HS-170I Premium Intrinsically Safe Accelerometer
AC acceleration output via Flame Retardant Cable

Key Features
- Intrinsically Safe with European approval
- Compact design
- Premium design
- Customisable features

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 ±10%
- Frequency Response:
  - Nominal 80Hz at 22°C
  - 2Hz (120cpm) to 14kHz (840kcpm) ± 5%
  - 1.5Hz (90cpm) to 18kHz (1,140kcpm) ± 10%
  - 0.8Hz (48cpm) to 19kHz (1,140kcpm) ± 3dB
- Isolation: Base isolated
- Range: see: ‘How To Order’ table
- Transverse Sensitivity: Less than 5%

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

Electrical
- Electrical Noise: 0.1mg max
- Current Range: 0.5mA to 8mA
- Bias Voltage: 10 - 12 Volts DC
- Settling Time: 1 second
- Output Impedance: 200 Ohms max.
- Case Isolation: >10⁶ Ohms at 500 Volts

Environmental
- Operating Temperature Range: see: attached certification details
- Sealing: IP65
- Maximum Shock: 5000g
- EMC: EN61326-1:2013

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
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
Baseefa18ATEX0130X
Ex ia I Ma

IECEx 18.0082X
Baseefa18ATEX0130X
Ex ia IIC T6... T4 Ga

Ex ia IIC T110°C...T145 Da

Certificate details: Group II and III
Australia Approval Group I
IECEx ExTC 18.0032X
Baseefa18ATEX0130X

Ex ia I Ma

(-55°C ≤ Ta ≤ +104°C)

Terminal Parameters 10m of cable
Ui = 28V, li = 93mA, Pi = 0.65W

CI = 5.0nF

Li= 7.2μH

Terminal Parameters 92m of cable
Ui = 28V, li = 93mA, Pi = 0.65W

CI = 35.9nF

Li= 66μH

500V Isolation Units Will Pass A 500V Isolation Test

Barrier
1 x Pepperl + Fuchs Galvanic Isolator
KFD2-VR4-Ex1.26 (BAS02ATEX7206)

1 x MTL Zener Barrier MTL7728+ (BAS01ATEX7217)
or Pepperl + Fuchs Zener Barrier Z728 (BAS01ATEX7005) or any other barrier that conforms with the terminal parameters

Standards Applied to Product
EN IEC 60079-0:2018
EN 60079-11:2012
IEC 60079-0 Edition 7 2017
IEC 60079-11 Edition 6 2011

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

<table>
<thead>
<tr>
<th>Range</th>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>±800g</td>
<td>010 - 10mV/g</td>
</tr>
<tr>
<td>±250g</td>
<td>030 - 30mV/g</td>
</tr>
<tr>
<td>±160g</td>
<td>050 - 50mV/g</td>
</tr>
<tr>
<td>±80g</td>
<td>100 - 100mV/g</td>
</tr>
<tr>
<td>±32g</td>
<td>250 - 250mV/g</td>
</tr>
<tr>
<td>±16g</td>
<td>500 - 500mV/g</td>
</tr>
</tbody>
</table>

Resonant Frequency

<table>
<thead>
<tr>
<th>Range</th>
<th>Resonant Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>±800g</td>
<td>34kHz (2,040kcpm)</td>
</tr>
<tr>
<td>±250g</td>
<td>32kHz (1,920kcpm)</td>
</tr>
<tr>
<td>±160g</td>
<td>30kHz (1,800kcpm)</td>
</tr>
<tr>
<td>±80g</td>
<td>28kHz (1,680kcpm)</td>
</tr>
<tr>
<td>±32g</td>
<td>26kHz (1,560kcpm)</td>
</tr>
<tr>
<td>±16g</td>
<td>24kHz (1,440kcpm)</td>
</tr>
</tbody>
</table>

Cable/Connector

02 - Braided
08 - Flame Retardant
50 - 2 Pin M5
54 - M12

Mounting Threads

01 - ¼-28 UNF Female
02 - ¼-28 UNF Male
06 - M6 x 1mm Male
08 - M8 x 1.25mm Male
10 - M10 x 1.5mm Male

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TS913