

# ABB Ability™ Smart Sensor, generation 2

## Installation with flat surface mount



### IMPORTANT!

Read these instructions in their entirety before installing the ABB Ability™ Smart Sensor, generation 2 with flat surface mount.



### ATTENTION

#### Install as per industry codes and regulations

The Smart Sensor should be installed by technically qualified personnel. Failure to install the sensor in compliance with applicable codes and regulations and according to the manufacturer's recommendations may result in electrical shock, fire hazard, unsatisfactory performance or equipment failure, and may void the sensor warranty.

#### Applicable installation areas for Smart Sensor with steel flat surface mount

Smart Sensor with flat surface mount can be installed on safe areas but also on following hazardous areas:

- Mines (Group I): All zones
- Gas (Group II A, B, C): All zones
- Dust (Group III): All zones



### WARNING

Only qualified individuals who are familiar with appropriate national codes, local codes and sound practices should install, repair or modify electric motor and/or related accessories. Installation should conform to appropriate codes and practices. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

**Electrical live circuit hazard.** Do not touch electrically live parts or equipment. For a safe installation, disconnect, lockout and tagout the asset's power supply before installing or servicing the sensor.



### CAUTION

**Asset surface temperature hazard.** The external surface of an electric motor may reach temperatures which can cause discomfort, burns or injury to individuals who come into contact with the hot surface. For safety reasons the asset should be switched off and allowed to cool before attempting to install the sensor. Asset surface temperatures should only be measured with suitable instruments and not estimated by hand touch or direct skin contact. Failure to observe this precaution could result in bodily injury.

**Do not replace batteries!** Incorrect use of batteries voids the certifications of the Smart Sensor, such as hazardous area certifications, safety certifications, and IP rating. Dispose of used sensors according to instructions.

## Quick start guide

Step	Instructions	Additional information
1	Install the ABB Ability™ Smart Sensor Platform App.	The Smart Sensor Platform App can be found in App Store (Apple) and Google Play Store (Android). <b>Note:</b> In some countries these stores may not be accessible. For more information see <a href="http://www.abb.com/smartsensor">www.abb.com/smartsensor</a> .
2	Register in the ABB Ability™ Smart Sensor Platform App.	- Follow the sign-up link in the app. - Alternatively, you can sign up on the web portal at <a href="https://smartsensor.abb.com">https://smartsensor.abb.com</a> . - Skip this step if you have already registered.
3	Log in to the ABB Ability™ Smart Sensor Platform App.	- Create or join an existing organization. - Follow the instructions on the screen.
4	Install the ABB Ability™ Smart Sensor.	- Make sure that you have the required components. - Install the sensor according to the installation steps in this manual.
5	Activate the sensor with the ABB Ability™ Smart Sensor Platform App.	- Navigate to the main menu in the app and tap <b>Activate Sensor</b> . - Follow the instructions on the screen.
6	Commission the asset in the ABB Ability™ Smart Sensor Platform App.	- Navigate to the <b>Commission new asset</b> menu in the app. - Select the equipment profile you want to monitor. - Follow the instructions on the screen.
7	Take first measurements and check the asset condition.	Select the asset and navigate to <b>Load Measurements</b> .

For more detailed instructions, visit [www.abb.com/smartsensor](http://www.abb.com/smartsensor).

## Installation instructions

Obey the following instructions for the installation of ABB Ability™ Smart Sensors on assets.

### Notes:

- For effective Bluetooth® communication, mount the sensor with a clear line of sight to any communication devices to be used (your smartphone or a Bluetooth® gateway).
- The mounting orientation must be such that the A-axis on the sensor housing is parallel to the rotating shaft. If this is not physically possible, the T-axis must be parallel to the rotating shaft.

### Mounting position on motor

Mount the sensor between the drive-end and non-drive-end bearings, as near to the center as possible.

**Note:** The sensor mount cannot be removed after installation.

### Supported motors

This mounting instruction applies for motors up to frame sizes equivalent to IEC 500. For information on motor types monitored with the ABB Ability™ Smart Sensor, visit [www.abb.com/smartsensor](http://www.abb.com/smartsensor).

### Mounting position on general machinery

**Pump:** Mount the sensor on the pump housing above the drive-end bearing of the pump, near to the motor coupling.

**Other equipment:** Install the general machinery sensor at any point on an asset where vibration and temperature need to be monitored.

## Instructions for hazardous area

1. The flat surface mount should be grounded in hazardous area installations. The grounding can be provided by attaching a grounding wire to the mount with the M3 screw.
2. Do the grounding according to local regulations. As a reference, the IEC 60079-14 defines the minimum diameter for grounding wire as 4 mm<sup>2</sup>.

## Materials needed for the installation

1	Flat surface mount
2	M6 hexagon socket screw
3	ABB Ability™ Smart Sensor, generation 2
4	Loctite™ EA 3463 or similar putty
5	Cover for screw hole
6	50 mm long hex bit (5 mm for M6 screw) and torque wrench
7	Rubber gloves
-	Other miscellaneous items: Safety goggles, degreasing agent, possibly threadlocker, and suitable tools and materials to do the grounding if sensor is installed in hazardous area.



### WARNING

Direct skin exposure to solvents and/or threadlocker could cause discomfort or injury, including, but not limited to, burning or skin irritation. Use appropriate protective gloves and goggles when performing this task.

## Installation steps

### Step 1

Degrease the installation surface at the recommended mounting position.



### CAUTION

Review and obey all manufacturer's instructions and safety precautions when using degreasing agent.

### Step 2

Apply Loctite™ EA 3463 or similar putty to the installation surface. Form the putty as a round disc as shown in the picture.

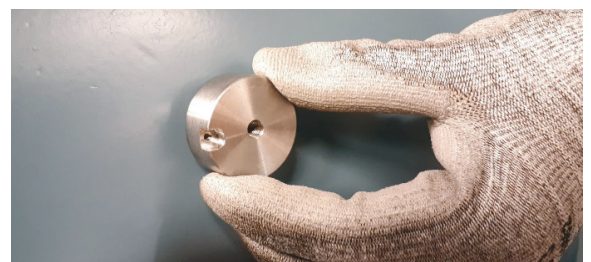


### CAUTION

Review and obey all manufacturer's instructions and safety precautions when using putty.

### Step 3

Keep the flat surface mount in the center of the putty disc.



#### Step 4

Press the flat surface mount against the putty. Make sure that the mount is pressed deep enough.

Ground the mounting piece if the sensor is installed in hazardous areas mentioned on page 1. Bring a grounding wire of minimum 4 mm<sup>2</sup> diameter on the M3 screw of the mounting piece. After grounding the mounting piece, measure the resistance between asset frame and mounting piece. Make sure that the resistance is below the maximum 1 M $\Omega$  according to IEC 60079-14.

Allow the putty to dry before performing step 5. For information on curing time, see the instructions and recommendations in the putty manufacturer's user manual.

#### Step 5

Fasten the ABB Ability™ Smart Sensor G2 to the flat surface mount by using the M6 hexagon socket screw. Tighten the screw with 10 Nm (7.4 ft-lb) of torque. Hold the sensor while tightening the screw to avoid exerting torque on the putty and the flat surface mount.

**Note:** In harsh environments, use threadlocker.

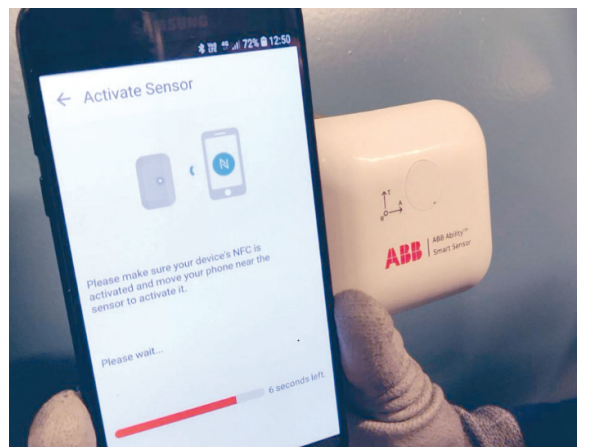
#### Step 6

Make sure that the ABB Ability™ Smart Sensor G2 is mounted parallel to the rotating shaft. Assemble the screw hole cover to hide the screw hole.

#### Step 7

Activate the sensor and commission the asset. See section Quick start guide, steps 5–7.

**Note:** After commissioning, the sensor has a two-month trial period with full functionality. After the trial period, you can continue the usage by activating a subscription acquired from a local ABB sales unit.



For questions, feedback and support, contact:

Product information

[www.abb.com/smartsensor](http://www.abb.com/smartsensor)

Support

[support.smartsensor@abb.com](mailto:support.smartsensor@abb.com)

Subscriptions

<https://eu.marketplace.ability.abb/>



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