



MSc HESS hybrid energy supply system makes it easy to create an independent microgrid by connecting available energy sources such as solar panels, generator and batteries. MSc Electronics has vast experience in designing power electronics applications for 35 years. System is based on the well proven converter technology developed by MSc.

Single unit has the rating for 50 kW but you can connect up to 8 modules in parallel to reach the rating of 400 kW. Unit can handle even 100% unbalanced load as well as non-linear loads for maximum reliability.

Subject to change without notice

TECHNICAL DATA

MODEL	MSc HESS
General data	
Nominal output power (continuous)	50 kW
Maximum PV-input current	100 A
Maximum battery converter current	100 A
Maximum AC-input current	85 A (ac)
PV-input	
Max. PV open circuit voltage	900 Vdc
MPPT operating range	200-750 Vdc
PV input current protection	Yes
PV input surge voltage protection	Yes
Generator/grid input	
Nominal input voltage	380-440Vac, 50/60Hz, 3-phase
Voltage tolerance	+/- 10%
Frequency tolerance	+/- 10%
AC-input current protection	Yes
Battery input	
Nominal battery voltage *	400- 650Vdc
Battery type **	VRLA, Ni-Cd, Li-ion
Output	
Nominal output voltage ***	380-460Vac, 50/60Hz, 3-phase+N
Rated continuous output current (I_n)	100 A
Max. overload current (I_h , 60 sec.)	1,5 * I_n
Max. output current (I_{pk}) (RMS)	2 * I_n
Voltage accuracy	Steady state +/-1%
Max. allowed phase imbalance	100% (phase independent regulation)
Harmonic distortion	THD < 1%, linear loads
Galvanic isolation	Between grid and power input
Protections	Overload, surge voltage
Efficiency	
PV → Load	$\eta > 97 \%$
Generator / Grid → Load	$\eta > 95 \%$
User Interfaces	
HMI	Display for parameter setup and monitoring
Remote monitoring / control ****	CAN bus
Environment	
Nominal ambient temperature	-10°C – 40°C
Max. ambient temperature	50°C (with de-rating, 1%/1°C)
Altitude	1000m
Humidity	RH < 95%
Mechanical data	
Dimensions (W x H x D) (mm)	1030 x 2330 x 750
Weight (kg)	600 kg
Cooling	Forced air cooling
Protection class	IP31
Cable entry	Bottom