C&I ESS SOLUTION

DEYE WINTER MC 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+2 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

430kWh
2/4/6/8-hour energy storage systm

C&I ESS Solution

PCS Model	SUN-100K-PCS01HP3
Battery Data	
Battery Type	Lithium-ion
Battery Voltage Range (V)	630-1000
Max. Charging Current (A)	175
Max. Discharging Current (A)	175
Charging Strategy for Li-ion Battery	Self-adaption to BMS
Number of Battery Input	1
DC Input Data	
DC Input Voltage Range(V)	630-1000
Max. DC Input Current(A)	200
AC Input/Output Data	
Rated AC Input/Output Active Power (kW)	100
Max. AC Input/Output Apparent Power (kVA)	110
Rated AC Input/Output Current (A)	151.6/145
Max. AC Input/Output Current (A)	166.7/159.5
Rated Input/Output Voltage/Range(V)	220/380, 230/400 0.85Un-1.1Un
Grid Connection Form	3L+N+PE
Rated Input/Output Grid Frequency/Range	50Hz/45Hz-55Hz 60Hz/55Hz-65Hz
Power Factor Adjustment Range	-1~1
Total Current Harmonic Distortion THDi	<3% (of nominal power)
DC Injection Current	<0.5% In
Efficiency	
Max. Efficiency	98.5%
Euro Efficiency	97.8%
MPPT Efficiency	>99%
Equipment Protection	
Integrated	AC Output Overcurrent Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, Thermal Protection,Anti-islanding Protection, Insulation Impedance Detection, Residual Current Detection
Surge Protection Level	TYPE II(DC), TYPE II(AC)
Interface	
LCD/LED display	LCD
Communication Interface	WIFI, RS485, CAN, Meter
General Data	
Operating Temperature Range(°C)	-40°C-60°C,＞45°C Derating
Permissible Ambient Humidity	0-95%
Permissible Altitude	4000m
Noise	<75dB
Ingress Protection(IP) Rating	IP 65(PCS Module)
Cabinet Size[W×H×D] (mm)	543x310x775
Weight (kg)	70.35
Inverter Topology	Non-Isolated
Over Voltage Category	OVC II(DC), OVC III(AC)
Type of Cooling	Intelligent Air Cooling
Grid Regulation	IEC 61727, IEC 62116, CEI 0-21, EN 50549, NRS 097, RD 140, UNE 217002, OVE-Richtlinie R25, G99, VDE-AR-N 4105
Safety/EMC Standard	IEC/EN 62477-1

C&I ESS Solution

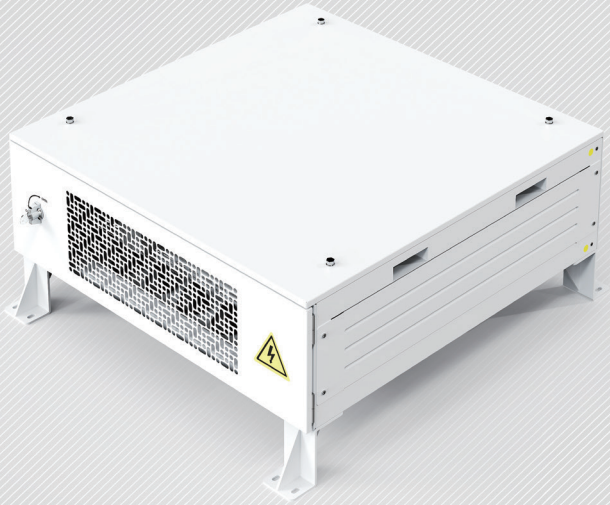
Model	MC-L430-2H2 (AC BESS)
System parameter	
Operating Temperature	-25°C ~ +55°C
Storage Temperature	-30°C ~ +60°C
Humidity	0 ~ 95% (No condensation)
Type of cooling	Liquid cooling
Fire Suppression	Aerosol, Water
Ingress Protection	IP54
Anticorrosion grade	⩾C4
Altitude	⩽2000m
Communication	RS485, Modbus 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	648~876Vd.c
Charge and discharge rate	0.5P
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

C&I ESS Solution

Model	MC-L430-BC-2 (DC BESS)
System parameter	
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
Altitude	⩽2000m
Communication	RS485, Modbus TCP, DIDO
Weight	⩽4700kg
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	648~876Vd.c
Charge and discharge rate	0.5P

Model	MS-MPPT400-2
System parameters	
Dimension (W × D × H, mm)	1000 × 1000 × 2450
Weight Appr. (kg)	⩽950kg
System Operating temperature range	-30°C ~ 50°C
Max. working altitude (m)	⩽2000m
IP Rating of Enclosure	IP54
STS parameters	
Rated working voltage (V)	AC400
Auxiliary equipment operating voltage (V)	AC220, DC24
Frequency	50/60Hz
Rated power of load (kW)	400
Rated power of the power grid (kW)	400
Rated power of oil engine (kW)	400
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
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 PV-BESS-EV Charging Integrated 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	IP20(MPPT IP65)
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

C&I Air-Cooled ESS | MS-EMS

AI Intelligence

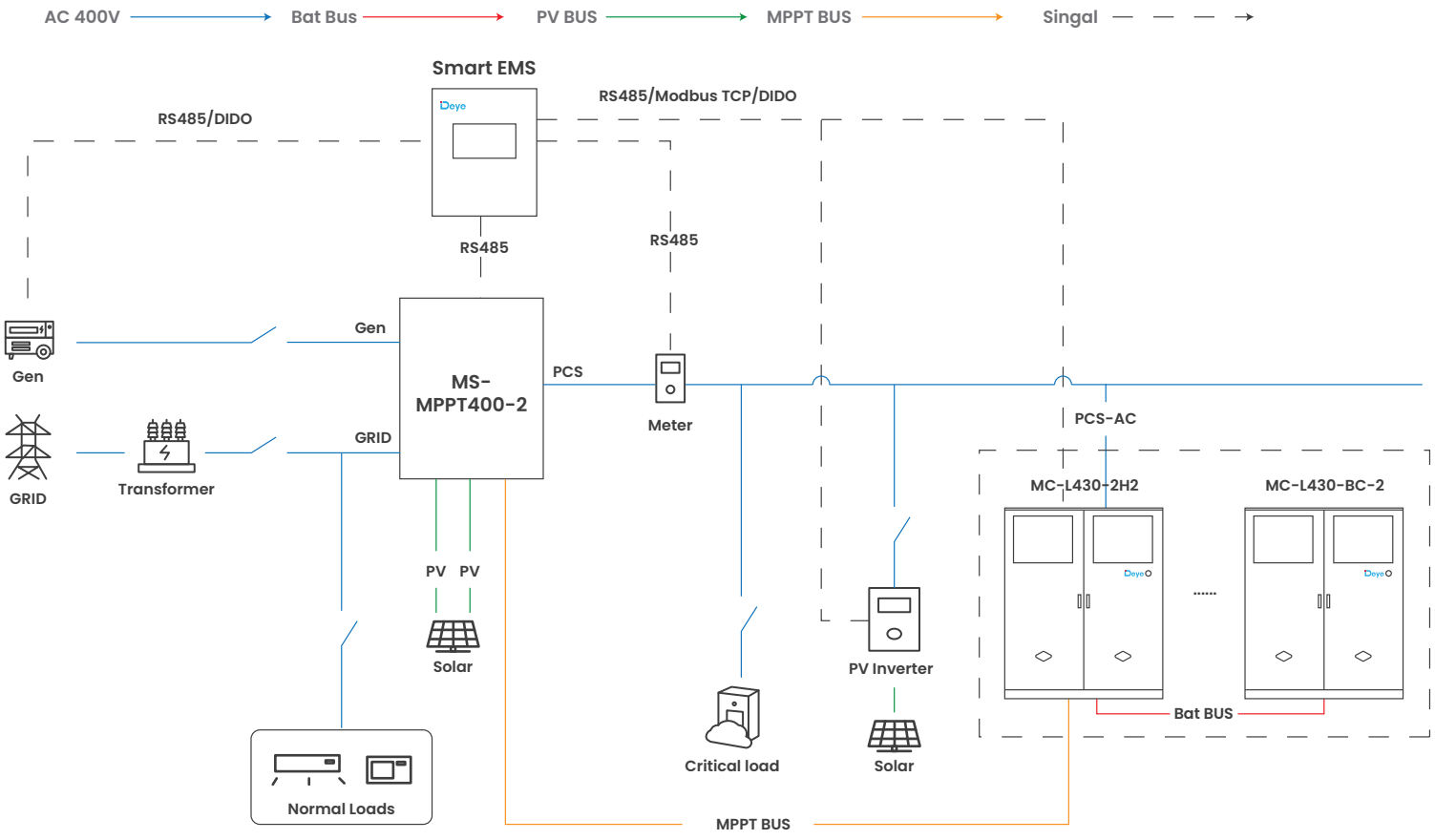
- Large capacity energy aggregation
- Real-time electricity price revenue calculation
- One click generation of statistical charts
- Maximum profit charging and discharging strategy

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 Air-Cooled EMS

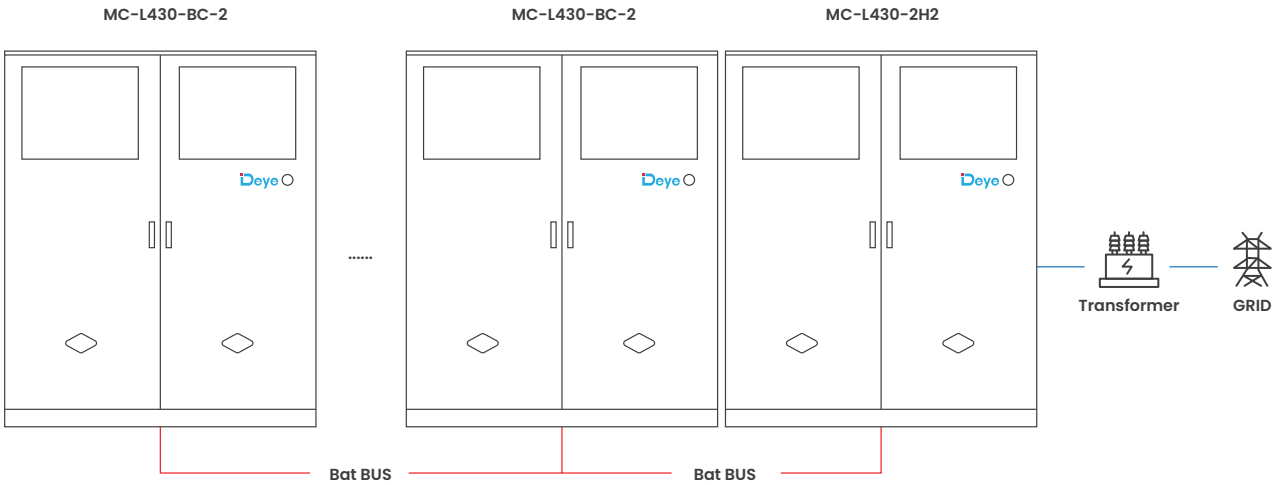
Model	MS-EMS
System	
Configuration	EMS controller, lightning protection module, switch power supply, UPS module, switch
Function	Basic functions : peak valley arbitrage, anti backflow, main transformer overload protection, load tracking, demand control, backup power function, phase separation control, 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
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

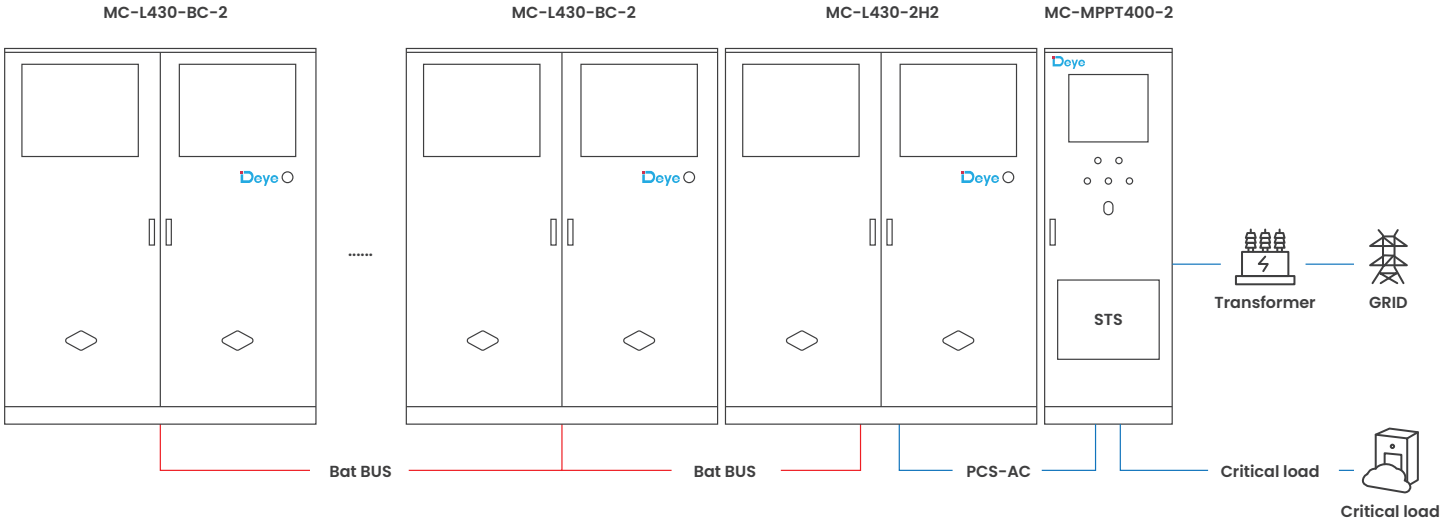
NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V — Bat Bus — PV BUS — MPPT BUS

For ESS on-grid application



For backup power application

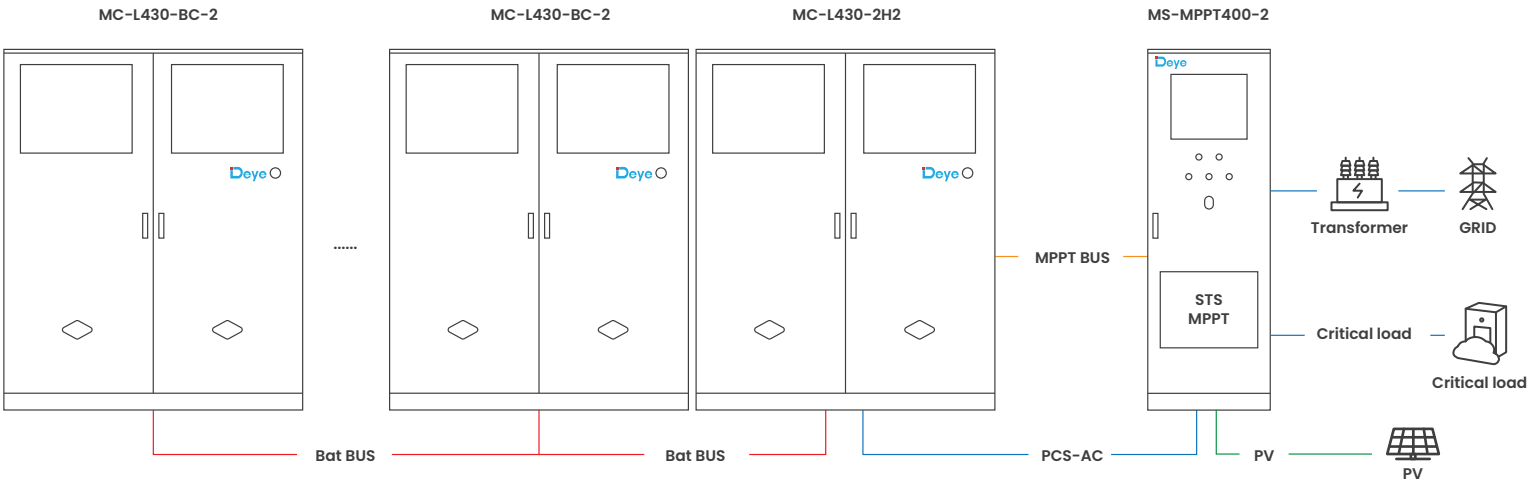


Versatile C&I Energy Storage Solutions

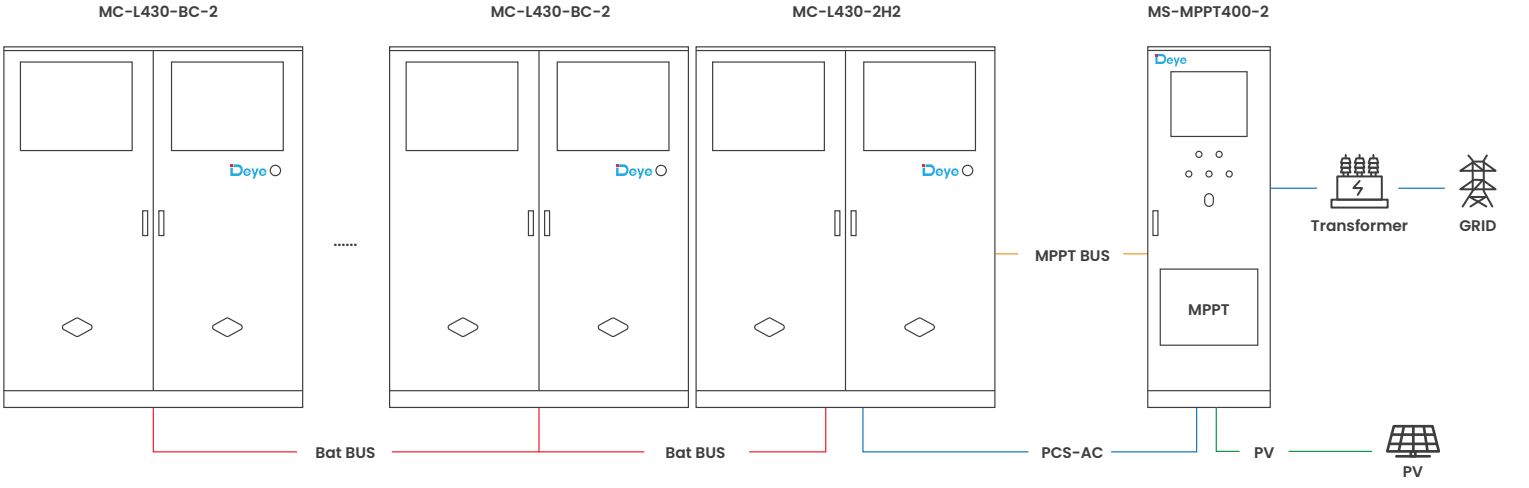
NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V — Bat Bus — PV BUS — MPPT BUS

For backup power application with solar



For ESS on-grid application with solar

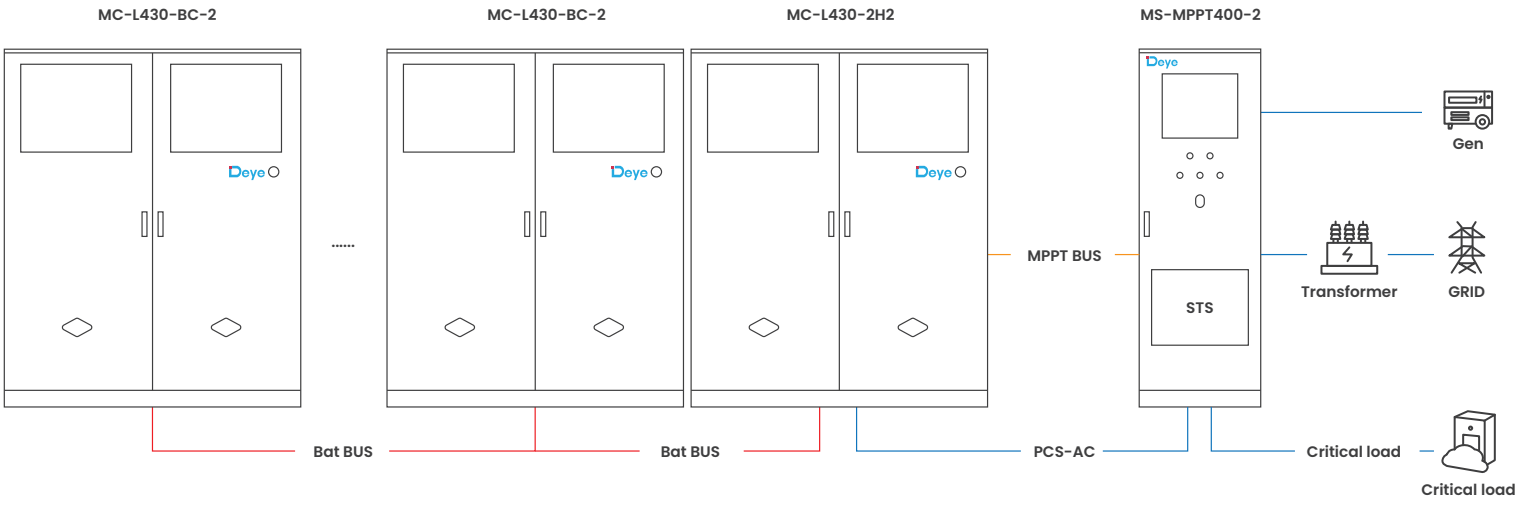


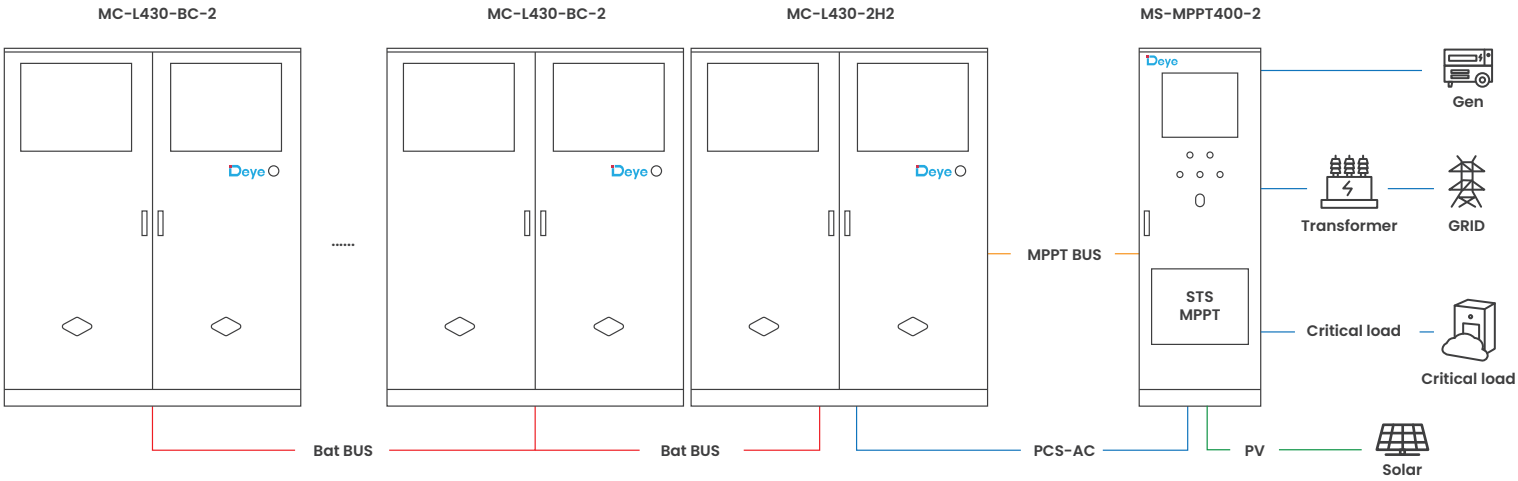
Versatile C&I Energy Storage Solutions

NOTE: MAX 3 battery cabinets (without PCS) parallel

AC 400V — Bat Bus — PV BUS — MPPT BUS

For backup power application with generator and grid



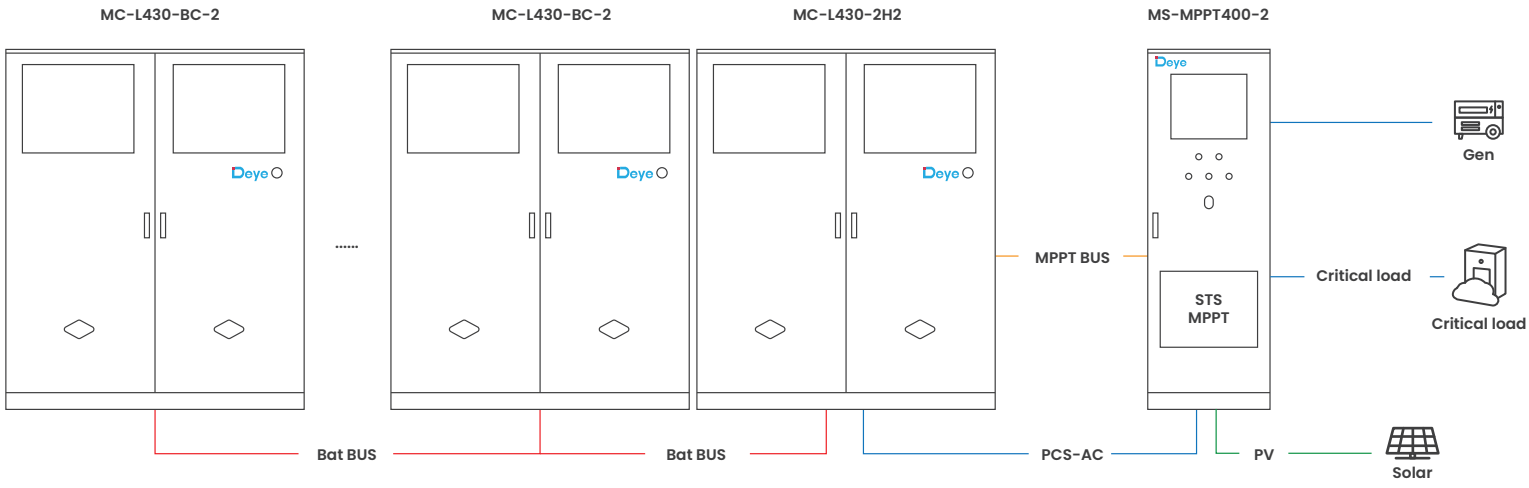


Versatile C&I Energy Storage Solutions

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