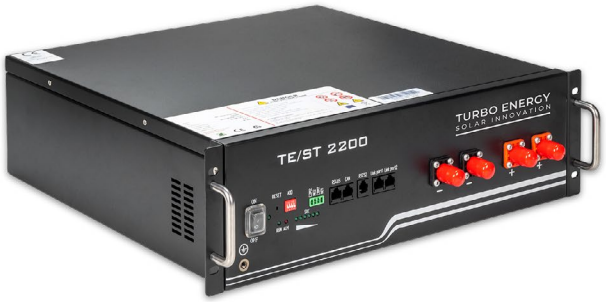
LITHIUM BATTERIES

Energy storage specialists

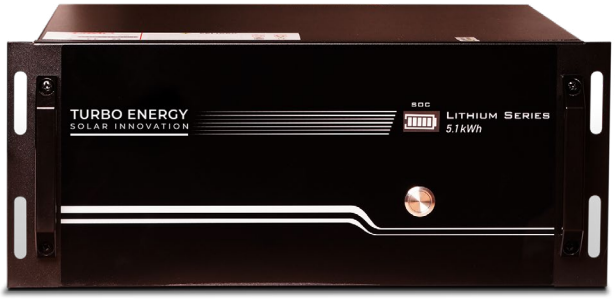


24V

2,24 kWh

48V

2,4 kWh



48V

5,1 kWh

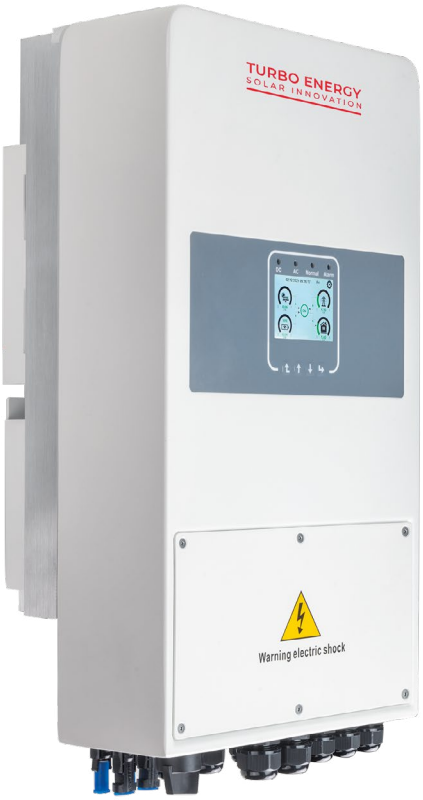
TURBO ENERGY™
SOLAR INNOVATION

Technical Data	LITHIUM SERIES BATTERIES 24V 2.24 kWh	
Electrical	Nominal capacity	2.24 kWh
	Depth Of Discharge (DoD)	90%
	Nominal voltage	25,55 V
	Voltage operating range	23,2 – 28,4V
	Cycle life	>= 4500
Physical	Weight	21 kg
	Dimensions	400 x 440 x 133 mm
	Protection class	IP20
	Battery type	NCM
Operation	Maximum charge/discharge current	43,75A (0.5 C)
	Temperature operating range (charge)	0ºC...40ºC
	Temperature operating range (discharge)	-10ºC...55ºC
	Humidity	<=80%
BMS	Monitoring parameters	System voltage, cell temperature and voltage
	Communication	Compatible CAN y RS-485

Technical Data	LITHIUM SERIES BATTERIES 48V 2.4 kWh	
Electrical	Nominal Energy	2.4 kWh
	Nominal Capacity	50Ah
	Depth of Discharge (DoD)	90%
	Nominal Voltage	48V
	Voltage operating range	40.5 - 54V
	Cycle Life	>= 6000
Physical	Weight	22 kg
	Dimensions	480 x 360 x 90 mm
	Protection class	IP20
	Battery type	LiFePO4
Operation	Charge/discharge current	25A (0.5 C)
	Max. Charge current	45A
	Max. Discharge current	55A
	Temperature operating range (charge)	0ºC...50ºC
	Temperature operating range (discharge)	-20ºC...50ºC
	Humidity	5%...85%
	Max. operating altitude	< 4000 m
BMS	Monitoring parameters	System voltage, Cell voltaje, current and temperature
	Communication	Compatible CAN and RS-485

Technical Data	LITHIUM SERIES BATTERIES 48V 5.1 kWh	
Electrical	Nominal Capacity	5.12 kWh
	Usable Capacity	4.6 kWh
	Depth of Discharge (DoD)	90%
	Nominal Voltage	51.2V
	Voltage operating range	48 - 57.6V
	Cycle Life	>= 6000
Physical	Weight	52 kg
	Dimensions	475 x 446 x 200 mm
	Protection class	IP20
	Battery type	LiFePO4
Operation	Maximum charge/discharge current	50A (0.5 C)
	Temperature operating range	0ºC...50ºC
	Humidity	15% - 85%
	Maximum operating altitude	< 3000 m
BMS	Energy consumption	<2 W running / <100mW at rest
	Monitoring parameters	System voltage and current, Cell voltage and temperature
	Communication	Compatible CAN and RS-485

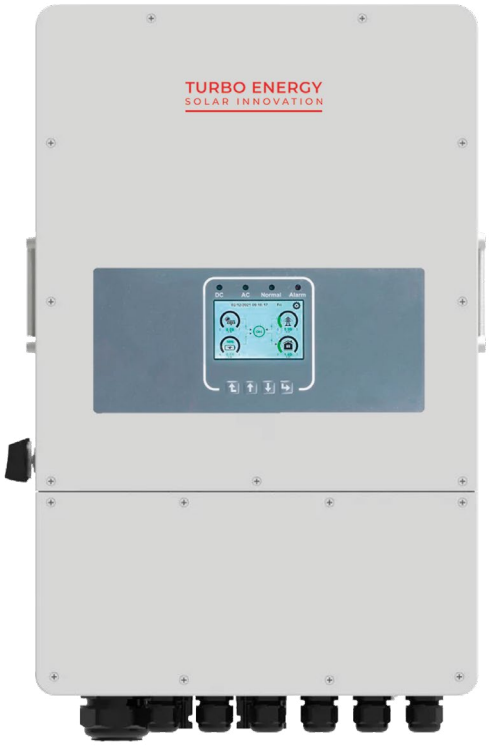
SMART HYBRID INVERTERS



HYBRID SERIES

48V

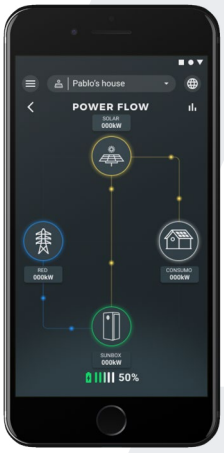
5,0 kW



THREE PHASE HYBRID SERIES

48V

10,0 kW



- Peak Shaving
- OFF/ON Gridd
- Single and three phase
- Smart APP
- Back up 5 kW and 10 kW

TURBO ENERGY™
SOLAR INNOVATION

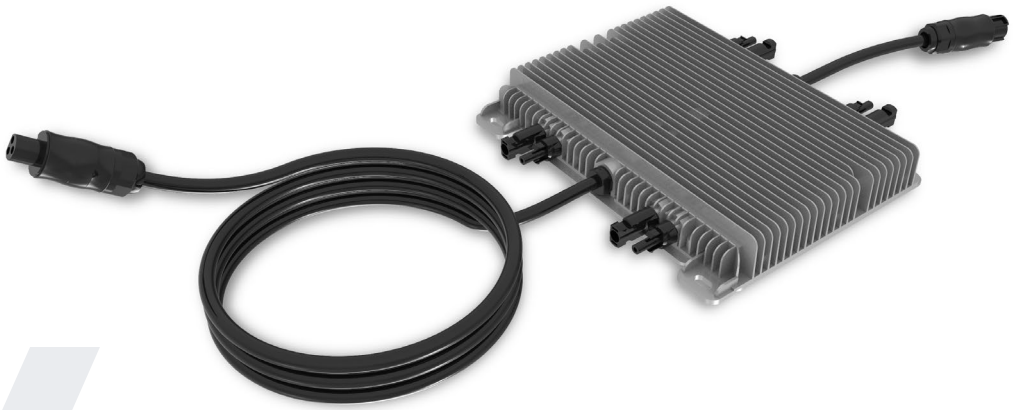
Technical Data	HYBRID SERIES 48V 5.0	
Battery input data	Battery type	Acid-Lead or Li-Ion
	Battery Voltage range (V)	40V-60V
	Imax Charge (A)	120A
	Imax Discharge (A)	120A
	Load curve	3 steps/equalization
	External Temperature Sensor	Optional
	Cycle Life	Self-adapting to BMS
Input data DC	Pmax DC (W)	6500W
	Input range PV (V)	370V (100V-500V)
	MPPT range (V)	125V-425V
	Full charge range (V)	240V-425V
	Startup voltage	150V
	Max input current (A)	13A+13A
	Nº MPPTs	2
	Strings per MPPT	1
Output data AC	Nominal Power (W)	5000W
	Max. Power (W)	5500W
	Peak Power (Offgrid)	Twice the Nominal Power, 10S
	Max. Back-Up Power (W)	5000W
	Nominal AC output current (A)	21.7A
	Max. AC current (A)	25A
	Peak Current (A)	35A
	Power factor	0.8-1
	Output frequency and voltage	50/60Hz; 220/230/240Vac (single phase)
	Grid type	Single phase
	Harmonic distortion	THD<3% (line loading)<1.5%
Efficiency	Max. Efficiency	97.60%
	European Efficiency	96.50%
	MPPT Efficiency	99.90%
General data	Weight (kg)	20.5 kg
	Size (mm)	580 x 330 x 232 mm
	Protection degree	IP65
	Cooling	Fan
	Warranty	5 years

Technical Data	THREE PHASE HYBRID SERIES 48V 10.0	
Battery input data	Battery type	Acid-Lead or Li-Ion
	Battery voltage range (V)	40V-60V
	Imax charge (A)	210A
	Imax discharge (A)	210A
	Chargin curve	3 steps/equalization
	External temperature sensor	Optional
	Charging Strategy for Li-Ion Battery	Self-adapting to BMS
DC input data	Pmax DC (W)	13000W
	Input range PV (V)	550V (160V-800V)
	MPPT range (V)	200V - 650V
	Startup voltage (V)	160V
	PV input current (A)	26A + 13A
	No. MPPTs trackers	2
	Strings per MPPT	2 + 1
AC output data	Nominal Power (W)	10000W
	Max. Power (W)	11000W
	Peak Power (Offgrid)	Twice the Nominal Power, 10S
	Nominal CA output current (A)	14.5A
	Max. CA output current (A)	16A
	Max. output current of each phase (A)	21.7A
	Max. continuous AC passthrough (A)	50A
	Output frequency and voltage	50/60Hz; 230/400Vac (three phase)
	Grid type	Three phase
	Harmonic distortion	THD<3% (linear load < 1.5%)
Efficiency	Max. efficiency	97.60%
	Euro efficiency	97.00%
	MPPT efficiency	99.90%
General data	Weight (kg)	36.8 kg
	Size (mm)	658 x 422 x 281 mm
	Protection degree	IP65
	Cooling	Fan
	Warranty	5 years

MICRO INVERTER SERIES

MIS

1.6



MIS

2.0

Easy connectivity

Suitable for different solar panel orientations

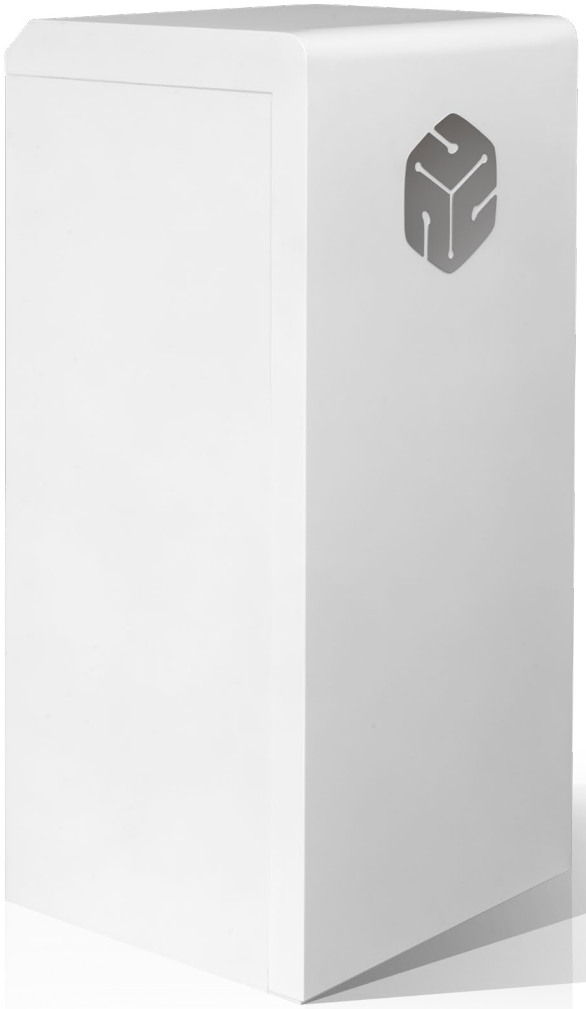
Modulable

IP67

TURBO ENERGY™
SOLAR INNOVATION

Technical Data	MICRO INVERSOR SERIES 1.6 & 2.0			
		MIS 1.6		MIS 2.0
Input data (DC)	Recommended Input Power (STC)		210 – 600 W	
	MPPT Voltage Range		25V – 55V	
	Operation Voltage Range		20V – 60V	
	Maximum Input Voltage		60V	
	Maximum Input Current		12.5A x 4	
	Maximum DC Short Circuit Currrent		16A	
Output Data (AC)	Nominal Output Power	1600 W		2000 W
	Peak Output Power	1760 W		2200 W
	Maximum Output Current	7.7 A		9.6 A
	Nominal Voltage / Range		230V / 184 – 265 V	
	Nominal Frequency / Range		50/60 Hz	
	Extended Frequency / Range		45-55 Hz / 55-65 Hz	
	Power Factor		>0.99	
	Maximum units per branch	4		3
	Max. Allowed Altitude Operation		< 4000 m	
Efficiency	Maximum Inverter Efficiency		96.5%	
	Weighted CEC Efficiency		95%	
	Static MPPT Efficiency		99%	
	Night Power Consumption		50 mW	
Mechanical Data	Operating Ambient Temperature Range		-40ºC .. +65ºC	
	Dimensions (W x H x D)		267mm X 300mm X 42.5mm	
	Weight		5.2 kg	
	Protection Class		Class I	
	Enclosure Rating		IP67	
	Cooling		Natural Convection – No fans	
Features	Compatibility		Compatible with 60, 72 cell PV modules	
	Communication		Wi-Fi	
	Certificates		EN50549, VDE0126, VDE4105, IEC62109, CE, INMETRO	
	Warranty		10 years	

SUNBOX®



SUNBOX SERIES

5 kW

THREE PHASE SUNBOX SERIES

10 kW

5kw and 10kw
backup output

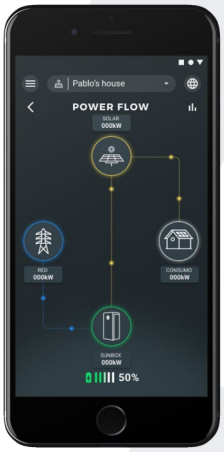
Reduces assembly
time (Plug and Play)

Peak Shaving

Safer facilities

All in one

Expandable storage
up to 10.2 kWh



TURBO ENERGY™
SOLAR INNOVATION

Technical Data	SUNBOX SERIES 5.0	
Photovoltaic panels data	Max. photovoltaic field power	6500 Wp
	PV voltage range	100-500 V
	MPPT working range	125-425V
	Starting voltage	150V
	Independent MPPT	2
	Maximum current per MPPT	13A
	Category DC surges	II
AC Output (Self-consumption with grid)	Maximum power	11500W
	Rated output voltage	230V
	Rated output frequency	50/60Hz
AC Output (Self-consumption with grid / Off-grid)	Nominal power	5000W
	Maximum power	5500W
	Rated output voltage	230V
	Rated output frequency	50/60Hz
Batteries data	Capacity	5,1kWh / 10,2kWh
	Usable capacity	4,60kWh / 9,20kWh
	DoD	90%
	Cycles at 90% DoD	>6000
	Cells	Metal Can
	Type of technology	LiFePO4
	Nominal battery voltage	51,2V
	Max. Charge/discharge current	10/100A
	BMS communication	CAN

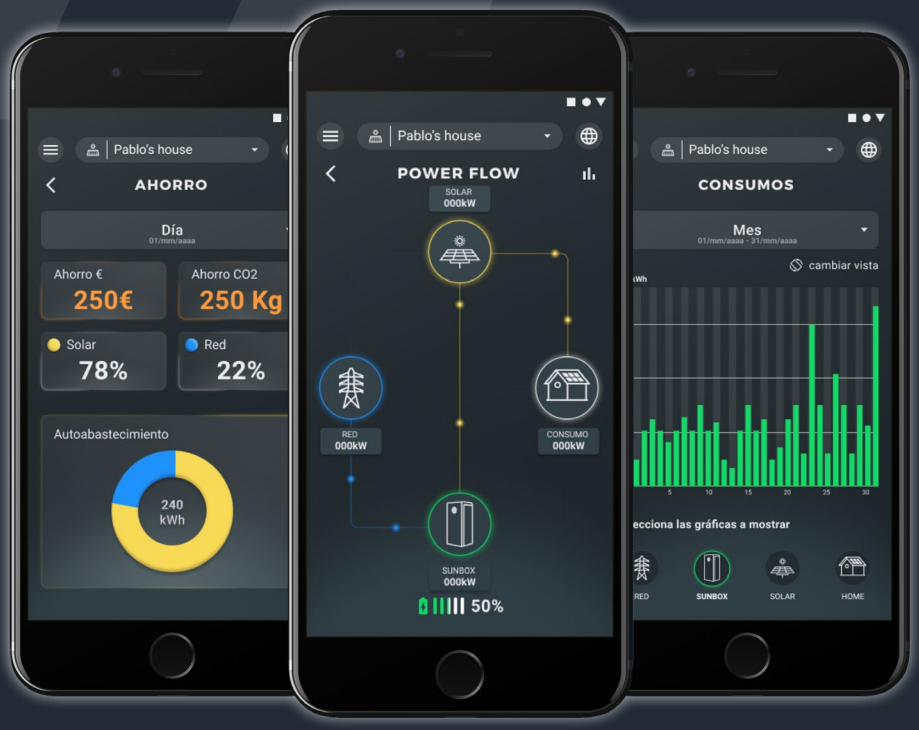
Technical Data	SUNBOX SERIES 5.0	
DC protections	CAT II surges	Integrated
	4 x Fuse holder and fuse 1000Vdc/15A	Integrated
AC protections	Magnetothermic Grid	Integrated
	Magnetothermic Load	Integrated
General data	Communication with the Portal	Wi-Fi
	IP rating	IP20
	User interface	APP
	Weight (Kg)	95Kg
	Switch on-grid/off-grid	Automatic
	Dimensions (width*height*depth)	600*1400*600mm
Certificates and Regulations	Network connection regulations	RD1699
	Safety regulations	IEC/EN62109-1 & -2 IEC 62040-1
	EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-4-16, EN61000-4-18, EN61000-4-29

Technical Data	THREE PHASE SUNBOX SERIES 10.0	
Photovoltaic panels data	Max. photovoltaic field power	13000 Wp
	PV voltage range	160-800 V
	MPPT working range	200-650V
	Starting voltage	160V
	Independent MPPT	2
	Maximum current per MPPT	26A + 13A
	Category DC surges	II
AC Output (Self-consumption with grid)	Maximum current per phase	32A
	Rated output voltage	230V / 400V (three phase)
	Rated output frequency	50/60Hz
AC Output (Self-consumption with grid / Off-grid)	Nominal power	10000W
	Maximum power	11000W (21.7A per phase)
	Rated output voltage	230V / 400V (three phase)
	Rated output frequency	50/60Hz
Battery data	Capacity	5,1kWh / 10,2kWh
	Usable capacity	4,60kWh / 9,20kWh
	DoD	90%
	Cycles at 90% DoD	>6000
	Cells	Metal Can
	Type of technology	LiFePO4
	Nominal battery voltage	51,2V
	Max. Charge/discharge current	50/100A
	BMS communication	CAN

Technical Data	THREE PHASE SUNBOX SERIES 10.0	
DC protections (by MPPT)	CAT II surges	Integrated
	6 x Fuse holder and fuse 1000Vdc/15A	Integrated
AC protections	Magnetothermic Grid	Integrated
	Magnetothermic Load	Integrated
	Magnetothermic Gen Port	Integrated
General data	Communication with the Portal	Wi-Fi
	IP rating	IP20
	User interface	APP
	Weight (Kg)	110Kg
	Switch on-grid/off-grid	Automatic
	Dimensions (width*height*depth)	600*1400*600mm
Certificates and Regulations	Network connection regulations	RD1699
	Safety regulations	IEC/EN62109-1 & -2 IEC 62040-1
	EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-4-16, EN61000-4-18, EN61000-4-29

APP TURBO ENERGY MONITORING

The software developed by Turbo Energy based on artificial intelligence analyses energy consumption and stores the energy in the battery automatically, for better use.



Energy consumption can be visualised from any device on the Turbo Energy app, and you can also select special modes in the event of storms or possible power failures.

It provides you with information on the battery status, solar production, and energy and environmental savings, including the % savings in your invoice.

Turbo Energy app allows users to choose the mode that best suits their needs, and to get in touch with our technical team to solve any problems or resolve any questions about their consumption.

Developed for Hybrid Inverter and SunBox.

TURBO ENERGY™
SOLAR INNOVATION