

C&I PV-BESS-EV CHARGING INTEGRATED SOLUTION

DEYE WINTER MS SERIES



Intelligent Cloud Platform

- Customizable load algorithmic modules
- 24-hour online O&M
- Battery life and safety warning
- Device cloud interconnection



Ultimate Safety

- 3+3 Fire Protection System
- 3+3 Electrical Safety Safeguards
- AC Leakage & DC Insulation Detection
- High-voltage interlocking, preventing loaded arc operation



Versatile Expansion

- PCS/BMS/EMS All-in-one modular design
- Support up to 10 cabinets in parallel
- Support 2/4/6/8-hour energy storage applications
- Higher energy density to reduce footprint
- PV and BESS DC Coupling



Multiple Application Scenarios

- Peak-to-Valley arbitrage/Peak-to-Valley shifting
- Virtual power plant ready
- Off-grid operation (Islands, communication base stations, etc.)

5 Level

Extreme
safety protection

Detection, early warning,
smoke exhaust, fire fighting,
explosion venting

10ms

Seamless
on-grid and off-grid

10 Years

10-year warranty
10-year free replacement
of coolant

420kW

DC fast charging
DC coupling for
ESS and charging



Model MS-LC430-2H2 (AC BESS)

System parameter

Operating Temperature	-25℃ ~ +55℃
Storage Temperature	-30℃ ~ +60℃
Humidity	0 ~ 95% (No condensation)
Type of cooling	Liquid cooling
Fire Suppression	Aerosol, Water
Ingress Protection	IP54
Anticorrosion grade	≥C4
Altitude	≤2000m
Communication	RS485, Modbus TCP, DIDO
Weight	≤5000kg
Dimensions (W × D × H)	2000 × 1300 × 2480mm

DC Data

Battery	LiFePO ₄
Nominal Capacity	280Ah
Nominal Energy	430.08kWh
Nominal DC Voltage	768Vd.c.
DC Voltage Range	636Vd.c ~ 876Vd.c.
Charge and discharge rate	charge 0.5P, discharge 1P

AC Data

Nominal AC Voltage	380/400V 3L+N+PE
Rated Frequency	50 / 60Hz
Rated Power	200kW
Maximun Power	220kW (1.1 times of rated power)
Power Factor	-0.8 ~ +0.8



Model		MS-LC430-BC-2 (DC BESS)
System parameter		
Operating Temperature		-30℃ ~ +55℃
Storage Temperature		-30℃ ~ +60℃
Humidity		0 ~ 95% (No condensation)
Type of cooling		Liquid cooling
Fire Suppression		Aerosol, Water
Ingress Protection		IP54
Anticorrosion grade		≥C4
Altitude		≤2000m
Communication		RS485, Modbus TCP, DIDO
Weight		≤4800kg
Dimensions (W × D × H)		2000 × 1300 × 2480mm
DC Data		
Battery		LiFePO ₄
Nominal Capacity		280Ah
Nominal Energy		430.08kWh
Nominal DC Voltage		768Vd.c.
DC Voltage Range		636Vd.c ~ 876Vd.c.
Charge and discharge rate		charge 0.5P, discharge 1P
Model		MS-DC420-2 (420kW DC charge power cabinet)
DC Input Data		
Input standard		DC+ / DC- / PE
DC input voltage range		200Vdc ~ 850Vdc
DC input current range		≤640A
DC rated input power		420kW @400Vdc≤Vin≤850Vdc
DC Output Data		
Dc output voltage range		50Vdc ~ 1000Vdc
Dc output current range		8 branches, max 250A each
Environmental Conditions		
Operating Temperature Range (°C)		-30℃ to +55℃ (derating above 55℃)
Storage Temperature (°C)		-40℃ to +60℃
Humidity		≤ 95%RH, no condensation
Cooling		Forced air cooling
Altitude		≤2000m (Derated when higher than 2000m)
IP Rating of Enclosure		≥IP54
Other Parameter		
Efficiency		≥ 97.5%, @full load
Dimension (W × H × D, mm)		1250 × 2450 × 1000mm
Approximate Weight (kg)		600kg



Model MS-DCC180-2 (DC charging terminal)

DC Input Data

DC Input Voltage Range (V)	50Vdc ~ 1000Vdc
Input number	2 DC inputs

DC Output Data

Output interface	1 pile 2 guns, each gun 180kW charging power, support the CCS2 charging standard interface
DC Output range	50Vdc ~ 1000Vdc
Max. Output Power (W)	Single gun Max 180kW @300 ~ 1000Vdc (conventional terminal)
Max. Output Current	Single gun Max. 250A

Environmental Conditions

Operating Temperature Range (°C)	-30°C to +55°C (derating above 55°C)
Storage Temperature (°C)	-40°C to +60°C
Humidity	≤ 95%RH, no condensation
Cooling	Natural cooling
Altitude	≤2000m
IP Rating of Enclosure	≥IP54

Other Parameter

Dimension (W × H × D, mm)	1100 × 2200 × 400mm
Approximate Weight (kg)	280kg



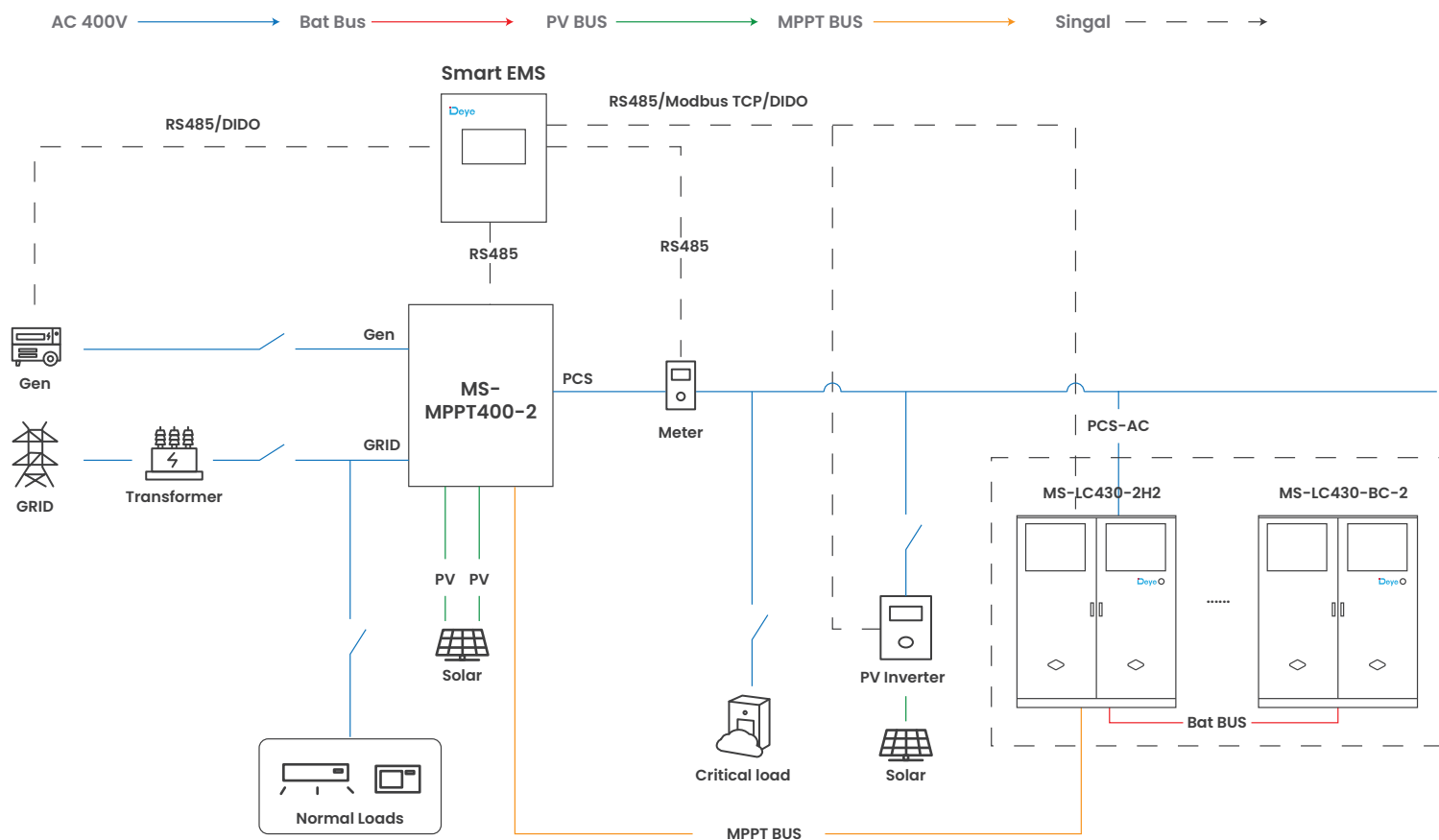
Model		MS-MPPT400-2
System parameters		
Dimension (W × D × H, mm)		1000 × 1000 × 2480
Weight Appr. (kg)		≤700kg
System Operating temperature range		-30°C ~ 50°C
Max. working altitude (m)		≤2000m
IP Rating of Enclosure		IP54
STS parameters		
Rated insulation voltage (V)		DC1000
Rated working voltage (V)		AC400
Auxiliary equipment operating voltage (V)		AC220, DC24
Frequency		50/60Hz
Rated power of load (kW)		250
Rated power of the power grid (kW)		500
Rated power of oil engine (kW)		500
Switching Time		≤15ms
MPPT parameters		
No. of MPPT		2
Max. PV Input Power (kW)		400(2*200)
Max. PV Input Voltage (V)		1000
Start-up Voltage (V)		200
MPPT Voltage Range (V)		180 ~ 850
Full Load MPPT Voltage Range (V)		450 ~ 850
Rated PV Input Voltage (V)		600
Max. Operating PV Input Current (A)		2*(40+40+40+40+40+40+40+40)
Max. Input Short-Circuit Current (A)		2*(60+60+60+60+60+60+60+60)
No.of MPP Trackers		16 (2*8)
Max. Efficiency		>99%
MPPT Efficiency		>99.9%



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

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

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

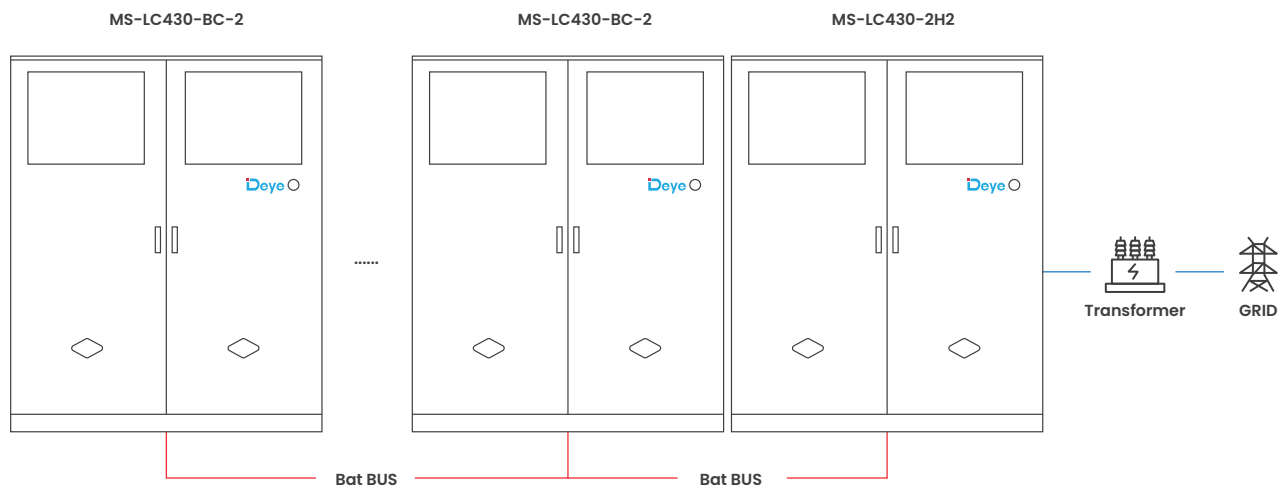


Model		MS-EMS
System		
Configuration		EMS controller, lightning protection module, switch power supply, UPS module, switch
Function		Basic functions : peak valley arbitrage, anti backflow, main transformer overload protection, load tracking, demand control, backup power function, phase separation control, SOC balancing, Deye Cloud monitoring Advanced features : load forecasting, production planning, electricity price planning, optimal economic curv
Communicate		
Ethernet (5 channels)		10 / 100 / 1000 Mbps
Fiber optic port (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)
MiniPCle Interface (1 channel)		4G card with expandable USB communication protocol (standard)
Nano SIM Interface (1 channel)		Used in conjunction with the miniPCle expansion 4G module
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
4G Antenna		Support multi country frequency bands
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)		≤3000m
IP Rating of Enclosure		IP54
Anti-Corrosion Grade		≥C4
Mechanical parameters		
Dimension (W × D × H, mm)		488 × 188 × 588
Weight Appr. (kg)		≤24.5kg
Installation Location		Indoor or outdoor, wall-mounted
Box Material		Metal
Incoming Specifications		AC power cord : Recommended wire diameter 1.5mm² DC power cord : Recommended wire diameter of 1.5mm² Eight core Ethernet cable: Recommended CAT5e Ethernet cable RS485 : Recommended 0.75mm²~1.5mm² outdoor UV protection with shielding layer twisted pair cable length<1000m (baud rate 9600)

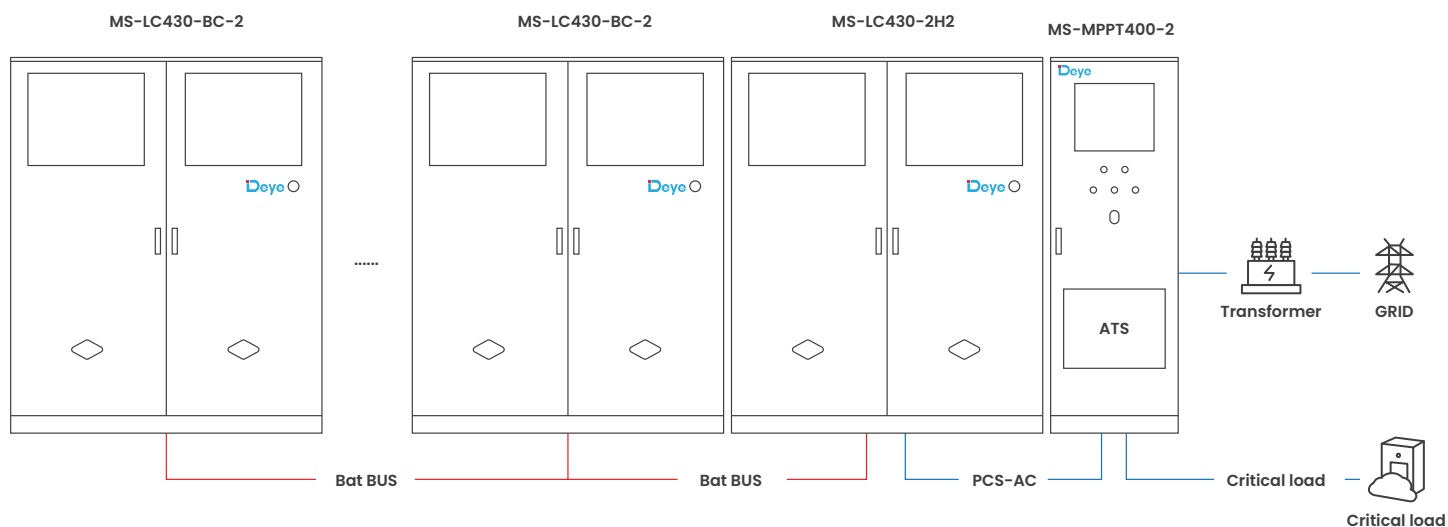
NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V ——— Bat Bus ——— PV BUS ——— MPPT BUS ———

For ESS on-grid application



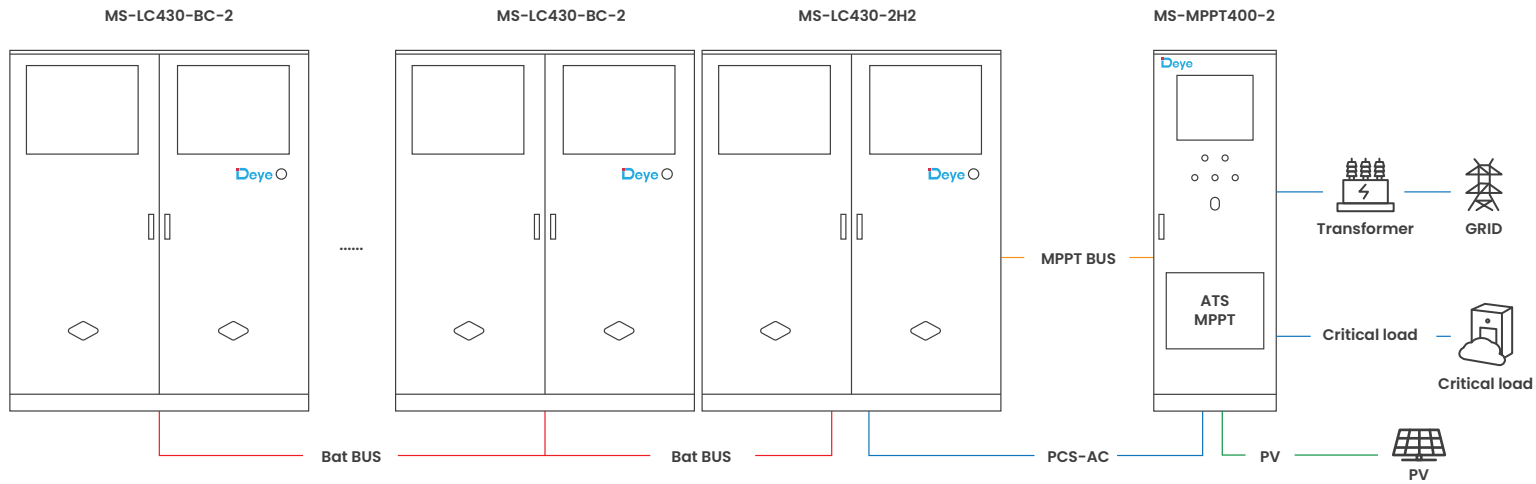
For backup power application



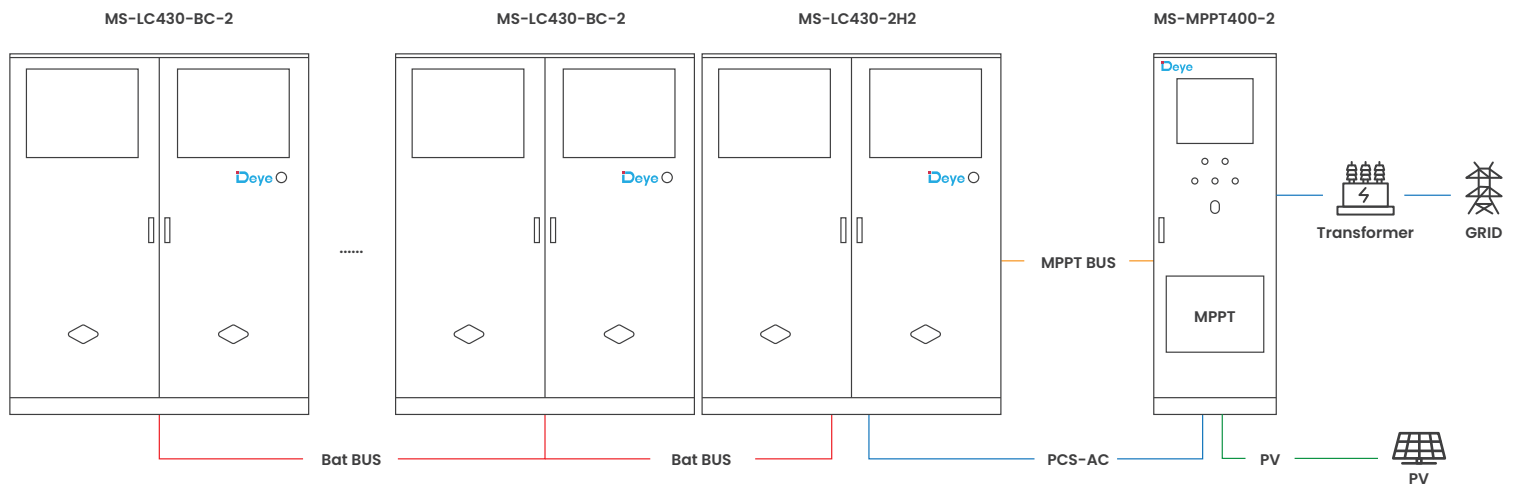
NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V ——— Bat Bus ——— PV BUS ——— MPPT BUS ———

For backup power application with solar



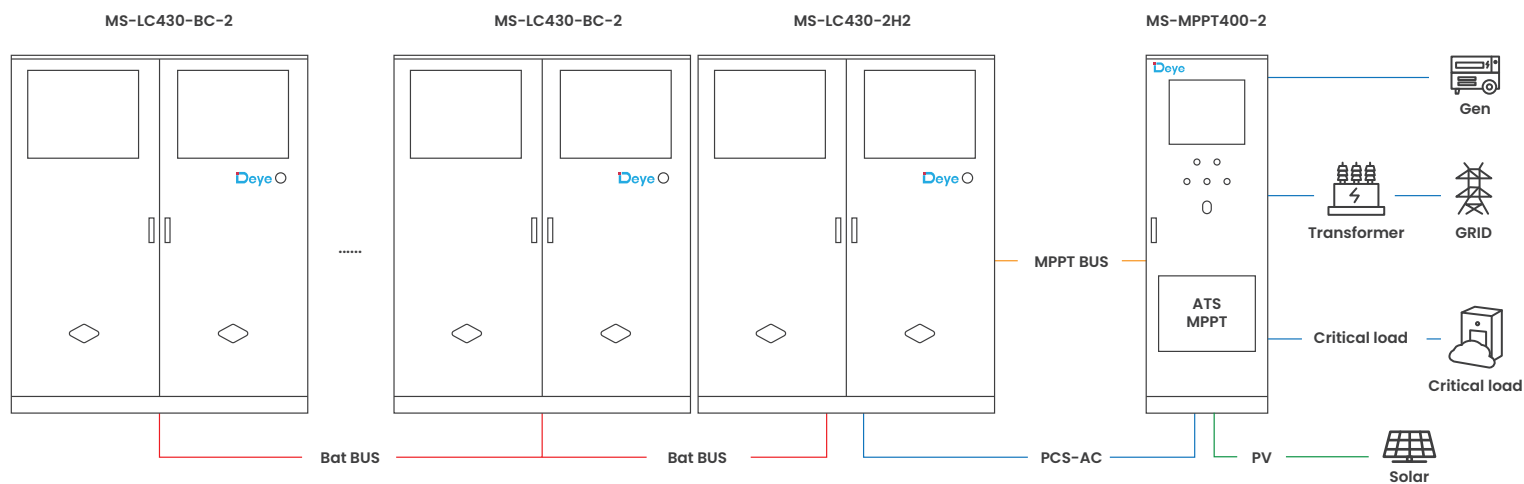
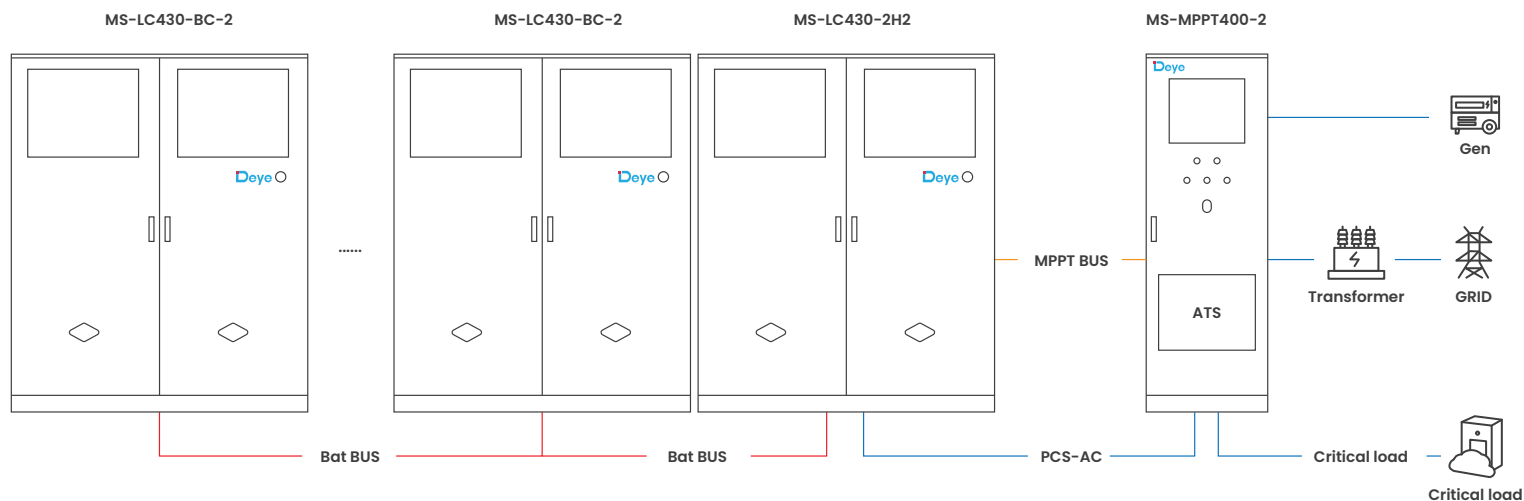
For ESS on-grid application with solar



NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V ——— Bat Bus ——— PV BUS ——— MPPT BUS ———

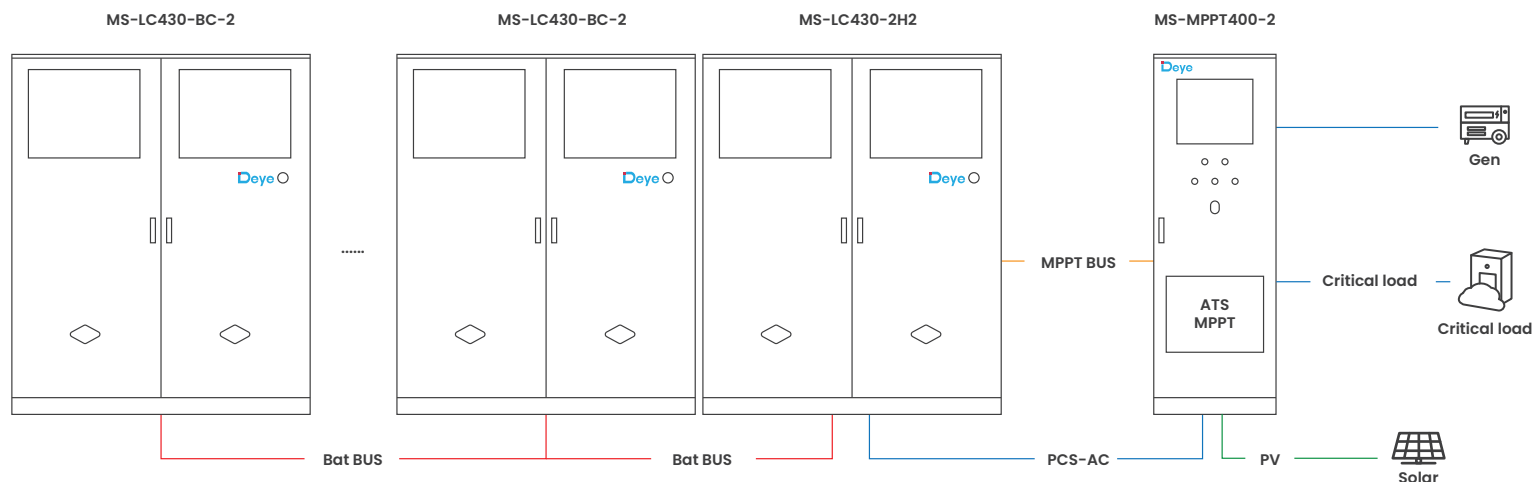
For backup power application with generator and grid



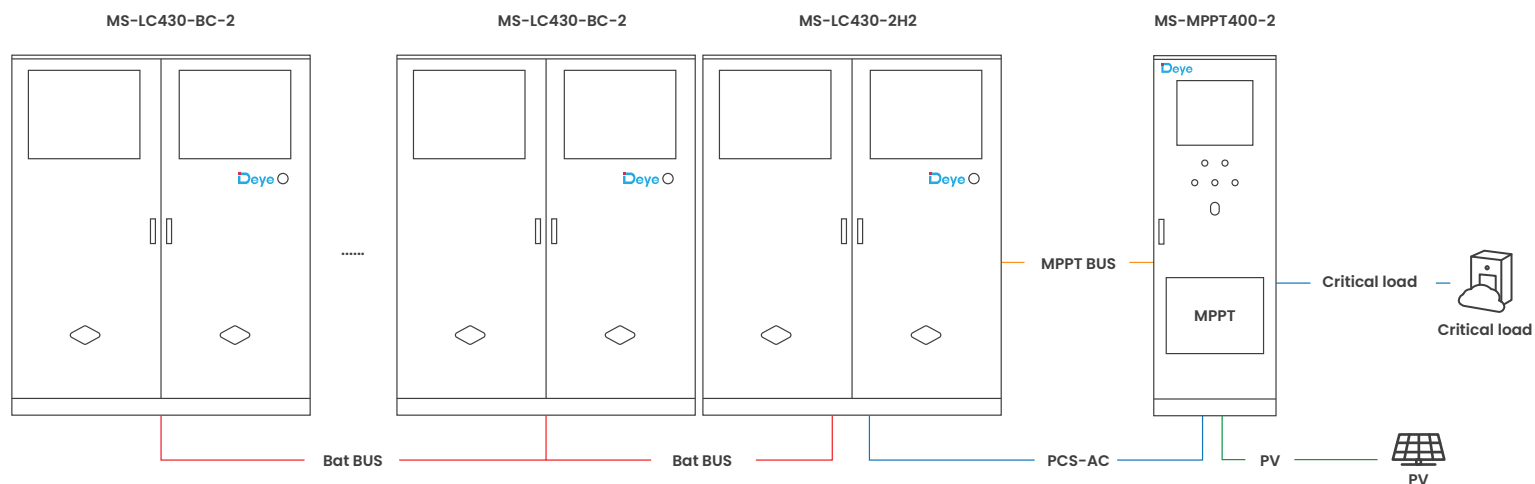
NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V ——— Bat Bus ——— PV BUS ——— MPPT BUS ———

For ESS off-grid application with solar and generator



For ESS off-grid application with solar



Integrated energy storage and charging application

Support up to four sets of double-gun charging terminals
Split type DC fast charging, With a maximum DC charging power of up to 180kW for a single gun
Supports flexible charging power distribution Adaptable to CCS2 charging interfaces
To solve the problem of insufficient capacity of new energy vehicles to access the distribution grid

