| Model Number **643A02** | **4-20 MA OUTPUT VELOCITY SENSOR** | Revision: A<br>ECN #: 43341 |
|---|---|---|

| **Performance** | **ENGLISH** | **SI** | |
|---|---|---|---|
| Measurement Range | 0.0 to 2.0 in/sec rms | 0.0 to 50.8 mm/s rms | [1] |
| Output | 4-20 mA | 4-20 mA | |
| Frequency Range(± 10 %) | 600 to 60,000 cpm | 10 to 1 kHz | [2][3] |
| Broadband Resolution | 0.01 in/sec rms | 0.26 mm/s rms | [4] |
| Non-Linearity | ± 1 % | ± 1 % | |
| **Environmental** | | | |
| Temperature Range | -40 to 185 °F | -40 to 85 °C | |
| **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 x Height) | 7/8 in x 1.41 in | 22.2 mm x 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 (-) | |

[7]

*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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## 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 (1) replaces Model 080A162

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

| | | |
|---|---|---|
| Electrical Connector | 3-Pin MIL-C-5015 | 3-Pin MIL-C-5015 |
| Electrical Connections(Pin A) | 4-20 mA Pos (+) | 4-20 mA Pos (+) |
| Electrical Connections(Pin B) | 4-20 mA Neg/Signal Output Neg | 4-20 mA Neg/Signal Output Neg |
| Electrical Connections(Pin C) | 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 080A162 Mounting Stud (1)
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)

| Entered: AP | Engineer: DK | Sales: EGY | Approved: BAM | Spec Number: |
|---|---|---|---|---|
| Date: 10/10/2014 | Date: 10/10/2014 | Date: 10/10/2014 | Date: 10/10/2014 | **36385** |

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