

Model Number  
640B12

# LOOP POWERED, CURRENT OUTPUT, INDUSTRIAL VIBRATION SENSOR

Revision: B  
ECN #: 24962

|                                    | ENGLISH           | SI                  |        |
|------------------------------------|-------------------|---------------------|--------|
| <b>Performance</b>                 |                   |                     |        |
| Measurement Range                  | 0.0 to 2 in/s pk  | 0.0 to 50.8 mm/s pk | [1]    |
| Output                             | 4-20 mA           | 4-20 mA             |        |
| Frequency Range (± 10 %)           | 180 to 60,000 cpm | 3 to 1 kHz          | [2][3] |
| Broadband Resolution               | 0.01 in/s pk      | 0.26 mm/s pk        | [4]    |
| Non-Linearity                      | ± 1 %             | ± 1 %               |        |
| <b>Environmental</b>               |                   |                     |        |
| Temperature Range                  | -40 to 185 °F     | -40 to 85 °C        |        |
| <b>Electrical</b>                  |                   |                     |        |
| Excitation Voltage                 | 12 to 30 VDC      | 12 to 30 VDC        |        |
| Settling Time (within 2% of value) | <15 sec           | <15 sec             |        |
| Electrical Isolation (Case)        | >10 <sup>8</sup>  | >10 <sup>8</sup>    |        |
| <b>Physical</b>                    |                   |                     |        |
| Size (Hex x Height)                | 1.0 in x 4.2 in   | 25.4 mm x 107 mm    |        |
| Weight (without cable)             | 4.7 oz            | 131 gm              |        |
| Mounting Thread                    | 1/4-28 UNF        | Not Applicable      |        |
| Mounting Torque                    | 3 to 5 ft-lb      | 4 to 7 N-m          |        |
| Sensing Element                    | Ceramic           | Ceramic             |        |
| Sensing Geometry                   | Shear             | Shear               |        |
| Housing Material                   | Stainless Steel   | Stainless Steel     |        |
| Sealing                            | Welded Hermetic   | Welded Hermetic     |        |
| Electrical Connector               | Integral Cable    | Integral Cable      |        |
| Electrical Connection Position     | Top               | Top                 |        |
| Electrical Connections (Red)       | 4-20 mA Pos (+)   | 4-20 mA Pos (+)     |        |
| Electrical Connections (Blue)      | 4-20 mA Neg (-)   | 4-20 mA Neg (-)     |        |
| Cable Length                       | 10 ft             | 3.0 m               |        |
| Cable Type                         | Polyurethane      | Polyurethane        |        |

**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** - ATEX or ATEX and CSA Hazardous Area Approval  
 Hazardous Area Approval EEx ia IIC T4, -40°CsTas80°C, II 1 G  
 Hazardous Area Approval EEx nL IIC T4, -40°CsTas80°C, II 3 G  
 Hazardous Area Approval DIV I, CL I, II, III, GRPS A-G, Exia, AExia, IIC T4  
 Hazardous Area Approval DIV II, CL I, GRPS A-D, ExnL, AExnA, IIC T4

**M** - Metric Mount  
 Supplied Accessory : Model M081A61 Mounting Stud 1/4-28 to M6 X 1 (1) replaces Model 081A40

**RV** - Buffered Analog Signal Output - 100 mV/g (±20%)  
 Electrical Connector Integral Cable  
 Electrical Connections (Red) 4-20 mA Pos (+)  
 Electrical Connections (Black) 4-20 mA Neg (-)  
 Electrical Connections (White) Signal Output Pos  
 Electrical Connections (Green) Signal Output Neg

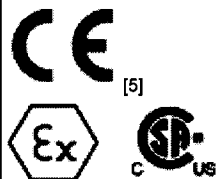
**NOTES:**  
 [1] Conversion Factor 1 in/sec = 0.0254 m/sec.  
 [2] Current will fluctuate at frequencies below 5 Hz.  
 [3] 1Hz = 60 cpm (cycles per minute).  
 [4] Typical.  
 [5] See PCB Declaration of Conformance PS039 or PS053 for details.

**SUPPLIED ACCESSORIES:**  
 Model 081A40 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: <i>[Signature]</i> | Engineer: <i>MJS</i> | Sales: <i>QVUM</i> | Approved: <i>NF</i> | Spec Number: |
| Date: 4-22-06               | Date: 4/22/06        | Date: 4/22/06      | Date: 4/16/06       | 27450        |

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All specifications are at room temperature unless otherwise specified.  
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