The HSV-100 High Speed Vibrometer measures vibration displacements and velocities up to ±40 m/s, simultaneously, with an arbitrary number of measurement channels. The vibration of the sample can be measured reliably even when space is restricted, thanks to the very compact optical sensor head coupled to a separate laser unit. One benefit of this non-contact method is that structural motion is measured more accurately. State of the art digital decoding in the controller achieves high resolution signal outputs with low noise for clear and precise results.
Several dedicated HSV-100 models are available for different measurement tasks: The single-channel version is the solution for common high speed vibration measurement. The dual-channel configuration allows differential vibration measurement, which automatically compensates for any background vibration of the test rig. An arbitrary number of extra channels can be added for true multi-channel differential vibration analysis.

Highlights

- High resolution real-time measurement
- Intuitive “point and shoot” operation
- Two- and multi-channel measurement with correct phase relationships
- IP64 rated sensor head housing for extreme industrial applications
- Frequency bandwidth up to 250 kHz
- Laser class 2

HSV-100 High Speed Vibrometer

Optical vibration measurement at high speeds

Datasheet

Technical data

Controller specifications			
Controller model	**HSV-E-100-01**	**HSV-E-100-02**	**HSV-E-100-01MC**
No. of measurement channels	1: Channel A	2: Channel A, Channel B	1: Channel A [1]
Signal outputs [2]	Velocity: A Displacement: A	Velocity: A, B, A-B Displacement: A, B, A-B	Velocity: A, B, A-B Displacement: A, B, A-B
Analog velocity output	BNC, ±8 V	BNC, ±8 V (±12 V for A-B)	BNC, ±8 V (±12 V for A-B)
Analog displacement output	BNC, ±10 V	BNC, ±10 V	BNC, ±10 V
Frequency bandwidth	0 Hz ... 50 kHz; 0 Hz ... 50 kHz / 250 kHz switchable (optional)		
Max. velocity[3]	±40 m/s	±40 m/s	±40 m/s
Velocity ranges	8 ranges: 25 mm/s/V ... 5 m/s/V		
Displacement ranges	11 ranges: 0.25 mm/V ... 256 mm/V		
Tracking filter	4 settings (slow, medium, fast, off)		
Signal level	Bargraph at front panel; Output as voltage signal (BNC, 0 ... 5 V)		
PC interface	USB 1.1, remote control of controller settings		

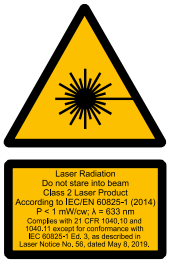
Optical specifications		
Sensor head model	**HSV-I-100-FF**	**HSV-I-100-V30**
Laser	Helium Neon (HeNe), 633 nm, visible red laser beam	
Laser safety class	Class 2, <1 mW	
Working distance	fixed: 485 mm ± 50 mm	variable: 140 mm ... approx. 10 m

General specifications			
System component	**HSV-E-100 Controller**	**HSV-I-100 Sensor Head: Laser unit**	**HSV-I-100 Sensor Head: Sensor**
Dimensions [L x W x H]	450 mm x 360 mm x 150 mm (19'', 84HP/3U)	340 mm x 130 mm x 115 mm (w/o handle)	174 mm x 48 mm x 39 mm (HSV-I-100-FF Sensor)
Weight	10 kg	6 kg	0.5 kg
Protection class	IP20	IP64	IP64
Cable length	Electrical main cable between Controller and Sensor Head: 10 m (detachable); Fiber cable between Laser Unit and Sensor: 3 m (permanent)		
Operating temperature	+5 °C ... +40 °C		
Storage temperature	-10 °C ... +65°C		
Relative humidity	max. 80%, non-condensing		
Mains voltage	100 ... 240 VAC ±10%, 50/60 Hz		
Power consumption	max. 100 VA		

[1] Additional measurement channel for HSV-E-100-02 Dual Channel Controller; the HSV-E-100-02 can be extended by an arbitrary number of additional channels.

[2] All signal outputs are available simultaneously.

[3] For the differential signal A-B velocities up to ±60 m/s are measurable due do the extended voltage range of the signal output.



Options and accessories:

HSV-AK-800 Beam Steering Unit

Optical beam deflection system for easy alignment of the laser beam especially for valve train measurement applications; compatible with the HSV-I-100-FF Sensor Head.

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2020/01 - Technical specifications are subject to change without notice.