

HS-422IT Intrinsically Safe Accelerometer

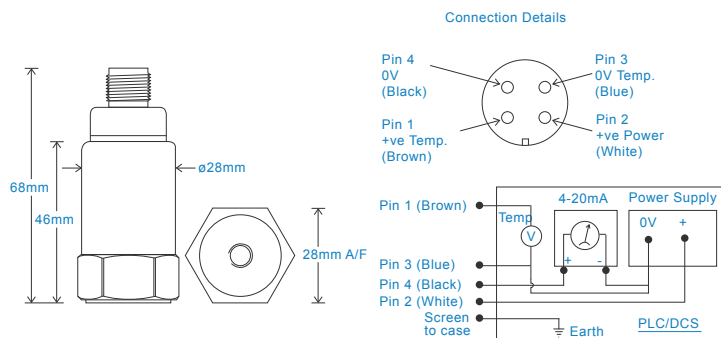
4-20mA acceleration and temperature output via M12 Connector

Key Features

- Intrinsically Safe with European, USA, South African, and Indian approvals
- Approved SIL 2 and SIL 3
- For use with PLC/DCS systems
- Temperature output

Industries

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



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
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

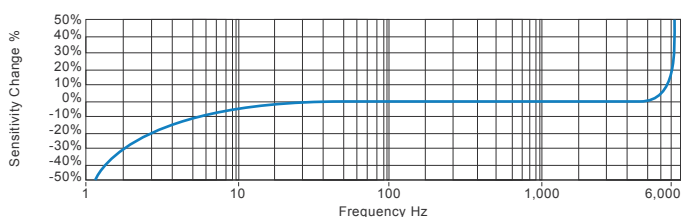
Electrical

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

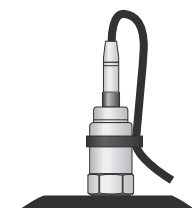
Typical Frequency Response



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



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



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We reserve the right to alter the specification of this product without prior notice
TS077.21



4-20mA acceleration and temperature output via M12 Connector

Maximum Cable Length	See website: www.hansfordsensors.com	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 II	IECEX BAS08.0034X		Zone 20, AEx, ia, IIIC, T130°C, IP65, Da, -40°C to +110°C
	Baseefa08ATEX0086X		
	ⓂII 1GD	Barrier	1 x Pepperl + Fuchs Galvanic Isolator
	Ex ia IIC T6 Ga		KFD2-VR-Ex1.18 (BAS01ATEX7262)
	Ex ia IIIC T80°C IP65 Da (-40°C ≤ Ta ≤ +60°C)		see attached system drawings
	ⓂII 1GD		1 x MTL Zener Barrier MTL7764+ac (BAS01ATEX7217) or Pepperl + Fuchs Zener Barrier
	Ex ia IIC T4 Ga		Z764 (BAS01ATEX7005) or any other barrier that conforms to system drawings attached
	Ex ia IIIC T130°C IP65 Da (-40°C ≤ Ta ≤ +110°C)		
Accelerometer System Certificate	Baseefa08Y0087	System Connections for Zener Barrier	see attached system drawings
	Ex ia IIC T6 (-40°C ≤ Ta ≤ +60°C) *On request - consult Sales Office	System Connections for Galvanic Isolator	see attached system drawings
Terminal Parameters	Ui = 44V, Ii = 117mA, Pi = 0.722W Group II	Terminal Parameters	Ui = Vmax = 28V Ii = Imax = 115mA Pi = 0.65W
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 IIC T4 Ga (-40°C ≤ Ta ≤ +110°C) (Gas) 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)	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.
South African Approval	Certificate No. MASC MS/16-0229X Group I and II (As Baseefa/ATEX)		

Product Prefix
HS - Hansford Sensors

Product Series
422 - Industrial Vibration Sensor

Extra Options (if required)
F - Filtered
G - SGS (US/Canada Approval)
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)
001 - 0-1g
002 - 0-2g
005 - 0-5g
010 - 0-10g
100 - 0-100g

Cable/Connector
01 - PUR
54 - M12

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

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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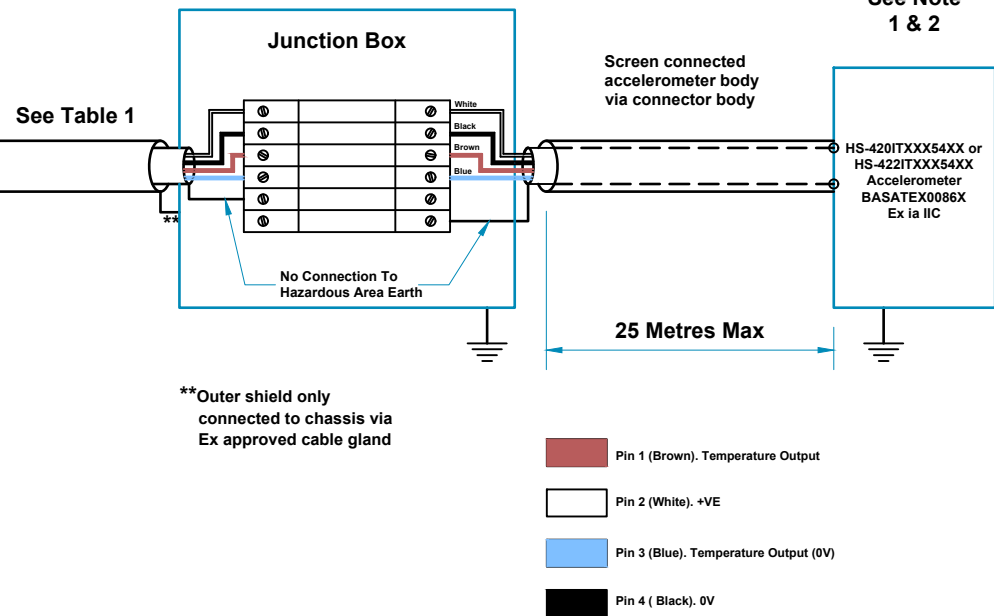
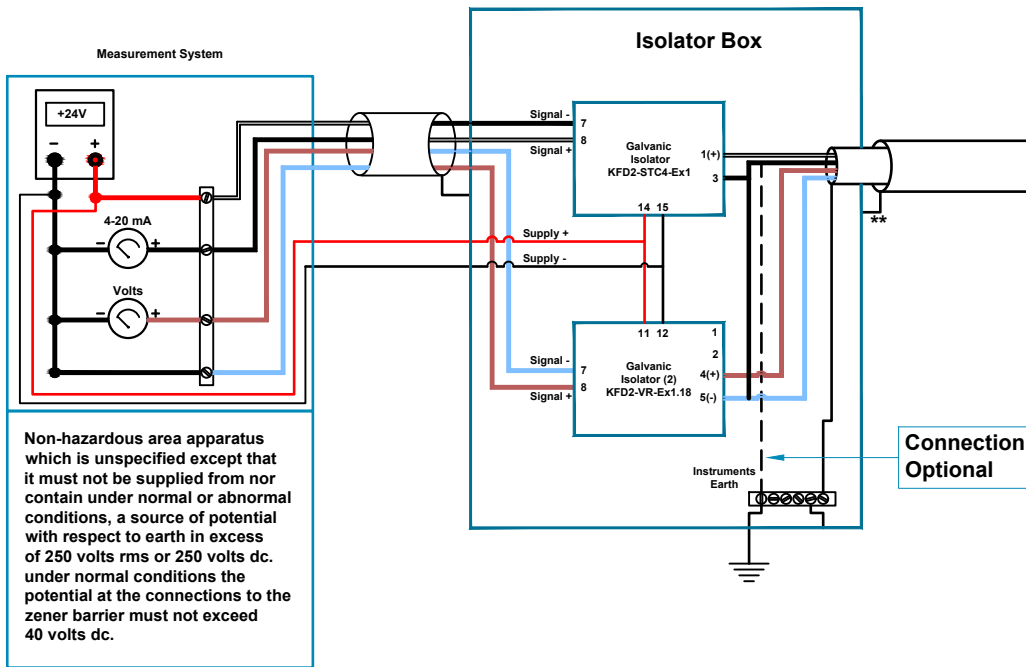


Table 1: Cable Connecting The Connector Version

Group	Capacitance μF	L/R Ratio $\mu\text{H}/\Omega$
IIC	0.024	47
IIB	0.247	71
IIA	0.767	429

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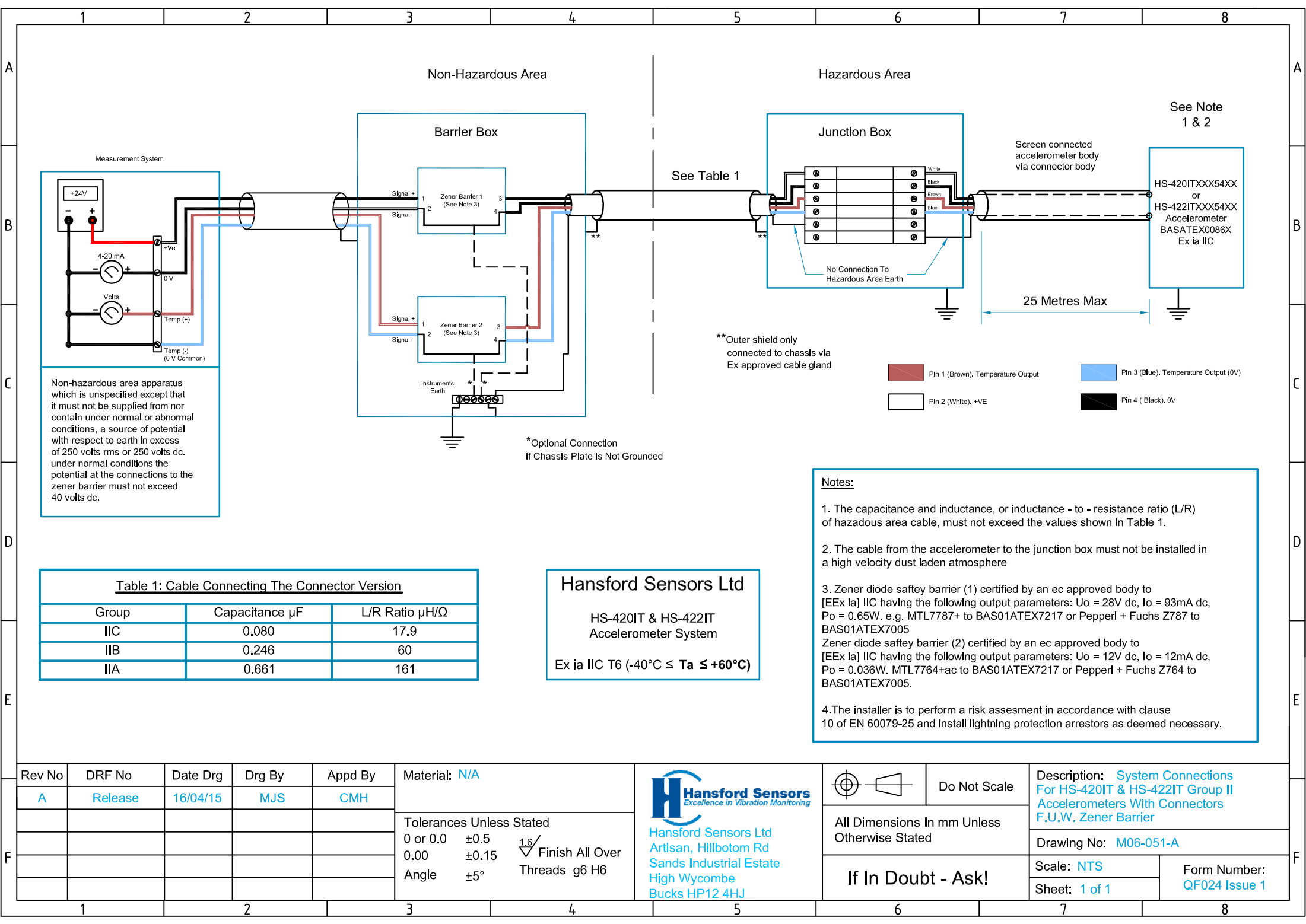
HS-420IT & HS-422IT
Accelerometer System

Ex ia IIC T6 (-40°C ≤ Ta ≤ +60°C)

Notes:

- The capacitance and inductance, or inductance - to - resistance ratio (L/R) of hazardous area cable, must not exceed the values shown in Table 1.
- The cable from the accelerometer to the junction box must not be installed in a high velocity dust laden atmosphere.
- 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	Material: N/A	 Hansford Sensors <i>Excellence in Vibration Monitoring</i> Hansford Sensors Ltd Saunderton Business Park Haw Lane Saunderton Bucks HP14 4JE	 Do Not Scale	Description: System Connections For HS-420IT & HS-422IT Group II Accelerometers With Connectors F.U.W. Galvanic Isolation		
A	Release	17/06/10	MJS	CMH	Tolerances Unless Stated 0 or 0.0 ±0.5 0.00 ±0.15 Angle ±5° 1.6/ Finish All Over Threads g6 H6		All Dimensions In mm Unless Otherwise Stated	Drawing No: M06-035-A		
B	DRF380	16/06/15	MJS	CMH				If In Doubt - Ask!	Scale: NTS	Form Number: QF024 Issue 1
									Sheet: 1 of 1	



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Hansford Sensors
Excellence in Vibration Monitoring

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Artisan, Hillbottom Rd
Sands Industrial Estate
High Wycombe
Bucks HP12 4HJ

Do Not Scale

All Dimensions In mm Unless Otherwise Stated

If In Doubt - Ask!

Description: System Connections For HS-420IT & HS-422IT Group II Accelerometers With Connectors F.U.W. Zener Barrier

Drawing No: M06-051-A

Scale: NTS

Sheet: 1 of 1

Form Number: QF024 Issue 1