Model Number MECHANICAL IMPEDANCE SENSOR 288D01 **ENGLISH** Performance **OPTIONAL VERSIONS** 10.2 mV/(m/s²) Sensitivity(± 10 %)(Acceleration) 100 mV/g Optional versions have identical specifications and accessories as listed for the standard model Sensitivity(± 10 %)(Force) 100 mV/lb 22.4 mV/N except where noted below. More than one option may be used. Measurement Range(Acceleration) ± 50 a pk ± 490.5 m/s² pk TLA - TEDS LMS International - Free Format Measurement Range(Force) ± 50 lbf pk ± 222.4 N pk TLB - TEDS LMS International - Automotive Format Frequency Range(± 5 %)(Acceleration) 1 to 5000 Hz 1 to 5000 Hz TLC - TEDS LMS International - Aeronautical Format Frequency Range(± 10 %)(Acceleration) 0.7 to 7000 Hz 0.7 to 7000 Hz [1] TLD - TEDS Capable of Digital Memory and Communication Compliant with IEEE 1451.4 Rise Time(Force) <10 u sec <10 u sec Resonant Frequency(Mounted) ≥ 20 kHz ≥ 20 kHz Output Bias Voltage 8 to 15 VDC Resonant Frequency(Unmounted; no load) >40 kHz >40 kHz Phase Response(± 5°) 4 to 5000 Hz 4 to 5000 Hz [1] Broadband Resolution(1 to 10.000 Hz) 0.002 a rms 0.02 m/s² rms **Broadband Resolution** 0.002 lb 0.0089 N [1] [2] Non-Linearity ±1% + 1 % Transverse Sensitivity(to Acceleration) ≤5% ≤5% Maximum Force 500 lb 2224 N **Environmental** Temperature Range(Operating) -15 to +200 °F -26 to +95 °C Temperature Response(on Acceleration) ≤ 0.05 %/°F ≤ 0.09 %/°C [1] ≤ 0.05 %/°C [1] Temperature Response(on Force) ≤ 0.03 %/°F Base Strain Sensitivity ≤ 0.0007 a/uε $\leq 0.007 \, (\text{m/s}^2)/\text{u}\epsilon$ [1] NOTES: Maximum Shock 29,430 m/s² pk 3000 g pk [1] Typical Electrical [2] Zero-based, least-squares, straight line method. **Excitation Voltage** 22 to 30 VDC 22 to 30 VDC [3] See PCB Declaration of Conformance PS023 for details. 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 Positive Output Polarity(Force) Positive [1] Spectral Noise(1 Hz) 200 μg/√Hz 1962 (µm/sec²)/√Hz [1] Spectral Noise(10 Hz) 50 μg/√Hz 490.5 ($\mu m/sec^2$)/ \sqrt{Hz} [1] Spectral Noise(100 Hz) 10 μg/√Hz 98.1 (um/sec²)/√Hz [1] Spectral Noise(1 kHz) 3 μg/√Hz 29.4 (µm/sec²)/√Hz **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 Welded Hermetic Sealing Welded Hermetic Size (Hex x Height) 11/16 in x 0.820 in 11/16 in x 20.83 mm [1] Weight 0.68 oz 19.2 gm SUPPLIED ACCESSORIES: Electrical Connector(Acceleration) 10-32 Coaxial Jack 10-32 Coaxial Jack Model 080A Adhesive Mounting Base (1) Electrical Connector(Force) 10-32 Coaxial Jack 10-32 Coaxial Jack Model 081B05 Mounting Stud (10-32 to 10-32) (2) Mounting Thread(both ends) 10-32 Female 10-32 Female 10 to 20 in-lb Mounting Torque 1.1 to 2.2 Nm End Plate Mass(Force) [1]

4.8 gm

0.35 kN/µm

[1]



Stiffness

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.

0.16 oz

2.0 lb/µin

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Model HCS-3 NIST Traceable Calibration of Series 288 impedance head (1) Model M081B05 Mounting Stud 10-32 to M6 X 0.75 (2)

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8 to 15 VDC