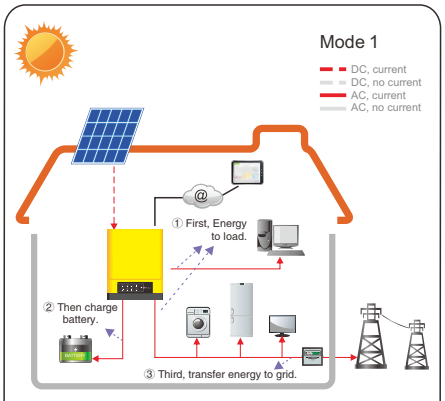
GOODWE
your solar engine

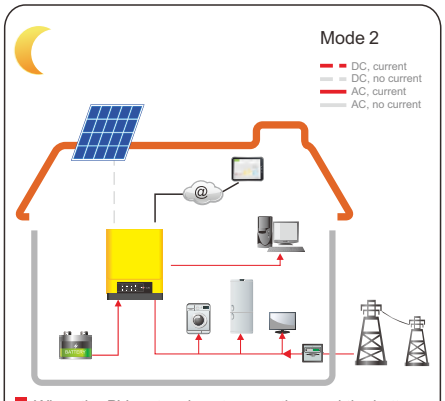
EM Series
Hybrid Inverter
3.0/3.6/5.0kW

- Integrated charge controller and inverter
- Intelligent battery management function
- Grid-tied or grid-independent operation
- Compatible with both lead-acid and Li-ion batteries
- Increased performance and security
- IP65 dust-proof and water-proof rating
- Easy remote monitoring via PCs, tablets and mobiles
- Fanless low-noise design

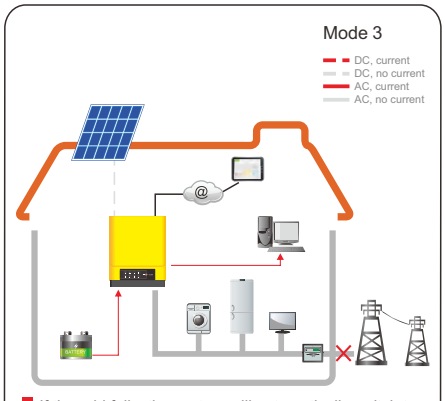
How does it work?



- Energy produced by the PV system is used to optimize self-consumption. The excess energy is used to recharge the batteries, then transferred to the grid.



- When the PV system is not generating, and the battery is charged, the inverter will supply the load first and then the grid if excess energy is available.



- If the grid fails, the system will automatically switch to the back-up mode and use the energy stored in the battery.

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Technical Data	GW3048-EM	GW3648-EM	GW5048-EM
Battery Input Data			
Battery Type	Li-Ion or Lead-acid	Li-Ion or Lead-acid	Li-Ion or Lead-acid
Nominal Battery Voltage [V]	48	48	48
Max. Charging Voltage [V]	≤60 (Configurable)	≤60 (Configurable)	≤60 (Configurable)
Max. Charging Current [A]*	50	50	50
Max. Discharging Current [A]*	50	50	50
Battery Capacity [Ah]**	50~2000	50~2000	50~2000
Charging Mode for Li-Ion Battery	Self-adaption to BMS	Self-adaption to BMS	Self-adaption to BMS
Charging Mode for Lead-acid Battery	3-stage adaptive with maintenance	3-stage adaptive with maintenance	3-stage adaptive with maintenance
PV String Input Data			
Max. DC Input Power [W]	3900	4600	6500
Max. DC Input Voltage [V]***	550	550	550
MPPT Range [V]	100~500	100~500	100~500
Start-up Voltage [V]****	125	125	125
MPPT Range for Full Load [V]	280~500	170~500	230~500
Nominal DC Input Voltage [V]	360	360	360
Max. Input Current [A]	11	11/11	11/11
Max. Short Current [A]	13.8	13.8/13.8	13.8/13.8
No. of MPP Trackers	1	2	2
No. of Strings per MPP Tracker	1	1	1
AC Output Data (On-grid)			
Nominal Apparent Power Output to Utility Grid [VA]	3000	3680	5000*****
Max. Apparent Power Output to Utility Grid [VA]	3000	3680	5000*****
Max. Apparent Power from Utility Grid [VA]	5300	5300	5300
Nominal Output Voltage [V]	230	230	230
Nominal Ouput Freqency [Hz]	50/60	50/60	50/60
Max. AC Current Output to Utility Grid [A]	13.6	16	22.8******
Max. AC Current From Utility Grid [A]	23.6	23.6	23.6
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	~1 (Adjustable from 0.8 leading to 0.8 lagging)	~1 (Adjustable from 0.8 leading to 0.8 lagging)
Output THDi (@Nominal Output)	<3%	<3%	<3%
AC Output Data (Back-up)			
Max. Output Apparent Power [VA]	2300	2300	2300
Peak Output Apparent Power [VA]*******	3500, 10sec	3500, 10sec	3500, 10sec
Max. Ouput Current [A]	10	10	10
Nominal Output Voltage [V]	230 (±2%)	230 (±2%)	230 (±2%)
Nominal Ouput Frequency [Hz]	50/60 (±0.2%)	50/60 (±0.2%)	50/60 (±0.2%)
Max. Output Current [A]	10	10	10
Output THDv (@Linear Load)	<3%	<3%	<3%
Efficiency			
Max. Efficiency	97.6%	97.6%	97.6%
Max. Battery to Load Efficiency	94.5%	94.5%	94.5%
Europe Efficiency	97.0%	97.0%	97.0%
MPPT Efficiency	99.9%	99.9%	99.9%
Protection			
Anti-islanding Protection	Integrated	Integrated	Integrated
PV String Input Reverse Polarity Protection	Integrated	Integrated	Integrated
Insulation Resistor Detection	Integrated	Integrated	Integrated
Residual Current Monitoring Unit	Integrated	Integrated	Integrated
Output Over Current Protection	Integrated	Integrated	Integrated
Output Short Protection	Integrated	Integrated	Integrated
Output Over Voltage Protection	Integrated	Integrated	Integrated
General Data			
Operation Temperature Range [°C]	-25~60	-25~60	-25~60
Relative Humidity	0~95%	0~95%	0~95%
Operation Altitude [m]	4000	4000	4000
Cooling	Nature Convection	Nature Convection	Nature Convection
Noise [dB]	<25	<25	<25
User Interface	LED & APP	LED & APP	LED & APP
Interface with BMS	RS485; CAN	RS485; CAN	RS485; CAN
Interface with Meter	RS485	RS485	RS485
Communicaiton with Cloud	Wi-Fi	Wi-Fi	Wi-Fi
Weight [kg]	16	17	17
Size (Width*Height*Depth mm)	347*432*175	347*432*175	347*432*175
Mounting	Wall Bracket	Wall Bracket	Wall Bracket
Protection Degree	IP65	IP65	IP65
Standby Self Consumption [W]	<13	<13	<13
Topolog	High Frequency Isolation	High Frequency Isolation	High Frequency Isolation
Certifications & Standards			
Grid Regulation	AS4777.2; G83/G100; CEI 0-21 VDE4105-AR-N; VDE0126-1-1; EN50438	AS4777.2; G83/G100; CEI 0-21 VDE4105-AR-N; VDE0126-1-1; EN50438	AS4777.2; G59/G100; CEI 0-21 VDE4105-AR-N; VDE0126-1-1; EN50438
Safety Regulation	IEC62109-1&2, IEC62040-1	IEC62109-1&2, IEC62040-1	IEC62109-1&2, IEC62040-1
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4

*: For lead-acid battery, default charge current is 0.15C, which is can be configurable up to 0.5C by APP EzManage and cannot exceed 50A.
C means the battery capacity, such as the battery capacity is 100Ah, default charge current 0.15C is 0.15 * 100A = 15A.
For Li-Ion battery, discharge and charge current follows the command of BMS which doesn't exceed 50A."

**: Under off-grid mode, then battery capacity should be more than 100Ah.

***: Maximum operation dc voltage is 530V

****: When there is no battery connected, inverter starts feeding in only if string voltage is higher than 200V.

*****: 4600 for VDE4105-AR-N & VDE0126-1-1

******: 21.7A for Australia and New Zealand

*******: Can be reached only if PV and battery power is enough.

Innovation
for a Better Life

LG Chem

Change Your Energy
Charge Your Life

Compact Size & Easy Installation

The compact and lightweight nature of the RESU is world-class. It is designed to allow easy wall-mounted or floor-standing installation for both indoor and outdoor applications. The inverter connections have also been simplified, reducing installation time and costs.

Powerful Performance

The new RESU series features industry-leading continuous power (4.2kW for RESU6.5) and DC round-trip efficiency (95%). LG Chem's L&S (Lamination & Stacking) technology provides durability ensuring 80% of capacity retention after 10 years.

Proven Safety

LG Chem places the highest priority on safety and utilizes the same technology for its ESS products that has a proven safety record in its automotive battery. All products are fully certified in relevant global standards.

RESU

ees AWARD 2016 WINNER

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LG Chem

RESU

Change Your Energy, Charge Your Life

48V



Models		RESU3.3	RESU6.5	RESU10
Total Energy [kWh]		3.3	6.5	9.8
Usable Energy [kWh]		2.9	5.9	8.8
Capacity [Ah]		63	126	189
Nominal Voltage [V]		51.8	51.8	51.8
Voltage Range [V]		42.0~58.8	42.0~58.8	42.0~58.8
Max Power [kW]		3.0	4.2	5.0
Peak Power [kW] (for 3 sec.)		3.3	4.6	7.0
Dimension [W x H x D, mm]		452 x 401 x 120	452 x 654 x 120	452 x 483 x 227
Weight [kg]		31	52	75
Enclosure Protection Rating		IP55		
Communication		CAN 2.0 B		
Certificates	Cell	UL1642		
	Product	UL1973 / TUV (IEC 62619) / CE / FCC / RCM		

Compatible Inverter Brands : SMA, SolaX, Sungrow, Schneider, Ingeteam, GoodWe, Redback, Victron Energy (As of 3Q. 2016, More brands to be added)

RESU PLUS

RESU Plus is an expansion kit specially designed for 48V models of new RESU series.
With RESU Plus, all 48V models can be cross-connected with each other.

- Dimension: 385 x 240 x 65 (W x H x D, mm)
- Number of Expandable Battery Units: Up to 2EA
- IP55

400V


Models		RESU7H	RESU10H	
Total Energy [kWh]		7.0	9.8	
Usable Energy [kWh]		6.6	9.3	
Capacity [Ah]		63	63	
Voltage Range [V]		350~450	350~450	385~550
Max Power [kW]		3.5	5.0	
Peak Power [kW] (for 10 sec.)		5.0	7.0	
Dimension [W x H x D, mm]		744 x 692 x 206	744 x 907 x 206	
Weight [kg]		76	97	99.8
Enclosure Protection Rating		IP55		
Communication		RS485	RS485	CAN 2.0 B
Certificates	Cell	UL 1642		
	Product	TUV (IEC 62619) / CE / RCM	UL1973 / TUV (IEC 62619) / CE / FCC / RCM	

Compatible Inverter Brands : SMA(RESU10H) , SolarEdge(RESU7H,10H) (As of 3Q. 2016, More brands to be added)