

Low-frequency, high EMI resistance accelerometers

HV100LF and HV200LF series

Wilcoxon’s HV series are designed for low-frequency applications where high electrical isolation between the sensor and machine is required. HV sensors can withstand arcing between the sensor base and its internal electronics to levels as high as 6,000 volts. The sensors offer improved EMI resistance in areas where high electromagnetic interference occurs, such as wind turbines, railway systems and other high-voltage generators. Improvements in EFT and ESD resistance improve survivability during extreme transient events. The HV100LF/200LF series has superior performance down to 0.1 Hz.



Models available

| HV models | Output connector | Integral mounting | Sensitivity |
|-------------|------------------|-------------------|-------------|
| HV100LF | 4 pin, M12 | M8 x 1.25 | 100 mV/g |
| HV100LF-500 | | | 500 mV/g |
| HV101LF | | 1/4-28 UNF | 100 mV/g |
| HV101LF-500 | | | 500 mV/g |
| HV102LF | | M6 | 100 mV/g |
| HV102LF-500 | | | 500 mV/g |
| HV200LF | 2 pin, MIL-5015 | 1/4-28 UNF | 100 mV/g |
| HV200LF-500 | | | 500 mV/g |
| HV201LF | | M8 x 1.25 | 100 mV/g |
| HV201LF-500 | | | 500 mV/g |
| HV202LF | | M6 | 100 mV/g |
| HV202LF-500 | | | 500 mV/g |

Key features

- Ultra low-frequency measurements
- Case-base isolated up to 6 kV
- Ideal for power generation applications
- Rapid shock recovery
- Improved EMI resistance
- Manufactured in an approved ISO 9001 facility

Certifications



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

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HV100LF and HV200LF series

SPECIFICATIONS

| | LF series | LF-500 series |
|---|------------------------------------|-------------------------------|
| Sensitivity, $\pm 5\%$, 25°C | 100 mV/g | 500 mV/g |
| Acceleration range, VDC > 22 V | 80 g peak | 10 g peak |
| Amplitude nonlinearity | 1% | |
| Frequency response: | | |
| $\pm 5\%$ | 0.35 - 5,000 Hz | |
| $\pm 10\%$ | 0.25 - 7,000 Hz | |
| ± 3 dB | 0.1 - 11,000 Hz | |
| Resonance frequency, nominal | 28 kHz | |
| Transverse sensitivity, max | 5% of axial | |
| Temperature response: | | |
| -25°C | -10% | |
| +120°C | +15% | |
| Temperature range | -50° to +120° C | |
| Power requirement: | | |
| Voltage source | 18 - 30 VDC | |
| Current regulating diode | 2 - 10 mA | |
| Dielectric withstand voltage between connector and surface: | | |
| 6,000 VDC | 1 min. | |
| 5,000 VAC | 1 min. | |
| Electrical noise, equiv. g: | | |
| Broadband 2.5 Hz to 25 kHz | 400 μ g rms | 250 μ g rms |
| Spectral 10 Hz | 10 μ g/ $\sqrt{\text{Hz}}$ | 3 μ g/ $\sqrt{\text{Hz}}$ |
| 100 Hz | 5 μ g/ $\sqrt{\text{Hz}}$ | 2 μ g/ $\sqrt{\text{Hz}}$ |
| 1,000 Hz | 5 μ g/ $\sqrt{\text{Hz}}$ | 2 μ g/ $\sqrt{\text{Hz}}$ |
| Output impedance, max | 100 Ω | 300 Ω |
| Impedance, between connector and base: | | |
| DC | >100 G Ω | |
| 100 Hz | >100 M Ω | |
| 1.0 kHz | >10 M Ω | |
| 10 kHz | >1 M Ω | |
| Bias output voltage | 13 VDC | |
| Grounding | case isolated, internally shielded | |
| Vibration limit | 500 g peak | |
| Shock limit | 5,000 g peak | |
| Electromagnetic sensitivity, equiv. g, max | 70 μ g/gauss | |
| Sealing | hermetic | |
| Base strain sensitivity, max | 0.0002 g/ μ strain | |
| Sensing element design | PZT, shear | |
| Sensor case material | stainless steel | |
| Isolation material | ceramic | |
| Recommended cabling | J10 / J9T2A | |

| Function | Connector pin |
|-----------------------|---------------|
| signal | P1 |
| to pin 3 inner shield | P2 |
| common | P3 |
| case | P4 |
| connector shell | case |

| Function | Connector pin |
|-----------------|---------------|
| signal | A |
| common | B |
| connector shell | case |

See page 3 for further specifications, dimensions and drawings.

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