Isolated sensor with high EMI resistance

HV100 and HV200 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.

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 survability during extreme transient events. The HV series come with a variety of mounting options to ensure compatibility with every application.

Key features

- 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

CE

HV models	Output connector	Integral mounting
HV100	4 pin M12	M8 x 1.25
HV101		1/4-28 UNF
HV102		M6
HV200	2 pin MIL-5015	1/4-28 UNF
HV201		M8 x 1.25
HV202		M6

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

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99190 Rev. B 08/17

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SPECIFICATIONS

Sensitivity, ±5%, 25° C		100 mV/g
Acceleration range, VDC > 22V		80 g peak
Amplitude nonlinearity		1%
Frequency response:	**± 5%**	3 - 5,000 Hz
	± 10%	1 - 7,000 Hz
	± 3 dB	0.5 - 12,000 Hz
Resonance frequency		25 kHz
Transverse sensitivity, max		5% of axial
Temperature response:	**–40° C**	–10%
	+120° C	+10%
Temperature range		–40 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**	700 µg
Spectral	**10 Hz**	10 µg/√Hz
	100 Hz	5 µg/√Hz
	1,000 Hz	5 µg/√Hz
Output impedance		100 Ω
Impedance, between connector and base		
	DC	>100 GΩ
	100 Hz	>100 MΩ
	1.0 kHz	>10 MΩ
	10 kHz	>1 MΩ
Bias output voltage		12 VDC
Grounding		case isolated, internally shielded
Vibration limit		500 g peak
Shock limit		5,000 g peak
Electromagnetic sensitivity, equiv. g, max		70 µg/gauss
Sealing		hermetic
Base strain sensitivity		<0.0002 g/µstrain
Sensing element design		PZT, shear
Sensor case material		stainless steel
Isolation material		ceramic
Recommended cabling		J10 / J9T2A

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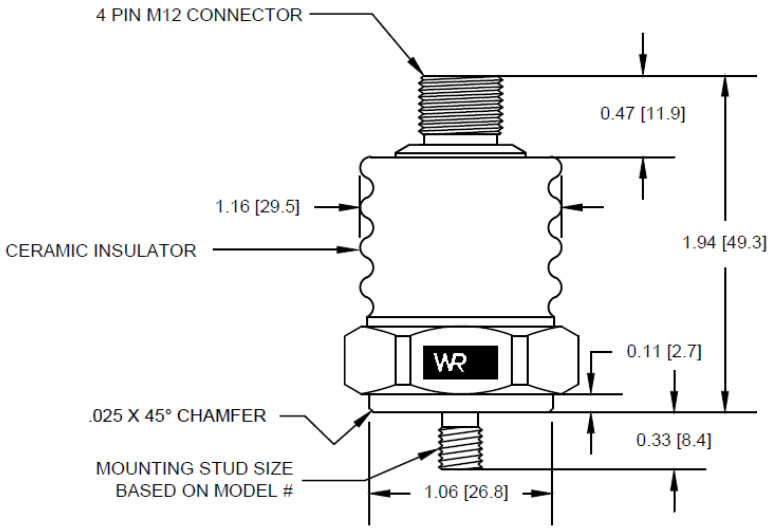
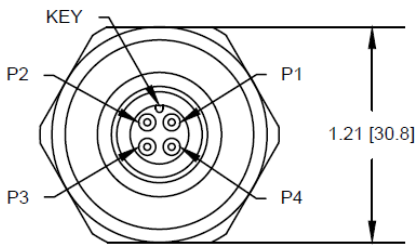
HV100 series specifications

		HV100	HV101	HV102
Output connector[1]		4 pin M12	4 pin M12	4 pin M12
Integral mounting		M8 x 1.25 x 8.4 mm	1/4-28 UNF x 0.33 in	M6 x 1.00 x 6.2 mm
Mounting torque, recommended		40 in-lb / 4.5 Nm	30 in-lb / 3.4 Nm	30 in-lb / 3.4 Nm
Dimensions	**A**		1.93 in (49.5 mm)	
	B		0.325 in (8.3 mm)	
	C		1.21 in (31.0 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

Notes:

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

Recommended connector: R75S

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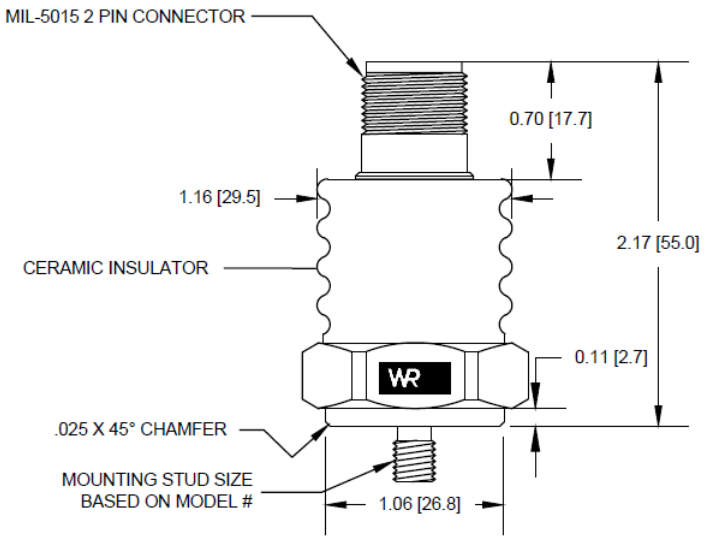
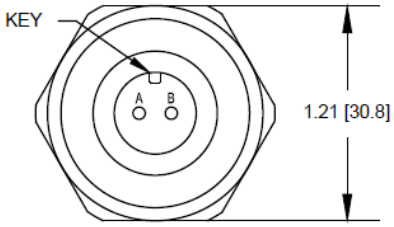
HV100 and HV200 series

HV200 series specifications

		HV200	HV201	HV202
Output connector[1]		2 pin MIL-5015	2 pin MIL-5015	2 pin MIL-5015
Integral mounting		1/4-28 UNF x 0.33 in	M8 x 1.25 x 8.4 mm	M6 x 1.00 x 6.2 mm
Mounting torque, recommended		30 in-lb / 3.4 Nm	40 in-lb / 4.5 Nm	30 in-lb / 3.4 Nm
Dimensions	**A**		2.15 in (55.1 mm)	
	B		0.325 in (8.3 mm)	
	C		1.21 in (31.0 mm)	
Weight			122 grams (4.35 oz)	





Connections	
Function	Connector pin
signal	A
common	B
connector shell	case

Notes:

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

Recommended connector: R6Q

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