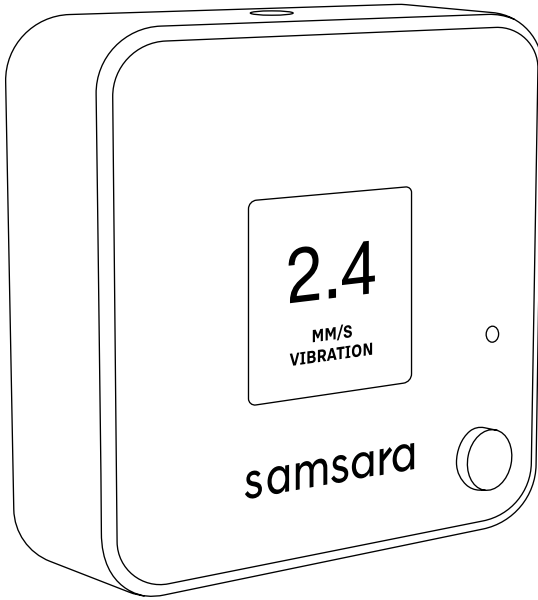




samsara



HM11

Install Guide

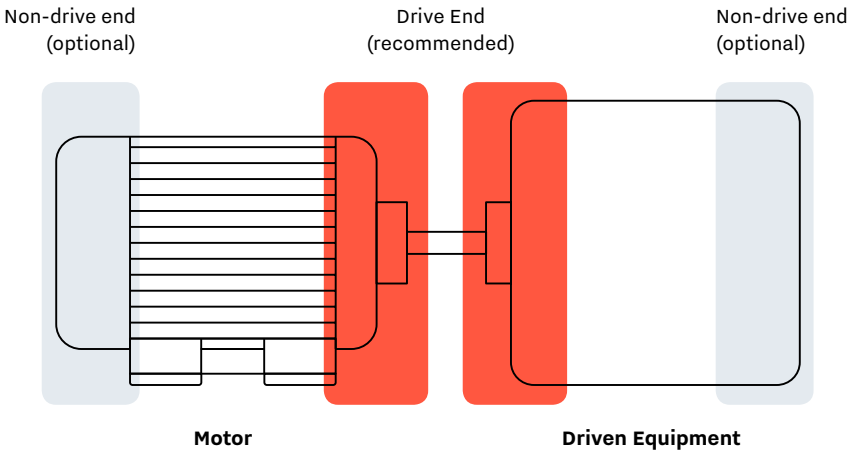
What You'll Need

- 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.)

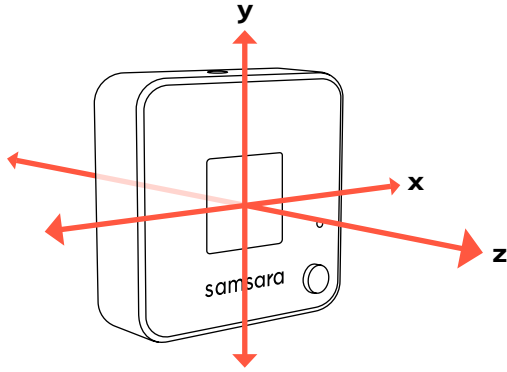
Record key machine parameters, including Name/Serial, RPM, HP, Amperage, Voltage, Machine Type & Class, Manufacturer/Model, etc.

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.

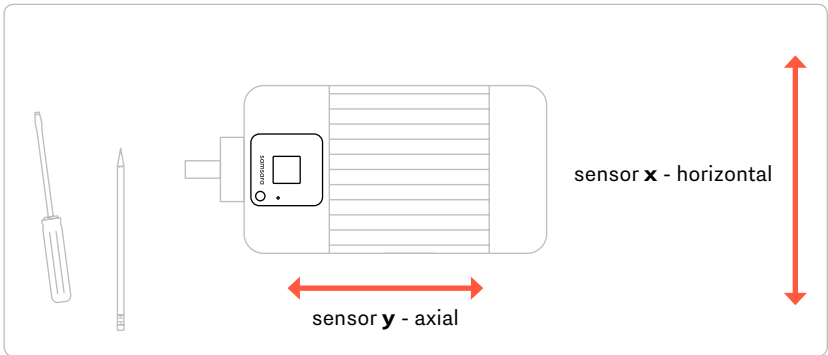
3 Plan Sensor Orientation

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.

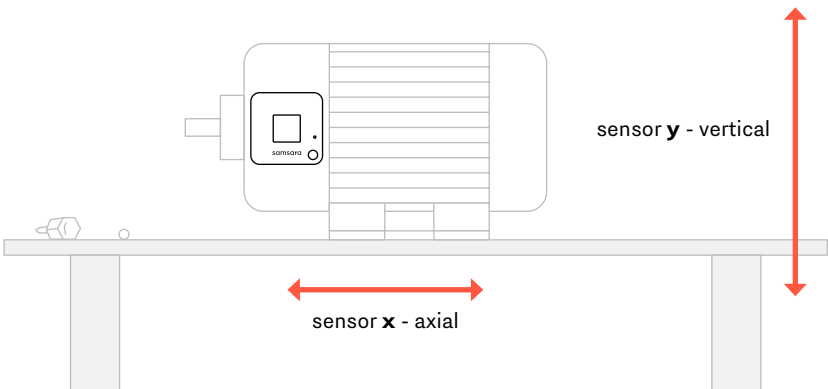
HM11 Internal Axes



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**)

Activate your Samsara hardware by adding their hardware identifiers here. A hardware identifier is either serial number (e.g. 'X-XXX-XXX-XXX') or, if a serial number is not provided, a MAC address (e.g. '00:00:00:00:00:00'). To quickly add all devices, simply copy and paste the identifiers from your order confirmation email, or you can find each device's hardware identifier on its label or packaging.

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

Environment Fleet **Industrial** Alerts Settings SupportAnchor

Overview **Machines** Sensors Reports Filters: all SearchD

Machines+ Add a machine configuration

Add Machine

Name

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.

4FA05 IB Fan ⚙

Sensors in Machine

× 4FA05 IB Fan ▾

WUHJ-7SK-8VS

W8X7-CN6-9GW

Name


4FA05 IB Fan

Notes

notes

Machine Location

Custom map location ▾



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.

The screenshot shows the 'Industrial' overview page. At the top, there is a navigation bar with 'Environment', 'Fleet', 'Industrial' (highlighted), 'Energy', 'Alerts', 'Settings', and 'Support'. Below this is a sub-navigation bar with 'Overview', 'Machines', 'Sensors', 'Reports', and a search icon. The main content area is split into two columns. The left column is a list of machines:

- Air Compressor C1 (n) - Running - GOOD (green status)
- Air Compressor C1 (o) - Not Running
- Air Compressor C2 (n) - Running - WARNING (yellow status)
- Air Compressor C3 (n) - Running - ALARM (red status)
- Air Compressor C3 (o) - Not Running

The right column shows a map with several colored dots representing the locations of these machines.

The screenshot shows the detailed view for 'Air Compressor C1 (n)'. At the top, there is a navigation bar with 'Environment', 'Fleet', 'Industrial' (highlighted), 'Energy', 'Alerts', 'Settings', and 'Support'. Below this is a sub-navigation bar with 'Overview', 'Machines', 'Sensors', 'Reports', and a search icon. The main content area is split into three sections:

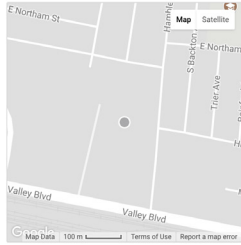
- Map:** A map showing the location of the machine at the intersection of E Northam St and Valley Blvd. A 'Back to all machines' button is located above the map.
- Vibration Analysis:** A horizontal bar chart showing vibration levels over time. The legend indicates: Green: Good, Yellow: Warning, Red: Error. The chart shows mostly green bars with a few red bars around 3 PM on Nov 1.
- Running Hours:** A donut chart showing the total running time. The chart is mostly green, indicating 'Running' time, with a small grey section for 'Off' time. The total running time is 22.37 Hours.



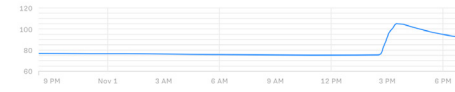
[← Back to all machines](#)

Status **History** Vibration Analysis

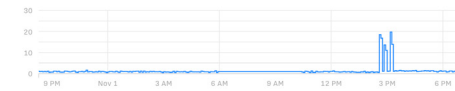
Air Compressor C1 (n) ⊗



Temperature - Air Compressor C1 (n)



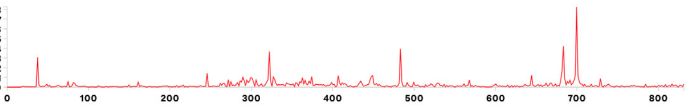
Vibration (RMS Velocity - X Axis)



Vibration (RMS Velocity - Y Axis)

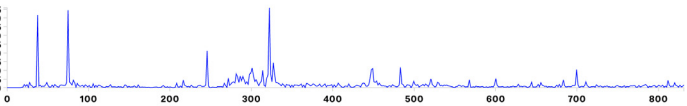
X data

0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00



Y data

0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000



Z data

0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000



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