

Condence monitoring concept: Blower package Advanced

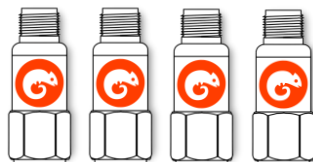
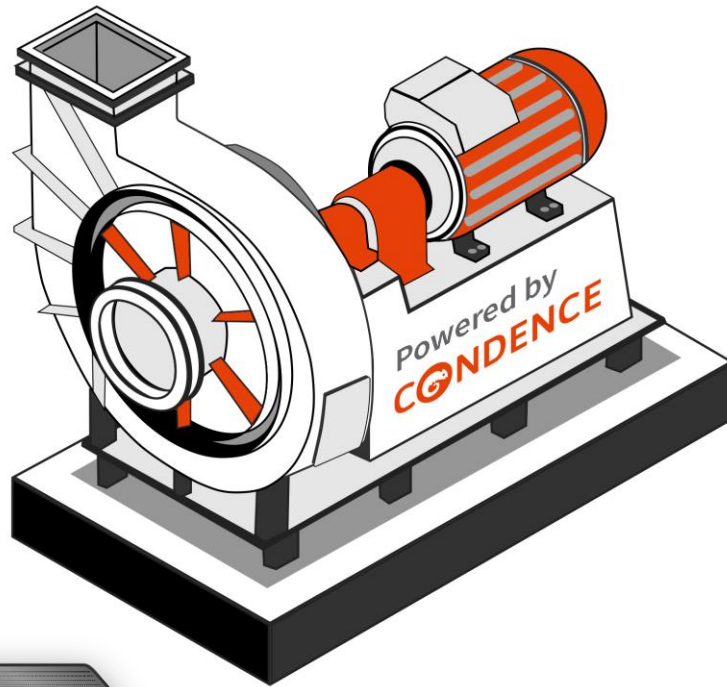


CONDENCE



Condence monitoring concept: Blower package

Holistic view of blower monitoring metrics



Examples of monitored metrics in a Fan or Blower

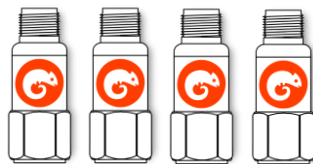
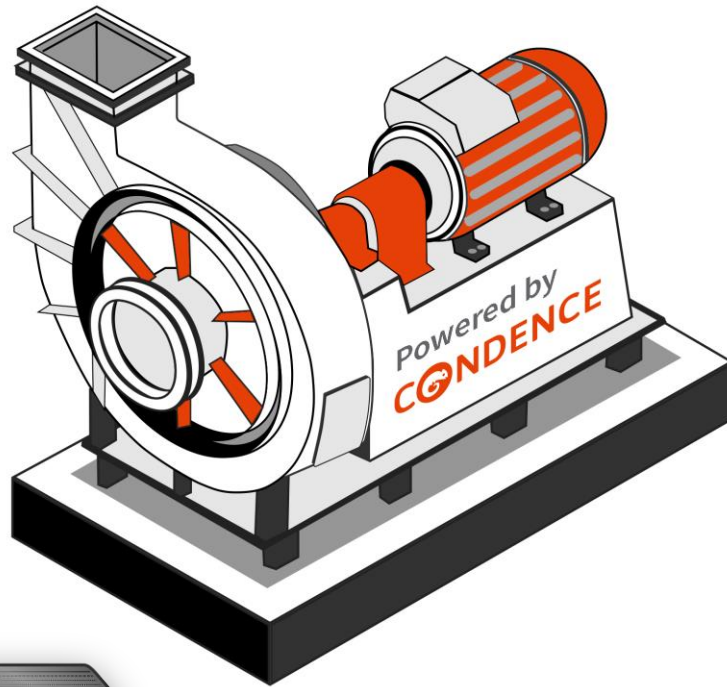
- Vibration
- RPM
- Temperature(s)
- Pressure / flow
- Peak current
- Activity reporting (running times & periods)
- Humidity

What can we detect by monitoring these metrics?

- Bearing failures
- Mechanical
 - Imbalance, Misalignment and looseness
- Blade pass frequencies
 - Debris build up / gradual fouling
 - Blade damage
- Temperature changes
- Performance decrease
- Changes in power consumption
- Running times, optimization of asset use

Condence monitoring concept: Blower package

Richest health metric: Vibration



Accuracy = time

Uses IEPE sensing technology to capture high frequency vibration
Wide frequency bandwidth translates into time, **time to react**



Continuous & online

Based on continuous sampling (e.g. every 5 min) and edge computing technology
Maximised **time to react** even with fast evolving failures



Eliminating surprise / risk

- Unplanned work is more expensive
- Unplanned downtime is expensive



Enable condition based maintenance

Decisions and maintenance based on actual asset condition

- Know when you need to clean the blades
- Know when you need to add lubricant to bearings
- Remove unnecessary manual work (inspection & repairs)
- Eliminate human error via automatic alarms and data availability

Monitoring view: Default dashboard structure

Condence components

Status Map

Image of what is being monitored, e.g. sensor placement and direction

Notifications Display

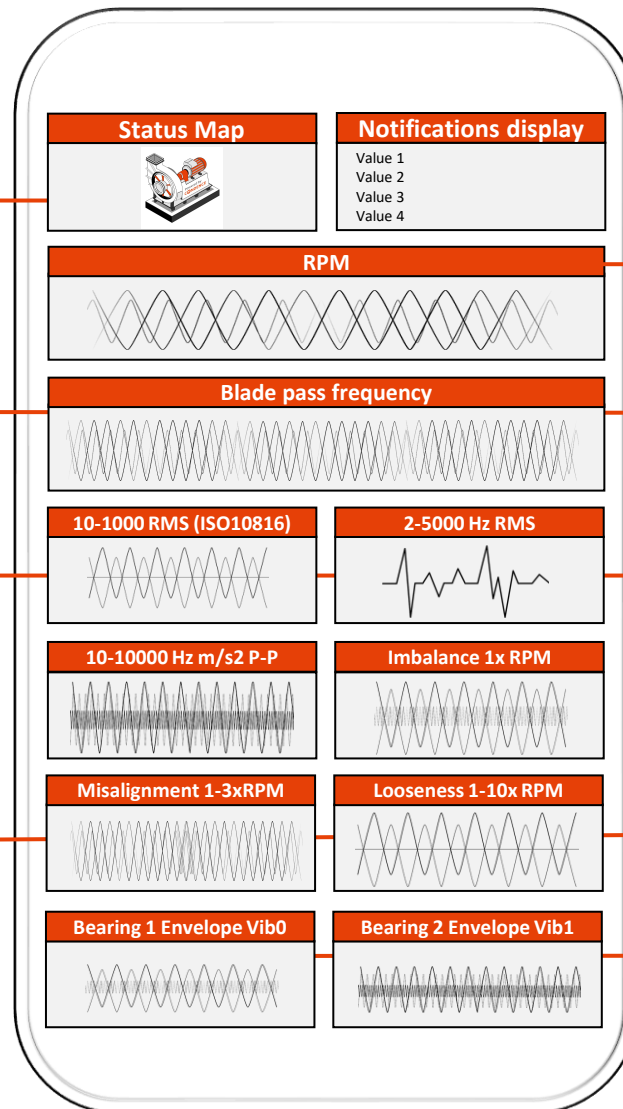
Displays what has happened / triggered thresholds during the selected time period. Easy configuration and adjustment of notifications in the cloud UI

Trend view widgets

Trend widget displays the calculated / sourced data as a line chart (one or more). Trend widget has plenty of tools available for further analysis and exports.

Other widgets

There are also other options to visualise sourced data in Condence such as period widget which can be used to monitor running hours of assets.



Default concept metrics

RPM

Mandatory and important information in variable speed assets.

Blade pass frequency

Monitoring the changes in the vibration each time the blade passes.

General vibration analyses

- Various frequency ranges
- Acceleration and velocity (e.g. ISO10816)

With Condence you can easily build your preferred measurements and analyses in the cloud UI

Mechanical

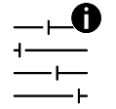
Multiples of RPM to detect mechanical phenomena's like imbalance, misalignment and looseness


Bearing failures


Early detection of bearing failures via enveloping high frequency vibration. Failure stages 1-4

Condition based maintenance

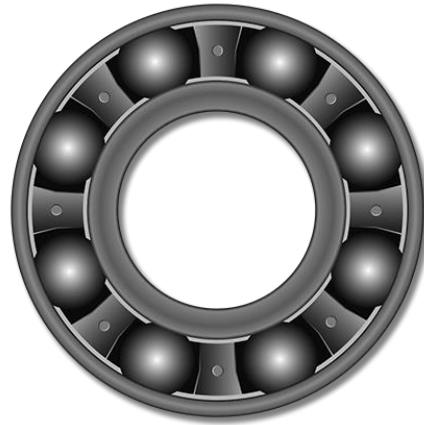
Create suggestive notifications





1 
Set suggestive severities and thresholds for them

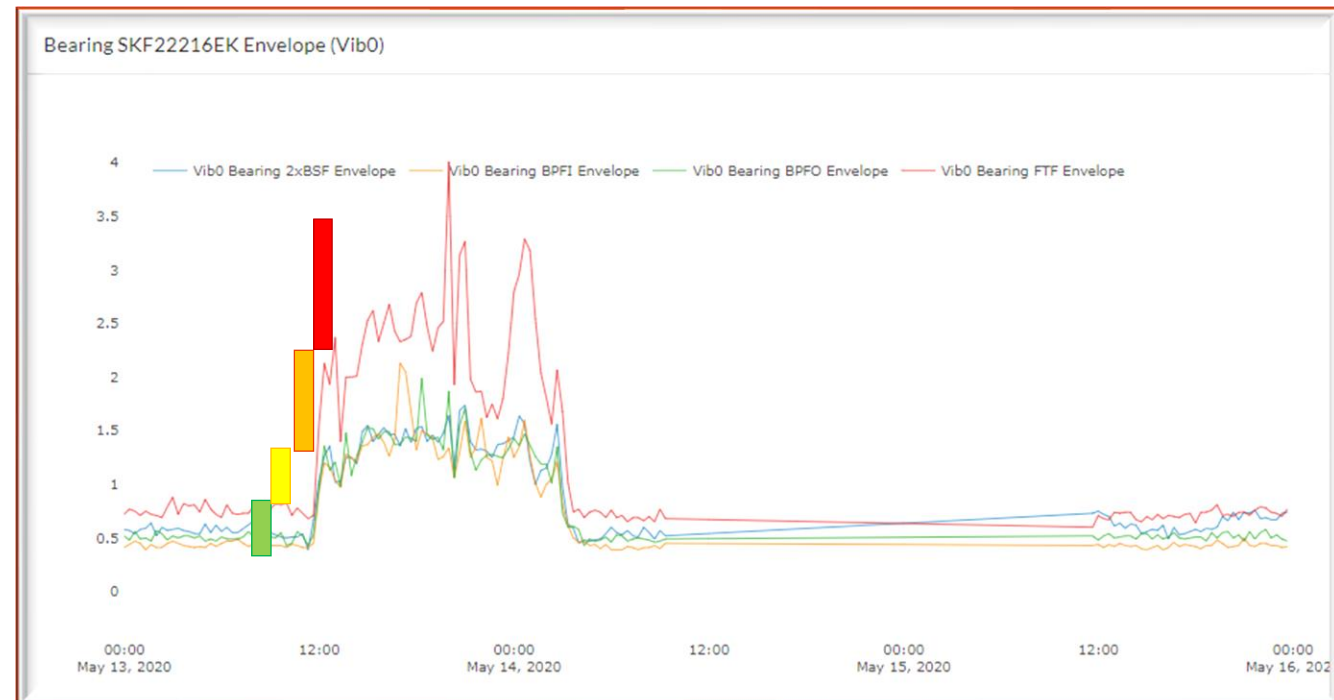
2 
Automatic system notifications to trigger workflows

3 
Notifications based on actual asset condition

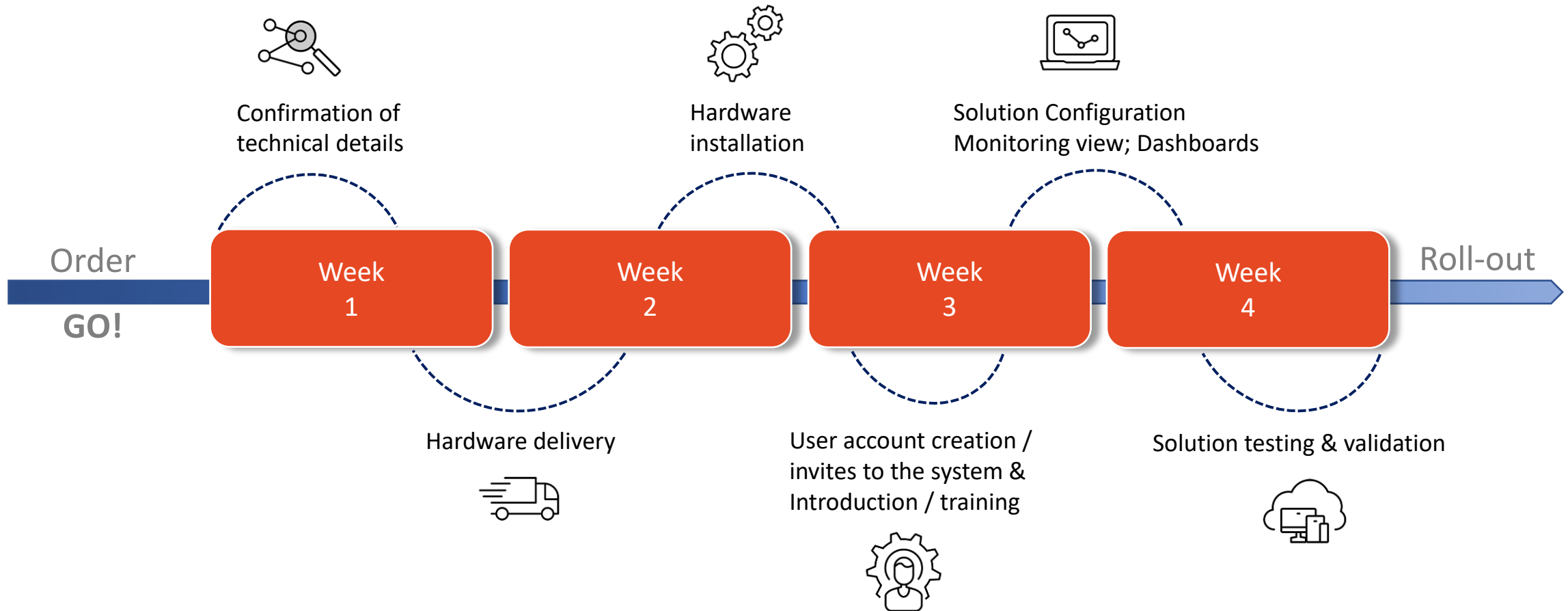
4 
Condition based maintenance (CBM)



-  Maintenance action needed
-  Plan for bearing check and lubrication
-  Follow elevated vibration levels
-  Normal vibration range



Delivery timeline



Read more at:
condence.io/condence-fan-blower/

Condence is a product of Distence Oy
Sinikalliontie 18 B, FI-02630 Espoo, Finland
sales@distence.fi