

Low frequency isolated sensor with high EMI resistance

HV100LF and HV200LF series



Wilcoxon's HV series are innovative accelerometers designed for demanding applications requiring high electrical isolation between the sensor and machine. HV sensors are designed to 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. The low frequency series has superior performance down to 0.1 Hz.

HV series sensors can pass a HiPot test of >6,000 volts from sensor electronics to mounting base. This high isolation prevents energy from arcing through the sensor offering better protection of the associated equipment. Improvements in EFT and ESD resistance improves survivability during extreme transient events. The HV series come with a variety of mounting options to ensure compatibility with every application.

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

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

Key features

- Ultra low frequency sensors
- Ideal for power generation applications
- Rapid shock recovery
- Hermetically sealed
- Case-base isolation min 6 kV
- EMI-protected
- Manufactured in an approved ISO 9001 facility

Certifications



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SPECIFICATIONS

	LF series	LF-500 series
Sensitivity, $\pm 5\%$, 25° C	100 mV/g	500 mV/g
Acceleration range, VDC > 22V	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	
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 Hz	3 μ g/ \sqrt Hz
100 Hz	5 μ g/ \sqrt Hz	2 μ g/ \sqrt Hz
1,000 Hz	5 μ g/ \sqrt Hz	2 μ g/ \sqrt 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	

Contact

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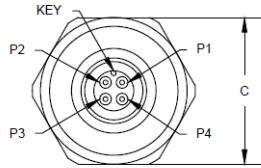
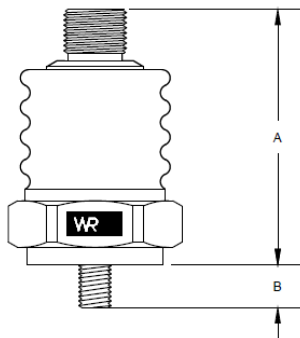
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HV100LF series specifications

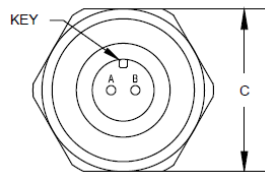
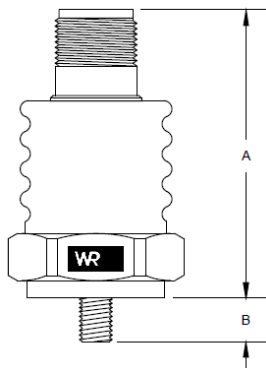
	HV100LF series	HV101LF series	HV102LF series
Output connector ¹	4 pin M12	4 pin M12	4 pin M12
Integral mounting	M8 x 1.25	1/4-28 UNF	M6 x 1.00
Dimensions	A	1.98 in (50.3 mm)	
	B	0.33 in (8.4 mm)	
	C	1.21 in (30.8 mm)	
Weight	126 grams (4.44 oz)		



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

HV200LF series specifications

	HV200LF series	HV201LF series	HV202LF series
Output connector ¹	2 pin MIL-5015	2 pin MIL-5015	2 pin MIL-5015
Integral mounting	1/4-28 UNF	M8 x 1.25	M6 x 1.00
Dimensions	A	2.21 in (56.0 mm)	
	B	0.33 in (8.4 mm)	
	C	1.21 in (30.8 mm)	
Weight	122 grams (4.35 oz)		



Connections	
Function	Connector pin
signal	A
common	B
connector shell	case

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Notes:

¹ For best performance, it is recommended that the connector shell be tied to the cable shield.

Recommended connector: 75S