

HS-100I Series Vibration Sensor

Intrinsically Safe, Submersible Industrial Accelerometer



Typical Applications

- For offline applications using commercially available intrinsically safe data collectors and online monitoring systems in the fields of Mining, Offshore, Petrochemical, Gas.
- **Protecting...**
Fans, Motors, Pumps, Compressors, Centrifuges, Conveyers, Air Handlers, Gearboxes, Rolls, Dryers, Presses, Cooling, HVAC, Spindles, Machine Tooling, Process Equipment and many more.

Technical Performance

Mounted Base Resonance	18 kHz (nominal)
Sensitivity	100 mV/g $\pm 10\%$ Nominal 80 Hz at 22 °C
Frequency Response	2 Hz to 10 kHz $\pm 5\%$ 0.8 Hz to 15 kHz ± 3 dB
Isolation	Base isolated
Measurement Range	± 80 g
Transverse Sensitivity	Less than 5%

Electrical

Electrical Noise	0.1 mg max
Current Range	0.5 mA to 8 mA
Bias Voltage	10 - 12 Volts DC
Settling Time	2 seconds
Output Impedance	200 Ohms max.
Case Isolation	$>10^8$ Ohms at 500 Volts

Environmental

Certified Temperature Range	Ex ia IIC T6 ($-55^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$) Ex ia IIC T4 ($-55^{\circ}\text{C} \leq T_a \leq +110^{\circ}\text{C}$) On request - consult Sales Office
Sensor Temperature Range	-55 to 140°C
Sealing	IP68
Maximum Shock	5000 g
Emissions	EN61000-6-4:2001
Immunity	EN61000-6-2:1999

Mechanical

Case Material	Stainless Steel
Sensing Element/Construction	PZT/Compression
Mounting Torque	8 Nm
Weight	120 gms (nom)
Maximum Cable length	See System drawing
Cable	Blue Silicon Screened-length to be specified with order
Mounting Threads	See 'How to order' table
Submersible Depth	100 metres max (10 bar)



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Intrinsically Safe, 100mV/g Industrial Accelerometer

PRODUCT DATA

Intrinsically Safe Requirements

Maximum Cable Length	See System Drawing M06-003-B (Armoured) M06-004-B (PUR) M06-005-B (Silicone)
Certificate details: Group I	IECEXBAS07.0037X Baseefa07ATEX0149X ⊕I M1 Ex ia I (-55°C < Ta < +110°C)
Certificate details: Group II	IECEXBAS07.0035X Baseefa07ATEX0144X ⊕II 1GD T130°C Ex ia IIC T4 Ex tD A20 IP65 T130°C (-55°C ≤ Ta ≤ +110°C)
Certificate details: Group II	IECEXBAS07.0035X Baseefa07ATEX0144X ⊕II 1GD T80°C Ex ia IIC T6 Ex tD A20 IP65 T80°C (-55°C ≤ Ta ≤ +60°C)
Accelerometer System Certificate	Baseefa07Y0145 Ex ia IIC T6 (-55°C ≤ Ta ≤ +60°C) Ex ia IIC T4 (-55°C ≤ Ta ≤ +110°C) On request - consult Sales Office
System Connections	Drawing M06-003-B (Armoured) Drawing M06-004-B (PUR) Drawing M06-005-B (Silicone)
Terminal Parameters	Ui = 28V, Ii = 93mA, Pi = 0.65W
500V Isolation	Units Will Pass A 500V Isolation Test
Barrier	1 x Pepperl + Fuchs Galvanic Isolator KFD2-VR4-Ex1.26 (BAS02ATEX7206) sheet 1 of M06-003-B, M06-004-B and M06-005-B. 1 x MTL Zener Barrier MTL7728 (BAS01ATEX7217) or Pepperl + Fuchs Zener Barrier Z728 (BAS01ATEX7005) or any other barrier that conforms to note 2 of sheet 2 of M06-003-B, M06-004-B and M06-005-B.
Notes:	Special conditions of safe use for Group II dust. The free end of the cable on the integral cable version of the apparatus must be terminated in an appropriately dust-proof enclosure.



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Dimensions

Ø5.2mm
61
44
25mm A/F

Non-Hazardous Area
Hazardous Area
Non-hazardous area apparatus
Isolator/Barrier Box
Junction Box
Approved Accelerometer
Supply +
Supply -
Screen to case
White ... +ve
Black ... 0V

For full details, see System Connection M06-003-B, M06-004-B and M06-005-B

Frequency Response

Sensitivity Change dB
Frequency Hz

Mounting of sensor to achieve good repeatable readings.
Vibration sensor should be firmly fixed to a flat surface (spot face surface may be needed to be produced and cable anchored to sensor body.)

How to order

HS - Product Prefix

Extra Options
I - ATEX Group II
S - 90° Side Exit
M - ATEX Group I Mining

Cable
01 ... Polyurethane
02 ... 2 core O/B ETFE
07 ... 3 core Silicone
Connector
50 ... 2 Pin MS
54 ... 4 Pin M12

Product Series
100 - Industrial Accelerometer

Output
010 ... 10mV/g
030 ... 30mV/g
050 ... 50mV/g
100 ... 100mV/g

Mounting Threads
01 ... 1/4"-28 UNF Female
02 ... 1/4"-28 UNF Male
05 ... Quick Fit Female
06 ... M6 x 1mm Male
08 ... M8 x 1.25mm Male
10 ... M10 x 1.5mm Male
12 ... M12 x 1.75mm Male

Product Code: **H S - 1 0 0 I S 1 0 0 0 7 0 1**

Please contact our Sales Office for information on sensor accessories (mounting studs, etc) and multichannel switch boxes.