Fan **online** condition monitoring
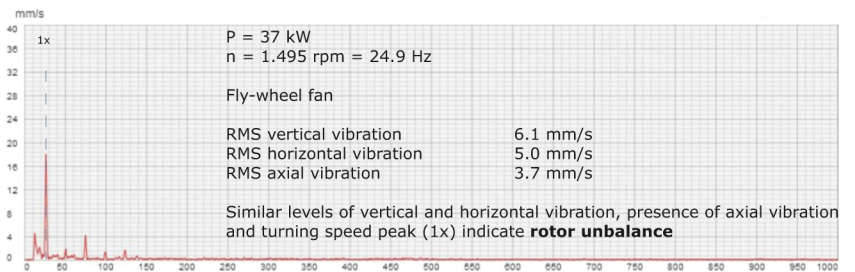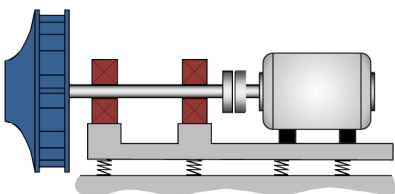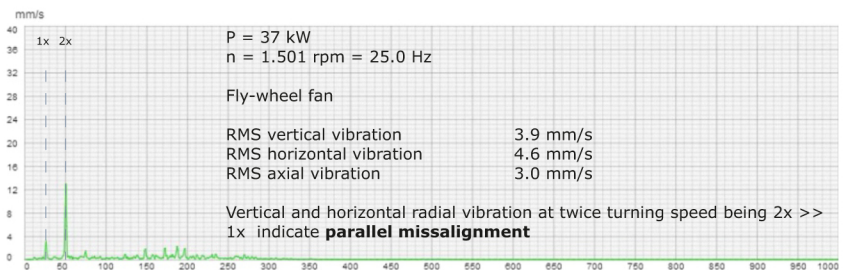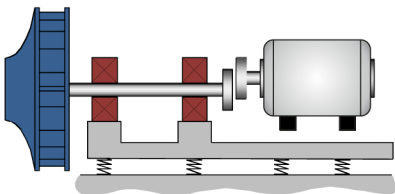
wise monitoring online vibration monitoring system allows the user to prevent malfunction of manufacturing equipment. When performance deviates from acceptable operation conditions, the system manages warnings and alarms with EtherNet interface and digital outputs.
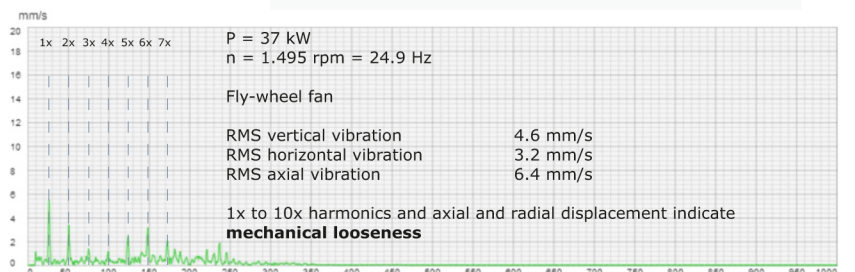
Rotor unbalance

P = 37 kW
n = 1.495 rpm = 24.9 Hz

Fly-wheel fan

RMS vertical vibration	6.1 mm/s
RMS horizontal vibration	5.0 mm/s
RMS axial vibration	3.7 mm/s

Similar levels of vertical and horizontal vibration, presence of axial vibration and turning speed peak (1x) indicate **rotor unbalance**

Parallel misalignment

P = 37 kW
n = 1.501 rpm = 25.0 Hz

Fly-wheel fan

RMS vertical vibration	3.9 mm/s
RMS horizontal vibration	4.6 mm/s
RMS axial vibration	3.0 mm/s

Vertical and horizontal radial vibration at twice turning speed being 2x >> 1x indicate **parallel missalignment**

Mechanical looseness

P = 37 kW
n = 1.495 rpm = 24.9 Hz

Fly-wheel fan

RMS vertical vibration	4.6 mm/s
RMS horizontal vibration	3.2 mm/s
RMS axial vibration	6.4 mm/s

1x to 10x harmonics and axial and radial displacement indicate **mechanical looseness**
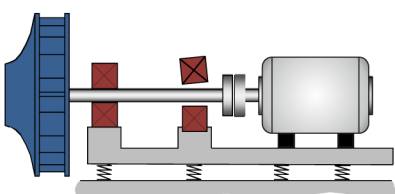
wise monitoring vibration sensor

Process Variables

PT100 temperature: 30.8 ºC

Revolutions Per Minute: 0.0 RPM

		unit	x	y	x	xyz
acceleration	RMS	g	2.7	0.1	0.1	2.7
velocity	RMS	mm/s	166.8	7.3	3.5	167.0
displacement	pp	mm	4.00	0.43	0.35	4.04

Process Waves

☐ Stop ☐ Y Zoom ☐ X Zoom ☐ X Zoom One
☐ Dinamic ☐ x10 ☐ x100
☐ Acceleration X(20g) ☐ Acceleration Y(20g) ☐ Acceleration Z(20g)
☑ Velocity X(300mm/s) ☑ Velocity Y(300mm/s) ☑ Velocity Z(300mm/s)
☐ Displacement X(5mm) ☐ Displacement Y(5mm) ☐ Displacement Z(5mm)

947 / -254.626

Process Analysis

☐ Y x10 ☐ Y x100

- Range: ±20 g
- Accuracy: 0.001 g
- Frequency range: X axis   0,5-1600 Hz
     Y axis   0,5-550 Hz
     Z axis   0,5-1600 Hz
     optional 20 kHz
- Pt100 range: 0-125 ºC
- Material: Stainless steel AISI304
- Protection code: IP65
- Operation temperature   -40..85ºC
- Power supply: Power over ethernet (POE)
- Communication: Ethernet, MODBUS TCP
- Alarms: 10 alarms
- Optional M8 6 pins connector: 2 digital inputs
  2 pnp outputs 20mA 35VDC
  external power supply 35VDC
- Analogical / Digital converter, DSP microprocessor and memory: Signal conversion in the sensor
  Management of sensor's I/O for tachometers, proximity switches, start/stop contacts, etc.
  Sends warning and alarm e-mails
  Web server in the sensor, no additional external software required to access information or set up alarms

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