

## 42D00043 MMA 80-8-CB1-U Data Sheet V1.5

| Parameter                               | Unit     | Value   |
|---|----------|---|
| <b><u>Mechanical specification</u></b>  |          |   |
| Power                                   | [kW]     | 10  |
| Torque (rated @ 120°C*)                 | [Nm]     | 32  |
| Torque (max.)**                         | [Nm]     | 52.5  |
| Time max. Torque starting @ 60°C*       | [s]      | 45  |
| Time max. Torque starting @ 120°C*      | [s]      | 15  |
| Speed (rated)                           | [rpm]    | 3000  |
| Speed (max)                             | [rpm]    | 4000  |
| Motor Technology                        |          | PMSM (sensorless control)   |
| Weight                                  | [kg]     | 17  |
| 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]    | ≈0.018  |
| Coolant                                 |          | Water/Ethylenglycol 50/50<br>or hydraulic oil                                     |
| Max. cooling pressure (coolant)         | [bar]    | 3   |
| Coolant max temperature                 | [°C]     | 60  |
| Rotational direction***                 |          | Both possible<br>(Four quadrant control, forward / backward with<br>regeneration) |
| <b><u>Electrical specification</u></b>  |          |   |
| 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   |
| <b><u>Connections</u></b>               |          |   |
| Low Voltage mating connector            |          | Molex MX 150 8 pin (Key A)<br>Including LV DC, KL15, CAN & HVIL                   |

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

