

# HS-421I Intrinsically Safe Accelerometer

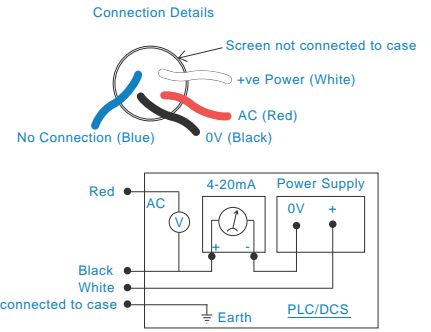
## 4-20mA velocity and AC acceleration output via PUR Cable

### Key Features

- Intrinsically Safe with European approval
- For use with PLC/DCS systems and data collectors
- Waterproof
- Resistant to oil

### Industries

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



### Technical Performance

|                            |  |
|----------------------------|--|
| Mounted Base Resonance     | 5kHz min   |
| Velocity Ranges            | see: 'How To Order' table $\pm 10\%$<br>Nominal 80Hz at 22°C |
| Frequency Response: 4-20mA | 10Hz (600cpm) to 1kHz (60kcpm) $\pm 5\%$<br>- ISO10816       |
| Frequency Response: AC     | 2Hz (120cpm) to 10kHz (600kcpm) $\pm 5\%$<br>- ISO10816      |
| 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                       | 150gms (nominal) body only              |
| Maximum Cable Length         | 1000 metres                             |
| 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)                 |

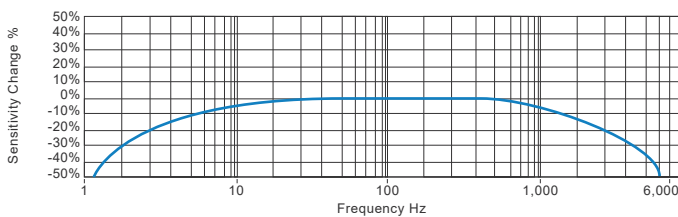
### Electrical

|                  |  |
|------------------|--|
| Outputs          | 4-20mA DC current proportional to<br>Range and AC acceleration |
| Bias Voltage     | 3 Volts DC (nominal)   |
| Supply Voltage   | 15-30 Volts DC (for 4-20mA)                                    |
| Settling Time    | 2 seconds  |
| Output Impedance | Loop Resistance 600 Ohms max. at 24 Volts                      |
| 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                      |

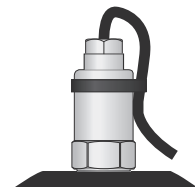
### Typical Frequency Response (4-20mA signal)



### 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)



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TS1150.3



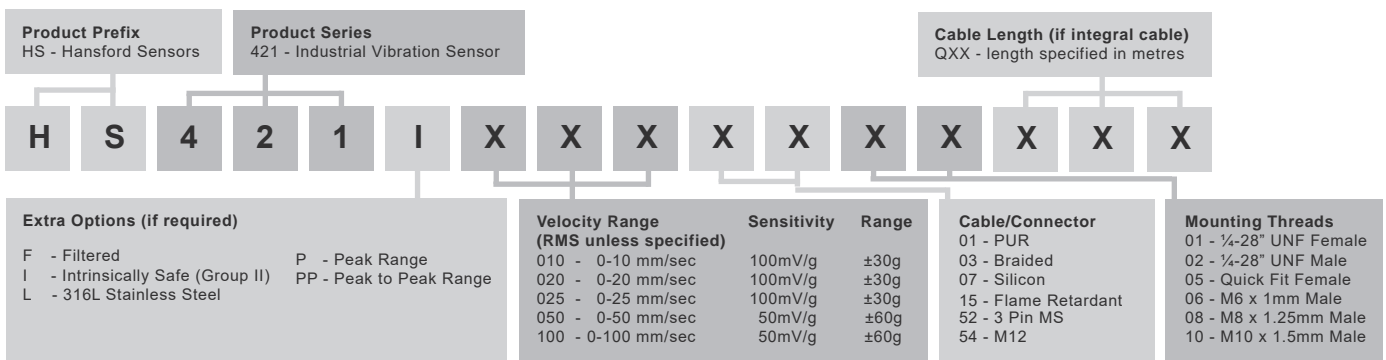
# HS-421I Intrinsically Safe Accelerometer

## 4-20mA velocity and AC acceleration output via PUR Cable

### Intrinsically Safe Requirements

|                               |   |                      |  |
|-------------------------------|---|----------------------|--|
| Maximum Cable Length          | See website: <a href="http://www.hansfordsensors.com">www.hansfordsensors.com</a>   | Barrier: 4-20mA loop | 1x Pepperl + Fuchs Galvanic Isolator<br>KFD2-STC5-Ex1 (HS-AA154)   |
| Certificate details: Group II | IECEX BAS08.0034X<br>Baseefa08ATEX0086X<br>ⓂII 1GD<br>Ex ia IIC T6 Ga<br>Ex ia IIIC T80°C IP65 Da<br>(-40°C ≤ Ta ≤ +55°C)   | Barrier: AC output   | 1 x MTL Zener Barrier MTL7787+ (HS-AA022)<br>1x Pepperl + Fuchs Galvanic Isolator<br>KFD2-VR-Ex1.19 (HS-AA155)<br>1 x MTL Zener Barrier MTL7764+ (HS-AA023)  |
| Certificate details: Group II | ⓂII 1GD<br>Ex ia IIC T4 Ga<br>Ex ia IIIC T130°C IP65 Da<br>(-40°C ≤ Ta ≤ +105°C)  | Terminal Parameters  | Ui = Vmax = 28V<br>Ii = Imax = 115mA<br>Pi = 0.856W  |
| Terminal Parameters           | Ui = 28V, Ii = 115mA, Pi = 0.856W Group II  | Notes:               | Special conditions of safe use for Group II dust.<br>The free end of the cable on the integral cable version of the apparatus must be terminated in an appropriately certified dust-proof enclosure.<br>The unit has no serviceable parts. |
| 500V Isolation                | Units Will Pass A 500V Isolation Test   |                      |  |
| Certified Temperature Range   | Ex ia IIC T6 Ga (-40°C ≤ Ta ≤ +55°C) (Gas)<br>Ex ia IIC T4 Ga (-40°C ≤ Ta ≤ +105°C) (Gas)<br>Ex ia IIIC T80°C IP65 Da (-40°C ≤ Ta ≤ +55°C) (Dust)<br>Ex ia IIIC T130°C IP65 Da (-40°C ≤ Ta ≤ +105°C) (Dust) |                      |  |

### How To Order



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



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