MG12RL

ROBUST POWER PERFORMANCE

- 100% full power backup output, delivering stable performance even at temperatures above 45°C
- Whole-home backup with 63 A bypass switch

ROBUST BACKUP POWER

- 4ms Seamless Switch[1)]

ROBUST SOLAR GENERATION

- Industry-leading Max. 20A PV input per string
- Wider MPPT voltage range

ROBUST SAFETY FEATURES

- Dual-system pressure relief structure

ROBUST CONTROL INTERFACE

- 4.3-inch large LCD touchscreen
- Multi-functional interface for Generator, Smart load control or Sungrow string inverter



Technical Data Sheet	MG12RL
Input (DC)	
Recommended max. PV input power	24000 Wp
Max. usable PV input power	19200 Wp
Max. PV input voltage	500 V
Min. PV input voltage / Startup input voltage	40 V / 50 V
Rated PV input voltage	360 V
MPPT operating voltage range[2)]	40 V - 425 V
No. of independent MPP trackers	3
No. of PV strings per MPPT	1 / 1 / 1
Max. PV input current	60 A (20 A / 20 A / 20 A)
Max. DC short-circuit current	75 A (25 A / 25 A / 25 A)
Max. current for DC connector	25 A
Battery data	
Battery type	Li-ion battery / Lead-acid battery
Compatible battery model	MGL060 / MBL050 / MBL120 / MBL160 / Third-party LV batteries
Battery voltage range	40 V – 60 V
Max. charge / discharge current[3)]	240 A / 240 A
Max. charge / discharge power	12000 W / 12000 W
Input / Output (AC)	
Max. AC power from grid	13860 W
Rated AC output power	12000 W
Max. AC output apparent power	12000 VA
Max. AC output current	54.5 A
Rated AC voltage	220 V / 230 V / 240 V
AC voltage range	154 V – 276 V
Rated grid frequency	50 Hz / 60 Hz
Grid frequency range	45 Hz – 55 Hz / 55 Hz – 65 Hz
Harmonic (THD)	< 3 % (of rated power)
Power factor at rated power / Adjustable power factor	> 0.99 at default value at rated power / 0.8 leading to 0.8 lagging
Feed-in phases / Connection phases	1 / 1
Backup Data (on grid mode)	
Max. output power for backup load[3)]	13860 W
Max. output current for backup load	63 A
Backup Data (off-grid mode)	
Rated voltage	220 V / 230 V / 240 V
Rated frequency	50 Hz / 60 Hz
THDV (@ Linear load)	< 2 %
Backup switch time	≤ 4 ms
Rated output power	12000 W
Max. output power for backup load	12000 W
Peak output power	1.7 times of rated power, 10 s
Efficiency	
Max. efficiency / European efficiency	97.6 % / 96.7 %
Protection & Function	
Grid monitoring	Yes
DC reverse polarity protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
DC switch (solar)	Yes
Surge protection	DC Type II / AC Type III
PID Zero	Yes
Micro-inverter compatibility[5)]	Optional
General Data	
Topology (Inverter)	Non-isolated
Topology (Battery BDC)	Isolated
Degree of protection	IP65
Dimensions (W * H * D)	552 mm * 448 mm * 250 mm
Weight	≤ 25 kg
Mounting method	Wall-mounting bracket
Operating ambient temperature range	-25 ℃ to 60 ℃
Allowable relative humidity range	0 % – 95 %
Cooling method	Fan cooling
Max. operating altitude	2000 m
Noise (typical)	≤ 45 dB (A)
Display	LCD digital touchable display & LED indicator
Communication	CAN, RS485, Ethernet, WLAN
DI / DO	DI * 1 / DO * 1
DC connection type	MC4 compatible (Max. 6 mm²)
Battery connection type	OT terminal (35 mm² – 95 mm²)
AC connection type	OT terminal (Max. 16 mm²)
Scalability[6)]	8 in parallel
Grid compliance	IEC 62109-1/-2, IEC/EN 61000-6-1/-3, IEC 62116, IEC 61727, NRS 097-2-1, DEWA

[1)] Available in typical conditions
[2)] Please refer to the user manual for the full load MPPT voltage range
[3)] The system's charging and discharging capability is also limited by the battery's charging and discharging performance
[4)] Please refer to the user manual and modify the settings based on actual load power
[5)] For micro-inverter compatibility, it is only available for the grid-connection port of the inverter
[6)] If the number of inverters in parallel exceeds 4, please consult SUNGROW