

# 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



### 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 2/4/8-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

## 480kW

DC fast charging DC coupling for ESS and charging



**Model** **MC-LC430-2H2 ( AC BESS )**

**System parameter**

Operating Temperature	-25°C ~ +55°C
Storage Temperature	-30°C ~ +60°C
Humidity	0 ~ 95% ( No condensation )
Type of cooling	Liquid cooling
Fire Suppression	Aerosol, Water
Ingress Protection	IP54
Anticorrosion grade	C4-M (Optional C5)
Altitude	≤2000m
Communication	RS485, Modbus TCP, DIDO
Weight	≤5000kg
Dimensions ( W × D × H )	2000 × 1350 × 2480mm

**DC Data**

Battery	LiFePO <sub>4</sub>
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	-1~+1



Model		MC-LC430-BC-2 ( DC BESS )
<b>System parameter</b>		
Operating Temperature		-30°C ~ +55°C
Storage Temperature		-30°C ~ +60°C
Humidity		0 ~ 95% ( No condensation )
Type of cooling		Liquid cooling
Fire Suppression		Aerosol, Water
Ingress Protection		IP54
Anticorrosion grade		C4-M (Optional C5)
Altitude		≤2000m
Communication		RS485, Modbus TCP, DIDO
Weight		≤4800kg
Dimensions ( W × D × H )		2000 × 1350 × 2480mm
<b>DC Data</b>		
Battery		LiFePO <sub>4</sub>
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-DC480-2 ( 480kW DC charge power cabinet )
<b>DC Input Data</b>		
Input standard		DC+ / DC- / PE
DC input voltage range		200Vdc ~ 850Vdc
DC input current range		≤667A
DC rated input power		480kW @400Vdc≤Vin≤850Vdc
<b>DC Output Data</b>		
Dc output voltage range		150Vdc ~ 1000Vdc
Dc output current range		8 branches, max 250A each
<b>Environmental Conditions</b>		
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		Forced air cooling
Altitude		≤2000m ( Derated when higher than 2000m )
IP Rating of Enclosure		≥IP54
<b>Other Parameter</b>		
Efficiency		≥ 97.5%, @full load
Dimension ( W × H × D, mm )		1250 × 2450 × 1000mm
Approximate Weight ( kg )		1150kg



<b>Model</b>	<b>MS-DCC180-2 ( DC charging terminal )</b>
<b>DC Input Data</b>	
DC Input Voltage Range ( V )	150Vdc ~ 1000Vdc
Input number	2 DC inputs
<b>DC Output Data</b>	
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
<b>Environmental Conditions</b>	
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
<b>Other Parameter</b>	
Dimension ( W × H × D, mm )	1100 × 2200 × 400mm
Approximate Weight ( kg )	280kg

Model	MS-MPPT400-2
<b>System parameters</b>	
Dimension ( W × D × H, mm )	1000 × 1000 × 2480
Weight Appr. ( kg )	≤950kg
System Operating temperature range	-30°C ~ 50°C
Max. working altitude ( m )	≤2000m
IP Rating of Enclosure	IP54
<b>STS parameters</b>	
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
<b>MPPT parameters</b>	
No. of MPPT	2
Max. PV Input Power ( kW )	400(2*200)
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
<b>PV String Input Data</b>	
Max. PV Input Power (kW)	200
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
<b>Efficiency</b>	
Max. Efficiency	>99%
MPPT Efficiency	>99.9%
<b>Equipment Protection</b>	
DC input reverse protection	YES
DC ARC protection	Optional
Anti-PID(Potential Induced Degradation)	Optional
DC Switch	YES
Surge Protection Level	TYPE II
<b>General Data</b>	
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
<b>DC Output Data</b>	
DC Output Voltage Range(V)	630-1000
Max. DC Output Current(A)	200



### AI Intelligence

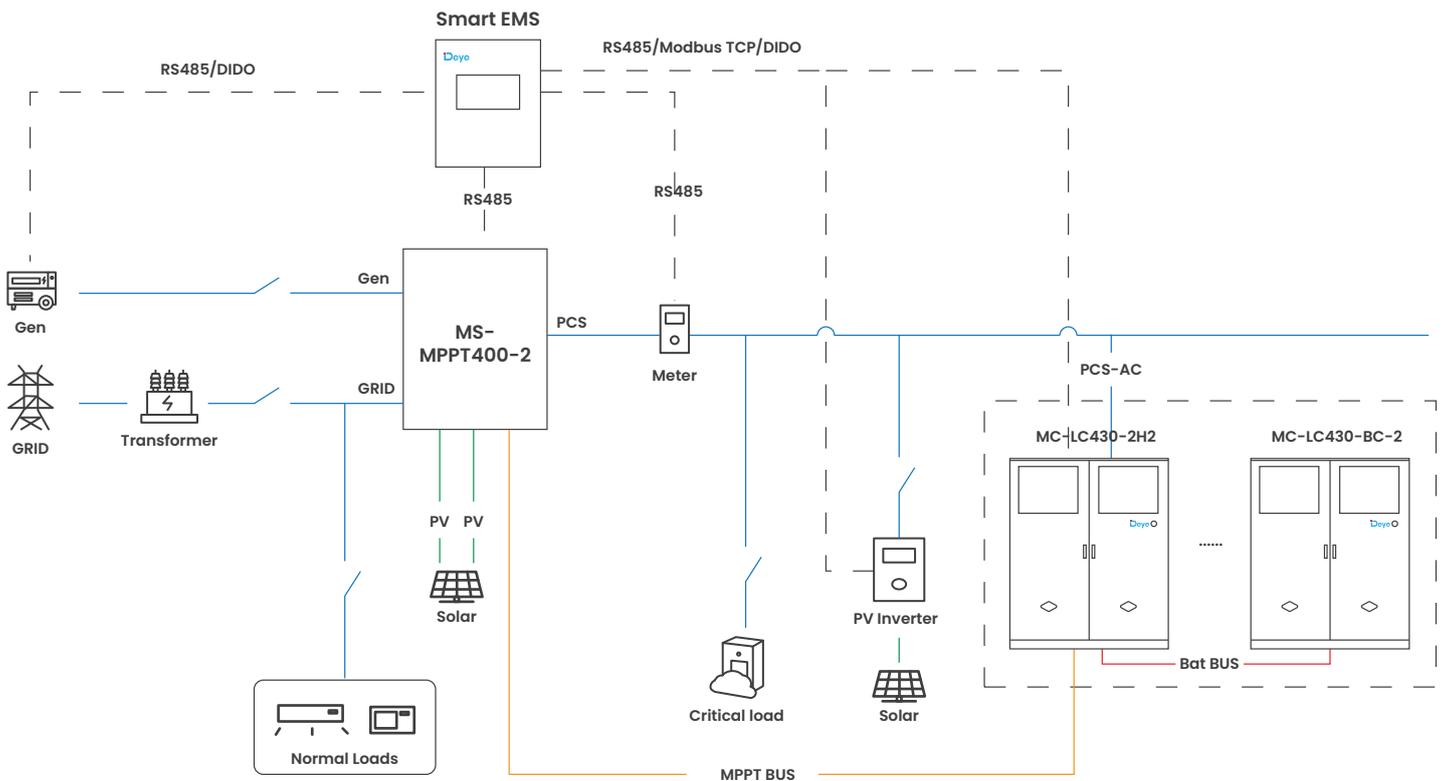
- Large capacity energy aggregation
- Real-time electricity price revenue calculation
- One click generation of statistical charts
- Maximum profit charging and discharging strategy

### 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

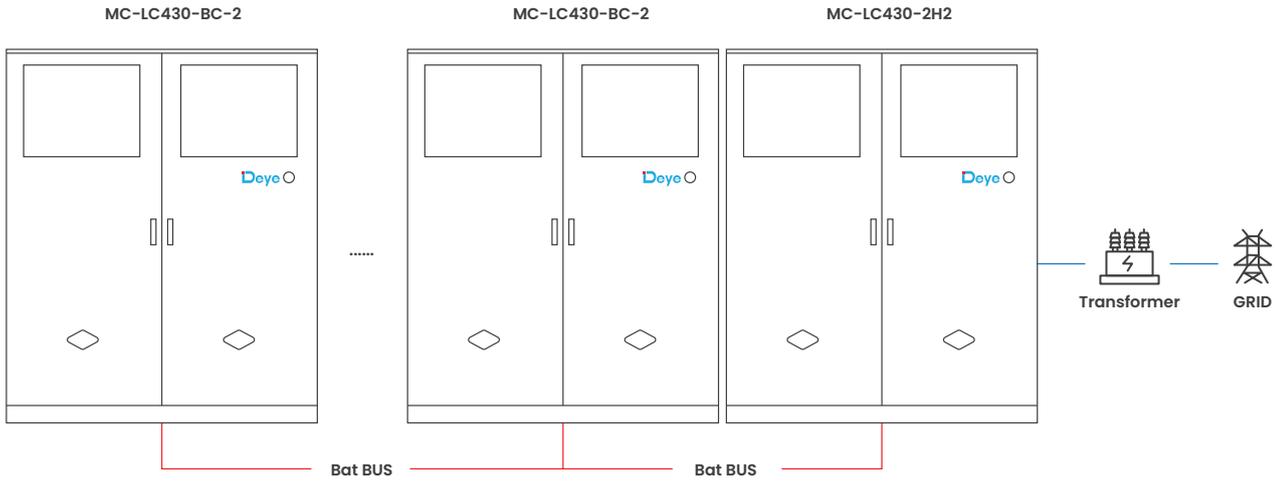


Model	MS-EMS
<b>System</b>	
Configuration	EMS controller, lightning protection module, switch power supply, UPS module, switch
Function	<p>Basic functions : peak valley arbitrage, anti backflow, main transformer overload protection, load tracking, demand control, backup power function, phase separation control, SOC balancing, Deye Cloud monitoring</p> <p>Advanced features : load forecasting, production planning, electricity price planning, optimal economic curve</p>
<b>Communicate</b>	
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
<b>Power Supply</b>	
Communication Input	220Vac
DC IN	24Vdc
UPS Backup Power	24Vdc
Consumption	Max 25W
<b>Environmental parameters</b>	
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)
<b>Mechanical parameters</b>	
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	<p>AC power cord : Recommended wire diameter 1.5mm<sup>2</sup></p> <p>DC power cord : Recommended wire diameter of 1.5mm<sup>2</sup></p> <p>Eight core Ethernet cable: Recommended CAT5e Ethernet cable</p> <p>RS485 : Recommended 0.75mm<sup>2</sup>~1.5mm<sup>2</sup> outdoor UV protection with shielding layer twisted pair cable length&lt;1000m ( baud rate 9600 )</p>

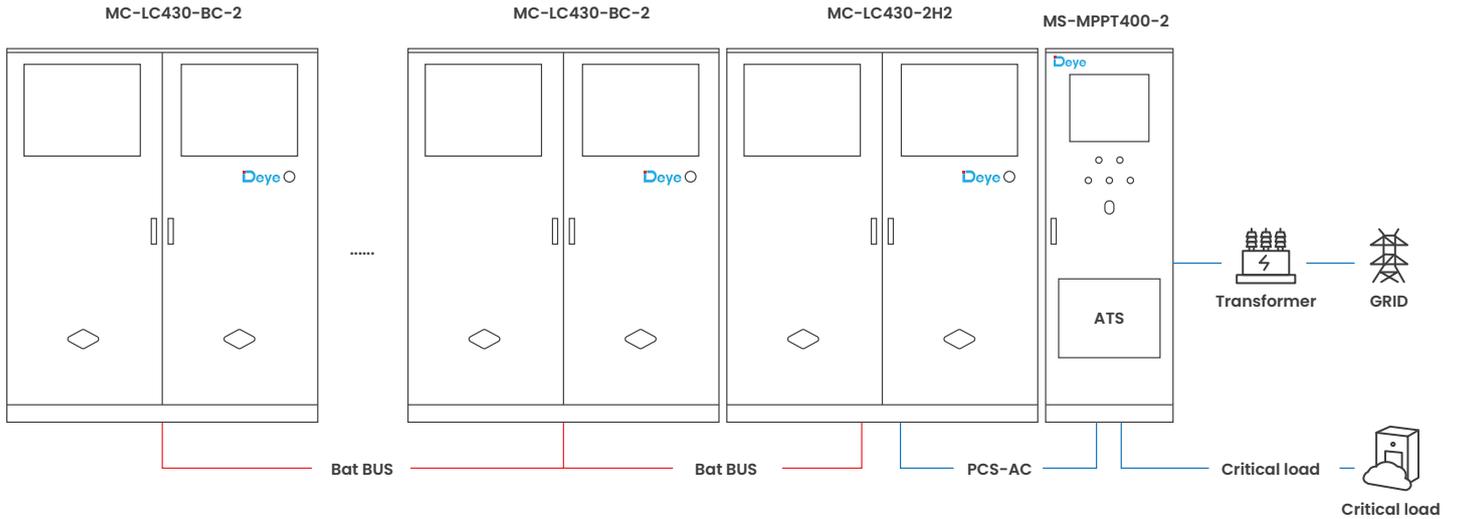
**NOTE: MAX 3 battery cabinets (without PCS) parallel**

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

**For ESS on-grid application**



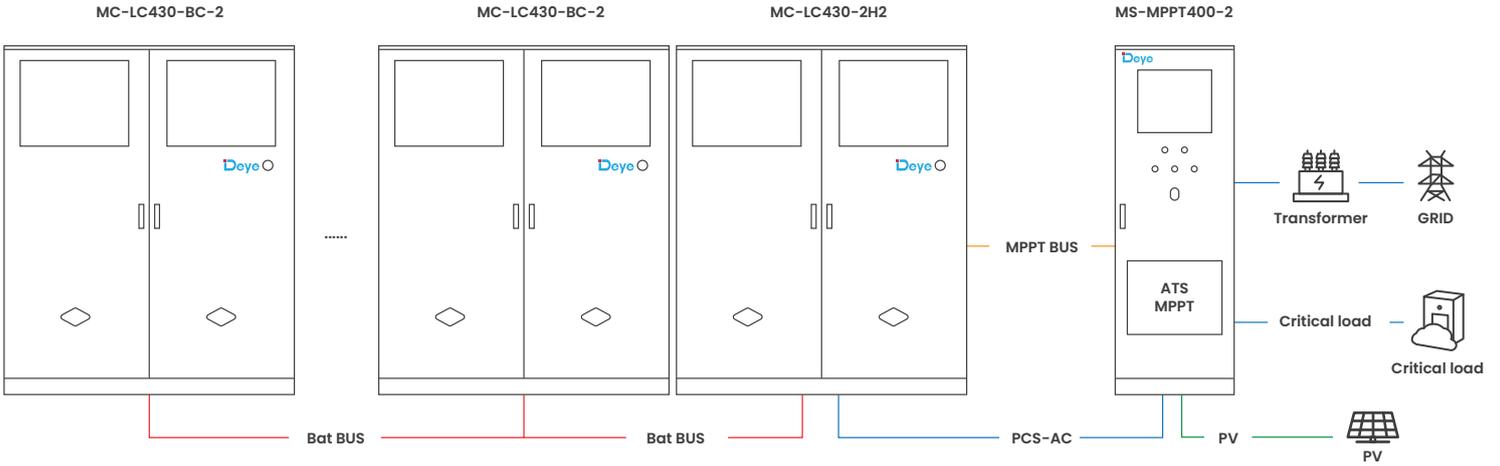
**For backup power application**



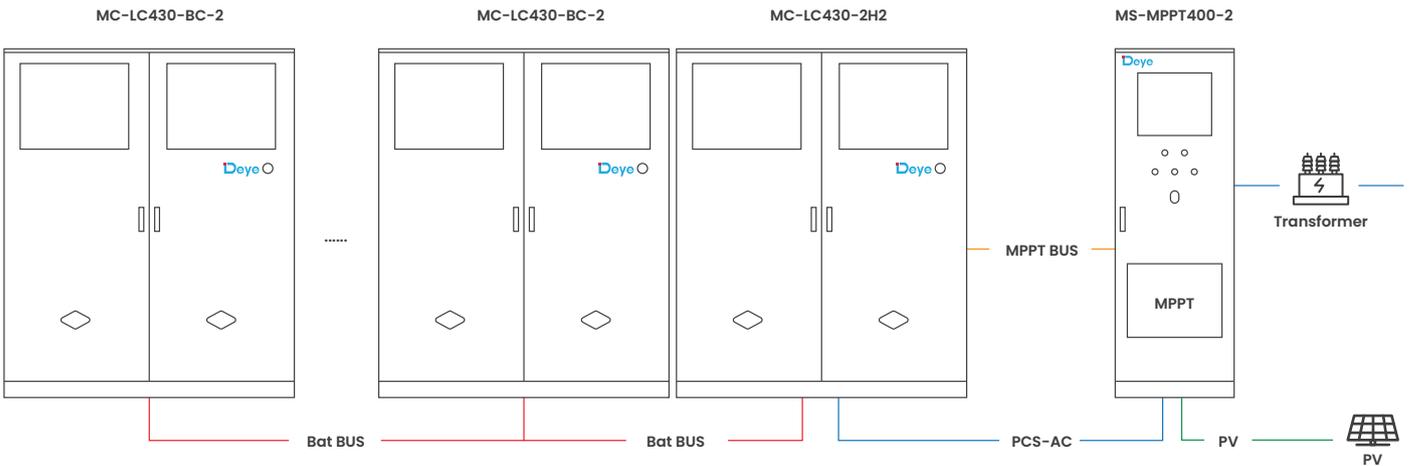
**NOTE: MAX 3 battery cabinets (without PCS) parallel**

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

**For backup power application with solar**



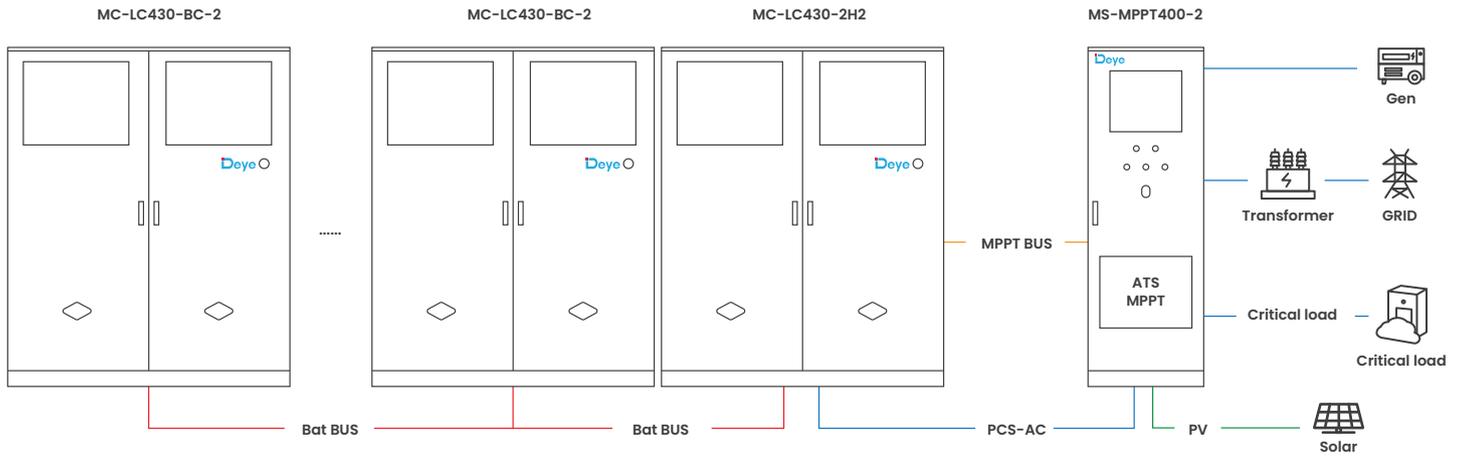
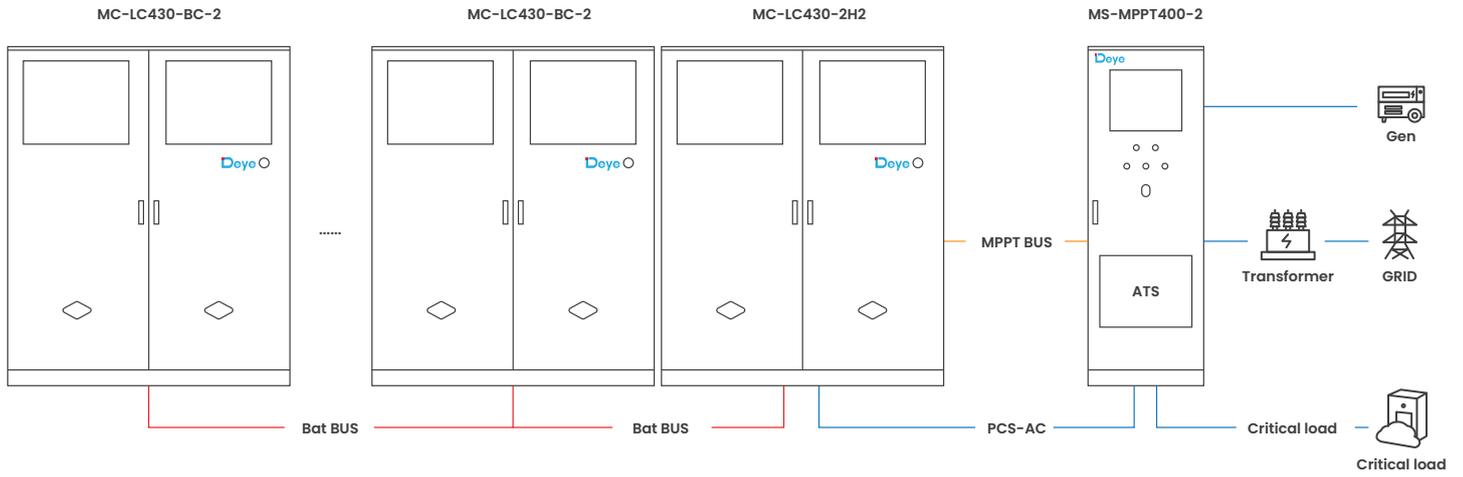
**For ESS on-grid application with solar**



NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V  Bat Bus  PV BUS  MPPT BUS 

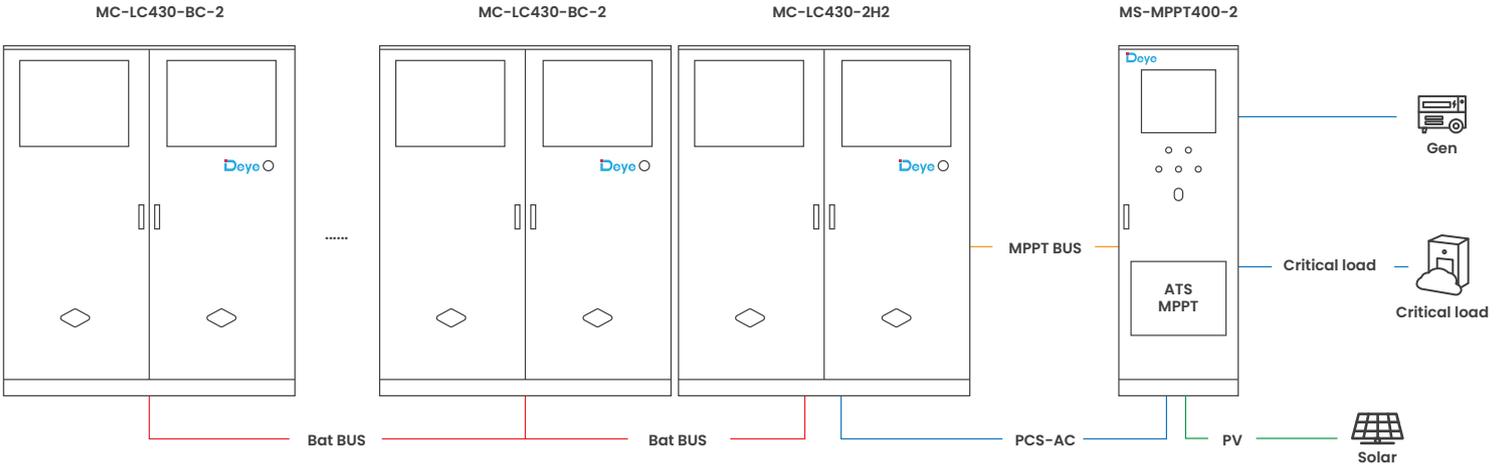
For backup power application with generator and grid



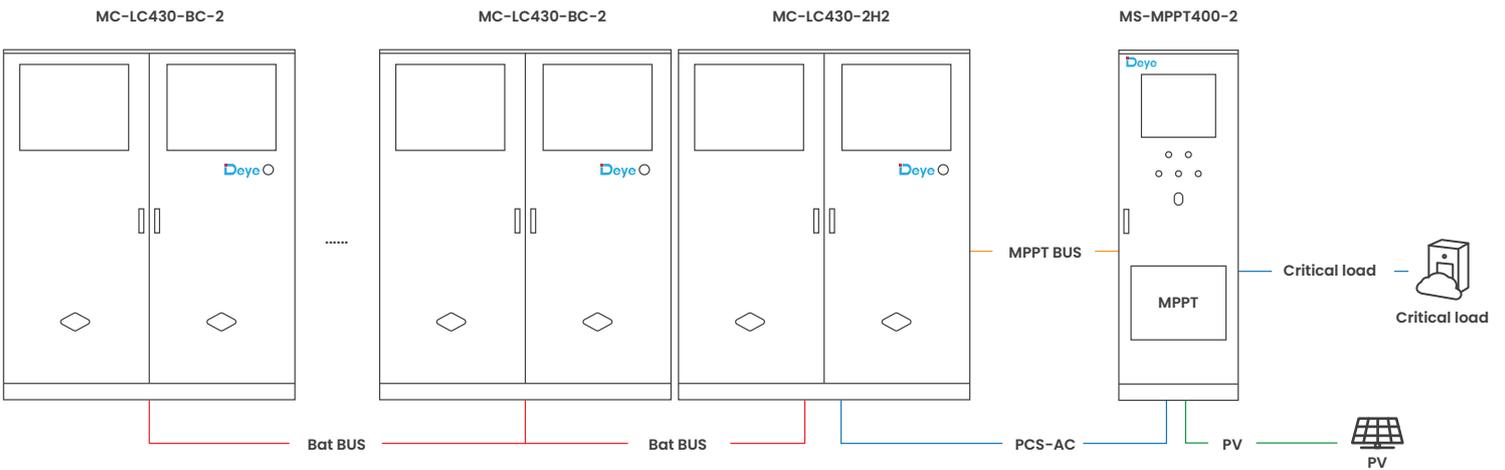
**NOTE: MAX 3 battery cabinets (without PCS) parallel**

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

**For ESS off-grid application with solar and generator**

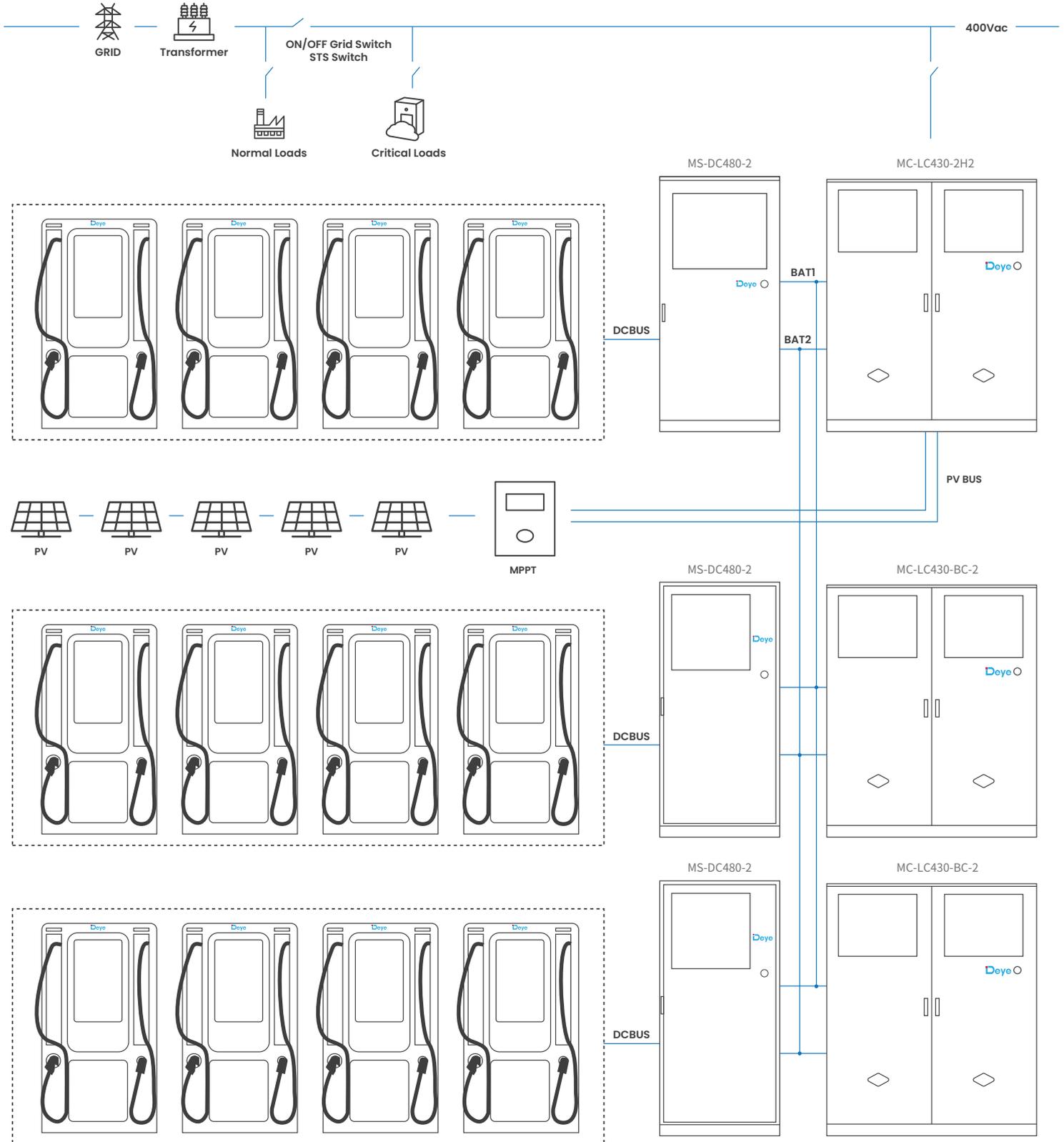


**For ESS off-grid application with solar**



**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





**POWERING YOUR LIFE**

 [www.deyeess.com](http://www.deyeess.com) / [www.deyeinverter.com](http://www.deyeinverter.com)

      **Deye ESS / Deye New Energy**