# PowerBox

Portable power station
**Moduloo Ex range**

Quick start guide

# User interface
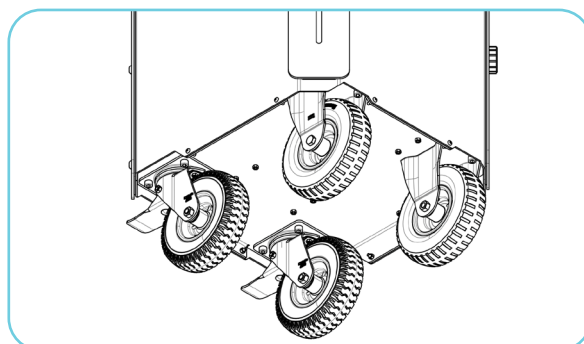
## PowerBox
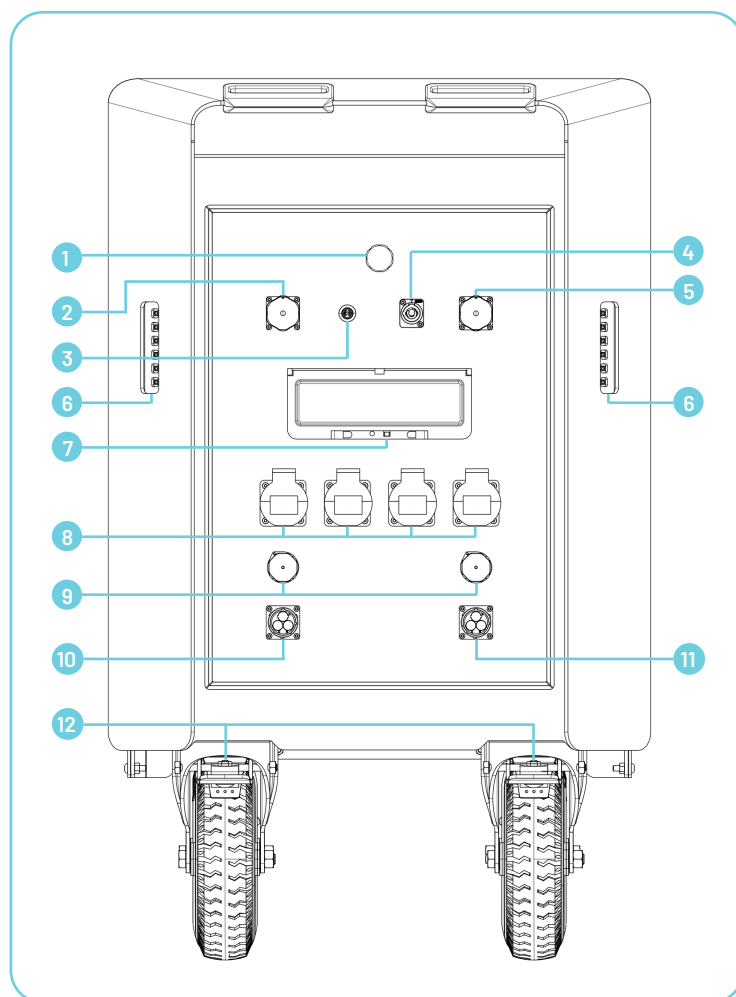


| | |
|---|---|
| **1** | Emergency stop button |
| **2** | Solar input<br>120 - 500 VDC / 18 A |
| **3** | ON / OFF button |
| **4** | AC charge outlet<br>220 VAC / 16 A / 50 Hz |
| **5** | Signal connector |
| **6** | LED displays<br>Battery state of charge |
| **7** | Breaker box |
| **8** | Power outlets<br>220 VAC / 16 A / 50 Hz / 3.5 kW max |
| **9** | Ethernet connectors |
| **10** | Power connector n°1<br>220 VAC / 50 A / 50 Hz / 11 kW max |
| **11** | Power connector n°2<br>220 VAC / 50 A / 50 Hz / 11 kW max |
| **12** | Wheels with 2 swivel braked wheels |

## Telescopic handle
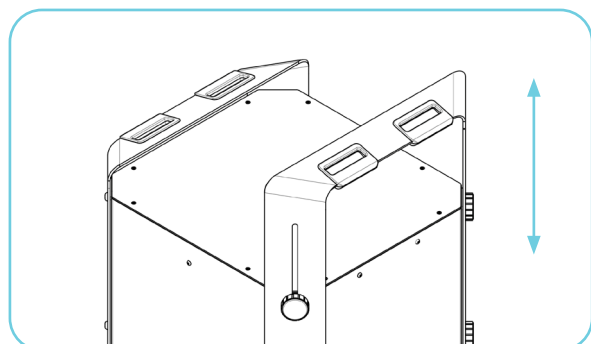


## All-terrain wheels

# Electrical specifications

| PowerBox | E5 | E11 |
|---|---|---|
| Available energy /kWh | 5.5 | 11 |
| 5 kW DC / AC single-phase converter | 1 | 2 |
| Output power /VAC | 220 | 220 |
| Frequency /Hz | 50 | 50 |
| **16 A output** | 4 | 4 |
| Maximum continuous discharge power /kW | 3.5 | 3.5 |
| **50 A output** | 2 | 2 |
| Maximum continuous discharge power /kW | 5.5 | 11 |
| Recommended charge time /hours | 5 | 5 |

| Power outlet | E5 | E11 |
|---|---|---|
| Input power /VAC | 220 | 220 |
| Maximum continuous charge power /kW | 3 | 3 |
| Maximum continuous charge current /A | 16 | 16 |

| Solar recharge | E5 | E11 |
|---|---|---|
| Input power /VDC | 120 - 500 | 120 - 500 |
| Maximum continuous charge power /kW | 5.5 | 5.5 |
| Maximum continuous charge current /A | 18 | 18 |

# Mechanical specifications

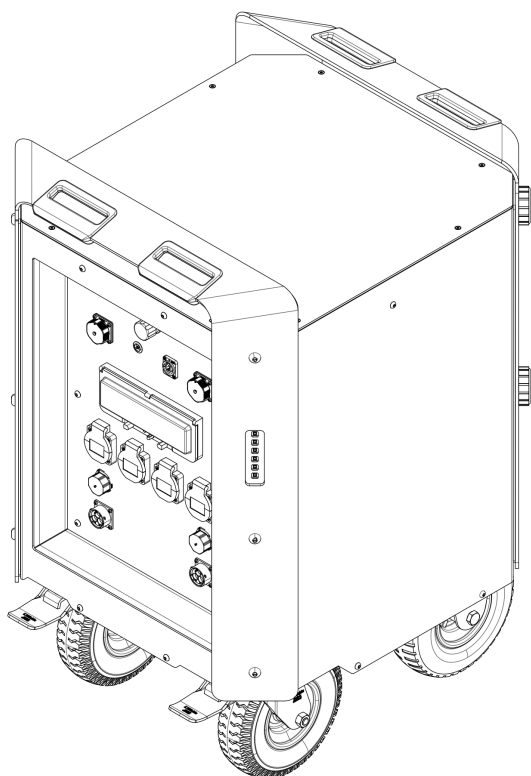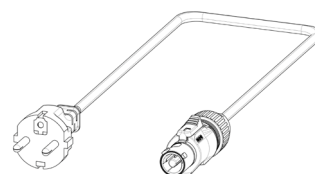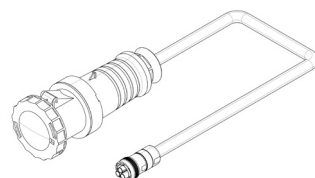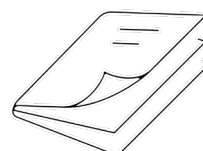| Dimensions | Weight | Sealing | Temperature | Chemistry | Outer case |
|---|---|---|---|---|---|
| 962 x 650 x 590 mm | 70 kg (E5) 110 kg (E11) | IP54 | Operating - 10 to + 40 °C Charge 0 to 40 °C | Li-ion NMC | Aluminium |

# Package content

## Included in delivery

Portable power station
PowerBox

Outlet power cable
220 VAC 16 A

32 or 63 A 220 VAC adapter

Quick start guide

## Optional accessories

Obtain additional accessories for your PowerBox by contacting TYVA Energie:

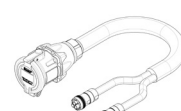Additional
220 VAC 63 A
adapter

220 VAC 32 A
adapter

Communication
beam
(paralleling)

Power beam
(paralleling)

Marechal adapter
DS3 position 17

Marechal adapter
DS6 position 17

# Starting up

## 1

### Control before use

1. Make sure the emergency stop button is disarmed.
2. Put every switches of the breaker box on the position ON.
3. Adjust brakes according to your needs.
4. Keep the charge cable nearby.

## 2

### Power up / down

1. Press the ON / OFF button once.
2. The indicator light on the button and both LED displays are blinking twice to indicate the system's switching on. They stay lit once the PowerBox is ready for use.
3. Press once more to switch off the station. Make sure not to store it while discharged.

## 3

### Use

1. Take the suitable adapter among the accessories included in delivery.
2. For a current lower or equal to 16 A, connect the cable to the PowerBox on one of the four plugs ① provided for this purpose. For a current higher than 16 A, connect on one of the two plugs ② dedicated. Finally, plug the opposite end to your application.
3. You are now powering your application thanks to the PowerBox and you can use it as you wish.
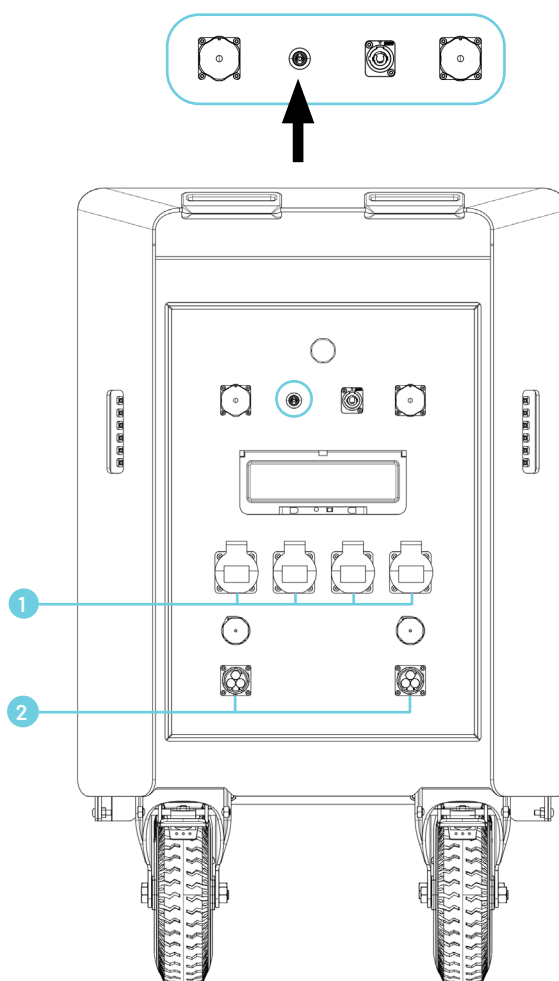4. Unplug the cable and switch off the PowerBox to end the use.

⚠️

The PowerBox can only be used in a - 10 °C to + 40 °C temperature range. It follows a specific security protocol that cannot be bent outside this range.

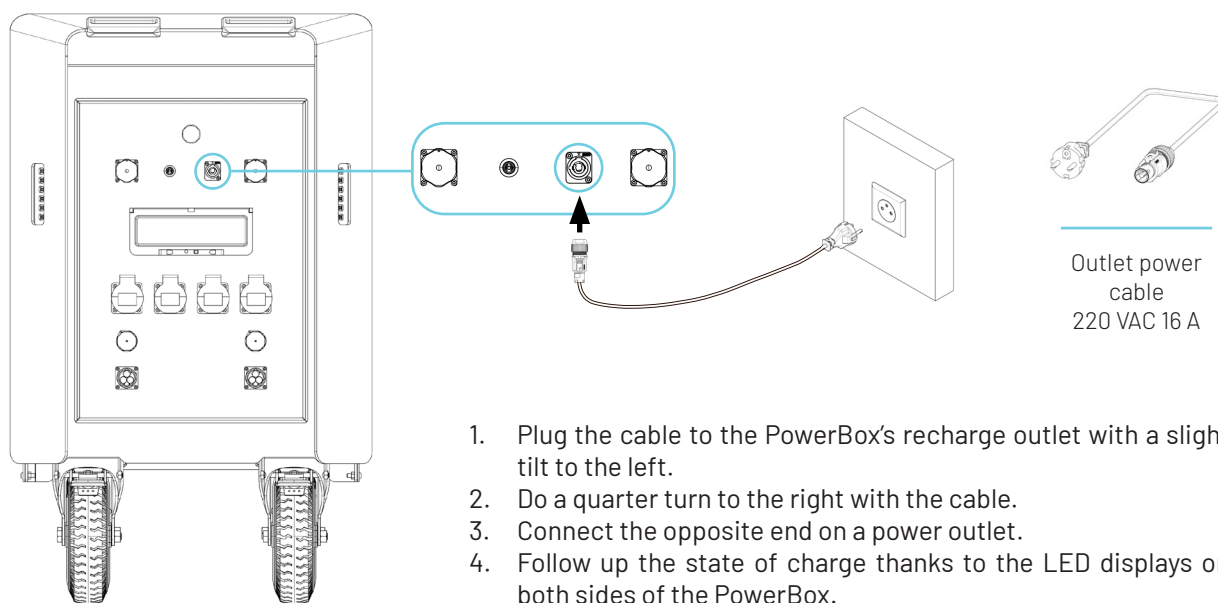Charge is impossible if you exceed the 0 to + 45 °C temperature range.
Discharge is impossible if you exceed the - 20 °C to + 60 °C temperature range.
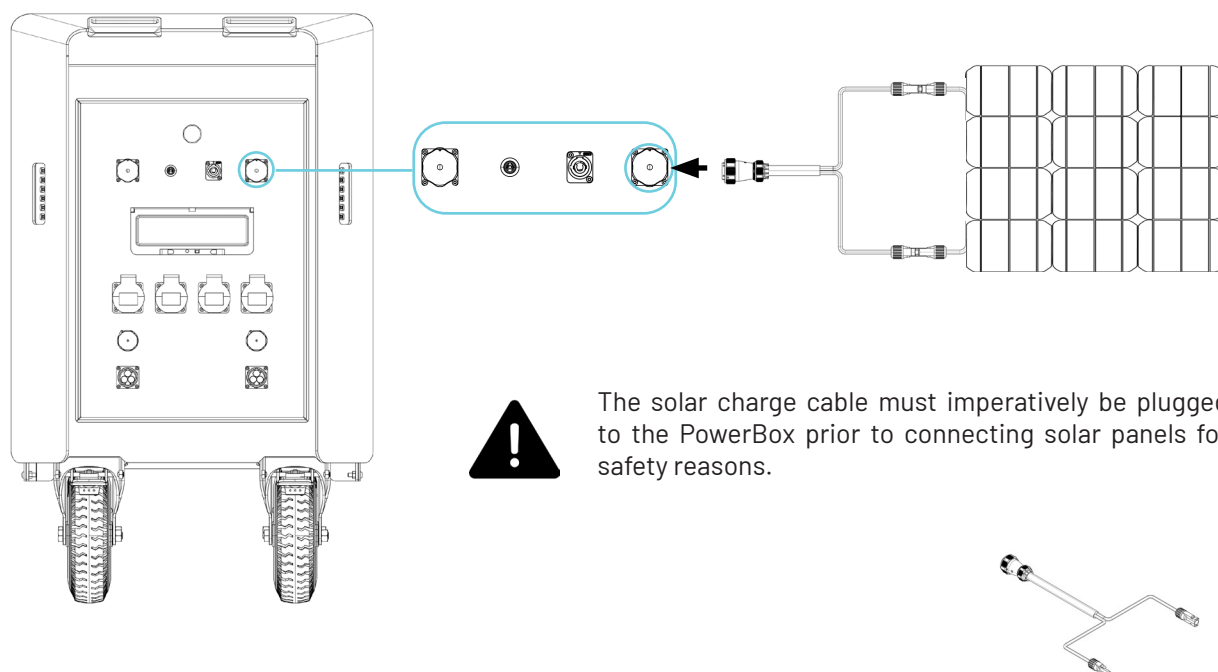
ON / OFF button

# Recharge

## Outlet charge



Outlet power cable
220 VAC 16 A

1. Plug the cable to the PowerBox's recharge outlet with a slight tilt to the left.
2. Do a quarter turn to the right with the cable.
3. Connect the opposite end on a power outlet.
4. Follow up the state of charge thanks to the LED displays on both sides of the PowerBox.

## Solar charge



⚠️ The solar charge cable must imperatively be plugged to the PowerBox prior to connecting solar panels for safety reasons.

You can recharge the PowerBox with solar panels by connecting it to the plug provided for this purpose. To this end, you must get hold of the suitable solar power cable among TYVA Energie's optional accessories.
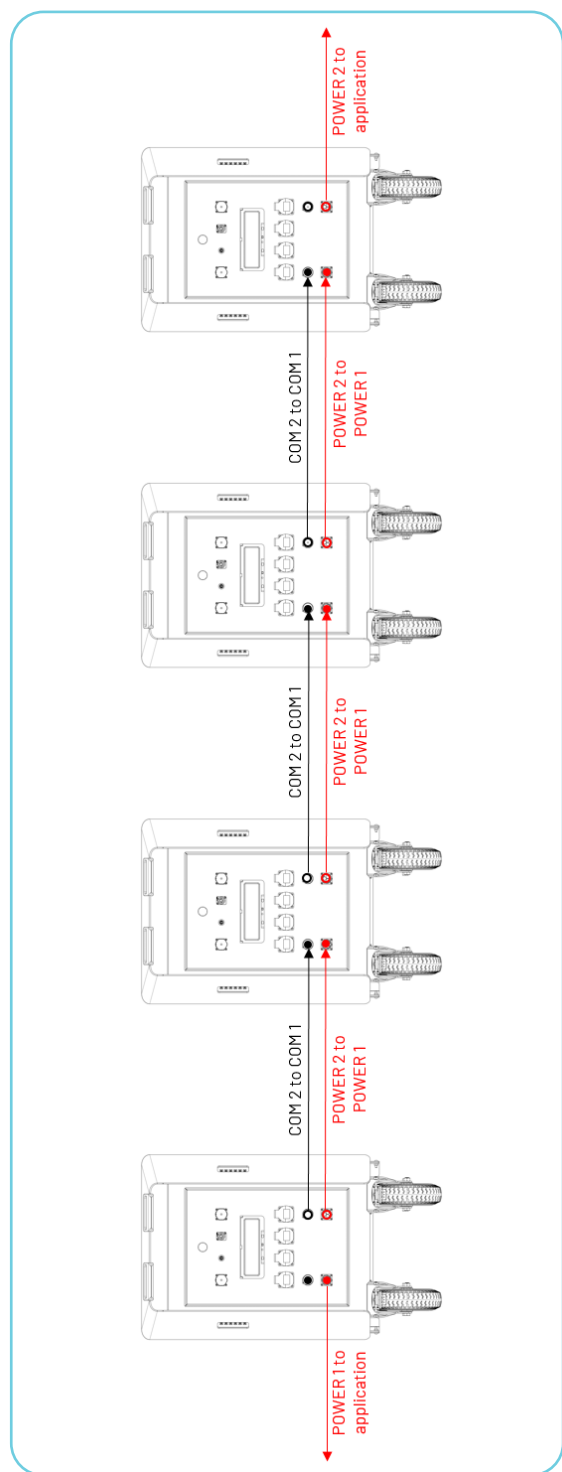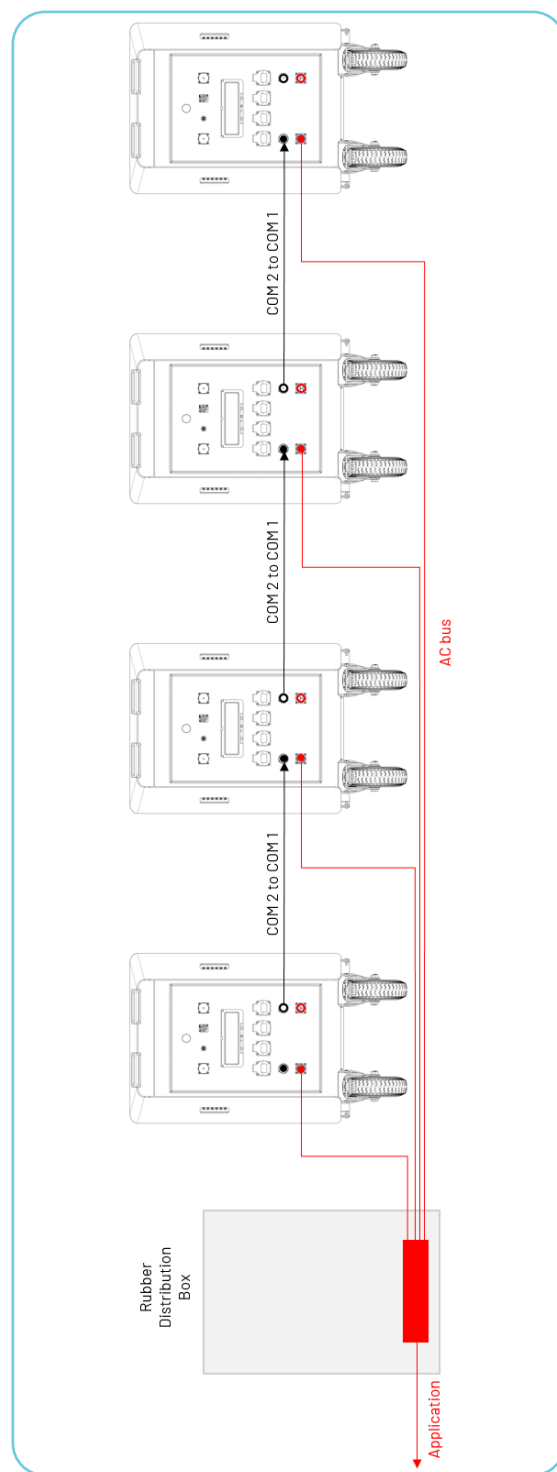
Solar power cable
120-500 VDC 18 A

# Parallelization

You have the possibility to parallelize up to 12 successive PowerBox in order to aquire autonomy or power. Please refer to the user manual to learn more and contact TYVA Energie to obtain the necessary additional accessories.

## Autonomy gain



POWER 2 to application

COM 2 to COM 1

POWER 2 to POWER 1

COM 2 to COM 1

POWER 2 to POWER 1

COM 2 to COM 1

POWER 2 to POWER 1

POWER 1 to application

## Power gain



COM 2 to COM 1

COM 2 to COM 1

AC bus

COM 2 to COM 1

COM 2 to COM 1

Rubber Distribution Box

Application

# TYVA Smart Dashboard

## Download

Download our TYVA Smart Dashboard monitoring app, the genuine mobile dashboard available on Android and iOS smartphones and tablets, then connect yourself to the system with Bluetooth!



### Android devices

Download the app via the Google Play Store



### iOS devices

Download the app via the App Store



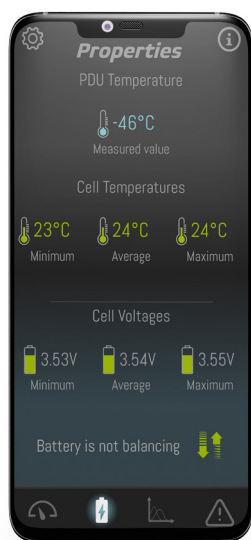By downloading the TYVA Smart Dashboard app, you accept the terms and conditions of TYVA Energie's Privacy policy. Learn more: https://tyva-energie.com/en/privacy-policy/

## Interface

The TYVA Smart Dashboard digital app allows you to supervise the global system of your portable power station made up of TYVA Energie's lithium batteries. It includes four tabs:



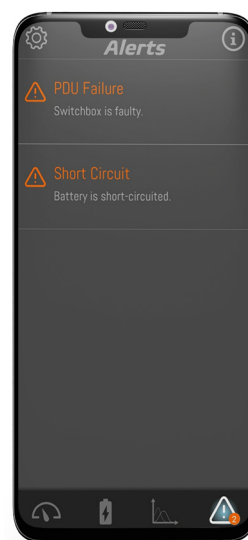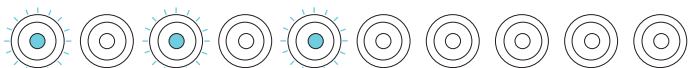| Homepage | Properties | Graphs | Alerts |
|---|---|---|---|
| Global overview of information | Temperature and voltage data | Temperature, power, voltage and current follow up | Warnings (blue icon) and errors (orange icon) |

# Status

## Indicator light

The light in the middle of the ON/OFF button repeatedly blinks depending on the PowerBox's various states as described below:

| Status | Type of pulse | Description |
|---|---|---|
| Idle | | 1 flash |
| PduCurrentError | | 2 flashes |
| VoltageError | | 3 flashes |
| TemperatureError | | 4 flashes |
| SystemError | | 5 flashes |
| Charge mode | | Continuous light disrupted by 1 flash |
| Discharge mode | | Continuous light disrupted by 2 flashes |

## Digital alerts

Notifications can be seen in the « Alerts » tab of TYVA Smart Dashboard app:

⚠️

- Low Voltage
- High Voltage
- NTC Issue
- Warning Bluetooth
- Data Log Issue

- Under-temperature
- Over-temperature
- Under-voltage
- Over-voltage
- Over-current

- PDU Lock
- PDU Failure
- PDU Over-temperature
- Charge Error
- Cellule Issue

- Short Circuit
- Slave Silent
- AFE Issue
- Short Circuit on Precharge

# Any question?



Access to the **Moduloo Ex range's** guides, user manuals and support

Prior to this guide, you must imperatively refer to the safety instructions and the directives listed in the user manual of the PowerBox

**TYVA**
*énergie*