

Model Number
643A01

4-20 MA OUTPUT VELOCITY SENSOR

Revision: D
ECN #: 49753

Performance	ENGLISH	SI	
Measurement Range	0.0 to 1.0 in/sec rms	0.0 to 25.4 mm/s rms	[1]
Output	4-20 mA	4-20 mA	
Frequency Range(± 10%)	600 to 60 kcpm	10 to 1 kHz	[2][3]
Broadband Resolution	0.005 in/sec rms	0.13 mm/s rms	[4]
Non-Linearity	± 1%	± 1%	
Environmental			
Temperature Range	-40 to 185 °F	-40 to 85 °C	
Enclosure Rating	IP68	IP68	
Electrical			
Excitation Voltage	12 to 30 VDC	12 to 30 VDC	
Settling Time(within 2% of value)	< 15 sec	< 15 sec	
Electrical Isolation(Case)	> 10 ⁸ Ohm	> 10 ⁸ Ohm	
Physical			
Size - Hex	7/8 in	22.2 mm	
Size - Height	1.41 in	35.8 mm	
Weight	3.8 oz	108 gm	
Mounting Thread	1/4-28 UNF	1/4-28 UNF	
Mounting Torque(Stud)	3 to 4 ft-lb	4.1 to 5.4 Nm	[5][6]
Mounting Torque(hex nut)	2 to 3 ft-lb	2.7 to 4.1 Nm	
Sensing Element	Ceramic	Ceramic	
Sensing Geometry	Shear	Shear	
Housing Material	Stainless Steel	Stainless Steel	
Sealing	Welded Hermetic	Welded Hermetic	
Electrical Connector	2-Pin MIL-C-5015	2-Pin MIL-C-5015	
Electrical Connection Position	Side	Side	
Electrical Connections(Pin A)	4-20 mA Pos (+)	4-20 mA Pos (+)	
Electrical Connections(Pin B)	4-20 mA Neg (-)	4-20 mA Neg (-)	

OPTIONAL VERSIONS

Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.

EX - Hazardous Area Approval- contact factory for specific approvals

Hazardous Area Approval	DIV II, CL I, GRPS A-D, ExnL, AExnA, IIC T4	DIV II, CL I, GRPS A-D, ExnL, AExnA, IIC T4
Hazardous Area Approval	EEx ia IIC T4, -40°C ≤ Ta ≤ 80°C, II 1 G	EEx ia IIC T4, -40°C ≤ Ta ≤ 80°C, II 1 G
Hazardous Area Approval	EEx nL IIC T4, -40°C ≤ Ta ≤ 80°C, II 3 G	EEx nL IIC T4, -40°C ≤ Ta ≤ 80°C, II 3 G
Hazardous Area Approval	DIV I, CL I, II, III, GRPS A-G, Exia, AExia, IIC T4	DIV I, CL I, II, III, GRPS A-G, Exia, AExia, IIC T4

M - Metric Mount
Supplied Accessory: Model M080A163A

RV - Buffered Analog Signal Output - 100 mV/g (±20%)

Electrical Connector	3-Pin MIL-C-5015	3-Pin MIL-C-5015
Electrical Connections	4-20 mA Pos (+)	4-20 mA Pos (+)
Electrical Connections	4-20 mA Neg/Signal Output Neg	4-20 mA Neg/Signal Output Neg
Electrical Connections	Signal Output Pos	Signal Output Pos

NOTES:

- [1] Conversion Factor 1 in/sec = 0.0254 m/sec.
- [2] 1Hz = 60 cpm (cycles per minute).
- [3] Current will fluctuate at frequencies below 5 Hz.
- [4] Typical value.
- [5] 1/8" hex Allen key required for English version, 3mm hex Allen key required for metric version.
- [6] Stud torque must exceed sensor hex nut torque to ensure proper dismantling.
- [7] See PCB Declaration of Conformance PS039 or PS053 for details.

SUPPLIED ACCESSORIES:

Model ICS-4 NIST-traceable single-axis amplitude response calibration from 0 cpm (0 Hz) to upper 10% frequency for 4-20 mA output vibration sensor (1)
Model 080A162 Mounting Stud (1)

Entered: LK	Engineer: NJF	Sales: MC	Approved: NJF	Spec Number:
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All specifications are at room temperature unless otherwise specified.
In the interest of constant product improvement, we reserve the right to change specifications without notice.
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