

Wilcoxon Research®

Low-power, low-voltage accelerometer LPA100T



Key features

- Ultra low power consumption 300 μ W
- Operates down to 3V
- Fast BOV settling time of <10 ms
- Comes with the industry popular M12 connector
- Hermetically sealed
- ESD-protected
- Reverse wiring protection
- Manufactured in an approved ISO 9001 and AS9100 facility

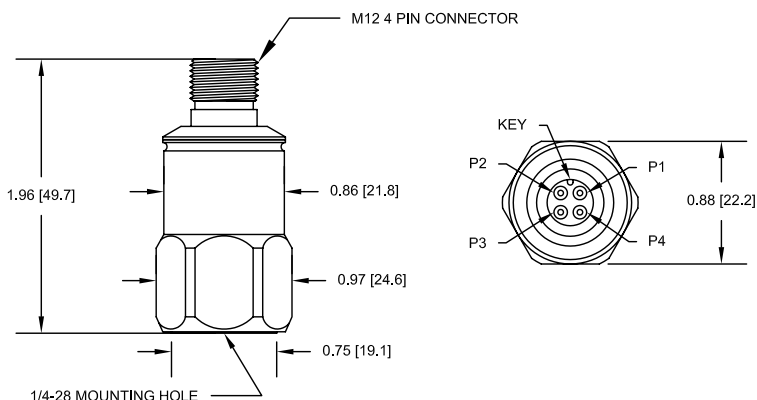
The heart of the LPA100T accelerometer incorporates new technology and innovative designs. Breaking from conventional IEPE power, the LPA100T operates from low-voltage power over the 3 to 5 volt range and consumes less than 300 μ Watts (at 3 volts); which compares to traditional IEPE sensors that typically operate at 48 mWatts. In addition to low power consumption, the new patent-pending circuitry minimizes sensor settling time to less than ten milliseconds while still preserving the low frequency response; comparing to traditional IEPE sensors which can require up to 3 seconds for measurement settlement time. To further enhance you measurement, the LPA100T also includes a built-in temperature sensor for monitoring at the mounting location.

In multiplexed applications such as online monitoring systems, this sensor permits faster scans of the entire sensor field and thus data for each machine will be refreshed more frequently, resulting in improved protection and analysis. In battery-operated or energy harvesting sensors, the LPA100T offers an ideal solution to extend battery life and sensor capability, especially valuable in wireless applications. A certified version (Class I, Div 2/Zone 2) is also available for use in hazardous areas where flammable or explosive atmospheres are present.

Certifications



Hazardous location certified
version available



Connections	
Function	Connector pin
power	1
common	2
accel signal	3
temp signal	4
shield*	shell

* See note 1 on back

Meggitt Sensing Systems

Our energy product competencies and services

Machinery protection | Condition monitoring | Integrated performance monitoring | Partial discharge monitoring | Sensors for extreme environments
Ignition systems | Flame detection and analysis | **Industrial monitoring solutions** | Nuclear products
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MEGGITT
smart engineering for
extreme environments

Wilcoxon Research®

Low-power, low-voltage accelerometer

LPA100T

Specifications

	English	Metric
Sensitivity, ± 5%, 25° C	50 mV/g	5.1 mV/m/sec ²
Acceleration range	25 g peak	245 m/sec ² peak
Amplitude nonlinearity	1%	1%
Frequency response	±5% 180 - 300,000 CPM ±10% 60 - 540,000 CPM ± 3 dB 18 - 900,000 CPM	3 - 5,000 Hz 1 - 9,000 Hz 0.3 - 15,000 Hz
Resonance frequency	1.8 kCPM	30 kHz
Transverse sensitivity, max	5% of axial	5% of axial
Sensitivity variation with temp	-25° C -10% +120° C +10%	-10% +10%
Temperature sensor		
Temperature signal sensitivity	-10.9 mV/°C	-10.9 mV/°C
Voltage at 0° C	2.05 - 2.15 V	2.05 - 2.15 V
Temperature range	-40 to +248° F	-40 to +120° C
Voltage source	3.0 - 5.5 VDC	3.0 - 5.5 VDC
Current (no cable)	100 µA max	100 µA max
Electrical noise, equiv g		
Broadband 2.5 Hz to 25 kHz	660 µg	6.47 mm/sec ²
Spectral		
10 Hz	60 µg/VHz	0.588 mm/sec ² /VHz
100 Hz	16 µg/VHz	0.156 mm/sec ² /VHz
1000 Hz	5 µg/VHz	0.049 mm/sec ² /VHz
Output impedance, max	1000 Ω	1000 Ω
Bias output voltage, settling time, 25° C	<10 ms	<10 ms
Including temp effects	1.5 VDC ±5%	1.5 VDC ±5%
Grounding	case isolated, internally shielded	case isolated, internally shielded
Vibration limit	500 g peak	4,900 m/sec ² peak
Shock limit	5,000 g peak	49,000 m/sec ² peak
Electromagnetic sensitivity, equiv g max	150 µg/gauss	1.47 mm/sec ² /gauss
Sealing	hermetic	hermetic
Base strain sensitivity, max	0.0002 g/µstrain	1.9 mm/sec ² /µstrain
Sensing element design	PZT, shear	PZT, shear
Weight	3.17 oz	90 g
Case material	316L stainless steel	316L stainless steel
Mounting	1/4-28 UNF tapped hole	1/4-28 UNF tapped hole
Mating connector¹	M12 style, 4 or 5 pin	M12 style, 4 or 5 pin
Recommended cabling	J12/J9T4A	J12/J9T4A

Note: ¹ For installations requiring CE conformance, cable shield must be tied to sensor case
Accessories supplied: SF6M mounting stud, calibration data (level 2)

Note: Due to continuous process improvement, specifications are subject to change without notice.
This document is cleared for public release.

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