





— 01 ABB's condition monitoring solution for motors: The ABB Ability™ Smart Sensor transmits data via a smartphone or gateway to a secure cloud service. Algorithms analyze the data and convert it into meaningful information, which is sent to the user's smartphone and customer portal.

### Intuitive interface

Users can check the status of their motors at any time with their smartphone via the ABB Ability™ Smart Sensor app. The interface includes a 'traffic light' display to give a quick overview of all the motors that are being monitored. Users also receive clear recommendations on how to optimize maintenance and save costs.

#### ● RED

Critical issue – failure likely soon. Take action as soon as possible.

#### ● YELLOW

Operation can continue but the motor should be watched closely and serviced at the next possible opportunity.

#### ● GREEN

Motor fine – operation can continue.

### Smart motors and intelligent maintenance

ABB Ability™ Smart Sensor converts machines that have always been rather simple into smart, wirelessly connected devices. It provides meaningful information on motor condition and performance, enabling users to put intelligence into their maintenance. Plants can now plan maintenance according to actual needs rather than on the basis of time intervals or operating hours alone. This cuts maintenance costs and reduces or even eliminates unplanned stops.

There are also opportunities to optimize motors' energy consumption. By combining data on the energy consumption levels of individual motors with plant operating information, it is possible to select the most appropriate motors to cut energy costs. The solution supports plant operators' efforts to reduce their overall cost of motor ownership.

### Factory of the future with digital powertrains

Smart, connected factories are the future of manufacturing. ABB Ability™ connects users to the power of the Industrial Internet of Things (IIoT). ABB Ability™ can combine data collected by the motor sensor with data from other connected equipment, such as mounted bearings, gearing, variable-speed drives and pumps. 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 operations efficient, predictable and safe.

Parameters	Description	Availability
<b>Measured parameters</b>		
Vibration: axial, radial, tangential	mm/s or inch/sec, rms	●
Skin temperature	°C or °F	●
Magnetic field	(Data not shown; used in calculations)	●
Accoustic signals	(Data not shown; used in calculations)	●
Time	MM:dd:hh:mm:ss	●
Vibration fft and time waveform	Special report	●
<b>Calculated health parameters</b>		
Overall motor condition	Traffic light for consolidated status	●
Overall vibration	Traffic light, mm/s or inch/sec, rms	●
Bearing condition	Traffic light, integer value	●
Misalignment	Traffic light, %	●
Unbalance	Traffic light	●
Bent shaft	Traffic light	●
Rotor winding health	Traffic light	●
<b>Calculated operating parameters</b>		
Output power	kW	●
Operating hours	Hours	●
Number of starts	Integer value	●
Speed	Revolutions per minute (rpm)	●
Motor supply frequency	Hz	●
Loading	% of name plate full load power	●
Torque	Nm	●
Direction of rotation	Clockwise / counterclockwise	●
<b>Maintenance advice</b>		
Alerts, alarms, reminders	In app, per e-mail, push, webhook	●
Regreasing	Remaining hours until next regreasing	●
Sensor unit and battery status		●
<b>Certifications</b>		
IP 66		●
CE, IC, RCM, EAC, FCC, UL, C-UL, SRE, SUBTEL		●
NEC Intrinsically Safe	Class 1, Div. 2	●
IECEX Intrinsically Safe	Ex iB IIB T4 Gb, -40 °C to +80 °C	●
<b>Compatibility</b>		
Induction motors	Frame sizes IEC: 56 - 500 NEMA: 42 - 449, non-standard motors equivalent to IEC 500	●
Permanent magnet/synchronous reluctance motors		●
Safe area motors		●
Hazardous area motors		●
Continuous and intermittent duty		●
Fixed speed and variable speed		●
Old and new motors		●
ABB and non-ABB motors		●

● = AVAILABLE

● = AVAILABLE IN FUTURE RELEASE (2020)