



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 (19.03.2019)

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 (typical)	400- 650Vdc
Battery type (other types possible)	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 (other buses optional)

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