

HS-422I/M Intrinsically Safe Accelerometer

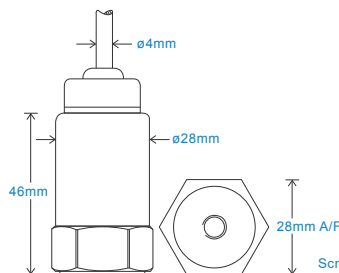
4-20mA acceleration output via Flame Retardant Cable

Key Features

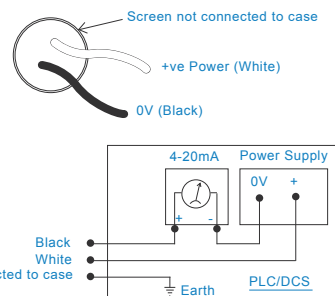
- Intrinsically Safe with European, USA, Australian, South African, and Indian approvals
- Approved SIL 2 and SIL 3
- For use with PLC/DCS systems
- Low smoke, halogen free cable

Industries

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



Connection Details



Technical Performance

Mounted Base Resonance	10kHz min
Acceleration Ranges	see: 'How To Order' table $\pm 10\%$ Nominal 80Hz at 22°C
Frequency Response	10Hz (600cpm) to 5kHz (300kcpm) $\pm 5\%$ - ISO10816
Isolation	Base isolated
Range	50g peak
Transverse Sensitivity	Less than 5%

Mechanical

Case Material	Stainless Steel
Sensing Element/Construction	PZT/Compression
Mounting Torque	8Nm
Weight	150gms (nominal)
Maximum Cable Length	1000 metres
Standard Cable Length	5 metres
Screened Cable	Flame Retardant - length to be specified with order
Mounting Threads	see: 'How To Order' table

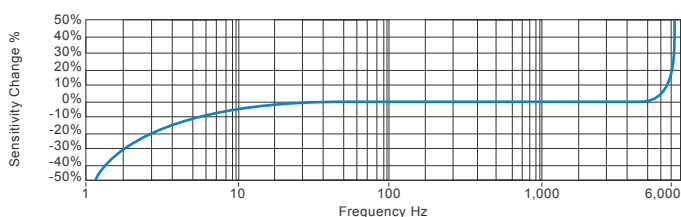
Electrical

Current Output	4-20mA DC proportional to acceleration
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	IP65
Maximum Shock	5000g
EMC	EN61326-1:2013

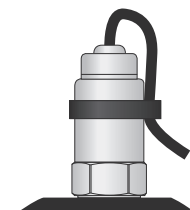
Typical Frequency Response



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



This product is certified in accordance with
UL 913, 8th Ed. Rev. December 6, 2013
CAN/CSA C22.2 No. 157-92 (R2012) +Upd1 +Upd2



www.hansfordsensors.com
sales@hansfordsensors.com

We reserve the right to alter the specification of this product without prior notice
TS066.18

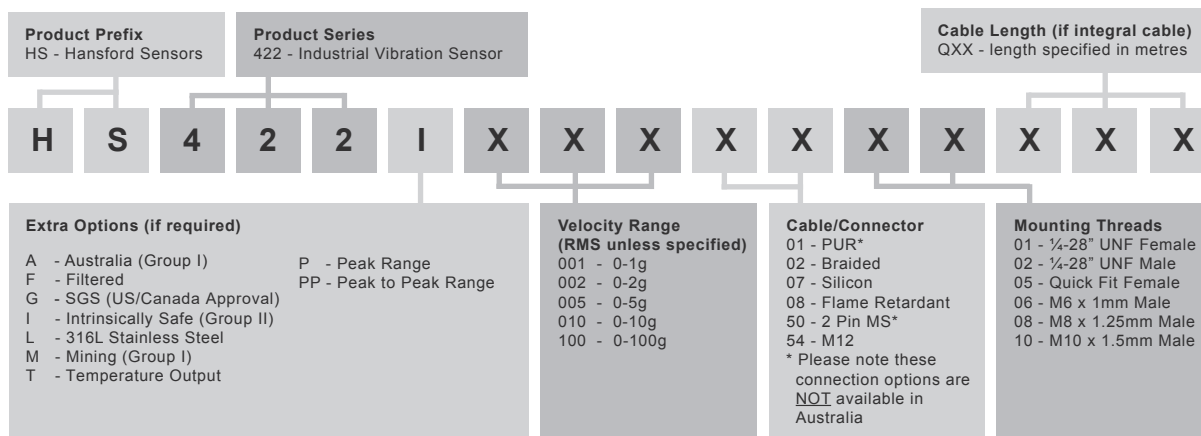


4-20mA acceleration output via Flame Retardant Cable

Intrinsically Safe Requirements

Maximum Cable Length		nominal 100 metres	US/Canada Approvals	Certificate No. SGSNA/18/SUW/0000231
		see attached system drawings	Class I, II, III, Division 1, 2, Groups A - G, T4, -40°C to +110°C, Class I, Zone 0, AEx, ia, IIC, T4, Ga, -40°C to +110°C	
Certificate details: Group I + II		IECEX BAS08.0034X Baseefa08ATEX0086X	Zone 20, AEx, ia, IIIC, T130°C, IP65, Da, -40°C to +110°C	
		Ⓜ II 1GD	Barrier	1 x Pepperl + Fuchs Galvanic Isolator
		Ex ia IIC T6 Ga	KFD2-STC4-Ex1, which has superseded	
		Ex ia IIIC T80°C IP65 Da	KFD2-CR-Ex1.30300 (BAS00ATEX7164)	
		Ⓜ I M1	see attached system drawings	
		Ex ia I Ma		
		(-40°C ≤ Ta ≤ +60°C)	1 x MTL Zener Barrier MTL7787+ (BAS01ATEX7217)	
Certificate details: Group II		Ⓜ II 1GD	or Pepperl + Fuchs Zener Barrier	
		Ex ia IIC T4 Ga	Z787 (BAS01ATEX7005) or any other barrier that	
		Ex ia IIIC T130°C IP65 Da	conforms to system drawings attached	
		(-40°C ≤ Ta ≤ +110°C)		
			System Connections for Zener Barrier	see attached system drawings
Accelerometer System Certificate		Baseefa08Y0087		
		Ex ia IIC T6 (-40°C ≤ Ta ≤ +60°C)	System Connections for Galvanic Isolator	see attached system drawings
		*On request - consult Sales Office		
			Terminal Parameters	Ui = Vmax = 28V
Terminal Parameters		Ui = 28V, Ii = 115mA, Pi = 0.65W Group II	Ii = Imax = 115mA	
		Ui = 16.5V Pi = 0.65W	Pi = 0.65W	
		or Ui = 28V Ii = 115mA Pi = 0.65W Group I		
			Notes:	Special conditions of safe use for Group II dust.
500V Isolation		Units Will Pass A 500V Isolation Test	The free end of the cable on the integral cable	
			version of the apparatus must be terminated in	
Certified Temperature Range		Ex ia IIC T6 Ga (-40°C ≤ Ta ≤ +60°C) (Gas)	an appropriately certified dust-proof enclosure.	
		Ex ia IIC T4 Ga (-40°C ≤ Ta ≤ +110°C) (Gas)	The unit has no serviceable parts.	
		Ex ia IIIC T80°C IP65 Da (-40°C ≤ Ta ≤ +60°C) (Dust)		
		Ex ia IIIC T130°C IP65 Da (-40°C ≤ Ta ≤ +110°C) (Dust)		
		Ex ia I Ma (-40°C ≤ Ta ≤ +60°C) (Mining)		
Australia Approval Group 1		IECEX ITA 10.0003X		
		Ex ia I Ma		
		(-40°C ≤ Ta ≤ +60°C)		
South African Approval		Certificate No. MASC MS/16-0229X		
		Group I and II (As Baseefa/ATEX)		

How To Order



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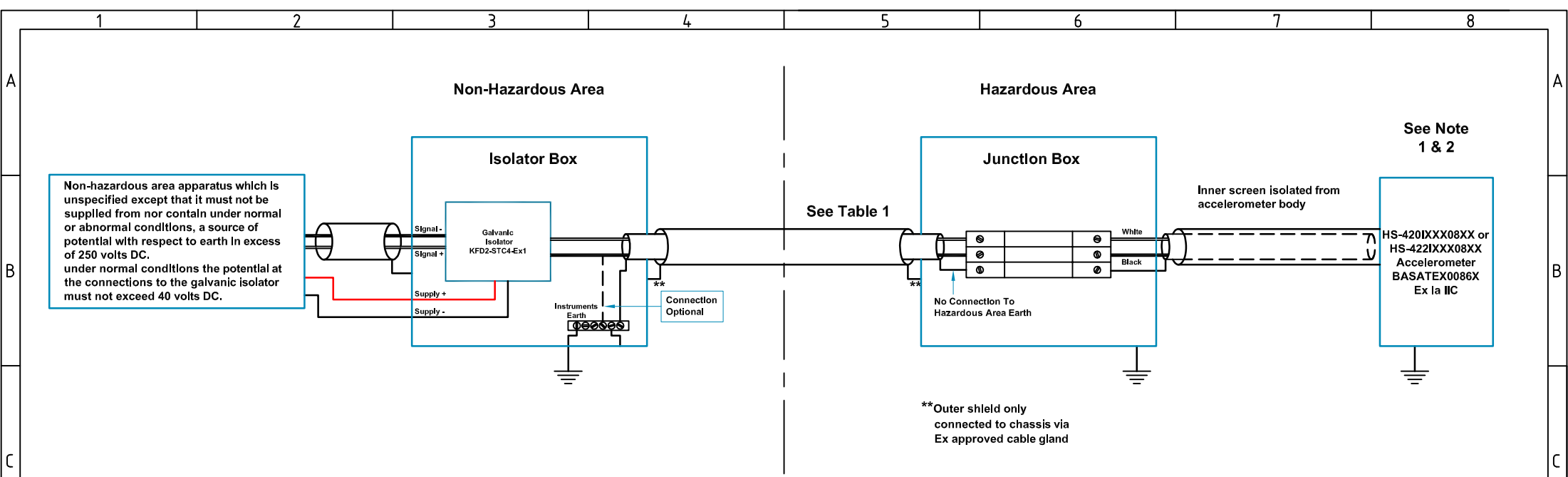


Table 1: Cable Parameters For Additional Cable Lengths

Accelerometer With Integral Cable Length ≤ 10m		
Group	Capacitance µF	L/R Ratio µH/Ω
IIC	0.097	72
IIB	0.768	277
IIA	2.598	585
Accelerometer With Integral Cable Length ≤ 50m		
Group	Capacitance µF	L/R Ratio µH/Ω
IIC	0.091	72
IIB	0.762	277
IIA	2.592	585
Accelerometer With Integral Cable Length ≤ 100m		
Group	Capacitance µF	L/R Ratio µH/Ω
IIC	0.083	72
IIB	0.754	277
IIA	2.584	585

Hansford Sensors Ltd

HS-420I & HS-422I
Accelerometer System

Ex ia IIC T6 (-40°C ≤ Ta ≤ +60°C)

Notes:

1. The capacitance and inductance, or inductance - to - resistance ratio (L/R) of hazardous area cable, must not exceed the values shown in Table 1.
2. The cable from the accelerometer to the junction box must not be installed in a high velocity dust laden atmosphere.
3. The installer is to perform a risk assessment in accordance with clause 10 of EN 60079-25 and install lightning protection arrestors as deemed necessary.

Rev No	DRF No	Date Drg	Drg By	Appd By
A	Release	17/06/10	MJS	CMH

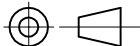
Material: N/A

Tolerances Unless Stated
0 or 0.0 ±0.5
0.00 ±0.15
Angle ±5°

1.6/√ Finish All Over
Threads g6 H6

**Hansford Sensors**
Excellence in Vibration Monitoring

Hansford Sensors Ltd
Saunderton Business Park
Haw Lane
Saunderton
Bucks HP14 4JE

 **Do Not Scale**

All Dimensions In mm Unless
Otherwise Stated

If In Doubt - Ask!

Description: **System Connections**
For HS-420I & HS-422I Group II
Accelerometers With Non Armoured
FR Polyurethane Cable
F.U.W. Galvanic Isolation

Drawing No: **M06-033-A**

Scale: **NTS**
Sheet: **1 of 1**

Form Number:
QF024 Issue 1

