# Sustainable & modular lithium batteries













# PowerBox Moduloo Ex\_NG

# **Datasheet**









### DESCRIPTION

The PowerBox Moduloo Ex is a powerful, silent and ergonomic portable power station solution. It is a robust and waterproof system which is easy to carry thanks to its two adjustable carrying handles as well as its four all-terrain wheels.

Available in PowerBox E5 (6 kWh) and PowerBox E11 (11 kWh) versions, it is fitted with the Moduloo Ax technology. It can also be connected in parallel thanks to the Gateway CAN which makes it modular regarding its energy capacity.

The **PowerBox** ideally responds to applications that require an external clean energy source without any fuel for specific sectors: cinema, construction, events, offgrid, etc.

### **SPECIFICATIONS**

- Batteries paralleling
- Compatible with **TPP** fire protection
- State of charge indicator in all 4 directions
- Battery monitoring thanks to TYVA Smart **Dashboard** app with a Bluetooth connection
- IHM projector powering up to 10 kW
- 5.5 kW nominal output power
- Noise level below 60 dB at 1 meter
- Compatible with TYVA Refill batteries reconditioning solution







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# **ELECTRICAL SPECIFICATIONS**

Item	PowerBox E5_NGL	PowerBox E11_NGL	PowerBox E11_NG
Available energy /kWh	6	11	11
5 kW DC / AC single-phase converter	1	1	2
Output power /VAC	220	220	220
Frequency /Hz	50	50	50
16 A outputs	2	2	4
Peak discharge power /kw	3.5	3.5	3.5
25 A and 50 A outputs	2 x 25	2 x 25	2 x 50
Peak discharge power /kW	5.5	5.5	11
Recommended charge time /hours	4	4	4

Power outlet	PowerBox E5_NGL	PowerBox E11_NGL	PowerBox E11_NG
Input power /VAC	220	220	220
Maximum continuous charge power /kw	1.6	1.6	2.8

Solar recharge	PowerBox E5_NGL	PowerBox E11_NGL	PowerBox E11_NG
Input power /VDC	120 to 500	120 to 500	120 to 500
Maximum continuous charge power /kw	6	6	6
Maximum continuous charge current /A	22	22	22

# **MECHANICAL SPECIFICATIONS**



Item	Description
Dimensions /mm	962 x 650 x 590
Weight /Kg	70 to 110
Sealing	IP54
Outer case	Aluminium
Operating temperature /°C	- 20 to + 60
Charge temperature /°C	0 to + 40

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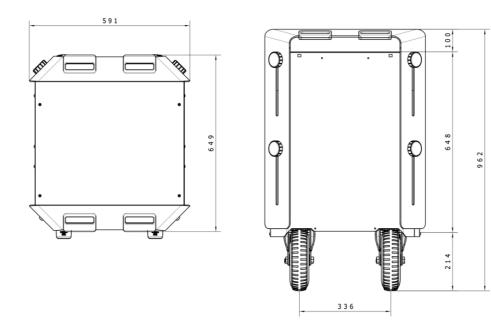


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# MECHANICAL ASSEMBLY



# **PERFORMANCE**

The PowerBox has a 60  $^{\circ}$ C temperature limit. The higher the current is, the higher the temperature of the power station will increase. Thus, it will impact its autonomy and performance. With a PowerBox with a 25 °C initial temperature, the nominal power for the E5\_NG and E11\_NGL stations will be 3 kW while it will be 5.5 kW for the E11\_NG station.

Performances of the PowerBox depending on its use temperature are available in the table right below:

PowerBox E5_NGL and E11_NGL	25 °C	35 °C	45 °C
Nominal power	3 kW	2 kW	1 kW
	2 hours	3 hours	5.5 hours
Peak power	5.5 kW	5.5 kW	5.5 kW
	30 minutes	20 minutes	10 minutes
PowerBox E11_NG	25 °C	35 °C	45 °C
Nominal power	5.5 kW	3.5 kW	2 kW
	2 hours	3 hours	5.5 hours
Peak power	11 kW	11 kW	11 kW
	30 minutes	20 minutes	10 minutes











# TYVA SMART DASHBOARD

Portable energy stations from the Moduloo Ex range are compatible with the supervision app for lithium batteries TYVA Smart Dashboard:

#### Real time monitoring

- Instantaneous charge and discharge power
- States of health (SOH), charge (SOC) and power (SOP)
- Values: current (A), power (W), voltage (V)
- Temperature, voltage and cells balancing
- Alerts and errors in real time

#### Accessibility

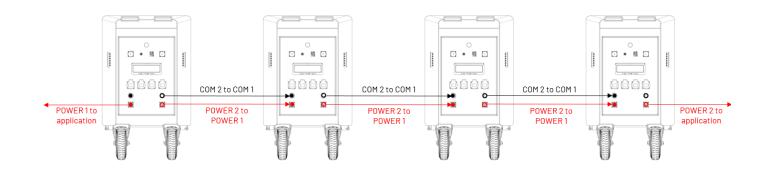
- Available for Android and iOS devices
- Software compatible with the BMS PRO in Bluetooth (BLE)



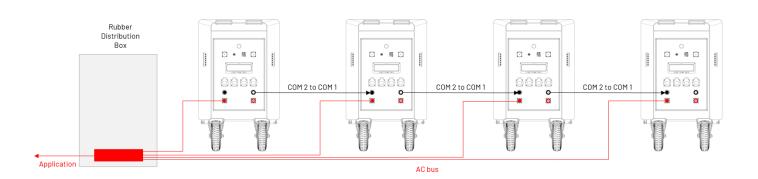


# PARALLELING ELETRICAL DIAGRAMS

#### **Autonomy gain**



### Power gain



















### ABOUT TYVA ENERGIE



We are living in a world of contradictions. Ecology is one of the major challenges of the XXIst century, such as technological innovation, the need for mobility and power of applications.

At TYVA Energie, we truly believe that ecology can go hand in hand with energy production thanks to the ingenuity of our sustainable and modular solutions. »





#### French manufacturing

From R&D to production, through coding and more, our lithium batteries are designed and made in France on our ISO 9001 certified automated production site of Annonay, Ardèche. This full management of the design and production chain allow us to offer you the safest and top-quality lithium batteries. Moreover, we are mostly working with local partners that are closed to Annonay: up to 80% of our component's suppliers are located less than 90 minutes from our factory.



#### Eco-designed lithium batteries

Since TYVA Energie's creation in 2013, our entire range of batteries includes the TYVA Refill cell replacement patented technology. Thereby, every single battery component can be reused to guarantee products with a constant energy level as well as **infinite life batteries**. We focus on cells conversion and recycling, mostly by using NMC chemistry, to promote the circular economy and thus reduce our carbon footprint to its maximum.



#### Innovative, compact and modular solutions

Our modular batteries can be incorporated in any new or existing complex system. Our Moduloo 3D range offers flexibility with a quick and economic construction of lithium batteries in 3 dimensions. You can also piece together series or parallel assemblies with our Moduloo Ax range thanks to its compact modules available in different standard and custom sizes and finishes.



#### Budget and planning control

We provide series or parallel assemblies in a short timeframe without any development costs nor certificates thanks to our standard modular systems. Our TYVA Refill solution quarantees you to save money in the long run since you only pay for new cells or components when they reach their end. Furthermore, TYVA Energie offers the lightest and most compact lithium batteries on the market with an outstanding energy density of 245 Wh/kg only. It allows you to gain autonomy while saving energy.











