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.

**Intended use**
- Centrifugal or vortex pumps
- Fluid type: water or wastewater
- The driving motor’s frame size must be supported by the ABB Ability™ Smart Sensor, i.e. up to 450 mm (IEC) or equivalent
- Direct online or variable-speed driven

**ABB Ability™ Smart Sensor gateway**
Automatically collects data from a high number of Smart Sensors and transmits the data to the cloud for processing.

**Gateway specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Range</td>
<td>Approx. 50 m (can vary in an industrial environment depending on facility layout)</td>
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<tr>
<td>Power supply</td>
<td>Power supply over ethernet port</td>
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<tr>
<td>Certifications</td>
<td>1879 FCC, CSA, CE</td>
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<tr>
<td>Radio frequency</td>
<td>ISM band, 2.402-2.480 GHz</td>
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<tr>
<td>Data transfer</td>
<td>WIFI, LAN, 4G/LTE USB dongle</td>
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<tr>
<td>Environment</td>
<td>Operating temperature: -40 °C to +65 °C</td>
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</table>

**Health parameters**
- Overall condition
- Overall vibration (velocity rms)
- Bearing condition
- Misalignment
- Unbalance
- Looseness
- Blade problems
- Cavitation (under development)
- Flow turbulence (under development)
- Skin temperature (degrees)

**Operating parameters**
- Radial vibration (velocity rms)
- Tangential vibration (velocity rms)
- Axial vibration (velocity rms)
- Speed (rpm)
- Operating hours
- Number of starts
### SPECIFICATIONS

**Temperature measurement**
- **Measurement range**: -40 °C to +85 °C
- **Resolution**: 0.05 °C
- **Accuracy (baseplate temperature)**: +/- 0.5 °C

**Vibration measurement (overall velocity values)**
- **Amplitude range**: 0.04 - 700 mm/s (25 Hz)
- **Frequency range**: 10 Hz - 1 kHz

**Wireless communication**
- **Network / radio standard**: Bluetooth® 4.0 / IEEE 802.15.1
- **Frequency**: 2.4 GHz, license free ISM band
- **Range**: With mobile phone: 1 - 10 m
  With gateway: approx. 50 m
  (can vary in an industrial environment depending on the facility layout)

**Power**
- **Battery type (not replaceable)**: 3.0 V Lithium Permanganate (Li-MnO4) button cell CR2477N
- **Estimated battery lifetime**: Batteries have a design life of 5 years. Expect 3 - 5 years depending on usage, settings and temperatures
- **Measured skin temperature (°C)**: +40 °C +70 °C
- **Battery life in years, sensor in default configuration**: approx. 5 approx. 3
  Default configuration: Sensor measures once per hour and stores data to memory. Stored data must be collected at least monthly with a Bluetooth® mobile device or gateway.

**Environmental**
- **Temperature**
  - **Operation**: -40 °C to +80 °C
  - **Storage**: +10 °C to +25 °C
- **IP class**: IP66 (dust-tight and resistant to powerful water jetting)
- **Vibration (of mounted surface)**: <15 g at 100 Hz

**Certification/Standards**
- CE, FCC, UL, C-UL
- Safe areas only; no hazardous area certification

**Physical**
- **Weight**: 0.26 kg
- **Case material**: Stainless steel/Thermoplastic
- **Mounting**: On housing above drive-end bearing of the pump (the bearing closest to the motor when seen from the pump), parallel to pump shaft; ensure good contact. Ensure that correct mounting kit is used; ready-made mounting kits might not be available for all kinds of pumps.