

Clamp-On Doppler Flow Monitor/Switch

- Flow monitor/switch for dirty and aerated liquids in fully filled pipes
- For commonly used pipe materials and diameters from 40 mm to 400 mm
- Simple and cost-effective solution with continuous outputs and switch points
- Doppler measurement principle for reliable flow indication under difficult flow conditions
- Non-invasive and non-intrusive design
- Robust stainless steel enclosure
- Short signal evaluation time

**Features**

- Sturdy and compact stainless steel enclosure for installation in tough environments
- Easy to install and commission through auto-scaled process outputs
- For flow velocities from 0.3 m/s to 9.0 m/s

Description

The KATflow 10 clamp-on flow monitor/switch works on the Doppler method. This is based on the principle that the frequency of an emitted sound shifts with the movement of the source of the sound in relation to a non-moving receiver. This principle is applied in reverse by the KATflow 10 which sends an ultrasonic signal into the pipe where it is reflected by suspended particles or gas bubbles (discontinuities). Due to the movement of the liquid, the frequency of the reflected signal is different to the one which has been sent into the pipe. This frequency shift is directly proportional to the flow rate of the liquid.

The KATflow 10 is a fixed-installation clamp-on flow indicator and switch for the non-invasive and non-intrusive monitoring of pipes filled with dirty and/or aerated liquids. Since there is no need to open the pipe for installation, there is no pressure drop and no risk of leakage or contamination. The KATflow 10 is capable of indicating a flow rate and providing a repeatable switching point on low and high flows for most dirty and/or aerated liquids and slurries with velocities from 0.3 m/s to 9.0 m/s.

Typical process liquids for the KATflow 10 are: Activated carbon slurries, aerated liquids, soap solutions, coal slurries, fly ash slurries, limestone slurries, paper slurries, sewage and sludge, domestic and animal waste slurries.

The setup of the KATflow 10 consists of a one-button calibration routine to establish the flow rate and to enable an alarm setting with a "high flow" and "low flow" alarm point. Red and green LEDs provide the user with feedback during this procedure. The process outputs are connected to the flow monitor through screw terminals inside the unit.

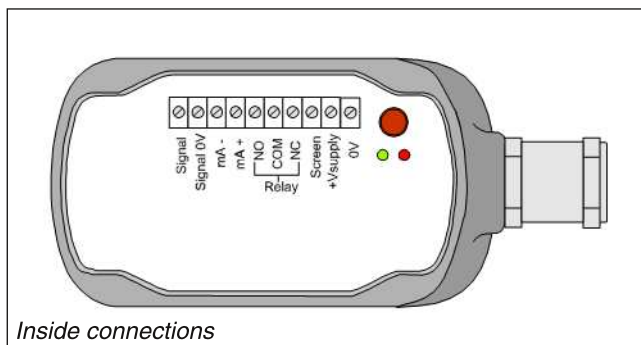
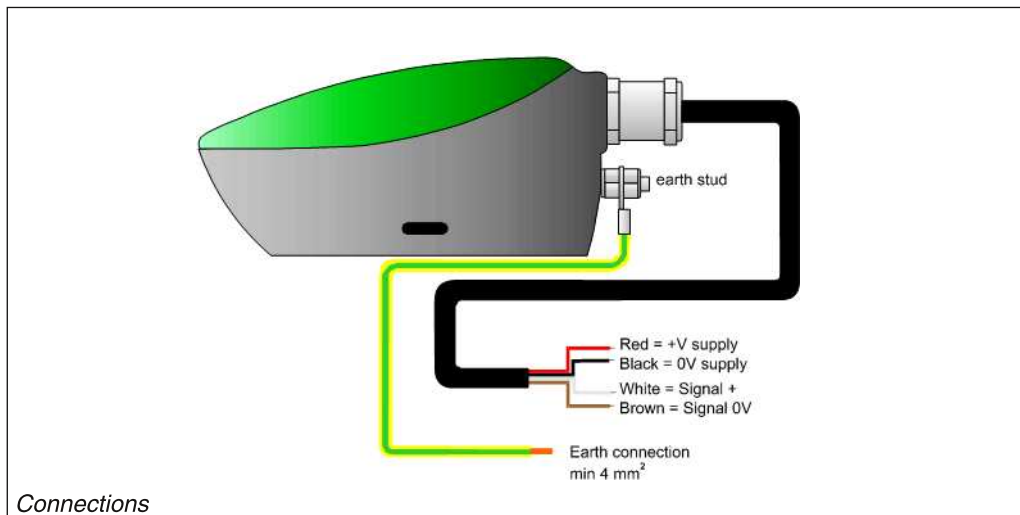
Configuration codes

Standard flow	:	KAT10 - 01 - 0 (velocities 0.3 ... 3.5 m/s)
High flow	:	KAT10 - 01 - 1 (velocities 0.7 ... 9.0 m/s)

Specification: Flow monitor/switch

Performance	Measurement principle	:	Ultrasonic Doppler
	Flow velocity range	:	0.3 ... 3.5 m/s (standard), 0.7 ... 9.0 m/s (high flow model)
	Accuracy	:	±7.5 % (application dependent)
	Pipe outside diameter	:	40 ... 400 mm
	Pipe wall thickness	:	< 10 mm
	Housing	:	Type 316 stainless steel, investment casing
	Size, weight	:	70 mm (h) x 118 (w) x 65 mm (d), 1.5 kg
	Switch output	:	Volt free relay, programmable, 1 A at 30 V DC, SPCO
	Switch point setup	:	Via settings in electronic unit
	Analogue output	:	4 ... 20 mA (auto scaled), 0 ... 10 V DC
	Power supply	:	22 ... 36 V DC, 120 mA
	Degree of protection	:	IP 67
	Operating temperature	:	-40 ... 85 °C
	CE/EMC approval	:	Complies with BS EN 50081-1 (1992) for emissions and with BS EN 50082-2 (1995) for immunity
	Shock and vibration	:	Complies with BS 60068
	Accessories	:	Metal strap and clamp, acoustic coupling paste

Drawings



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