

42D00050 MMA80-8-BC1-U 400 VDC Data Sheet V1.1

Parameter	Unit	Value
<u>Mechanical specification</u>		
Power	[kW]	4
Torque (rated @ 100°C*)	[Nm]	21.5
Torque (rated @ 120°C*)	[Nm]	25.5
Torque (max @ 100°C*) (60 sec.) **	[Nm]	41.5
Torque (max @ 120°C*) (30 sec.) **	[Nm]	41.5
Speed (rated)	[rpm]	1500
Speed (max)	[rpm]	1500
Motor Technology		PMSM (sensorless control)
Weight	[kg]	14
Protection class		IP67
Thermal class		H
Thermal protection		Yes (Motor & Inverter)
Operating ambient temperature range	[°C]	-30 / 80
Cooling type		Water cooled
Min./rated flowrate (coolant)	[l/min]	6
Pressure drop @ rated flow rate	[bar]	≈0.014
Coolant		Water/Ethylenglycol 50/50 or hydraulic oil
Max. cooling pressure (coolant)	[bar]	3
Coolant max temperature	[°C]	60
Rotational direction***		Both possible (Four quadrant control, forward / backward with regeneration)
<u>Electrical specification</u>		
DC-link voltage range (For no Derating)	[V]	325-400
DC-link maximum operating voltage	[V]	420
DC link capacitance	[uF]	300
Power stage Y capacitors	[nF]	2x197
DC Hardware Overcurrent Protection	[A peak]	85
LV nominal supply range	[V]	12 – 24
LV maximum supply range	[V]	9 – 36
LV critical voltage	[V]	58
PWM frequency	[kHz]	6-16
Max. AC Frequency	[Hz]	599
<u>Connections</u>		
Low Voltage mating connector		Molex MX 150 8 pin (Key A) Including LV DC, KL15, CAN & HVIL

Application specific mating connector		Molex MX 150 12 pin (Key A) 7 different sensor in- and outputs (optional to be used)
HV Mating Plug		Amphenol ELP2A04 (2x10mm ²) Including HVIL and EMC shielding
<u>CAN bus</u>		
CAN bus type		CAN 2.0B/J1939, CAN FD (optional)
CAN bus baudrate	[kbit/s]	250, 500
Internal CAN termination		No (120Ω optional available)
Motor CAN-interface / control		motor torque, motor speed or combination of both
Error handling		Yes
<u>Protections</u>		
Current		Maximum motor/inverter current protection including derating
Voltage		Min. high voltage battery protection including derating Max. high voltage battery protection – Prevents over voltage situations
Overload		Motor stall protection – limits motor current if motor is blocked for certain time
CAN-fail protection		Yes
Hardware		Faults for sensors, controller and custom application



* Winding temperature

Performance data were determined with a thermally decoupled motor+inverter and a coolant temperature of 60°C at 6 l/min (water/ethylenglycol 50/50)



** Up to base speed @ max torque speed curve



*** The clockwise rotational direction is defined according to DIN-EN60034-8 (looking on the motor shaft).

