

# HS-100I Intrinsically Safe Accelerometer

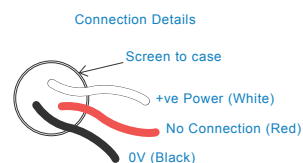
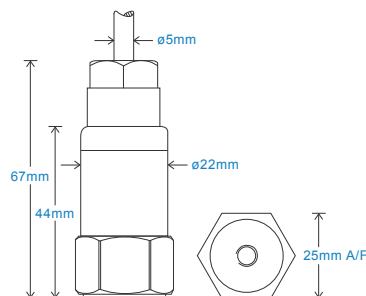
## AC acceleration output via Silicon Cable

### Key Features

- Intrinsically Safe with European, USA, South African and Australian approvals
- For use with data collector

### Industries

Building services, Pulp and Paper, Mining, Metals, Utilities, Automotive, Water, Pharmaceutical



### Technical Performance

|                        |   |
|------------------------|---|
| Mounted Base Resonance | see 'How To Order' table (nominal)  |
| Sensitivity            | see: 'How To Order' table $\pm 10\%$<br>Nominal 80Hz at 22°C  |
| Frequency Response     | 2Hz (120cpm) to 10kHz (600kcpm) $\pm 5\%$<br>1.5Hz (90cpm) to 12kHz (720kcpm) $\pm 10\%$<br>0.8Hz (48cpm) to 15kHz (900kcpm) $\pm 3\text{dB}$ |
| Isolation              | Base isolated   |
| Range                  | see: 'How To Order' table   |
| Transverse Sensitivity | Less than 5%  |

### Mechanical

|                              |   |
|------------------------------|---|
| Case Material                | Stainless Steel                             |
| Sensing Element/Construction | PZT/Compression                             |
| Mounting Torque              | 8Nm   |
| Weight                       | 125gms (nominal)                            |
| Maximum Cable Length         | 1000 metres                                 |
| Standard Cable Length        | 5 metres                                    |
| Screened Cable               | Silicon - length to be specified with order |
| Mounting Threads             | see: 'How To Order' table                   |
| Submersible Depth            | 100 metres max (10 bar)                     |

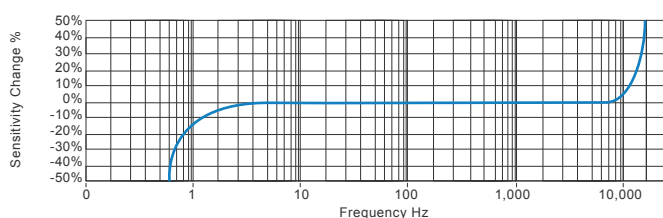
### Electrical

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

### Environmental

|                             |                                     |
|-----------------------------|-------------------------------------|
| Operating Temperature Range | see: attached certification details |
| Sealing                     | IP68                                |
| Maximum Shock               | 5000g                               |
| EMC                         | EN61326-1:2013                      |

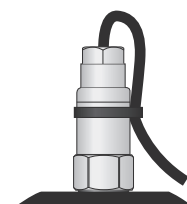
### Typical Frequency Response (at 100mV/g)



### Applications

Fans, Motors, Pumps, Compressors, Centrifuges, Conveyors, Air Handlers, Gearboxes, Rolls, Dryers, Presses, Cooling, VAC, Spindles, Machine Tooling, Process Equipment

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.)



### Certifications



[www.hansfordsensors.com](http://www.hansfordsensors.com)  
[sales@hansfordsensors.com](mailto:sales@hansfordsensors.com)

We reserve the right to alter the specification of this product without prior notice  
TS038.14



## AC acceleration output via Silicon Cable

## Intrinsically Safe Requirements

|   |  |  |  |
|---|--|--|--|
| Maximum Cable Length  | Up to 300 metres dependent on cable<br>- see attached system drawing   | Certified Temperature Range  | Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +60°C) (Gas)<br>Ex ia IIIC T80°C IP65 Da (-55°C ≤ Ta ≤ +60°C) (Dust)<br>Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +110°C) (Gas)*<br>Ex ia IIIC T130°C IP65 Da (-55°C ≤ Ta ≤ +110°C) (Dust)*<br>Ex ia I Ma (-55°C ≤ Ta ≤ +110°C) (Mining)<br>*On request - consult Sales Office |
| Certificate details: Group I                                  | IECEEx BAS07.0037X<br>Baseefa07ATEX0149X<br>ⓈI M1<br>Ex ia I Ma<br>(-55°C ≤ Ta ≤ +110°C)                                       | Australia Approval Group I   | IECEEx ITA 11.0013X<br>Ex ia I Ma<br>(-55°C ≤ Ta ≤ +110°C)   |
| Certificate details: Group II<br>(ignition temperature 130°C) | IECEEx BAS07.0035X<br>Baseefa07ATEX0144X<br>ⓈII 1GD<br>Ex ia IIC T4 Ga<br>Ex ia IIIC T130°C IP65 Da<br>(-55°C ≤ Ta ≤ +110°C)   | US/Canada Approvals<br>Class I, II, III, Division 1, 2, Groups A - G, T4, -55°C to +110°C, IP65<br>Class I, Zone 0, AEx, ia, IIC, T4, Ga, -55°C to +110°C<br>Zone 20, AEx, ia, IIIC, T130°C, IP65, Da, -55°C to +110°C | Certificate No. USTC/15/FAI/01350  |
| Certificate details: Group II<br>(ignition temperature 80°C)  | IECEEx BAS07.0035X<br>Baseefa07ATEX0144X<br>ⓈII 1GD<br>Ex ia IIC T6 Ga<br>Ex ia IIIC T80°C IP65 Da<br>(-55°C ≤ Ta ≤ +60°C)     | Class I, II, III, Division 1, 2, Groups A - G, T6, -55°C to +60°C<br>Class I, Zone 0, AEx, ia, IIC, T6, Ga, -55°C to +60°C<br>Zone 20, AEx, ia, IIIC, T80°C, IP65, DA, -55°C to +60°C                                  | South African Approval<br>Certificate No. MASC S/16-0231X<br>Group II (As Baseefa/ATEX)<br>MASC M/16-0230X<br>Group I (As Baseefa/ATEX)  |
| Accelerometer System Certificate                              | Baseefa07Y0145<br>Ex ia IIC T6 (-55°C ≤ Ta ≤ +60°C)<br>Ex ia IIC T4 (-55°C ≤ Ta ≤ +110°C)<br>On request - consult Sales Office | System Connections   | see attached system drawings   |
| Terminal Parameters   | Ui = 28V, Ii = 93mA, Pi = 0.65W<br>Ci = 83nf<br>Li/Ri = 15.4µH/Ohm   | Barrier  | 1 x Pepperl + Fuchs Galvanic Isolator<br>KFD2-VR4-Ex1.26 (BAS02ATEX7206)<br>see attached system drawings<br>1 x MTL Zener Barrier MTL7728+ (BAS01ATEX7217)<br>or Pepperl + Fuchs Zener Barrier   |
| 500V Isolation  | Units Will Pass A 500V Isolation Test  |  | Z728 (BAS01ATEX7005) or any other barrier that<br>conforms to system drawings on website   |

Notes: Special conditions of safe use for Group I & II. The free end of the cable on the integral cable version of the apparatus must be terminated in an appropriate dust-proof enclosure.

## How To Order

