

IPS Detect

IPS Detect sensor

The IPS Detect sensor from Flowserve is a cost-effective and easy-to-install vibration monitoring solution for rotating equipment. It is available with “Ex ia” ATEX and IECEx certifications and for use in Zone 1 applications. The IPS Detect sensor measures vibration velocity in accordance with DIN/ISO 10816 and on the acceleration spectrum up to 5.6 kHz. The acceleration spectrum is divided into frequency bands, and abnormal operating conditions (cavitation, etc.) are detected as performance deviates from these thresholds.



Detect abnormal operating conditions

IPS Detect sensors can monitor the following operating conditions:

- Imbalance
- Maximum flow exceeded
- Misalignment of pump and drive
- Mechanical friction of rotating components
- Pipeline forces
- Loose mechanical components
- Bearing wear
- Magnetic coupling desynchronization
- Coupling wear
- Resonance frequencies
- Cavitation
- Fluid noise

Online monitoring

The IPS Detect sensor measures vibration velocity of the RMS and acceleration spectrum every 30 seconds (more than 1,000,000 measurements per year). After comparing this data to pre-defined limit values, the sensor activates an integrated color-coded (green, yellow or red) LED to alert technicians of the asset’s current operating conditions. Furthermore, the IPS Detect sensor’s error memory stores incidences when boundary values are exceeded.

The 4–20 mA HART® interface transfers data within the IPS Detect sensor to enable online condition monitoring in existing control or process control technologies. This data can also be transferred via wireless standard technology. If the transferred data must also be recorded for further evaluation, it will remain securely stored via the DataUSB trend data memory, which is installed in every IPS Detect sensor. Technicians can use Vibrosoft software to access the error memory and evaluate it to identify trends.

Technical data

Ex-characteristic (optional)

Ex-marking	 II 2G Ex ia IIC T4 Gb
	TÜV 07 ATEX 553845
	IECEx Ex ia IIC T4 Gb
	TUN 15.0038

Electrical data

Output signal	4–20 mA HART
Display sensor failure	21 mA (>20.5 mA)
Max. signal deviation	1.5%
Min. current consumption	8 mA (4.8 mA are not supported)
Max. current consumption	22 mA
Required voltage at sensor input	11–30 V
Max. allowed load impedance	750 Ω if 30 V supply
Connecting wire	Two-wire
Connection 4–20 mA	Internal screw-clamping terminal

Environmental condition

Safety class at EN 60529	IP66
Allowed ambient temperature	$T_a = -40^{\circ}\text{C}$ to 80°C (-40°F to 176°F)

Mechanical condition

Dimension	76 x 40 x 53 mm
Weight	0.12 kg (0.26 lb)
Mounting of sensor	M8 screw
Material of body	PA 6 GF 10 + GB 20, 22% Irgastat® P18, 3% color ("warm" gray)

Accessories

Communication:	
DataUSB	Trend data memory USB software interface for Vibrosoft
Software:	
Windows	Vibrosoft (via DataUSB)
DCS integration	EDD for Emerson AMS EDD for Siemens SIMATIC PDM DTM driver for FDT frame applications (PACTware, FieldCare, SMART VISION, etc.)

Mounting options available:

1. Additional glue adapter
2. Cooling element to 120°C (248°F)
3. Cooling element to 160°C (320°F)