HS-420I/M Intrinsically Safe Accelerometer

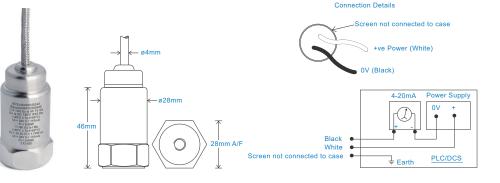
4-20mA velocity output via Braided Cable



- Intrinsically Safe with European, USA,
- Australian, South African, and Indian approvals
- Approved SIL 2 and SIL 3
- For use with PLC/DCS systems
- Customisable features

Industries

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



Technical Perform	nance	
Mounted Base Resonar	nce	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)
Maximum Cable Length	1000 metres
Standard Cable Length	5 metres
Screened Cable	Braided - length to be specified with order
Mounting Threads	see: 'How To Order' table

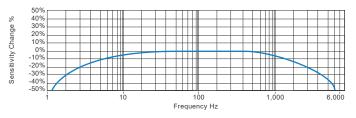
Electrical

Current Output4-20mA DC proportional to Velocity RangeSupply Voltage15-30 Volts DC (for 4-20mA)Settling Time2 secondsOutput ImpedanceLoop Resistance 600 Ohms max. at 24 VoltsCase Isolation>10⁸ Ohms at 500 Volts

Environmental

Operating Temperature Range Sealing Maximum Shock EMC see: attached certification details IP65 5000g 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 TS061.23



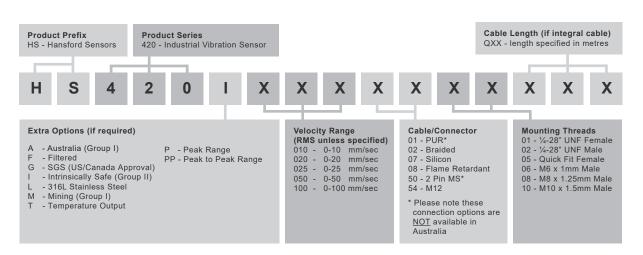
HS-420I/M Intrinsically Safe Accelerometer 4-20mA velocity output via Braided Cable

Intrinsically Safe Rec	uirements		
Maximum Cable Length	nominal 100 metres	US/Canada Approvals	Certificate No. SGSNA/18/SUW/0000231
	see attached system drawings	Class I, II, III, Divis	sion 1, 2, Groups A - G, T4, -40°C to +110°C,
		Class I, Z	Zone 0, AEx, ia, IIC, T4, Ga, -40°C to +110°C
Certificate details: Group I	FII IECEx BAS08.0034X	Zone 20, AEx	, ia, IIIC, T130°C, IP65, Da, -40°C to +110°C
	Baseefa08ATEX0086X		
	⊛II 1GD	Barrier	1 x Pepperl + Fuchs Galvanic Isolator
	Ex ia IIC T6 Ga		KFD2-STC4-Ex1, which has superseded
	Ex ia IIIC T80°C IP65 Da		KFD2-CR-Ex1.30300 (BAS00ATEX7164)
	🐵 l M1		see attached system drawings
	Ex ia I Ma		
	(-40°C ≤ Ta ≤ +60°C)	1 x MTL	Zener Barrier MTL7787+ (BAS01ATEX7217)
Certificate details: Group II	ll 1GD		or Pepperl + Fuchs Zener Barrier
• • • • • • • • • • • • • • • • • • •	Ex ia IIC T4 Ga	Z787	7 (BAS01ATEX7005) or any other barrier that
	Ex ia IIIC T130°C IP65 Da		conforms to system drawings attached
	(-40°C ≤ Ta ≤ +110°C)		
		System Connections for Zener	r Barrier see attached system drawings
Accelerometer System Cert	ificate Baseefa08Y0087		
	Ex ia IIC T6 (-40°C ≤ Ta ≤ +60°C)	System Connections for Galva	anic Isolator see attached system drawings
	*On request - consult Sales Office		
		Terminal Parameters	Ui = Vmax = 28V
Terminal Parameters	Ui = 28V, li = 115mA, Pi = 0.65W Group II		li = Imax = 115mA
	Ui = 16.5V Pi = 0.65W		Pi = 0.65W
	or Ui = 28V li = 115mA Pi = 0.65W Group I		
			ecial conditions of safe use for Group II dust.
500V Isolation	Units Will Pass A 500V Isolation Test		he free end of the cable on the integral cable
		Ve	ersion of the apparatus must be terminated in
Certified Temperature Rang	e Ex ia IIC T6 Ga (-40°C ≤ Ta ≤ +60°C) (Gas)	ar	appropriately certified dust-proof enclosure.
	Ex ia IIC T4 Ga (-40°C ≤ Ta ≤ +110°C) (Gas)		The unit has no serviceable parts.
	C 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)		

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

Certificate No. MASC MS/16-0229X Group I and II (As Baseefa/ATEX)

How To Order





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П	- T			m			Т				5						0		B >	
	Rev I																	I_		
	No DRF No E	IIA	₿	IC	Group	Accelerome	IA		Group	Accelerom	IIA	IIB	IC	Group	Accelerom	Table 1: Cable			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.	
2	Date Drg Drg By 17/06/10 MJS	2.571	0.741	0.070	Capacitance µF	Cable	2.585	0.755	Capacitance µF	Accelerometer With Integral Cable Length ≤ 50m	2.597	0.767	0.096	Capacitance µF	Accelerometer With Integral Cable Length ≤ 10m	Table 1: Cable Parameters For Additional Cable Lengths			atus which is nust not be under normal source of urth in excess repotential at c.	2
Tolera 0 or 0. 0.00 Angle	Appd By Mat	585	277	72	ີ L/R Ratio μΗ/Ω	Lenath ≤ 100m	585	27	L/R Ratio μΗ/Ω	⊢Length ≤ 50m	585	277	72	L/R Ratio μΗ/Ω	⊢Length ≤ 10m	onal Cable Lengths			Non-Hazar	
rances Unless 0.0 ±0.5 ±0.15 e ±5°	Material: N/A				Ω/H				Ω/Hr					Ω/H		10,		ı∥⊢	Non-Hazardous Area	
Stated ^{1.6} ∕ Finish All Over Threads g6 H6 ₄								HS-420		Hansford Senso									* Connection Optional	Ŧ
Hansford Sensors Ltd Saunderton Business Park Haw Lane Saunderton Bucks HP14 4JE	Hansford Sensors Excellence in Vibration Monitoring					U°C ≤ Ta ≤ +60°C)	1	HS-4201 & HS-4221 Accelerometer System	2	Sensors Ltd							Ĕ 8 8 6			
All Dimensions In mm Unless Otherwise Stated If In Doubt - Ask!							10 of EN 60079-25 and install lightning protection arrestors as deemed necessary.	2. The installer is to perform a risk assesment in accordance with clause	of hazadous area cable, must not exceed the values shown in table 1.	1. The canacitance and	Notes:						**Outer shield only *Ou connected to chassis via ch Ex approved cable gland ca		Hazardous Area	6
t - Ask!	Do Not Scale						install lightning pr	erform a risk assesı	e, must not exceed	d inductance, or inc							*Outer shield connected to chassis via Ex approved cable gland	-	Outer accele screet accele	-
F.U.W. Galvanic Isolatio Drawing No: M06-031-A Scale: NTS Sheet: 1 of 2	Description: Syste For HS-420I & HS- Accelerometers W						otection arrestors as	nent in accordance w	the values shown in t	luctance - to - resistar							õ		Outer shield connected to accelerometer body, inner screen not connected to accelerometer body.	
-031-A Form Number: QF024 Issue 1 8	Description: System Connections For HS-420I & HS-422I Group II Accelerometers With Armoured Cable						deemed necessary.	ith clause	table 1.	nce ratio (L/R)								∥⊢	See Note 1 HS-420IXXX02XX or HS-422IXXX02XX Accelerometer BASATEX0086X Ex la IIC Ex la IIC	α
				m						C	5			_			\cap		∞ >	

	8	6		4	u		2			
	Scale: NTS Form Number: Sheet: 2 of 2 QF024 Issue 1	If In Doubt - Ask!	Haw Lane Saunderton Bucks HP14 4JE		Angle ±					T
י ו ר	Drawing No: M06-011-A	Otherwise Stated	Hansford Sensors Ltd Saunderton Business Park	±0.5 <u>1.6</u> ±0.5 <u>1.6</u> ±0.15 ∑ Finish All Over	0.0					
	 Accelerometers With Armoured Cable F.U.W. Zener Barrier 	All Dimensions In mm IInless	Excellence in Vibration Monitoring	Indace Stated					Release	
		Do Not Scale		Þ	By Material: N/A	A	₽			Rev No
					448		0.635		IIA	
_					168		0.220		IB	
ГП	10 of EN 60079-25 and install lightning protection arrestors as deemed necessary.	10 of EN 60079-25 and install lightning			56		0.054		IIC	Ш
	esment in accordance with clause	3. The installer is to perform a risk asse			L/R Ratio μΗ/Ω		oup Capacitance µF		Group	
	ATEX7217 or Pepperl + Fuchs Z787 to	Po = 0.65W. e.g. MTL7787+ to BAS01A BAS01ATEY7005			448 448		0.649 With Integral C		IIA	
	2. Any shunt zener dlode saftey barrler certified by an ec approved body to IEEx ia1 IIC having the following output parameters: Uo = 28V dc. lo = 93mA dc.	Any shunt zener dlode saftey barrler IEEx ial IIC having the following output	7	; ;	168		0.234		IIB	
		טן וומבמעסעיט מוכמ המשוב, ווועטן ווען באהפכע נווב עמועבט טווטאון וון רמשוב ו.	m	Acceleron	56		0.068		IIC	
	r inductance - to - resistance ratio (L/R)	 The capacitance and inductance, or inductance - to - resistance ratio (L/R) of hazadous area cable, must not exceed the values shown in Table 1 	HS-4201 & HS-4221	HS-4201	L/R Ratio μΗ/Ω	ź	Capacitance µF		Group	
		Notes:	Sensors Ltd	Hansford 8	ו ≤ 50m	Cable Lengtl	Accelerometer With Integral Cable Length ≤ 50m	elerometer	Acc	
\Box					448	_	0.661		IIA	
			S.	IS Wyles	168	+	0.246		IB	_
					56	+	0.080			_
			Ulawing		L/R Ratio μΗ/Ω	ኽ (Capacitance µF		Group	
			Drawing		ו ≤ 10m	Cable Lengtl	Accelerometer With Integral Cable Length ≤ 10m	elerometer	Acc	
			Schedule	Baseefa	ble Lengths	dditional Ca	Table 1: Cable Parameters For Additional Cable Lengths	: Cable Par	Table 1	
			Baseefa							1
\cap		тей салле улаги	8 /	paseera U8 Y						\cap
	ted to ved	ssis via	0 0 1							
	⊣⊨			.11						
Β	HS-422IXXX02XX Accelerometer BASATEX0086X Ex la IIC	arth 0 0 0	** No connection to hazardous area e			Signat-	rier rier	pect to earth in rr 250 volts dc. Idltlons the poi to the zener bai 40 volts dc.	ortential 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.	Ψ
		White	See Table 1		Zener Barrier (See Note 2)	Signal	vhich is not be e of	rea apparatus v pt that it must r r contaln undei lltlons, a sourc	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	
	See Note 1	Junction Box			Barrier Box	_				
\triangleright		Hazardous Area		Area	Non-Hazardous Area					Þ
	7 8	6	ſ	4	ω		2			