

# Sulzer Sense condition monitoring system

Abnormal vibrations or high temperatures give early signs of machine failure due component imbalance, misalignment, wear or improper use of equipment. Those can be now effortlessly identified without manual measurements or expensive wired equipment to increase machine uptime and extend mean time between failures.

The solution includes wireless sensors and gateway. The condition monitoring system identifies changes in condition parameters and indicates potential faults at an early stage. The Sense data is sent to the cloud and can be monitored in the Sulzer's online service on a mobile, tablet, laptop, etc. anywhere and anytime.

## Sulzer Sense measurement sensor

Sulzer Sense is a wireless battery-operated condition monitoring device that measures tri-axial vibration and temperature of rotating equipment, such as pumps, agitators, motors and compressors. The customer can set an alert value and measurement interval for each Sulzer Sense device.

### Specifications

#### Vibration

- Acceleration measurement on 3-axis axial, horizontal and radial
- Dynamic range +/- 4G
- Frequency range 10–1'000Hz
- Sampling rate 6'600Hz
- Resolution 16-bit
- FFT resolution 1Hz/bin

#### Temperature

- Measurement range -55°C to +150°C / -67° to +302°F
- Resolution 0.1°C / 0.2°F
- Accuracy +/- 2°C / 4°F (mounting dependent)
- Repeatability +/- 0.1°C / 0.2°F

#### Wireless communication

- 2.4GHz / Wirepas Mesh

#### Battery

- 3.6V lithium thionyl chloride
- Battery lifetime est. three years (battery life is dependent on operating temperature and configuration)

#### Dimensions

- 78.5 x 28 mm / 3.1 in x 1.1 in
- Mounting to M8 thread
- Weight 129 g / 0.29 lb
- Cover material AISI 316
- Top cap material PE HD

#### Environment

- Ambient / operating temperature -40°C to +85°C / -40°F to +185°F
- Storage 30°C / 86°F maximum
- IP68 (dust-tight and resistant to water up to 1 m / 3.3 ft.)



# Sulzer Sense gateway

Sulzer Sense gateway connects measurement sensors to Sulzer's online service. Sulzer Sense gateway supports a wide range of wired and wireless connectivity such as cellular, WLAN, Ethernet network. It's easy to install and use, just plug and play.

## Product summary

### Hardware

- ARM Cortex-A8 1GHz processor 1 GB DDR3L RAM
- 16 GB eMMC storage
- Power supply 5V DC

### Connectivity

- USB A Host Port Ethernet
- 2G, LTE CAT M1 / NB-IOT Wi-Fi, BT & BT LE
- 2.4GHz / Wirepas

### Dimensions

- Standard enclosure:  $\varnothing$  95 x 18.3 mm /  $\varnothing$  3.74 x 0.72 in.
- With IP-protected enclosure: 175 x 175 x 75 mm / 6.89 x 6.89 x 2.95 in.

### Environment

- Operating -10°C to 50°C / 14°F to 122°F
- Storage -40°C to 85°C / -40°F to 185°F maximum
- In standard enclosure IP20
- In IP-protected enclosure IP67

### Mounting options

- Accessory wall mount (not included in sales box)
- Direct attachment to wall in IP-protected enclosure

### Software

- Embedded Linux operating system

### Security

- TLS/SSL-protected connection to backend
- Encrypted and authenticated data transfer over mesh-network
- Protected maintenance access to gateway

### Remote management

- Software update
- Configurability

