

# **MARSTEK MARS I PLUS**

7-in-1 1000V V-Boost 12kW Three-Phase Residential ESS

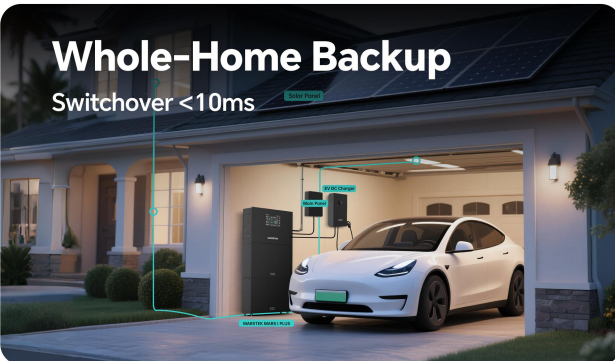
6-in-1 550V V-Boost 6kW Single-Phase Residential ESS

## With Localized EMS



## Whole-Home Backup

Switchover <10ms



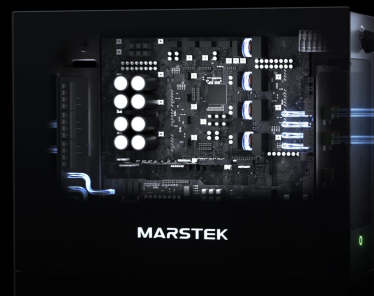
## TOU Management for Cost Savings

### Command with Marstek App



## With Smart Meter

**Max. 24kW**  
**4 MPPT**



**Up to 12kW**  
**Three-Phase Inverter**



SG – Ready

## Heat Pump Integration



### Eliminates Battery Imbalance



12kW V2X Power  
EV DC/AC Charger Required



## Open API for Third-Party EMS Integration

## Battery

Years Warranty

## Life Cycles

Years Lifespan

## Sub-30dB

# MARSTEK MARS I PLUS



## 7-in-1

## 1000V V-Boost 12kW Three-Phase Residential ESS

## 6-in-1

## 550V V-Boost 6kW Single-Phase Residential ESS



## Modular Battery, Flexible Expansion

**Up to 6 Battery Packs & 30.72kWh**



## Parallel Scalable Power and Capacity

## Up to 48kW & 122.88kWh



## Battery

Years Warranty

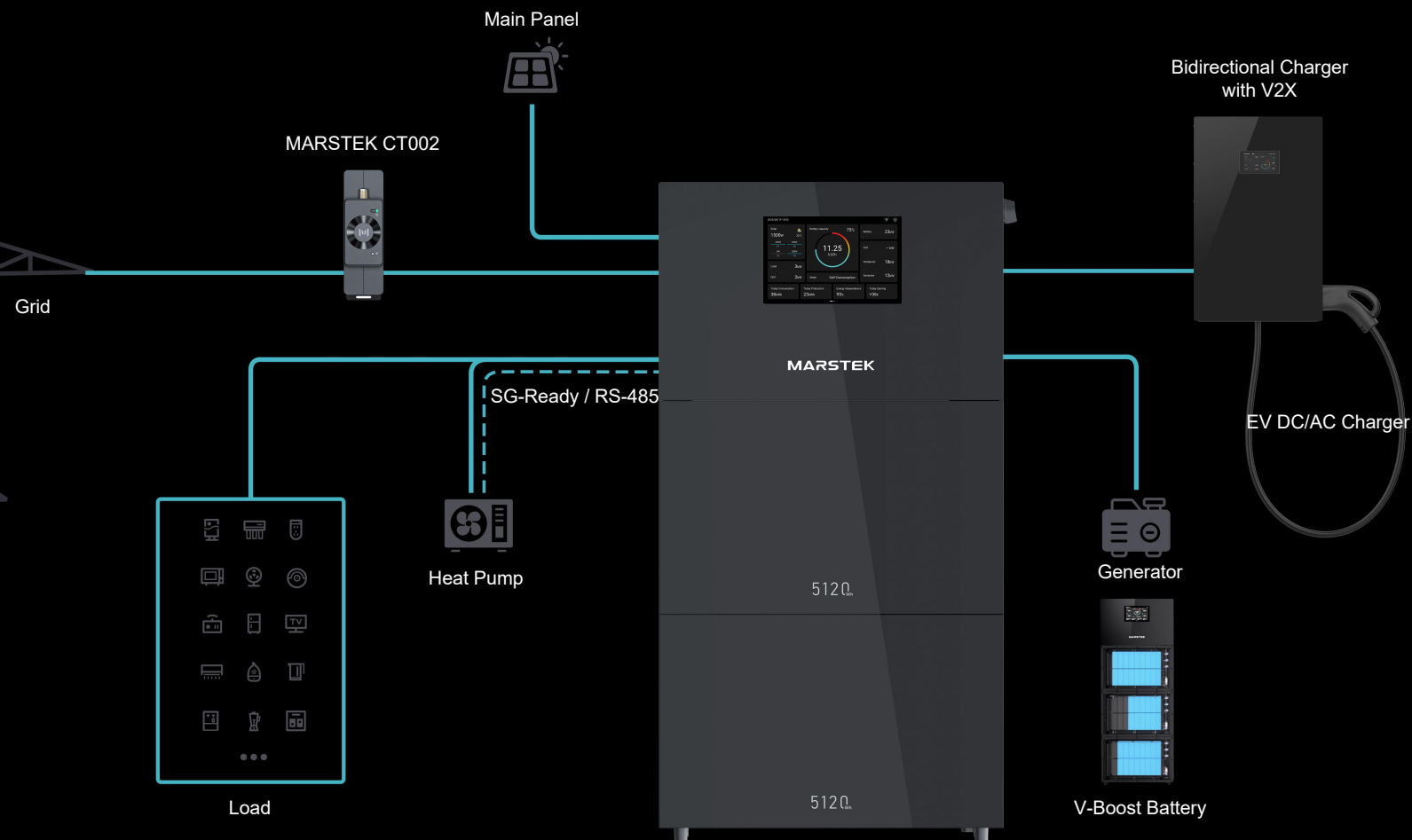
## Life Cycles

Years Lifespan

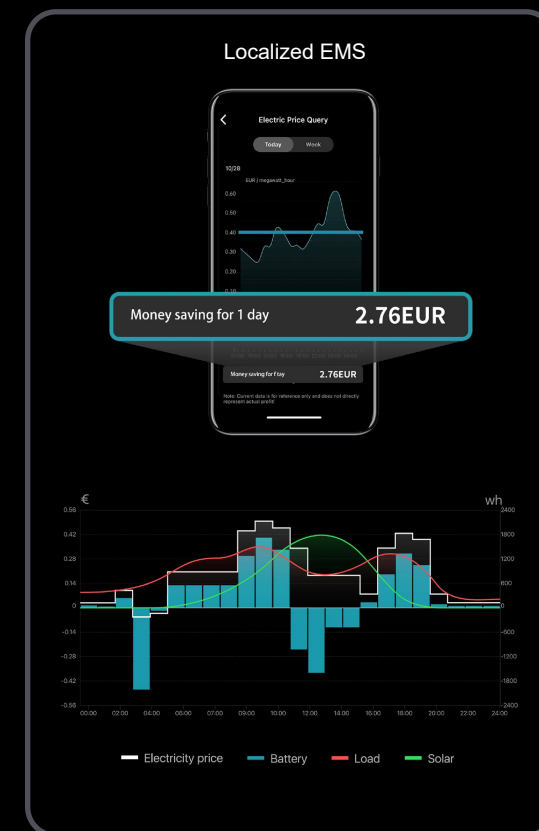
## Sub-30dB

# 7-in-1 Total Energy Solution

12kW Hybrid Inverter | 24kW MPPT | 1000V V-Boost Battery | 25kW DC/11kW AC EV Charger | 12kW V2X | Heat Pump Management | Localized EMS

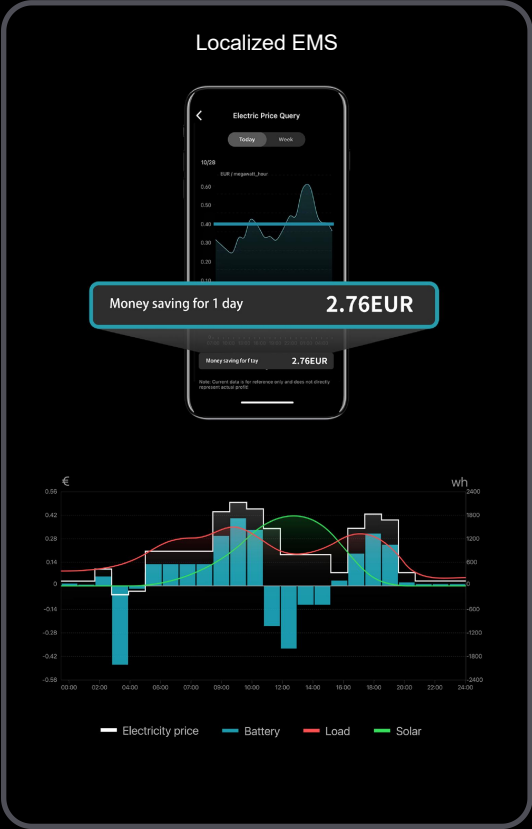
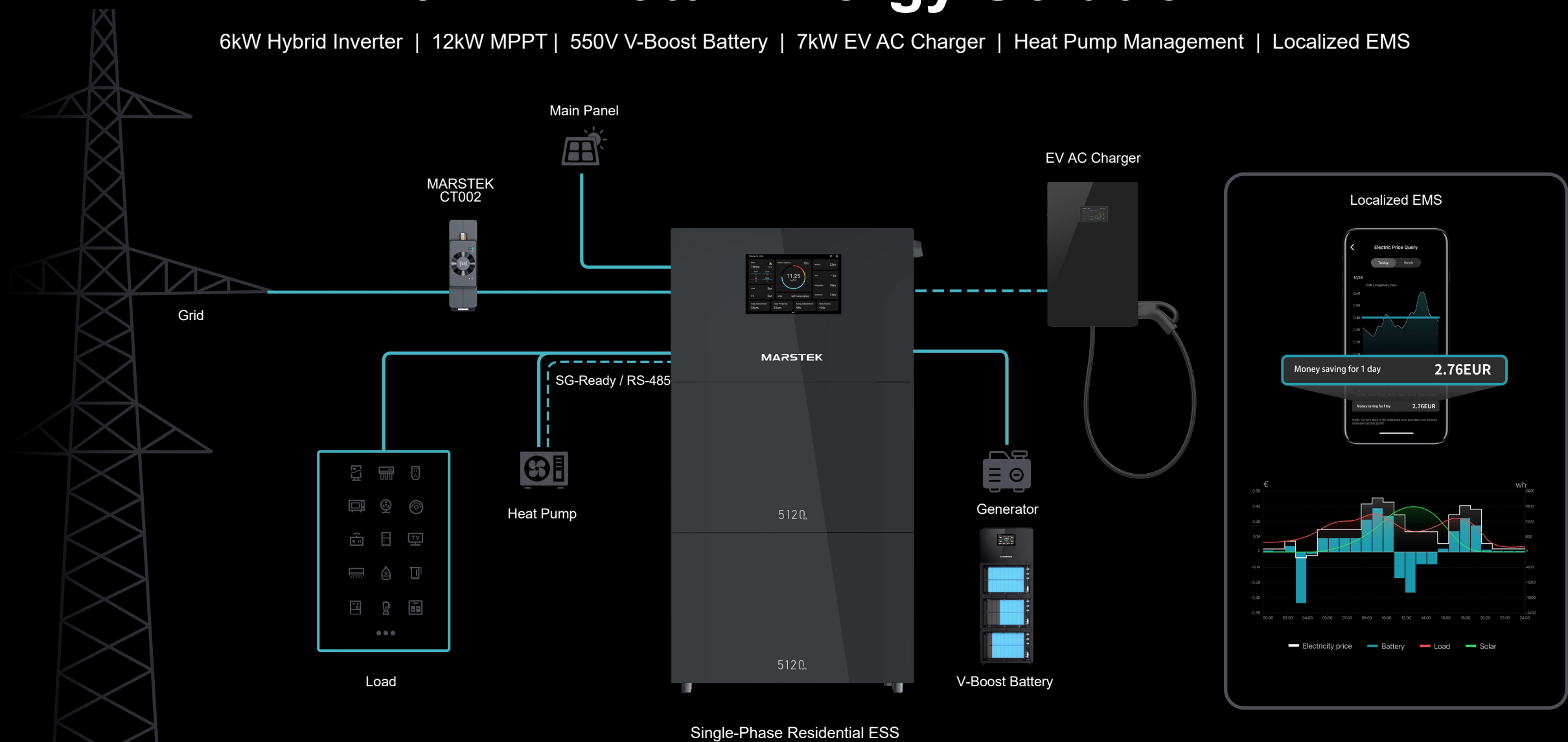


Three-Phase Residential ESS



# 6-in-1 Total Energy Solution

6kW Hybrid Inverter | 12kW MPPT | 550V V-Boost Battery | 7kW EV AC Charger | Heat Pump Management | Localized EMS



# Efficient Energy Integration

## MARSTEK MARS I PLUS Three Phase

12kW Three-Phase Inverter

24kW PV Input | 4 MPPT

25kW DC/11kW AC EV Charging Power (EV DC/AC Charger Required)

12kW V2X Power (EV DC/AC Charger Required)

## MARSTEK MARS I PLUS Single Phase

6kW Single-Phase Inverter

12kW PV Input | 2 MPPT

7kW EV AC Charger (EV AC Charger Required)



# V-Boost Battery

Eliminates Battery Imbalance



MARSTEK MARS I PLUS



Traditional Residential Battery

# Modular Design

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**5.12kWh**

Per Battery Pack

**30.72kWh**

Flexible Expansion up to 6 Battery Packs



# Parallel Scalability

## Single Phase

**12kW ~ 48kW** MPPT

**6kW ~ 24kW** On-Grid Power

**10.24kW ~ 122.88kW** Capacity

## Three Phase

**24kW ~ 96kW** MPPT

**12kW ~ 48kW** On-Grid Power

**15.36kWh ~ 122.88kWh** Capacity



# 10.1"

## HD Touchscreen

with Localized EMS





## SG-Ready Heat Pump Integration

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# Anti Feed-in with Smart Meter

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# AI Optimization

TOU Management for Cost Savings

Command with Marstek App



**LFP**

Battery

**6000+**

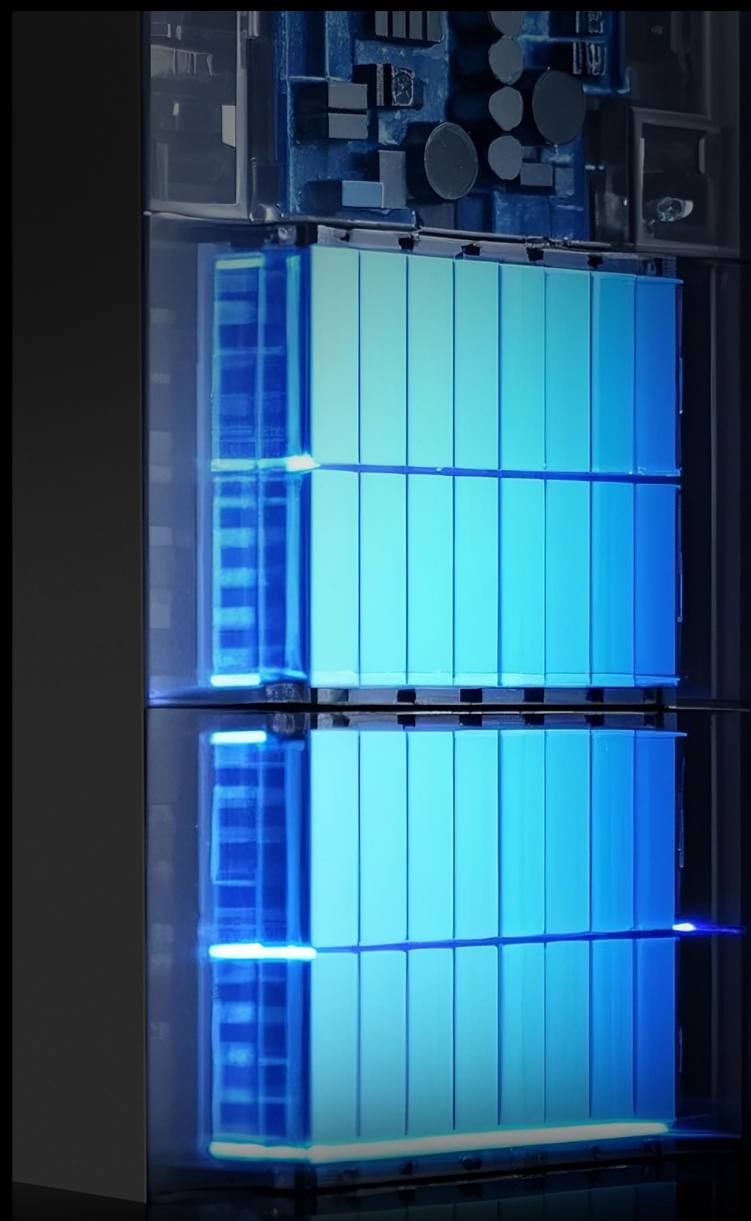
Life Cycles

**10**

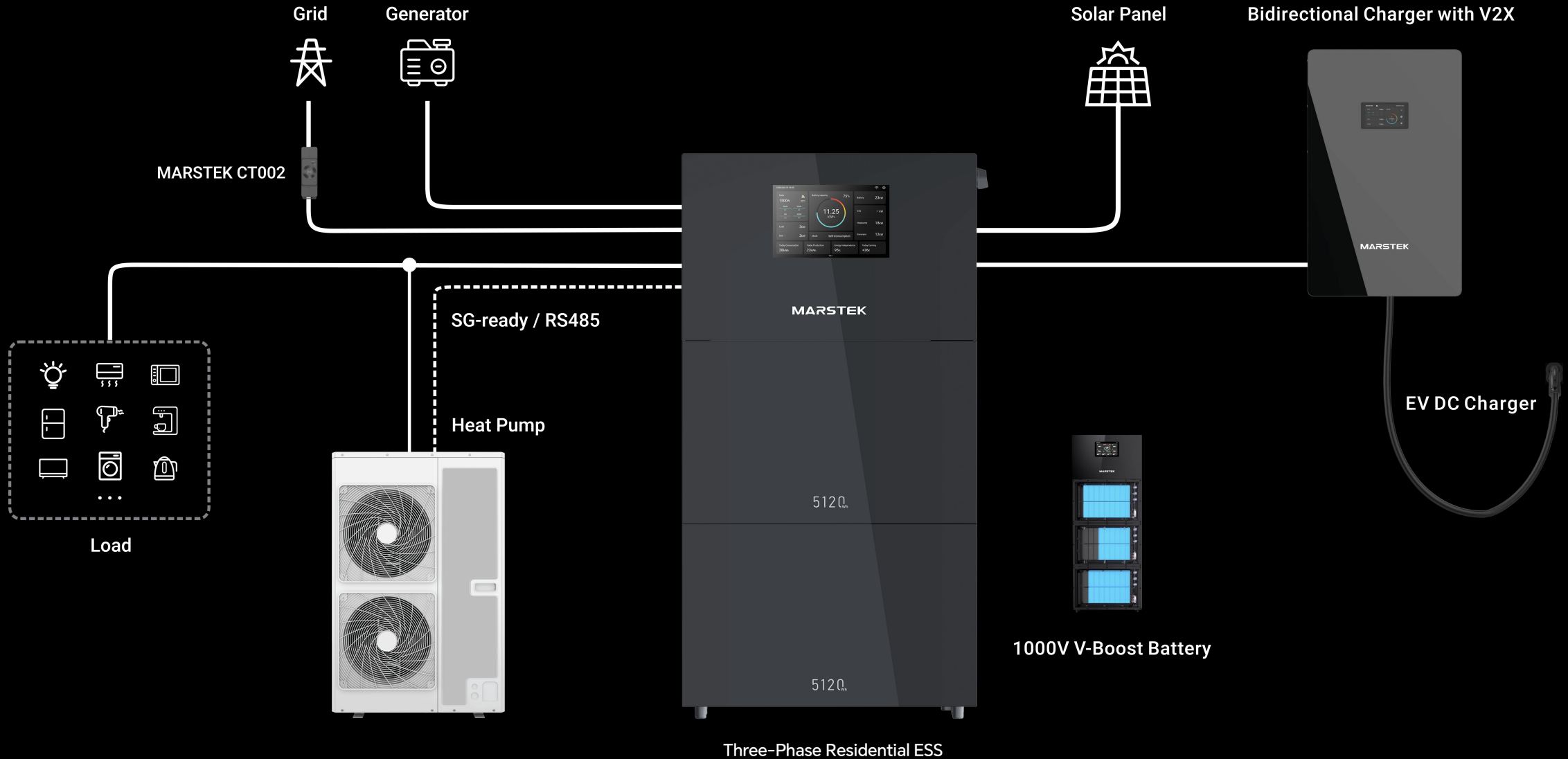
Years Warranty

**15**

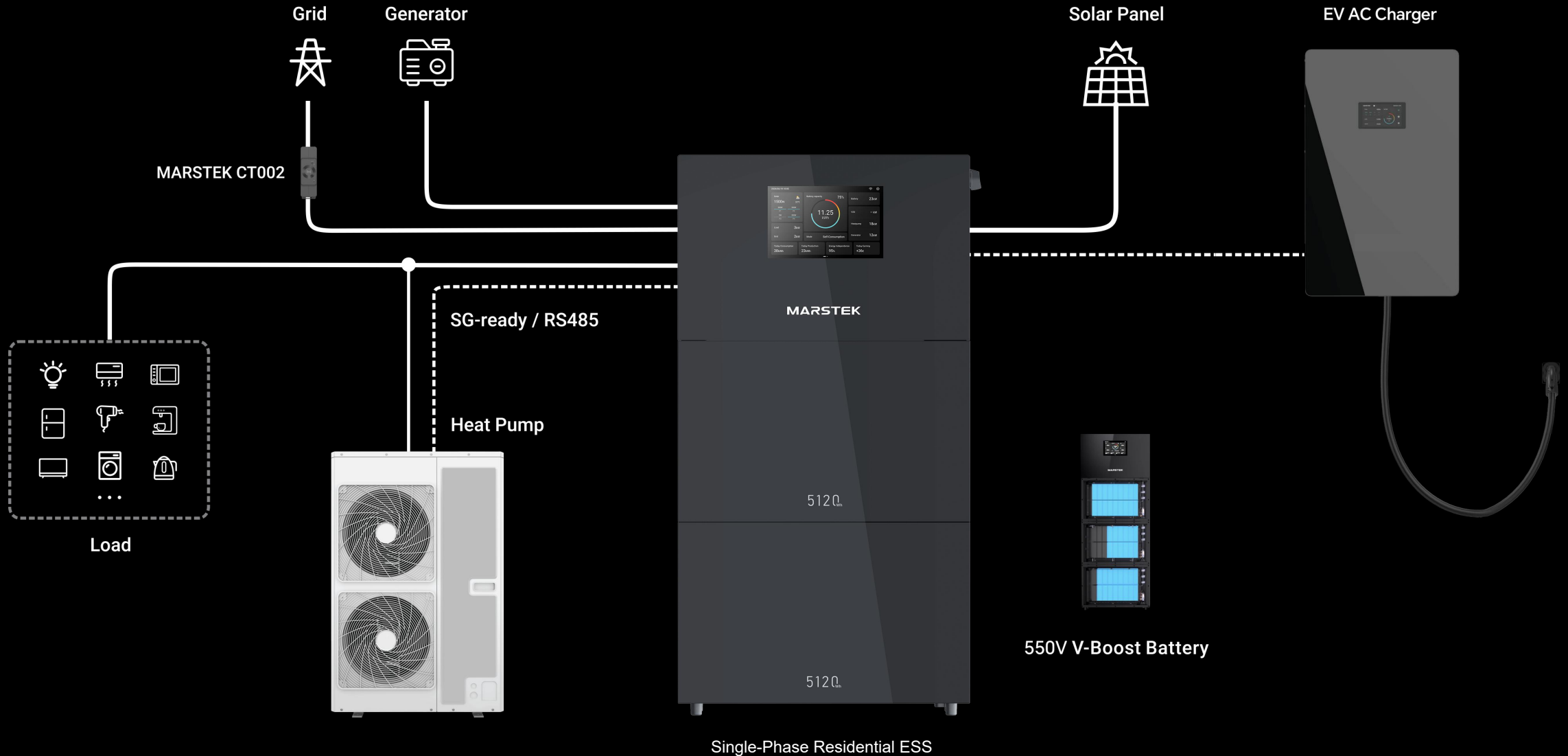
Years Lifespan



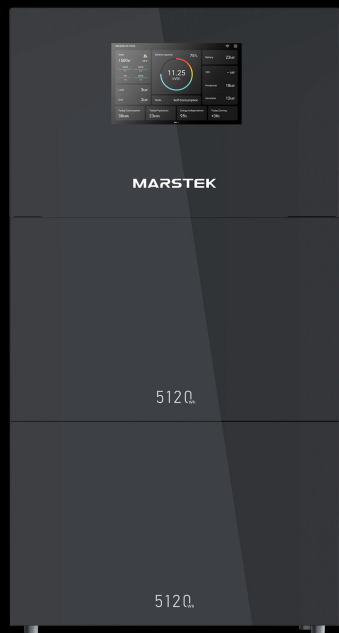
# Installation & Wiring Layout for MARSTEK MARS I PLUS



# Installation & Wiring Layout for MARSTEK MARS I PLUS

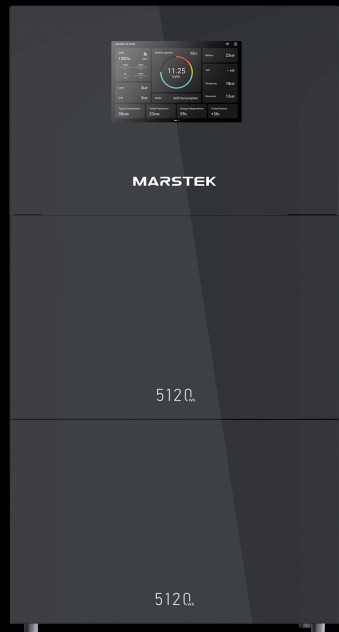


## MARS I PLUS-12KTP



| Model                                |  | MST-MARS I PLUS-12KTP                                                                                                                                                  |
|--------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PV Input</b>                      |  |                                                                                                                                                                        |
| Max. PV Power                        |  | 24kW                                                                                                                                                                   |
| Max. DC Input Voltage                |  | 1000V                                                                                                                                                                  |
| Nominal DC Input Voltage             |  | 650V                                                                                                                                                                   |
| Start-up Voltage                     |  | 200V                                                                                                                                                                   |
| MPPT Voltage Range                   |  | 200V~850V                                                                                                                                                              |
| Number of MPP. Trackers              |  | 4                                                                                                                                                                      |
| Number of PV Strings Per MPPT        |  | 1                                                                                                                                                                      |
| Max. Input Current Per MPPT          |  | 16A                                                                                                                                                                    |
| Max. Short-Circuit Current Per MPPT  |  | 20.8A                                                                                                                                                                  |
| <b>AC Output and Input (On-Grid)</b> |  |                                                                                                                                                                        |
| Nominal Output Power                 |  | 12kW                                                                                                                                                                   |
| Nominal Output Current               |  | 17.4A                                                                                                                                                                  |
| Nominal Output Voltage               |  | 380V/400V                                                                                                                                                              |
| Nominal Grid Frequency               |  | 50Hz/60Hz                                                                                                                                                              |
| Power Factor                         |  | 0.8 leading~ 0.8 lagging                                                                                                                                               |
| Total Current Harmonic Distortion    |  | THDi<3%                                                                                                                                                                |
| Max. Input Apparent Power            |  | 18kW                                                                                                                                                                   |
| Max. Input Current                   |  | 26.1A                                                                                                                                                                  |
| <b>Efficiency</b>                    |  |                                                                                                                                                                        |
| Max. Efficiency                      |  | 98.20%                                                                                                                                                                 |
| European Efficiency                  |  | 97.80%                                                                                                                                                                 |
| MPPT Efficiency                      |  | 99.50%                                                                                                                                                                 |
| Battery Conversion Efficiency        |  | 97.80%                                                                                                                                                                 |
| <b>Generator</b>                     |  |                                                                                                                                                                        |
| Max. Input Apparent Power            |  | 18kVA                                                                                                                                                                  |
| Nominal Input Voltage                |  | 3L/N/PE; 380V/400V                                                                                                                                                     |
| Frequency                            |  | 50Hz/60Hz                                                                                                                                                              |
| Max. Input Current                   |  | 27.3A                                                                                                                                                                  |
| <b>AC Output (Backup)</b>            |  |                                                                                                                                                                        |
| Nominal Output Power                 |  | 12kW                                                                                                                                                                   |
| Max. Output Apparent Power           |  | 12.6kVA                                                                                                                                                                |
| Max. AC Output Current               |  | 18.3A                                                                                                                                                                  |
| Peak Output Current (1s)             |  | 150%~200%                                                                                                                                                              |
| Nominal Output Voltage               |  | 380V/400V                                                                                                                                                              |
| Power Factor                         |  | 50Hz/60HZ                                                                                                                                                              |
| Total Voltage Harmonic Distortion    |  | THDv<2%                                                                                                                                                                |
| Disruption Time of Backup Switch     |  | <10ms                                                                                                                                                                  |
| <b>Battery Connection</b>            |  |                                                                                                                                                                        |
| Battery Module Models                |  | MST-MARS I PLUS-5.0KBAT                                                                                                                                                |
| Number of Modules Per inverter       |  | 1~6PCS                                                                                                                                                                 |
| Nominal Voltage of Battery Module    |  | 800V                                                                                                                                                                   |
| Voltage Range of Battery Module      |  | 650V~950V                                                                                                                                                              |
| <b>Protection</b>                    |  |                                                                                                                                                                        |
| Safety Protection Feature            |  | Insulation Monitoring, Residual Current Monitoring, Anti-islanding Protection, DC Reverse Polarity Protection, AC OV/OC/SC Protection, Type II DC /AC Surge Protection |
| <b>General Data</b>                  |  |                                                                                                                                                                        |
| Dimensions (W/H/D)                   |  | 628*195*498mm                                                                                                                                                          |
| Weight                               |  | 55kg                                                                                                                                                                   |
| Storage Temperature Range            |  | -40°C~70°C                                                                                                                                                             |
| OperatingTemperature Range           |  | -25°C~60°C                                                                                                                                                             |
| Relative Humidity Range              |  | 0~100%                                                                                                                                                                 |
| Max. Operating Altitude              |  | 4000m, Derating from 2000m                                                                                                                                             |
| Cooling                              |  | Natural Cooling                                                                                                                                                        |
| Standby Power Consumption            |  | <25W                                                                                                                                                                   |
| System Ingress Protection Rating     |  | IP65                                                                                                                                                                   |
| Noise Level                          |  | <30dB                                                                                                                                                                  |
| Display                              |  | 10.1"LCD, App                                                                                                                                                          |
| Communication                        |  | RS-485 for Meter, RS-485 for Heat Pump, Parallel CAN * 2, DC BUS CAN (For V2G), RS-485 for EMS, Wi-Fi/Bluetooth/Ethernet, Battery Access CAN (Internal)                |
| General IO                           |  | DI*4, DO*2, CT*3, +5V Power, +12V Power, DRAM                                                                                                                          |
| <b>Standard Compliance</b>           |  |                                                                                                                                                                        |
| Safety Standard                      |  | IEC/EN62109-1                                                                                                                                                          |
| EMC Standard                         |  | IEC/EN61000-6-1-4 Class B                                                                                                                                              |
| On-Grid Standard                     |  | EN 50549-1:2019, VDE 4105:2018                                                                                                                                         |

# MARS I PLUS-6KSP



| Model                                |  | MST-MARS I PLUS-6KSP                                                                                                                                                   |
|--------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PV Input</b>                      |  |                                                                                                                                                                        |
| Max. PV Power                        |  | 12kW                                                                                                                                                                   |
| Max. DC Input Voltage                |  | 550V                                                                                                                                                                   |
| Nominal DC Input Voltage             |  | 360V                                                                                                                                                                   |
| Start-up Voltage                     |  | 150V                                                                                                                                                                   |
| MPPT Voltage Range                   |  | 125V~500V                                                                                                                                                              |
| Number of MPP. Trackers              |  | 2                                                                                                                                                                      |
| Number of PV Strings Per MPPT        |  | 1                                                                                                                                                                      |
| Max. Input Current Per MPPT          |  | 16A                                                                                                                                                                    |
| Max. Short-Circuit Current Per MPPT  |  | 20.8A                                                                                                                                                                  |
| <b>AC Output and Input (On-Grid)</b> |  |                                                                                                                                                                        |
| Nominal Output Power                 |  | 6kW                                                                                                                                                                    |
| Max. Output Apparent Power           |  | 6.6kVA                                                                                                                                                                 |
| Nominal Output Current               |  | 26.1A                                                                                                                                                                  |
| Max. Output Current                  |  | 30A                                                                                                                                                                    |
| Nominal Output Voltage               |  | 230V                                                                                                                                                                   |
| Nominal Grid Frequency               |  | 50Hz/60Hz                                                                                                                                                              |
| Power Factor                         |  | 0.8 leading~0.8lagging                                                                                                                                                 |
| Total Current Harmonic Distortion    |  | THDi<3%                                                                                                                                                                |
| Max. Input Apparent Power            |  | 7.5kVA                                                                                                                                                                 |
| Max. Input Current                   |  | 32.6A                                                                                                                                                                  |
| <b>Efficiency</b>                    |  |                                                                                                                                                                        |
| Max. Efficiency                      |  | 97.60%                                                                                                                                                                 |
| European Efficiency                  |  | 97.10%                                                                                                                                                                 |
| MPPT Efficiency                      |  | 99.60%                                                                                                                                                                 |
| Battery Conversion Efficiency        |  | 97.00%                                                                                                                                                                 |
| <b>Generator</b>                     |  |                                                                                                                                                                        |
| Max. Input Apparent Power            |  | 7.5kVA                                                                                                                                                                 |
| Nominal Input Voltage                |  | 230V                                                                                                                                                                   |
| Frequency                            |  | 50Hz/60Hz                                                                                                                                                              |
| Max. Input Current                   |  | 32.6A                                                                                                                                                                  |
| <b>Ac Output (Backup)</b>            |  |                                                                                                                                                                        |
| Nominal Output Power                 |  | 6kW                                                                                                                                                                    |
| Peak Output Current(1s)              |  | 150%~200%                                                                                                                                                              |
| Nominal Output Voltage               |  | 230V                                                                                                                                                                   |
| Power Factor                         |  | 50Hz/60Hz                                                                                                                                                              |
| Total Voltage Harmonic Distortion    |  | THDv<3%                                                                                                                                                                |
| Disruption Time of Backup Switch     |  | <10ms                                                                                                                                                                  |
| <b>Battery Connection</b>            |  |                                                                                                                                                                        |
| Battery Module Models                |  | MST-MARS I PLUS-5.0KBAT                                                                                                                                                |
| Number of Modules Per Inverter       |  | 1~6PCS                                                                                                                                                                 |
| Nominal Voltage of Battery Module    |  | 400V                                                                                                                                                                   |
| Voltage Range of Battery Module      |  | 350V~550V                                                                                                                                                              |
| <b>Protection</b>                    |  |                                                                                                                                                                        |
| Safety Protection Feature            |  | Insulation Monitoring, Residual Current Monitoring, Anti-islanding Protection, DC Reverse Polarity Protection, AC OV/OC/SC Protection, Type II DC /AC Surge Protection |
| <b>General Data</b>                  |  |                                                                                                                                                                        |
| Dimensions (W/H/D)                   |  | 628*195*398mm                                                                                                                                                          |
| Weight                               |  | 35kg                                                                                                                                                                   |
| Storage Temperature Range            |  | -40°C~70°C                                                                                                                                                             |
| Operating Temperature Range          |  | -25°C~60°C                                                                                                                                                             |
| Relative Humidity Range              |  | 0~100%                                                                                                                                                                 |
| Max. Operating Altitude              |  | 4000m, Derating from 2000m                                                                                                                                             |
| Cooling                              |  | Natural Cooling                                                                                                                                                        |
| Standby Power Consumption            |  | <35W                                                                                                                                                                   |
| System Ingress Protection Rating     |  | IP65                                                                                                                                                                   |
| Noise Level                          |  | <30dB                                                                                                                                                                  |
| Display                              |  | 10.1"LCD, App                                                                                                                                                          |
| Communication                        |  | RS-485 for Meter, RS-485 for Heat Pump, Parallel CAN * 2, DC BUS CAN, RS-485 for EMS, Wi-Fi/Bluetooth/Ethernet, Battery Access CAN (Internal)                          |
| General IO                           |  | DI*4, DO*2,CT*3,+5V Power,+12V Power, DRAM                                                                                                                             |
| <b>Standard Compliance</b>           |  |                                                                                                                                                                        |
| Safety Standard                      |  | IEC/EN62109-1                                                                                                                                                          |
| EMC Standard                         |  | IEC/EN61000-6-1~4 Class B                                                                                                                                              |
| On-Grid Standard                     |  | EN 50549-1:2019, VDE4105:2018, VDE0126-1-1, EN50438, Italy CE10-21                                                                                                     |

MARS I PLUS-5.0KBAT

5kWh



| Marstek Battery                                 |                                                                             | 5.0kWh | Units |
|-------------------------------------------------|-----------------------------------------------------------------------------|--------|-------|
| Performance Specification                       |                                                                             |        |       |
| Battery Type                                    | LiFePO4                                                                     |        |       |
| Cell Capacity                                   | 50Ah                                                                        |        |       |
| Number of Battery Strings                       | 32                                                                          |        |       |
| Total Energy Capacity                           | 5.12kWh                                                                     |        |       |
| Usable Energy Capacity                          | 5kWh                                                                        |        |       |
| Battery Modules Voltage Range (Three Phase)     | 650V~950V                                                                   |        |       |
| Nonimal Current of Battery Module (Three Phase) | 7.7A                                                                        |        |       |
| Max. Charge Power                               | 5kW                                                                         |        |       |
| Max. Discharge Power                            | 5kW                                                                         |        |       |
| Protection                                      |                                                                             |        |       |
| Safety Protection Feature                       | Cell and pack OT/UT/OV/UV/OC/SC protection,<br>Type II DC surge protection. |        |       |
| General Data                                    |                                                                             |        |       |
| Dimensions (W/H/D)                              | 628*390*194mm                                                               |        |       |
| Weight                                          | 63kg                                                                        |        |       |
| Relative Humidity Range                         | 0~100%                                                                      |        |       |
| Cooling                                         | Natural Cooling                                                             |        |       |
| Standby Power Consumption                       | 10W                                                                         |        |       |
| System Ingress Protection Rating                | IP65                                                                        |        |       |
| Noise Level                                     | 30dB                                                                        |        |       |
| Communication                                   | Battery Parallel CAN,<br>Inverter Access CAN                                |        |       |
| Standard Compliance                             |                                                                             |        |       |
| Safety Standard                                 | IEC/EN60730-1, IEC/EN62619, IEC/EN63056                                     |        |       |
|                                                 | UL1973, UL9540, UL9540A, UL1998                                             |        |       |
| EMC Standard                                    | IEC/EN61000-6-1~4 Class B                                                   |        |       |
|                                                 | FCC Pat 15 Class B                                                          |        |       |
| Transportation                                  | UN38.3                                                                      |        |       |

# THANKS!

## Contact Us

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