HS-170 \text{I Premium Intrinsically Safe Accelerometer}

AC acceleration output via Flame Retardant Cable

Key Features

- Intrinsically Safe with European, USA, Indian and Australian approvals
- Compact design
- Premium design
- Customisable features

Industries

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

Technical Performance

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounted Base Resonance</td>
<td>see ‘How To Order’ table (nominal)</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>see: ‘How To Order’ table ±10%</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>2Hz (120cpm) to 14kHz (840kcpm) ± 5%</td>
</tr>
<tr>
<td></td>
<td>1.5Hz (90cpm) to 16kHz (960kcpm) ± 10%</td>
</tr>
<tr>
<td></td>
<td>0.8Hz (48cpm) to 19kHz (1,140kcpm) ± 3dB</td>
</tr>
<tr>
<td>Isolation Range</td>
<td>Base isolated</td>
</tr>
<tr>
<td>Transverse Sensitivity</td>
<td>see: ‘How To Order’ table Less than 5%</td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Material</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Sensing Element/Construction</td>
<td>PZT/Shear</td>
</tr>
<tr>
<td>Mounting Torque</td>
<td>8Nm</td>
</tr>
<tr>
<td>Weight</td>
<td>52gms (nominal) body only</td>
</tr>
<tr>
<td>Maximum Cable Length</td>
<td>See certificate</td>
</tr>
<tr>
<td>Standard Cable Length</td>
<td>5 metres</td>
</tr>
<tr>
<td>Screened Cable</td>
<td>Flame Retardant - length to be specified with order</td>
</tr>
<tr>
<td>Mounting Threads</td>
<td>see: ‘How To Order’ table</td>
</tr>
</tbody>
</table>

Electrical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Noise</td>
<td>0.1mg max</td>
</tr>
<tr>
<td>Current Range</td>
<td>0.5mA to 8mA</td>
</tr>
<tr>
<td>Bias Voltage</td>
<td>10 - 12 Volts DC</td>
</tr>
<tr>
<td>Settling Time</td>
<td>1 second</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>200 Ohms max</td>
</tr>
<tr>
<td>Case Isolation</td>
<td>&gt;10³ Ohms at 500 Volts</td>
</tr>
</tbody>
</table>

Environmental

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature Range</td>
<td>see: attached certification details</td>
</tr>
<tr>
<td>Sealing</td>
<td>IP65</td>
</tr>
<tr>
<td>Maximum Shock</td>
<td>5000g</td>
</tr>
<tr>
<td>EMC</td>
<td>EN61326-1:2013</td>
</tr>
</tbody>
</table>

Typical Frequency Response (at 100mV/g)

<table>
<thead>
<tr>
<th>Frequency Hz</th>
<th>Sensitivity Change %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>50%</td>
</tr>
<tr>
<td>1</td>
<td>40%</td>
</tr>
<tr>
<td>10</td>
<td>30%</td>
</tr>
<tr>
<td>100</td>
<td>20%</td>
</tr>
<tr>
<td>1,000</td>
<td>10%</td>
</tr>
<tr>
<td>10,000</td>
<td>0%</td>
</tr>
</tbody>
</table>

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.)

Certificates

www.hansfordsensors.com
sales@hansfordsensors.com

We reserve the right to alter the specification of this product without prior notice
T5913.2
HS-170I Premium Intrinsically Safe Accelerometer

AC acceleration output via Flame Retardant Cable

Intrinsically Safe Requirements

Sensor Maximum Cable Length

- Up to 92 metres
- Certified Temperature Range
  - Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +57°C) (Gas)
  - Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +103°C) (Gas)

Certificate details: Group I

- IECEx 18.0082X
- Baseefa 18ATEX0110X
- Ex I Ma

Certificate details: Group II and III

- IECEx 18.0082X
- Baseefa 18ATEX0110X
- Ex ia IIC T6…T4 Ga

Ex ia IIC T110°C…145 Da

US/Canada Approvals

- Certificate No. SGSNA/19/BAS/00005
- Certificate No. SGSNA/19/BAS/00005

Terminal Parameters 10m of cable

- Terminal Parameters 10m of cable
- Terminal Parameters 92m of cable

- Sensitivity
  - 010 - 10mV/g
  - 030 - 30mV/g
  - 050 - 50mV/g
  - 100 - 100mV/g
  - 250 - 250mV/g
  - 500 - 500mV/g

- Range
  - ±80g
  - ±160g
  - ±320g
  - ±640g

- Resonant Frequency
  - 34kHz (2,040kcpm)
  - 32kHz (1,920kcpm)
  - 29kHz (1,800kcpm)
  - 24kHz (1,440kcpm)

- Control Drawing

- M06-083-A Overbraided Cable
- M06-084-A PUR Cable
- M06-085-A Silicone Cable
- M06-086-A FR PUR Cable

Standards Applied to Product

- EN IEC 60079-0:2018
- EN 60079-11:2012

Barrier

- 1 x Pepperl + Fuchs Galvanic Isolator
- 1 x Pepperl + Fuchs Zener Barrier

Special conditions of use: When a sensor is supplied with integral cable, this must be terminated in an enclosure providing at least degree of protection IP20.

Note: If the equipment is to be used in unusual environments or aggressive substances are likely to be encountered, contact the manufacturer to discuss suitability.

How To Order

Product Prefix

- HS - Hansford Sensors

Product Series

- 170I - Premium Intrinsically Safe Accelerometer

Extra Options (if required)

- A - Australia (Group I)
- I - Intrinsically Safe (Group II)
- L - 316L Stainless Steel
- M - Mining (Group I)
- S - 90° Side Exit
- Y - 5% tolerance on sensitivity

Sensitivity

- 010 - 10mV/g
- 030 - 30mV/g
- 050 - 50mV/g
- 100 - 100mV/g
- 250 - 250mV/g
- 500 - 500mV/g

Range

- ±80g
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- ±320g
- ±640g

Resonant Frequency

- 34kHz (2,040kcpm)
- 32kHz (1,920kcpm)
- 29kHz (1,800kcpm)
- 24kHz (1,440kcpm)

Cable/Connector

- QXX - length specified in metres

Mounting Threads

- 01 - ½-28 UNF Female
- 02 - 2 Pin MS
- 08 - M8 x 1.25mm Male
- 10 - M10 x 1.5mm Male

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TS913.2