

# ABB Ability™ Smart Sensor for pumps

## Installation with mounting putty



**IMPORTANT!** Read these instructions in their entirety before installing the ABB Ability™ Smart Sensor for pumps.



### 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.



### CAUTION

**Asset surface temperature hazard.** The external surface of an electric pump 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.



### WARNING

Only qualified individuals who are familiar with appropriate national codes, local codes and sound practices should install, repair or modify electric pump 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.

## 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	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.
5	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.
6	Commission the asset in the ABB Ability™ Smart Sensor Platform App.	- Navigate to the “Commission new asset” menu in the app. - Follow the instructions on the screen.
7	Take first measurements and check the asset condition.	Select the asset and navigate to “Load Measurements”.
8	Activate the sensor’s subscription	Manually with the ABB Ability™ Smart Sensor Platform App or automatic renewals on ABB Marketplace.

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 pumps

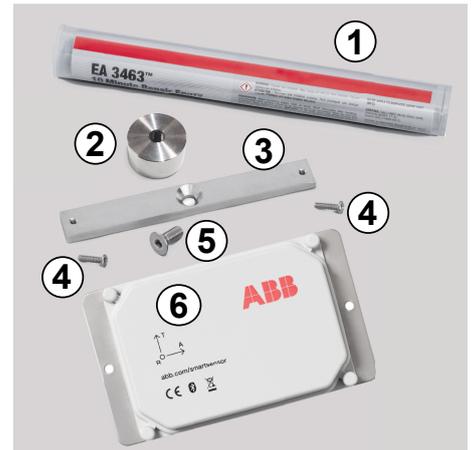
Mount the sensor on the pump housing above the drive-end bearing of the pump, near to the motor coupling.

### Supported pumps

- Pump type: Single-stage, end-suction, overhung centrifugal pump
- Impeller type: Single-channel or vortex
- Fluid type: Water or wastewater
- Min. recommended no. of impeller blades:  $b_{MIN} = 3$
- Speed control: fixed / direct-online (DOL) or variable-speed
- Maximum blade-pass frequency (BPF): 6000 RPM
  - Rotating speed  $\omega$
  - No. of blades  $b$
$$BPF = \omega \times b < 6000 \text{ RPM}$$
- Power / size: shaft height from 150 mm to 450 mm

## Materials needed for the installation

1	ABB Ability™ Smart Sensor for pumps
2	Flat surface mount
3	Mounting bracket
4	Two Phillips head screws (M4-0.7 x 10 mm)
5	One Tapered hex Drive Flat Head Screw 1/4" x 5/8" (UNF 28)
6	Loctite™ 3463 or similar mounting putty
7	Degreasing agent
8	Clean shop rag
9	Rubber gloves
10	Mechanical abrasive pad (e.g. sandpaper)
11	Loctite™ Blue or similar threadlocker
12	Cutting tool
13	Leveling tool
14	Small Phillips head screw driver
15	Allen wrench (4 mm or 5/32")



**⚠️ WARNING**

Direct skin exposure to solvents and/or thread locker 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**

Use the degreasing agent and remove debris and oils from mounting surface.

**⚠️ CAUTION**

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

**Step 2**

Use sandpaper or similar abrasive material to remove paint from mounting surface. Repeat step 1.

**Step 3**

Remove putty from tube and cut out between 1/4 and 1/3 of the putty for installation of receiving mount.

**⚠️ CAUTION**

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

**Step 4**

Squeeze, knead, twist and roll putty until it has a uniform and homogeneous color according to manufacturer's instructions. This takes 5–10 minutes.



**Step 5**

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

The putty should be approximately 1.25 in (3 cm)

**Step 6**

Keep the flat surface mount in the center of the putty disc. Press the flat surface mount against the putty. Make sure that the mount is pressed deep enough.

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

**Step 7**

Fasten the bracket to receiving mount using the hex head screw. Apply Loctite™ or equivalent threadlocker to the screw threads.

**CAUTION**

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

**Step 8**

Use the leveling tool to verify the alignment. The axial direction (white line) must be parallel to the pump shaft. The tangential axis (red line) should be at a right angle to the axial line, on a plane tangential to the housing. The radial direction (black line) points towards the center line of the shaft. If this is not possible, the T-axis must be parallel to the rotating shaft.

**Step 9**

Fasten the ABB Ability™ Smart Sensor to mounting bracket using two Phillips head screws. Make sure that the screw head is locked approximately 1 mm above chamfer and touches the bottom plate of the sensor.

**Step 10**

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, the usage can be continued by activating a subscription acquired from a local ABB sales unit or from ABB Ability Marketplace™. Contact your local ABB partner to know if the ABB Ability Marketplace™ is available in your region.

For questions, feedback and support, please 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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