HS-420IT Intrinsically Safe Accelerometer

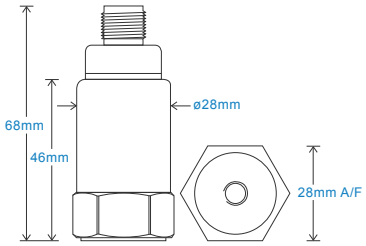
4-20mA velocity and temperature output via M12 Connector

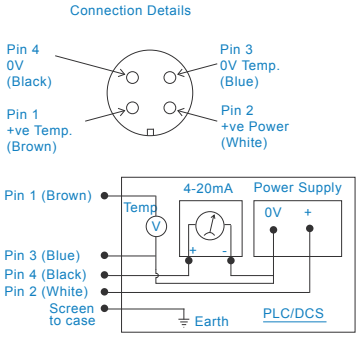
Key Features

- Intrinsically Safe with European, USA, Australian and South African approvals
- For use with PLC/DCS systems
- Temperature output

Industries

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





Technical Performance

Mounted Base Resonance	5kHz min
Velocity Ranges	see: 'How To Order' table ±10%
	Nominal 80Hz at 22°C
Frequency Response	10Hz (600cpm) to 1kHz (60kcpm) ± 5% - ISO10816
Isolation	Base isolated
Range	50g peak
Temperature Output	10mV/°C - 0-1V proportional to 0-100°C (to convert this to 4-20mA use the HS-540 module)
Transverse Sensitivity	Less than 5%

Mechanical

Case Material	Stainless Steel
Sensing Element/Construction	PZT/Compression
Mounting Torque	8Nm
Weight	150gms (nominal)
Screened Cable Assembly	HS-AC010 - straight
	HS-AC011 - right angle
Mounting Threads	see: 'How To Order' table

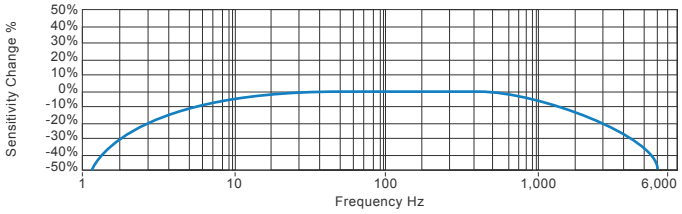
Electrical

Current Output	4-20mA DC proportional to Velocity Range
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	IP67
Maximum Shock	5000g
EMC	EN61326-1:2013

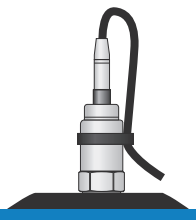
Typical Frequency Response



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

Hansford Sensors
Excellence in Vibration Monitoring

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

TS072.14

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4-20mA velocity and temperature output via M12 Connector

Intrinsically Safe Requirements

Maximum Cable Length	nominal 100 metres see attached system drawings
Certificate details: Group II	IECEx BAS08.0034X Baseefa08ATEX0086X Ⓔx II 1GD Ex ia IIC T6 Ga Ex ia IIIC T80°C IP65 Da (-40ºC ≤ Ta ≤ +60ºC)
Accelerometer System Certificate	Baseefa08Y0087 Ex ia IIC T6 (-40°C ≤ Ta ≤ +60°C) *On request - consult Sales Office
Terminal Parameters	Ui = 28V, Ii = 115mA, Pi = 0.65W Group II
500V Isolation	Units Will Pass A 500V Isolation Test
Certified Temperature Range	Ex ia IIC T6 Ga (-40°C ≤ Ta ≤ +60°C) (Gas) Ex ia IIIC T80°C IP65 Da (-40°C ≤ Ta ≤ +60°C) (Dust) Ex ia I Ma (-40°C ≤ Ta ≤ +60°C) (Mining)
Australia Approval Group 1	IECEx ITA 10.0003X Ex ia I Ma (-40ºC ≤ Ta ≤ +60ºC)
South African Approval	Certificate No. MASC MS/16-0229X only Group II (As Baseefa/ATEX)

US/Canada Approvals	Certificate No. USTC/15/FAI/01350 Class I, II, III, Division 1, 2, Groups A - G, T6, -40°C to +60°C, IP65 Class I, Zone 0, AEx, ia, IIC, T6, Ga, -40°C to +60°C Zone 20, AEx, ia, IIIC, T80°C, IP65, Da, -40°C to +60°C
Barrier	1 x Pepperl + Fuchs Galvanic Isolator KFD2-STC4-Ex1, which has superseded KFD2-CR-Ex1.30300 (BAS00ATEX7164) see attached system drawings
	1 x MTL Zener Barrier MTL7787+ (BAS01ATEX7217) or Pepperl + Fuchs Zener Barrier Z787 (BAS01ATEX7005) or any other barrier that conforms to system drawings attached
System Connections for Zener Barrier	see attached system drawings
System Connections for Galvanic Isolator	see attached system drawings
Terminal Parameters	Ui = Vmax = 28V Ii = Imax = 115mA Pi = 0.65W
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.

How To Order

Product Prefix
HS - Hansford Sensors

Product Series
420 - Industrial Vibration Sensor

H	S	4	2	0	I	T	X	X	X	X	X	X	X

Extra Options (if required)
A - Australia (Group I)
F - Filtered
I - Intrinsically Safe (Group II)
L - 316L Stainless Steel
T - Temperature Output
P - Peak Range
PP - Peak to Peak Range

Velocity Range (RMS unless specified)
010 - 0-10 mm/sec
020 - 0-20 mm/sec
025 - 0-25 mm/sec
050 - 0-50 mm/sec
100 - 0-100 mm/sec

Cable/Connector
54 - M12

Mounting Threads
01 - ¼-28" UNF Female
02 - ¼-28" UNF Male
05 - Quick Fit Female
06 - M6 x 1mm Male
08 - M8 x 1.25mm Male
10 - M10 x 1.5mm Male

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