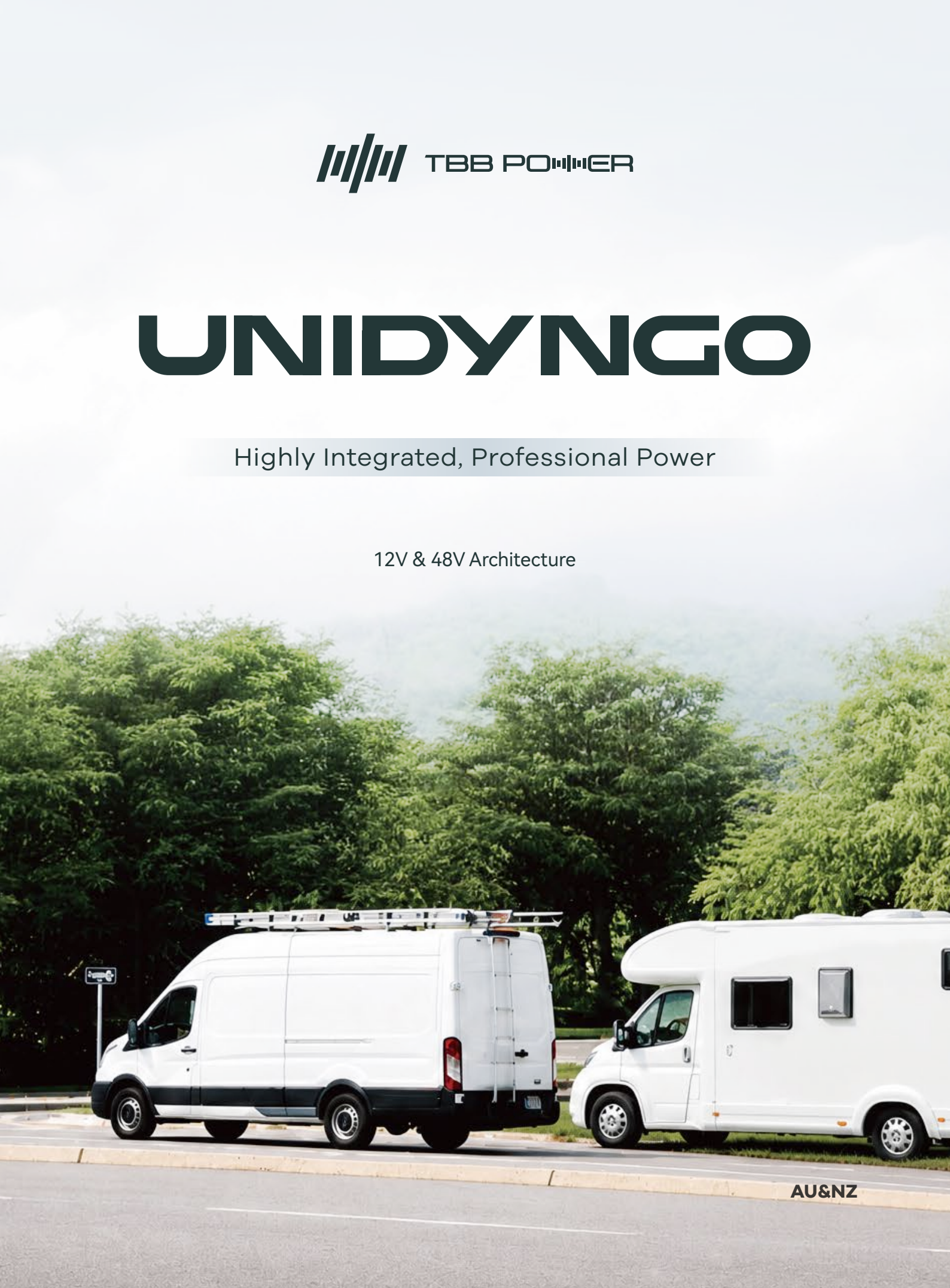
TBB POWER

UNIDYNGO

Highly Integrated, Professional Power

12V & 48V Architecture



AU&NZ



UNIDYNGO 12V Power System

Compact and Efficient

Designed primarily for motorhomes, caravans, and light commercial vehicles, UNIDYNGO 12V is a highly integrated onboard power solution delivering compact and efficient power.

Uni Inverter Charger

At the heart of the system is the PG Uni Inverter Charger, integrating inverter, battery charger, MPPT solar charger and bi-directional DC-DC charger into one compact unit, simplifying installation while maximizing living space.

Lithium Battery

The M12 lithium battery delivers reliable high-current power with integrated BMS, low-temperature heating and a high-precision shunt for safe operation and accurate energy monitoring.

Performance Tracking & Remote Monitoring

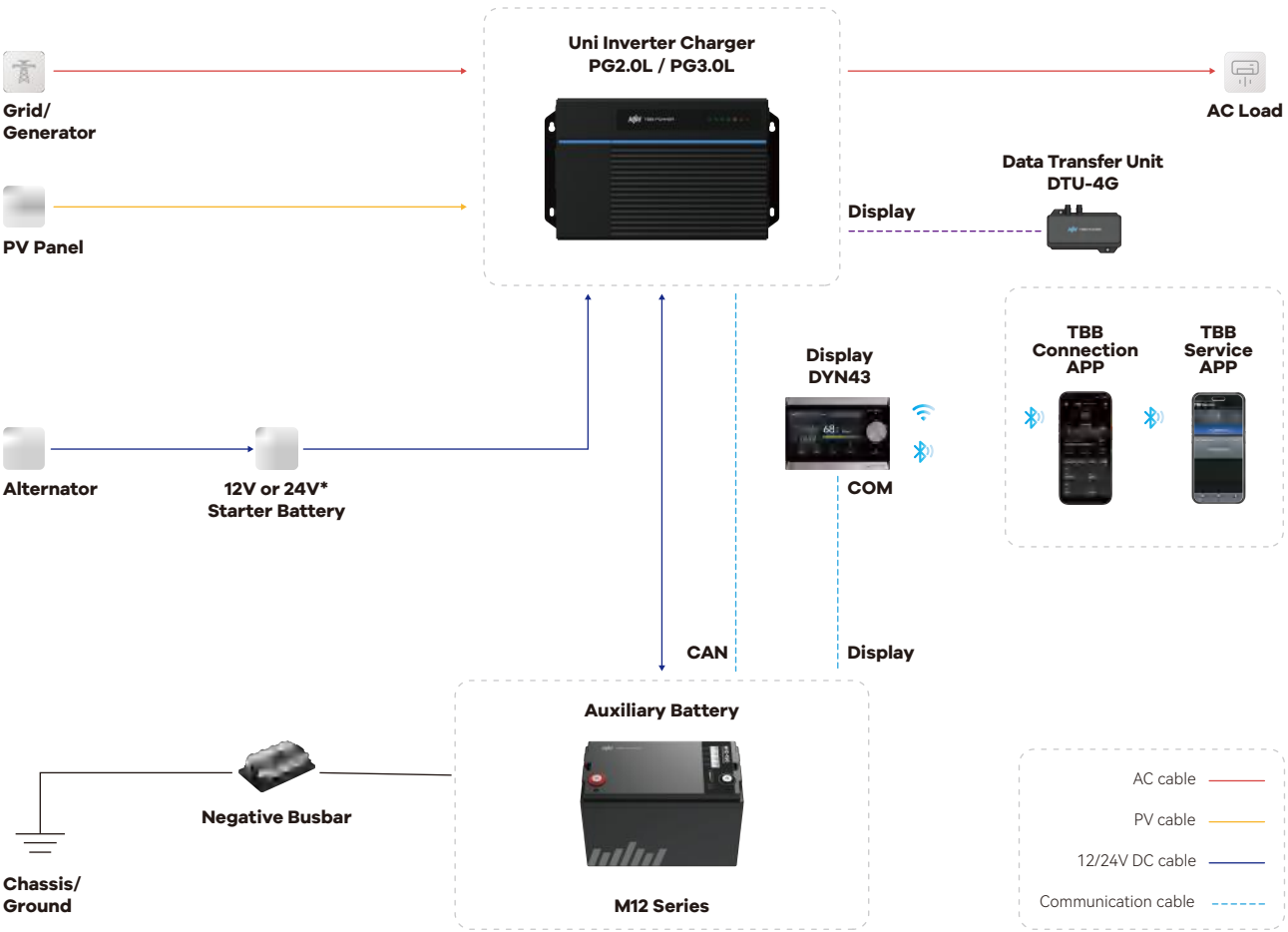
The DYN43 system monitor provides intuitive configuration, real-time monitoring and convenient control, with Bluetooth connectivity for mobile access.

Designed for modern mobile lifestyles, UNIDYNGO efficiently powers everyday essentials, kitchen appliances and power tools while intelligently coordinating solar, alternator and shore power throughout every journey.

System Highlights

- Easy power solution with the PG uni inverter charger as a generator replacement
- High-performance PG inverter charger powers everyday essentials, kitchen appliances and power tools
- Power Assist function allows the PG inverter charger to combine grid power with lithium battery to support heavy AC appliances
- High-performance lithium battery with a max discharge current of up to 12V 300A
- Lithium battery supports parallel connection of up to 8 units, forming a battery bank of up to 12V 2400Ah
- DYN43, a 4.3" touchscreen system monitor providing quick access to critical system information and settings
- IoT Connectivity: With DYN43, supports Wi-Fi and optional external 4G connectivity for data upload and remote device management
- Remote system control, configuration, and monitoring via mobile app

System Schematic



Note*: 24V starter battery support for PG2.0L only

PG SERIES UNI Inverter Charger

PG2.0L / PG3.0L 12VDC 2kW / 3kW 230VAC

FEATURES





- All-in-one design significantly saves installation space and installation time
- Inverter charger combination
  - Rated power 12V 2kW / 3kW
  - High-frequency design featuring compact size, ultra-light weight, and quiet operation
  - Powering the AC load through 12V auxiliary battery and automatically perform charging upon connected to shore power
  - Outstanding overload capability for all kinds of demanding AC loads
  - Powerful AC charger with current up to 200A (PG3.0L)
  - Power control and power assist function to compose the generator hybrid system
  - High inverter / AC charger efficiency up to 93% (PG2.0L) / 94.5% (PG3.0L)
  - Extreme low zero-load power at 18W
- Integrated MPPT solar charge controller
  - Charge 12V auxiliary battery from PV with a wide range input voltage
  - Max charging current: 60A
- Integrated bi-directional DC-DC charger
  - Euro 6 compatible, PG charges the auxiliary battery while driving and maintaining the starter battery when parked
  - Auxiliary battery current: 12V 60A with 12V / 24V alternator (PG2.0L)
- Equipped with an insulation guard that automatically shuts down inverter output in case of low insulation, ensuring user safety
- Plug and play WAGO connectors ensure fast, reliable installation and prevent mismating
- Automatic power on when there is power from grid, or PV, or alternator

Model NO.	PG2.0L	PG3.0L
Inverter Charger		
Nominal Battery Voltage (V)	12	
Input Voltage Range (V)	9 ~ 15	
Zero Load Current (A)	≤ 1.5	
Static Current (mA)	≤ 1	
Cont. Output @ 25℃ (kVA / kW)	2.0	3.0
Cont. Output @ 40℃ (kVA / kW)	1.9	2.7
Peak Power (2s) (kW)	4.0	6.0
AC Output Voltage / Frequency	230Vac ± 2%, 50Hz ± 0.1%	
Inverter / AC Charger Efficiency (%)	Max: 92.5, Full load: 89	Max: 94.5, Full load: 91
AC Input Voltage / Frequency	176 ~ 264Vac, 45 ~ 65Hz	
Max. AC Charge Current (A)	130 @ 12V	200 @ 12V
Transfer Time (ms)	2 (< 15 in weak AC source mode)	
Max. AC Input Current (A)	Max 25 (Default 16)	
Bi-directional DC-DC Charger		
ALT Voltage (V)	12 / 24	12
Static Power (mA)	< 1 @ 12V ALT, < 2 @ 24V ALT	< 1 @ 12V ALT
ALT Current (A)	60 @ 12V ALT, 30 @ 24V ALT	60 @ 12V ALT
Auxiliary Battery Max. Charge / Discharge Current (A)	60 (12V BAT) @ 12V / 24V ALT	60 (12V BAT) @ 12V ALT
Converter Power (W)	780 @ 12V / 24V ALT	780 @ 12V ALT
Efficiency (%)	Max: 96.3, Full load: 94.5 @ 12V ALT Max: 95.5, Full load: 93 @ 24V ALT	Max: 97.6, Full load: 96 @ 12V ALT
MPPT		
PV Input Voltage Range (V)	15 ~ 60 @ 25℃	
Max PV Short Circuit Current (A)	50	
Max Power of PV Panels (kW)	1.0	
Max Charging Current (A)	60	
Efficiency (%)	Max: 96, Full load: 93.5	Max: 95.4, Full load: 94.5
MPPT Efficiency (%)	> 99.5	
Others		
Programmable Relay	Yes	
Insulation Guard	Yes (Disabled by default)	
Dimensions (mm)	446.9 × 273.2 × 89.2	449.9 × 333.2 × 86.9
Weight (kg)	5.9	9.1
Cooling	Forced fan	
Noise (dB)	≤ 55	
IP Rating	IP20	
Altitude (m)	0 ~ 5000 (Derating when > 2000)	
Operating Temperature Range (℃)	-30 ~ 65 (Derating when > 30)	
Safety Standards	IEC62109-1, IEC62109-2, IEC62477	
EMC Standards	EN61000-6-4, EN61000-6-2, ECE R10	EN61000-6-3, EN61000-6-1, ECE R10

M SERIES

Lithium Battery Module

M12-150 / M12-230 12VDC 150Ah / 230Ah





TBB's M Series lithium iron phosphate battery delivers a high continuous discharge current, making it one of the most capable solutions on the market for powering heavy-duty onboard appliances such as air conditioners, coffee makers, and microwave ovens.

Despite its high discharge capability, the battery maintains a lightweight and compact design. It also supports parallel connection of up to 8 units, offering exceptional versatility for a wide range of applications and flexible installation options.

Equipped with a built-in BMS, the M Series battery provides comprehensive protection against overcharging, over-discharging, and over-temperature conditions by monitoring each cell's status. This ensures enhanced safety and extends the battery's service life.

The integrated heating element automatically warms the battery cells when external charging is detected, enabling reliable charging even in extremely low ambient temperatures.

An elegantly designed monitor displays key battery information such as voltage, current, and SoC. It allows users to remotely disconnect the battery power if needed. In addition, the monitor supports mobile APP control via built-in Bluetooth connectivity, offering convenient access to battery status and functions.

FEATURES

- Long cycle life: > 4,000 cycles (0.5C charge/discharge, 80% DoD, @25°C)
- Supports max discharge current: 200A for M12-150, and 300A for M12-230
- Supports up to 8 batteries in parallel
- Built-in BMS with automatic balancing and complete protection
- Built-in high precision shunt for accurate SOC monitoring
- Built-in heating element: automatically warms the battery during low-temperature charging
- Battery BMS idle consumption drops by over 90% (to <0.1mA) from standby mode to shutdown mode
- Intelligent voltage and current control with terminal adaptive charging to ensure the well balancing among cells for optimal cyclelife
- Supports CAN and RS485 communication
- Remote control: mobile APP & Bluetooth connectivity



Battery Remote Switch

- Connects to the battery via RJ45 cable
- Installable in any easily accessible location

Model NO.	M12-150	M12-230
Electrical		
Cell type	LiFePO4	
Rated capacity (Ah)	150	230
Rated power (kWh)	1.932	2.944
Rated voltage (V)	12.88	12.8
Charging voltage (V)	14.2	
Recommended charging current (A)	75	115
Maximum charging current (A)	150	230
Continuous discharge current (A)	150	230
Maximum discharge current (A)	200 - 15 min	300 - 30 min
Cell operating temperature (charging) (℃)	2 ~ 63	
Cell operating temperature (discharging) (℃)	-30 ~ 63	
Storage temperature range (<1 month) (℃)	-20 ~ 45, 20% ~ 50% SOC, < 65% RH	
Storage temperature range (<6 months) (℃)	0 ~ 35, 20% ~ 50% SOC, < 65% RH	
Operating humidity range (%)	10 ~ 90 RH	
Dimensions (W x D x H) (mm)	333 x 175.5 x 224	340 × 190 × 328
Weight (kg)	14.7	24
IP rating	IP20	
Certifications	CE, UN38.3, E-mark	CE, UN38.3, E-mark, RCM, CB
Shipping class	UN3480	
Cycle life	> 4000 (0.5C charge and discharge, 80% DoD, at 25℃)	
Heating element	YES	
Maximum number of parallel	8	
Display unit (optional)	VS28-LS, DTU-BLE	



UNIDYNGO 48V Professional Power System

Highly Powerful, Compact, Efficient

Designed for commercial vehicles and demanding onboard applications, and increasingly adopted by premium motorhomes, UNIDYNGO 48V is a highly integrated onboard power solution delivering industry-leading performance and high efficiency, with the capability to replace generators and PTOs.

Uni Inverter Charger

At the heart of the system is the PG Uni Inverter Charger, integrating inverter, battery charger, powerful MPPT solar charger and bi-directional DC-DC charger into one compact unit, simplifying installation while reducing system complexity.

Lithium Battery

The M48 lithium battery delivers reliable high-power energy with integrated BMS, low-temperature heating and a high-precision shunt for dependable operation in all conditions.

Performance Tracking & Remote Monitoring

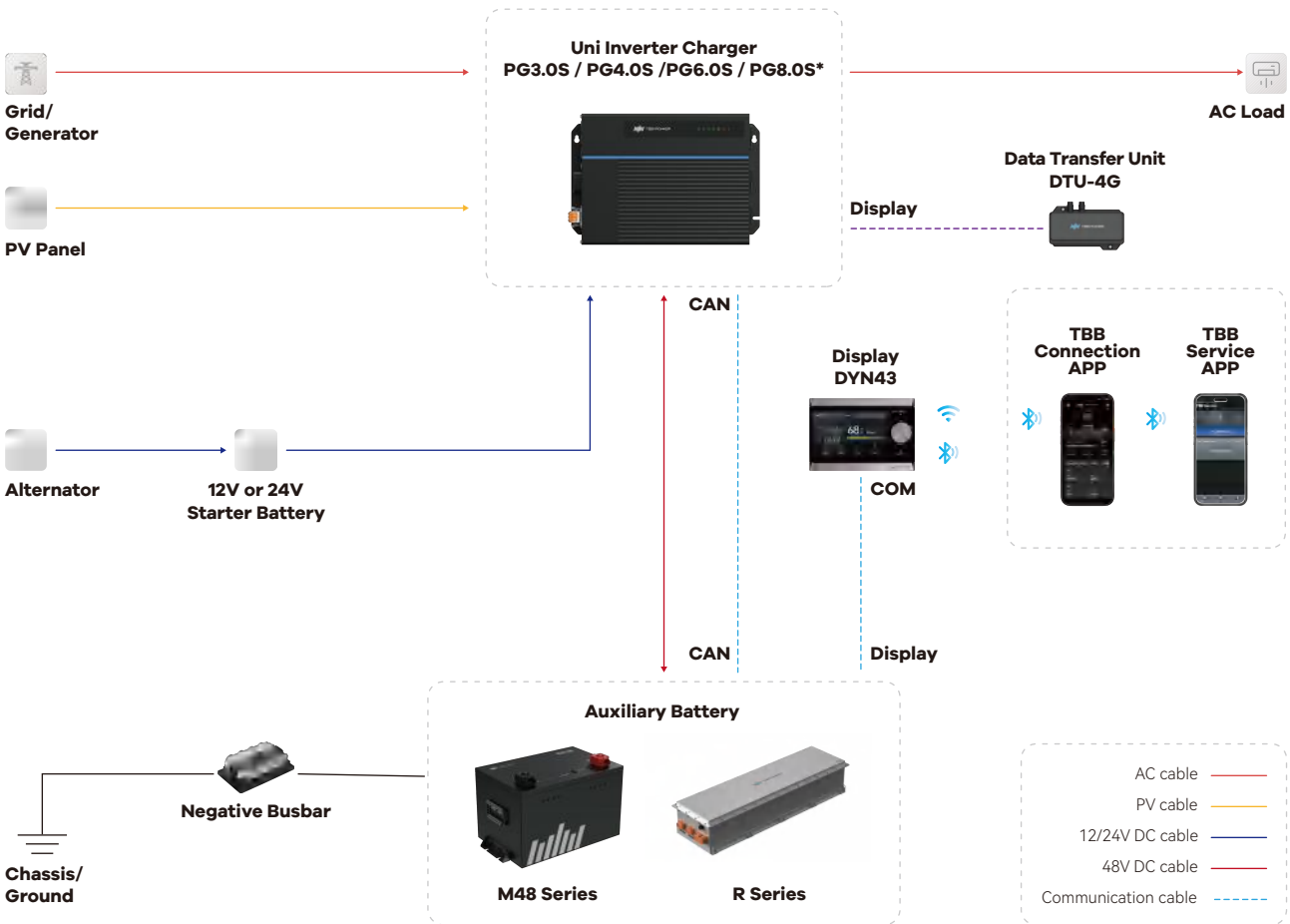
The DYN43 system monitor provides intuitive configuration, real-time monitoring and convenient control, with Bluetooth connectivity for mobile access.

Designed for demanding mobile operations, UNIDYNGO efficiently powers air compressors, welding machines, pumps, air conditioners and electric tools while maximizing energy availability from solar, alternator and shore power.

System Highlights

- Easy power solution with the PG uni inverter charger as a generator replacement
- Powerful PG inverter charger powers air compressors, welding machines, surge pumps, air conditioners, and electric tools
- Delivers up to 8 kW per unit and supports three-phase systems
- Power Assist function allows the PG inverter charger to combine grid power with lithium battery to support heavy AC appliances
- High-performance lithium battery with a max discharge current of up to 48V 200A
- Lithium battery supports parallel connection of up to 8 units, forming a battery bank of up to 48V 1200Ah
- DYN43, a 4.3" touchscreen system monitor providing quick access to critical system information and settings
- IoT Connectivity: With DYN43, supports Wi-Fi and optional external 4G connectivity for data upload and remote device management
- Remote system control, configuration, and monitoring via mobile app

System Schematic



Note*: PG4.0S supports three-phase operation.

PG SERIES

UNI Inverter Charger

PG3.0S / PG4.0S / PG6.0S / PG8.0S 48VDC 3kW / 4kW / 6kW / 8kW 230VAC

FEATURES



- All-in-one design significantly saves installation space and installation time
- Inverter charger combination
  - Rated power 48V 3kW / 4kW / 6kW / 8kW
  - High-frequency design featuring compact size, ultra-light weight, and quiet operation
  - Powering the AC load through 48V auxiliary battery and automatically perform charging upon connected to shore power
  - Outstanding overload capability for all kinds of demanding AC loads
  - Powerful AC charger with current up to 150A (48V)
  - Power control and power assist function to compose the generator hybrid system
  - High efficiency up to 96.5% (PG3.0S / PG4.0S)
  - Extreme low zero-load power at 14.4W (PG3.0S / PG4.0S)
- Integrated MPPT solar charge controller
  - Charge 48V auxiliary battery from PV with a wide range input voltage
  - Max charging current: 30A
- Integrated bi-directional DC-DC charger
  - Euro 6 compatible, PG charges the auxiliary battery while driving and maintaining the starter battery when parked
  - Auxiliary battery current: 48V 30A with 12V alternator / 48V 60A with 24V alternator (PG4.0S / PG6.0S / PG8.0S)
- Equipped with an insulation guard that automatically shuts down inverter output in case of low insulation, ensuring user safety
- Supports three-phase operation (PG4.0S)
- Plug and play WAGO connectors ensure fast, reliable installation and prevent mismating
- Automatic power on when there is power from grid, or PV, or alternator

Model NO.	PG3.0S	PG4.0S	PG6.0S	PG8.0S
Inverter Charger				
Nominal Battery Voltage (V)	48			
Input Voltage Range (V)	40 ~ 57			
Zero Load Current (mA)	≤ 300		≤ 400	
Static Current (mA)	≤ 1			
Cont. Output Power @25℃ (kVA / kW)	3.0	4.0	6.0	8.0
Cont. Output Power @40℃ (kVA / kW)	3.0	3.0	5.8	5.8
Peak Power (2s) (kW)	6.0	8.0	12.0	16.0
AC Output Voltage / Frequency	230Vac ± 2%, 50Hz ± 0.1%			
Inverter / AC Charger Efficiency (%)	Maximum: 96.5, full load: 95.2	Maximum: 96.5, full load: 94.8	Maximum: 96, Full load: 95.5	Maximum: 96, Full load: 95
AC Input Voltage / Frequency	176 ~ 264Vac, 45 ~ 65Hz			
Max. AC Charge Current (A)	55	75	110	150
Transfer Time (ms)	2 (<15 in Weak AC source mode)			
Max. AC Input Current (A)	25		40	
Bi-directional DC-DC Charger				
ALT Voltage (V)	12 / 24			
Static Power (mA)	< 1 @ 12V ALT, < 2 @ 24V ALT			
ALT Current (A)	60 @ 12V ALT / 24V ALT	120 @ 12V ALT / 24V ALT		
Auxiliary Battery Max. Charge/Discharge Current (A)	15 (48V BAT) @ 12V ALT, 30 (48V BAT) @ 24V ALT	30 (48V BAT) @ 12V ALT, 60 (48V BAT) @ 24V ALT		
Converter Power (W)	750 @ 12V ALT, 1500 @ 24V ALT	1500 @ 12V ALT, 3000 @ 24V ALT		
Efficiency (%)	Maximum: 95.5, Full load: 94.8 @ 12V ALT Maximum: 97.5, Full load: 97.0 @ 24V ALT			
MPPT				
PV Input Voltage Range (V)	15~60 @ 25℃			
Max. PV Short-Circuit Current (A)	60			
Max. Power of PV Panels (W)	1800			
Max Charging Current (A)	30			
Efficiency (%)	Maximum: 97.6, Full load: 95		Maximum: 96, Full load: 95 @ 30V	
MPPT Efficiency (%)	> 99.5			
Others				
Programmable Relay	Yes			
Insulation Guard	Yes (Disabled by default)			
Dimensions (mm)	449.9 x 313.2 x 86.9		506.6 x 351.2 x 88.1	
Weight (kg)	8.8		12.5	
Cooling	Forced fan			
Noise (dB)	≤ 55			≤ 62
IP Rating	IP20			
Altitude (m)	0 ~ 5000 (Derating when > 2000)			
Operating Temperature Range (℃)	-30 ~ 65 (Derating when > 30)			
Safety Standards	IEC62109-1, IEC62109-2, IEC62477			
EMC Standards	EN61000-6-3, EN61000-6-1, ECE R10		EN61000-6-4, EN61000-6-2, ECE R10	

M SERIES

Lithium Battery Module

M48-105 / M48-150 48VDC 105Ah / 51.52VDC 150Ah





TBB's M Series lithium iron phosphate battery delivers a high continuous discharge current, making it one of the most capable solutions on the market for powering heavy-duty onboard appliances such as air conditioners, coffee makers, and microwave ovens.

Despite its high discharge capability, the battery maintains a lightweight and compact design. It also supports parallel connection of up to 8 units, offering exceptional versatility for a wide range of applications and flexible installation options.

Equipped with a built-in BMS, the M Series battery provides comprehensive protection against overcharging, over-discharging, and over-temperature conditions by monitoring the current and voltage of each cell. This ensures enhanced safety and extends the battery's service life.

The integrated heating element automatically warms the battery cells when external charging is detected, enabling reliable charging even in extremely low ambient temperatures.

An elegantly designed monitor displays key battery information such as voltage, current, and SoC. It allows users to remotely disconnect the battery power if needed. In addition, the monitor supports mobile APP control via built-in Bluetooth connectivity, offering convenient access to battery status and functions.

FEATURES

- Long cycle life: 4000 cycles (0.5C charge and discharge, 80% DoD, @25°C)
- Supports max discharge current: 150A for M48-105, 200A for M48-150
- Supports up to 8 batteries in parallel
- Built-in BMS with automatic balancing and complete protection
- Built-in high precision shunt for accurate SOC monitoring
- Built-in heating element: automatically warms the battery during low-temperature charging
- Battery BMS idle consumption drops by over 90% (to approximately 0.05mA) from standby mode to shutdown mode
- Intelligent voltage and current control with terminal adaptive charging to ensure the well balancing among cells for optimal cycle life
- Supports CAN and RS485 communication
- Remote control: mobile APP & Bluetooth connectivity



Battery Remote Switch

- Connects to the battery via RJ45 cable
- Installable in any easily accessible location

Model NO.	M48-105	M48-150
Cell type	LiFePO4	
Rated capacity (Ah)	105	150
Rated power (kWh)	5.04	7.728
Rated voltage (V)	48	51.52
Charging voltage (V)	53.25	56.8
Recommended charging current (A)	52.5	75
Maximum charging current (A)	100	150
Continuous discharge current (A)	100	150
Maximum discharge current (A)	150 - 30min	200 - 30min
Cell operating temperature (charging) (℃)	2 ~ 63	
Cell operating temperature (discharging) (℃)	-30 ~ 63	
Storage temperature range (<1 month) (℃)	-20 ~ 45, 20% ~ 50% SOC, < 65% RH	
Storage temperature range (<6 months) (℃)	0 ~ 35, 20% ~ 50% SOC, < 65% RH	
Operating humidity range (%)	10 ~ 90 RH	
Dimensions (W × D × H) (mm)	455 x 200 x 300	500 × 290 × 305.5
Weight (kg)	39.2	60
IP rating	IP20	
Certifications	CE, UN38.3, E-mark, CB, RCM	UN38.3, UL, FCC, IC, E-mark, CE, CB, RCM
Shipping class	UN3480	
Cycle life	> 4000 (0.5C charge and discharge, 80% DoD, @25℃)	
Heating element	YES	
Maximum number of parallel	8	
Display unit (optional)	VS28-LS	

R SERIES

Lithium Battery

RS5	51.2VDC	105Ah	**RS15**	48.3VDC	300Ah



FEATURES

01

Reliable Protection, Remarkable Outdoor Performance

The IP67 and IP69K-rated design ensures reliable battery performance in harsh outdoor environments, including exposure to high-pressure washing.

02

Separated Placement, Enhanced Security

Mounted outside the living area, the battery enhances safety by keeping the battery system separate from the cabin.

03

Chassis-Mounted Design, Space Saving

The chassis-mounted battery lowers the motorhome's center of gravity, improving driving stability while freeing up valuable interior storage space.

04

Built-in Heater, Ready for Winter

The integrated heater automatically warms the battery during low-temperature charging, maintaining optimal charging performance and extending battery life in freezing conditions.

05

Built-in QuickRig Connector, Safe & Convenient

Plug-and-play installation with a built-in IP67 QuickRig connector ensures secure, vibration-resistant connections for enhanced reliability in demanding mobile environments.

Model NO.	RS5	RS15
Cell Type	LiFePO4	
Rated Capacity (Ah)	105	300
Rated Power (kWh)	5.376	14.49
Rated Voltage (V)	51.2	48.3
Charging Voltage (V)	56.8	53.25
Maximum Charging Current (A)	100	100
Continuous Discharge Current (A)	100	100
Maximum Discharge Current (A)	150	150
Cell Operating Temperature (Charging) (℃)	0 ~ 63	
Cell Operating Temperature (Discharging) (℃)	-35 ~ 63	
Storage Temperature Range (< 1 month) (℃)	-20 ~ 45, 20% ~ 50% SOC, < 65% RH	
Storage Temperature Range (< 6 months) (℃)	0 ~ 35, 20% ~ 50% SOC, < 65% RH	
Operating Humidity Range (%)	10 ~ 90 RH	
Dimensions (mm)	553 × 360 × 230	1238 × 360 × 230
Weight (kg)	47.5	118
IP Rating	IP67	
Shipping Class	UN3480	
Heating Element	Yes	
Cycle Life	3000 (0.5C charging, 0.5C discharging, @ 25℃)	



Note: Illustration for installation reference only. Actual product may vary.

System Monitor



DYN43

- 4.3" LCD with one power switch and two touch buttons — one for inverter control and one customizable
- Integrated battery switch for remote ON/OFF control
- Real-time monitoring of battery, inverter, DC-DC charger and MPPT charger
- Parameter configuration via system monitor or mobile app
- Built-in Bluetooth for mobile app control
- Supports CAN and RS485
- IoT Connectivity: Supports Wi-Fi and external 4G connectivity for data upload, remote monitoring and management

Power Distribution Module



D11

- 11 outputs (8 × MOSFET + 3 × dual-battery relay outputs), rated from 5A to 20A
- Supports water level and temperature sensors
- 5 signal inputs and 2 relay outputs
- CAN, Bluetooth and RF connectivity



EL6-Q

- 6 × 10A MOSFET dimmable lighting control module
- CAN, Bluetooth and RF connectivity

EC4-Q

- 4 MOSFET outputs for high-current DC always-on loads (2 × 15A + 2 × 30A)
- 4 signal inputs
- CAN communication

Data Transfer Unit



DTU-4G

- 4G connectivity, compatible with local SIM cards
- An external communication device to connect TBB system to the cloud, enabling remote monitoring, control, fault diagnostics, and data transmission for efficient after sales support

TBB CONNECTION & TBB SERVICE

Smart Monitoring. Instant Service

DYN43

Centralized Monitor



TBB CONNECTION

Local and Remote Real-Time Monitoring

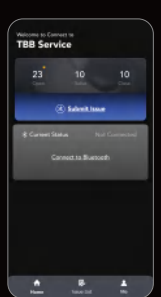


TBB SERVICE

Instant Issue Report + Remote Diagnosis









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