

PRODUCT NOTE

ABB Ability™ Smart Sensor

Condition monitoring for pumps



The ABB Ability™ Smart Sensor converts traditional pumps into smart, wirelessly connected devices. It enables you to monitor the health of your pumps, identify inefficiencies and improve reliability and safety.

Monitoring the health of pumps

ABB Ability™ Smart Sensor for pumps is an intelligent sensor that helps to reduce risks related to pump operation and maintenance by identifying inefficiencies within the pumping system.

It monitors the vital operating parameters of the pump, such as vibration and temperature, to calculate pump health indicators. These indicators provide valuable information on the pump's condition and performance. They can help to predict pump failure by detecting early signs of common operating problems, such as bearing failure, blade problems, looseness, unbalance or overheating.

Maintenance can be planned based on actual needs rather than on generic schedules.

Better safety and reliability

Pumps operating in dangerous environments or hard-to-reach locations pose a risk to workplace safety and are more likely to break down due to inadequate maintenance. By monitoring the pump and transferring the data wirelessly to the cloud, maintenance needs can be identified from a distance. This increases work safety, saves time and improves reliability.

Benefits

- Easy identification of pump inefficiency
- Prevention of unexpected downtime
- Reduced maintenance costs
- Extended equipment life
- Better safety

| Technical data | |
|------------------------------------|-------------------------------------------------------------------------------------------------|
| Monitored parameters | Vibration, temperature |
| Example performance indicators | Rotating speed of the pump, Operating hours, Blade problems, Looseness, Misalignment, Unbalance |
| Wireless communication | Bluetooth® 4.0 |
| IP class | IP66 |
| Lifetime | Design life of 5 years |
| Case material | Stainless steel/Thermoplastic |
| Ambient conditions | Operation: -40°C to +85°C Storage: +10°C to +25°C |
| Pump type | Single-stage, overhung/vertical, suction-end, centrifugal pumps |
| Impeller type | Channel or vortex |
| Fluid type | Water, wastewater or similar |
| Min. number of impeller blades (b) | b _{MIN} = 3 |
| Max. blade-pass frequency (BPF) | 6000 RPM |
| BPF = $\omega \times b$ | |
| Rotating speed (RPM): ω | |
| Number of blades: b | |
| Speed control | Fixed or variable |
| Power / size | Pump shaft height: 150 to 450 mm |

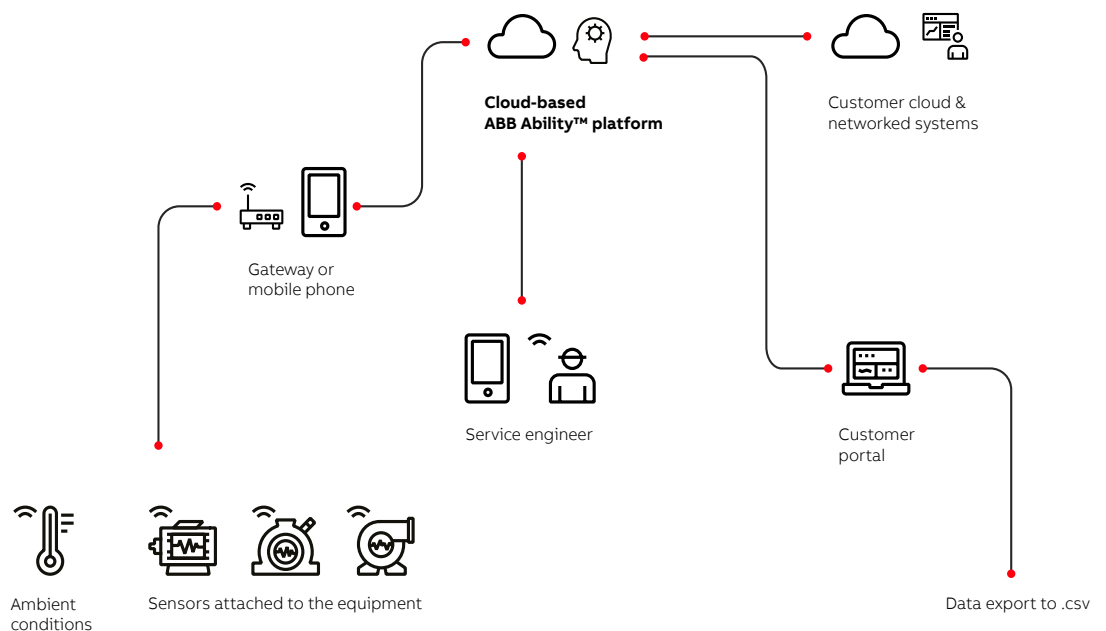


Easy-to-install

At the heart of the solution is a compact sensor unit which can be easily attached to the pump without wiring. The sensor monitors signals from the pump, accurately measuring key parameters at regular intervals. It transfers the data, using built-in wireless Bluetooth® Low Energy technology, to a smartphone, tablet or Bluetooth® gateway. Industry-standard encryption protocols are used for data communication. All data is transferred to a secure cloud-based server where it is stored in encrypted form.

Factory of the future with digital powertrain

Smart, connected factories are the future of manufacturing. ABB Ability™ connects our customers to the power of the Industrial Internet of Things (IIoT). ABB Ability™ can combine data collected by the pump sensor with data from other connected equipment, such as motors and drives. This data can be accessed and analyzed remotely, providing deeper insight into the health of the entire process. ABB offers a unique digital advantage by combining connectivity and data analytics with industrial expertise to make your operations efficient, predictable and safe.



For more information, please contact your local ABB representative or visit:

www.abb.com/smartsensor

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