

HS-420I/M Intrinsically Safe Accelerometer

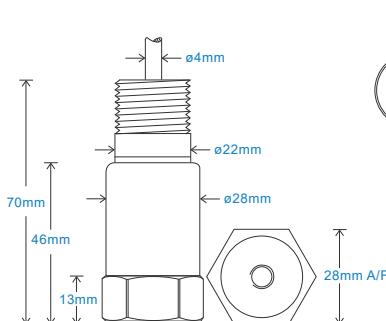
4-20mA velocity output via Flame Retardant Cable for use with Terminal Head

Key Features

- Intrinsically Safe with European, USA, Australian, South African, and Indian approvals
- Approved SIL 2 and SIL 3
- For use with Terminal Head
- Customizable 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 ±10% Nominal 80Hz at 22°C
Frequency Response	10Hz (600cpm) to 1kHz (60kcpm) ± 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)
External Cable Length	site cable up to 1000 metres
Integral Cable Length	up to 300 mm
Cable Connections	Screw Terminals
Mounting Threads	see: 'How To Order' table

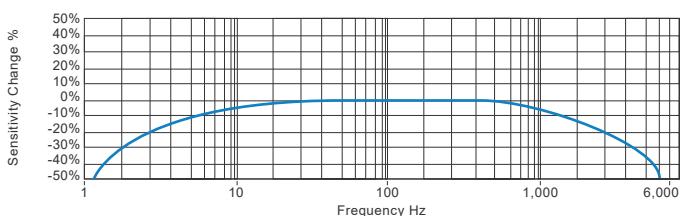
Electrical

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

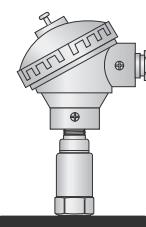
Typical Frequency Response



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
TS080.25



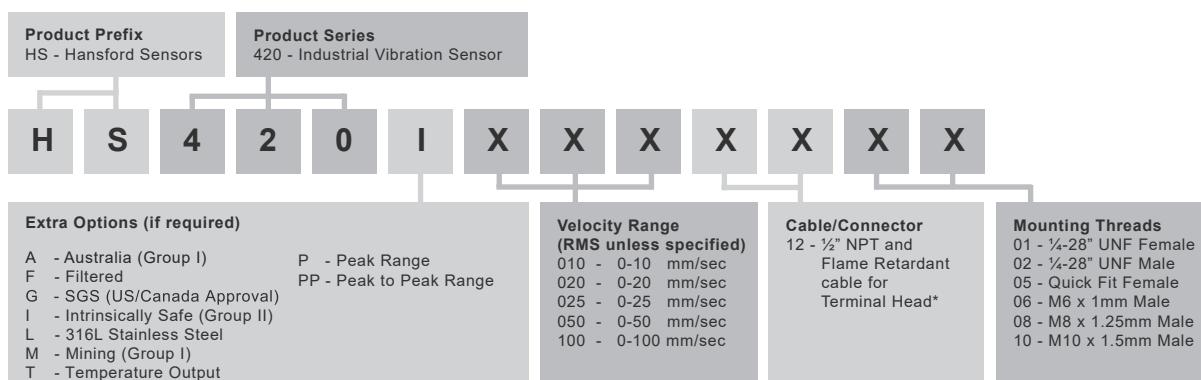
HS-420I/M Intrinsically Safe Accelerometer

4-20mA velocity output via Flame Retardant Cable for use with Terminal Head

Intrinsically Safe Requirements

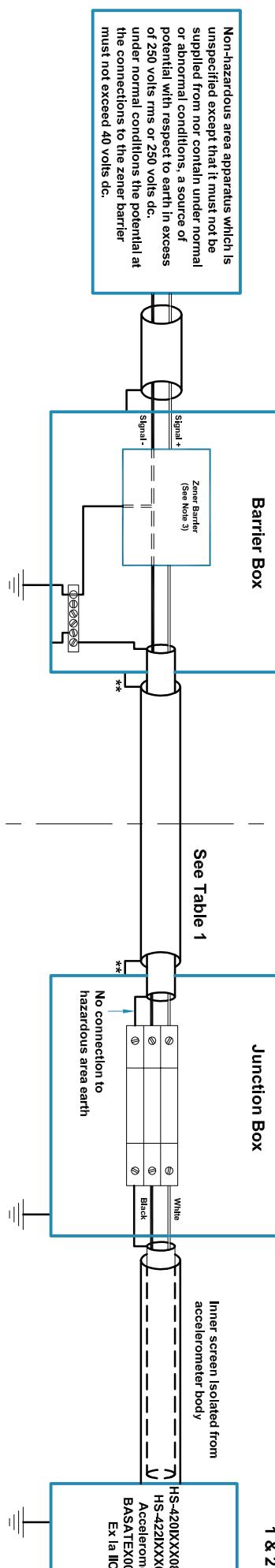
Maximum Cable Length	nominal 100 metres see attached system drawings	US/Canada Approvals	Certificate No. SGSNA/18/SUW/0000231
Certificate details: Group I + II	IECEx BAS08.0034X Baseefa08ATEX0086X	Class I, II, III, Division 1, 2, Groups A - G, T4, -40°C to +110°C, Class I, Zone 0, AEx, ia, IIC, T4, Ga, -40°C to +110°C Zone 20, AEx, ia, IIIC, T130°C, IP65, Da, -40°C to +110°C	
	Ex ia IIC T6 Ga Ex ia IIIC T80°C IP65 Da Ex ia I Ma (-40°C ≤ Ta ≤ +60°C)	② II 1GD ② I M1 ② II 1GD	Barrier 1 x Pepperl + Fuchs Galvanic Isolator KFD2-STC4-Ex1, which has superseded KFD2-CR-Ex1.30300 (BAS00ATEX7164) see attached system drawings
Certificate details: Group II	Ex ia IIC T4 Ga Ex ia IIIC T130°C IP65 Da (-40°C ≤ Ta ≤ +110°C)	Ex ia I Ma (-40°C ≤ Ta ≤ +60°C)	1 x MTL Zener Barrier MTL7787+ (BAS01ATEX7217) or Pepperl + Fuchs Zener Barrier Z787 (BAS01ATEX7005) or any other barrier that conforms to system drawings attached
Accelerometer System Certificate	Baseefa08Y0087 Ex ia IIC T6 (-40°C ≤ Ta ≤ +60°C) *On request - consult Sales Office	System Connections for Zener Barrier	see attached system drawings
Terminal Parameters	Ui = 28V, Ii = 115mA, Pi = 0.65W Group II Ui = 16.5V Pi = 0.65W or Ui = 28V Ii = 115mA Pi = 0.65W Group I	System Connections for Galvanic Isolator	see attached system drawings
500V Isolation	Units Will Pass A 500V Isolation Test	Terminal Parameters	Ui = Vmax = 28V Ii = Imax = 115mA Pi = 0.65W
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) Ex ia I Ma (-40°C ≤ Ta ≤ +60°C) (Mining)	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.
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



*HS-AA042 or HS-AA052 Terminal Head to be purchased separately

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 rms or 250 volts dc. Under normal conditions the potential at the connections to the zener barrier must not exceed 40 volts dc.



See Note
1 & 2

Table 1: Cable Parameters For Additional Cable Lengths

Accelerometer With Integral Cable Length \leq 10m

Group	Capacitance μ F	L/R Ratio μ H/ Ω
IIC	0.081	56
IIB	0.247	168
IIA	0.662	448
Accelerometer With Integral Cable Length \leq 50m		
Group	Capacitance μ F	L/R Ratio μ H/ Ω
IIC	0.075	56
IIB	0.241	168
IIA	0.656	448
Accelerometer With Integral Cable Length \leq 100m		
Group	Capacitance μ F	L/R Ratio μ H/ Ω
IIC	0.067	56
IIB	0.233	168
IIA	0.648	448

Baseefa
Certification
Schedule
Drawing

HS-420I & HS-422I
Accelerometer System

Baseefa08/0087
Ex ia IIC T6 (-40°C \leq Ta \leq +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 [IEEx ia] IIC having the following output parameters: $U_o = 28V$ dc, $I_o = 93mA$ dc, $P_o = 0.65W$, e.g. MTL7787 to BASATEXZ217 or Pepperl + Fuchs Z787 to BASATEX7005.
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.

baseefa 08 Y 0087

Rev No	DRF No	Date Drg	Drg By	Appd By	Material: N/A
A	Release	10/03/08	MJS	CMH	

Tolerances Unless Stated

0 or 0.0

± 0.5

\triangle

Finish All Over

0.00

± 0.15

\triangle

Threads g6 H6

Angle

$\pm 5^\circ$

\triangle

Saunderton

Haw Lane

HS-420I

HS-422I

Baseefa08/0087

Ex ia IIC T6 (-40°C \leq Ta \leq +60°C)

HS-420XXX08XX or

HS-421XXX08XX

Accelerometer

BASATEX0086X

Ex ia IIC

HS-420XXX08XX or

HS-421XXX08XX

Accelerometer

BASATEX0086X</