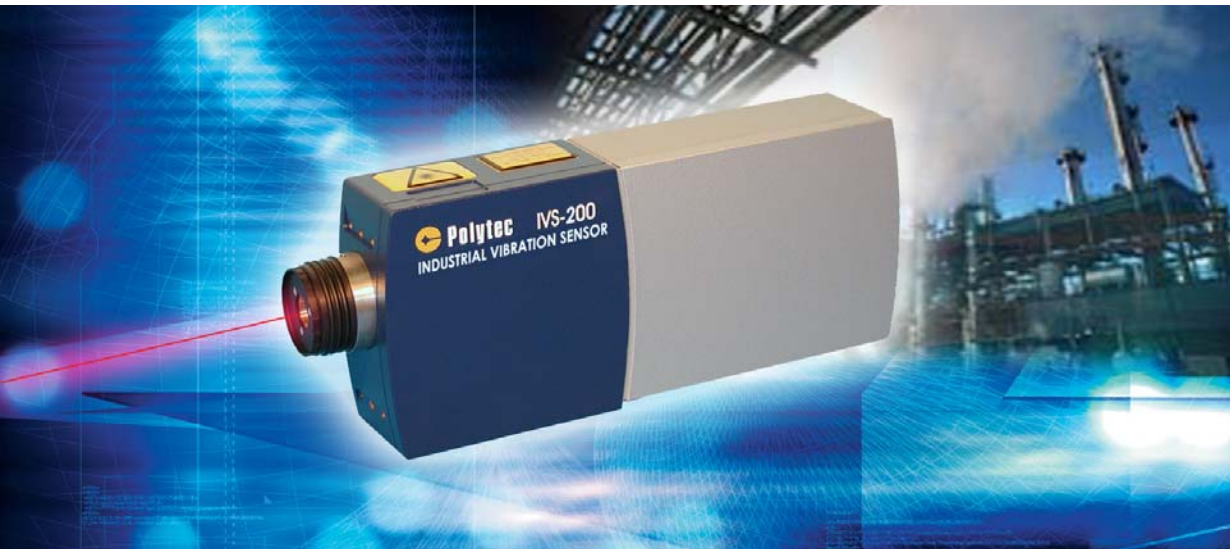


IVS-200 *Industrial Vibration Sensor*



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

ON-LINE PRODUCTION VIBRATION TESTING

The IVS-200 Industrial Vibration Sensor is a ruggedized laser Doppler vibrometer for non-contact, in-process or on-line vibration testing. From its inception, the IVS-200 was designed to be retrofitted into existing production lines: the laser interferometer optics and electronics are all contained within a single, compact and robust industrial housing, and an eye-safe visible laser probe can be focused onto the monitored part from close and long standoff distances. Once properly installed, the IVS-200 can monitor defects, noise and vibration in manufactured parts ranging from microelectronics to automotive transmissions. The output signal enables the reduction of defects when properly utilized by a process controller. The net effect leads to faster, more accurate product quality monitoring, improved yields and higher throughputs.



Key Features of the IVS-200 Industrial Vibration Sensor

- Laser Doppler precision and Polytec reliability at an affordable price
- Measures a wide range of vibration frequencies and velocities
- Compact, rugged, tamper-proof, IP-64 rated industrial housing
- Eye-safe red laser probe (Class II)
- Simple to install and operate
- Integrates with existing control systems
- Convenient range of standoff distances
- Powered by 11 V – 14.5V DC

Designed for Industrial Environments

The IVS-200 meets the challenges of today's industrial environment. The high optical sensitivity of the IVS-200 enables measurements to be made with an eye-safe laser from almost any surface without the need for special paints or tapes. A variable focus lens system allows standoff distances ranging from 70 to 2000 mm and the focus can be locked for tamper-resistant installations. The IVS-200 has a robust, tamper-proof, IP-64 rated industrial housing with no operator controls that can be accidentally altered. It is factory configured with the velocity range best suited for the specific application. If unwanted environmental low frequency vibrations are present, a high-pass filter can be supplied.

The IVS-200 Vibration Sensor has two connectors on its rear panel. The first connector provides the power input (11 V – 14.5 V DC), optical signal quality output and velocity signal output. The velocity output is an analog voltage (± 4 V) proportional to the vibration velocity of the measurement object. The second connector is intended for use with the optional IVS-310 optical signal-level display unit. The IVS-310 may be connected locally to the IVS-200, either for monitoring velocity signal quality or for service purposes.

The IVS-200 is supplied with a 5 meter long “open end” connection cable for integration into process control systems. An optional IVS-320 rail-mountable connection box is available with integrated AC/DC power supply, signal level bar-graph display and signal outputs.

Applications

- Quality control of AC & DC motors
- Vibration measurements on products using electric motors such as automotive actuators, fuel pumps, toothbrushes, vacuum cleaners and power tools
- Noise control on turbo chargers, air conditioners, gearboxes, steering devices and other automotive components
- Compressor production lines
- Testing of microelectronics, PC boards, MEMS sensors and actuators
- Measurements on light bulb filaments and other surfaces that prohibit contact
- Analysis of other parts including ultrasonic and medical devices

IVS-200 Technical Data

IVS-200 General Specifications	
Velocity range (p-p)	± 20 mm/s or ± 100 mm/s (factory configured)
Output voltage at maximum velocity	± 4 V
Scaling factor	5 mm s ⁻¹ /V or 25 mm s ⁻¹ /V (factory configured)
Velocity resolution	≤ 1 μ m/s (in 10 Hz resolution bandwidth)
Frequency range	0.2 Hz to 25 kHz (-3dB)
High pass filter	22 Hz on/off (factory configured)
Frequency response	± 0.1 dB (10 Hz – 15 kHz)
Calibration accuracy	2 % (manufacturer calibrated)
Power	11 V – 14.5 V DC, max. 1 A

IVS-200 Housing	
Connectors	1. Industrial connector for supply voltage, optical signal level and velocity output 2. Connector for IVS-310 indicator (to monitor velocity signal quality)
Housing protection	IP-64 standard
Dimensions	255 mm x 114 mm x 52 mm (281 mm with lens)
Weight	< 2.8 kg

IVS-200 Optics	
Optical system	1. Fixed focus lens (ff); 226 mm stand-off distance 2. Variable focus lens (vf); 70 mm to ca. 2 m stand-off distance Best signal at 96 mm + n x 138 mm (n= 0, 1, 2, ...)
Laser and safety	< 1 mW output power, safety class II, visible 632.8 nm laser Mechanical laser shutter

IVS-320 Connection Box (optional)	
Power	100 V ~ 240 V AC line voltage; 13 V DC output
Output connectors	Velocity signal (BNC); Signal quality output (BNC)
Control connector	Remote power on/off input
Displays	LED bar-graph for optical signal level

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