



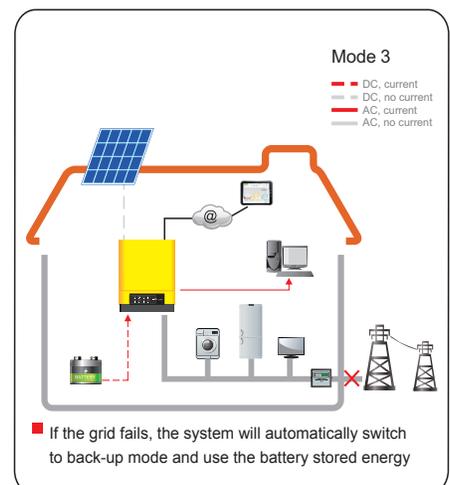
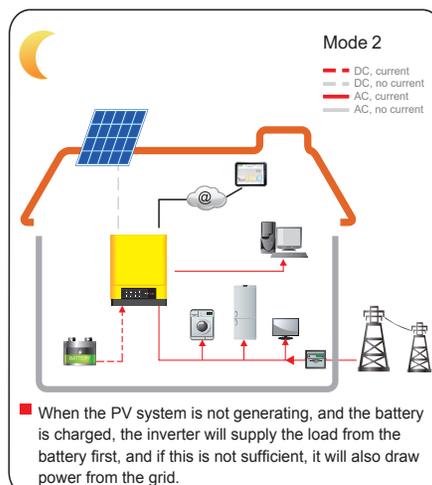
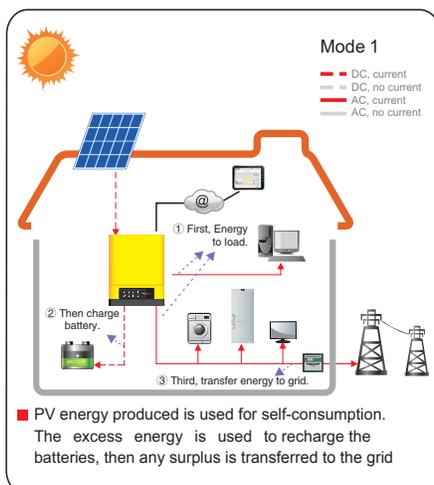
**GOODWE**  
your solar engine



## 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
- Max. power output up to 5kW
- IP65 dust-proof and water-proof rating
- Easy remote monitoring via PCs, tablets and mobiles
- Fanless low-noise design

### How does it work?



# Technical Data

GW3048-EM

GW3648-EM

GW5048-EM

Solar			
Max. allowed PV Power [W]	3900	4600	6500
Nominal DC Power [W]	3300	4000	5500
Max. DC voltage [V]*	550	550	550
MPPT voltage range [V]	100~500	100~500	100~500
Starting feed voltage [V]**	125	125	125
Max. DC current [A]	11	11/11	11/11
No. of DC connectors	1	2 (can parallel)	2 (can parallel)
No. of MPPTs	1	2	2
DC connector	MC4/ Phoenix/ Amphenol	MC4/ Phoenix/ Amphenol	MC4/ Phoenix/ Amphenol
Battery			
Battery type	Lead-acid or Li-Ion	Lead-acid or Li-Ion	Lead-acid or Li-Ion
Norminal Voltage [V]	48	48	48
MAX Charge Current [A]***	50	50	50
Max Discharge Current [A]	50 (configurable)	50 (configurable)	50 (configurable)
Battery capacity [Ah]****	≥ 50 (depending requirement)	≥ 50 (depending requirement)	≥ 50 (depending requirement)
Charging curve	3-stage adaptive with maintenance	3-stage adaptive with maintenance	3-stage adaptive with maintenance
Max Charge voltage [V]	60 (configurable)	60 (configurable)	60 (configurable)
Battery temperature compensation	Included (Li-Ion)	Included (Li-Ion)	Included (Li-Ion)
Battery voltage sense	Integrated	Integrated	Integrated
Current shunt	Integrated	Integrated	Integrated
AC Output Data (On-grid)			
Norminal AC power [W]	3000	3680	5000
Max. AC power [W]	3000	3680	5000
Max. AC current [A]	13.6	16	22.8
Norminal AC output	50/60Hz; 230Vac	50/60Hz; 230Vac	50/60Hz; 230Vac
AC output range	45~55Hz/55~65Hz; 180~270Vac	45~55Hz/55~65Hz; 180~270Vac	45~55Hz/55~65Hz; 180~270Vac
THDi	<1.5%	<1.5%	<1.5%
Power factor	0.8 leading~0.8 lagging	0.8 leading~0.8 lagging	0.8 leading~0.8 lagging
Grid connection	Single phase	Single phase	Single phase
AC Output Data (Back-up)			
AC output (Back-up)	230Vac ±2%, 50Hz (60Hz Optional)±0.2%, THDv<3%(linear load),Single phase		
Max.AC current [A]	10	10	10
Norminal AC power [VA]	2300	2300	2300
Peak power [VA]	3500, 10sec	3500, 10sec	3500, 10sec
Efficiency			
Max. efficiency	97.6%	97.6%	97.6%
Euro efficiency	>97.0%	>97.0%	>97.0%
MPPT adaptation efficiency	99.9%	99.9%	99.9%
Max Battery efficiency	94.5%	94.5%	94.5%
Protection			
Residual current monitoring unit	Integrated	Integrated	Integrated
Anti-islanding protection	Integrated	Integrated	Integrated
DC switch (PV)	Integrated (optional)	Integrated (optional)	Integrated (optional)
AC over current protection	Integrated	Integrated	Integrated
Insulation monitoring	Integrated	Integrated	Integrated
Certifications & Standards			
Grid regulation	VDE-AR-N 4105, AS4777.2, VDE0126-1-1, G83/G59, CEI 0-21		
Safety	IEC62109-1&-2,IEC62040-1		
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-3-11, EN61000-3-12		
General Data			
Dimensions (WxHxD) [mm]	347*432*175	347*432*175	347*432*175
Weight [kg]	16	17	17
Mounting	Wall bracket	Wall bracket	Wall bracket
Ambient temperature range	-25~60°C	-25~60°C	-25~60°C
Relative humidity	0~95%	0~95%	0~95%
Max. operating altitude	4000m(> 3000m derating)	4000m(> 3000m derating)	4000m(> 3000m derating)
Protection degree	IP65	IP65	IP65
Cooling	Natural convection	Natural convection	Natural convection
Noise emission [dB]	<25	<25	<25
Display	LED light & APP	LED light & APP	LED light & APP
Communication	USB; RS485;CAN;WiFi	USB; RS485;CAN;WiFi	USB; RS485;CAN;WiFi
Standard warranty [years]	5	5	5

\*: Do not exceed this voltage otherwise the inverter maybe damaged. At above 525V the inverter will issue the warning message "PV Over Voltage" and then protect itself by shutting down.

\*\*: Starting feed voltage [V] The minimum DC voltage from PV, to allow the inverter to support the load, battery or feeding the grid.

\*\*\*: For lead-acid battery, default charge current is 0.15C, which can be configurable up to 0.5C and cannot exceed 50A; For Li-Ion battery, charge current follows the command of BMS which doesn't exceed 50A.

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