UFM-10
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 30 mm to 350 mm.
- Simple and cost-effective solution with continuous outputs and switch points.
- Refracted Spread Spectrum Analysis 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 *mis* to 4.0 *mis.*

Description

The UFM-10 clamp-on flow monitor works based on the new innovative Refracted Spread Spectrum Analysis method. This new measurement systems is a development of the older Doppler measurement system using the frequency of an emitted sound shifts in relation to a non-moving receiver. This principle is applied in reverse by the UFM-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 UFM-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 tor installation, there is no pressure drop and no risk of leakage or contamination. The UFM-10 is capable of indicating a flow rate and providing a repeatable switching point on low and high flows tor most dirty and/or aerated liquids and slurries with velocities from 0.3 m/s to 4.0 m/s.

Typical process liquids for the UFM-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.

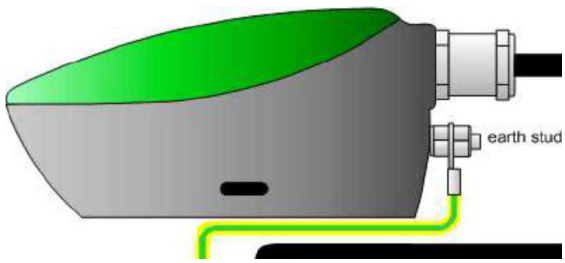
The setup of the UFM-10 has been simplified and improved and now uses a programming / monitoring PC-based software tor the configuration of the meter. The new software helps the user setup the UFM-10, providing information on signal confidence and raw data, as well as providing graphical representation of both flow velocity and volumetric flow rate.

Configuration Codes

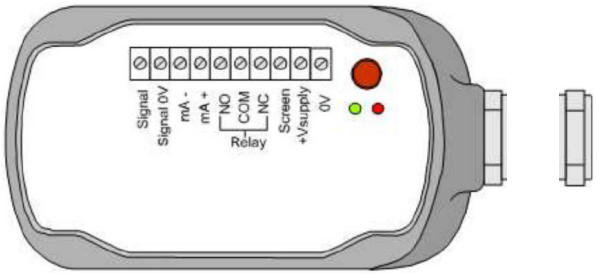
Standard instrument For larger pipes >350 mm	UFM-10 - 03 - 0 (velocities 0.3 ... 4.0 m/s) UFM-10 - 03 - 1 (velocities 0.3 ... 4.0 m/s)

Performance	Measurement principle	RSSA - Refracted Spread Spectrum Analysis;
	Flow velocity range	0.3 ... 4.0 mis;
	Accuracy	±5 % (application dependent);
	Pipe outside diameter	40 ... 350 mm (standard), up to 1,000 mm (special);
	Pipe wall thickness	<20 mm;
	Housing	Type 316 stainless steel, investment
	Size, weight	70 mm (h) x 118 (w) x 65 mm (d), 1.5 kg;
	Switch output	Volt free relay, programmable, 1 Aat 30 V DC,
	Serial comms	SPCO; RS485 ModBus;
	Analogue output	4 ... 20 mA scalable;
	Power supply	18 ... 28 V DC, 120 mA;
	Degree of protection	IP 67;
	Operating temperature	-20 ... 70 °C;
	CE/EMC approval	Complies with BS EN 61326-1 :2006 (1992) for emissions and immunity;
	Accessories	Metal strap and clamp, acoustic coupling pad.

Drawings



Connections



Inside connections

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