



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

- 3+3 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.)

5 Level

Extreme safety protection

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

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 ~ 850Vd.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

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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 ~ 850Vd.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 for operation >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

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Model	MS-DCC180-2 (DC charging terminal)
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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-MPPT400-2

System parameter

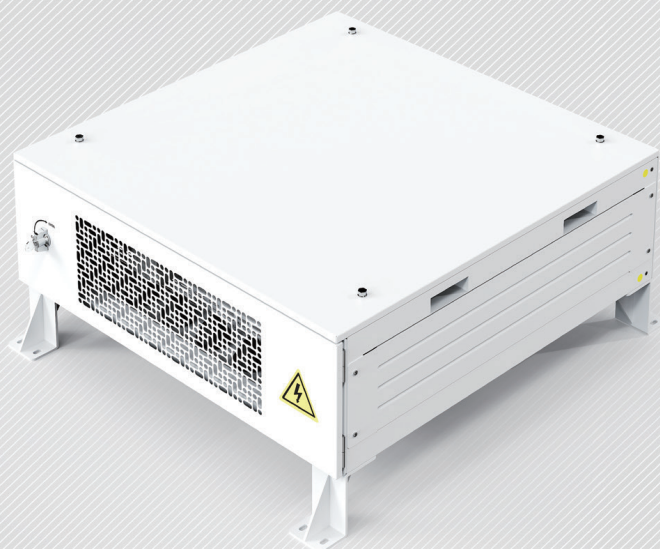
Dimension (W × D × H, mm)	1000 × 1000 × 2480
Weight Appr. (kg)	≤950kg
System Operating temperature range	-30°C ~ 45°C
Max. working altitude (m)	≤2000m
IP Rating of Enclosure	IP54

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%



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



AI Intelligence

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

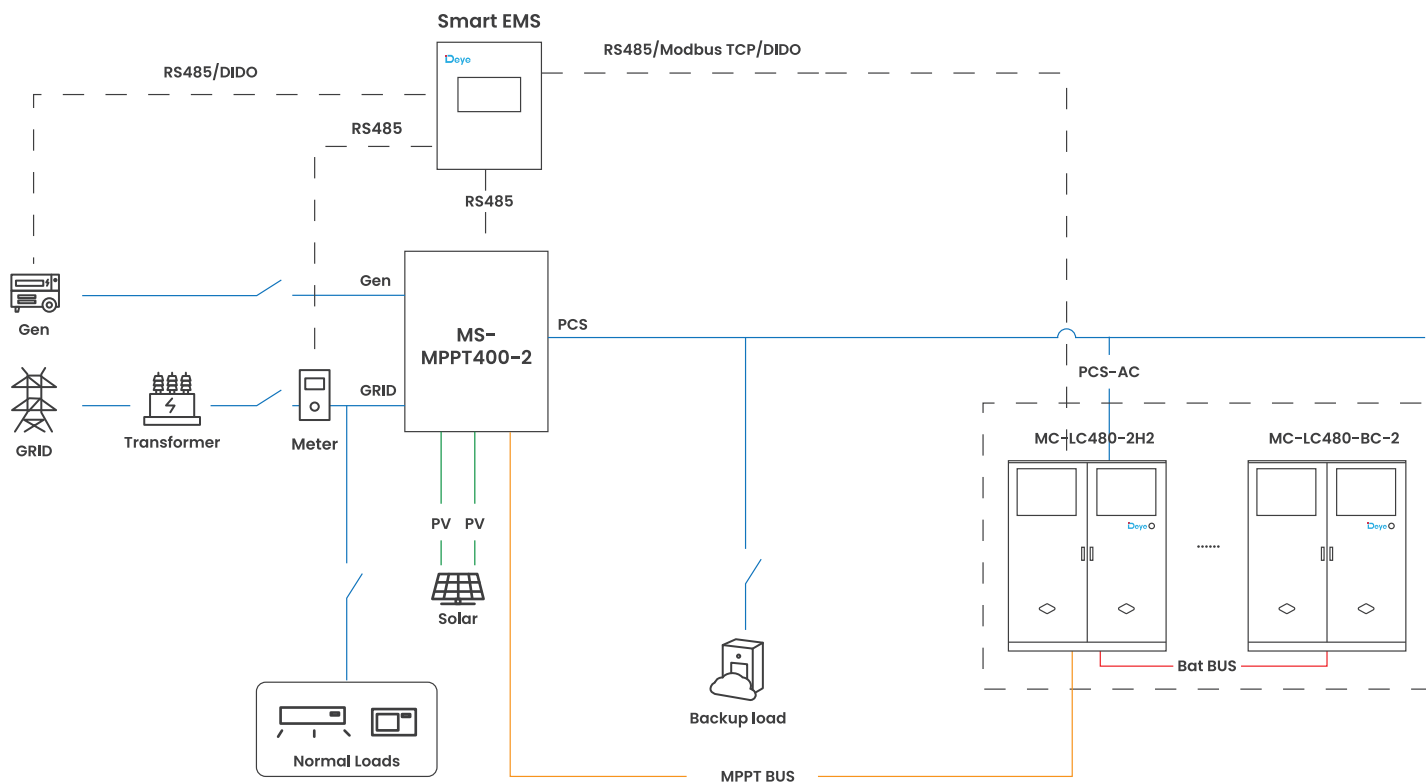
Efficient Operation and Maintenance

- 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

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



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)

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-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

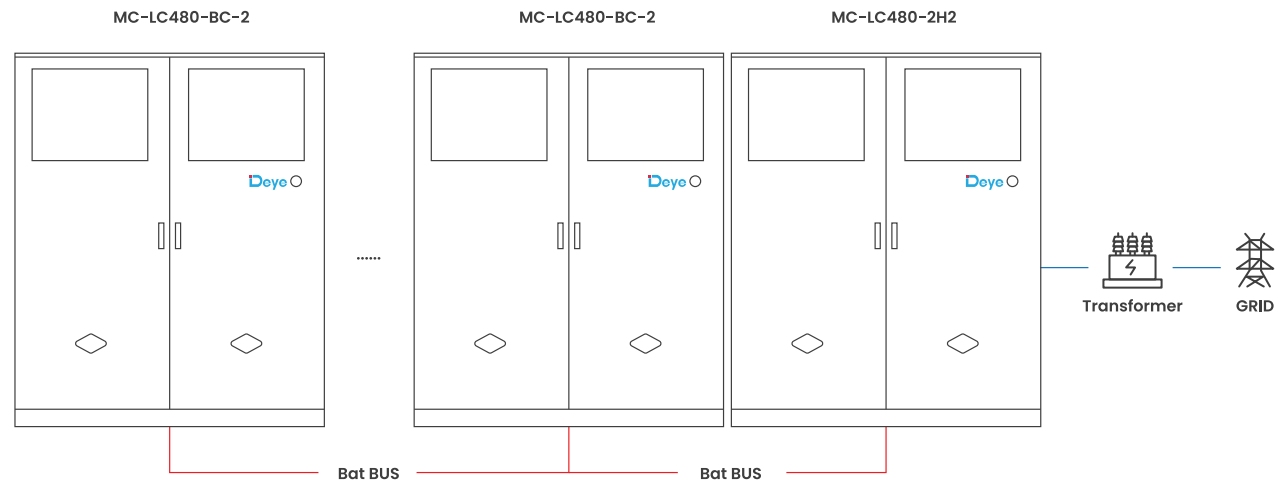
AC power cord : Recommended wire diameter 1.5mm²
DC power cord : Recommended wire diameter of 1.5mm²
Eight core Ethernet cable: Recommended CAT5e Ethernet cable
RS485 : Recommended 0.75mm²~1.5mm² outdoor UV protection with shielding layer twisted pair cable length<1000m (baud rate 9600)

Versatile C&I Energy Storage Solutions

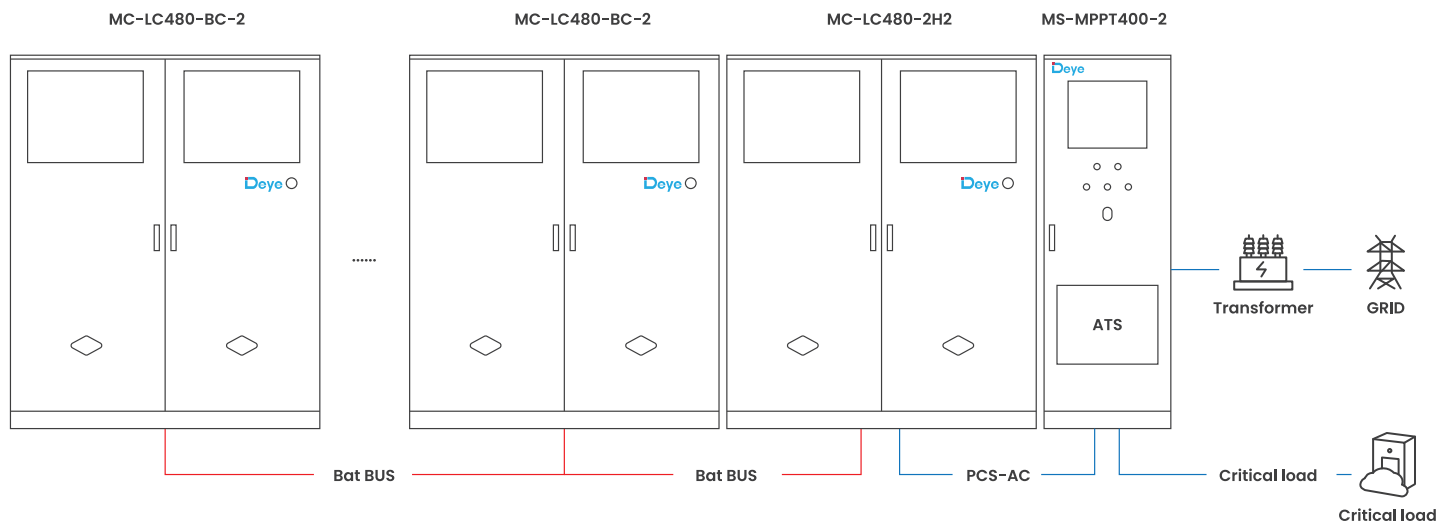
NOTE: MAX 3 battery cabinets (without PCS) parallel

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

For ESS on-grid application



For backup power application

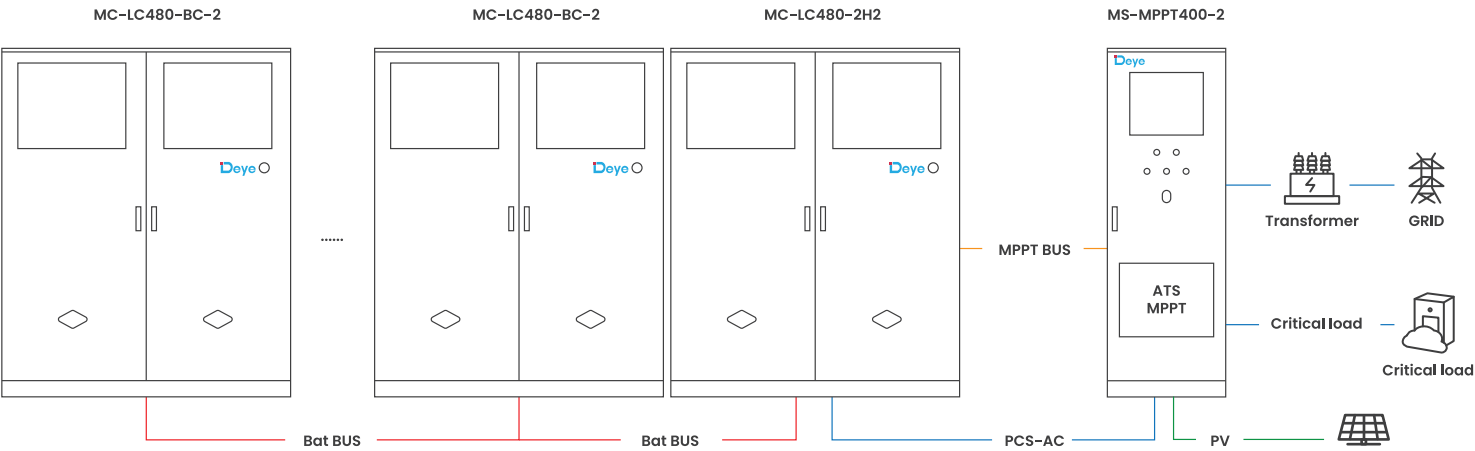


Versatile C&I Energy Storage Solutions

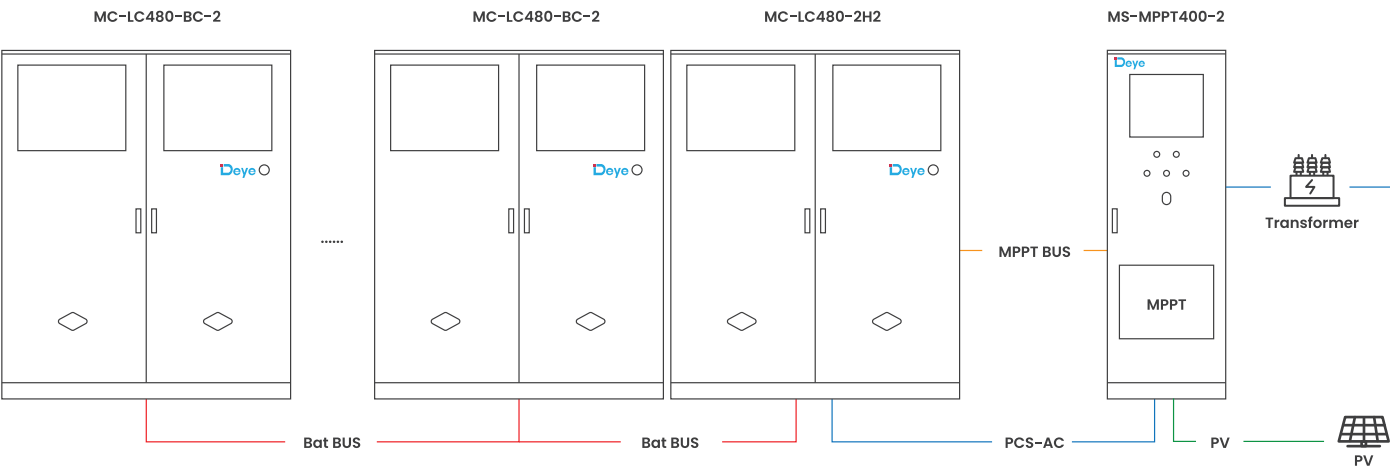
NOTE: MAX 3 battery cabinets (without PCS) parallel

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

For backup power application with solar



For ESS on-grid application with solar

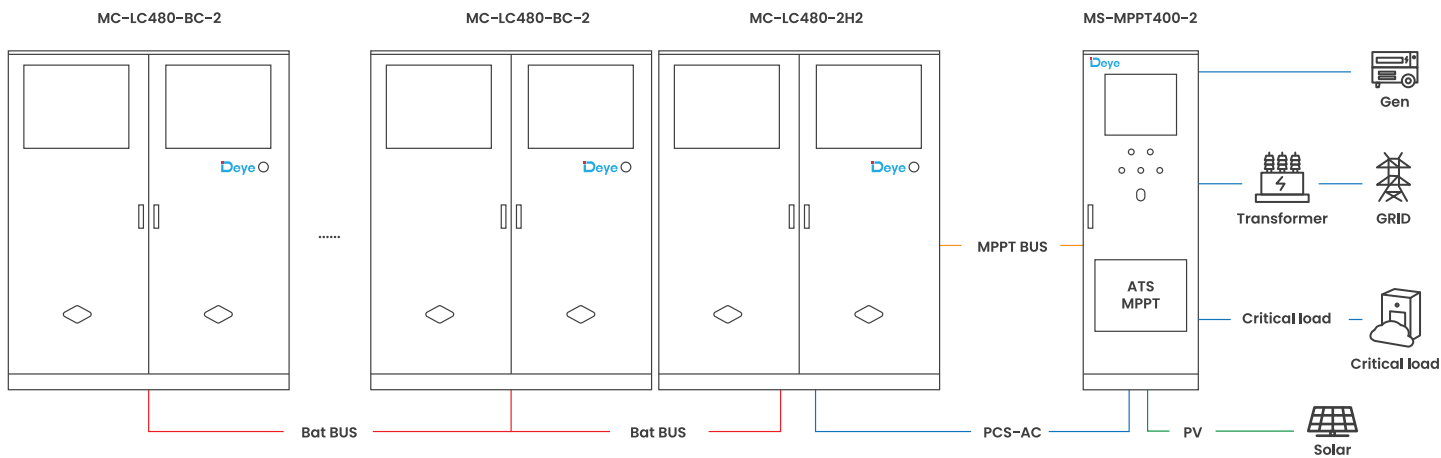
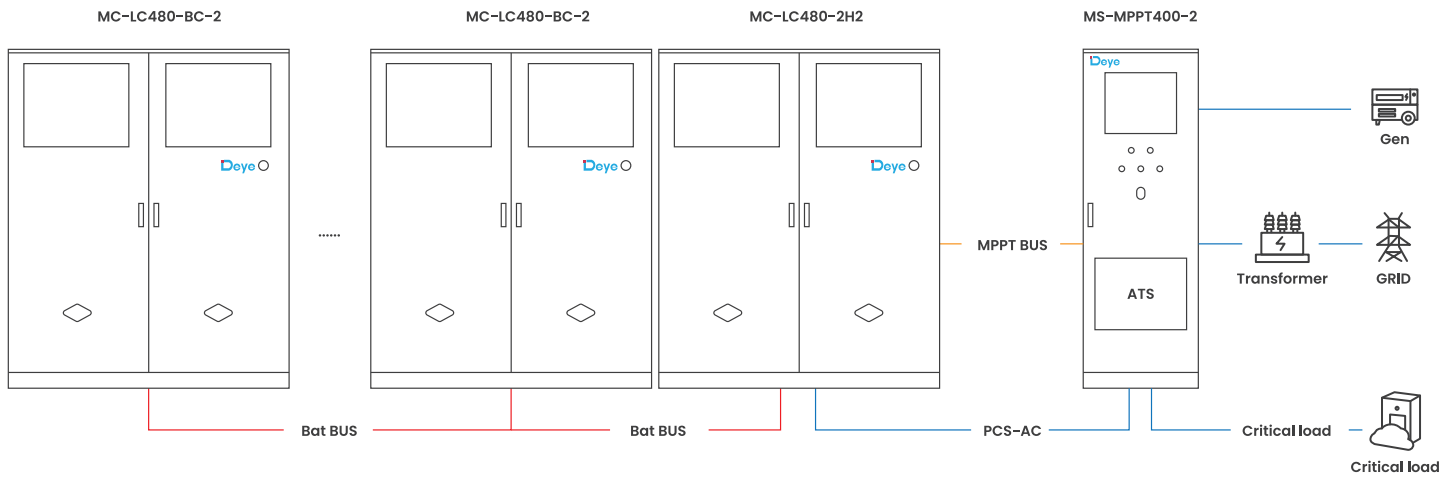


Versatile C&I Energy Storage Solutions

NOTE: MAX 3 battery cabinets (without PCS) parallel

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

For backup power application with generator and grid

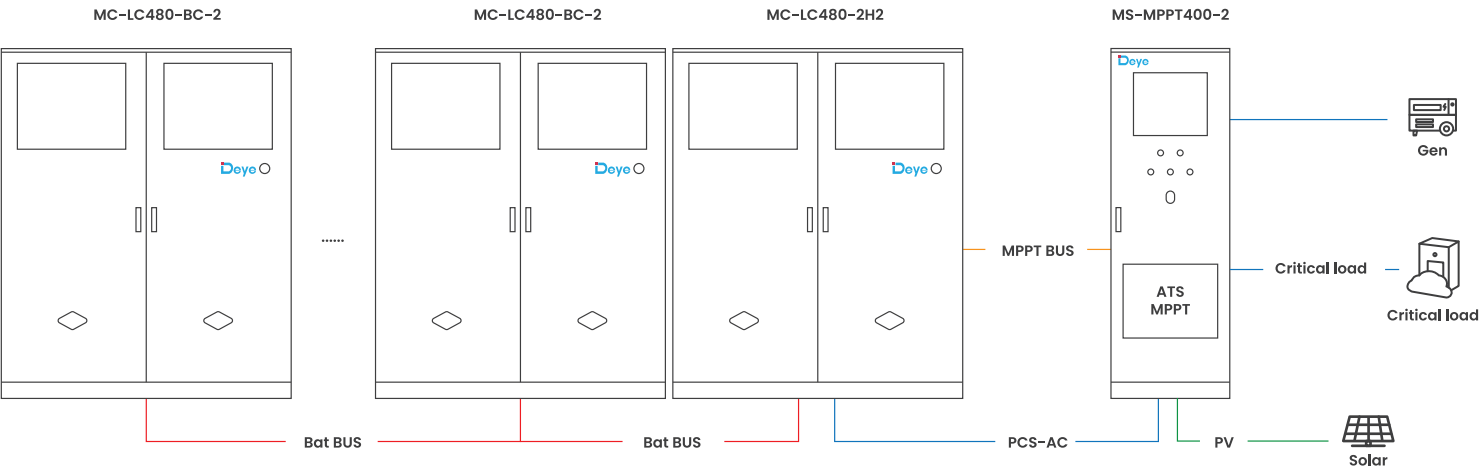


Versatile C&I Energy Storage Solutions

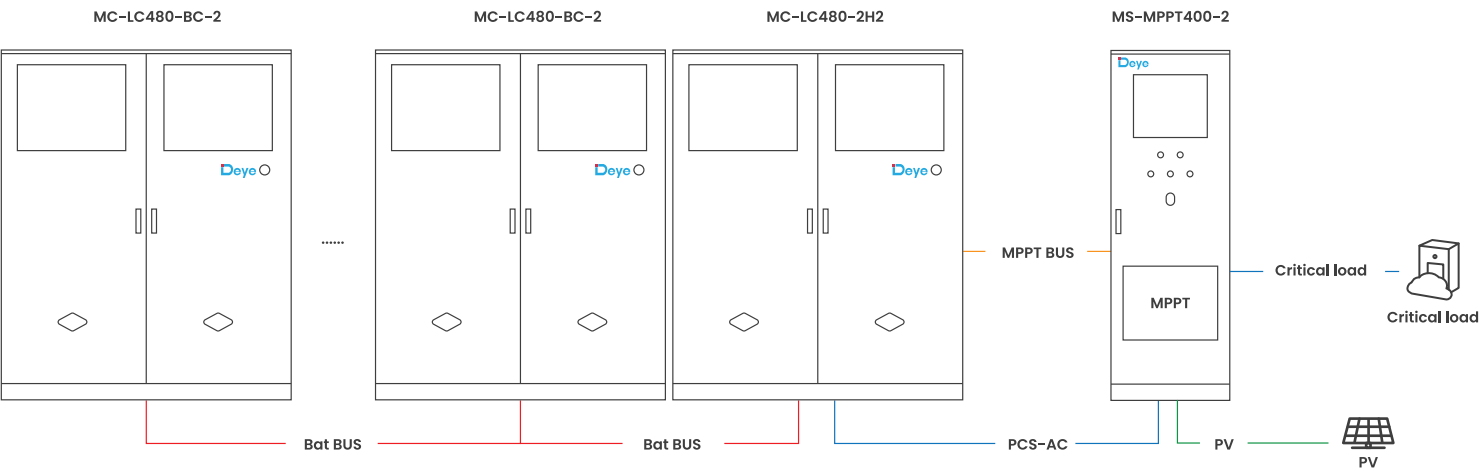
NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V Bat Bus PV BUS MPPT BUS

For ESS off-grid application with solar and generator



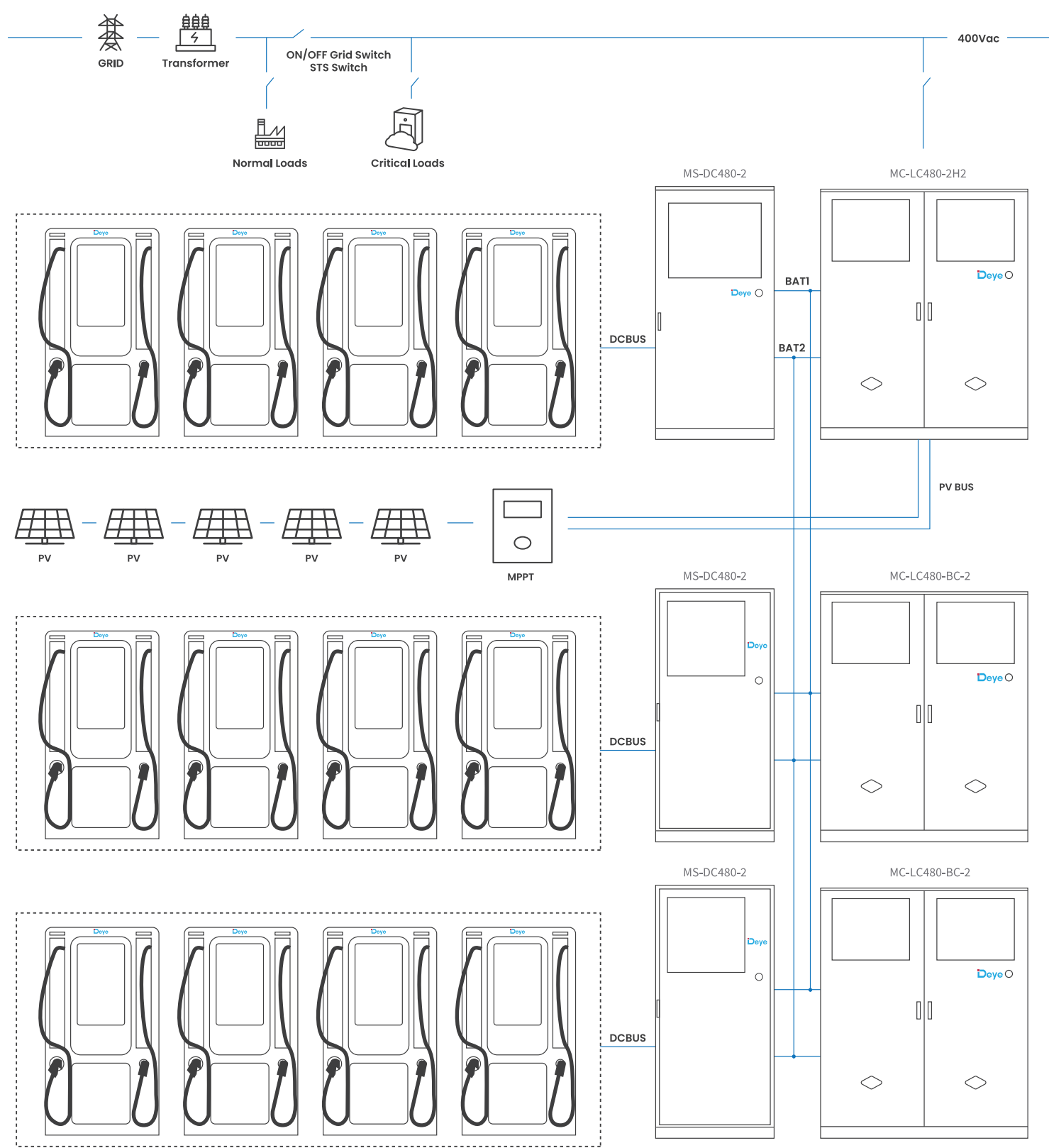
For ESS off-grid application with solar



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





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