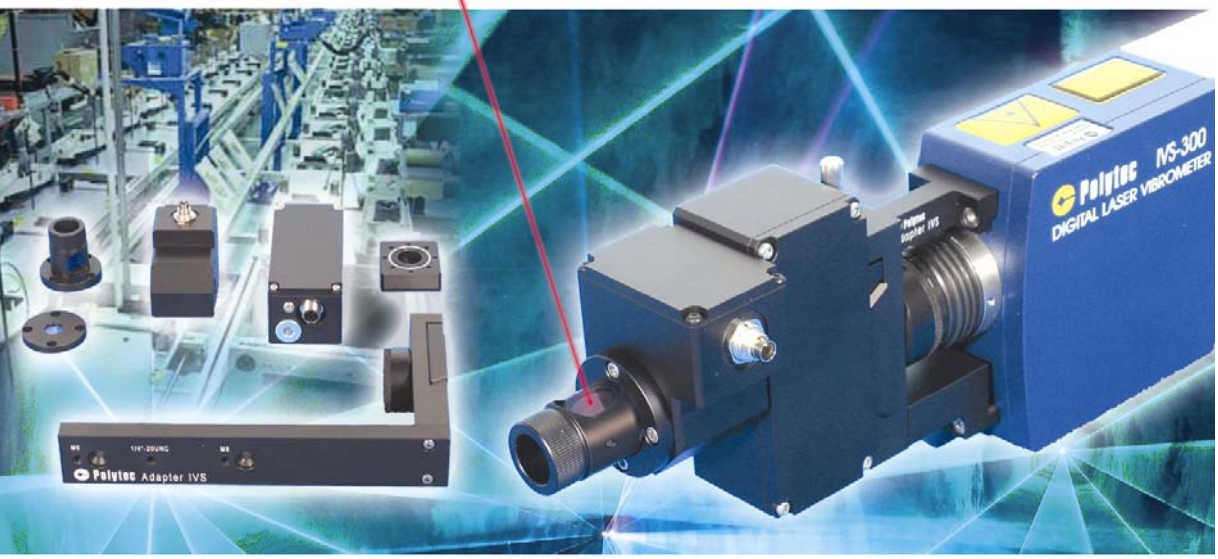
VIB-A-100 *Beam Deflecting System*



IVS SERIES INDUSTRIAL SENSORS

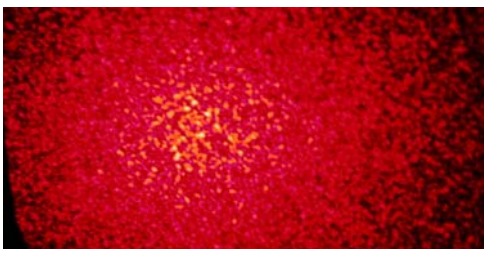
- IVS-200 Industrial Vibration Sensor
- IVS-300 Digital Industrial Vibration Sensor
- Accessories
  - Beam Deflector
  - Programming Kit
  - Additional Parts

SENSITIVE AND FLEXIBLE PRODUCTION TESTING

The VIB-A-100 Beam Deflector is available for Polytec IVS Industrial Vibration Sensors, CLV Compact Laser Vibrometers and PDV Portable Digital Vibrometers. This device allows a remote-controlled, minimal deflection of the laser beam in order to avoid or reduce speckle dropouts and thus to improve the signal quality. A 90 degree deflector is also available to enable measurements in positions that are difficult to access by the normal configuration.

Speckle Effect

Speckle is an interference effect manifest when a coherent laser is reflected from a "rough" surface. Each position on a surface produces a unique speckle pattern when laser light is reflected from it. The size of the speckles at the input aperture when the laser is in focus approximates the laser's output beam diameter.



The position of the speckles relative to the input aperture is determined by the surface topography, which can distribute the light so that no speckle enters the input aperture. This condition is known as a "dropout". In industrial production lines the loss of signal may prevent the proper inspection of a product. Polytec has responded with the VIB-A-100 Beam Deflector.

Function of the VIB-A-100

The Beam Deflector utilizes a piezo driven mirror for steering the laser beam to four different positions via two digital inputs. As an alternative the deflection angle can be set via an analog input. The maximum deflection angle is 0.45 degree. An additional 90 degree deflector and electro-mechanical shutter device can be combined with the beam deflector or used as stand alone items with the respective vibrometer. Adapter plates are available for mounting the beam deflector, 90° redirector and shutter to the IVS, CLV and PDV systems.

Key Features

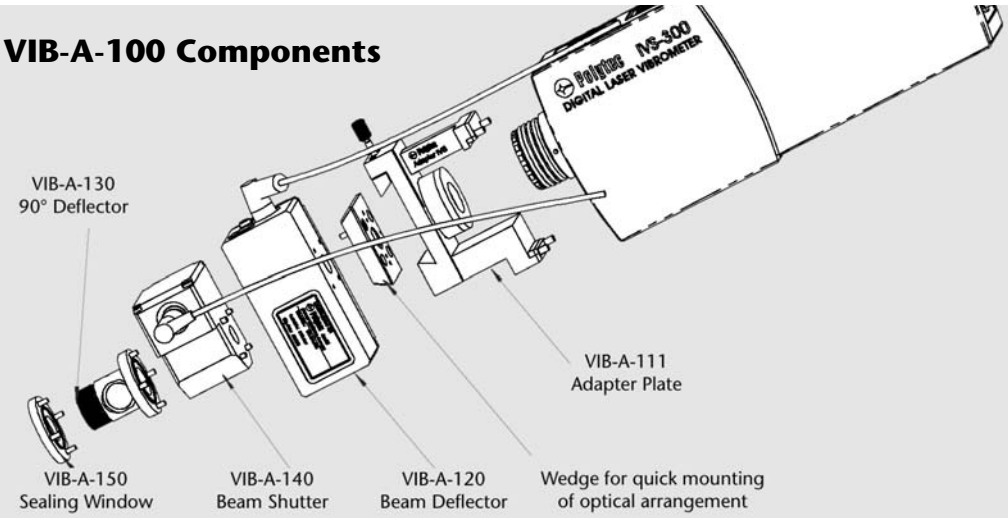
- Minimizes the impact of speckles onto vibrometer measurements in production lines
- Remote-controlled via digital and analog inputs
- IP-64 sealed for use in industrial environments
- Additional or stand-alone 90° Deflector and Beam Shutter available

VIB-A-100 Beam Deflecting System Components

VIB-A-120 Beam Deflector	
Supply Voltage	+24 VDC (+18 VDC ... +30 VDC; referring to common GND)
Analog control Input	Control voltage: 0 V...14 Vp-p (linear range) Input impedance: ~100 kΩ (AC coupling) Bandwidth (-3dB): 1.6 Hz ...103 Hz Beam deflection: ~0.002 °/V (factory-set), adjustable* from 0.001 °/V to 0.02 °/V
Digital control Input	1 (active): +2.4 V... +24 V 0 (not active): <0.7 V, or the line has a high impedance Input impedance: ~10 kΩ Beam deflection: Bit 0: ~0.015 °/V (factory-set), adjustable* from 0.006° /V to 0.15 °/V Bit 1: ~0.03 °/V (factory-set), adjustable* from 0.012° /V to 0.3 °/V
Housing protection	IP 64 Standard
Additional Optical Parts (depending on VIB-A-100-XX package)	
VIB-A-130 90° Deflector	For 90° deflection of the beam, can be rotated in any direction
VIB-A-140 Beam Shutter	Electro-mechanical shutter device Supply voltage: 24 VDC (referring to common GND)
VIB-A-150 Sealing Window	To protect the optics of the VIB-A-120 Beam Deflector or VIB-A-140 Beam Shutter, respectively
Adapter Plates (optional)	
Sensor Type	Adapter Plate Type
IVS-200 Industrial Vibration Sensor	VIB-A-110 for mounting IVS-200-VF (variable focus) VIB-A-114 for mounting IVS-200-FF (fixed focus)
IVS-300 Digital Laser Vibrometer	VIB-A-111 for mounting IVS-300-VF (variable focus) VIB-A-115 for mounting IVS-300-FF (fixed focus)
CLV Compact Laser Vibrometer	VIB-A-112 for mounting CLV-XXX-VF (variable focus) VIB-A-116 for mounting CLV-XXX-FF (fixed focus)
PDV-100 Portable Digital Vibrometer	VIB-A-113 for mounting PDV-100

* adjustable via the internal trim resistor

VIB-A-100 Components



For more information please contact your local Polytec sales engineer or visit our website www.polytec.com. Technical drawings and dimensions are available on request.

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