
User Manual

Connected scale for hives



Index	Date	Modifications
A	02/07/2020	Initial

► - DESCRIPTION ◀

The product is composed of two H shaped aluminium structures assembled using a weight sensor (load cell) and wired to a connected measuring unit.

The whole product acts as a scale with the following main characteristics:

- Measurements: 50 x 43 x 14 cm
- Total weight: 6.9 kg
- Protection rating: IP67
- Internal 2700 mAh lithium battery
- Embedded temperature sensor

Detailed characteristics:

Function	Characteristics	Value
Weighing	Range	0 to 300 kg
	Maximum tolerated weight	900 kg
	Precision	± 20 grams
	Frequency of measurements	1 measurement every hour
Temperature sensing	Range of measurements	-20/+70 °C
	Precision	±0.5°C
	Frequency of measurements	1 measurement every hour
Power consumption	Measurements without transmission	
	Transmission	
Battery life	Typical	2 years*
Alerts	Transmission delay	0 to 10 minutes depending on the delay since the last transmission
	Type	Weight and Temperature
Operating temperature	In function	-20/+70°C
	In storage	-30/+85°C

- : for one radio transmission every hour

This system is used to monitor the weight and temperature of a hive remotely.

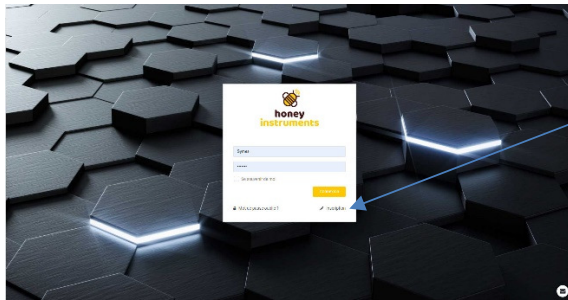
It is used to detect and transmit alarms triggered on threshold or variation of weight and temperature measurements.

The product functions using an 868 MHz Sigfox radio network.

▶ - INSTALLATION AND SET UP ◀

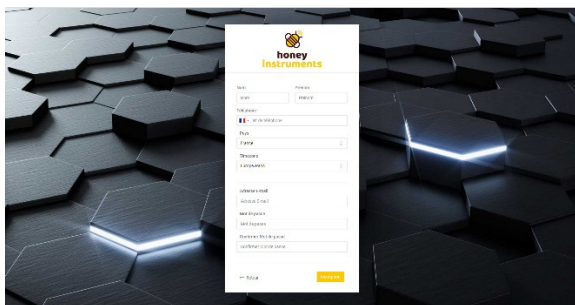
On your computer:

Create a Honey Instruments account (if you don't have one) on the ruches.symescloud.com website by clicking on "Sign up"



Click on "Sign up" to create an account

Fill up the registration form then click on "registration"

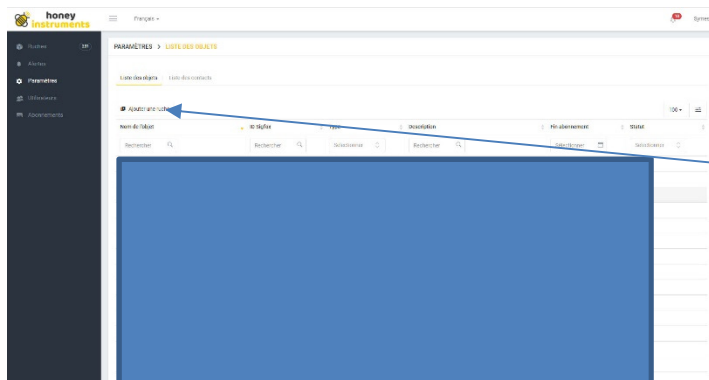


You will receive a welcome email to confirm your registration

If you already have an account, enter your username and password. If you forgot your password you can click on the "Forgot your password?" button, then enter your email address and click "Reset password".

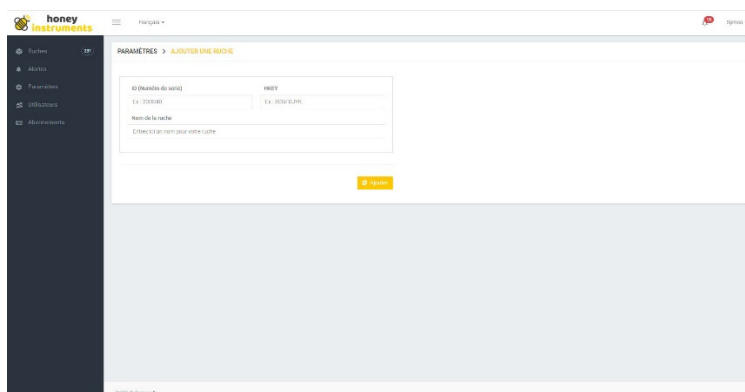
Adding a connected weighing scale:

When you are logged in to your account, click on "Settings" on the left sidebar. Then click on the "Add a hive" button.



Cliquer sur ajouter une ruche

Enter the ID number and HKEY of your weighing scale, they can be found on the connected measuring unit as shown below.



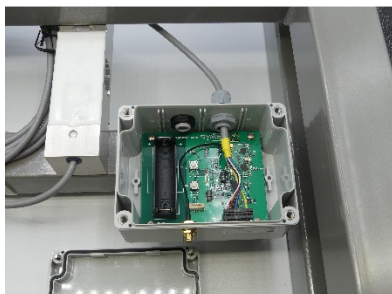
You can add a name for your weighing scale before validating. Then click on “Add” to validate.

You can add multiple weighing scales in one account.

On your weighing scale:

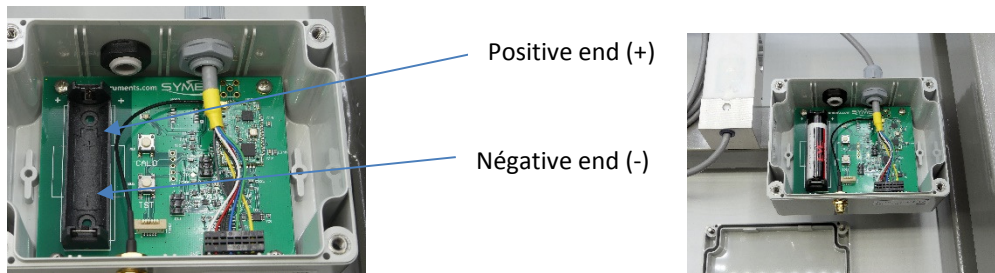
Place your weighing scale horizontally. Use a suitable support (pallet, cinderblock, metal rails).

Unscrew the cover of the connected measuring unit.



Insert the battery in the battery holder. The LED turns green for 1 second.

⚠ Ensure the battery polarity is correct!



Screw the antenna on the magnetic base. Then screw the cable of the magnetic base on the side of the measuring unit.



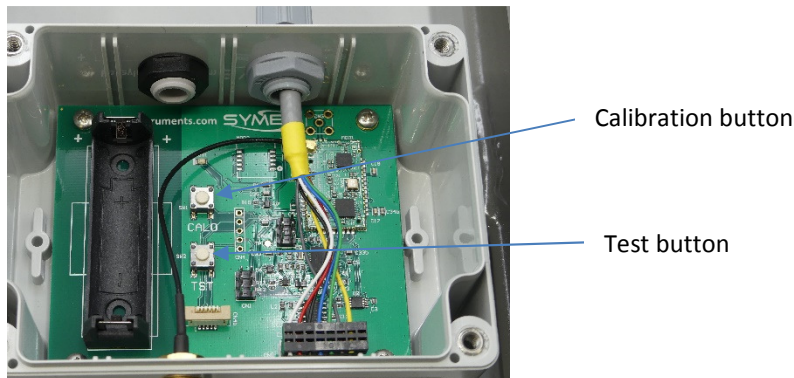
Calibration:

If this is the first time you use this weighing scale, press the CALO button.

Do not put anything on the scale and do not lean on it.

→ *This operation calibrates the scale for no load.*

→ *This operation MUST be executed before using the weighing scale for the first time.*



The LED turns green for 2 seconds then flashes red once.

Testing:

Press the TST button

→ *This operation sends a first message immediately. It allows to test the radio network connection. Log on to your account to verify that you received this first message.*

The LED turns green during the transmission (approximately 6 seconds) then flashes green twice to indicate that the transmission is over.

Put the cover back on top of the measuring unit and screw the locking screws back.

You can now put your beehive on your weighing scale.

Side notes:

- *The buttons only function for 15 minutes following the battery insertion*
- *To reset a weighing scale: take out the battery, wait 30 seconds, and put the battery back in*
- *The electronic case must not be directly exposed to sunlight*
- *The electronic case must not be submerged and must not contain water*
- *Le weighing scale is designed to only work with the battery sold by your supplier*
- *The batteries used ARE NOT RECHARGEABLE*

You can now monitor the weight of your hive !

▶ - FUNCTIONING ◀

Le product has a single functioning mode in which it sends a message every hour with the weight and temperature values.

There are two types of messages

Automatic messages:

Every hour, the product sends a message containing the date, hour, weight value, temperature value, and two indicators of radio signal quality. One indicator is a bar graph from 1 to 5 bars (1 is poor quality, 5 is excellent), the other is the number of stations that received the message (more stations means a better signal).

Alert messages:

Alerts can be configured on the cloud platform.

Two types of alerts can be configured:

Weight values alerts: low threshold, high threshold, and variation

Temperature values alerts: low threshold, high threshold, and variation

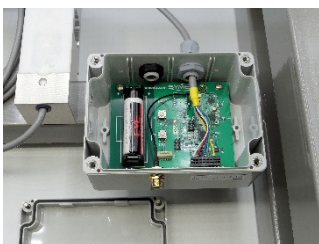
Alerts can be associated with notifications using email (free) and text messages using SMS (extra fee).

Alert messages are characterised an **Alert** tag and the **⚠** icon placed after the weight or temperature value.

▶ - MAINTENANCE ◀

The only maintenance operation that can be done by the user is a battery replacement.

Unscrew the 4 screws of the cover of the measuring unit.



Take out and replace the 3.7V 2700mAh Lithium battery.



- The battery is not a standard 1.5V alkaline battery but a 3.7V Lithium
- Ensure the battery polarity is correct and corresponds to polarity indicated on the battery holder

Put the cover back on top of the measuring unit and screw the locking screws back.