

HS-100I Intrinsically Safe Accelerometer

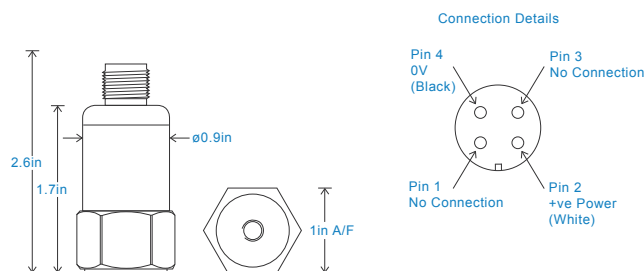
AC acceleration output via M12 Connector

Key Features

- Intrinsically Safe with European, USA, South African, Indian, Korean and Australian approvals
- For use with data collector

Industries

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



Technical Performance

Mounted Base Resonance	see 'How To Order' table (nominal)
Sensitivity	see: 'How To Order' table $\pm 10\%$ Nominal 80Hz at 72°F
Frequency Response	120cpm (2Hz) to 600kcpm (10kHz) $\pm 5\%$ 90cpm (1.5Hz) to 720kcpm (12kHz) $\pm 10\%$ 48cpm (0.8Hz) to 900kcpm (15kHz) $\pm 3\text{dB}$
Isolation	Base isolated
Range	see: 'How To Order' table
Transverse Sensitivity	Less than 5%

Mechanical

Case Material	Stainless Steel
Sensing Element/Construction	PZT/Compression
Mounting Torque	5.9ft. lbs
Weight	4.4 oz. (nominal)
Shielded Cable Assembly	HS-AC010 - straight HS-AC011 - right angle
Mounting Threads	see: 'How To Order' table

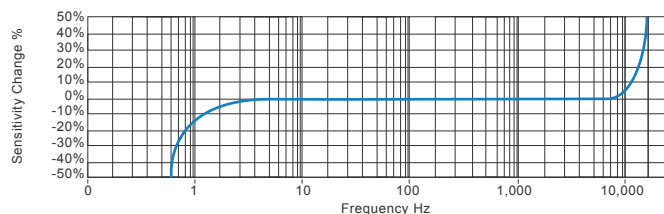
Electrical

Electrical Noise	0.1mg max
Current Range	0.5mA to 8mA
Bias Voltage	10 - 12 Volts DC
Settling Time	2 seconds
Output Impedance	200 Ohms max.
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

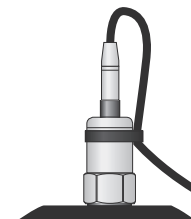
Typical Frequency Response (at 100mV/g)



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

TS036U.12



HS-100I Intrinsically Safe Accelerometer

AC acceleration output via M12 Connector

Intrinsically Safe Requirements

Maximum Cable Length	See website www.hansfordsensors.com - see attached system drawing	Australian Approval Group I	IECEX ITA 11.0013X Ex ia I Ma (-55°C ≤ Ta ≤ +110°C)
Certificate details: Group I	IECEX BAS07.0037X Baseefa07ATEX0149X Ⓔ I M1 Ex ia I Ma (-55°C ≤ Ta ≤ +110°C)	US/Canada Approvals Class I, II, III, Division 1, 2, Groups A - G, T4, -55°C to +110°C, IP65 Class I, Zone 0, AEx, ia, IIC, T4, Ga, -55°C to +110°C Zone 20, AEx, ia, IIIC, T130°C, IP65, Da, -55°C to +110°C	Certificate No. USTC/15/FAI/01350
Certificate details: Group II (ignition temperature 130°C)	IECEX BAS07.0035X Baseefa07ATEX0144X Ⓔ II 1GD Ex ia IIC T4 Ga Ex ia IIIC T130°C IP65 Da (-55°C ≤ Ta ≤ +110°C)	Class I, II, III, Division 1, 2, Groups A - G, T6, -55°C to +60°C Class I, Zone 0, AEx, ia, IIC, T6, Ga, -55°C to +60°C Zone 20, AEx, ia, IIIC, T80°C, IP65, DA, -55°C to +60°C	
Certificate details: Group II (ignition temperature 80°C)	IECEX BAS07.0035X Baseefa07ATEX0144X Ⓔ II 1GD Ex ia IIC T6 Ga Ex ia IIIC T80°C IP65 Da (-55°C ≤ Ta ≤ +60°C)	South African Approval Korean Approval Group II	Certificate No. MASC S/16-0231X Group II (As Baseefa/ATEX) MASC M/16-0230X Group I (As Baseefa/ATEX) Certificate No 19-AV4BO-0048X Ex ia IIC T6/T4 T6 -55°C < Ta < +60°C T4 -55°C < Ta < +110°C
Accelerometer System Certificate	Baseefa07Y0145 Ex ia IIC T6 (-55°C ≤ Ta ≤ +60°C) Ex ia IIC T4 (-55°C ≤ Ta ≤ +110°C) On request - consult Sales Office	Terminal Parameters Connector	Ui = 28V, li = 93mA, Pi = 0.65W Ci = 1.0nf Li = 0
Terminal Parameters	Ui = 28V, li = 93mA, Pi = 0.65W Ci = 83nf Li/Ri = 15.4µH/Ohm	System Connections	see attached system drawings
500V Isolation	Units Will Pass A 500V Isolation Test	Barrier	1 x Pepperl + Fuchs Galvanic Isolator KFD2-VR4-Ex1.26 (BAS02ATEX7206) see attached system drawings 1 x MTL Zener Barrier MTL7728+ (BAS01ATEX7217) or Pepperl + Fuchs Zener Barrier Z728 (BAS01ATEX7005) or any other barrier that conforms to system drawings on website
Certified Temperature Range	Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +60°C) (Gas) Ex ia IIIC T80°C IP65 Da (-55°C ≤ Ta ≤ +60°C) (Dust) Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +110°C) (Gas)* Ex ia IIIC T130°C IP65 Da (-55°C ≤ Ta ≤ +110°C) (Dust)* Ex ia I Ma (-55°C ≤ Ta ≤ +110°C) (Mining) *On request - consult Sales Office	Notes: Special conditions of safe use for Group I & II. The free end of the cable on the integral cable version of the apparatus must be terminated in an appropriate dust-proof enclosure.	

Intrinsically Safe Requirements for IC3 Variations

HS-100IC3 Variation is certified as Category 3 equipment. These sensors are only certified for use within Zones 2.	Certified Temperature Range	Ex ic IIC T4 Gc (-55°C ≤ Ta ≤ +110°C)
	Terminal Parameters	Ui = 25.2V, li = 146mA, Pi = 0.92W Ci = 83nf Li 66µH
Certificate Details: Group II (ignition temperature 130°C)	IECEX BAS17.0054X Baseefa7ATEX0069X Ⓔ II 3G Ex ic IIC T4 Gc (-55°C ≤ Ta ≤ +110°C)	500V Isolation Special Conditions of Use:
		Units will pass a 500V Isolation Test The Ci and Li parameters listed on the equipment certificate must be taken into account when connecting this equipment.

How To Order

Product Prefix HS - Hansford Sensors		Product Series 100 - Industrial Vibration Sensor									
H	S	1	0	0	I	X	X	X	X	X	X
Extra Options (if required) A - Australia (Group I) G - SGS (US/Canada Approval) I - Intrinsically Safe (Group II) L - 316L Stainless Steel M - Mining (Group I) S - 90° Side Exit Y - 5% tolerance on sensitivity IC3 - Category 3 Classification		Sensitivity 010 - 10mV/g 030 - 30mV/g 050 - 50mV/g 100 - 100mV/g		Range ±800g ±250g ±160g ±80g		Resonant Frequency 34kHz (2,040kcpm) 33kHz (1,980kcpm) 32kHz (1,920kcpm) 30kHz (1,800kcpm)		Cable/Connector 01 - PUR 02 - Braided 07 - Silicon 50 - 2 Pin MS 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	