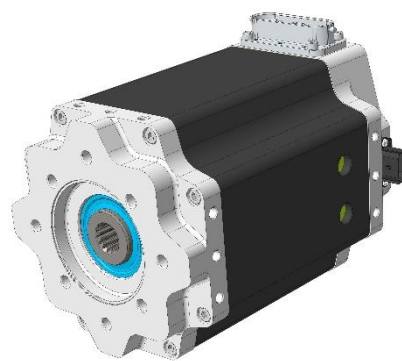


MMA100-5-ED1

600V_{AC} / 850V_{DC}

LIQUID COOLED ELECTRIC MOTORS



PRODUCT DATASHEET

CHARACTERISTIC OPERATING POINTS

Parameter		Unit	Operation Mode		
			S1	S2	S2
Feasible operation time	t_{on}		continuous	60 s	10 s
Torque	T	[Nm]	78.3	95	130.3
Power	P	[kW]	49.2	49.7	68.2
Speed	n	[rpm]	6000	5000	5000
Phase Current	I_{rms}	[A]	53	65	90
Line-Line Voltage	U_{rms}	[V]	601	537	596.3
Rated Battery Voltage	U_{DC}	[V]	850	850	850
Electric frequency	f_{el}	[Hz]	500	416.67	416.67
Efficiency	η	[%]	96.8	95.3	95.7

- Recommended Inverter (for shown operating points S1 and S2 60s): Poclairn emDrive H20
- Performance data were determined with a thermally decoupled engine and a coolant temperature of 60°C at 10 l/min (Water/Ethylenglycol 50/50)

ELECTRICAL DATA

Parameter	Unit	Value
Phase:		
k_E	[$V_{RMS}/krpm$]	59.5
k_T	[Nm/A]	1.49
$R_{Ph,20}$	[Ohm]	0.07071
L_d	[mH]	0.863
L_q	[mH]	1.089
Connection		Y

ADDITIONAL DATA

Max. Speed	[rpm]	6000
Moment of inertia	[kgm ²]	0.006
Weight	[kg]	25
Protection class		IP67
Thermal class		H
Thermal protection		PTC (Pt1000 on request)
Cooling type		Water cooled
Min flow rate (motor coolant)	[l/min]	10
Rated flow rate (motor coolant)	[l/min]	10
Max flow rate (motor coolant)	[l/min]	30
Pressure drop @ rated flow rate	[bar]	0.02
Coolant		Water/Ethylenglycol 50/50
Max. cooling pressure (motor coolant)	[bar]	3
Coolant max temperature	[°C]	60

For specific details, motor geometry and dimensions please see additional information in interface drawing or product selection guide. If not available please contact customer support under support@moteg.de.

EFFICIENCY MAP

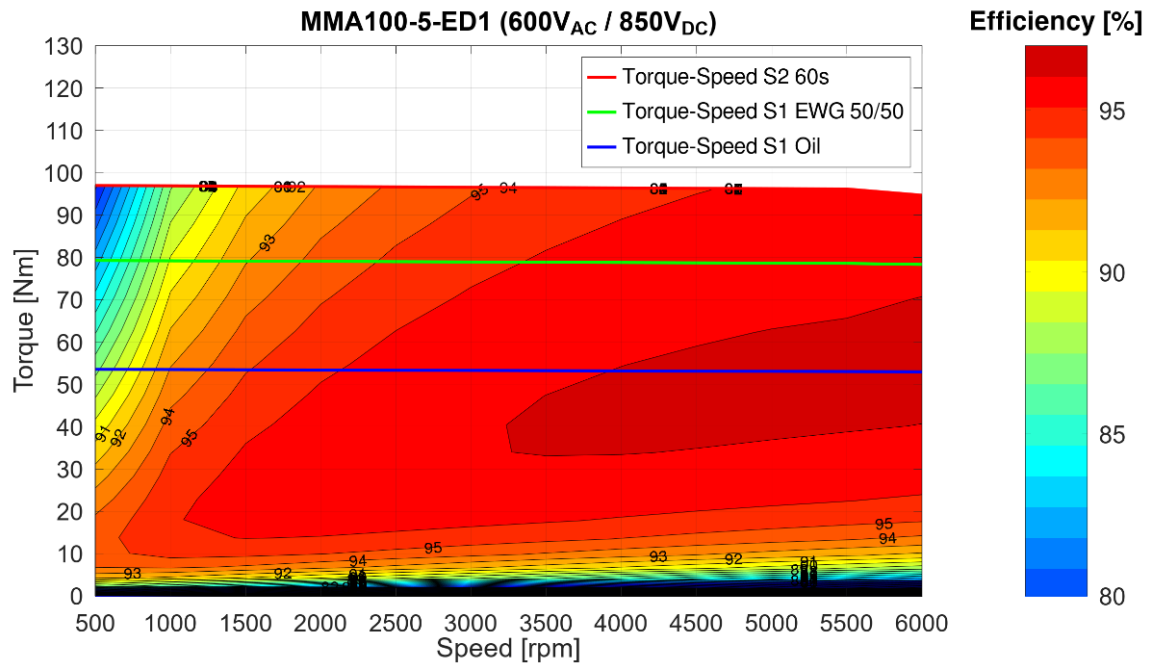


Figure 1 Efficiency map and Torque Speed curves

- o Recommended Inverter (for shown efficiency map): Poclain emDrive H20
- o Performance data were determined with S1-temperatures with $U_{DC} = 850\text{ V}$, with a thermally decoupled engine and a coolant temperature of 60°C at 10 l/min (Water/Ethylenglycol 50/50)

SPECIFIED CHARACTERISTICS (ACCORDING TO DIN EN 60349-4)

Simulation of curves at 150°C average winding temperature and 100°C magnet temperature

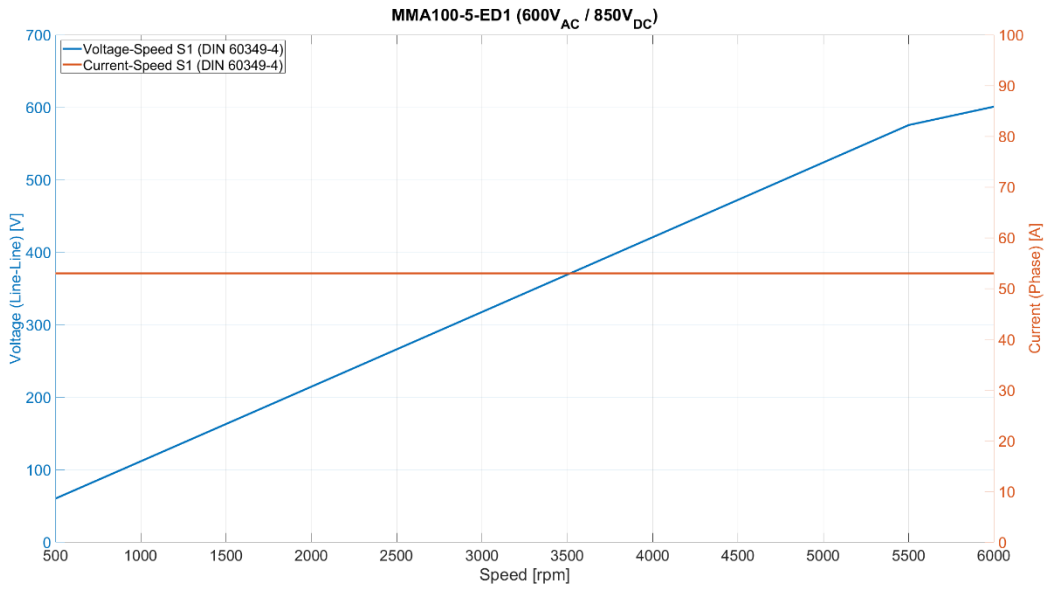


Figure 2 Phase voltage and current over speed (DIN EN 60349-4)

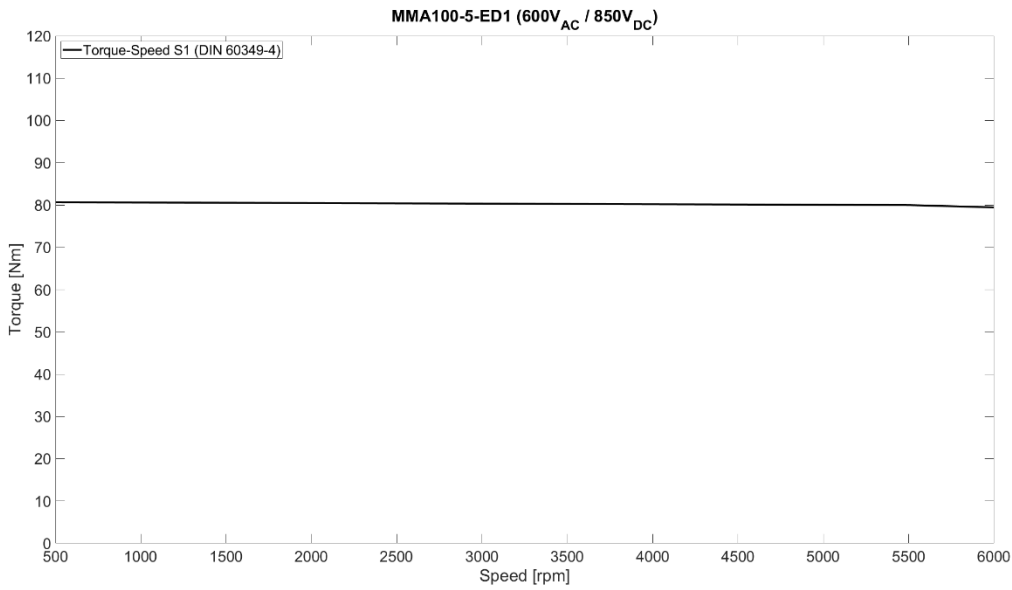


Figure 3 Torque-Speed curve S1 (DIN EN 60349-4)



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