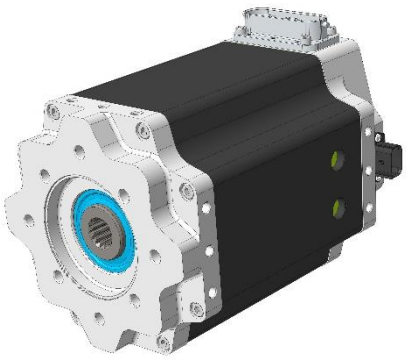
MMA100-5-FE1

400V_{AC} / 565V_{DC}

LIQUID COOLED ELECTRIC MOTORS



PRODUCT DATASHEET

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CHARACTERISTIC OPERATING POINTS

Parameter		Unit	Operation Mode		
			S1	**S2**	**S2**
Feasible operation time	t_{on}		continuous	60 s	10 s
Torque	T	[Nm]	89.7	130	200
Power	P	[kW]	28.2	43.4	62.8
Speed	n	[rpm]	3000	3000	3000
Phase Current	I_{rms}	[A]	60	90	180
Line-Line Voltage	U_{rms}	[V]	317	351	400
Rated Battery Voltage	U_{DC}	[V]	565	565	565
Electric frequency	f_{el}	[Hz]	250	250	250
Efficiency	η	[%]	95.8	94	88

- Recommended Inverter (for shown operating points S1 and S2 60 s): Poclain 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]	59.7
k_T	[Nm/A]	1.5
$R_{Ph,20}$	[Ohm]	0.05952
L_d	[mH]	0.7915
L_q	[mH]	0.9943
Connection		Y

ADDITIONAL DATA

Max. Speed	[rpm]	6000
Moment of inertia	[kgm^2]	0.007
Weight	[kg]	28.7
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

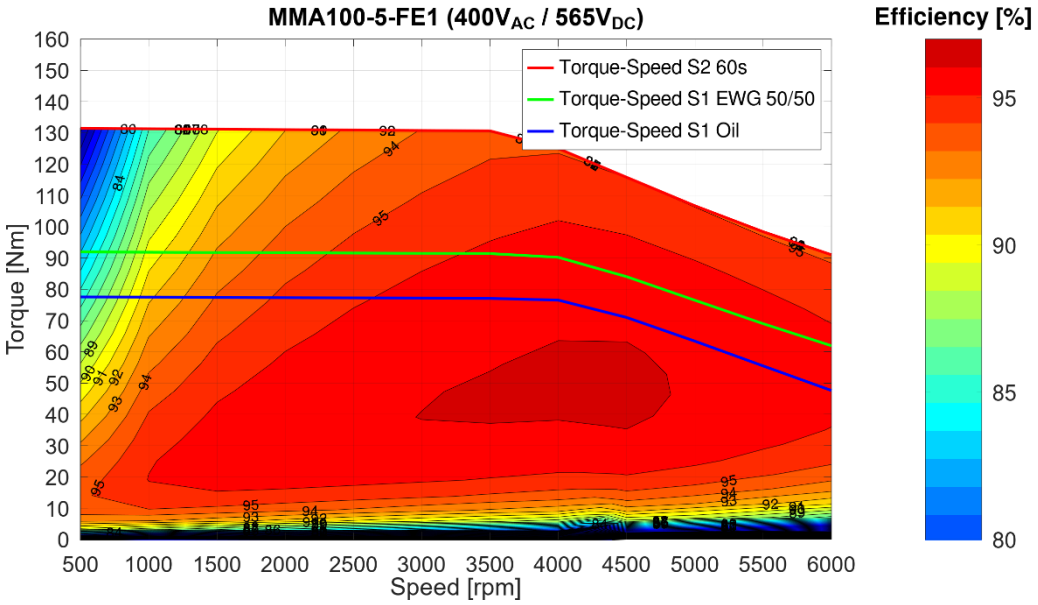

Figure 1 Efficiency map and Torque Speed curves

- Recommended Inverter (for shown efficiency map): Poclain emDrive H20
- Performance data were determined with S1-temperatures with U_{DC} = 565 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

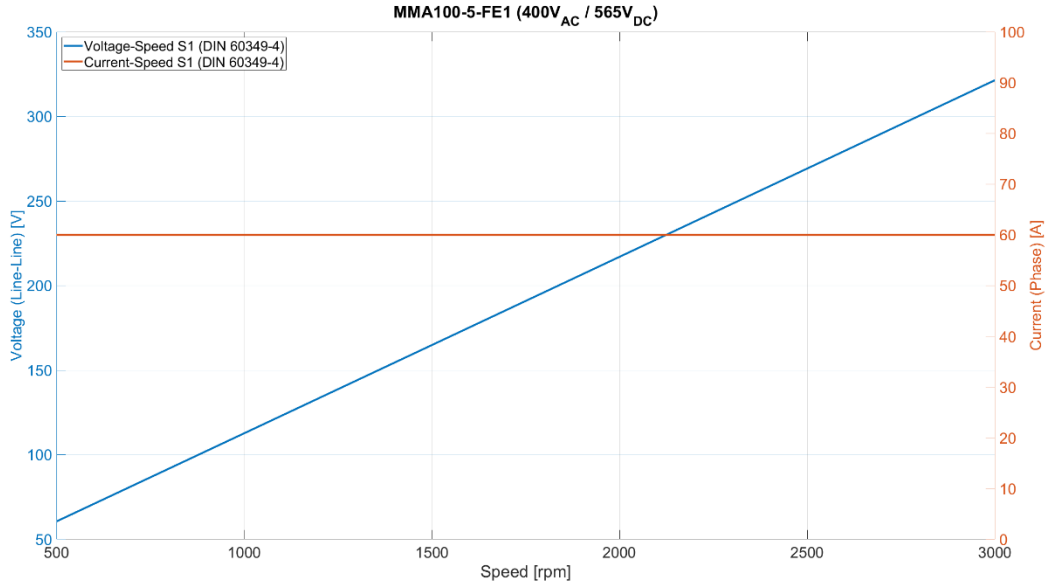

Figure 2 Phase voltage and current over speed (DIN EN 60349-4)

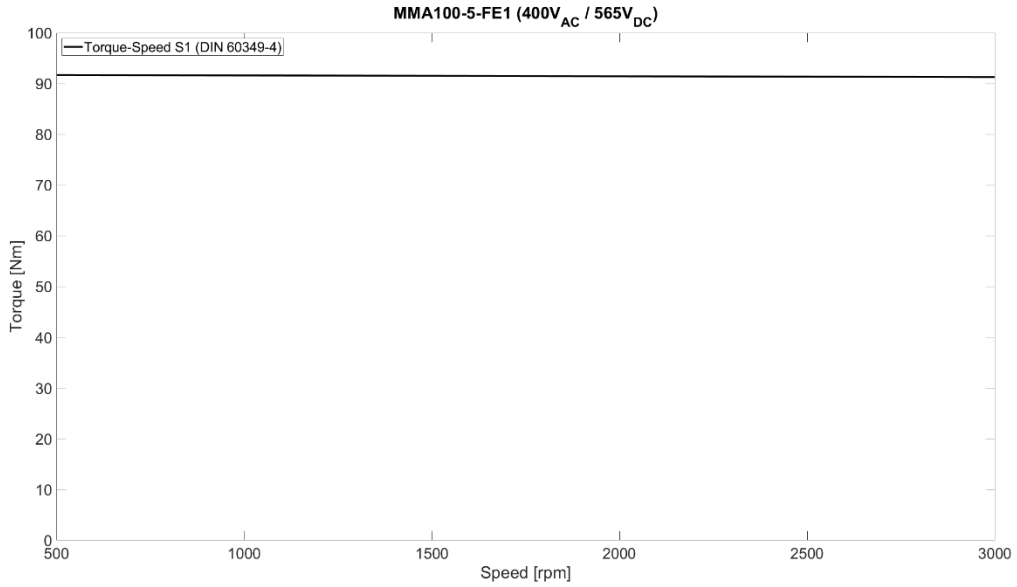

Figure 3 Torque-Speed curve S1 (DIN EN 60349-4)

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