power pack 120 V <sub>AC</sub>						40-200	5	1/2"	KFG-1013
KF-8100: Power pack 240 V <sub>AC</sub>						100-500	7.5	1/2"	KFG-1014

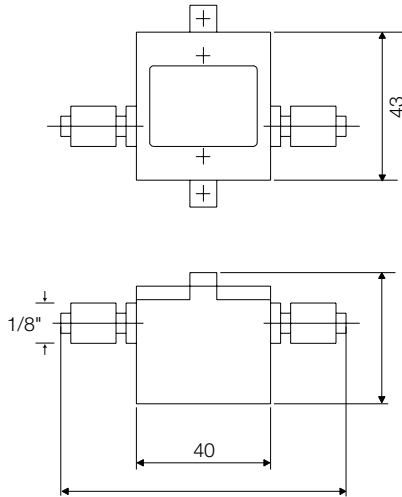
**Model KFF-3.../KFG-3... sensor with digital display**

Water					Air				
Measuring range [ml/min]	Pressure loss [bar]	Connection	Ryton®	Brass	Measuring range [ml/min]	Pressure loss [mbar]	Connection	Ryton®	Brass
13-100	0.7	1/8"	KFF-3003	KFF-3103	10-50	100	1/8"	-	-
20-200	0.7	1/8"	KFF-3004	KFF-3104	20-100	50	1/8"	KFG-3003	KFG-3103
50-500	0.7	1/4"	KFF-3005	KFF-3105	40-200	25	1/8"	KFG-3004	KFG-3104
60-1000	0.5	1/4"	KFF-3006	KFF-3106	100-500	7.5	1/8"	KFG-3005	KFG-3105
100-2000	0.5	1/4"	KFF-3007	KFF-3107	200-1000	7.5	1/8"	KFG-3006	KFG-3106
200-5000	0.5	3/8"	KFF-3008	KFF-3108	400-2000	7.5	1/4"	KFG-3007	KFG-3107
					[l/min]				
KF-8000: Power pack 120 V <sub>AC</sub>					1-5	7.5	1/4"	KFG-3008	KFG-3108
KF-8100: Power pack 240 V <sub>AC</sub>					2-10	7.5	1/4"	KFG-3009	-

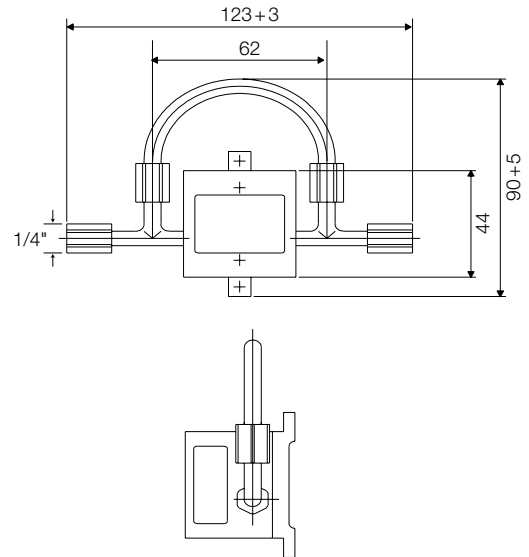


Dimensions [mm]

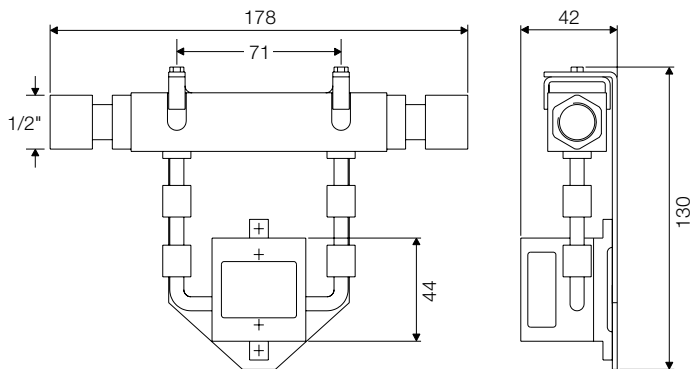
KFF-/KFG-1... 1/8"



KFF-/KFG-1... 1/4"



KFF-/KFG-1... 1/2"



KFF-/KFG-3...

