# HS-150IS Premium Intrinsically Safe Accelerometer

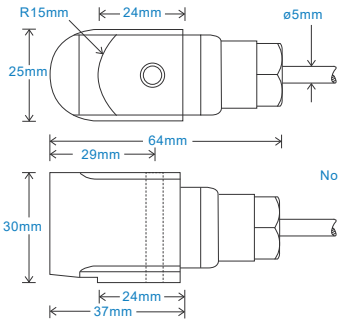
## AC acceleration output via PUR Cable

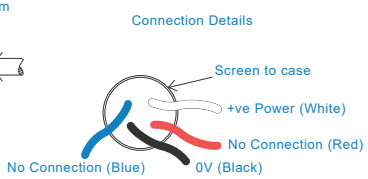
### Key Features

- Intrinsically Safe with European, Indiana, USA and Australian approvals
- Side entry for easy access
- 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 ±10% |
| | Nominal 80Hz at 22°C |
| Frequency Response | 2Hz (120cpm) to 10kHz (600kcpm) ± 5% |
| | 1.5Hz (90cpm) to 12kHz (720kcpm) ± 10% |
| | 0.8Hz (48cpm) to 15kHz (900kcpm) ± 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 |
| Mounting Bolt provided | see: 'How To Order' table x 35mm long |
| Weight | 205gms (nominal) body only |
| Maximum Cable Length | See certificate |
| Standard Cable Length | 5 metres |
| Screened Cable | PUR - length to be specified with order |
| Mounting Threads | see: 'How To Order' table |
| Submersible Depth | 100 metres max (10 bar) |

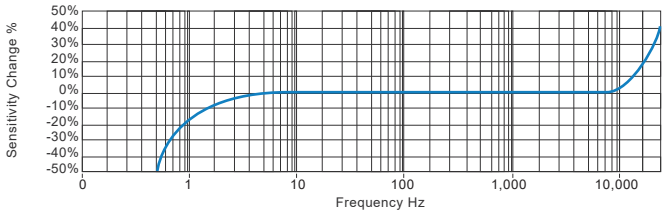
## Electrical

| | |
|---|---|
| Excitation Voltage: | 18-30Volts DC |
| 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 |

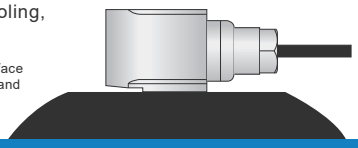
## Typical Frequency Response (at 100mV/g)




## 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

710318

This product is certified in accordance with
**UL 60079-0, 6th Ed, Rev. July 26, 2013**
**UL 60079-11, 6th Ed. Rev. September 6, 2013**
**CAN/CSA C22.2 No. 60079-0:15 Rev. October 2015**
**CAN/CSA C22.2 No. 60079-11:14**
**UL 913, 8th Ed. Rev. October 16, 2015**


Hansford Sensors
*Excellence in Vibration Monitoring*

www.hansfordsensors.com
sales@hansfordsensors.com

# HS-150IS Premium Intrinsically Safe Accelerometer

## AC acceleration output via PUR cable

## Intrinsically Safe Requirements

| | |
|---|---|
| Sensor Maximum Cable Length | Up to 92 metres |
| Certificate details: Group I | IECEx 18.0082X<br>Baseefa18ATEX0130X<br>Ⓔx I M 1<br>Ex ia I Ma |
| Certificate details: Group II and III | IECEx 18.0082X<br>Baseefa18ATEX0130X<br>Ⓔx II 1GD<br>Ex ia IIC T6..T4 Ga<br>Ex ia IIIC T110ºC..T145ºC Da |
| Terminal Parameters 10m of cable | Ui = 28V, Ii = 93mA, Pi = 0.65W<br>Ci = 5.0nF<br>Li= 7.2µH |
| Terminal Parameters 92m of cable | Ui = 28V, Ii = 93mA, Pi = 0.65W<br>Ci = 35.9nF<br>Li= 66µH |
| 500V Isolation | Units Will Pass A 500V Isolation Test |
| Standards Applied to Product | EN IEC 60079-0:2018<br>EN 60079-11:2012<br><br>IEC 60079-0 Edition 7 2017<br>IEC 60079-11 Edition 6 2011 |

| | |
|---|---|
| Certified Temperature Range | Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +57°C) (Gas)<br>Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +103°C) (Gas)<br>Ex ia IIIC T110°C Da (-55°C ≤ Ta ≤ +57°C) (Dust)<br>Ex ia IIIC T135°C Da (-55°C ≤ Ta ≤ +70°C) (Dust)<br>Ex ia IIIC T145°C Da (-55°C ≤ Ta ≤ +92°C) (Dust)<br>Ex ia I Ma (-55°C ≤ Ta ≤ +103°C) (Mining) |
| Australian Approval Group I | IECEx ExTC 18.0032X<br>Ex ia I Ma<br>(-55ºC ≤ Ta ≤ +104ºC) |
| US/Canada Approvals | Certificate No. SGSNA/19/BAS/00005<br>Cl I, II, III, Div 1, 2 Gr A-G T*<br>Cl I Zn 0 AEx ia IIC T6...T4 Ga<br>Cl II Zn 20 AEx ia IIIC T110ºC...T145ºC Da<br>Cl II Zn 20 AEx ia IIIB T110ºC...T145ºC Da<br>Ex ia IIC T6...T4 Ga<br>Ex ia IIIC T110ºC...T145ºC |
| Control Drawing | M06-083-A Overbraided Cable<br>M06-084-A PUR Cable<br>M06-085-A Silicone Cable<br>M06-086-A FR PUR Cable<br>M06-087-A Various Cables (HS-150IT Only) |
| Barrier | 1 x Pepperl + Fuchs Galvanic Isolator<br>KFD2-VR4-Ex1.26 (BAS02ATEX7206)<br>1 x MTL Zener Barrier MTL7728+ (BAS01ATEX7217)<br>or Pepperl + Fuchs Zener Barrier<br>Z728 (BAS01ATEX7005) or any other barrier that<br>conforms with the terminal parameters |

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**
150IS - Premium Intrinsically Safe Accelerometer

**Cable Length (if integral cable)**
QXX - length specified in metres

| H | S | 1 | 5 | 0 | I | S | X | X | X | X | X | X | X | X | X | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**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
T - Temperature Output
Y - 5% tolerance on sensitivity

| Sensitivity | Range | Resonant Frequency |
|---|---|---|
| 010 - 10mV/g | ±800g | 34kHz (2,040kcpm) |
| 030 - 30mV/g | ±250g | 33kHz (1,980kcpm) |
| 050 - 50mV/g | ±160g | 32kHz (1,920kcpm) |
| 100 - 100mV/g | ±80g | 30kHz (1,800kcpm) |
| 250 - 250mV/g | ±32g | 28kHz (1,680kcpm) |
| 500 - 500mV/g | ±16g | 26kHz (1,560kcpm) |

**Cable/Connector**
01 - PUR
02 - Braided
07 - Silicon
08 - Flame Retardant
50 - 2 Pin MS
52 - 3 Pin MS
54 - M12

**Mounting Threads**
02 - ¼-28" UNF Male
06 - M6 x 1mm Male
08 - M8 x 1.25mm Male

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www.hansfordsensors.com
sales@hansfordsensors.com