

HS-420I/M Intrinsically Safe Accelerometer

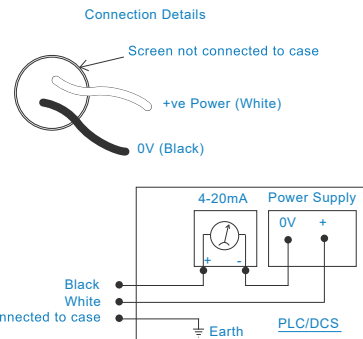
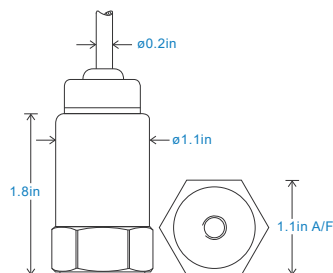
4-20mA velocity output via Flame Retardant Cable

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



Technical Performance

Mounted Base Resonance	5kHz min
Velocity Ranges	see: 'How To Order' table $\pm 10\%$
	Nominal 80Hz at 72°F
Frequency Response	600cpm (10Hz) to 60kcpm (1kHz) $\pm 5\%$ - ISO10816
Isolation	Base isolated
Range	50g peak
Transverse Sensitivity	Less than 5%

Mechanical

Case Material	Stainless Steel
Sensing Element/Construction	PZT/Compression
Mounting Torque	5.9ft. lbs
Weight	5.2 oz. (nominal)
Maximum Cable Length	3,280 ft.
Standard Cable Length	16 ft.
Shielded Cable	Flame Retardant - length to be specified with order
Mounting Threads	see: 'How To Order' table

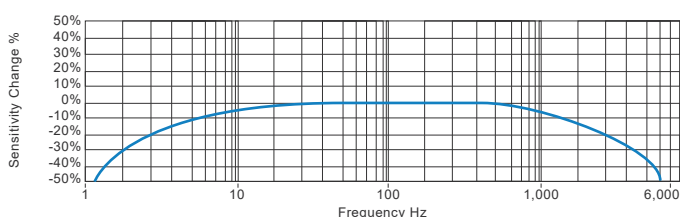
Electrical

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	IP65
Maximum Shock	5000g
EMC	EN61326-1:2013

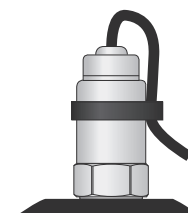
Typical Frequency Response



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



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We reserve the right to alter the specification of this product without prior notice
TS062U.16



Intrinsically Safe Requirements

How To Order

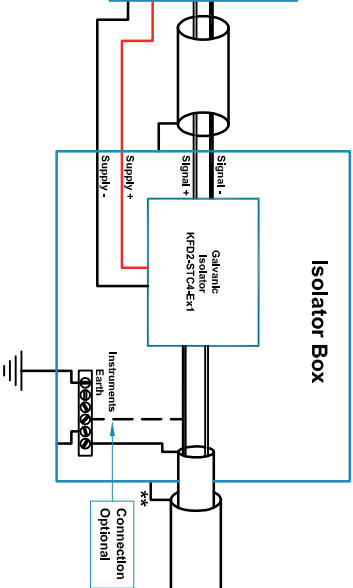


Non-Hazardous Area

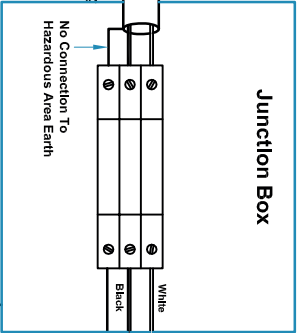
Hazardous Area

Non-hazardous area apparatus which is unspecified except that it must not be supplied from nor contain under normal or abnormal conditions, a source of potential with respect to earth in excess of 250 volts DC.

under normal conditions the potential at the connections to the galvanic isolator must not exceed 40 volts DC.



See Table 1



See Note 1 & 2

HS-420XXXX08XX or HS-4221XXX08XX Accelerometer BASATEX0086X Ex Ia IIC

**Outer shield only connected to chassis via Ex approved cable gland

Table 1: Cable Parameters For Additional Cable Lengths

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	

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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	Material: N/A
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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		
<div><div>Hansford Sensors <i>Excellence in Vibration Monitoring</i></div><div>Hansford Sensors Ltd Saunderton Business Park Haw Lane Saunderton Bucks HP14 4JE</div></div>					<div><div></div><div>Do Not Scale</div></div>	<div><div>All Dimensions In mm Unless Otherwise Stated</div><div>If In Doubt - Ask!</div></div>	<div><div>For P13-4201 & P13-4201 Group II Accelerometers with Non Armoured FR Polyurethane Cable F.U.W. Galvanic Isolation</div><div>Drawing No: M06-033-A</div><div>Scale: NTS</div><div>Sheet: 1 of 1</div><div>Form Number: QF024 Issue 1</div></div>



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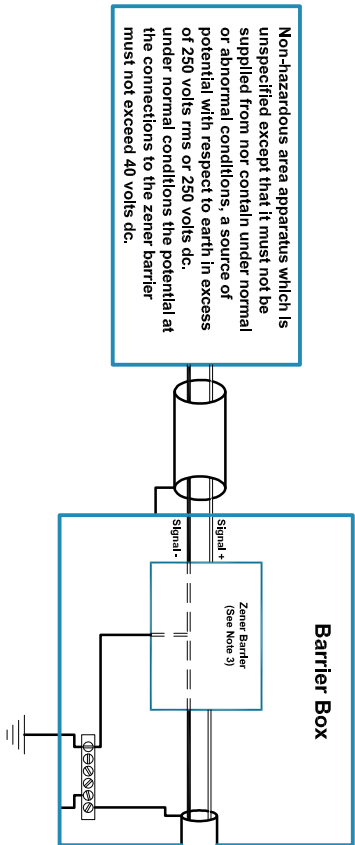
All Dimensions in mm Unless Otherwise Stated

Description: System Connections
For HS-420I & HS-422I Group II Accelerometers With Non Armoured F.U.W. Galvanic Isolation
Drawing No: M06-033-A

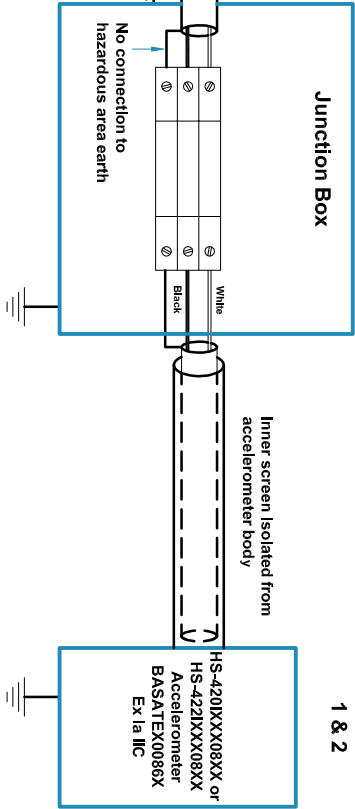
If In Doubt - Ask!

Scale: NTS
Sheet: 1 of 1
Form Number: QF024 Issue 1

Non-Hazardous Area



Hazardous Area



See Table 1

Baseefa
Certification
Schedule
Drawing

baseefa 08 Y 0087



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Table 1: Cable Parameters For Additional Cable Lengths

Accelerometer With Integral Cable Length ≤ 10m			
Group	Capacitance μF	L/R Ratio $\mu\text{H}/\Omega$	
IIC	0.081	56	
IIB	0.247	168	
IIA	0.662	448	
Accelerometer With Integral Cable Length ≤ 50m			
Group	Capacitance μF	L/R Ratio $\mu\text{H}/\Omega$	
IIC	0.075	56	
IIB	0.241	168	
IIA	0.656	448	
Accelerometer With Integral Cable Length ≤ 100m			
Group	Capacitance μF	L/R Ratio $\mu\text{H}/\Omega$	
IIC	0.067	56	
IIB	0.233	168	
IIA	0.648	448	

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HS-4201 & HS-4221
Accelerometer System
Baseefa08Y0087
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. Any shunt zener diode safety barrier certified by an ec approved body to [Ex ia] IIC having the following output parameters: $U_o = 28\text{V dc}$, $I_o = 3\text{mA dc}$, $P_o = 0.65\text{W}$, e.g. MTL7787 to BAS01ATEX7217 or Pepperl + Fuchs Z787 to BAS01ATEX7005.
4. 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
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A	Release	10/03/08	MJS	CMH	
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Saunderton
Bucks HP14 4JE



Do Not Scale

All Dimensions in mm Unless
Otherwise Stated

Description: System Connections
For HS-4201 & HS-4221 Group II
Accelerometers With Non Armoured
FR Polyurethane Cable F.U.W. Zener Barrier
Drawing No: M06-013-A

If In Doubt - Ask!

Scale: NTS
Sheet: 2 of 2
Form Number: QF024 Issue 1