

Model Number

288D01

MECHANICAL IMPEDANCE SENSOR

Revision: H

ECN #: 29479

Performance

	ENGLISH	SI	
Sensitivity($\pm 10\%$)(Acceleration)	100 mV/g	10.2 mV/(m/s ²)	
Sensitivity($\pm 10\%$)(Force)	100 mV/lb	22.4 mV/N	
Measurement Range(Acceleration)	± 50 g pk	± 490.5 m/s ² pk	
Measurement Range(Force)	± 50 lbf pk	± 222.4 N pk	
Frequency Range($\pm 5\%$)(Acceleration)	1 to 5000 Hz	1 to 5000 Hz	
Frequency Range($\pm 10\%$)(Acceleration)	0.7 to 7000 Hz	0.7 to 7000 Hz	
Rise Time(Force)	<10 μ sec	<10 μ sec	[1]
Resonant Frequency(Mounted)	≥ 20 kHz	≥ 20 kHz	
Resonant Frequency(Unmounted; no load)	>40 kHz	>40 kHz	
Phase Response($\pm 5^\circ$)	4 to 5000 Hz	4 to 5000 Hz	
Broadband Resolution(1 to 10,000 Hz)	0.002 g rms	0.02 m/s ² rms	[1]
Broadband Resolution	0.002 lb	0.0089 N	[1]
Non-Linearity	$\pm 1\%$	$\pm 1\%$	[2]
Transverse Sensitivity(to Acceleration)	$\leq 5\%$	$\leq 5\%$	
Maximum Force	500 lb	2224 N	

Environmental

Temperature Range(Operating)	0 to +200 °F	-18 to +95 °C	
Temperature Response(on Acceleration)	$\leq 0.05\%$ /°F	$\leq 0.09\%$ /°C	[1]
Temperature Response(on Force)	$\leq 0.03\%$ /°F	$\leq 0.05\%$ /°C	[1]
Base Strain Sensitivity	≤ 0.0007 g/ $\mu\epsilon$	≤ 0.007 (m/s ²)/ $\mu\epsilon$	[1]
Maximum Shock	3000 g pk	29,430 m/s ² pk	

Electrical

Excitation Voltage	22 to 30 VDC	22 to 30 VDC	
Constant Current Excitation	2 to 20 mA	2 to 20 mA	
Discharge Time Constant(Acceleration)	0.4 to 1.5 sec	0.4 to 1.5 sec	
Discharge Time Constant(Force)	≥ 60 sec	≥ 60 sec	
Output Bias Voltage	8 to 14 VDC	8 to 14 VDC	
Output Impedance	<250 ohm	<250 ohm	
Output Polarity(Acceleration)	Positive	Positive	
Output Polarity(Force)	Positive	Positive	
Spectral Noise(1 Hz)	200 μ g/ $\sqrt{\text{Hz}}$	1962 ($\mu\text{m/s}^2$)/ $\sqrt{\text{Hz}}$	[1]
Spectral Noise(10 Hz)	50 μ g/ $\sqrt{\text{Hz}}$	490.5 ($\mu\text{m/s}^2$)/ $\sqrt{\text{Hz}}$	[1]
Spectral Noise(100 Hz)	10 μ g/ $\sqrt{\text{Hz}}$	98.1 ($\mu\text{m/s}^2$)/ $\sqrt{\text{Hz}}$	[1]
Spectral Noise(1 kHz)	3 μ g/ $\sqrt{\text{Hz}}$	29.4 ($\mu\text{m/s}^2$)/ $\sqrt{\text{Hz}}$	[1]

Physical

Sensing Element(Acceleration)	Ceramic	Ceramic	
Sensing Element(Force)	Quartz	Quartz	
Sensing Geometry(Acceleration)	Shear	Shear	
Sensing Geometry(Force)	Compression	Compression	
Housing Material	Titanium	Titanium	
Sealing	Welded Hermetic	Welded Hermetic	
Size (Hex x Height)	11/16 in x 0.820 in	11/16 in x 20.83 mm	
Weight	0.68 oz	19.2 gm	[1]
Electrical Connector(Acceleration)	10-32 Coaxial Jack	10-32 Coaxial Jack	
Electrical Connector(Force)	10-32 Coaxial Jack	10-32 Coaxial Jack	
Mounting Thread(both ends)	10-32 Female	10-32 Female	
Mounting Torque	10 to 20 in-lb	1.1 to 2.2 N-m	
End Plate Mass(Force)	0.16 oz	4.8 gm	[1]
Stiffness	2.0 lb/ μin	0.35 kN/ μm	[1]

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.

T - TEDS Capable of Digital Memory and Communication Compliant with IEEE P1451.4

TLA - TEDS LMS International - Free Format

TLB - TEDS LMS International - Automotive Format

TLC - TEDS LMS International - Aeronautical Format

Output Bias Voltage 8 to 15 VDC 8 to 15 VDC

TLD - TEDS Capable of Digital Memory and Communication Compliant with IEEE 1451.4

NOTES:

[1] Typical.

[2] Zero-based, least-squares, straight line method.

SUPPLIED ACCESSORIES:

Model 080A Adhesive Mounting Base (1)

Model 081B05 Mounting Stud (10-32 to 10-32) (2)

Model HCS-3 NIST Traceable Calibration of Series 288 impedance head (1)

Model M081B05 Mounting Stud 10-32 to M6 X 0.75 (2)

Entered: BLS Engineer: BM Sales: WDC Approved: EJV Spec Number:

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