

C&I PV-BESS-EV Charging Integrated Solution

Deye Winter MC-LC Series

Intelligent Cloud Platform

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

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

Ultimate Safety

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

Multiple Application Scenarios

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

4 Level
Extreme safety protection
Detection, early warning, smoke exhaust, fire fighting

10ms
Seamless on-grid and off-grid

480kW
DC fast charging
DC coupling for ESS and charging

C&I PV-BESS-EV Charging Integrated Solution



Model	MC-LC480-2H2
System parameter	
Operating Temperature	-25°C ~ 55°C
Storage Temperature	-30°C ~ 60°C
Humidity	0 ~ 95%
Type of Cooling	Liquid Cooling
Fire Suppression	Aerosol, Water
Ingress Protection	Overall IP54 (Battery Compartment, Chiller Control Box: IP55; PCS: IP65)
Anticorrosion Grade	C4-M (Optional C5)
Altitude	⩽2000m
Communication	RS485, Modbus TCP, DIDO
Weight	⩽5100kg
Dimensions (W × D × H)	2000 × 1350 × 2480mm (without air outlet cover)
DC Data	
Battery	$LiFePO_4$
Nominal Capacity	314Ah
Nominal Energy	482.304kWh
Nominal DC Voltage	768Vd.c.
DC Voltage Range	648Vd.c ~ 876Vd.c
Charge and Discharge Rate	Charge 0.4P, Discharge 0.9P
AC Data	
Nominal AC Voltage	380/400V 3P+N+PE
Rated Frequency	50 / 60Hz
Rated Power	200kW
Maximun Power	220kW (1.1 Times of Rated Power)
Power Factor	-1~1

C&I PV-BESS-EV Charging Integrated Solution

Model	MC-LC480-BC-2 (DC BESS)
System parameter	
Operating Temperature	-25°C ~ 55°C
Storage Temperature	-30°C ~ 60°C
Humidity	0 ~ 95%
Type of Cooling	Liquid Cooling
Fire Suppression	Aerosol, Water
Ingress Protection	Overall IP54 (Battery compartment, Chiller control box: IP55)
Anticorrosion Grade	C4-M (C5M is optional)
Altitude	⩽2000m
Communication	RS485, Modbus TCP, DIDO
Weight	⩽4800kg
Dimensions (W × D × H)	2000 × 1350 × 2480mm
DC Data	
Battery	$LiFePO_4$
Nominal Capacity	314Ah
Nominal Energy	482.304kWh
Nominal DC Voltage	768Vd.c.
DC Voltage Range	648Vd.c ~ 876Vd.c.
Charge and Discharge Rate	Charge 0.4P, Discharge 0.9P

Model	MS-DC480-2 (480kW DC Charge Power Cabinet)
DC Input Data	
Input Standard	DC+ / DC- / PE
DC Input Voltage Range	200Vdc ~ 850Vdc
DC Input Current Range	⩽667A
DC Rated Input Power	480kW @400Vdc⩽Vin⩽850Vdc
DC Output Data	
DC Output Voltage Range	150Vdc ~ 1000Vdc
DC Output Current Range	8 Branches, Max 250A each
Environmental Conditions	
Operating Temperature Range (°C)	-30°C to 50°C （Derating Above 50°C）
Storage Temperature (°C)	-40°C to 60°C
Humidity	⩽ 95%RH, no condensation
Cooling	Forced Air Cooling
Altitude	⩽ 2000 m (No derating required foroperation >1000m:Set the actual altitude value; the working temperature decreases-by 1°C for-every 100 m increase-in altitude).
IP Rating of Enclosure	IP54
Other Parameter	
Efficiency	⩾ 97.5%, @ peak full load
Dimension (W × H × D, mm)	1250mm× 2450mm (without eyebolt)× 1000mm
Approximate Weight (kg)	1200kg

C&I PV-BESS-EV Charging Integrated Solution



Model	MS-DCC180-2 (DC Charging Terminal)
DC Input Data	
DC Input Voltage Range (V)	150~1000Vd.c. 500A max
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	150~1000Vd.c. 500A-max
Max. Output Power (W)	360kW(2*180kW).
Max. Output Current	Single Gun Max.250A
Environmental Conditions	
Operating Temperature Range (°C)	-30°C to 55°C （Derating Above 50°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 mm x 2200 mm (without GPS & 4G Antenna) x 400mm
Approximate Weight (kg)	280kg

C&I PV-BESS-EV Charging Integrated Solution

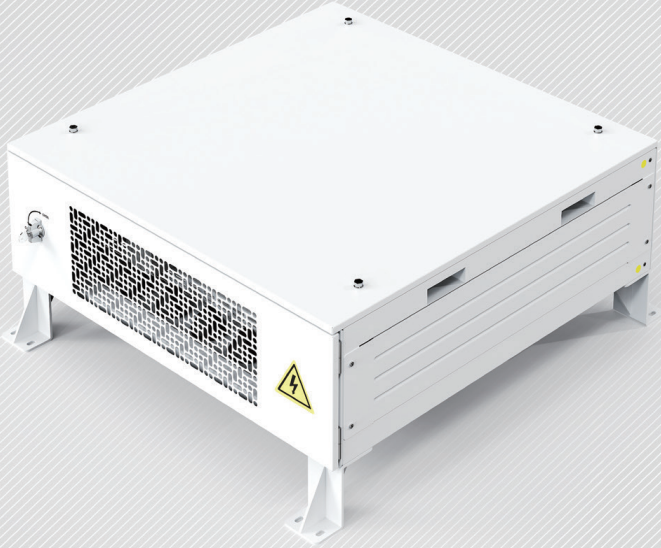


Model	MS-DCC180-2-C (DC Charging Terminal)
DC Input Data	
DC Input Voltage Range (V)	150~1000Vd.c. 500A max
Input Number	2 DC inputs
DC Output Data	
Output Interface	1 pile 2 guns, each gun 180kW charging power，support the CCS2 and GB-DC charging standard interface
DC Output Range	150~1000Vd.c. 500A-max
Max. Output Power (W)	360kW(2*180kW).
Max. Output Current	Single Gun Max.250A
Environmental Conditions	
Operating Temperature Range (°C)	-30°C to 55°C（Derating Above 50°C）
Storage Temperature (°C)	-40°C to 60°C
Humidity	⩽ 95%RH, no condensation
Cooling	Natural Cooling
Altitude	⩽2000m
IP Rating of Enclosure	IP55
Other Parameter	
Dimension (W × H × D, mm)	630mm x 1697.5 mm (without GPS & 4G Antenna) x 450mm
Approximate Weight (kg)	280kg

C&I PV-BESS-EV Charging Integrated Solution

Model	MS-MPPT400-2
System parameters	
Dimension (W × D × H, Mm)	1000 × 1000 × 2480
Weight Appr. (Kg)	⩽950kg
System Operating Temperature Range	-30°C ~ 45°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	⩽10ms
MPPT parameters	
No. of MPPT	2
MAX.PV Access Power(kW)	400(200*2)
Max. PV Input Power (kW)	320(2*160)
Max. PV Input Voltage (V)	800
Start-up Voltage (V)	200
MPPT Voltage Range (V)	180 ~ 750
Full Load MPPT Voltage Range (V)	450 ~ 750
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%

C&I ESS Solution



MS-MPPT200-2

Model	MS-MPPT200-2
PV String Input Data	
MAX.PV Access Power(kW)	200
Max. PV Input Power (kW)	160
Max. PV Input Voltage (V)	800
Start-up Voltage (V)	200
MPPT Voltage Range (V)	180-750
Full Load MPPT Voltage Range（V）	450-750
Rated PV Input Voltage（V）	600
Max. Operating PV Input Current (A)	40+40+40+40+40+40+40+40
Max. Input Short-Circuit Current (A)	60+60+60+60+60+60+60+60
No. of MPP Trackers	8
Efficiency	
Max. Efficiency	>99%
MPPT Efficiency	>99.9%
Equipment Protection	
DC Input Reverse Protection	YES
DC ARC Protection	Optional
Anti-PID(Potential Induced Degradation)	Optional
DC Switch	YES
Surge Protection Level	TYPE II
General Data	
Ingress Protection(IP) Rating	IP65
Over Voltage Category	OVC I
Cabinet Size[W×H×D] (mm)	543x198x700
Weight (kg)	70
Type of Cooling	Intelligent Air Cooling
Safety EMC/Standard	IEC/EN 62109-1
DC Output Data	
DC Output Voltage Range(V)	630-1000
Max. DC Output Current(A)	200

MS-EMS



AI Intelligence

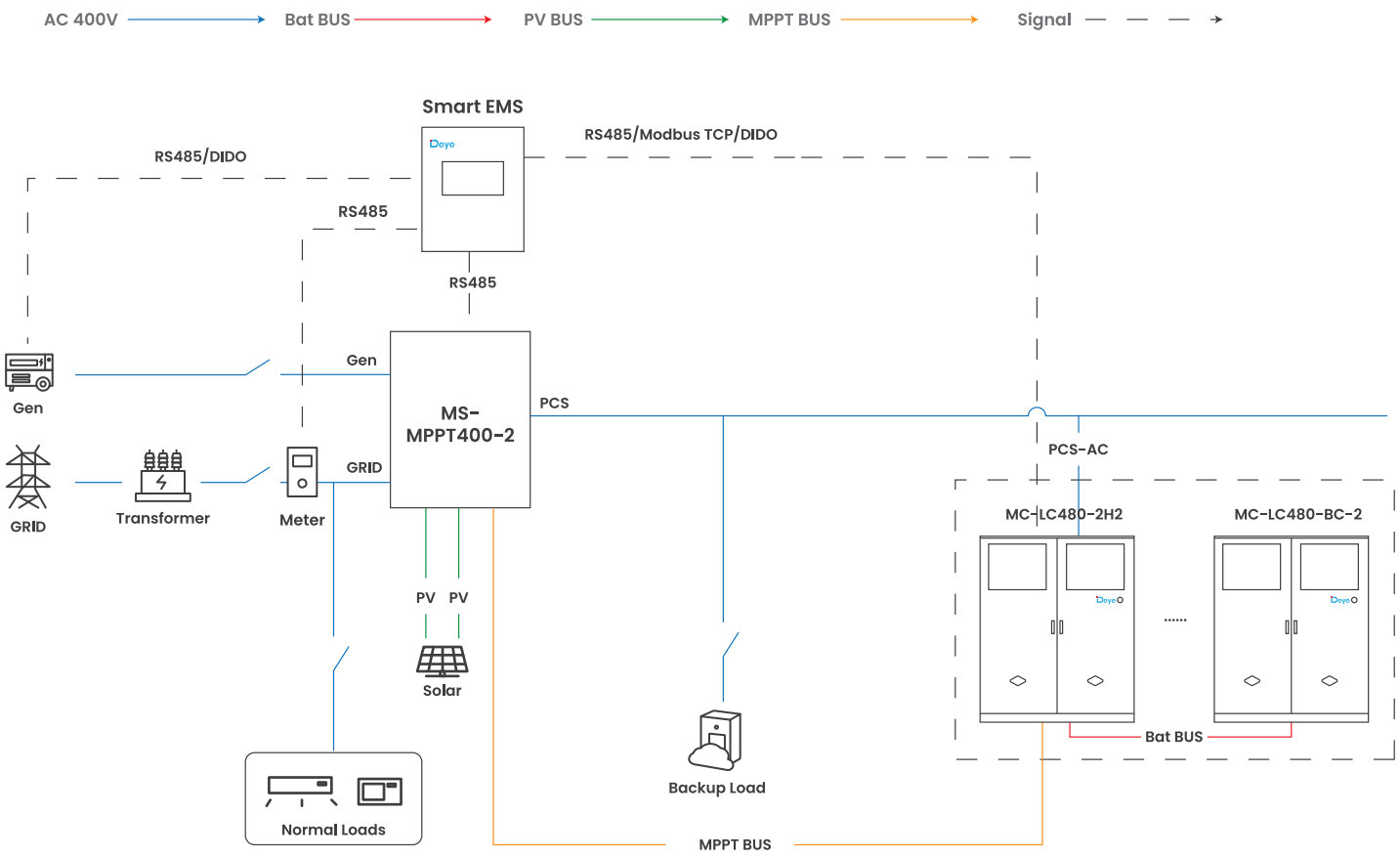
- Large capacity energy aggregation
- Real-time electricity price revenue calculation
- One click generation of statistical charts
- Maximum profit charging and discharging strategy

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



C&I EMS

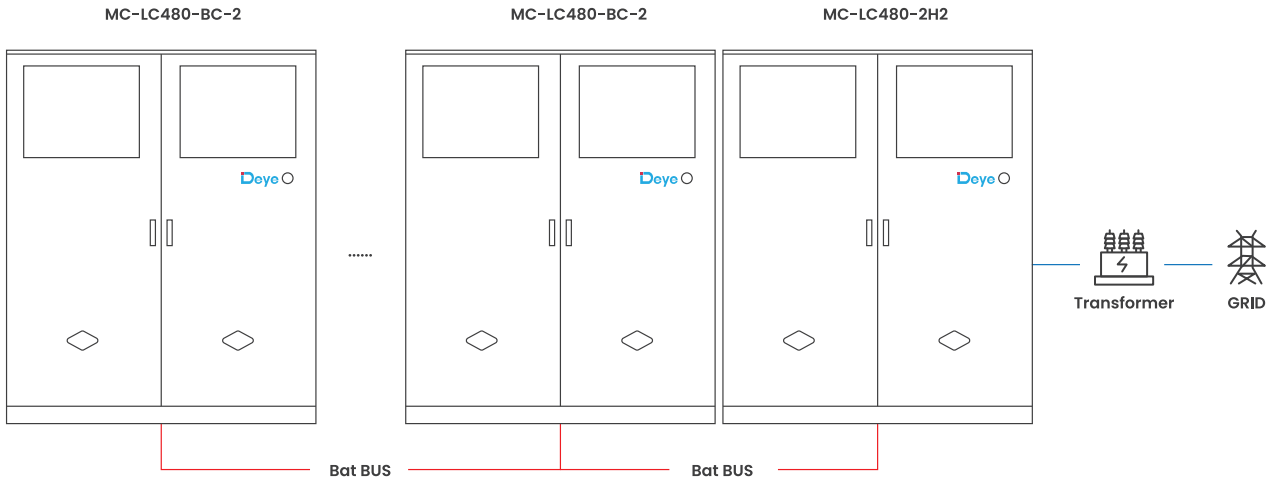
Model	MS-EMS
System	
Configuration	EMS controller, lightning protection module, switch power supply, UPS module, switch
Function	Basic functions : peak valley arbitrage, anti backflow, main transformer overload protection, load tracking, demand control, backup power function, phase separation control, 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)
MiniPCIe Interface (1 Channel)	4G card with expandable USB communication protocol (standard)
Nano SIM Interface (1 Channel)	Used in conjunction with the miniPCIe 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-M (Optional C5)
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 1.5mm^2 DC power cord : Recommended wire diameter of 1.5mm^2 Eight core Ethernet cable: Recommended CAT5e Ethernet cable RS485 : Recommended 0.75mm^2~1.5mm^2 outdoor UV protection with shielding layer twisted pair cable length<1000m (baud rate 9600)

Versatile C&I Energy Storage Solutions

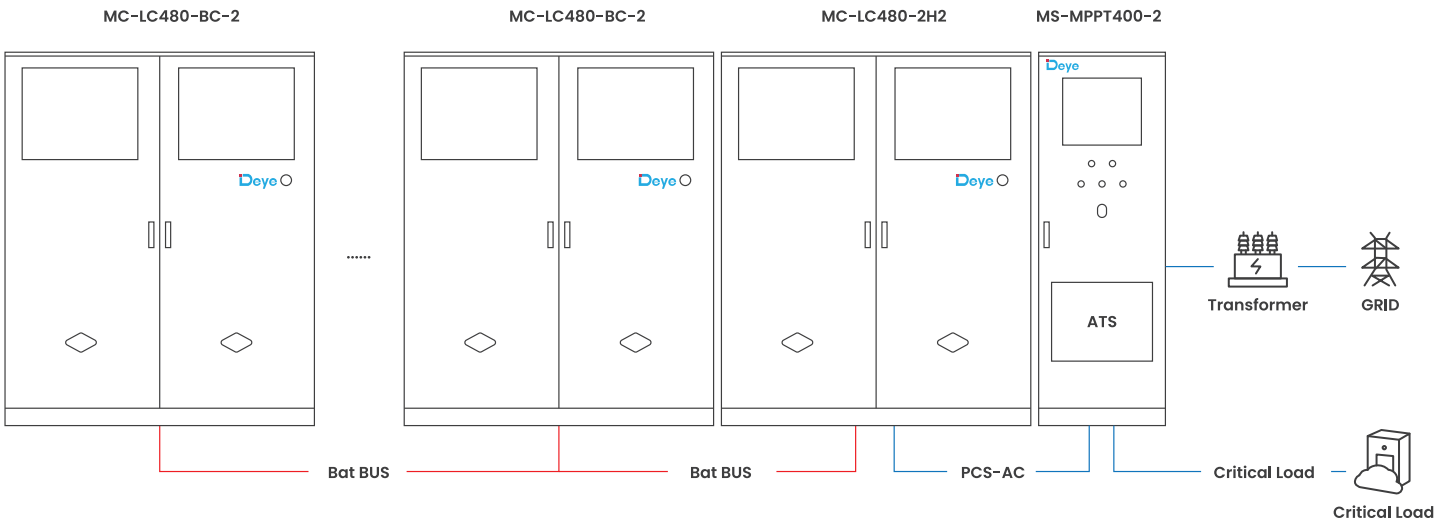
NOTE: MAX 3 Battery Cabinets（without PCS） Parallel

AC 400V — Bat Bus — PV BUS — MPPT BUS

For ESS On-Grid Application



For Backup Power Application

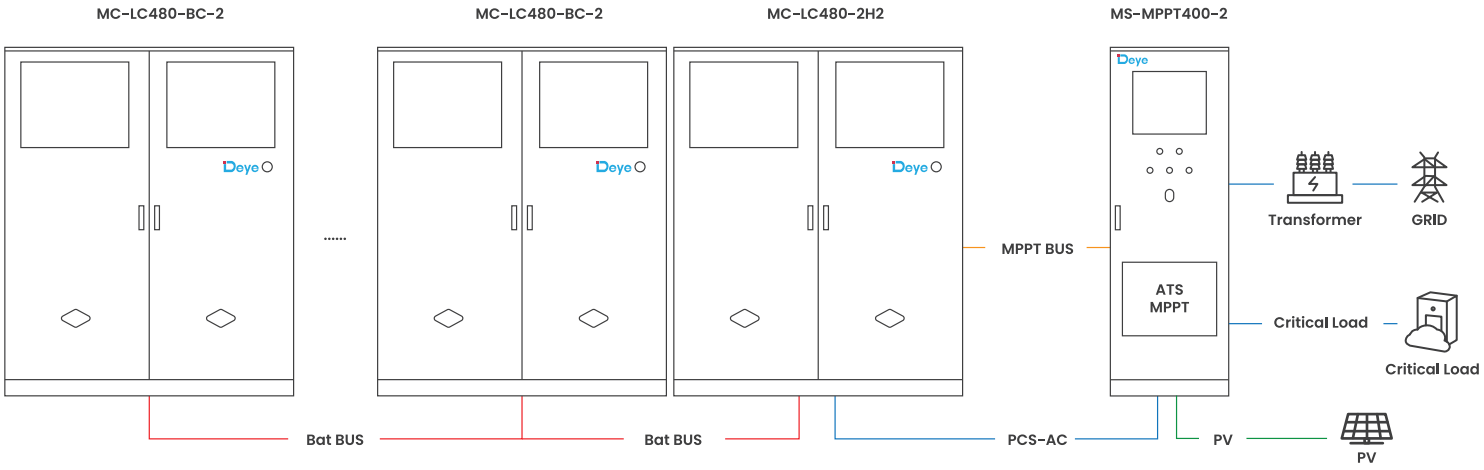


Versatile C&I Energy Storage Solutions

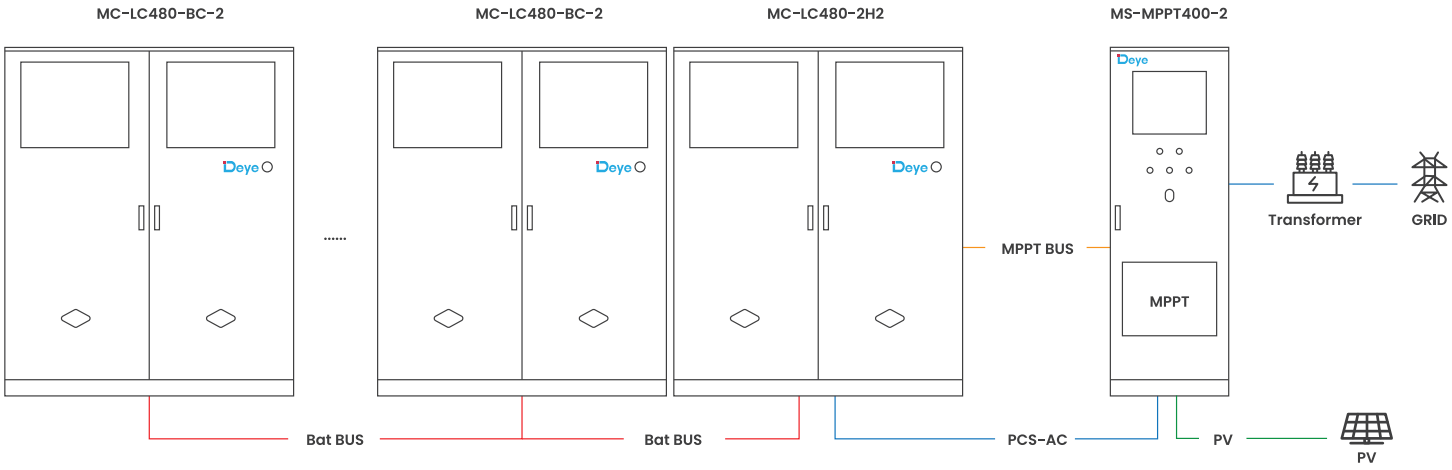
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AC 400V — Bat BUS — PV BUS — MPPT BUS

For Backup Power Application with Solar



For ESS On-Grid Application with Solar

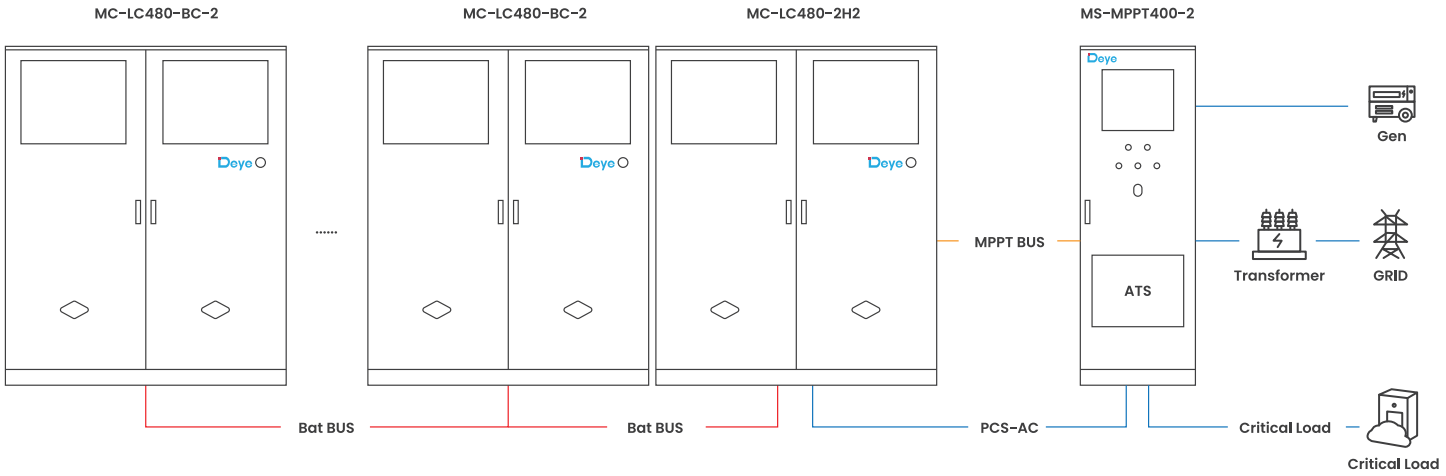


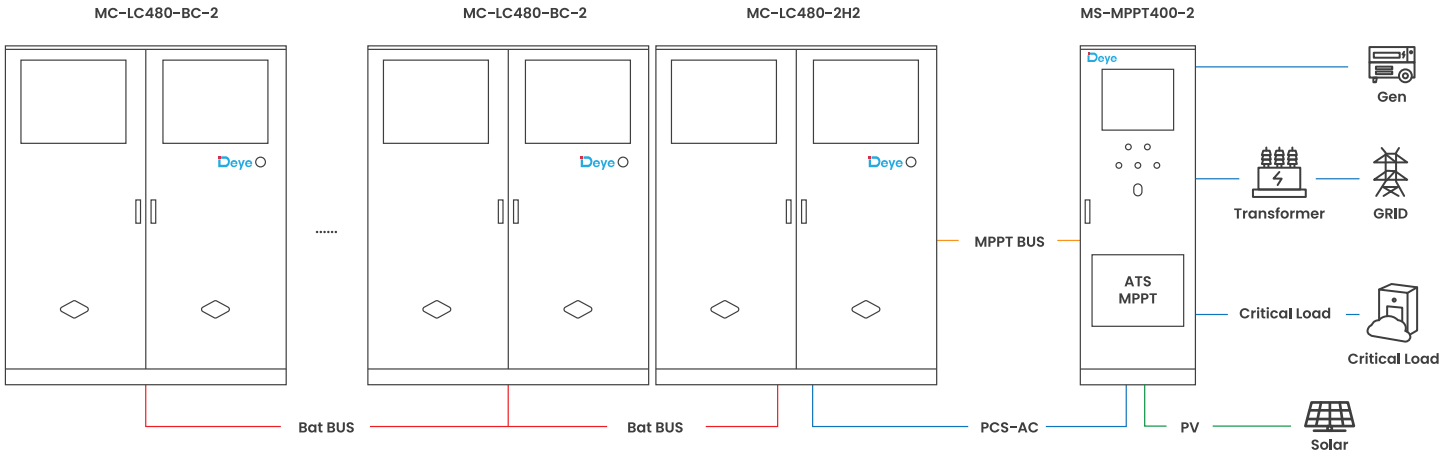
Versatile C&I Energy Storage Solutions

NOTE: MAX 3 Battery Cabinets（without PCS） Parallel

AC 400V — Bat Bus — PV BUS — MPPT BUS

For Backup Power Application with Generator and Grid



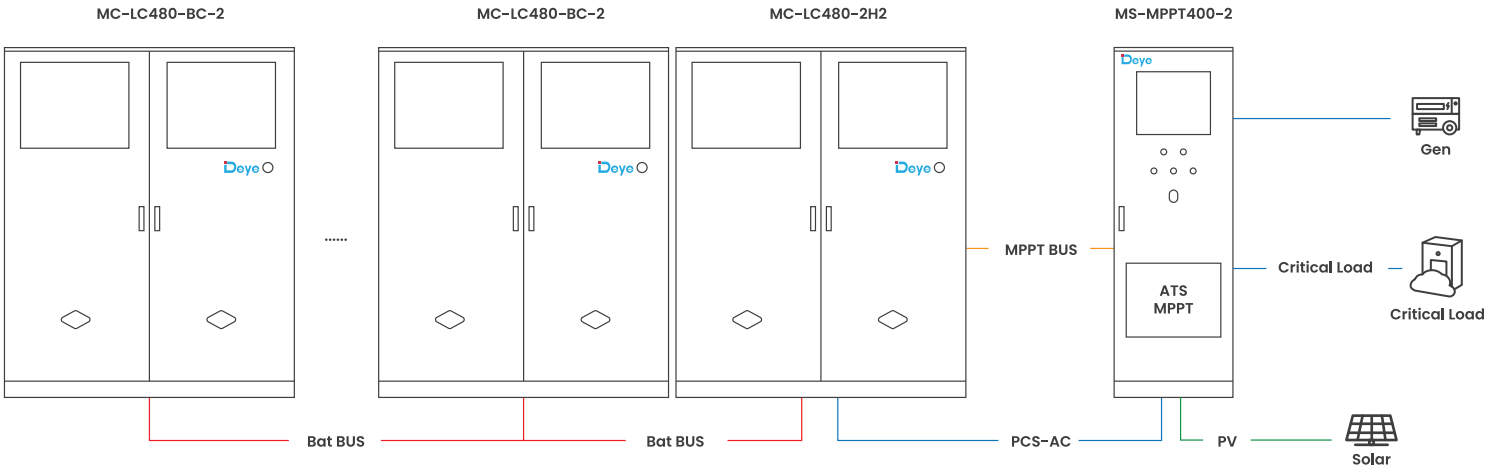


Versatile C&I Energy Storage Solutions

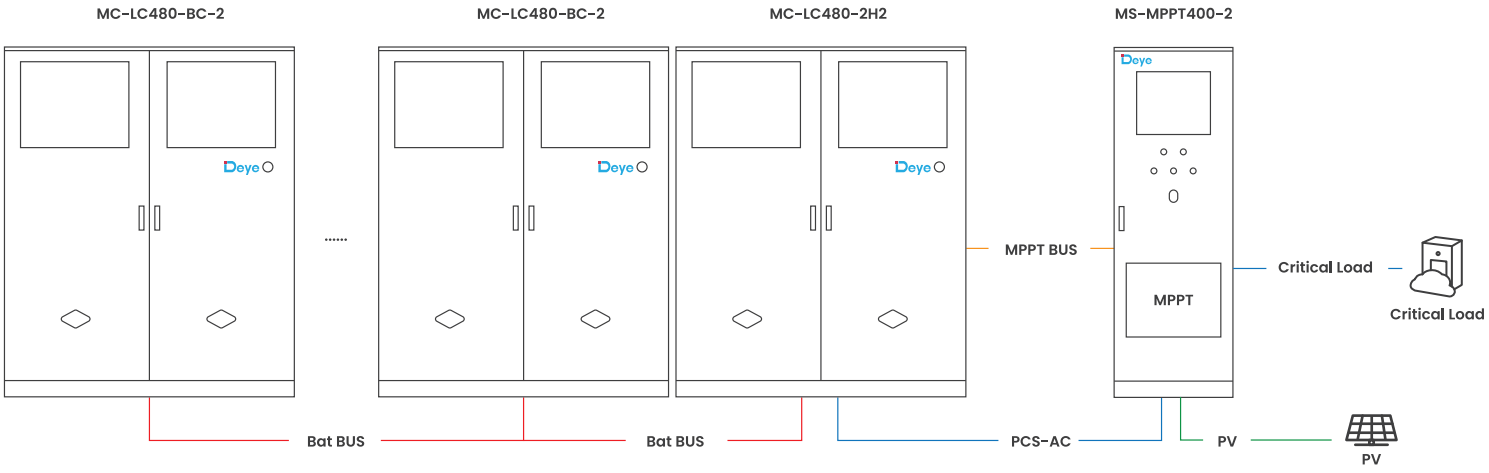
NOTE: MAX 3 Battery Cabinets（without PCS） Parallel

AC 400V — Bat Bus — PV BUS — MPPT BUS

For ESS Off-Grid Application with Solar and Generator



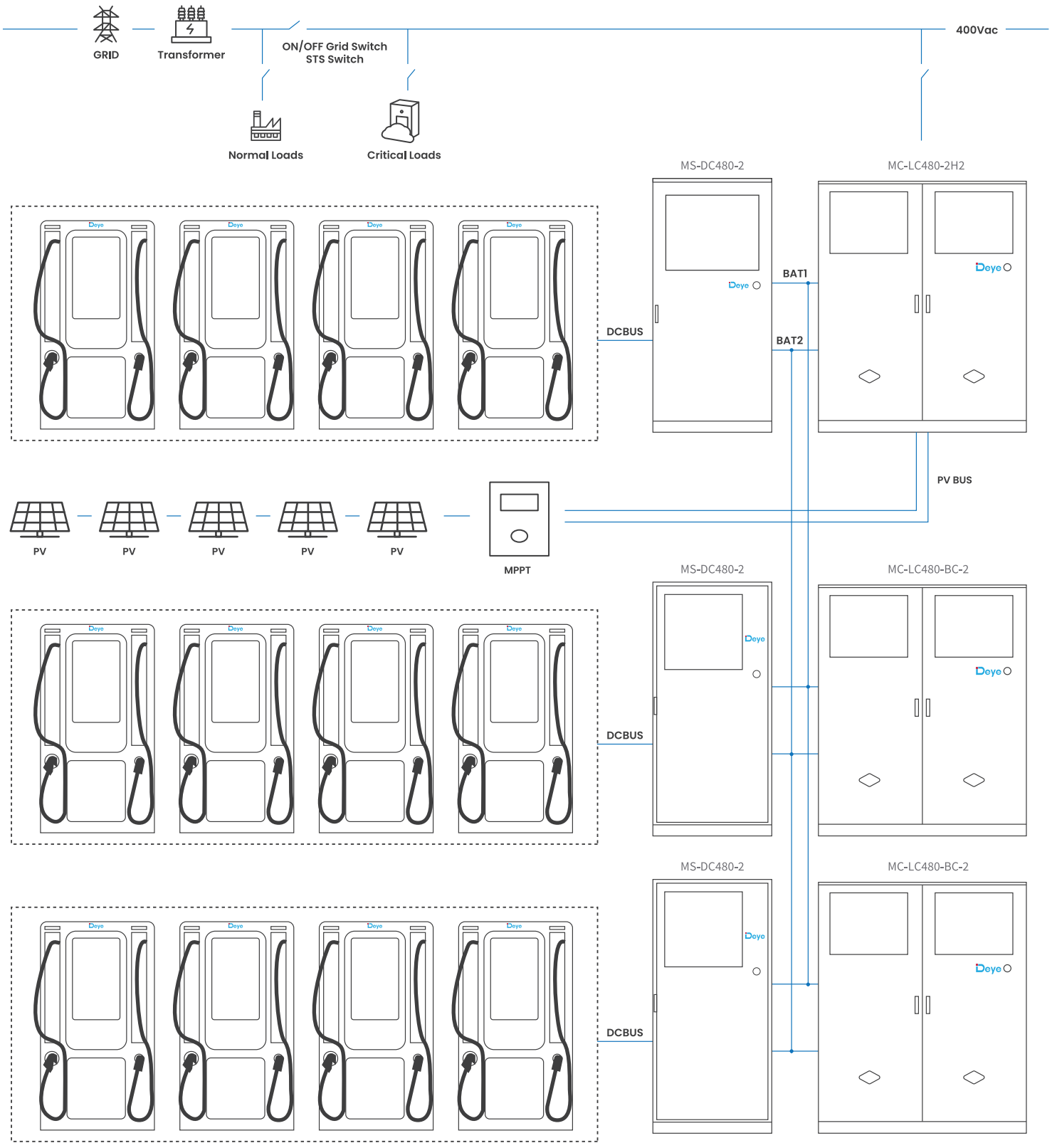
For ESS Off-Grid Application with Solar



Versatile C&I Energy Storage Solutions

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



POWERING YOUR LIFE

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