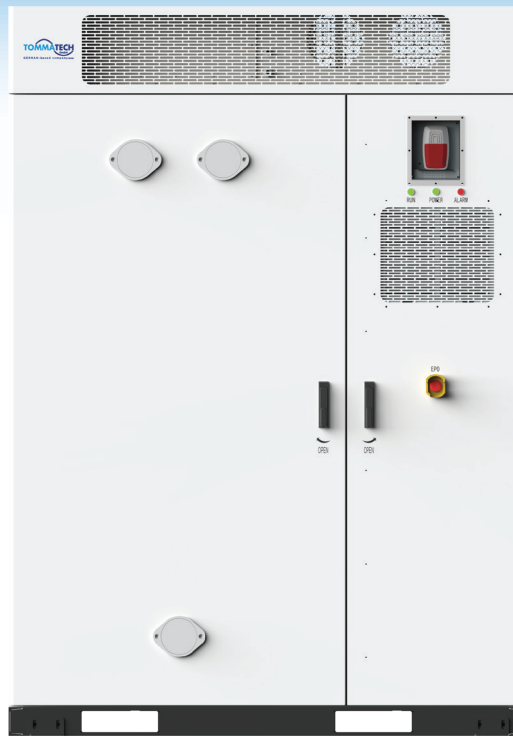


C&I ESS SOLUTION



Scalable

- Support up to 5 units off-grid backup, maximum 500kW/1MWh
- Support up to 20 units on-grid in parallel, maximum 2MW/4.3MWh
- Support up to 10 units off-grid in parallel, maximum 1MW/2.15MWh



Safer

- LFP batteries
- System supports aerosol fire extinguishing
- Battery compartment with auto venting & explosion-proof



Intelligent Control

- Thermal management keeps battery < 35°C
- Peak-valley mgmt, anti-backflow, overload protection
- Load tracking, demand control, backup power, phase separation



Multi-Fusion

- Integrated EMS, PCS, and BMS
- Support expansion of MPPT module
- Support off-grid backup



Reliable

- Operating temp : -20°C to 50°C
- IP54 & C5 protection rating
- Operate up to 3000m altitude
- 1.1x overload capacity
- Balancing solutions extend battery life
- Triple auxiliary power design for stable supply

≥6000

Cycles

C5

Protection Rating

70%

EOL

10 Years

Warranty

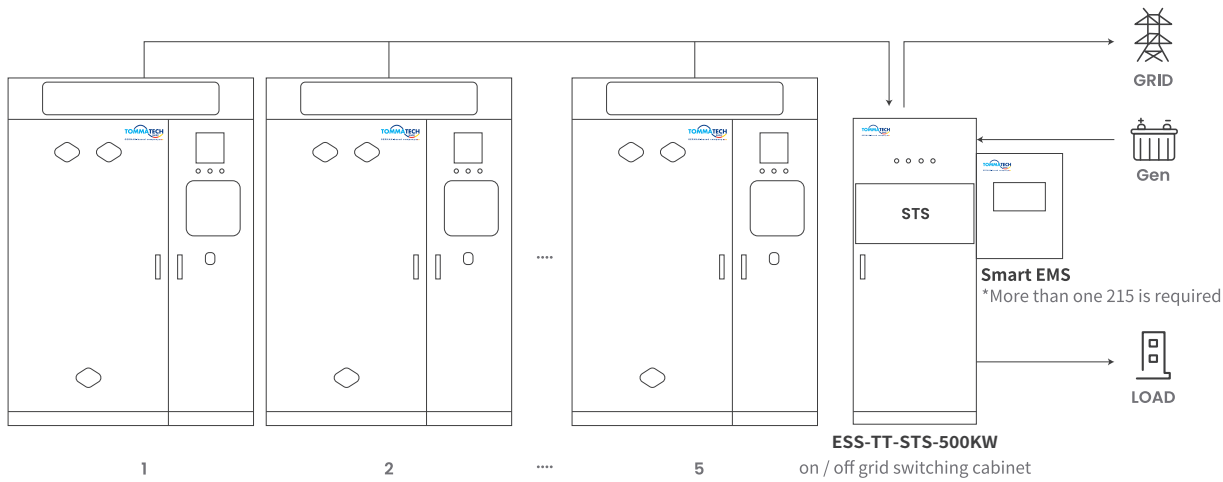

Model: ESS-TT-KB-215KWH | Battery energy storage system, supporting on and off grid operation
Main Parameter

AC Output Power (kW)	100
AC Output Frequency and Voltage	50 / 60Hz; 380 / 400Vac
Grid Type	3L / N / PE
Battery Operating Voltage (Vd.c.)	660 ~ 864
Energy (kWh)	215
Dimension (W × D × H, mm)	1865 × 1000 × 2500
Weight Appr. (kg)	2700
Max. RTE	88%
System Communication	ETH / 4G
System Operating Temperature Range (°C)	-20 ~ 50 (>45 Derating)
Max. Working Altitude (m)	≤3000
IP Rating of Enclosure	IP54
Anti-Corrosion Grade	≤C5
System Certification	UN3536, IEC 61000, IEC62477, IEC 60730
Warranty	10 years or Cycle Life ≥ 6000 (@25°C ± 2°C, 0.5C / 0.5C, 70%EOL)

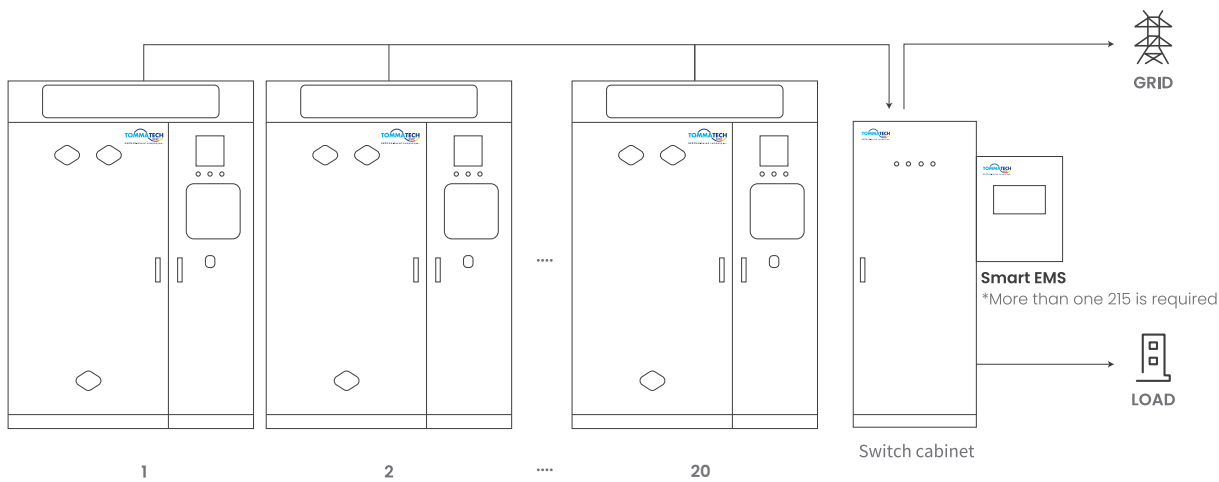
Converter Specification

AC Output Rated Current (A)	152
Max. AC Output Current (A)	167
Max. Number of Parallel (off-grid)	10 pcs (off-grid)
Peak Power	1.1 times of rated power
Power Factor	-1 ~ 1
THD	<3%
DC Injection Current	<0.5In
Display	LCD
Relative Humidity	15% ~ 85% (No Condensing)
Dimension (W × D × H, mm)	506 × 772 × 310
Communication	CAN, RS485, ETH
Overvoltage Protection	DC Type II / AC Type II
Protection Level	Class 1
Grid Regulation	EN50549, AS4777.2, CEI 0-21, CEI-016, NRS097
Max. Efficiency	97.6%

ESS-TT-KB-215KWH | Battery storage on-grid back up solution



ESS-TT-KB-215KWH | Battery storage on-grid back up solution



ESS-TT-KB-WS-215KWH | Solar & Battery energy storage system, supporting on and off grid operation

Main Parameter

AC Output Power (kW)	100
AC Output Frequency and Voltage	50 / 60Hz; 380 / 400Vac
PV Input Power (kWp)	200
Grid Type	3L / N / PE
Battery Operating Voltage (Vd.c.)	660 ~ 864
Energy (kWh)	215
Dimension (W × D × H, mm)	1865 × 1000 × 2500
Weight Appr. (kg)	2732
Max. RTE	88%
System Communication	ETH / 4G
System Operating Temperature Range (°C)	-20 ~ 50 (>45 Derating)
Max. Working Altitude (m)	≤3000
IP Rating of Enclosure	IP54
Anti-Corrosion Grade	≤C5
System Certification	UN3536, IEC 61000, IEC62477, IEC 60730
Warranty	10 years or Cycle Life ≥ 6000 (@25°C ± 2°C, 0.5C / 0.5C, 70%EOL)

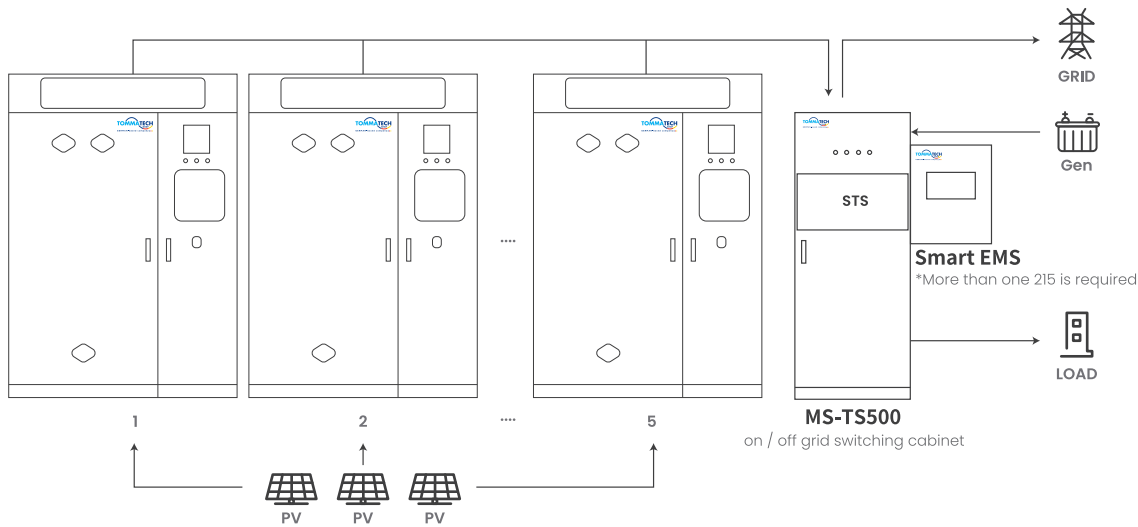
Converter Specification

AC Output Rated Current (A)	152
Max. AC Output Current (A)	167
Max. Number of Parallel (off-grid)	10 pcs (off-grid)
Peak Power	1.1 times of rated power
Power Factor	-1 ~ 1
THD	<3%
DC Injection Current	<0.5In
Display	LCD
Relative Humidity	15% ~ 85% (No Condensing)
Dimension (W × D × H, mm)	506 × 772 × 310
Communication	CAN, RS485, ETH
Overvoltage Protection	DC Type II / AC Type II
Protection Level	Class 1
Grid Regulation	EN50549, AS4777.2, CEI 0-21, CEI-016, NRS097
Max. Efficiency	97.6%

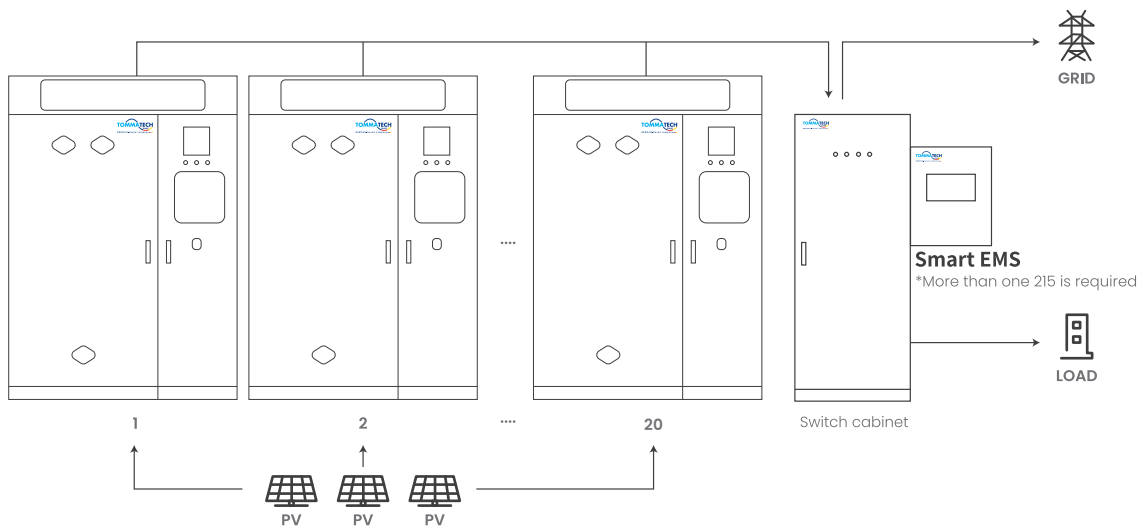
PV Specification

Out Rated Power (kW)	150 (dc)
Max. Input Voltage (V)	1000
Start Voltage (V)	200
MPPT Voltage Range (V)	180 ~ 880
Full Load Voltage Range (V)	450 ~ 850
Number of MPPT	8 pcs
MPPT Max.Current / Short Current (A)	40 / 60
Dimension (W × D × H, mm)	440 × 610 × 178
Weight Appr. (kg)	32

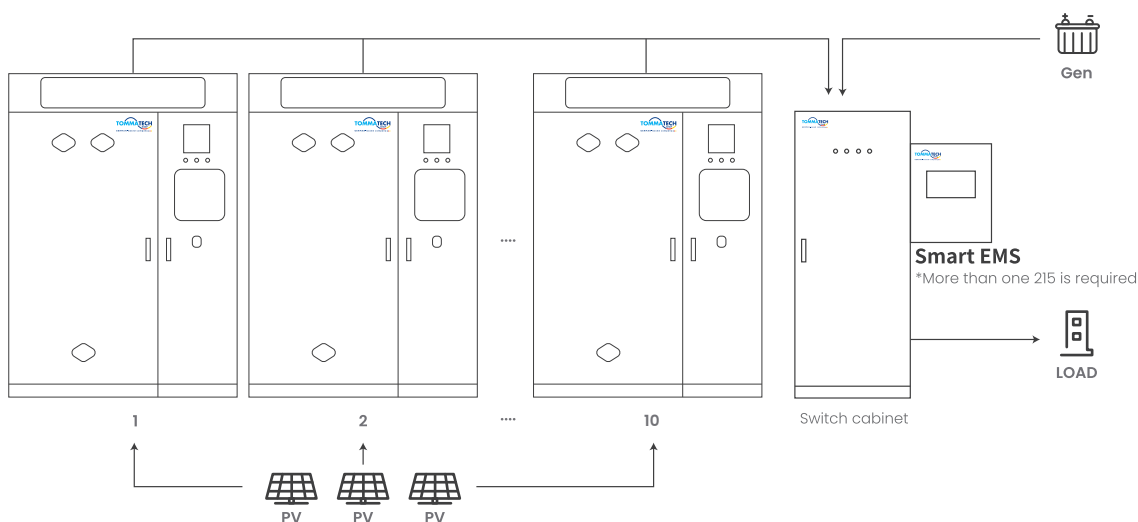
ESS-TT-KB-WS-215KWH | Solar & Battery energy storage system, supporting on and off grid operation



ESS-TT-KB-WS-215KWH | Solar & Battery energy storage on-grid solution



ESS-TT-KB-WS-215KWH | Solar & Battery energy storage off-grid solution





Model: ESS-TT-STS-500KW | <20 ms off-grid switching and diesel generator & backup load access

Basic Parameters

Rated Insulation Voltage (V)	DC1000
Rated Working Voltage (V)	AC400
Auxiliary Equipment Operating Voltage (V)	AC220, DC24
Rated Current of Busbar (A)	1000
Rated Current of Branch Busbar (A)	200
Frequency	50Hz
Load Rated Power (kW)	500
Grid Rated Power (kW)	500
Rated Power of Oil Engine (kW)	500
Switching Time	20ms
Dimension (W × D × H, mm)	1000 × 1000 × 2365
Weight Appr. (kg)	≤700kg
System Operating Temperature Range	-20°C ~ 55°C
Max. Working Altitude (m)	≤3000m
IP Rating of Enclosure	IP54

Model: ESS-TT-SCB-500KW | 5 units of 100kw/215kWh access

Basic Parameters

Rated Insulation Voltage (V)	DC1000
Rated Working Voltage (V)	AC400
Auxiliary Equipment Operating Voltage (V)	AC220, DC24
Rated Current of Busbar (A)	1000
Rated Current of Branch Busbar (A)	200
Frequency	50Hz
Load Rated Power (kW)	500
Grid Rated Power (kW)	500
Dimension (W × D × H, mm)	1000 × 1000 × 2365
Weight Appr. (kg)	≤650kg
System Operating Temperature Range	-20°C ~ 55°C
Max. Working Altitude (m)	≤3000m
IP Rating of Enclosure	IP54



AI Intelligence

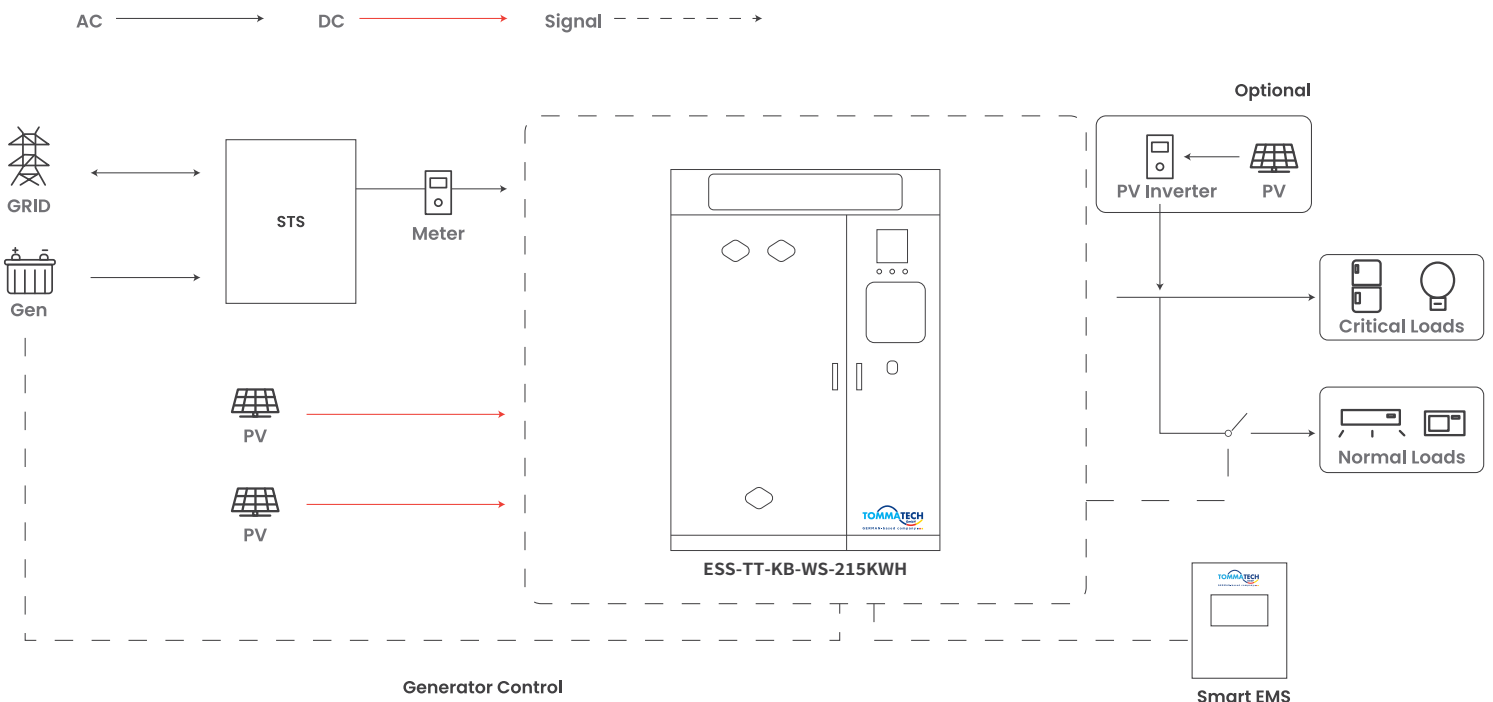
- Large capacity energy aggregation
- Real-time electricity price revenue calculation
- One click generation of statistical charts
- Maximum profit charging and discharging strategy

Efficient Operation and Maintenance

- Provide local / cloud operation and maintenance to ensure stable device operation
- Combination of multiple operation and maintenance methods for WEB / APP

Safe and Reliable

- Real-time alarm for equipment malfunction
- Support SOC balance management



Model	EMS
System	
Configuration	EMS controller, lightning protection module, switch power supply, UPS module, switch
Single Point Access Capacity	Energy storage : $\leq 3.44\text{MWh}$ Photovoltaic : $\leq 1.6\text{MWp}$
Function	Basic functions : peak valley arbitrage, anti backflow, main transformer overload protection, load tracking, demand control, backup power function, phase separation control, SOC balancing, TommaTech Cloud monitoring Advanced features : load forecasting, production planning, electricity price planning, optimal economic curve
Communicate	
Ethernet (5 channels)	10 / 100 / 1000 Mbps
SFP (2 channels)	1Gbps
USB (2 channels)	Host
CAN (3 channels)	Isolation, with 2 channels supporting CAN-FD
RS485 (8 channels)	Isolation
RS232 (3 channels)	2 isolated channels, 1 non isolated debugging channel (DB9 socket)
TF Card (1 channel)	Standard TF card holder
LVDS (1 channel)	The physical interface is DVI (including 1 USB for touch)
M. 2 Interfaces (1 channel)	PCIe2.0 X1, Scalable SSD (standard 1TB)
DI (17 channels)	Optocoupler isolation
DO (8 channels)	Relay isolation
WLAN	802.11 b / AC g n, HT 20 / 40, 2.4 GHz 5 GHz
Power Supply	
Communication Input	220Vac
DC IN	24Vdc
UPS Backup Power	24Vdc
Consumption	Max 25W
Environmental parameters	
Operation Temperature	-15°C ~ +50°C
Storage Temperature	-15°C ~ +50°C
Working Humidity	5% ~ 95%
Max. Working Altitude (m)	$\leq 3000\text{m}$
IP Rating of Enclosure	IP54
Anti-Corrosion Grade	$\geq \text{C4}$
Mechanical parameters	
Dimension (W × D × H, mm)	488 × 188 × 588
Weight Appr. (kg)	$\leq 24.5\text{kg}$
Installation Location	Indoor or outdoor, wall-mounted
Box Material	Metal
Incoming Specifications	AC power cord : Recommended wire sectional area 1.5mm^2 DC power cord : Recommended wire sectional area 1.5mm^2 Eight core Ethernet cable: Recommended CAT5e Ethernet cable RS485 : Recommended $0.75\text{mm}^2 \sim 1.5\text{mm}^2$ outdoor UV protection with shielding layer twisted pair cable length $< 1000\text{m}$ (baud rate 9600)