

# HS-104I ATEX Low Power Accelerometer

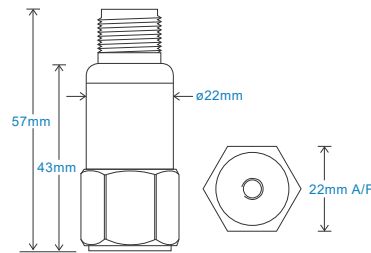
## AC acceleration output via 3 Pin MS Connector

### Key Features

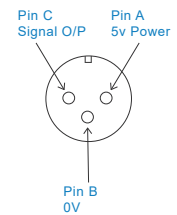
- Intrinsically Safe with European, USA and Australian approvals
- Low voltage
- Ultra low power consumption
- Customisable features

### Industries

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



Connection Details



### Technical Performance

Mounted Base Resonance	see 'How To Order' table (nominal)
Sensitivity	see: 'How To Order' table $\pm 10\%$ Nominal 80Hz at 22°C
Frequency Response	0.3Hz (18cpm) to 10kHz (600kcpm) $\pm 10\%$
Isolation	Base isolated
Range	see: 'How To Order' table @ 5V power
Transverse Sensitivity	Less than 5%
Amplitude Linearity	$\pm 1\%$

### Mechanical

Case Material	Stainless Steel
Sensing Element/Construction	PZT/Shear
Mounting Torque	8Nm
Weight	106gms (nominal)
Screened Cable Assembly	see: <a href="http://www.hansfordsensors.com">www.hansfordsensors.com</a> for options
Connector	HS-AA005 - non-booted HS-AA068 or HS-AA069 - booted
Mounting Threads	see: 'How To Order' table

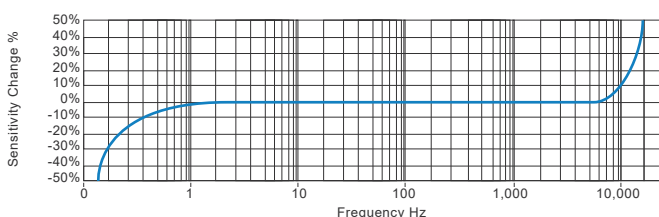
### Electrical

Electrical Noise	< 500 $\mu$ g
Power Requirements	5V nominal (other voltages 1.8 to 12V on request)
Current Consumption	100 $\mu$ A nominal at 5V supply (60 $\mu$ A at 1.8V)
Bias Voltage	50% of supply voltage
Settling Time	1 second
Output Impedance	100 Ohms max.
Case Isolation	>10 <sup>8</sup> Ohms at 500 Volts

### Environmental

Operating Temperature Range	see: attached certification details
Sealing	IP68
Maximum Shock	5000g
EMC	EN61326-1:2013

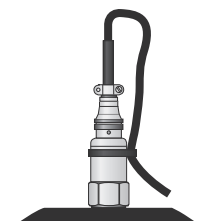
### Typical Frequency Response (at 100mV/g)



### 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 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



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

TS930.6



## AC acceleration output via 3 Pin MS Connector

Maximum Cable Length	Up to 92 metres	500V Isolation	Units Will Pass A 500V Isolation Test
Certificate details: Group II	IECEx 18.0099X Baseefa18ATEX0166X ⒺII 1G Ex ia IIC T6..T4 Ga	Certified temperature range	Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +66°C) (Gas) Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +116°C) (Gas)
Terminal Parameters Connector	Ui = 12V, Ii = 160mA, Pi = 0.48W Ci = 494nF, Li = 0	US/Canada Approvals	Certificate No. SGSNA/19/BAS/00005 Cl I, Div 1, Grp A-D T6 Cl I Zn 0 AEx ia IIC T6 Ga Ex ia IIC T6 Ga (-55°C to +66°C)
Terminal Parameters 92m of Cable	Ui = 12V, Ii = 160mA, Pi = 0.48W Ci = 529nF, Li = 66µH		Or
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		Cl I, Div 1, Grp A-D T4 Cl I Zn 0 AEx ia IIC T4 Ga Ex ia IIC T4 Ga (-55°C to +116°C)
Barrier	1 x MTL Zener Barrier MTL7766ac (BAS01ATEX7217) Or any other barrier that conforms with the terminal parameters	Control Drawing	M06-091-A

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. The equipment is reduced with reduced certification markings. Refer to the Certificate Schedule for full certification marking and applicable temperature classification associated ambient temperature range. The screen of the cable is not to be connected to the barrier in the Safe Area, it must be connected in the Hazardous area only.

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.

Product Prefix		Product Series							Supply Voltage		
HS - Hansford Sensors		104 - Intrinsically Safe Low Power Vibration Sensor							+3 Volts +5 Volts		
H	S	1	0	4	I	X	X	X	X	X	X
<b>Extra Options (if required)</b> F - Filtered G - SGS (US/Canada Approval) L - 316L Stainless Steel S - 90° Side Exit I - Intrinsically Safe (Group II) Y - 5% Tolerance on Sensitivity		<b>Sensitivity</b> 010 - 10mV/g 025 - 25mV/g 030 - 30mV/g 050 - 50mV/g 100 - 100mV/g 250 - 250mV/g 500 - 500mV/g		<b>Range</b> ±200g ±80g ±66g ±40g ±20g ±8g ±4g		<b>Resonant Frequency</b> 25kHz (1,500kcpm) 25kHz (1,500kcpm) 25kHz (1,500kcpm) 25kHz (1,500kcpm) 25kHz (1,500kcpm) 25kHz (1,500kcpm) 25kHz (1,500kcpm)		<b>Cable/Connector</b> 01 - PUR 03 - Braided 07 - Silicon 13 - Flame Retardant 52 - 3 Pin MS 54 - M12		<b>Mounting Threads</b> 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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