



## Electronic Low Volume Flow Meter

for Liquids and Gases



measuring  
•  
monitoring  
•  
analysing



Model: KFF-3...

- Measuring ranges:
  - 15-100 mL/min to 1-10 L/min water
  - 10-50 mL/min to 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:  $\frac{1}{8}$ " to  $\frac{1}{2}$ "
- Material: Ryton, brass, PTFE
- Output: 0-5 V<sub>DC</sub> or pulses
- No zero drift
- very sturdy
- Medium: infrared light transmissive



Model: KFF-1...



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Model:  
KFF/KFG...



**Areas of Application**

KOBOLD KFF/KFG flow meters are used for sensing small, to extremely small, volumetric flow rates of gases (KFG) and liquids (KFF). The media must be transmissive for infrared light.

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

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

**Technical Specifications**

- 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
  - 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	Stainless steel	Stainless steel	Stainless steel
Gasket	FPM	FPM	Kalrez®
Connection	Acetal	brass	PFA

**Function Principle**

The flow meter 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 photo-diodes. 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 [bar]	Connection	Ryton®:
15-100	1	1/8"	KFF-1003	KFF-1103	KFF-1503	10-50	100	1/8"	KFG-1002
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

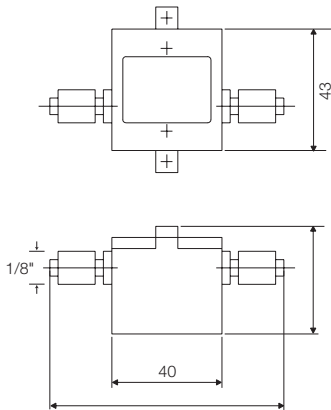
\*\*Calibrated with chlorine

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

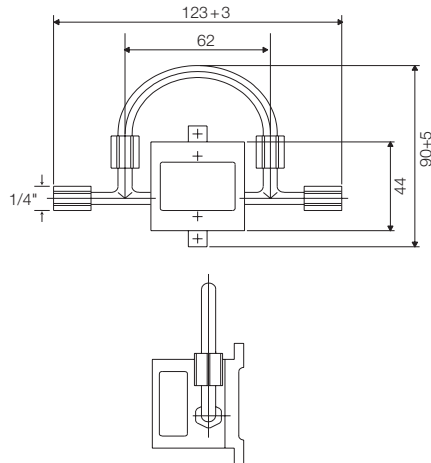
Water					Air				
Measuring range [mL/min]	Pressure loss [bar]	Connection	Ryton®	Brass	Measuring range [mL/min]	Pressure loss [bar]	Connection	Ryton®	Brass
13-100	0.7	1/8"	KFF-3003	KFF-3103	10-50	100	1/8"	-	-
20-200	0.7	1/8"	KFF-3004	KFF-3104	20-100	50	1/8"	KFG-3003	KFG-3103
50-500	0.7	1/4"	KFF-3005	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**

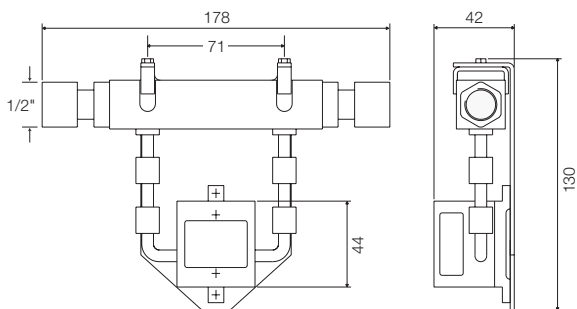
**KFF-/KFG-1...1/8"**



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



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



**KFF-/KFG-3...**

