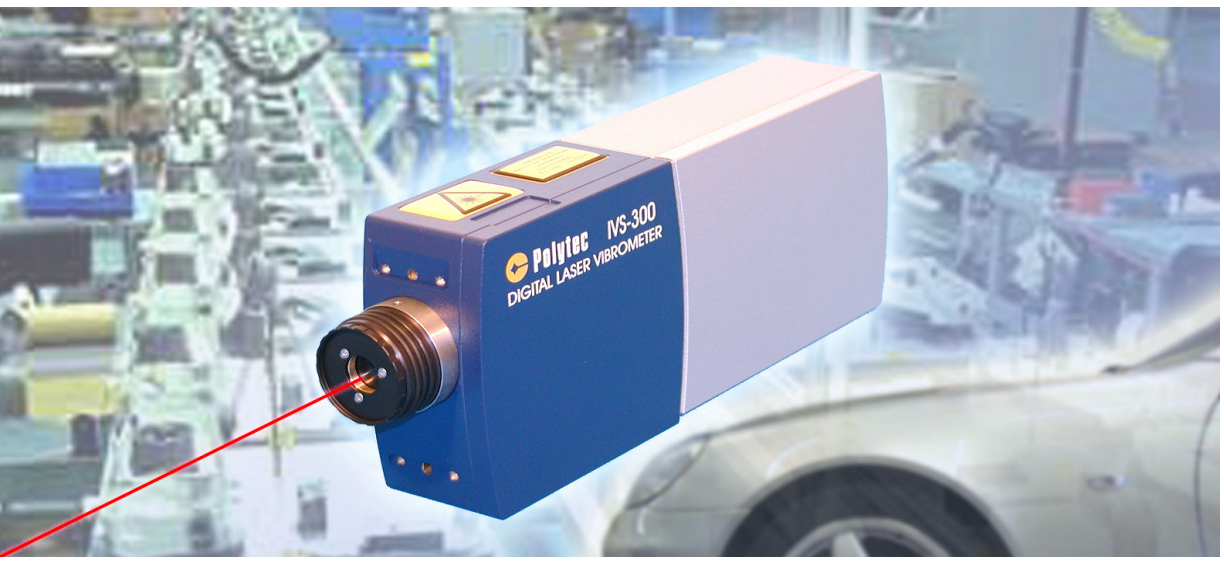
IVS-300 *Industrial Vibration Sensor*



IVS SERIES INDUSTRIAL SENSORS

- IVS-200 Industrial Vibration Sensor
- **IVS-300 Digital Industrial Vibration Sensor**
- Accessories for IVS Series
  - Beam Deflector
  - Programming Kit
  - Additional Parts

DIGITAL VIBRATION SENSING

The Polytec Industrial Vibration Sensor IVS-300 is an integrated single-box digital vibrometer, specifically developed for non-contact vibration measurement in production test environments. It enables fast, accurate product quality monitoring and accelerates time-to-market. The IVS-300 features a robust and compact design, sealed according to IP-64 standards to cope with the challenges of harsh industrial areas.

Designed for Measurements on Difficult Surfaces

The IVS-300 exploits the latest digital signal processing techniques to ensure accurate and repeatable measurements from uncooperative surfaces. It is the first choice for non-contact measurements on "difficult" surfaces with poor light scattering characteristics and for the analysis of low vibration amplitudes requiring high resolution.

The IVS-300 is easily retrofitted into existing production lines because the laser interferometer optics and electronics are all contained within a single, compact and robust industrial housing.

All range and filter settings are software configured via a serial interface, leaving no risk of accidental changes in key settings on the production line. Vibration signal output is via an analog (± 4V BNC), or digital audio interface (S/P-DIF).

Key Features of the IVS-300 Industrial Vibration Sensor

- Robust and compact single-box design, eye-safe visible low power laser (Class II)
- Simple to install and operate
- Easy to integrate into test rig applications and existing control systems
- Advanced digital signal electronics for lowest noise combined with highest sensitivity
- 0 to 22 kHz frequency response
- Velocity up to ± 500 mm/s (3 ranges)
- Analog velocity output and digital S/P-DIF audio interface compatible with VIBSOFT-SP and other acquisition systems supporting the S/P-DIF standard

IVS-300 Technical Data

General Specifications			
Ambient temperature	+5 °C … +40 °C		
Storage temperature	-5 °C … +60 °C		
Relative humidity	20 % – 80 %, non-condensing		
Housing protection	IP 64 standard		
Dimensions	302 mm x 114 mm x 55 mm		
Weight	2.6 kg		
Power	11 V – 14.5 V DC, max. 15 W		
Decoder type	DSP velocity decoder, 3 measurement ranges		
Velocity ranges	± 20 mm s^{-1}	± 100 mm s^{-1}	± 500 mm s^{-1}
Scaling factor	5 mm s^{-1}/V	25 mm s^{-1}/V	125 mm s^{-1}/V
Velocity resolution*	< 0.02 µm s^{-1} /√ Hz (< 0.05 µm s^{-1})	< 0.04 µm s^{-1} /√ Hz (< 0.1 µm s^{-1})	< 0.15 µm s^{-1} /√ Hz (< 0.3 µm s^{-1})
Frequency range	0 – 22 kHz (digital output) ; 0.5 Hz – 22 kHz (analog output)		
Filters	1. Digital low pass filter 1kHz / 5 kHz / 22 kHz (-1 dB), roll-off >120 dB/dec (analog and digital output) 2. Analog high pass filter 100 Hz (-3 dB) /off, roll-off about 60 dB/dec (analog output only)		
Outputs analog	± 4 V, 24-bit DAC, ranges: 5 / 25 / 125 (in mm s^{-1}/V)		
Outputs digital	S/P-DIF (SONY/Philips Digital Audio Interface) 24 bit, 48 kSa/s		
Connectors	1. Industrial connector for voltage supply, optical signal level and velocity output 2. Connector for IVS-310 signal level indicator and RS-232 cable 3. Triax connector for S/PDIF digital output		
Optical system	1. Fixed focus lens (ff): 240 mm stand-off distance 2. Variable focus lens (vf): 90 mm to 3 m stand-off distance		
Laser safety	< 1 mW output power, laser safety class II, visible 632.8 nm laser		

* The resolution is defined as the signal amplitude (rms) at which the signal-to-noise ratio is 0 dB, measured from 3M Scotchlite® tape. Values in brackets refer to 10 Hz spectral bandwidth (RBW).

Accessories	
IVS-310	Signal level display, cable length 2 m
IVS-320	Connection box with power supply (100 V - 240 V AC), BNC output connectors for velocity signal/signal level and remote control input for laser on/off
IVS-Prog	Programming kit for adjusting the velocity range and filter settings
OFV-P7	Adjustable mounting plate recommended for fitting IVS-300 in industrial production/QC lines
IVS-320-C	Cable for connection of IVS-300 to IVS-320 connection box
IVS-200-C	Cable for external connection of IVS-300 to process control systems
VIB-A-100	Beam deflector and component parts, see separate data sheet

Compliance with Standards	
Electrical safety	EN 61010 (IEC 1010)
EMC	EN 61326-1, EN 61326/A1, Class B, EN 61000-3-2, EN 61000-3-3
Laser safety	EN/IEC 60825-1 (CFR 1040.10, 1040.11)
CE	Mark (EMC, laser safety, LVD)

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