MG RS Series

- Technical specifications -

MGRS12S4P176
MGRS14S3P132
MGRS16S3P132
MGRS24S2P088

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Technical specifications

Technical specifications	MGRS12S4P176 44 V / 192 Ah	MGRS14S3P132 51 V / 144 Ah	MGRS16S3P132 58 V / 144 Ah	MGRS24S2P088 88 V / 96 Ah
Technology	Lithium-Ion NMC			
Cell configuration	12S4P	14S3P	16S3P	24S2P
Nominal voltage	43.8 V	51.1 V	58.4 V	87.6
Nominal capacity	192 Ah	144 Ah	144 Ah	96 Ah
Nominal energy	8.4 kWh	7.4 kWh	8.4 kWh	8.4 kWh
Weight	75 kg	69 Kg	75 kg	75 kg
Discharge [6]				
Discharge cut-off voltage	36.0 V	42.0 V	48.0 V	72.0 V
Maximum discharge current (2C) [1]	384 A	288 A	288 A	192 A
Peak discharge current (3C) [1]	500 A [2]	432 A	432 A	288 A
Charge [6]				
Maximum charge voltage (4.20V per cell)	50.4 V	58.8 V	67.2 V	100.8 V
Recommended charge voltage (4.05V per cell)	48.6 V	56.7 V	64.8 V	97.2 V
Maximum charge current (1C) [1]	192 A	144 A	144 A	96 A
Peak charge current (2C) [1]	384 A	288 A	288 A	192 A
Configuration				
Series configuration	Yes, up to 900 V			
Parallel configuration	Yes, up to 32 modules			
Redundant mode	Yes, Using multiple Master BMS devices			
Cycle Life [3]				
80% depth of discharge	> 8000 cycles			
Environmental				
Operating temperature (liquid cooling)	+20 to +30 °C			
Operating temperature charge	0 to +40 °C			
Operating temperature discharge	-30 to +50 °C			
Storage temperature (< 50% SoC)	60 °C for 1 month, 45 °C for 3 months, 40 °C for 1 year			
IP-Protection class	IP65			
Thermal management	Liquid cooling/heating			
Humidity (non-condensing)	≤ 95 %			
Connections				
Communication	CAN-bus (M12 connection)			
Power connections	Amphenol PowerLok™ 300 [4] / 500 series			
Safety				
Batteries are always used in combination with a MG Master.	Integrated Slave BMS Passive cell balancing Redundant BMS			
Compatible BMS master	MG Master LV, MG Master HV			
Safety features	Interlock circuit in HV and CAN-Bus connectors Cell level thermal runaway propagation protection Automatic thermal runaway suppression valve input			
Type approval	DNV-GL / Lloyds [5]			
In accordance with	IEC-EN 62619 IEC-EN 62620			

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Footnotes

[1] Only valid when a proper designed liquid cooling circuit is running. Cycle life is depending on the battery temperature. Higher battery temperature will result in lower number of cycles.
[2] Limited by the maximum continuous current rating of the Amphenol PowerLok™ 500 series with 150 mm^2 cable.
[3] End-of-Life is 70% of initial capacity at 25 °C. Charge up to max. 4.05V per cell.
[4] Continuous current ratings must be de-rated to ≥ 300 A.
[5] Lloyds type approval pending.
[6] Charge and discharge rates depending on battery temperature and State-Of-Charge.