

# MON-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	0.8 Hz to 14 kHz $\pm 5\%$ 0.8 Hz to 15 kHz $\pm 3$ dB
Isolation	Base isolated
Measurement Range	$\pm 80$ 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°C $\leq$ Ta $\leq$ +60°C) Ex ia IIC T4 (-55°C $\leq$ Ta $\leq$ +110°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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& Plant Reliability Services

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PRODUCT DATA



# MON-100I Series Vibration Sensor

Intrinsically Safe, 100mV/g Industrial Accelerometer

PRODUCT DATA

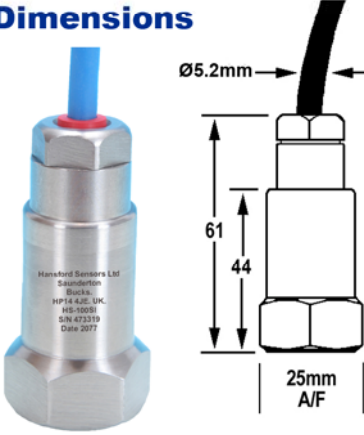
## Intrinsically Safe Requirements

Maximum Cable Length	See System Drawing M06-003-A (Armoured) M06-004-A (PUR) M06-005-A (Silicone)
Certificate details: Group I	IECEXBAS07.0037 Baseefa07ATEX0149 ⊕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-A (Armoured) Drawing M06-004-A (PUR) Drawing M06-005-A (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-A, M06-004-A and M06-005-A.  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-A, M06-004-A and M06-005-A.
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.



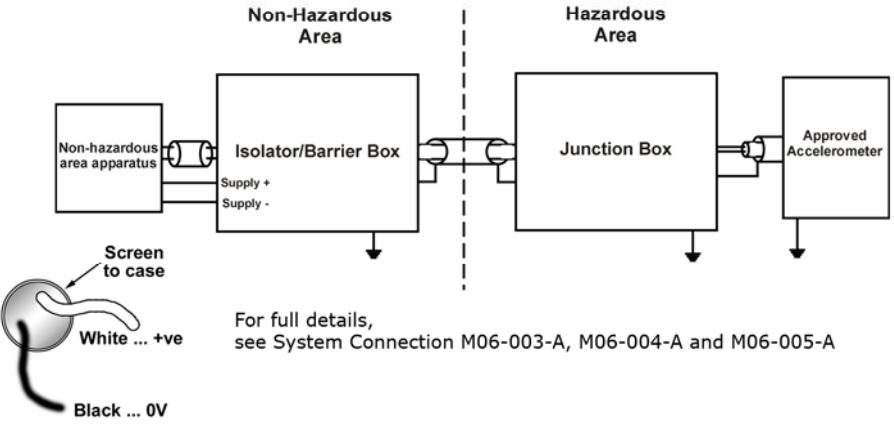
# MON-100I Series Vibration Sensor

### Dimensions



Handford Sensors Ltd  
Sunderford  
Bucks.  
HP14 4JZ, UK  
NIS 50058  
S/N 473319  
Date 2077

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 -

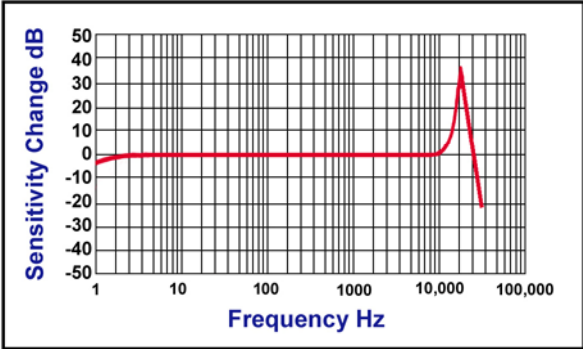
Screen to case

White ... +ve

Black ... 0V

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

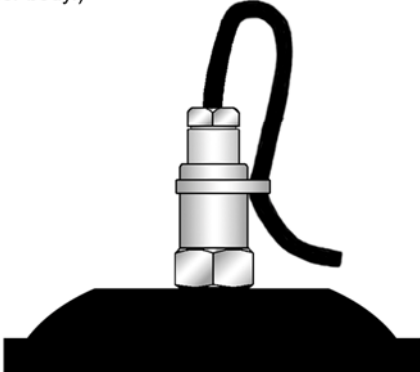
### Frequency Response



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

1 0 0 I S 1 0 0 0 7 0 1

**Product Series**  
100 - Industrial Accelerometer

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

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

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

**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

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

We reserve the right to alter the specification of this product without prior notice.