ABB Ability™ Smart Sensor, generation 2
Installation with aluminum clamping bracket

IMPORTANT! Read these instructions in their entirety before installing the ABB Ability™ Smart Sensor, generation 2 with aluminum clamping bracket.

⚠ 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 aluminum clamping bracket
Smart Sensor with aluminum clamping bracket can be installed on safe areas but also on following hazardous areas:

• Mines (Group I): Not permitted

• Gas (Group II A, B, C): Zone 1, Zone 2 (Zone 0 is not permitted)

• 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). **Note:** In some countries these stores may not be accessible. For more information, see www.abb.com/smartsensor.
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 https://smartsensor.abb.com. - 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 Senso**r**.	- 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 **Activate Sensor**. - Follow the instructions displayed on the mobile screen.
6	Commission the asset in the ABB Ability™ Smart Sensor Platform App.	- Navigate to the **Commission new asset** 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 **Load Measurements**.

For more detailed instructions, visit 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
The sensor must be located 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
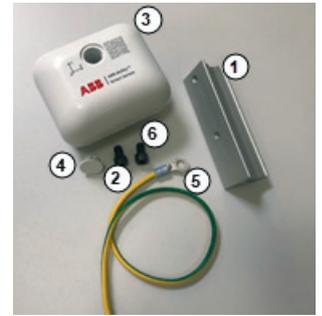This mounting instruction applies for fin-cooled motors equivalent to frame sizes IEC 160–450.
For information on motor types monitored with the ABB Ability™ Smart Sensor, visit
www.abb.com/smartsensor.

Instructions for hazardous area

1. The aluminum clamping bracket should be grounded in hazardous area installations. The grounding
    can be provided by attaching a grounding wire to the other end of clamp with a M6 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^2.

Materials needed for the installation

1	Aluminum clamping bracket (revision B with 2 * M6 threads)
2	M6 hexagon socket screw (metallic color)
3	ABB Ability™ Smart Sensor G2
4	Cover for screw hole
5	Grounding cable
6	¼" - 28 UNF hexagon socket screw (black color)
7	Rubber gloves
8	50 mm long hex bit (5 mm for M6 screw) and torque wrench
-	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

Notes
- Make sure that the bracket is clamped to the cooling fin such that the neighboring fins do not prevent attaching the sensor.
- If sensor is installed in hazardous area, prepare the clamp with grounding cable before attaching the sensor to the clamp.

Step 1

Degrease the upper and lower surfaces of the selected fin at the recommended mounting position.

⚠ **CAUTION**

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

Step 2

Apply Loctite™ 454 or equivalent glue evenly along the entire length of the bracket in two marked places shown in figure-1. Similarly apply glue evenly to the top of the fin for the entire length of bracket as shown in figure-2.

⚠ **CAUTION**

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

Figure-1   Figure-2

Step 3

Use a hammer with a rubber or plastic head and insert the mounting bracket until the edge of the cooling fin touches the inside face of the bracket.

The groove marked in red in the figure is for direct contact between the clamp and the motor rib.
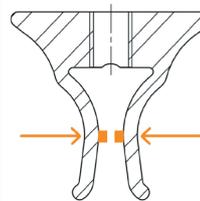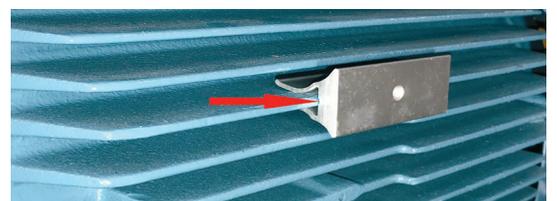
Step 4

Ground the mounting piece if the sensor is installed in hazardous

areas mentioned on page 1. Bring a grounding wire of minimum

4 mm^2 diameter on the M6 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 MΩ according to IEC 60079-14.

⚠️ **CAUTION**

This step is manadatory only for installations in hazardous areas.

Step 5

Fasten the ABB Ability™ Smart Sensor G2 to the mounting bracket using the metallic colored hexagon M6 socket screw. Tighten the screw with 10 Nm (7.4 ft-lb) of torque.
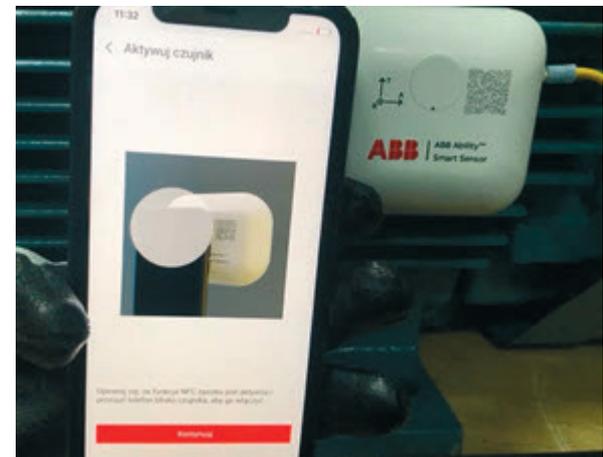
Note: In harsh environments, use threadlocker.

Step 6

Make sure that the ABB Ability™ Smart Sensor G2 is mounted parallel to the rotating shaft by aligning it with the asset fins. Assemble the cover plate 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.

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