

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 Switch¹⁾



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 - 425V
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 / MBL160-PF / 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, 10s
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 II
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 °C to 60 °C
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 mm ²)
Battery connection type		OT terminal (35 mm ² – 95 mm ²)
AC connection type		OT terminal (Max.16 mm ²)
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