UFM Guard | Data Sheet

UFM Guard - Pig Detector
Non-invasive pig passage identification

Pig detection is essential for the performance of critical cleaning an inspection operations. The ultrasonic bolt-on sensor of the UFM Guard monitors every pig passage in pipelines used for the transport of e.g. crude oil, liquefied gas or water. This non-invasive method is quick, reliable and cost-effective.

UFM Guard - sensor (ATEX)

The UFM Guard reacts to structure-borne sound signals caused by the movement of material inside a pipe. It detects pigs and foreign objects within the process, blockages, high flow, low flow and no flow of solids.

The UFM Guard pig detector is suitable for use with Galvanically isolating barriers only. Intrinsically safe earthing is not required. It operates within a -40°C to +92°C range.

We offer an optional DIN rail signal conditioner in order to create a complete pig detection system.

Optional: UFM Guard - DIN rail signal conditioner

Features

● **Non-invasive and maintenance free**

● **Easy bolt-on installation**

● **Low cost**

● **No moving parts and vibration resistant**

● **IP 68 stainless steel housing**

● **Highly reliable in low and high temperatures**

● **ATEX flammable atmosphere approved**

Recommended for

● **Process protection**

● **Burst filter bag detection**

● **Pending blockages detection**

● **Flow and no flow detection of solids**

● **Pump cavitation detection**

● **Valve leakage detection**

● **Bridging and rat-holing detection**

● **Material flow/route verification**

● **Bearing failure**

The technology behind the detection

The UFM Guard works by monitoring the friction between the pig and the pipe wall, which generates a noise within the ultrasonic frequency of the sensor. This noise level generated by the passing pig is significant compared to other background noises or vibration caused by plant machinery. The large increase in noise provides a signal indicating the pig's passing through the detection system, providing time and location.

Instant reaction to flow changes provides protection to plant operation from abnormal flow conditions in pipelines. Fine powder in flight, in minute quantities, can generate a distinctive signal enabling flow or no flow alarms.

Simple installation

At U-F-M we are experts in ultrasonic clamp-on technology. The UFM Guard sensor is bolted on the outside of the pipe. Installation takes only minutes and the compact design implicates that it can be fitted in the tightest of positions or environments.

No interruptions

UFM Guard's non-invasive nature allows easy fit to most pipelines. There is no need to shut down the flow process for installation or monitoring operations.

Easy to use

The sensor is designed with the operator in mind. Powered with 24 to 26V DC, the UFM Guard provides a 0 to 10 V DC output, this signal may be fed directly to a PLC, or an optional control unit.

Dimensions
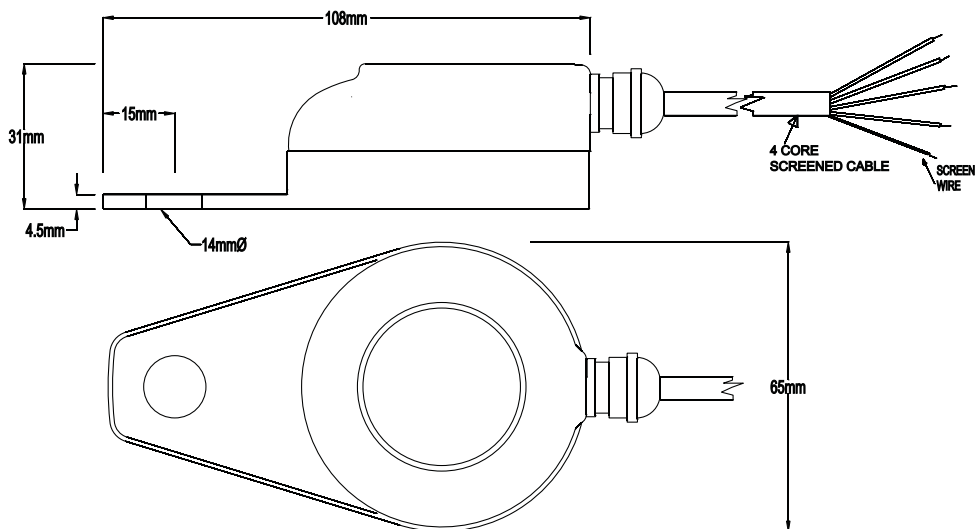
Technical specifications

Physical	
Dimensions	125mm x 31mm x 65mm (LxHxW)
Weight	nominal 0,5 kg (excl. cable)
Case	type 316 stainless steel (investment casting)
Mounting	14mm hole in tab, suitable for 12mm threaded fixing
Environmental	
Housing	IP68
Temperature	-40°C to +92°C
CE approval	EMC Approval to BS EN 50081-1:1992 for emissions and BS EN 50082-2: 1995 for immunity
Hazardous area approval	
ATEX is	-40°C to +92°C (Eex ia I/IIC)
Analogue output	0 to 10 V DC
Supply	
Power supply	24 to 26 V DC via suitable galvanic barriers
Current consump.	typically 15mA