

PipeMonit® Swarm®
– Real-time erosion and
corrosion monitoring

Swarm® S1





Swarm® S1

PRODUCT SPECIFICATIONS

TECHNICAL DATA

Type	Integrated Ultrasonic device
UT channels	1
Ultrasound frequency (typical)	5 MHz
Pipeline operating temperature	-40 to +125 °C (-40 to +257 °Fahrenheit)
Temperature sensor	-40 to +125 °C +- 0.1 °C (-40 to +257 °Fahrenheit)
Ambient operating temperature	-40 to +60 °C (-40 to 140 °F)
Pipe size	≥ 100 mm OD (4 inches)
Wall thickness	> 3 mm (0.12 inches)
Wall material	Steel or solid homogenous solid materials
Coating materials	Works through external homogeneous PE/PP/FBE coatings
Repeatability	2.5 µm (0.1 mils)
Absolute wall thickness accuracy	0.1 mm (4 mils)
Retrofittable	Yes
Non-intrusive	Yes
Dimensions	80 x 45 x 50 mm
Weight	0.3 kg
Ingress protection	IP67
Ex rating	UL USA: Class1 Zone1 AEx ib IIB T4 cUL Canada: Ex ib IIB T4 Europe: ATEX EX ib IIB T4 Gb IECEX: IEC Ex ib IIB T4 Gb Brasil: InMetro
Bracket material	SS316
Tightening band material	SS316 or composite polymer
ELECTRICAL DATA	
Supply Voltage	4.5 to 16 VDC
Power consumption (typical)	< 1 W (Active), < 0.1 W (Idle)
Communication options	RS-485 (2 connectors)
Connector type	4 pin, Sealed

SUMMARY

The S1 Sensor is a high resolution ultrasonic pulse - echo erosion and corrosion monitoring tool which provides quick response to corrosion and erosion changes in pipelines and vessels. A Swarm® consists of multiple daisy chained S1 sensors organized in a customized matrix to cover a bend, straight pipe, a weld, a t-piece or a vessel or a tank.

The Swarm®s market leading ability to provide fast and accurate wall thickness loss data makes it a cost effective tool for real-time feedback of corrosion inhibitor programs. Swarm® is non-intrusive and offers simpler, faster and safer installation than any competing systems. No need for removal of solid coatings, no gluing, no welding and no interference with production.