SOLEM
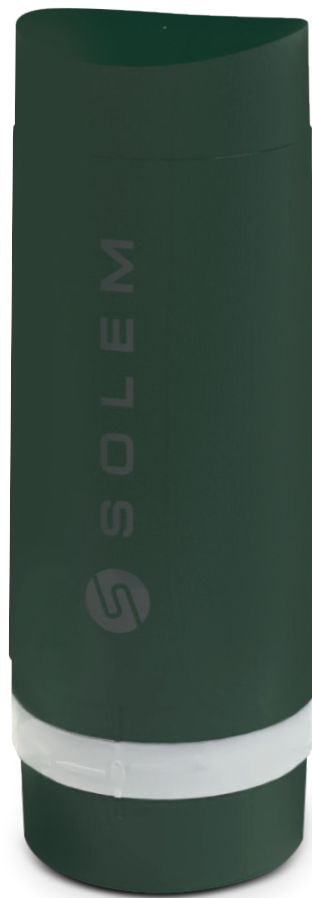
THE CONNECTED IRRIGATION EXPERT

LR-BST-REACT

The 4G / LoRa™ GATEWAY

LoRa™

Bluetooth®

PRESENTATION

The LR-BST-REACT is a 4G gateway connected to the internet which makes it possible to retrieve programming data from the MySOLEM application or from the MySOLEM.com platform and transmit them to the LoRa™ modules used in your installations.

It communicates by long range LoRa™ radio with a maximum of 25 modules such as LR-IP, LR-IP-FL, LR-AG, LR-IS-FL irrigation controllers or LR-FL watermeters module and LR-MS sensors module .

When combined with an LR-MS (sensor module) or LR-FL (water meter module, it allows the feedback of field data and alerts so that the user remains connected to their installations.

It can be powered by 220VAC power supply or a solar panel, and has a backup battery to ensure the continuity of its functionning for 3 days without any power supply.

INFORMATIONS

The frequency of 4G data communication :

Thanks to its SIM card, the LR-BST-REACT communicates periodically over 4G with the MySOLEM platform in order to :

- Transmit the informations to LR-IP / LR-AG / LR-IS-FL / LR-IPFL.
  (ex: irrigation programs, manual controls, ON / OFF, etc ...)

- Feed back information from LR-FL / LR-MS
  (eg: battery level, water volumes, sensor alerts, etc.)

This frequency varies depending on the subscription (from 2 to 24 times per day). Communication hours are configured at the time of choice and can be modified on demand.

To validate the SIM card subscription, use the document in the LR-BST box, to send SOLEM your choice of subscription and your payment.

Once the payment has been received and the SIM card activated, the LR-BST will be operational and will be able to connect to the MySOLEM platform at the requested times.

RECOMMENDATIONS

During the first installation, it may be necessary to charge the LR-BST battery if it has spent a very long time without having had a charge / discharge cycle.

Follow steps 1.1 to 3 to wire the temporary power supply while charging the LR-BST battery for 24 hours.

LR-BST-REACT INSTALLATION

1. ELECTRICAL WIRING OF LR-BST-REACT

Regardless of the power supply or solar panel, the wiring is the same. The connection of the power cable is made by a 2-core cable for which there is no polarity.

- Remove the upper and lower part of the LR-BST-REACT by rotating them.

- Insert the SIM Card (if it is not present).

1.1 POWER SUPPLY CONNECTION

- Drill the grommet located under the lower part of the LR-BST-REACT.

- Pass the cable through the grommet.

- Connect the cable to the green connector. (No polarity to respect)

Power Supply Connection and recommendations ✅

230V ∿   24V⎓

230V ∿

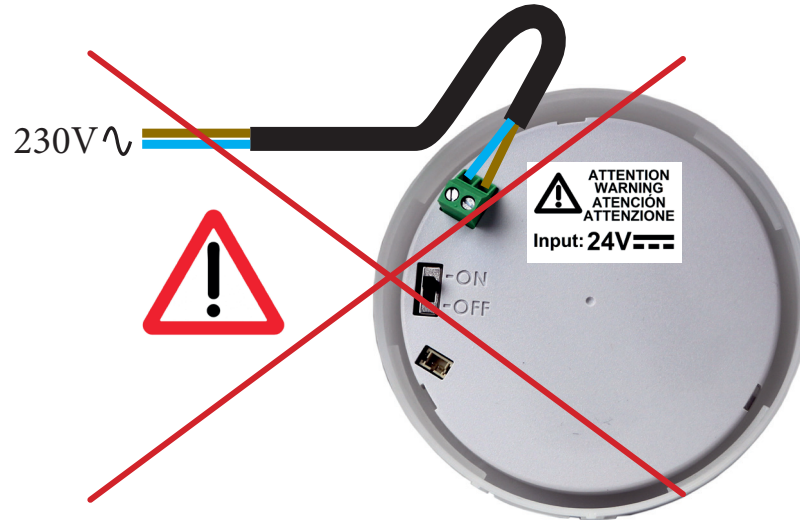## Recommendations of the power supply connection to the electricity network

- Use the power supply supplied.

- Connect the 230Vac input of the transformer to the electrical network, protecting it with a 2A disconnecting circuit breaker.

- Connect the 24Vdc output of the transformer to theLR-BST-REACT using a sheathed cable type H05RN-F 2x0.75mm².

- Place the transformer + circuit breaker assembly in a Class II electrical box.

SOLAR Panel connection ✅

24V⎓
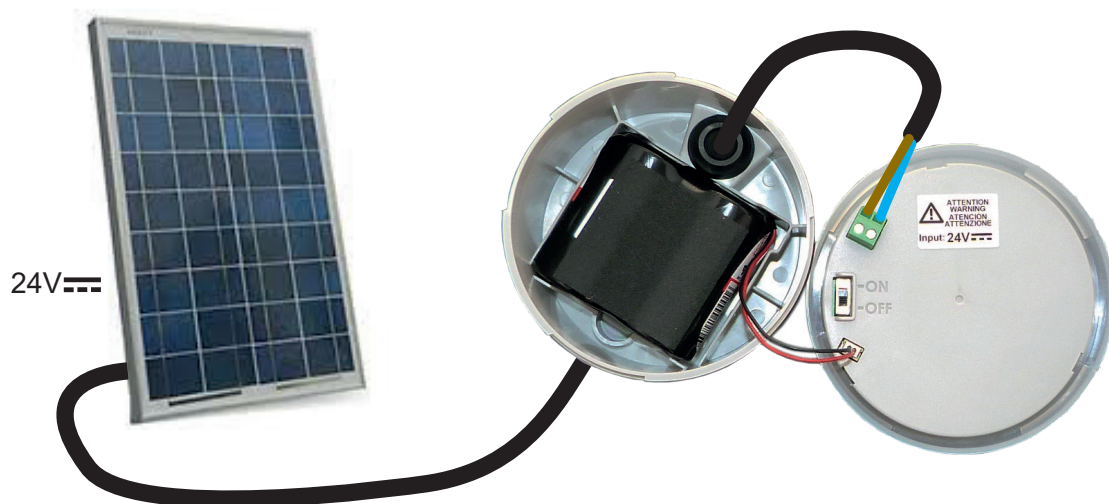
⚠ Prohibited connections

230V ∿

ATTENTION
WARNING
ATENCIÓN
ATTENZIONE
Input: **24V** ▭▭▭

ON
OFF

24V ▭▭▭

230V ∿

230V ∿

ATTENTION
WARNING
ATENCIÓN
ATTENZIONE
Input: **24V** ▭▭▭

ON
OFF

230V ∿

230V ∿

24V ▭▭▭

24V ▭▭▭

ATTENTION
WARNING
ATENCIÓN
ATTENZIONE
Input: **24V** ▭▭▭

ON
OFF
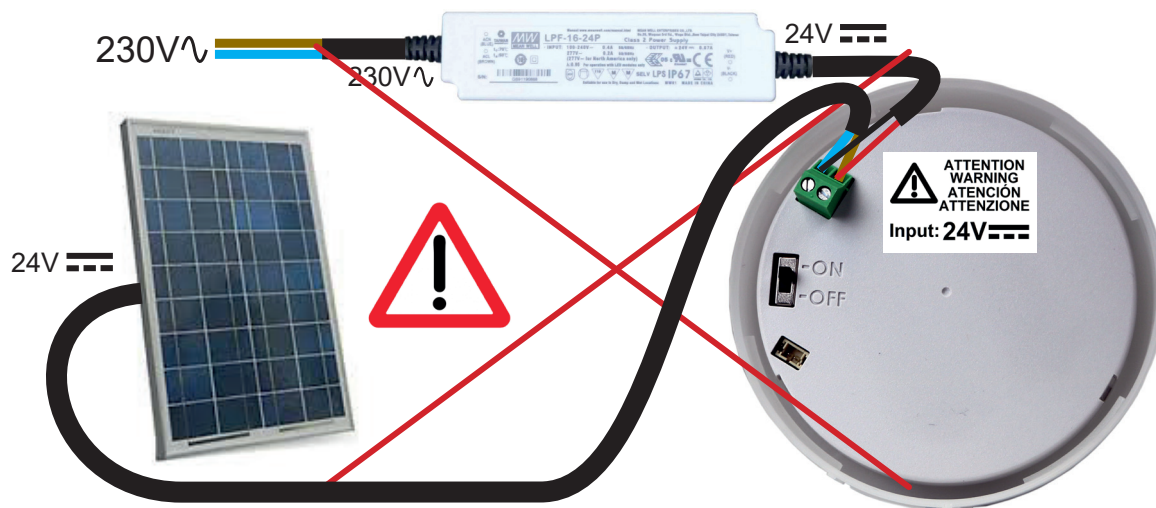
1.2 BATTERY CONNECTION

• Branchez la batterie.
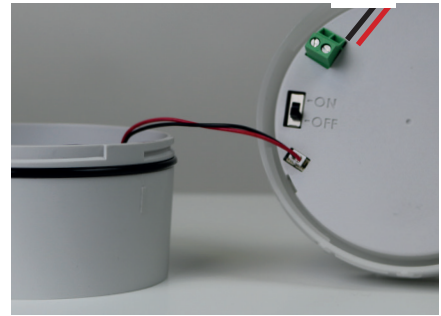
• Set the Switch to ON.
When starting up the LR-BST-REACT connects to the internet network and thus to the MySOLEM platform. (insofar as you have requested the activation of the SIM card).
The LEDs will be green for one hour after startup to let you know the product is operational.
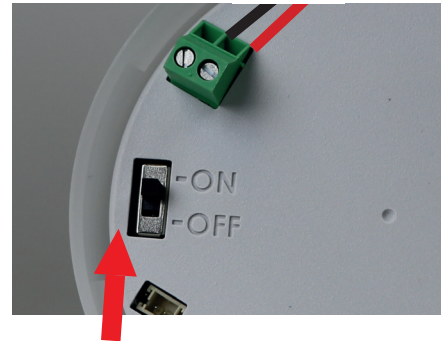
2. REASSEMBLY THE LR-BST-REACT

• Adjust the length of the cable by pulling it.
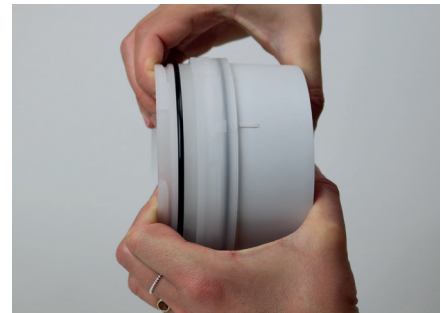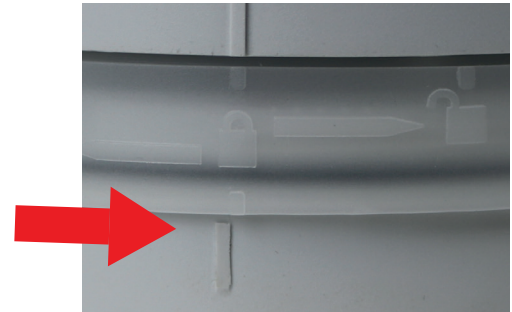
• Fit the parts together by applying strong pressure and lock the 2 parts.

• Adjust the cable.
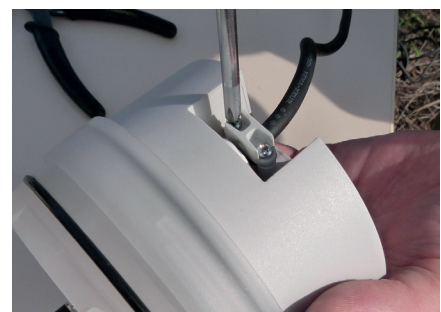
• Tighten the anti-traction.

3. CLOSE THE LID OF THE LR-BST-REACT

• Close the lower and upper parts using
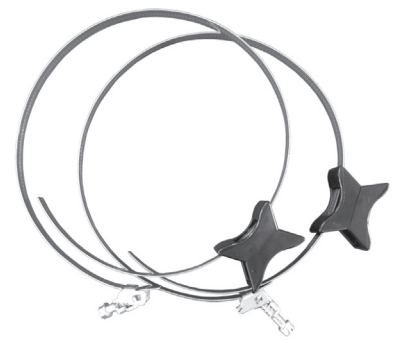 the locking pictograms.

POLE MOUNTING

• Prepare the bracket with its 2 collars.
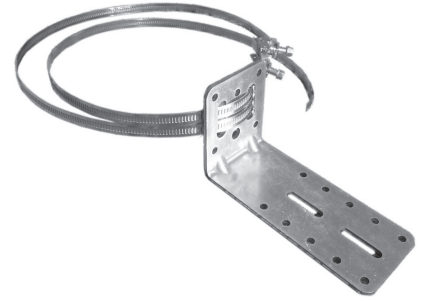
• Prepare the 2 LR-BST supports with 2 collars.

• First fix the bracket on the pole.

• Then fix the 2 LR-BST supports
  on the pole with the 2 collars.

• Do not fully tighten the collars
  to allow you to adjust The LR-BST-REACT.

9

• Place the LR-BST-REACT on the bracket and se-
cure
  it with the clamps.

  If necessary readjust the height of the 2 plastic
  supports as well as the position of the square.

• Once properly positioned, correctly tighten
  all clamps

  Cut off the excess collar

NOTE: The LR-BST-REACT can also be mounted on a wall.

SOLAR PANEL ASSEMBLY

The solar panel can be mounted on the wall or on a pole 40 to 60 mm in diameter, or with the addition of jaws on a pole of 60 to 120 mm.

FOR THE DETAILS OF THE ASSEMBLY OF THE PANEL AND THE FLANGES, REFER TO THE INSTRUCTIONS PROVIDED IN THE BOX OF BINDINGS

Jaws for 60 to 120 mm posts

Nuts

Lock nuts
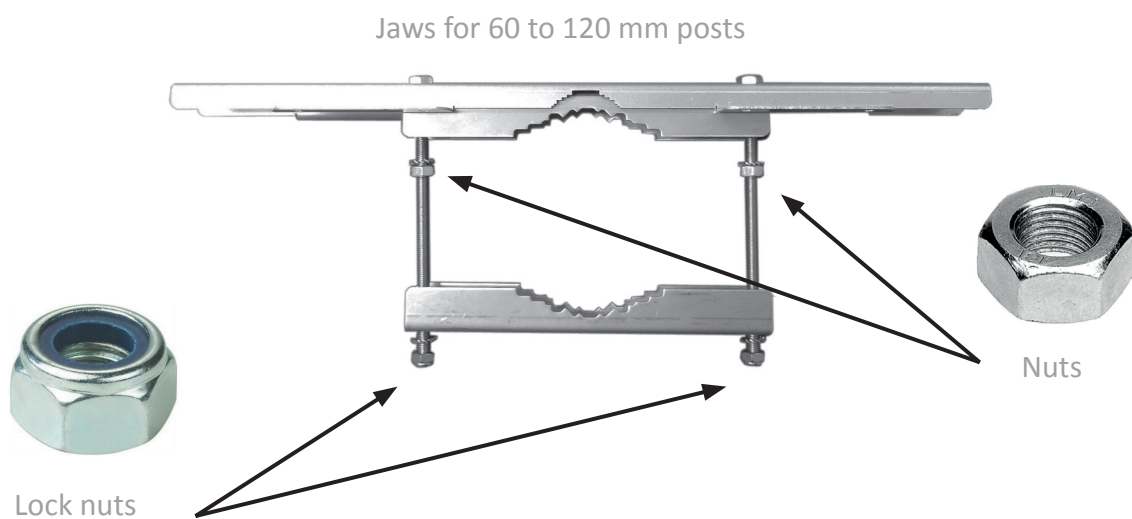
SOLAR PANEL ASSEMBLY
HIGH WIND FIXATION

The Solar panel has another type of attachment sold apart from the so-called "high wind" for exposures of the solar panel to winds above 50km / h.

FOR THE DETAILS OF THE ASSEMBLY OF THE PANEL AND THE FLANGES, REFER TO THE INSTRUCTIONS PROVIDED IN THE BOX OF BINDINGS.

SUMMARY TABLE OF THE COMMUNICATION PERIODICITY OF THE LoRa™ RADIO DEPENDING ON THE BATERRY STATUS

Power supply mode	Battery Status	Periodicity	
		LoRa™	4G Plateform (Internet)
230VAC Power supply or Solar panel	Ended Charge	Communication corresponding to the chosen subscription : 2/12 or 24 communicationsper day	
230VAC Power supply or Solar panel	Batterry charging		
Battery			
Battery			
Battery			
Battery			
Battery		Out of service until the battery has regained a sufficient voltage level	
Battery			

LED STATUS

The LEDs are functional for one hour when starting the LR-BST-REACT.

Beyond this period the LR-BST-REACT goes into standby mode.

• **Green LED :** fonctionnement normal.

• **Flashing green LED :** LoRa™ communication.

• **Red LED flashing 3 times :** Loss of GSM network.

• **Red LED flashing twice :** Hour alarm:
  The LR-BST-REACT is out of date.
  If your product is connected to the MySOLEM platform, the time update
  will be automatic.
  Otherwise, connect to the LR-BST-REACT from the MySOLEM application
  and verify that the message "Synchronization OK" is displayed.

• **Flashing white LEDs :** Searching for the best network.

• **Flashing blue LEDs :** Platform communication.

MySOLEM APP DOWNLOADING

1. On your Smartphone and/or tablet, go to «**App Store**» or «**Google Play**».

2. Search «**MySOLEM**» on the search bar.
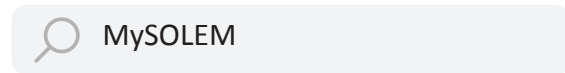
MySOLEM

3. Once found, Download **MySOLEM App**.

GET   INSTALL

4. Once Installed, activate the Bluetooth® of your smartphone and/or tablet

MySOLEM ACCOUNT CREATION

o   Why create a MySOLEM Acount ?

The possibility of remote connection of SOLEM products is not only linked to their connectivity (Wi-Fi, 4G, Sigfox). To allow remote programming of your product, you need a way to identify the product but also the person using it. This is why creating an account allows you to be identified on the MySOLEM platform and to program only the product that belongs to you.

By creating your account on the MySOLEM.com platform or on the MySOLEM application, you will enrich your online experience and have access to many features such as permanent product backup in the event of a telephone malfunction, receipt of alerts, anti-theft and CANOPY function and grouped controls, cluster function for agriculture.

To connect or create an account, launch the MySOLEM application from your smartphone and / or tablet.

1. Go to the "My Account" tab by pressing the icon ⚙ .
2. Follow the steps described on the application

ANTI THEFT FUNCTION

o **What is the anti-theft function :**
The ANTI-THEFT functionality applies to all SOLEM products, even those already installed in the field.
It allows you to remotely deactivate / reactivate any device stolen by a third party.
This function can be used from version 5.15.3 of the MySOLEM application. It is linked to the Bluetooth® security key. Without this key, the thief will be unable to use the product even if it is resetted.

o **Activate the anti-theft function :**
Each time you add a programmer (see the module association section in the application), the MySOLEM application will ask you to activate or not the anti-theft function. Once activated, it will ask you to create a Bluetooth® security key.

You can activate the function after the association of the product by entering the product then on the small pencil at the top right, you will find the anti-theft function to activate.
The 2 activated parameters (security key + anti-theft function) will not prevent the theft, but you will be able to block its use from a distance.

o **Block / reactivate the product :**
To block the product you can do it in 2 different ways :

■ In the MySOLEM application: enter the product, click on the small pencil at the top right and go down to the anti-theft function then deactivate the product.

■　　On the mysolem.com platform : enter your account with your log in, then enter the stolen product, press the forbidden direction and declare your stolen product.

■　　If the product is recovered (because it was simply lost), you can then reuse it by reactivating it.

The objective of this function is both to render the product unusable but to no longer generate interest in stealing SOLEM products. (Inability to use or resell it).
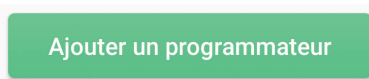The more this function is used, the more the interest in stealing the product will decrease.

LR-BST-REACT ASSOCIATION IN THE MySOLEM APP

1. Verify that the Bluetooth® is activated on the settings of your smartphoner.

2. Launch **MySOLEM App** from your smartphone and/or tablet.

3. Push on :

Ajouter un programmateur   or   +

4. Select the LR-BST-REACT picture
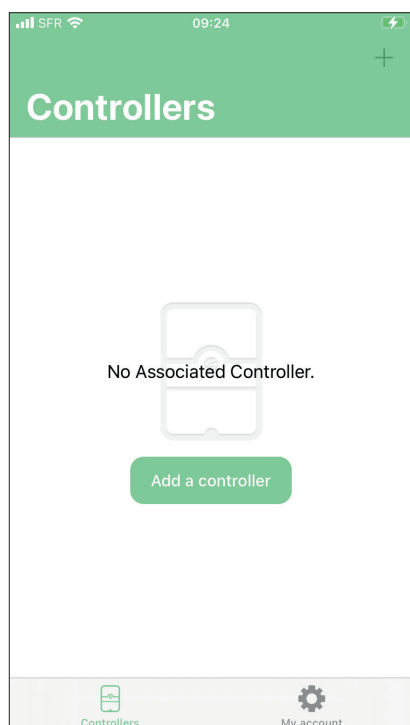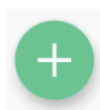
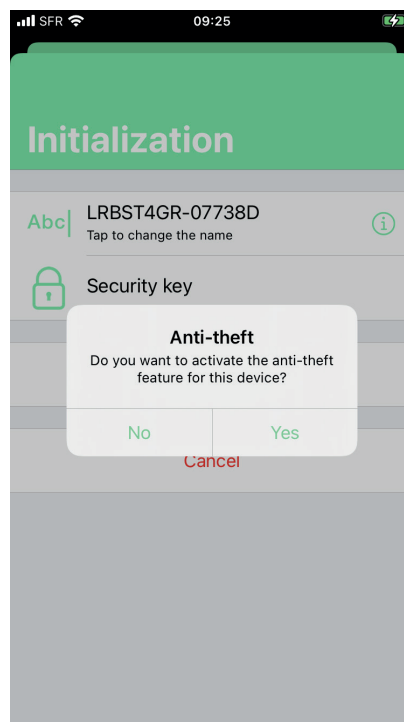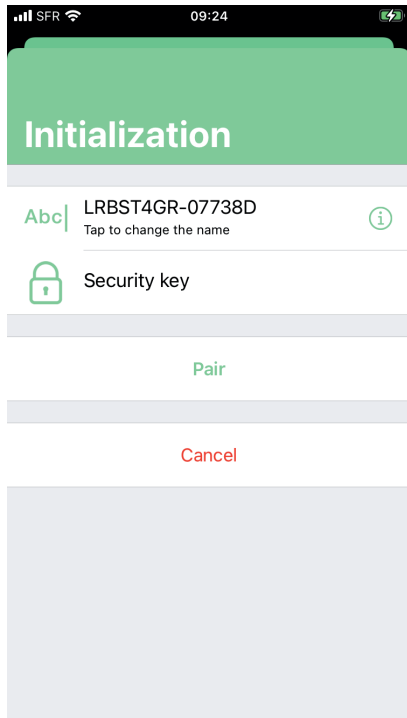No module already installed
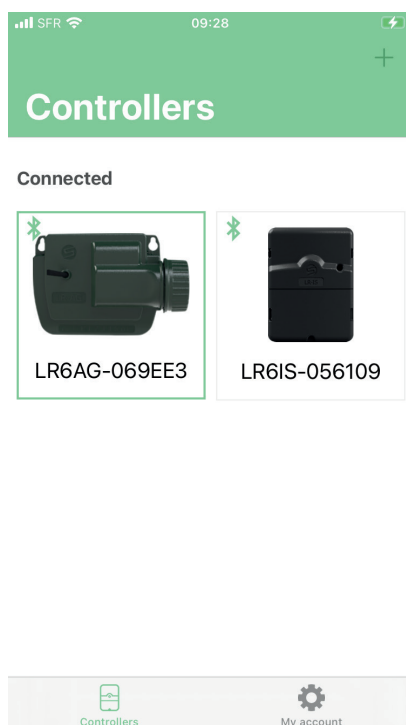
Modules are already installed
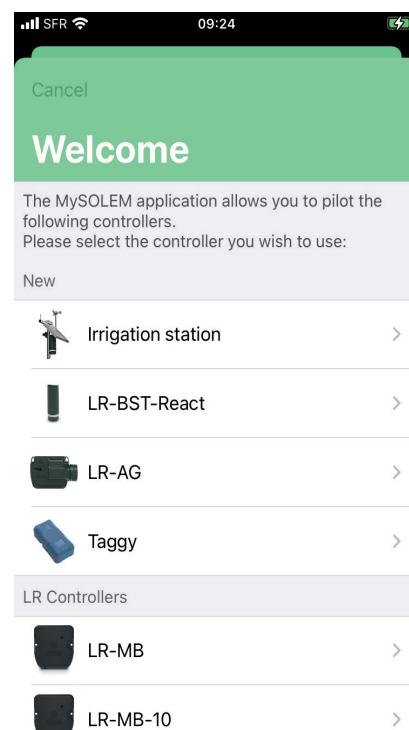
5. Select the required LR-BST-REACT to be installed from the list of the available modules.
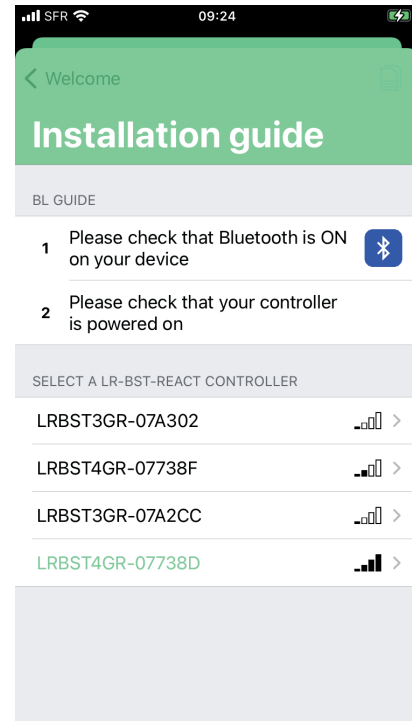
6. Associete your LR-BST-REACT and activate the anti theft if you want to use it.
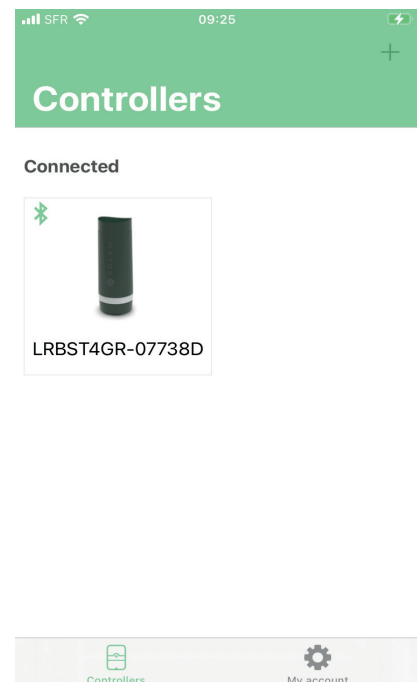
LoRa™ MODULE ASSOCIATION to the LR-BST-REACT

Preamble :

- **The communication periodicity in LoRa™ mode :**
  The frequency of communication of the LoRa™ radio between the modules LR and LR-BST-REACT depend on the LR-BST-REACT power mode and battery charge status. (see table on page 13).
  It also depends on the wakeup of the LoRa™ radio of the LR module (wakeup every 3 minutes for battery modules).

- **Status of LoRa™ radio communication between the modules and the LR-BST-REACT**

  Ces icônes indiquent le moment de la dernière connexion entre le LR-BST-REACT et les modules LoRa™.

Connection < 24 heures

Connection > 10 heures
Changes not transmitted

Connection never done or very long time without communication with the gateway.

PAIRING MODE

If you have powered LR-BST-REACT gateway on solar panel, to associate LoRa™ modules such as LR-FL / LR-MS / LR-IS / LR-IS-FL / LR-IP / LR-IP-FL / LR-AG to the LR-BST-REACT gateway, it must be switched to pairing mode.

Enter the LR-BST-REACT you just linked.
Go to the settings (little pencil at the top right).
Click on the "pairing" mode.
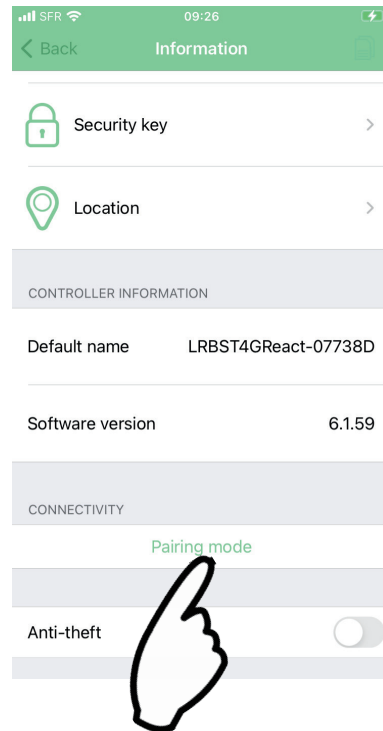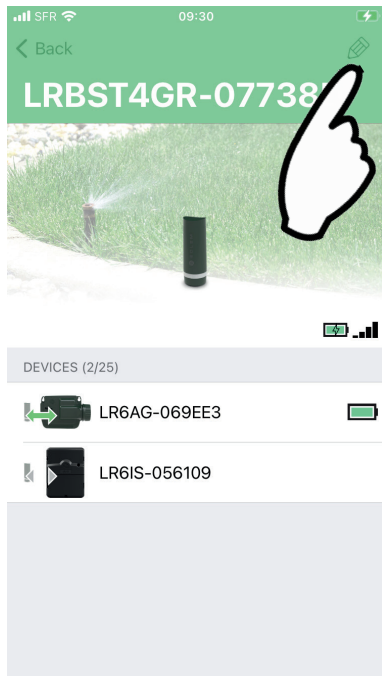
You will activate the LoRa™ radio of your LR-BST-REACT for 1 hour to pair your products.

Example of a radio association between an LR-AG module and the LR-BST-REACT :

You must first have associated your LR-AG module with the MySOLEM application before proceeding with the association of the module on your LR-BST gateway. Refer to the user manual to associate it and then perform the following steps.
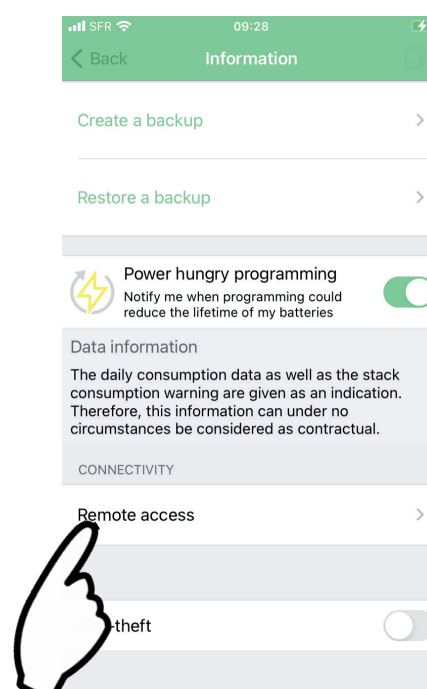
1/ Select the product in the list of modules.

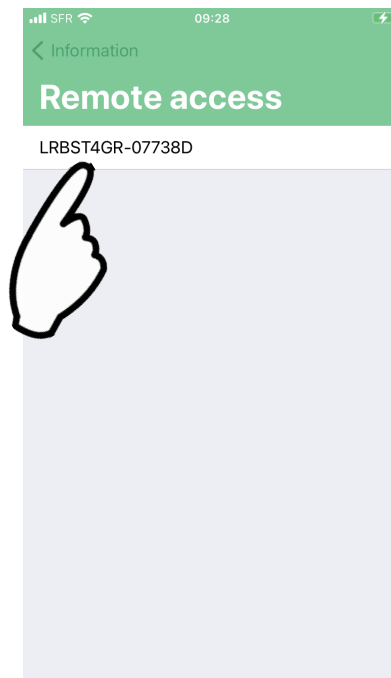Push on on the top right of the screen to access to information of the products.
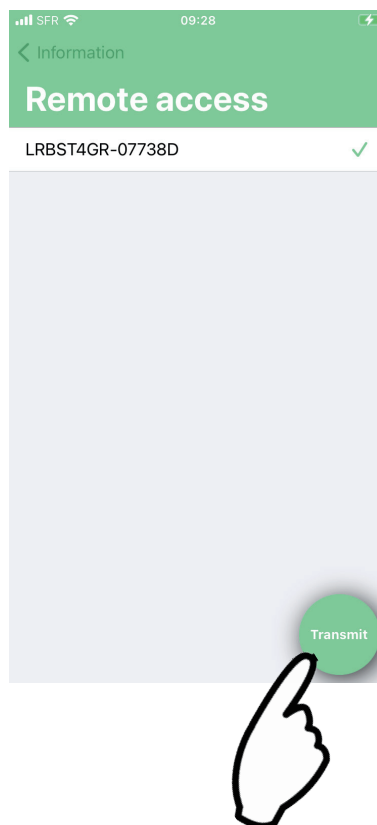
Example avec un LR-AG
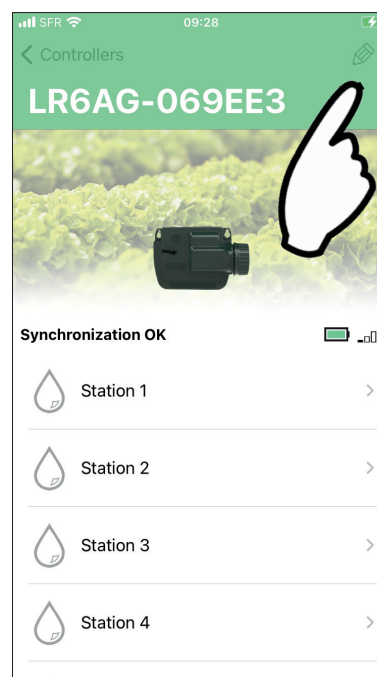
2/ Pusch on « Remote access »

3/ Sélect your LR-BST-REACT

4/ push on send to validate the operation.


Your LR-AG is now associated.

LoRa™ TEST CONNECTION

If the association of the modules is carried out before the final installation of the LR-BST, this connection test can be used to validate the positioning of the latter by going to temporarily install the LR-BST-REACT in its intended location then by going to position a module in each of the manholes to verify good communication with the LR-BST-REACT.

The connection test can also allow you to verify at any time the correct operation of the LoRa™ radio between your module and the LR-BST. (Example: the product fell into the upside-down manhole and no longer communicates with the LR-BST)
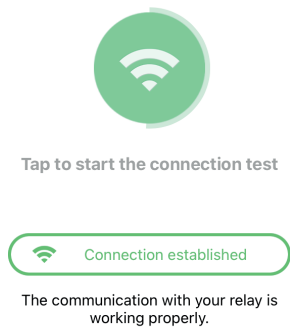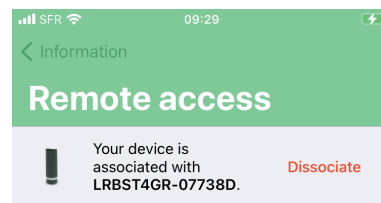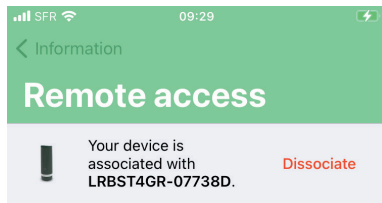
To test the LoRa™ connection, do the following,

Enter the LR module in Bluetooth®, then in the parameters (small pencil at the top right)
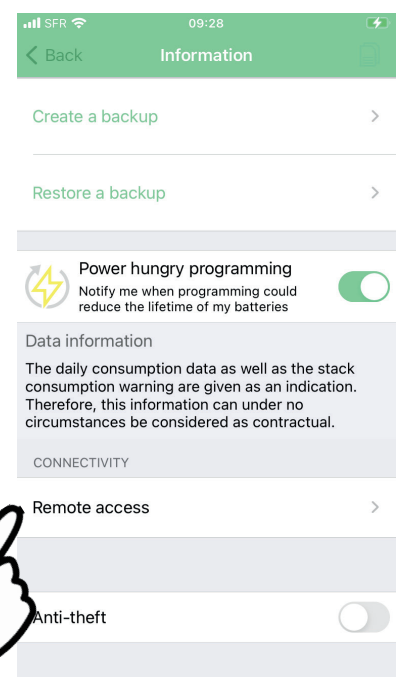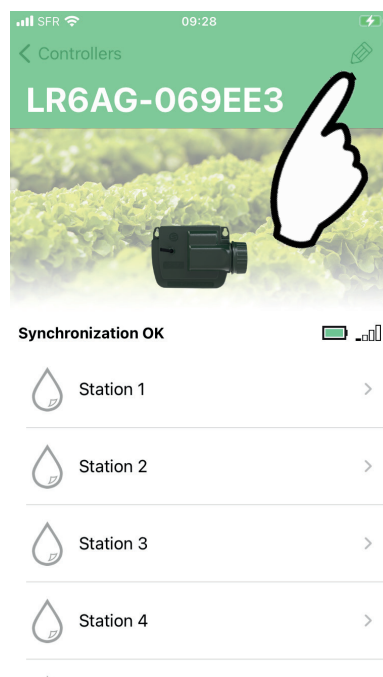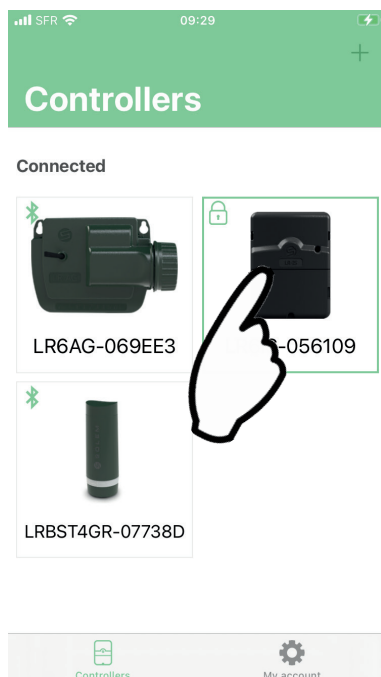
1/ Test the connection LoRa™

2/ The message (📶 Connection established) indicate that the LoRa™ connection betwen the LR-BST-REACT and the module is reliable.

If the connection is not established, a "No connection established" message appears. Repeat this test several times to confirm that the connection cannot be made. If this is the case, it will be preferable to reposition the module.
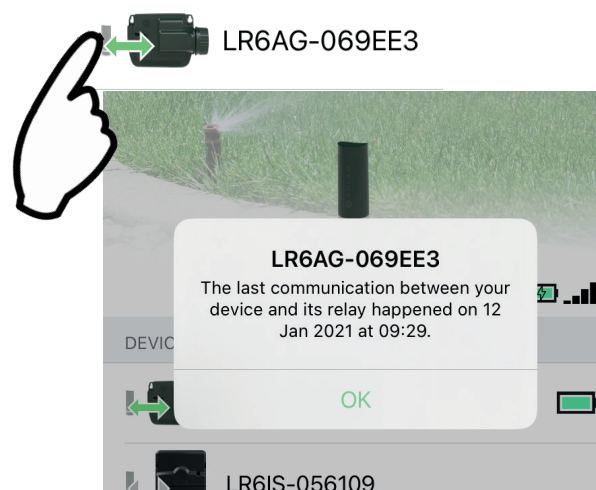
LoRa™ STATUS CONNECTION

These icons indicate when the LR-BST-REACT was last connected to the LoRa™ modules.

 Connection < 5mn

 5mn < Connection < 10mn

 Connection > 10mn
Changes not transmitted

 Connection never done or very long time without communication with the gateway.

By pressing one of the icons you get a message giving the status of the LoRa™ connection.

Example :

LR6AG-069EE3

LR6AG-069EE3
The last communication between your device and its relay happened on 12 Jan 2021 at 09:29.

OK

DEVIC

LR6IS-056109

TECHNICAL CARACTERISTICS

Use conditions :

Allowable humidity : 90% (relative humidity)
Ambient temperature of use of the product : -20°C à 60°C
Warranty : 2 years

Dimensions :

Diameter 115mm x Height 307mm

Power supply :

Power supply unit : INPUT : 100-240V 50/60Hz OUTPUT : 24Vdc 0.6A
Solar panel : 12V 20W
Battery : 4V 2.5Ah

Frequency band used :

Bluetooth® : [2400-2483.5]Mhz
LoRa™: [868-868.6]Mhz
3G : [900-2100]Mhz