

Model Number  
645B12

# LOOP POWERED, CURRENT OUTPUT, INDUSTRIAL VIBRATION SENSOR

Revision: A  
ECN #: 24962

	ENGLISH	SI	
<b>Performance</b>			
Measurement Range	0.0 to 5 g rms	0.0 to 49 m/s <sup>2</sup> rms	[1]
Output	4-20 mA	4-20 mA	
Frequency Range (± 10 %)	180 to 600,000 cpm	3 to 10 kHz	[2][3]
Broadband Resolution	0.025 g rms	0.24 m/s <sup>2</sup> rms	[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	
Load Resistance	50(Vs-12) ohm	50(Vs-12) ohm	
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°C≤Tas80°C, II 1 G  
 Hazardous Area Approval EEx nL IIC T4, -40°C≤Tas80°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

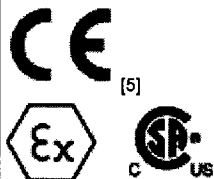
**NOTES:**

- [1] Conversion Factor 1g = 9.81 m/s<sup>2</sup>.
- [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>JR</i>	Engineer: <i>MSE</i>	Sales: <i>GLM</i>	Approved: <i>NF</i>	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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