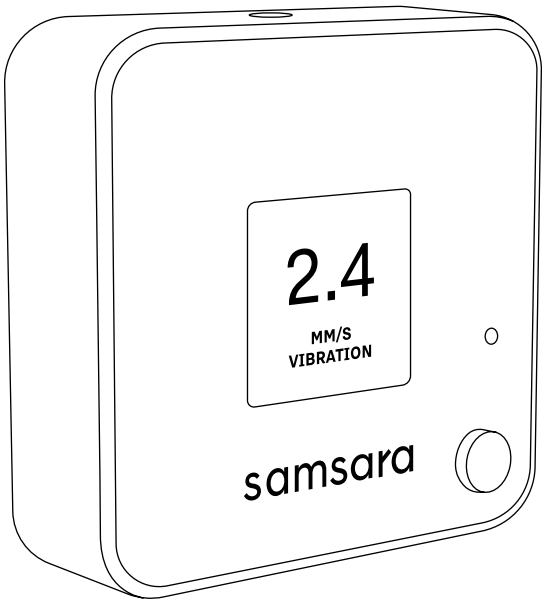
samsara



HM11

Install Guide

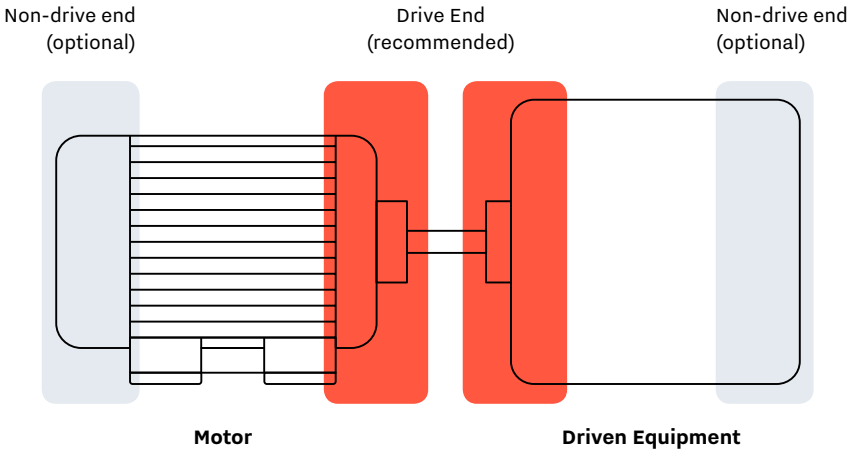
What You'll Need

- HM11 machine health monitor (with included mount)
- Samsara Industrial Gateway (for wireless connectivity)
- Industrial-grade epoxy (included, for non-magnetic surfaces)
- Cleaning supplies, gloves, etc. (optional)

Mounting Considerations

Each HM11 sensor should be mounted as close as possible to each bearing that is being monitored. For motors over 50 HP, each bearing should have its own sensor, but for smaller motors, one sensor may be adequate.

In a typical machine train consisting of a driver and a driven piece of equipment (e.g. motor coupled to pump, compressor, fan, etc.), each of the 4 bearings should be instrumented as per the schematic below. If only one sensor is being deployed per machine, monitoring the thrust bearing (i.e. bearing with highest axial load) is essential. Typically, this is the drive end bearing for horizontal motors, and the upper bearing for vertical motors.



The mount location should be on solid metal of the bearing housing, so that vibration is accurately transmitted between the bearing and the sensor. We recommend avoiding bearing caps, guards, fan covers, cooling fins, etc. as these may generate spurious vibration frequency responses.

Installation Steps

1 Identify and Prepare the Mount Location

We recommend cleaning the surface of any oil, grease, debris, etc., and using sandpaper to remove paint.

2 Record Machine Information

Note the serial of the device installed (you can check this on the box or back of the sensor by unscrewing the mount.)

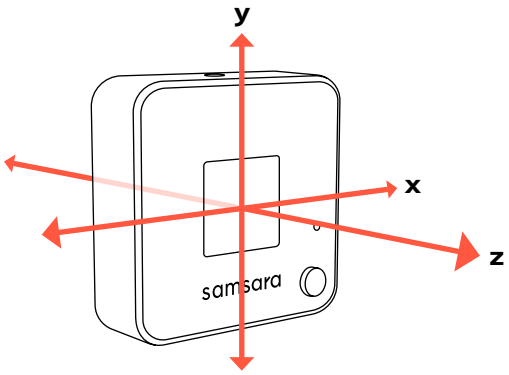
Record key machine parameters, including Name/Serial, RPM, HP, Amperage, Voltage, Machine Type & Class, Manufacturer/ Model, etc.

As a best practice, we suggest taking a picture of the machine with the sensor so you can upload it to the dashboard for easy identification and configuration of the sensor location.

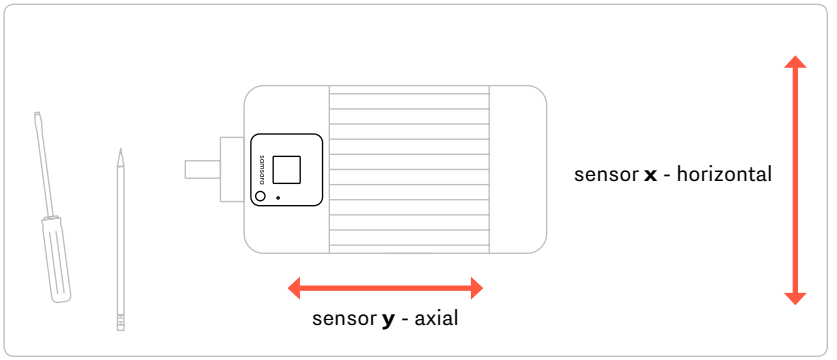
3 Plan Sensor Orientation

At the mount location, note how the sensor is oriented vs. the axes of the machine, i.e. if the Axial direction of the machine is aligned with the X, Y or Z axes of the sensor, and similarly for the Horizontal and Vertical directions of the machine. This will be needed to configure the sensor in the dashboard accordingly. Here are two examples illustrating how the sensor's axes correspond to the axes of the machine.

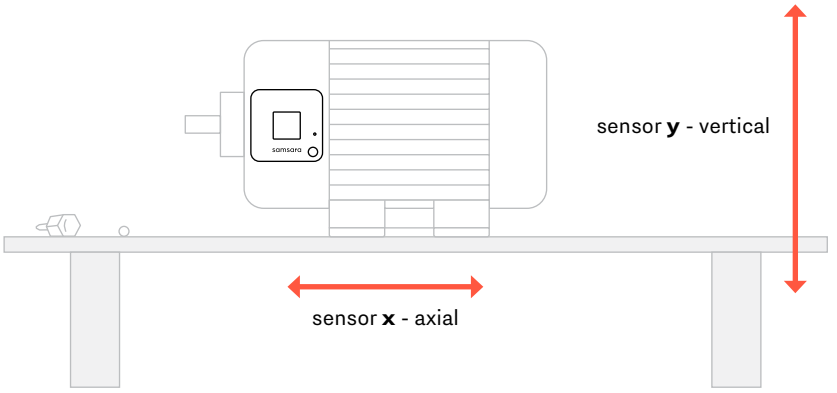
HM11 Internal Axes



Top Mount



Side Mount



4 Mount the Sensor

Magnetic Mount

This is the fastest method for most scenarios. Using the mount attachment, simply place the sensor at the desired location. Place carefully to avoid damage to the magnets.

Epoxy mount

For non-ferrous surfaces, or for a more permanent install.

a. Unscrew the mount from the bottom of the HM11 sensor.
   (We suggest placing the sensor at the desired mount point before applying epoxy to ensure the HM11 fits once it's screwed back.)

b. Place the mount at the desired location, and use the two holes on top to pour epoxy.

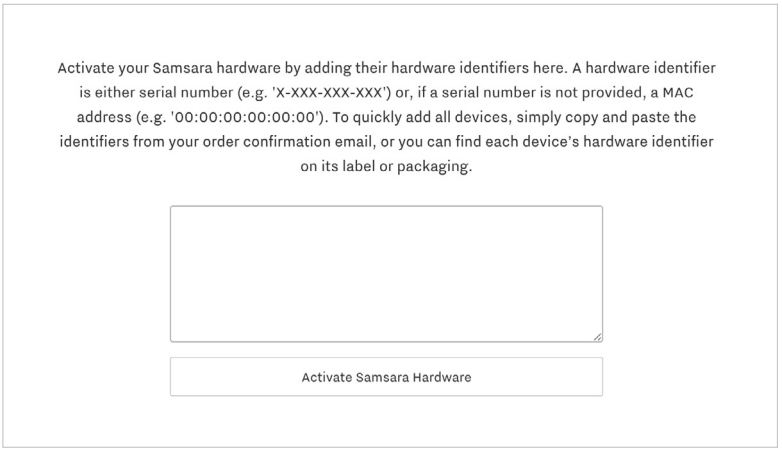
c. Allow the epoxy to cure for 60 minutes undisturbed.

d. Screw the HM11 sensor onto the mount tightly, ensuring that it goes all the way to the desired orientation.

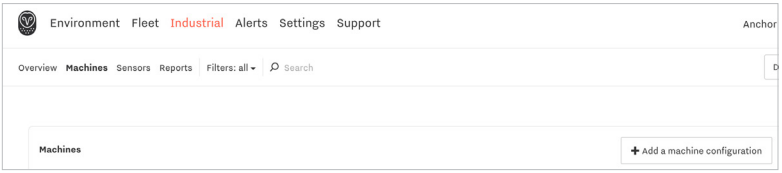
e. Allow 24 hours for final curing.

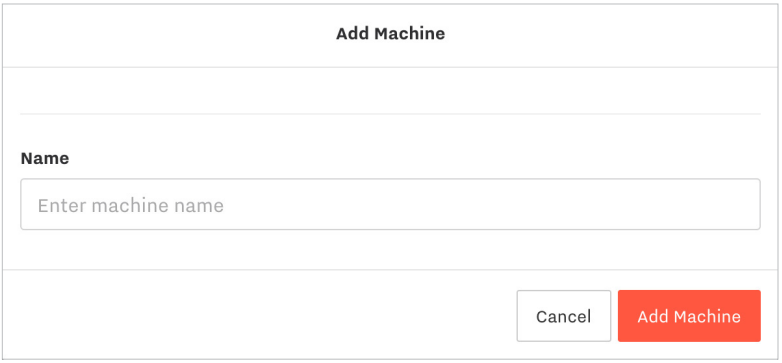
5 Configure Dashboard

If not already done, activate the sensor via its serial (under **Settings > Sensors > + Activate Devices**)

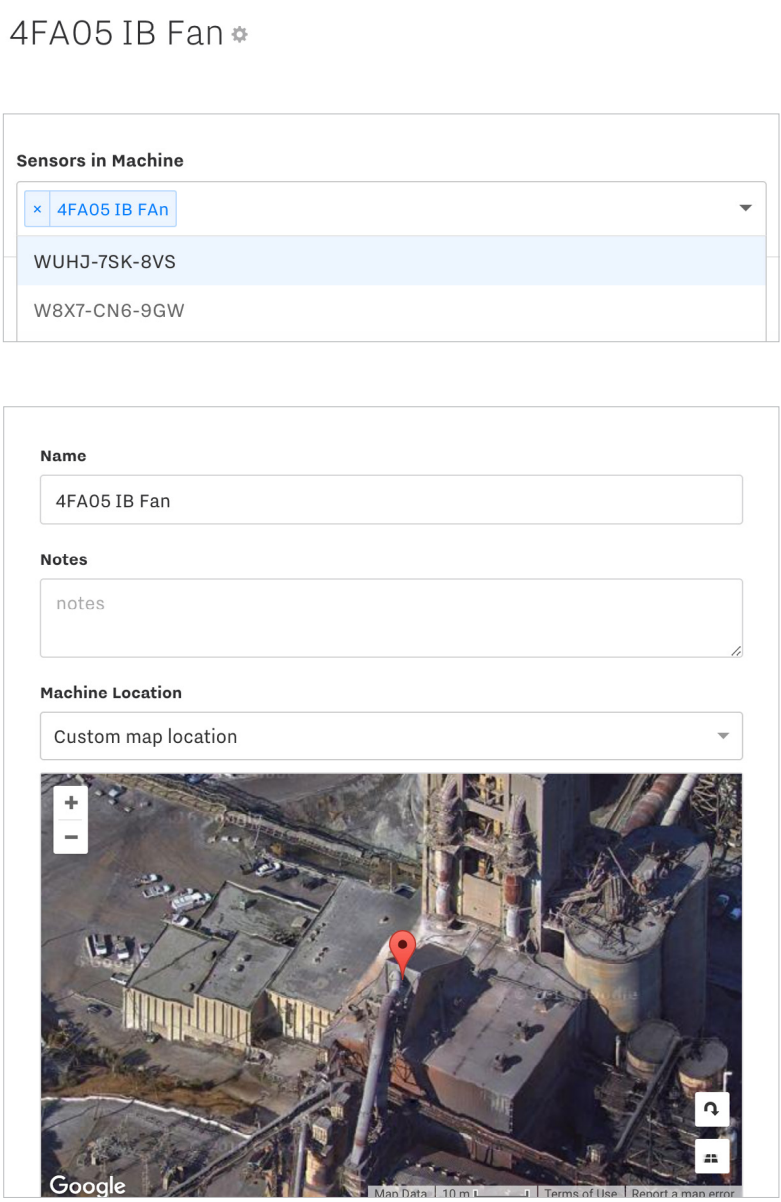


Add a new machine (under **Industrial > Machines > + Add a machine configuration**)

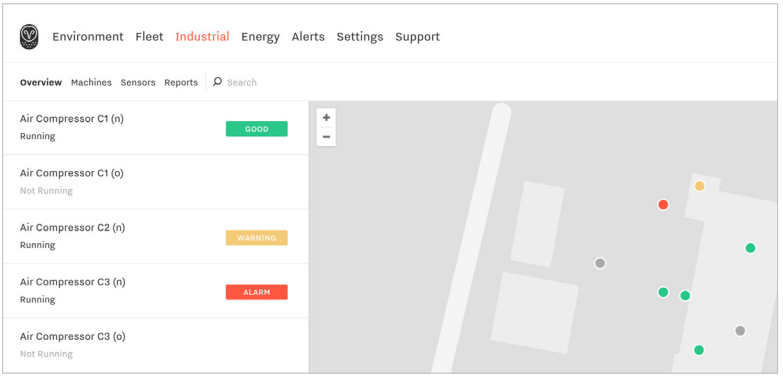


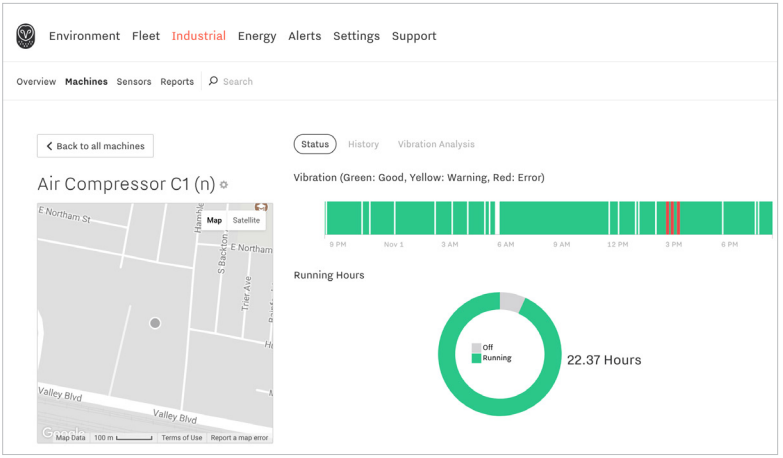


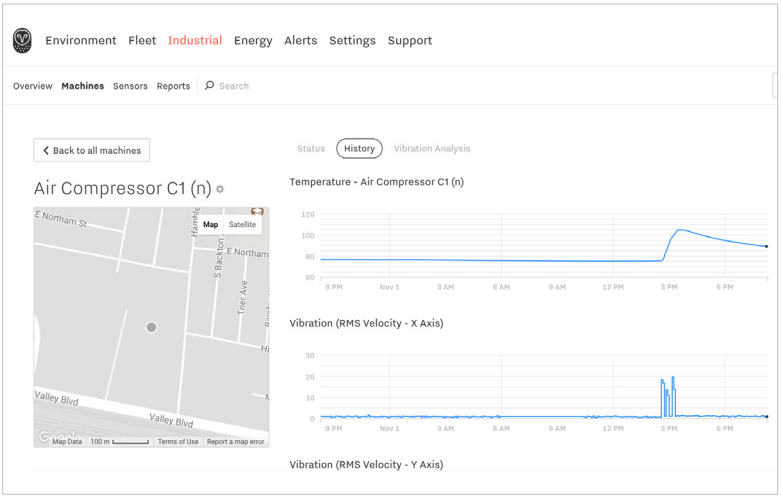
Click on the gear next to the machine name. Add sensor(s) to the machine on the pop-up. Here, you can also pick the location of the machine and drag & drop the marker for fine-grained positioning. In addition, you can specify machine parameters collected earlier for more accurate machine classification.



Once added, you will start seeing the machine on the Industrial Overview page with its current status. You can also click into the machine to see its Status timeline, History and Vibration Analysis that shows periodic FFTs.



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Sensors
Reports
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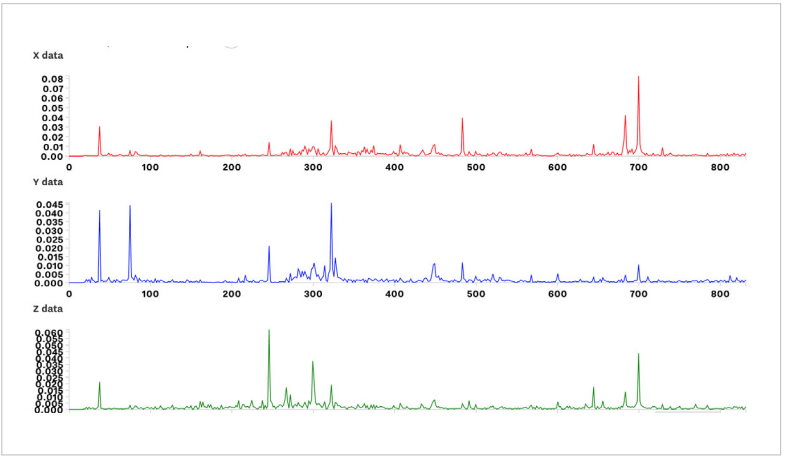
Vibration (RMS Velocity - Y Axis)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