



## Gear Wheel Flow Meter Made of Aluminium

for viscous liquids



measuring  
•  
monitoring  
•  
analysing

KZA



- Measuring range:  
0.02-4 ... 1-200 l/min
- Measuring accuracy:  
 $\pm 0.3 \dots \pm 3 \%$  of  
measured value
- $p_{\max}$ : 200 bar
- $t_{\max}$ : 80 °C
- Process connection:  
G 1/4, G 3/8, G 3/4, G 1 female
- Material:  
aluminium housing



S4

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**Principle of Function**

The KOBOLD gear wheel flow meter model KZA for viscous liquids is a low cost flow meter. The movement system consists of a gear set, which is propelled by the flow.

The instrument movement bearing is designed for the types KZA-1810 and KZA-1865, as radial and axial gliding bearing. The type KZA-1816 has a ball bearing.

The pick-up is separated from the measuring chamber and it registrates contactlessly the gear resolution through the housing wall.

Easy maintenance, small pressure loss, small weight and low noise level are the outstanding features of this flow meter.

**Areas of Application**

- For all viscose, non abrasive liquids like: petroleum, grease, pastes etc.
- Mixing and batching
- Hydraulics

**Technical Details**

Accuracy: see order details  
 Repeatability: < 0.1% of measured value (KZA-1865)  
 < 0.3% (KZA-1865)  
 (Q < 3 l/min and < 30 mm<sup>2</sup>/s)  
 < 0.1% (20 mm<sup>2</sup>/s; KZA-1816)  
 Max. pressure: 200 bar (KZA-1804)  
 160 bar (KZA-1810... 1865)  
 80 bar (KZA-1899)  
 Temperature range: -10... +80 °C (Medium)  
 Viscosity range: see order details  
 Max. particle size: 20 µm (KZA-1804/1816/1899)  
 30 µm (KZA-1810/1865)

**Materials**

Housing: aluminium, anodised AlMgSiF30 (KZA 1810/1865)  
 aluminium AlMgSiF30 (KZA-1804/1816/1899)  
 Gears: stainless steel 1.4462 (KZA-1804/1810)  
 steel 1.7139 (KZA-1816/1865/1899)

Bearing: plastic gliding bearing (KZA-1810)  
 multi-layer gliding bearing (KZA-1865)  
 ball bearing (KZA-1804/1816/1899)  
 FPM

**Electrical Data**

Output signal: 1 pulse output (KZA-1804/1810/1865/1899)  
 2 pulse outputs, 90° ± 30° misalignment (KZA-1816)  
 square pulse, ratio 1:1 (± 15%), signal PNP  
 Pulse form: short-circuit-proof  
 Pulse amplitude: ≥ 0.8 U<sub>S</sub>  
 Power supply U<sub>S</sub>: 24 V<sub>DC</sub> (± 20%)  
 12 V<sub>DC</sub> (± 20%) (option)  
 reverse polarity protection

Max. power consumption: 0.6 W  
 Max. power output: 0.3 W  
 Electr. connection: connector plug DIN 43650 with mating plug incl. pre-amplifier IP65, DIN 40050  
 Protection: IP65

**Plug-on Display**

Display: 4-digit LED display digit height 7.62 mm with floating point  
 Protection: IP65  
 Electrical connection: plug acc. DIN 43650 (4 pin)  
 Fluid temperature: 0... 80 °C  
 Ambient temperature: 0... 60 °C  
 Max. current consumption: 120 mA  
 Analogue output (Option 3): 0-20 mA, 4-20 mA  
 max. load 250 Ω (18 V<sub>DC</sub>)  
 50 Ω (10 V<sub>DC</sub>)  
 Relay contact (Option 4): 2xN.O. max. 24 V / 1 A

**Weight:** KZA-1804: 0.5 kg  
 KZA-1810: 0.5 kg  
 KZA-1816: 0.7 kg  
 KZA-1865: 1.9 kg  
 KZA-1899: 6 kg

**Order Details** (Example: KZA-1810R10 S3 0)

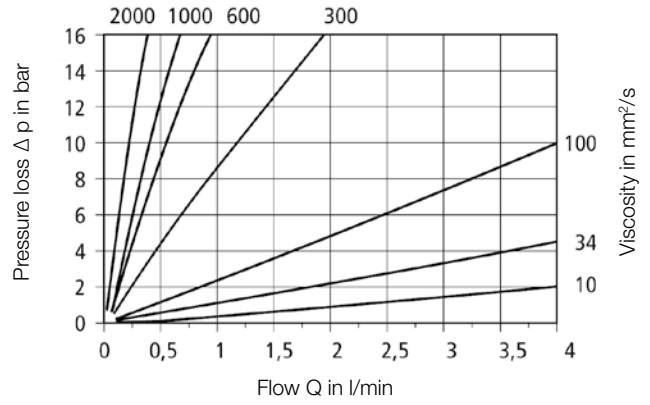
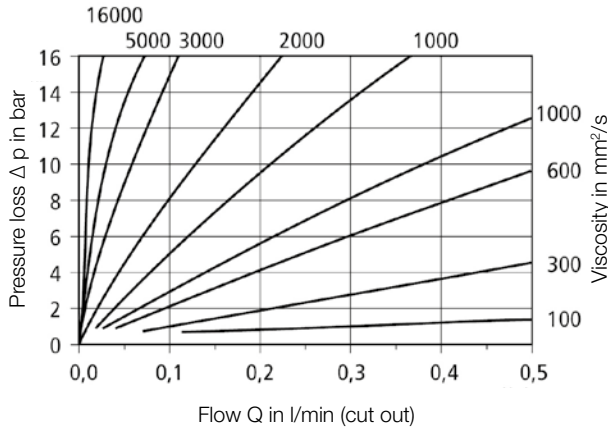
Start of rotation at 20 mm <sup>2</sup> /s [l/min]	Measuring range [l/min]	Viscosity [mm <sup>2</sup> /s]	Accuracy % of meas. value	Resolution [pulses/l]	Model	Connection female	Sensor	Electronic*
0.004	0.02...4	20... 4000	±2	25000	KZA-1804R08	G ¼	... S 3 = 24 V <sub>DC</sub> ... S 5 = 12 V <sub>DC</sub>	0 = standard mating plug without cable 1 = mating plug with 5 m cable 2 = mating plug with 10 m cable 3 = plug-on display with 0(4)... 20 mA output and mating plug 4 = plug-on display with 2 x relay contact and mating plug
-	0.25...10	20... 4000	±3	5000	KZA-1810R10	G ½		
0.01	0.16...16	1... 3000	±0.3	4082	KZA-1816R10	G ¾		
0.12	1...65	20... 4000	±2.5	500	KZA-1865R20	G ¾		
0.1	1...200	20... 4000	±1	191.5	KZA-1899R25	G 1		

\* Pre-amplifier integrated in mating plug or plug-on display

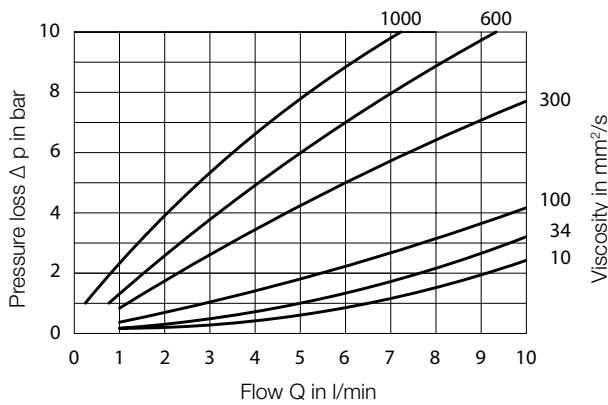


**Pressure Loss**

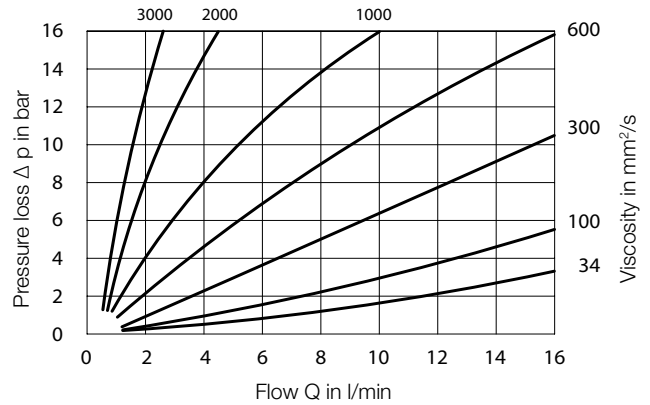
**KZA-1804**



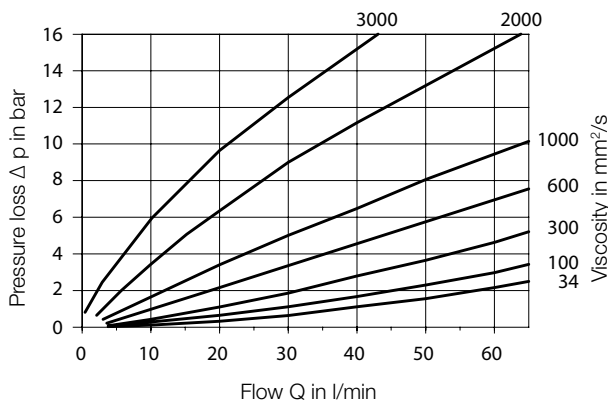
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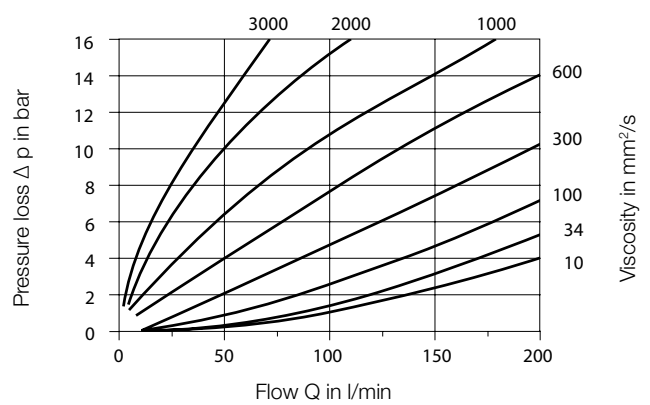
**KZA-1816**



**KZA-1865**



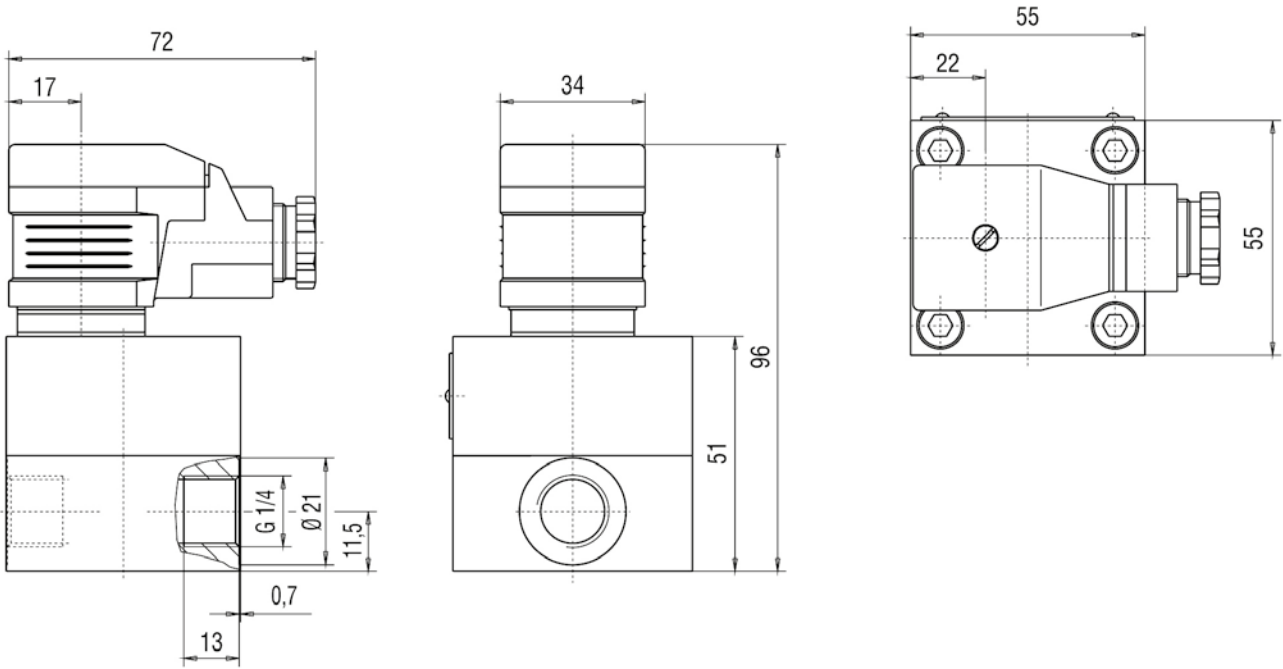
**KZA-1899**



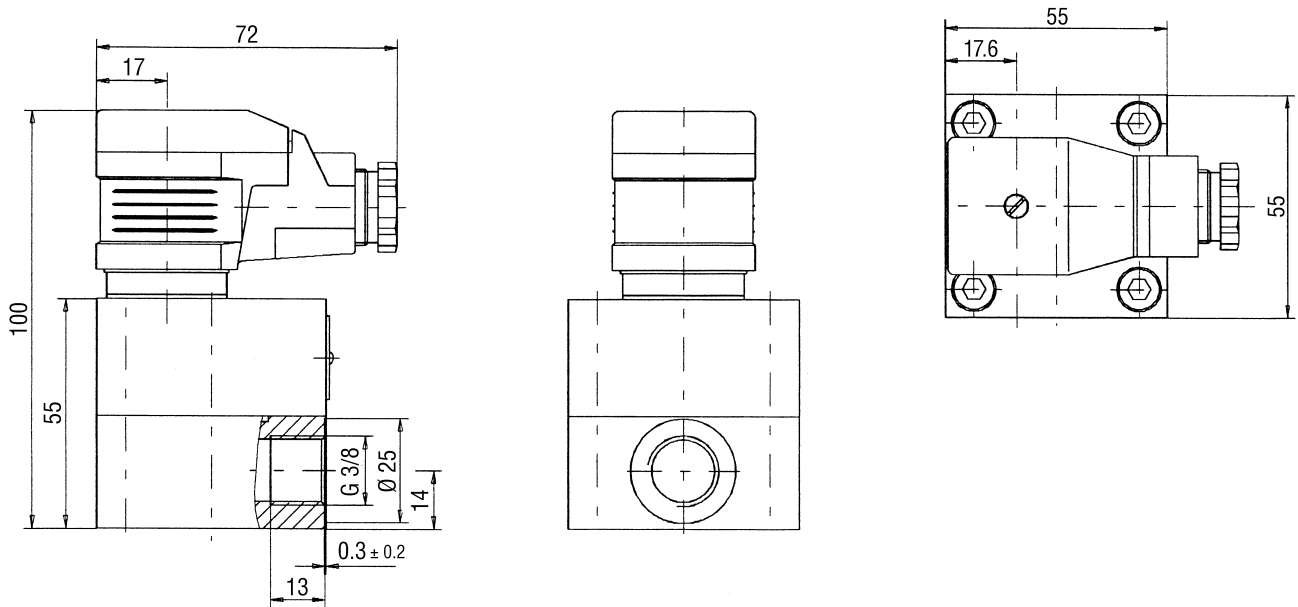


Dimensions [mm]

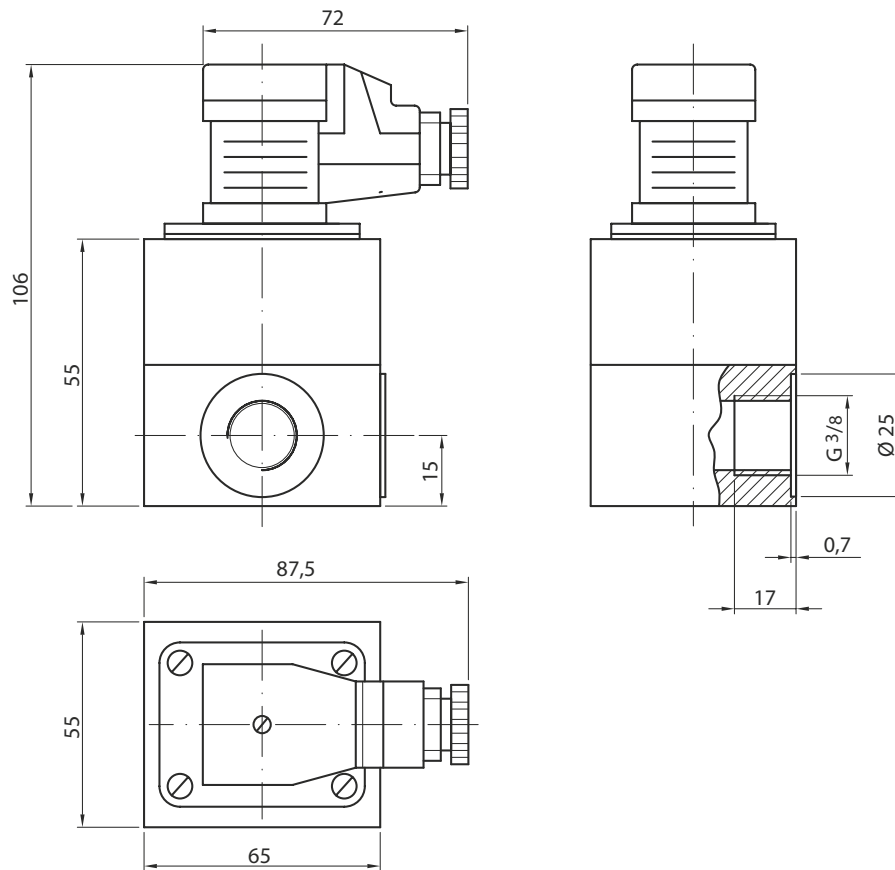
KZA-1804R08



KZA-1810R10



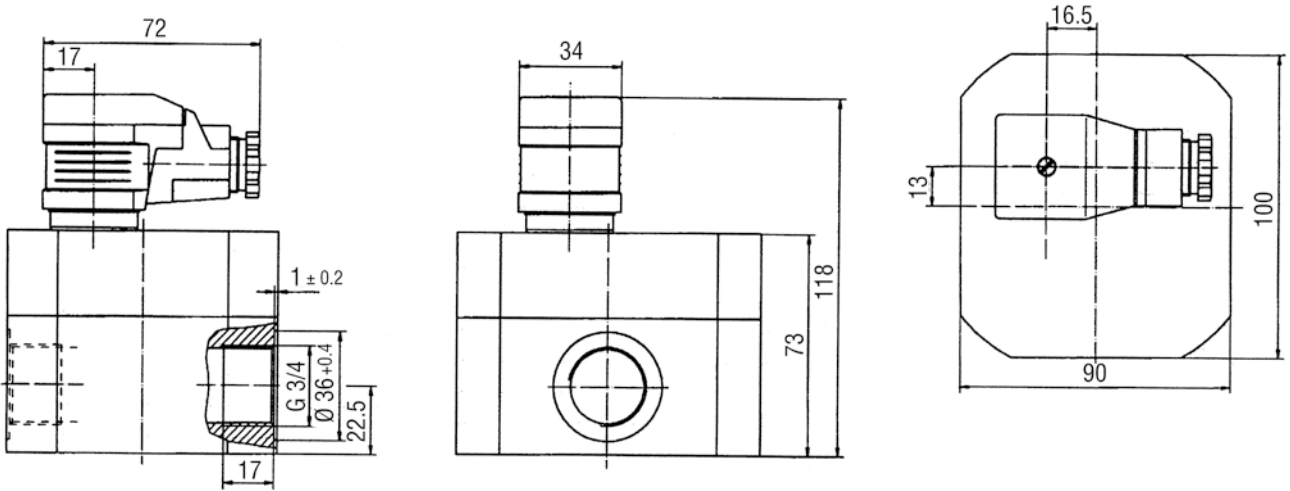
KZA-1816R10



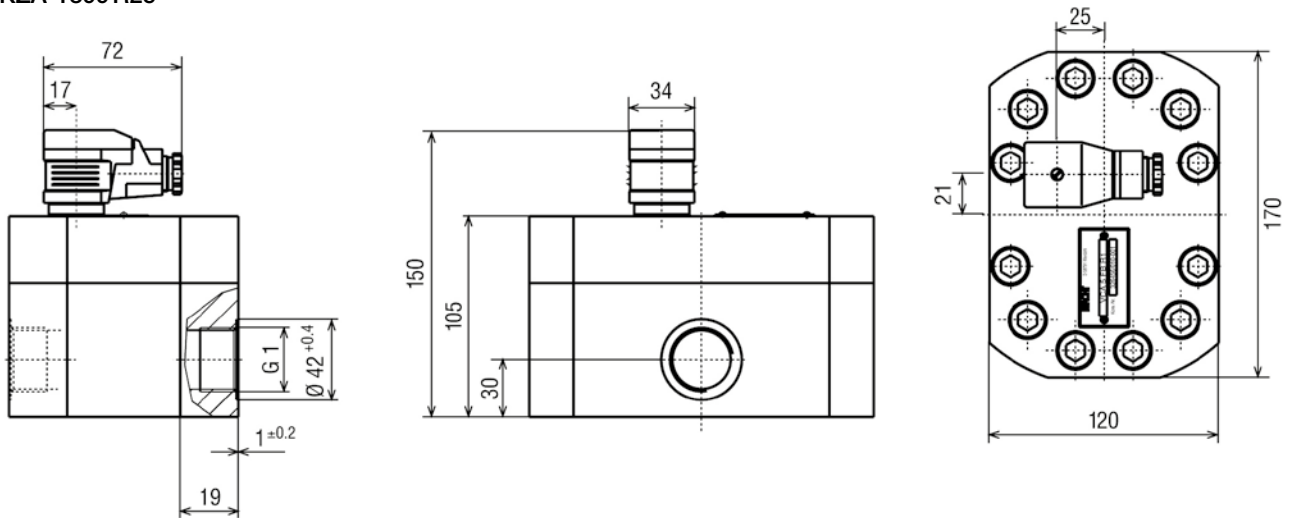


Gear Wheel Flow Meter Made of Aluminium for Viscous Fluids Model KZA

KZA-1865 R20



KZA-1899 R25



Optional plug-on display

