

KATflow 10

Clamp-On Ultrasonic Flow Monitor

SMALL. SOLID. STANDARD.

The KATflow 10 is a simple ultrasonic clamp-on flow monitor, which provides an extremely cost-effective alternative to in-line flowmeters on effluent, wastewater and sludge applications. The KATflow 10 is used to monitor the flow of liquids containing higher levels of

solids or entrained gas bubbles for measurements where a general flow indication is sufficient. The instrument is extremely simple to install and commission and is ideal for applications which demand good repeatability and reliable results.



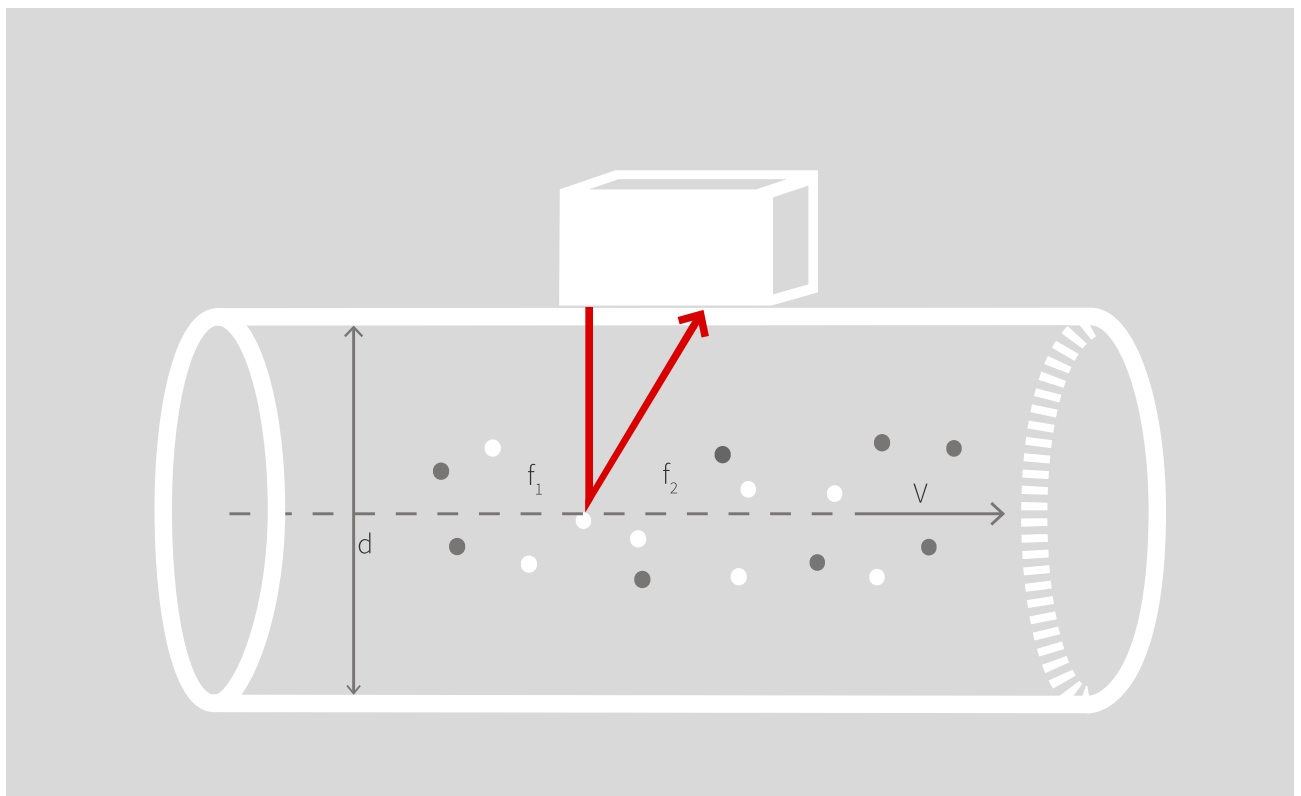
Katronic

Your Solution Starts With Our Product

THE TECHNOLOGY BEHIND THE MEASUREMENT

Unlike the other products in the Katronic range the KATflow 10 is not a transit time based device. The instrument produces a wide ultrasonic beam that is refracted by the pipe wall, as well as reflected by suspended particles in the flowing medium. The KATflow 10 uses a high-output ceramic transducer to send ultrasound through the pipe wall. The ultrasonic pulses are refracted at angles across the axis of the flow

and are then reflected from bubbles, particles and vortices at a wide range of directions and frequencies. The returned signal is analysed in a digital signal processor using Refractive Spread Spectrum Analysis (RSSA). The calculation analyses and integrates the received signals over a wide frequency range, for real-time analysis and flow rate calculation.



Flow monitor sends ultrasonic pulses which are refracted at angles across the axis of the flow and then reflected from bubbles, particles and vortices at a wide range of directions and frequencies.



SPECIFICATION

- Pipe diameter range 30 mm to over 350 mm
- Temperature range -20°C to $+70^{\circ}\text{C}$ (-4°F to $+158^{\circ}\text{F}$)
- Weight 1.5 kg
- Robust IP 68 stainless steel housing
- Velocity range 0.3 ... 4 m/s
- Power supply 18 ... 28 VDC

FEATURES

- Small size
- Low purchase costs
- Quick and simple installation
- No complicated process connections
- Easy programming through dedicated software
- For acoustically conductive fluids with particle concentration > 200 ppm

APPLICATIONS

- Wastewater measurements
- Sludge monitoring
- Effluent measurements
- Metering food waste pipes
- Mining slurry
- Paper stock

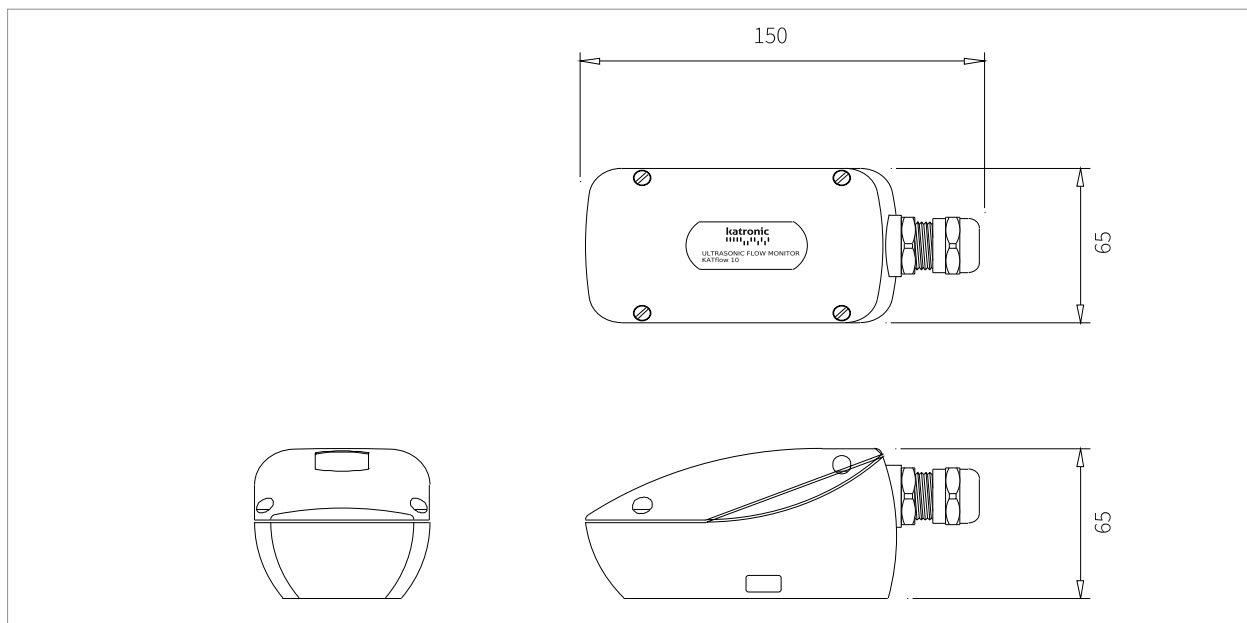


FLOW MONITOR

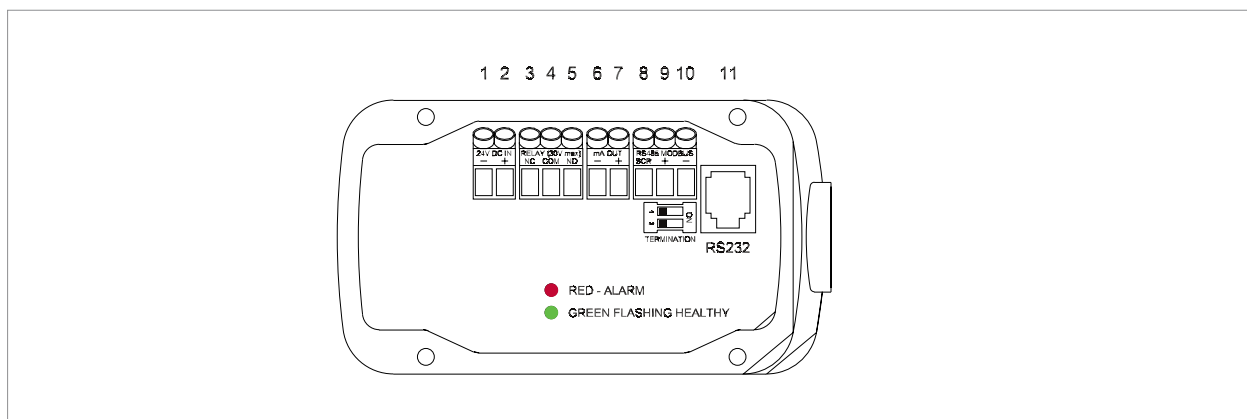
Performance

Measurement principle	RSSA - Refracted Spread Spectrum Analysis
Flow velocity range	0.3 ... 4 m/s
Accuracy	±5 % (up to 350 mm pipe diameter)
Pipe diameter range	30 mm ... 350 mm
Pipe wall thickness	< 20 mm
Pipe material	Rigid plastic, stainless steel, mild steel, cast iron, corrugated pipes
Gaseous and solid content of liquid media	Minimum particle size of 100µ Minimum particle concentration of 200 ppm

Images



KATflow 10 (dimensions in mm)



KATflow 10 inside connections



General

Enclosure type	Pipe mounted
Degree of protection	IP 68
Operating temperature	-20 ... +70 °C (-4 °F to +158 °F)
Housing material	Type 316 stainless steel, investment casting
Power supply	18 ... 28 V DC, 125 mA
Dimensions	65 (h) x 150 (w) x 65 (d) mm
Weight	1.5 kg

Communication

Type	1 x Volt-free relay, 1 x 4...20 mA active output RS 232, RS 485 Modbus RTU
------	---

Process outputs

Switch output	Volt free relay, programmable, 1A at 30 VDC, SPCO
Analogue output	4 ... 20 mA scalable

Accessories

Mounting accessories	Metal strap and clamp, acoustic coupling pad
----------------------	--

Configuration code

Standard instrument	KAT10 - 03 - 0 (velocity 0.3 ... 4.0 mm/s)
For larger pipes >350 mm	KAT10 - 03 - 01 (velocity 0.3 ... 4.0 mm/s)