HS-170IS Premium Intrinsically Safe Accelerometer

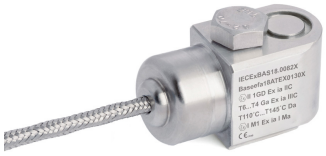
AC acceleration output via Braided Cable

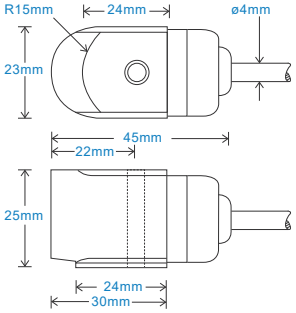
Key Features

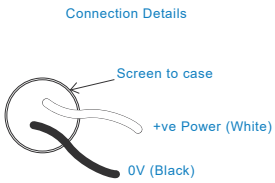
- Intrinsically Safe with European, USA, Indian and Australian approvals
- Compact design
- Side entry for easy access
- Premium design

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 ±10%
	Nominal 80Hz at 22°C
Frequency Response	2Hz (120cpm) to 14kHz (840kcpm) ± 5%
	1.5Hz (90cpm) to 16kHz (960kcpm) ± 10%
	0.8Hz (48cpm) to 19kHz (1,140kcpm) ± 3dB
Isolation	Base isolated
Range	see: 'How To Order' table
Transverse Sensitivity	Less than 5%

Mechanical

Case Material	Stainless Steel
Sensing Element/Construction	PZT/Shear
Mounting Torque	8Nm
Mounting Bolt Provided	see: 'How To Order' table x 30mm long
Weight	135gms (nominal) body only
Maximum Cable Length	See certificate
Standard Cable Length	5 metres
Screened Cable	Braided - length to be specified with order
Mounting Threads	see: 'How To Order' table

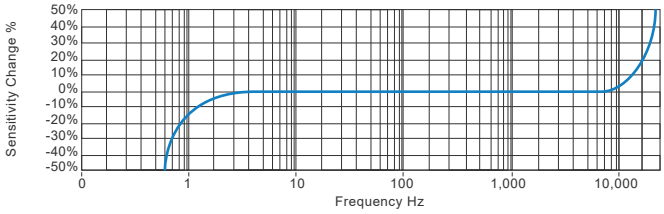
Electrical

Electrical Noise	0.1mg max
Current Range	0.5mA to 8mA
Bias Voltage	10 - 12 Volts DC
Settling Time	1 second
Output Impedance	200 Ohms max.
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

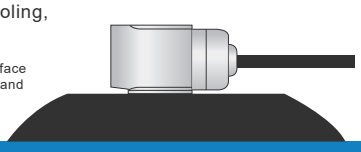
Typical Frequency Response (at 100mV/g)



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

710318

This product is certified in accordance with
UL 60079-0, 6th Ed, Rev. July 26, 2013
UL 60079-11, 6th Ed. Rev. September 6, 2013
CAN/CSA C22.2 No. 60079-0:15 Rev. October 2015
CAN/CSA C22.2 No. 60079-11:14
UL 913, 8th Ed. Rev. October 16, 2015

Hansford Sensors
Excellence in Vibration Monitoring

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

HS-170IS Premium Intrinsically Safe Accelerometer

AC acceleration output via Braided Cable

Intrinsically Safe Requirements

Sensor Maximum Cable Length	Up to 92 metres
Certificate details: Group I	IECEx 18.0082X Baseefa18ATEX0130X Ⓔx I M 1 Ex ia I Ma
Certificate details: Group II and III	IECEx 18.0082X Baseefa18ATEX0130X Ⓔx II 1GD Ex ia IIC T6..T4 Ga Ex ia IIIC T110ºC..T145ºC Da
Terminal Parameters 10m of cable	Ui = 28V, Ii = 93mA, Pi = 0.65W Ci = 5.0nF Li= 7.2µH
Terminal Parameters 92m of cable	Ui = 28V, Ii = 93mA, Pi = 0.65W Ci = 35.9nF Li= 66µH
500V Isolation	Units Will Pass A 500V Isolation Test
Standards Applied to Product	EN IEC 60079-0:2018 EN 60079-11:2012 IEC 60079-0 Edition 7 2017 IEC 60079-11 Edition 6 2011

Certified Temperature Range	Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +57°C) (Gas) Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +103°C) (Gas) Ex ia IIIC T110°C Da (-55°C ≤ Ta ≤ +57°C) (Dust) Ex ia IIIC T135°C Da (-55°C ≤ Ta ≤ +70°C) (Dust) Ex ia IIIC T145°C Da (-55°C ≤ Ta ≤ +92°C) (Dust) Ex ia I Ma (-55°C ≤ Ta ≤ +103°C) (Mining)
Australian Approval Group I	IECEx ExTC 18.0032X Ex ia I Ma (-55ºC ≤ Ta ≤ +104ºC)
US/Canada Approvals	Certificate No. SGSNA/19/BAS/00005 Cl I, II, III, Div 1, 2 Gr A-G T* Cl I Zn 0 AEx ia IIC T6...T4 Ga Cl II Zn 20 AEx ia IIIC T110ºC...T145ºC Da Cl II Zn 20 AEx ia IIIB T110ºC...T145ºC Da Ex ia IIC T6...T4 Ga Ex ia IIIC T110ºC...T145ºC
Control Drawing	M06-083-A Overbraided Cable M06-084-A PUR Cable M06-085-A Silicone Cable M06-086-A FR PUR Cable M06-087-A Various Cables (HS-150IT Only)
Barrier	1 x Pepperl + Fuchs Galvanic Isolator KFD2-VR4-Ex1.26 (BAS02ATEX7206) 1 x MTL Zener Barrier MTL7728+ (BAS01ATEX7217) or Pepperl + Fuchs Zener Barrier Z728 (BAS01ATEX7005) or any other barrier that conforms with the terminal parameters

Special conditions of use: When a sensor is supplied with integral cable, this must be terminated in an enclosure providing at least degree of protection IP20.

Note: If the equipment is to be used in unusual environments or aggressive substances are likely to be encountered, contact the manufacturer to discuss suitability.

How To Order

Product Prefix
HS - Hansford Sensors

Product Series
170IS - Premium Intrinsically Safe Accelerometer

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

H	S	1	7	0	I	S	X	X	X	X	X	X	X	X	X	X

Extra Options (if required)
A - Australia (Group I)
I - Intrinsically Safe (Group II)
L - 316L Stainless Steel
M - Mining (Group I)
S - 90° Side Exit
Y - 5% tolerance on sensitivity

Sensitivity		Range	Resonant Frequency	
010	- 10mV/g	±800g	34kHz	(2,040kcpm)
030	- 30mV/g	±250g	32kHz	(1,920kcpm)
050	- 50mV/g	±160g	30kHz	(1,800kcpm)
100	- 100mV/g	±80g	28kHz	(1,680kcpm)
250	- 250mV/g	±32g	26kHz	(1,560kcpm)
500	- 500mV/g	±16g	24kHz	(1,440kcpm)

Cable/Connector
01 - PUR
02 - Braided
07 - Silicon
08 - Flame Retardant
50 - 2 Pin MS
54 - M12

Mounting Threads
02 - ¼-28" UNF Male
06 - M6 x 1mm Male
08 - M8 x 1.25mm Male

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