



Microgrid Solutions

MGS100-15

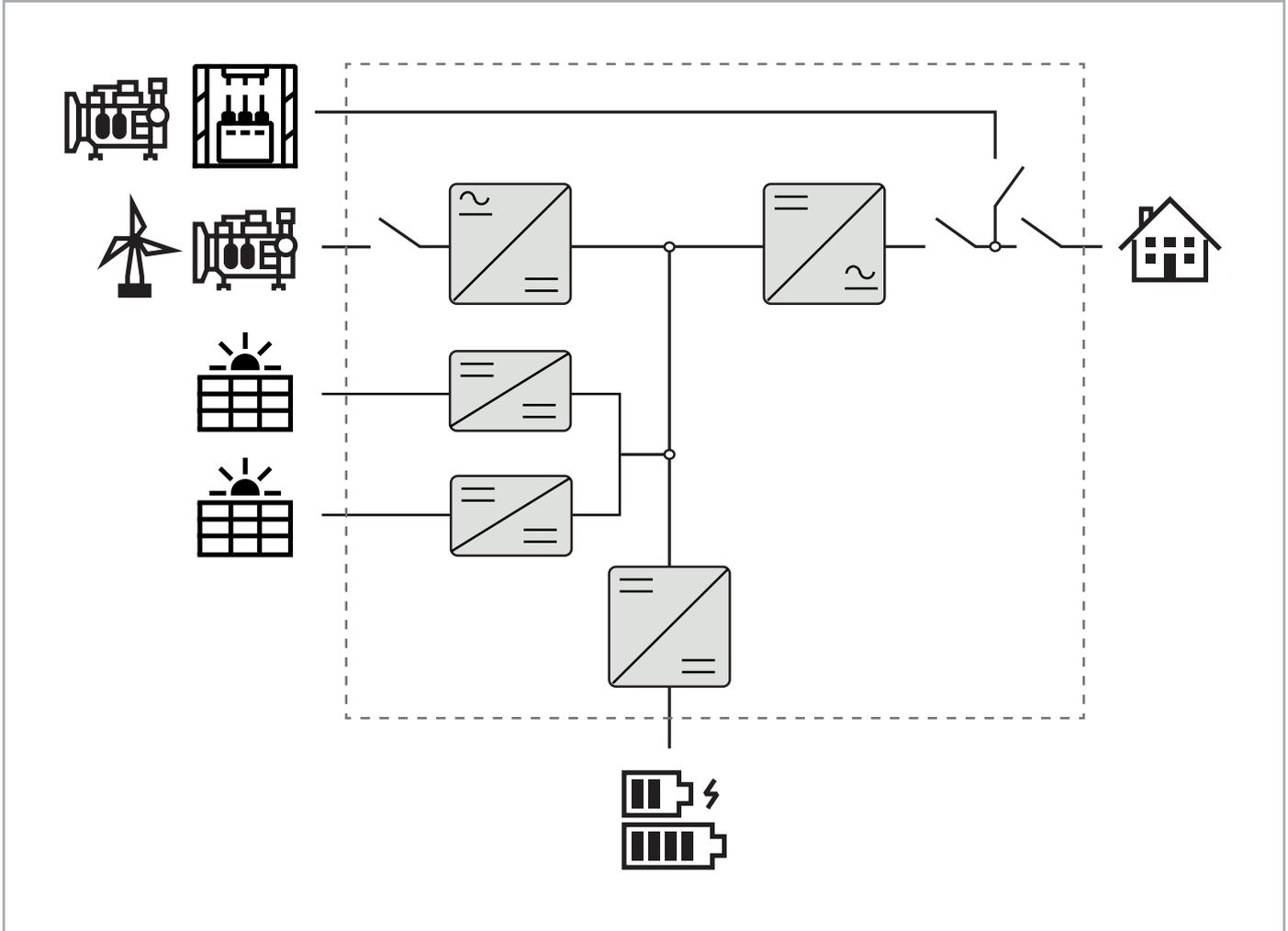
MGS100-15 is the new addition to FIMER's small microgrids product range. Designed to provide reliable electricity for remote off-grid sites and back-up power for smaller commercial and telecom utilities, the system offers multiple operating modes for both off-grid, on-grid and hybrid applications and brings together all components required for a sustainable microgrid into a single device.

The dedicated generator section with wide frequency and voltage band also ensures seamless integration and operation with other renewable sources such as biomass and wind generators along with Solar PV, without compromising on power quality and negating the effects of load imbalance on the generators.

The MGS100-15 is much lighter and compact than its predecessor, thereby allowing easy transportation and installation even in the remotest areas.

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

Block diagram MGS100.15



Technical data and types

Rating	15 kW
General Data	
Nominal load power	15 kW
Max. PV output power	22.5 kW
Max. PV input power	Upto 30 kWp
Max. no. of MGS100-15 in parallel	6
Max. battery charging power	14.4 kW
PV Input	
Max. PV input DC voltage	900 VDC
Working DC voltage range	350 – 900 VDC
MPPT voltage range	400 – 800 VDC
Start-up voltage/Initial feed-in voltage	320 VDC/ 350 VDC
Number of MPPT	2 (1x18.6, 1x37.2)
DC grounding	Not allowed
Max. inverter back feed current to the array	0 A
AC Input (Grid bypass section)	
Nominal input voltage	3 × 400/230 V + N
Acceptable Input Voltage Range	170 – 280VAC/phase
Input frequency	50 / 60 Hz
Frequency tolerance (Via grid input)	±5%
Maximum AC inrush input current	40 A / 1ms
Maximum export power via grid input	15 kW
Generator Input (Generator section)	
Nominal input voltage	3 × 400/230 V + N
Acceptable Input Voltage Range	170 – 280VAC/phase
Acceptable Input frequency Range	40.0 – 60 Hz
Maximum input power from generator	16 kW
Output	
Nominal output voltage	3 × 400/230 V
Output voltage range (grid section)	184 – 265VAC/phase
Output voltage variation (generator section)	±1%
Output frequency	50 / 60 Hz
Permissible unbalanced p-p load	100%
Nominal Output Current	21.7 A
Inrush Current/Duration	25.5 A per phase / 20ms
Maximum output fault current/Duration	68 A per phase / 20ms
Maximum output overcurrent protection	68 A per phase / 20ms
Power factor range	0.9 lead – 0.9 lag
Insulation Level	Transformer less
Battery	
Nominal battery voltage	48VDC
DC operating voltage range	40 – 62 VDC
Battery type	VRLA, Li-ion
Maximum battery discharge current	405 A
Maximum battery charging current	300A, Default – 90A (10A-300A adjustable)
Inverter mode (Battery mode) output	
Nominal output voltage	3 × 400/230 V
Output frequency	50 / 60 Hz
Output waveform	Pure sinewave
Output power	15 kW
Transfer time	<15ms (On-grid mode to off-grid mode)
Transfer time in parallel mode	<50ms (On-grid mode to off-grid mode)

Technical data and types

Rating	15 kW
General Data	
Efficiency	
PV to Load maximum	95.1%
Battery to load maximum	92.5%
AC source to battery maximum	93.6%
PV to grid maximum	95.1%
PV to battery maximum	93.2%
AC source to load	>99% (Bypass through bus bar)
Auxiliary consumption	
No-load power consumption	<210W
Standby power consumption	<35W
Mechanical	
Dimension DxWxH (mm)	974x650x224
Net weight (kgs)	62
Environment	
Ingress protection	IP21
Protective class	I
Humidity	0~90% RH (non condensing)
Operating temperature	-10 to 55°C (Derating after 50°C)
Altitude	2000m (Derating of 1% every 100m after 1000m)
Interface	
Communication	RS-232/USB for PC tool monitoring and CAN interface for parallel operation of inverters
HMI	Graphical display for monitoring
Local and remote monitoring	Yes (optional) via GSM/Wifi card
Intelligent slot (Optional)	MODBUS, GSM Card, Wifi card
Certifications	
Safety and EMC	IEC 62116, IEC61727, IEC62109-1:2010, IEC61000-6-3:2006+A1:201, IEC61000-3-11:2017 IEC61000-3-12:2011, IEC61000-6-2:2016, IEC61683:1999 IEC60068-2-(1:2007,2:2007,6:2007,14:2009, 27:2008,30:2005,75:2014, 78:2012) EN50530:2010+A1:2013



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