



# Tempus Air BS

## Base Station

3G-LoRa™ Gateway



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## PRESENTATION

Tempus Air BS is a 3G-LoRa™ gateway that allows data transmission between the MyToroTempus application or platform and Tempus Air modules (CT, MS, PS, MV). Tempus Air BS connects to the MyToroTempus, application or web platform, via Internet in 3G. Tempus Air BS can communicate via LoRa™ (long range radio connection) with up to 25 modules between Tempus Air CT / MV / MS / PS. Using Tempus Air MS (Multi Sensor module) and Tempus Air PS (Pressure Sensor module), always allows the user to have field data feedback and safety threshold alerts. Tempus Air BS can be powered by a 230VAC power supply or a solar panel. It has a buffer battery to ensure the continuity of its operation for 24 hours without any power supply (depending on the conditions of use).

## INTRODUCTION

### The frequency of 3G data communication:

Thanks to its SIM card, the Tempus Air BS communicates periodically over 3G with the MyToroTempus platform in order to:

- Transmit the informations to Tempus Air CT, Tempus Air MV.  
(e.g.: irrigation programs, manual controls, ON / OFF, etc ...)
- Feed back information from Tempus Air MS, Tempus Air PS  
(e.g.: battery level, water volumes, sensor alerts, etc.)

The frequency is 12 times per day. Communications are configured 1 at 1 am and 11 from 8 am to 6 pm every hour.

### To activate your SIM card, send the subscription request to the dealer.

Once the SIM card has been activated, the Tempus Air BS will be operational and will be able to connect to the MyToroTempus platform.

## RECOMMENDATION

During the first installation or if a long time has passed without having had a charge / discharge cycle, it is necessary to charge the Tempus Air BS battery, turned off, for 24 hours with 230 VAC power supply.

Follow the step 1 to wire the 230 VAC power supply for battery charging.

## SPECIFICATION

### Dimensions

Diameter: 115mm

Height: 307mm

### Used frequency band:

Bluetooth®: [2400-2483.5] Mhz

LoRa™ [868-868.6]Mhz

3G: [2100]Mhz

### Power Supply:

Power pack: INPUT: 100-240V 50/60Hz

OUTPUT: 24VDC 0.6A

Solar panel : 12V 20W

Battery : 4V 2.5Ah

### Use:

Permitted humidity: 90% (relative humidity)

Ambient temperature: -20°C to 60°C

Warranty: 2 years

# Step 1

## INSTALLATION

### TEMPUS AIR BS ELECTRICAL WIRING

Tempus Air BS is a 3G-LoRa™ gateway that allows data transmission between the MyToroTempus application or platform and Tempus Air modules (CT, MS, PS, MV). Tempus Air BS connects to the MyToroTempus, application or web platform, via Internet in 3G.

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 Tempus Air BS by rotating them.
- Insert the SIM card (If not already inserted)

During the first installation it is necessary to charge the Tempus Air BS, turned off, for 24 hours with 230 VAC power supply.

#### 1.1 Power supply

- Drill the grommet located under the lower part of the Tempus Air BS
- Pass the cable through the grommet.



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



#### Power transformer connection and recommendations

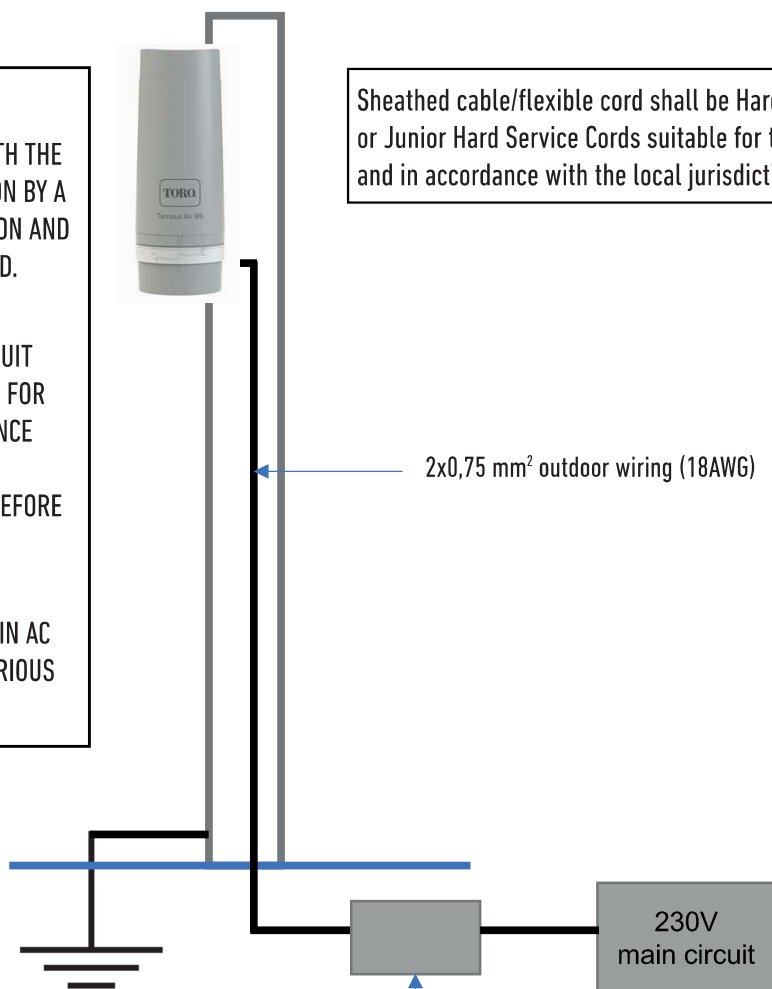
##### IMPORTANT SAFETY INSTRUCTIONS:

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE AND LOCAL JURISDICTION BY A PERSON FAMILIAR WITH THE CONSTRUCTION, INSTALLATION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED.

THE USE OF OR INSTALLATION OF JUNCTION BOXES, CONDUIT BODIES, CONDUIT CONNECTIONS, AND FITTINGS SHALL BE FOR THE INSTALLATION AND INTENDED USE, AND IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE. CONSULT WITH A QUALIFIED ELECTRICIAN AND LOCAL ELECTRICAL CODES BEFORE INSTALLING ANY ELECTRICAL PRODUCT.

DISCONNECT ALL POWER BEFORE SERVICING. ENSURE MAIN AC BREAKER IS OFF. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY DUE TO ELECTRICAL SHOCK HAZARD.

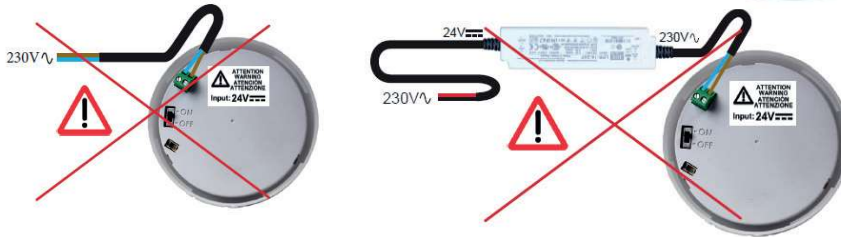
Sheathed cable/flexible cord shall be Hard Service Cord, or Junior Hard Service Cords suitable for the application and in accordance with the local jurisdiction.



Waterproof box for electrical connections supplied by end user. Certified waterproof electrical junction body and conduit in accordance with local jurisdiction.



**Prohibited connections**

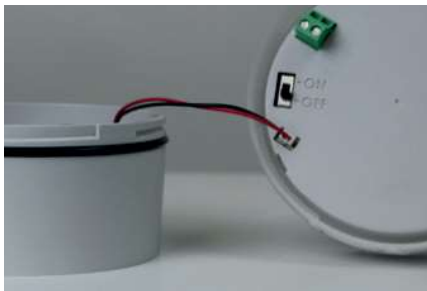


**Recommendations of the power supply connection to the electricity network**

- Use the power transformer 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 the Tempus Air BS as per local installation guidelines with suitable sheathed cable/flexible cord applicable for the intended application, and water tight conduit and fittings. Sheathed cable/flexible cord shall be Hard Service Cord, or Junior Hard Service Cord.
- Place the transformer and circuit breaker assembly in a Class II electrical box. (supplied by end user. Listed waterproof electrical junction body and conduit in accordance with local jurisdiction).

**1.2 Battery connection**

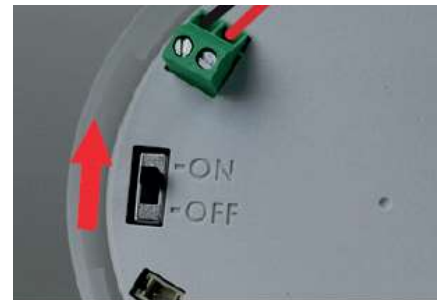
- Connect the battery.



- Set the switch to ON

During the first installation it is necessary to charge the Tempus Air BS battery for 24 hours with 230VAC power before turning it ON.

Upon startup, the Tempus Air BS LEDs will flash red. Pair the Tempus Air BS, in the MyToroTempus App via Bluetooth, to your MyToroTempus account, following STEP 2. (We remind you that the SIM Card must be activated). The LEDs will turn green for one hour after pairing to indicate that the product is operational.



**1.3 Reassembly the Tempus Air BS**

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



- Adjust the cable.



- Tighten the anti-traction.



**Close the Tempus Air BS**

- Close the lower and upper parts using the locking pictograms



## Step 2

### MYTOROTEMPUS APP DOWNLOADING

1. On your smartphone or tablet, go to the «App Store» or to the «Play Store» app.



2. Search for «The Toro Company» in the search bar.

**Developer**

The Toro Company



3. Once found, download the MyToroTempus App




4. Once installed, activate the Bluetooth® of your smartphone or tablet.

### CREATE AN ACCOUNT

To use Tempus Air BS, you need to create a MyToroTempus account

1. Launch MyToroTempus app from your smartphone and/or tablet.

2. Go to «My account» by typing on icon. 

3. Follow the steps described on the app.

**Note:** if you already have an account on the MyToroTempus.com platform, you must use the same credentials

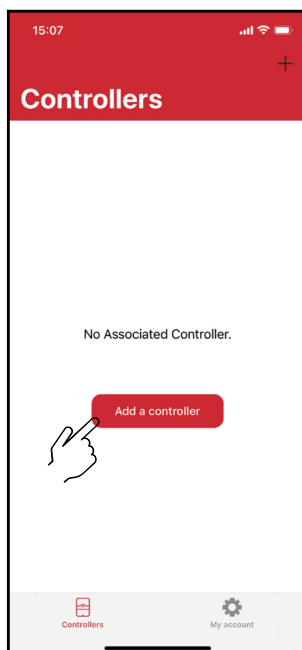
### ASSOCIATION

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

2. Launch MyToroTempus App from your smartphone and/or tablet.

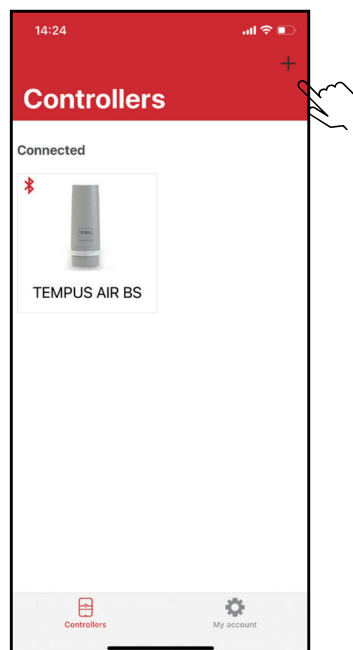


3. Click on the «Add a module» button or on the «+» button



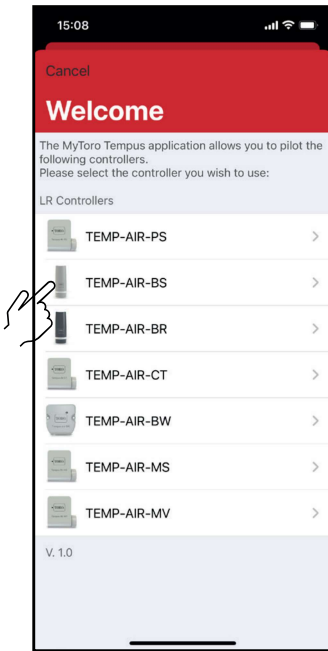
No module already installed

OR

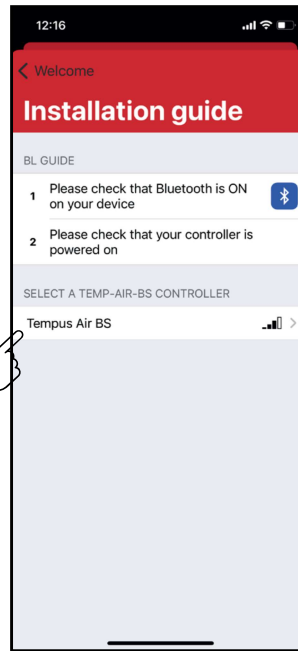


Modules are already installed

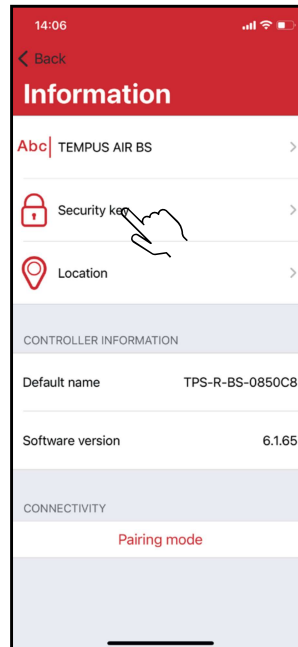
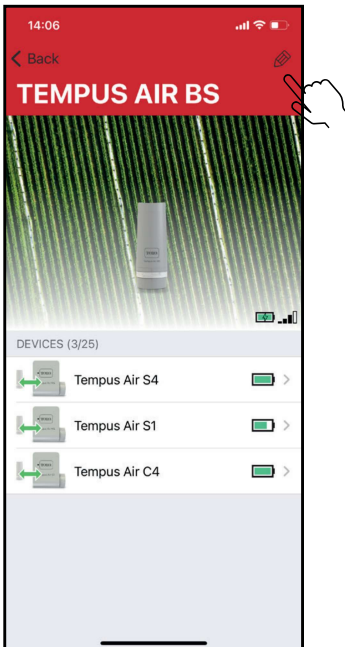
#### 4. Select the Tempus Air BS picture from the modules list



#### 5. Select the required Tempus Air BS to be installed from the list of the available modules



**Note:** To identify your Tempus Air BS among the nearby BS gateways, please refer to the «Default name» present on its product label.



#### Security key

The security key allows to protect your Gateway. You can define it during the «ASSOCIATION» or access to further information by clicking on the icon "Pencil" at the top right of your screen.

## LED STATUS

**The LEDs are functional for one hour when starting the Tempus Air BS  
Beyond this period the Tempus Air BS 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:

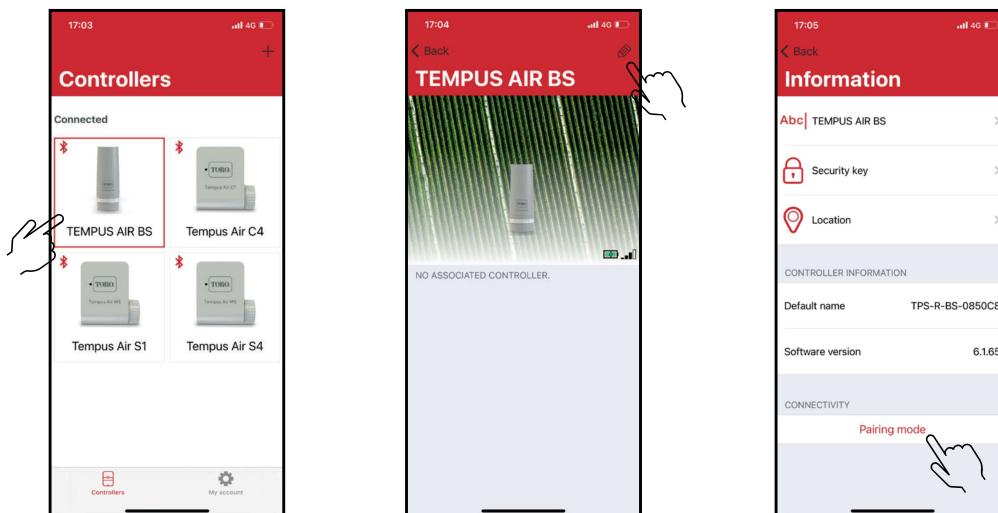
The Tempus Air BS is out of date. If your product is connected to the MyToroTempus platform, the time update will be automatic. Otherwise connect to the Tempus Air BS from the MyToroTempus application and verify that the message "Synchronization OK" is displayed.

- **Flashing white LEDs:** Searching for the best network.
- **Flashing blue LEDs:** Platform communication

# Step 3

## PARING MODULES


If you have powered Tempus Air BS gateway on solar panel, to associate LoRa™ modules such as Tempus Air CT / MS / MV / PS to the Tempus Air BS gateway, it must be switched to pairing mode.



### Example of a radio association between an Tempus Air module and the Tempus Air BS:

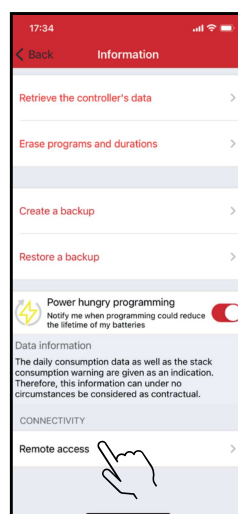
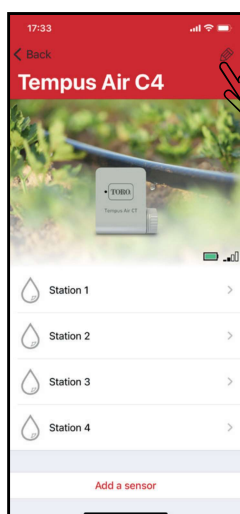
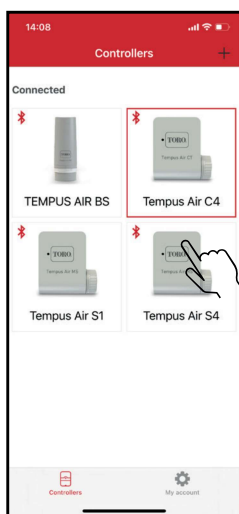
You must first have associated your Tempus Air module with your account in MyToroTempus application before proceeding with the association of the module on your Tempus Air BS gateway. Refer to the user manual to associate it and then perform the following steps.

1. Select the product in the list of modules. (Remember that you must be connected to your module via Bluetooth).

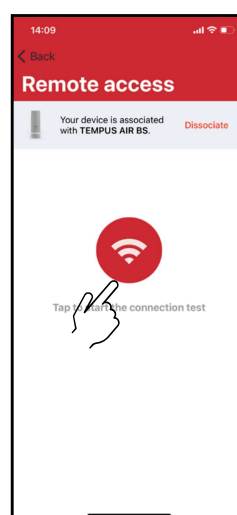
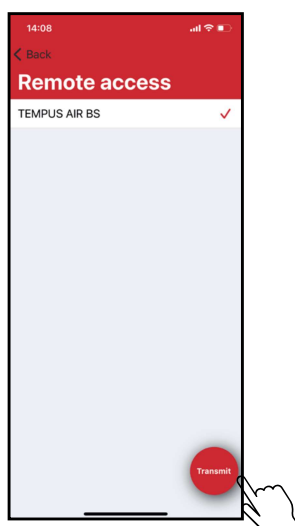
Push on  on the top right of the screen to access to information of the products. (Example with a Tempus Air CT)

2. Push on « Remote access »

3. Select your Tempus Air BS (Refer to the «Default name» present on its product label)



4. Push on Transmit to validate the operation.



5. Your Tempus Air BS is now associated. (Push red button to test it)



# Step 4

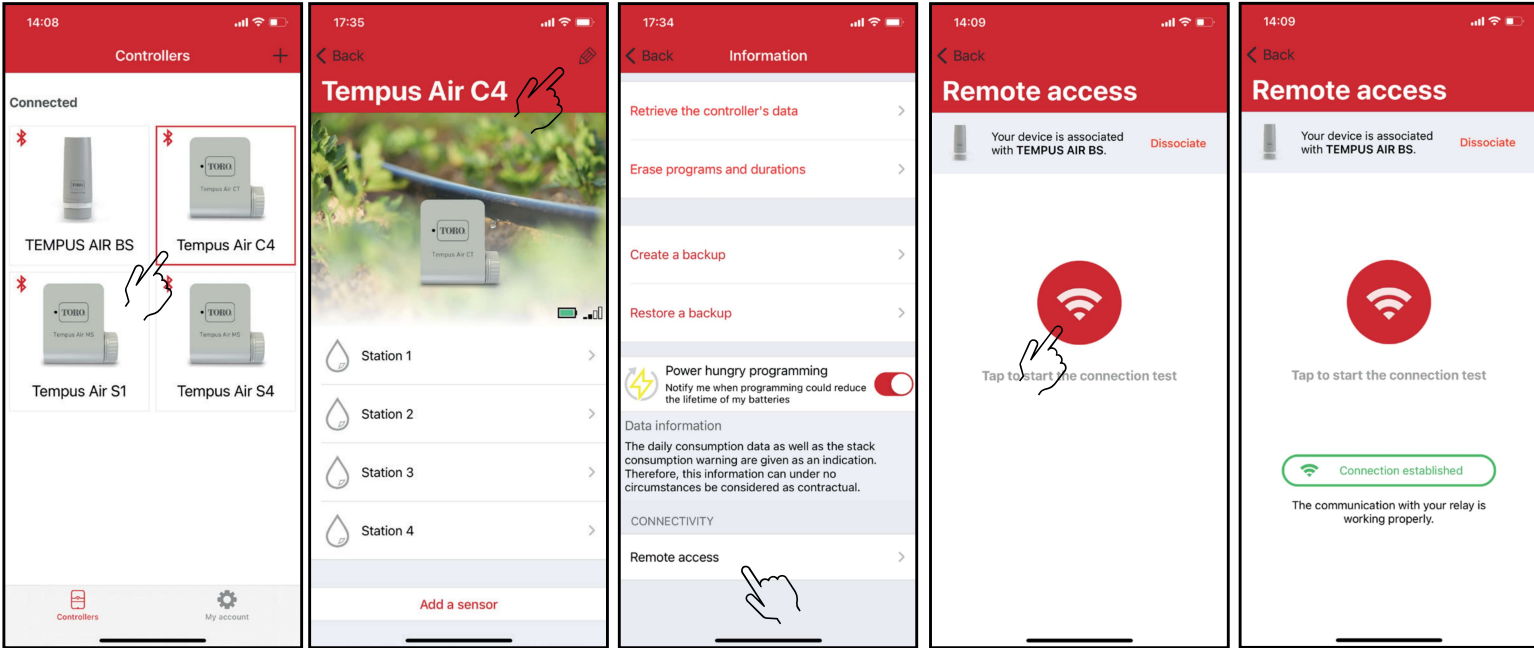
## LoRa™ TEST CONNECTION

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

The connection test can also allow you to verify at any time the correct operation of the LoRa™ radio between your module and the Tempus Air BS.

(Example: the product fell into the upside-down valve box and no longer communicates with the Tempus Air BS).

To test the LoRa™ connection, do the following:



1. Enter the Tempus Air module in Bluetooth®
2. Push on « Remote access »
3. Push the red button to test the connection LoRa™
4. The message indicate that the LoRa™ connection between the Tempus Air BS 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. In this case, the distance between the Tempus Air BS and the Tempus Air module will need to be reduced.

## LoRa™ STATUS CONNECTION

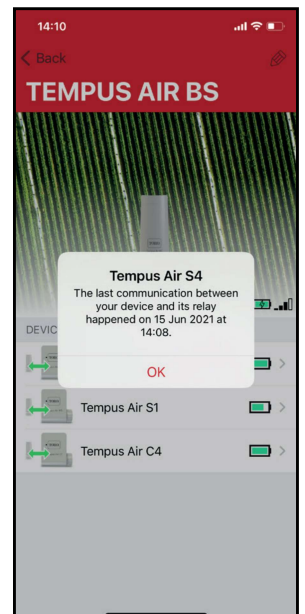
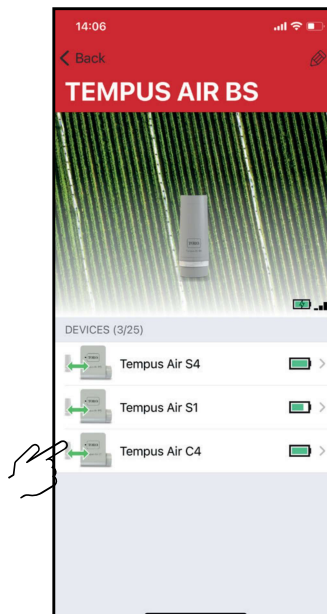
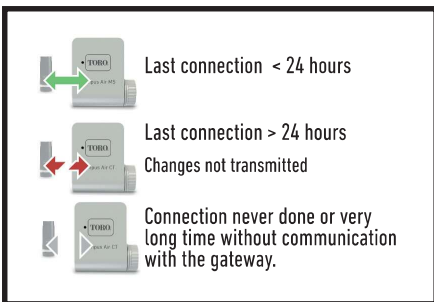
During the first installation it is necessary to charge the Tempus Air BS battery for 24 hours with 230VAC power before turning it ON.

### Preamble :

- **The communication periodicity in LoRa™ mode :**



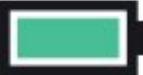
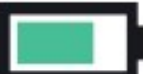

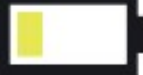


The communication interval of the LoRa™ radio between the Tempus Air modules and Tempus Air BS is approximately 3 minutes (Battery full charged). You can see the Tempus Air BS's power mode and its battery charge status in the table on the next page.

- **Status of LoRa™ radio communication between the modules and the Tempus Air BS.** These icons indicate when the Tempus Air BS was last connected to a module via LoRa™.





**LoRa™ COMMUNICATION PERIODICITY AND BATTERY STATUS**

| Power supply mode                  | Battery Status  | Periodicity  |   |
|------------------------------------|---|--|---|
|                                    |   | LoRa™  | Internet  |
| 230VAC Power supply or Solar panel | Ended Charge<br>     | 3 minutes  | Connection at 1 am and 11 connection from 8 am to 6 pm every hour |
| 230VAC Power supply or Solar panel | Battery charging<br> | 24 minutes   |   |
| Battery                            |                      | 24 minutes   |   |
| Battery                            |                     | 24 minutes   |   |
| Battery                            |                    | 24 minutes   |   |
| Battery                            |                    | 72 minutes   |   |
| Battery                            |                    | Out of service until the battery has regained a sufficient voltage level |   |
| Battery                            |                    |  |   |

# Step 5

## POLE MOUNTING

- Prepare the bracket with the 2 collars.



- Prepare the 2 BST supports with the 2 collars.



- First fix the bracket on the pole.



- Then fix the 2 Tempus Air BS supports on the pole with the 2 collars.
- Do not fully tighten the collars to permit the positioning of the Tempus Air BS.



- Place the Tempus Air BS on the bracket and secure 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: Tempus Air BS can also be wall mounted.

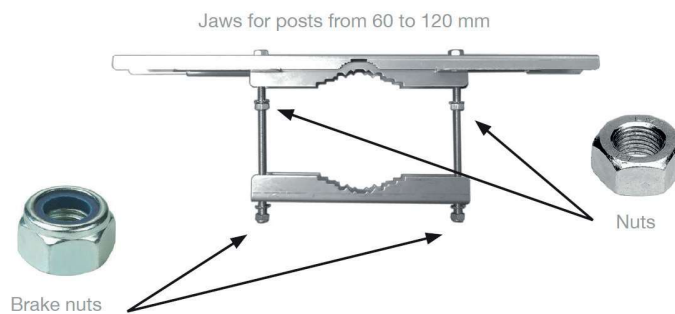
## Step 6

## 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**



## Solar Panel Connection

During the first installation, before connecting the solar panel, it is necessary to charge the Tempus Air BS battery, turned off, for 24 hours with 230 VAC power supply. After 24h of charging, disconnect the transformer and connect the solar panel.



## Prohibited connections



## 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**



## DECLARATION OF CONFORMITY

The Toro Company declares that TEMPUS AIR BS conforms to the following directives and standards:

### Directive 2014/53/UE (RED)

BLE standard : ETSI EN 300 328 v2.2.2

RADIO standard : ETSI EN 300 220-2 v3.1.1 & ETSI EN 300 220-1 v3.1.1

3G/2G standard : ETSI EN 301 511 v12.1.1 & TS 151 010-1 v13.4.0 & 301 908-1 v11.1.1

EMF standard : EN 62311 (2008)

and the recommendation 1999/519/CE

EMC standard : EN 301 489-1 v.1.9.2 & EN 301 489-17 2.2.1

Safety standard :

EN 62368-1 (2014) and A11 (2017) & EN 60950-22 ed 2 (2017)

### RoHS Directive 2011/65/EU & Directive amendment (EU)2015/863

This declaration has been issued under the sole responsibility of the manufacturer.

The object of the declaration is in conformity with relevant Union harmonization legislation.

### The Toro Company

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## GENERAL INFORMATION



This symbol indicates that the product uses a LoRa™ technology radio.



The symbol «CE» indicates that this device complies with the European standards on safety, health, environment and user protection. Devices with the symbol «CE» are intended for sale in Europe.



This symbol indicates that these types of electrical and electronic equipment must be disposed of separately in European countries. Do not dispose of this device with your household waste. Please use the collection and recycling points available in your Country when you no longer need this device.

**TEMPUS AIR BS**  
3G-LoRa™ Gateway

**TORO**®

For Technical Assistance:  
[service.wb.emea@toro.com](mailto:service.wb.emea@toro.com)

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