Coin

Model:Coin_v3

SenseGiz-Coin

A Proprietary mesh network of Sensors for end-to-end IoT solutions

By using COIN sensor nodes, early machine failure can be predicted thus allowing for timely action and preventing a major failure down the line, food and goods losses can be reduced to a larger extent, productivity of your employees can be increased, wait time due to search of assets can be reduced and illegal intrusion can be prevented.

Compact Design

Small and compact design with multiple sensors like Temperature, Humidity, Accelerometer and Gyroscope.

Data Driven Decision

Using COIN, the user can monitor key metrics, analyze past trends, generate reports and analyze data to get actionable insights of the operations. Our machine learning algorithms can also predict failure of your assets.

Wide Applications

COIN can be used for a wide range of applications such as Condition Monitoring, Security solutions for perimeter, Real Time Locating systems for Asset Tracking, Geo Fencing solutions, People tracking and many more.

Custom Deployment

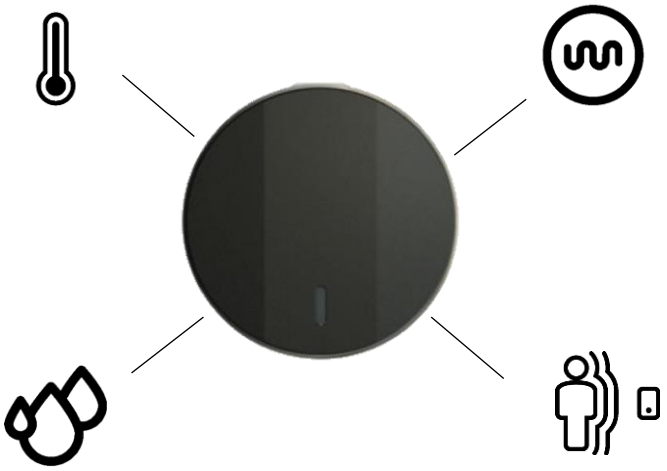
Monitor Temperature, Humidity, Motion, Vibration, Assets and People in real time. Get alerts and notification in real time.

SenseGiz SaaS

Monitor and control all the sensors from our dashboard. Mapping feature allows you to get a birds eye view of your entire facility and monitor assets and other parameters in real time. Powerful Analytics enables our customers to draw valuable insights about assets and COIN sensor data.

SenseGiz

Set no limits...



Compact Design | Custom Deployment | Data driven decisions | Wide Applications | Over the air Updates | Water and Dust resistant

TECHNICAL SPECIFICATIONS

Physical	
Dimensions	Diameter: 39.2 mm, Height 14 mm
Weight	20 gms
Mounting	Adhesive 3M Tape

Connectivity	
Processor	48 MHz ARM Cortex M3
Flash Size	128 KB
RAM Size	8 KB
External Memory	512 KB
Antenna	Frequency 2.4 – 2.5 GHz, 0.5 dBi
Wireless Protocol	Proprietary mesh on top of Bluetooth 5.0
Data Transfer Rate	1 Mbps

Configuration	
Security	AES-128 Security Module
Normal Operations	1.8V to 3.8V
User Interface	SenseGiz Dashboard

Temperature and Humidity	
Operating range	0 to 100% RH
Operating range	-40 to +125 °C
Temperature accuracy	±1 °C
Humidity accuracy	± 5% RH, 0–90% RH
Operating voltage	(1.9 to 3.6 V)

Accelerometer and Gyroscope	
Acceleration range	±2/±4/±8/±16 g
Angular rate range	±125/±250/±500/±1000/±2000 dps

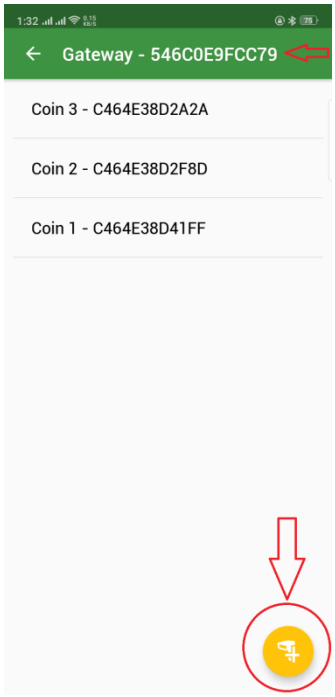
Power	
Battery Life for CR 2477 Lithium 3V Battery (Condition Monitoring)	3 Months for 24 Values / day 6 Months for 12 Values / day 12 Months for 6 Values /day
Battery Life D type battery with 16,000 mah (Condition Monitoring)	48 Months for 24 Values / day 24 Months for 48 Values / day or 1 value per 30 minutes. 12 Months for 96 Values /day or 1 value per 15 minutes.

For asset/people tracking, battery will last for 6 months.

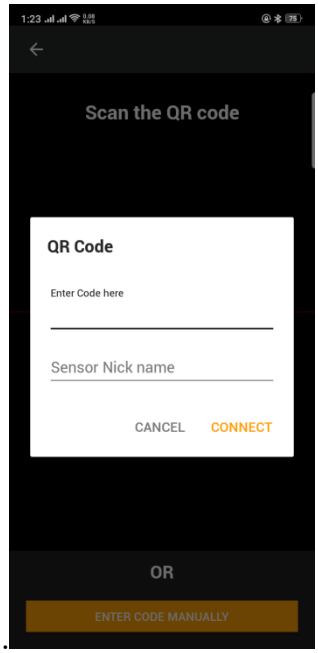
Next Step is to add Coins to the Gateway

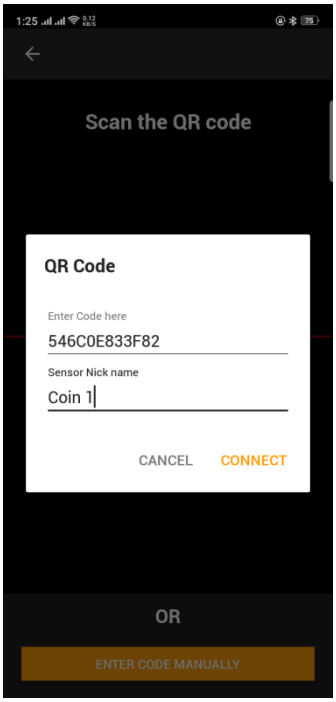
Step 1 : Select your Gateway Say Ex 546C0E9FCC79 is your Gateway id click on it.

Step 2 : Click on the + marker seen at the bottom of the page .



Step 3 : Enter the Coin BLE address and nick name for Coin and then click on connect. Here the coin should be power with 3v power supply and should be next to you. Once you hit connect green led on coin glows and it adds to your gateway. Repeat all 3 steps to add each individual Coin.





The coin registered on a server through the SenseGiz Coin app does not appear on the dashboard directly. For the coin to be displayed on the dashboard, please follow the below steps :

1) Open MQTT-Spy. You can download it from https://github.com/eclipse/paho.mqtt-spy/wiki/Downloads
2) Click on Connections --> New connection
3) Add the server IP(the one on which the coin is added) in the Server URIs text field.
4) Click open connection and then Ok. A green tab will be opened.
5) Under the Publish Message :
Topic : registereddeviceid
Data : <Coin Mac><Device Id>
(Example: If coin Mac address is 546C0E7B8C75 and the device id is 01 then the Data field will be 546C0E7B8C7501)
6) Click on Publish. (only once)
7) Refresh the dashboard page to see the new coin added.

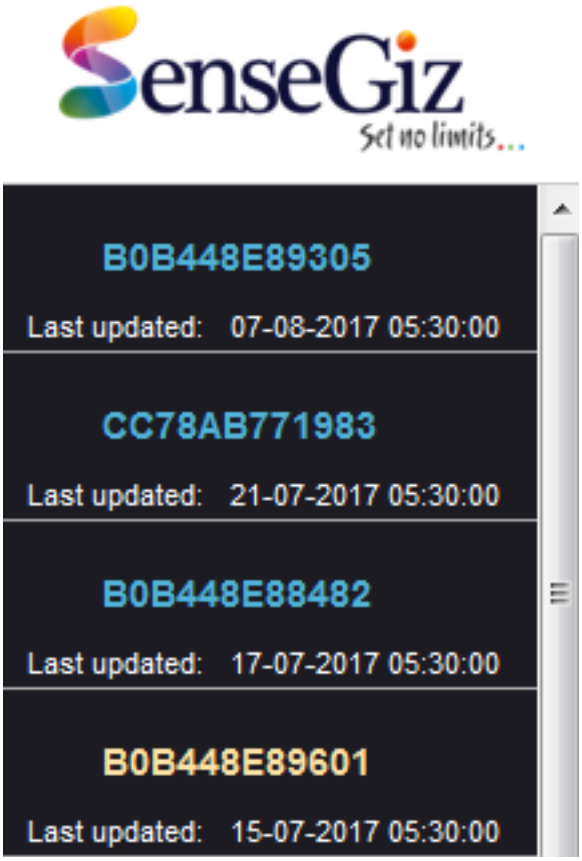
NOTE:
1) Above steps are to be followed after the coin is added using the app.
2) Please do not add the same gateway on the same server twice.
3) If there is gateway that is already added to a different user, delete it first n then add again to a different user.
4) Make sure that the data that you enter in Step 5 above is correct.

How to use the COIN dashboard

The dashboard has two sections.

On the left, below the SenseGiz logo is a list of the Gateways registered to the user, displayed in black.

Screenshot



Click on any gateway to view COIN data on the right.
On the right(screenshot below), the table view of different sensors of each COIN registered to a particular gateway.
The sensor data is categorized in different tables as accelerometer, gyroscope, temperature, humidity and streaming.

Accelerometer

Sl. No	Nick Name	Threshold	Value	Get Current Value	Last Updated	Set Threshold
1	Coin2	low	1.3	GET	20-01-2018 18:07:33	1.125 SET
2	Coin2	high	6.1	GET	20-01-2018 17:58:21	3.5 SET
3	Coin1	low	1.5	GET	20-01-2018 17:51:38	1.125 SET
4	Coin1	high	10.9	GET	20-01-2018 17:48:43	3.5 SET

Gyroscope

Sl. No	Nick Name	Threshold	Value	Get Current Value	Last Updated	Set Threshold
1	Coin2	low	10	GET	20-01-2018 17:58:11	10 SET
2	Coin2	high	550	GET	20-01-2018 17:52:50	300 SET
3	Coin1	low	220	GET	20-01-2018 17:52:34	100 SET
4	Coin1	high	500	GET	20-01-2018 17:48:49	300 SET

Temperature

Sl. No	Nick Name	Threshold	Value	Get Current Value	Last Updated	Set Threshold
1	Coin2	high	29	GET	18-01-2018 17:01:05	70 SET
2	Coin1	low	29	GET	18-01-2018 16:26:03	5 SET

COIN Data

What does each row on the COIN dashboard mean?

The columns:

Sl. No	Nick Name	Threshold	Value	Get Current Value	Last Updated	Set Threshold	Set Stream

1. Sl.No: A serial number for reference.
2. Nick Name: The nick name given to the COIN during registration. Example: If you have placed COIN 1 in your Living Room, you can nick name it Living Room for easy understanding.
3. Threshold: This refers to the LOW or HIGH threshold value of the particular sensor.
4. Value: This is the current/last updated value of the sensor.
5. Get Current Value: Click this button to retrieve the specific COIN sensor's current value.
6. Last Updated: Date and time of the latest data received from the COIN.
7. Set Threshold: Set threshold for the specific COIN sensor.
8. Set Stream: Find out how to set the streaming interval.

How to Get the Latest COIN Sensor Value

Each COIN sensor data can be retrieved using the GET button

Gyroscope

Sl. No	Nick Name	Threshold	Value	Get Current Value	Last Updated	Set Threshold
1	Coin2	low	100	GET	24-01-2018 12:32:19	10 SET

Once the COIN responds back with the latest value, it can be viewed on the table with the latest value and timestamp and is also updated on the Recent Updates Windows.

Recent updates:

Coin2-Gyroscope Low-Value-100-Updated on-24-01-2018 12:32:19

Threshold

Let us take a look at what LOW and HIGH represent and how their behaviour affects the functionality of the dashboard.

Each sensor has a LOW threshold and a HIGH threshold.

Sl. No	Nick Name	Threshold	Value	Get Current Value	Last Updated	Set Threshold
1	Coin2	low	1.3	GET	20-01-2018 18:07:33	1.125 SET
2	Coin2	high	6.1	GET	20-01-2018 17:58:21	3.5 SET

LOW: The COIN sensor will communicate data to the cloud dashboard whenever the sensor value drops below the LOW threshold.

Example: Consider we set the LOW temperature threshold of COIN 1 to 20 degrees.The COIN will communicate data to the cloud if the COIN senses a temperature below 20 degrees.

High: The COIN sensor will communicate data to the cloud dashboard whenever the sensor value goes above the HIGH threshold.

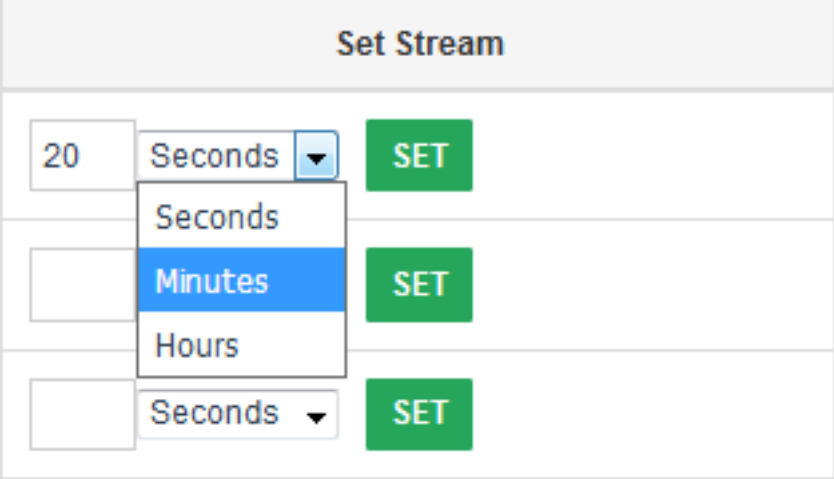
Example: Consider we set the HIGH temperature threshold of COIN 1 to 30 degrees. Here, the COIN will communicate data to the cloud if the COIN senses a temperature above 30 degrees.

When SMS and Email alerts are enabled, the cloud sends emails and SMS when the COIN sends data regarding threshold changes for each sensor based on user settings.

Set Stream

Each COIN can stream temperature and humidity data as per custom user settings

Streaming rate can be set using the set stream option on the dashboard in the stream Table.



Streaming rate can be set in either Seconds, Minutes or Hours.

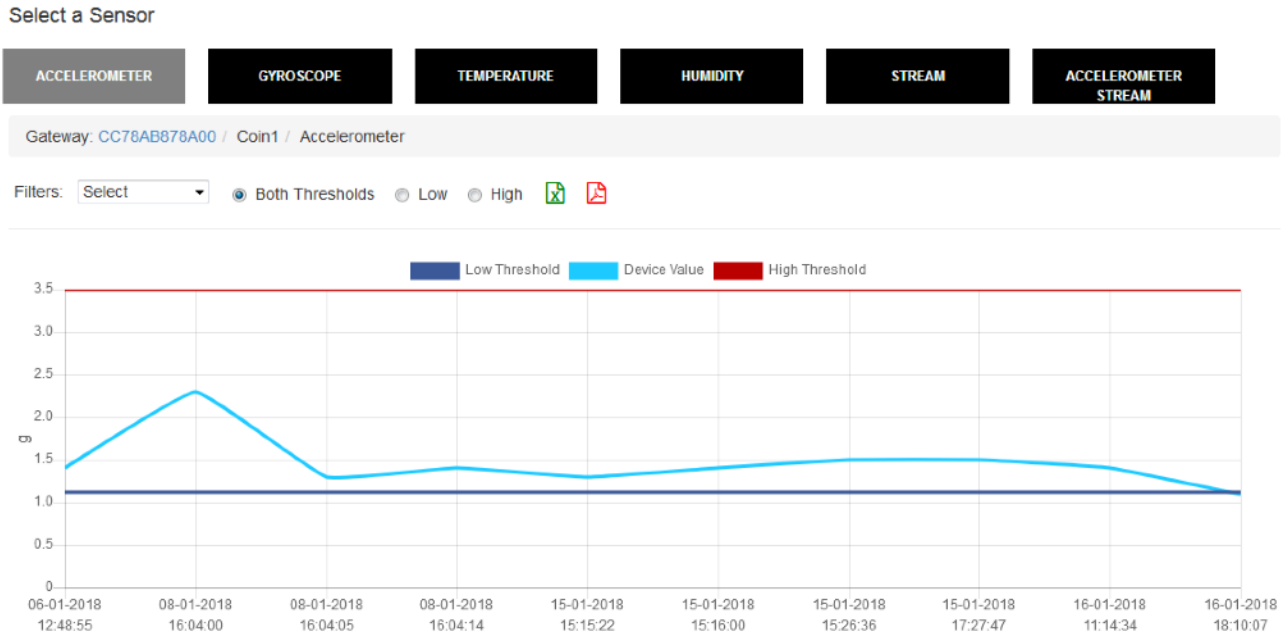
Range of Values supported by COIN sensors

Sensor	Minimum Value	Maximum
Accelerometer	0.001 G	16 G
Gyroscope	1 RMS	200 RMS
Temperature	-40 ℃	125 ℃
Humidity	1%	100%

Analytics

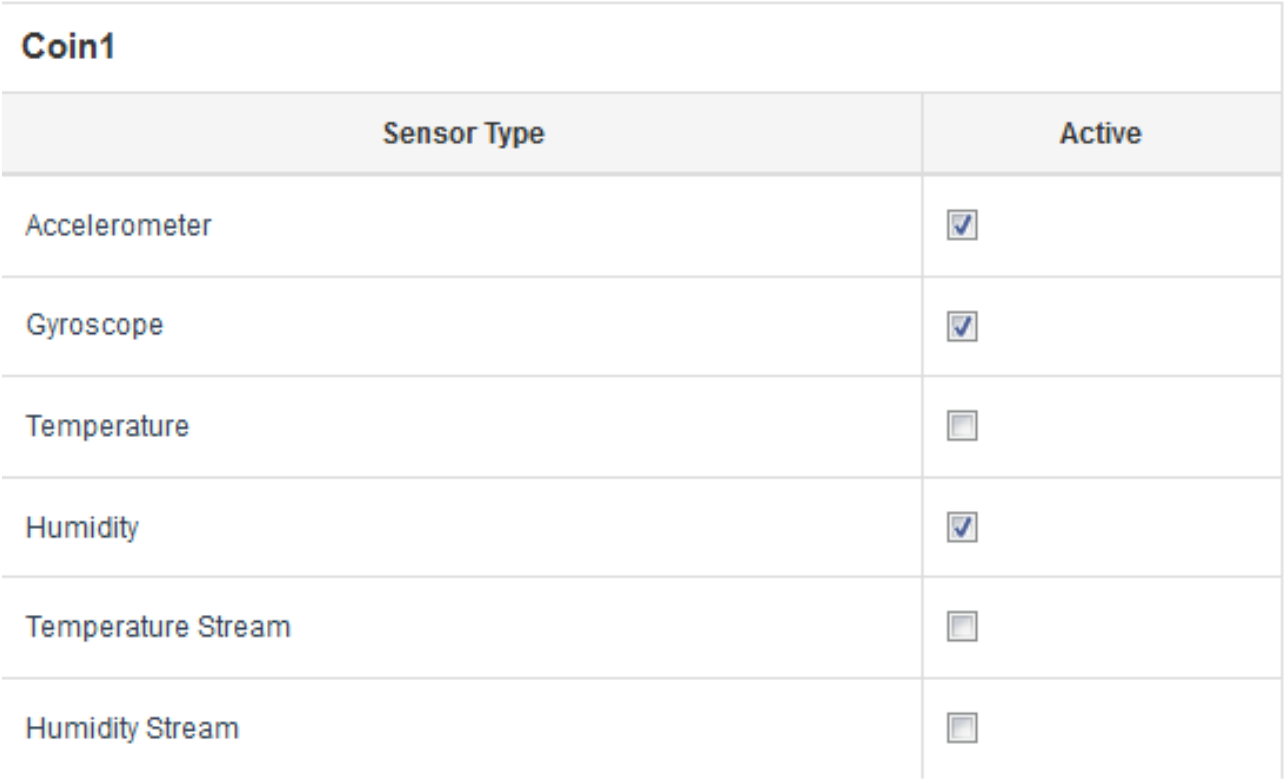
You can view the graphical representation of the values received for each sernsor of a particular coin.

Graph shows the LOW threshold, HIGH threshold and the device value of that sensor.



You can also disable or enable a sensor for a particular coin. If a sensor is disabled, the coin will stop sending the values of that particular sensor.

Example: The below image shows that Acceleromter, Gyroscope and Humidty of a Coin is enabled i.e., only these 3 sensor values will be received from that particular coin.



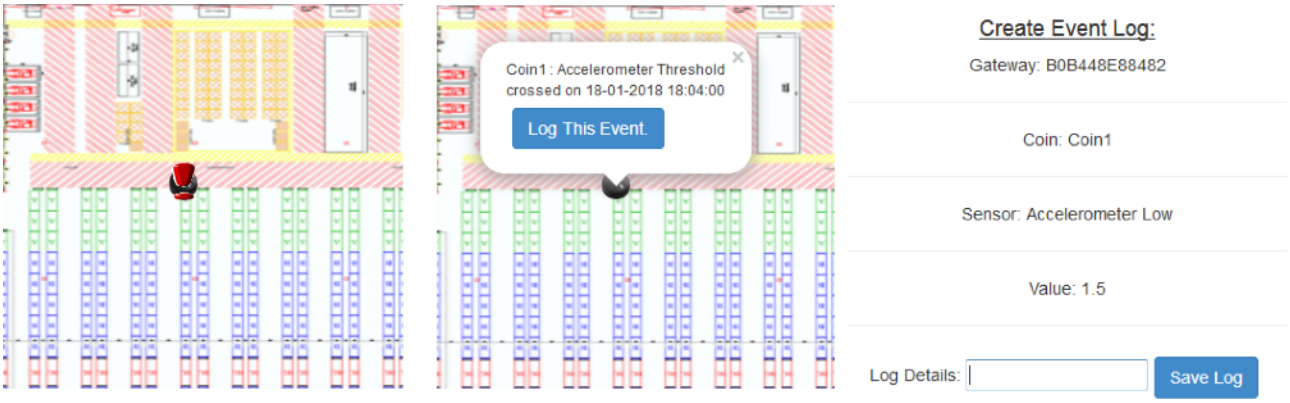
Coin1

Sensor Type	Active
Accelerometer	☑
Gyroscope	☑
Temperature	☐
Humidity	☑
Temperature Stream	☐
Humidity Stream	☐

Map Centre

You can visualise COIN activities on virtual location maps. All you need to do is upload the floor plan image and then drag and drop the markers to point to the physical location of the COIN.

Monitoring page shows the real time alerts on the indoor map. You can also log the event for future reference.



FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.