

Technical specifications

Technical specifications	MGHP240090 25.2 V / 90 Ah	MGHP240135 25.2 V / 135 Ah	MGHP240180 25.2 V / 180 Ah
Technology	Lithium-Ion NMC	Lithium-Ion NMC	Lithium-Ion NMC
Cell configuration	7S32P	7S48P	7S64P
Nominal voltage	25.2 V	25.2 V	25.2 V
Nominal capacity	90 Ah	135 Ah	180 Ah
Nominal energy	2.3 kWh	3.4 kWh	4.5 kWh
Cycle Life @80% DOD (0.3C)	500	500	500
Energy/weight ratio <sup>4</sup>	143 Wh/kg	152 Wh/kg	157 Wh/kg
Weight <sup>4</sup>	15.7 kg	22.4 kg	28.6 kg
<b>Discharge</b>			
Discharge cut-off voltage	21.0 V	21.0 V	21.0 V
Recommended discharge current	45 A (0.5 C)	68 A (0.5 C)	90 A (0.5 C)
Maximum discharge current	270 A (3 C)	405 A (3 C)	540 A (3 C)
Peak discharge current <sup>1</sup>	640 A	960 A	1280 A
Fuses <sup>2</sup>	150 A, fuse inside	200 A, fuse inside	300 A, fuse inside
<b>Charge</b>			
Max. charge voltage	29.4 V	29.4 V	29.4 V
Recommended charge voltage	28.0 V	28.0 V	28.0 V
Maximum charge current	126 A (1.4 C)	189 A (1.4 C)	252 A (1.4 C)
Recommended charge current	45 A (0.5 C)	68 A (0.5 C)	90 A (0.5 C)
<b>Configuration</b>			
Series configuration <sup>3</sup>	Yes, up to 2	Yes, up to 2	Yes, up to 2
Parallel configuration <sup>3</sup>	Yes, up to 96	Yes, up to 96	Yes, up to 96
<b>Temperature</b>			
Operating temp. charge	0 to +50°C	0 to +50°C	0 to +50°C
Operating temp. discharge	-20 to +75°C	-20 to +75°C	-20 to +75°C
Storage temp. (3 months)	-20 to +45°C	-20 to +45°C	-20 to +45°C
Storage temp. (1 year)	-20 to +20°C	-20 to +20°C	-20 to +20°C
<b>Mechanical</b>			
Power connections	M8 stud, Max. 15 Nm	M8 stud, Max. 15 Nm	M8 stud, Max. 15 Nm
Protection class	IP 20	IP 20	IP 20
Cooling	Air, active (2x fan inside)	Air, active (2x fan inside)	Air, active (2x fan inside)
Dimensions	362x193x214 mm	362x193x284 mm	362x193x355 mm
<b>Safety</b>			
Battery Management System (BMS)	Integrated slave BMS	Integrated slave BMS	Integrated slave BMS
Balancing	Passive	Passive	Passive
Compatible BMS master controller	MG Master LV, HV	MG Master LV, HV	MG Master LV, HV
Communication	CAN-Bus ( RJ45 or M12 connection)	CAN-Bus ( RJ45 or M12 connection)	CAN-Bus ( RJ45 or M12 connection)
<b>Standards</b>			
EMC: Emission	EN-IEC 61000-6-3:2007/A1:2011/C11:2012		
EMC: Immunity	EN-IEC 61000-6-1:2007		
Low voltage directive	EN 60335-1:2012/AC:2014		

1) Duration is depending on battery temperature

2) Fuses can be replaced with dummy fuses. Batteries need to be fused elsewhere in the circuit.

3) More series and parallel on request

4) Including BMS and enclosure

# HP Series

## High Power Lithium-Ion batteries



**Marine**  
Electric propulsion  
Aux. battery bank

**Industrial**  
Peak shaving  
UPS systems

**Off-grid/Solar**  
Self-consumption  
Off-grid solutions

**Automotive**  
Mobile power sources  
Electric mobility

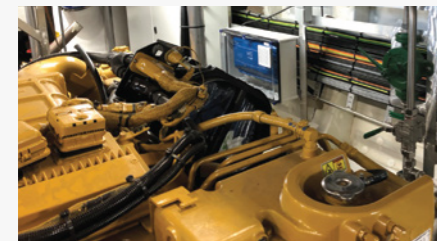
## HP Series

The HP battery series is based on a high power battery cell. This means high power output from a compact battery module. The integrated battery management system brings the highest standard on safety and gives insight in the status of the battery. Flexibility in system configuration is created by a modular design. The high power capability of this series can be used to start engines or in high ambient temperatures.



25.2 V  
2.3 / 3.4 / 4.4 kWh

- ▶ High power output
- ▶ Integrated battery management system
- ▶ Scalable system design due to 25.2 V modules
- ▶ High safety standard
- ▶ Plug and Play installation
- ▶ Engine starting applications



## Applications

The HP series can be used in all kinds of applications where high power is required or ambient temperature is high, such as engine starting.

## M12 and RJ45

The communication connections between the batteries and Master unit can be established with either economical RJ45 cables or more robust M12 cables. Up to 96 V both options are available. In the range higher than 96 V only the M12 option is available.



## Safety

Each battery module comes with an integrated battery management system (BMS). This is an intelligent electronic module (slave BMS), that measures all cell voltages and temperatures to control balancing on both battery cell and module level. The battery modules communicate by a galvanic isolated CAN-Bus with the MG Master LV (master BMS), which collects and monitors the status of all battery modules. If the measured values from a battery module exceed the limit, the MG Master will automatically take action to protect the connected battery modules.

## Battery management controllers

Protecting, monitoring and controlling a battery system is very important to create a safe, reliable and easy-to-use system. The MG Master LV is the safety and control unit of the battery system. It protects the connected battery modules against over-charging, over-discharging, over-temperature, under-temperature and controls the balancing of the battery cells. Besides a safety function, the MG Master LV monitors and tracks other important parameters to give insight in the battery status and energy consumption. The compact design make it ideal for use in applications with limited space.

## MG Master LV



12 V to 96 V  
150 A to 1000 A



## Energy storage systems

System flexibility is one of the key features of all MG products. Combining HP series batteries together with one of the Master units will create a powerful and compact system for engine starting, high ambient temperature and other power applications.

## System example engine starting: 24 V / 135 Ah / 3.4 kWh / 23 kg

