

# HS-421I Intrinsically Safe Accelerometer

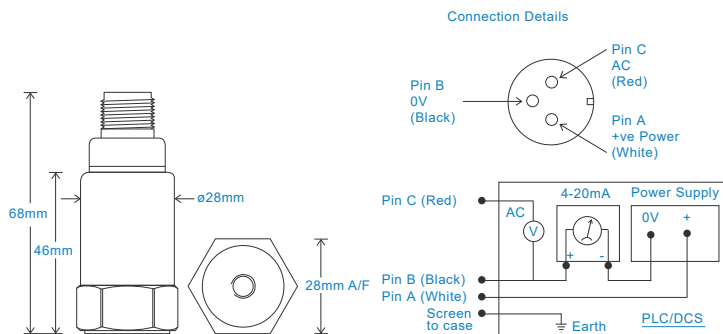
## 4-20mA velocity and AC acceleration output via 3 Pin MS Connector

### Key Features

- Intrinsically Safe with European approval
- For use with PLC/DCS systems and data collectors
- Customisable features

### 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 $\pm 10\%$ Nominal 80Hz at 22°C
Frequency Response: 4-20mA	10Hz (600cpm) to 1kHz (60kcpm) $\pm 5\%$ - ISO10816
Frequency Response: AC	2Hz (120cpm) to 10kHz (600kcpm) $\pm 5\%$ - 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
Screened Cable Assembly	see: <a href="http://www.hansfordsensors.com">www.hansfordsensors.com</a> for options
Connector	HS-AA005 - non-booted HS-AA068 or HS-AA069 - booted
Mounting Threads	see: 'How To Order' table

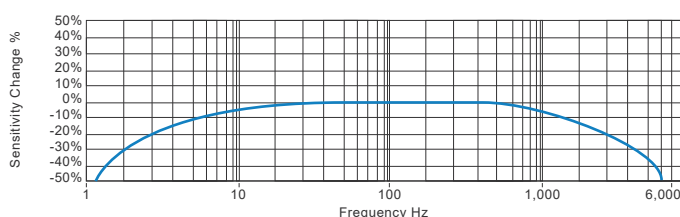
### Electrical

Outputs	4-20mA DC current proportional to 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

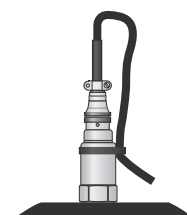
### Typical Frequency Response (4-20mA signal)



### 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)

We reserve the right to alter the specification of this product without prior notice  
TS1104.4



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## 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 KFD2-STC5-Ex1 (HS-AA154)
Certificate details: Group II	IECEx BAS08.0034X Baseefa08ATEX0086X ⓂII 1GD Ex ia IIC T6 Ga Ex ia IIIC T80°C IP65 Da (-40°C ≤ Ta ≤ +55°C)	Barrier: AC output	1x Pepperl + Fuchs Galvanic Isolator KFD2-VR-Ex1.19 (HS-AA155)
Certificate details: Group II	ⓂII 1GD Ex ia IIC T4 Ga Ex ia IIIC T130°C IP65 Da (-40°C ≤ Ta ≤ +105°C)	Terminal Parameters	Ui = Vmax = 28V Ii = Imax = 115mA Pi = 0.856W
Terminal Parameters	Ui = 28V, Ii = 115mA, Pi = 0.856W Group II	Notes:	Special conditions of safe use for Group II dust. The free end of the cable on the integral cable version of the apparatus must be terminated in an appropriately certified dust-proof enclosure. 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) Ex ia IIC T4 Ga (-40°C ≤ Ta ≤ +105°C) (Gas) Ex ia IIIC T80°C IP65 Da (-40°C ≤ Ta ≤ +55°C) (Dust) Ex ia IIIC T130°C IP65 Da (-40°C ≤ Ta ≤ +105°C) (Dust)		

## How To Order

Product Prefix HS - Hansford Sensors		Product Series 421 - Industrial Vibration Sensor											
H	S	4	2	1	I	X	X	X	X	X	X	X	
Extra Options (if required)						Velocity Range (RMS unless specified)		Sensitivity		Range		Cable/Connector	Mounting Threads
F - Filtered		P - Peak Range				010 - 0-10 mm/sec		100mV/g		±30g		01 - PUR	01 - ¼-28" UNF Female
I - Intrinsically Safe (Group II)		PP - Peak to Peak Range				020 - 0-20 mm/sec		100mV/g		±30g		03 - Braided	02 - ¼-28" UNF Male
L - 316L Stainless Steel						025 - 0-25 mm/sec		100mV/g		±30g		07 - Silicon	05 - Quick Fit Female
						050 - 0-50 mm/sec		50mV/g		±60g		15 - Flame Retardant	06 - M6 x 1mm Male
						100 - 0-100 mm/sec		50mV/g		±60g		52 - 3 Pin MS	08 - M8 x 1.25mm Male
												54 - M12	10 - M10 x 1.5mm Male