

Empowering communities and businesses

Reliable electricity access with MGS100



MGS100 brings together all of the components required for a sustainable microgrid in a single device. Drawing on ABB's 125 years of electrical design experience, the product is optimized to provide reliable power in the most efficient way.

The system is formed from an integrated solar PV and battery energy storage converter with an additional AC input. This can incorporate either biofuel or diesel generation, or even an existing grid connection, into the microgrid's energy mix.

Specification

MGS100 Microgrid System

Rating	20 kW	40kW	60kW
General Data			
Nominal load power	20 kW	40 kW	60 kW
Max. PV input power	24 kW	32 kW	53 kW
Max. battery charging power	12 kW	24 kW	48 kW
PV Input			
MPPT operating range	440 – 800 V	500 - 800 V	480 - 800 V
Max. PV input DC voltage	1000 V	1000 V	1000 V
No. of independent MPPT	2	2	1
No. of DC input pairs/MPPT	1	1	2
PV input current protection	Yes, DC Fuses	Yes, DC Fuses	Yes, DC Fuses
PV input voltage protection	Yes	Yes	Yes

AC Input			
Nominal input voltage	3 × 380/220 V + N 3 × 400/230 V + N 3 × 415/240 V + N	3 × 380/220 V + N 3 × 400/230 V + N 3 × 415/240 V + N	3 × 380/220 V + N 3 × 400/230 V + N 3 × 415/240 V + N
Voltage tolerance	±15%	±15%	±15%
Input frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Frequency tolerance (normal operation)	-30% / +40%	-30% / +40%	-30% / +40%
Frequency tolerance (grid export)	±5%	±5%	±5%
Maximum input current	36 A	71 A	108 A
AC input current protection	Yes, MCCB	Yes, MCCB	Yes, MCCB
Output			
Nominal output voltage	3 × 380/220 V 3 × 400/230 V 3 × 415/240 V	3 × 380/220 V 3 × 400/230 V 3 × 415/240 V	3 × 380/220 V 3 × 400/230 V 3 × 415/240 V
Output rated current (In)	29 A	58 A	87 A
Output frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Overload capability	150% load for 60 sec.	150% load for 60 sec.	150% load for 60 sec.
Short term overload (RMS)	2.7xIn for 100ms	2.7xIn for 100ms	2.7xIn for 100ms
Permissible unbalanced load	100% (All 3 phases regulated independently)	100% (All 3 phases regulated independently)	100% (All 3 ph.Regulated independently)
Output protection	Yes, MCCB	Yes, MCCB	Yes, MCCB
No. of output breakers	1	1	1
Battery			
Nominal battery voltage	480 to 576 V DC	480 to 576 V DC	480 to 576 V DC
Battery type	VRLA, Ni-Cd, Li-ion	VRLA, Ni-Cd, Li-ion	VRLA, Ni-Cd, Li-ion
Maximum charging current	24 A	48 A	96 A
Efficiency			
Max. PV to load	>98%	>98%	>98%
Max. grid to load	>95%	>95%	>95%
Environmental			
Humidity	<95% (Non-condensing)	<95% (Non-condensing)	<95% (Non-condensing)
Ambient temperature	-5 to 45 °C without derating	-5 to 45 °C without derating	-5 to 50 °C without derating
Temperature derating	-5%/°C after 45 °C	-5%/°C after 45 °C	N.A.
Max. Ambient temperature	50 °C	50 °C	50 °C
Altitude	1000 m	1000 m	1000 m
Altitude derating	-5%/1000m	-5%/1000m	-5%/1000m
Electrical/Mechanical			
Degree of protection	IP31	IP31	IP31
Cable entry	Bottom	Bottom	Bottom
User interface & remote monitoring			
HMI	Graphical display for control & monitoring (Optional)	Graphical display for control & monitoring (Optional)	Graphical display for control & monitoring (Optional)
Local & remote monitoring	Yes (Optional)	Yes (Optional)	Yes (Optional)
Communication Protocol	MODBUS (Others on request)	MODBUS (Others on request)	MODBUS (Others on request)
Weight, dimensions			
Weight (kg)	620	640	745
Cabinet Dimensions w x h x d (mm)	1700 × 2200 × 800	1700 × 2200 × 800	1200 × 2200 × 800