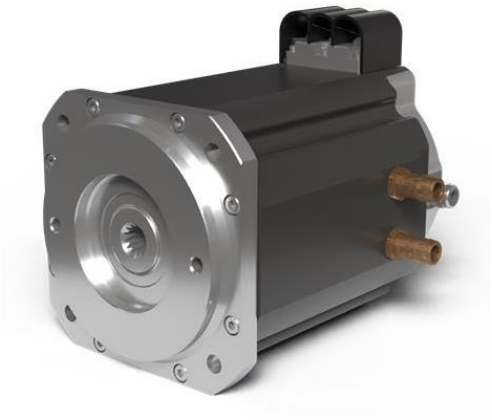
MMA100-5-FB1

$34V_{AC}$ / $48V_{DC}$

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]	102	157.2	198
Power	P	[kW]	21.3	24.7	31
Speed	n	[rpm]	2000	1500	1500
Phase Current	I_{rms}	[A]	420	650	1060
Line-Line Voltage	U_{rms}	[V]	33.9	31.6	31.4
Rated Battery Voltage	U_{DC}	[V]	48	48	48
Electric frequency	f_{el}	[Hz]	166.67	125	125
Efficiency	η	[%]	93.5	88.9	77.5

- Recommended Inverter (for shown operating points S1 and S2 60 s): Poclain emDrive L30
- 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]	9.95
k_T	[Nm/A]	0.251
$R_{Ph,20}$	[Ohm]	0.001653
L_d	[mH]	0.02262
L_q	[mH]	0.02798
Connection		Y

ADDITIONAL DATA

Max. Speed	[rpm]	6000
Moment of inertia*	[kgm^2]	0.007
Weight*	[kg]	32
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 Network | Poclain.

*: Weight and moment of inertia may vary with shaft type

EFFICIENCY MAP

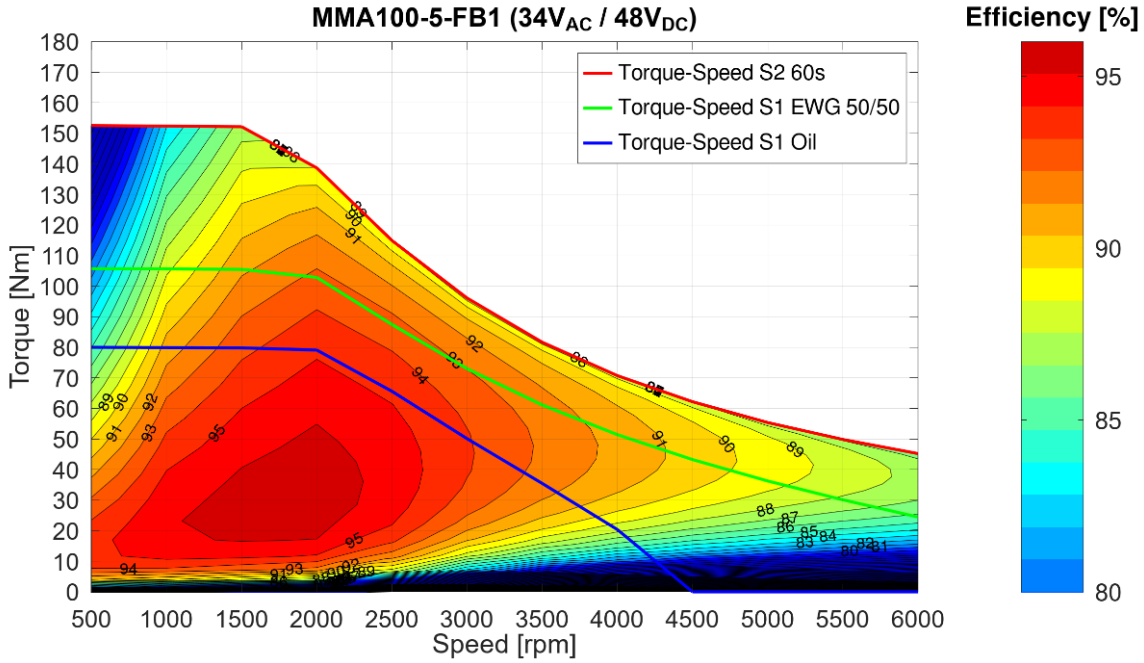

Figure 1 Efficiency map and Torque Speed curves

- Recommended Inverter (for shown efficiency map): Poclain emDrive L30
- Performance data were determined with S1-temperatures with U_{DC} = 48 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

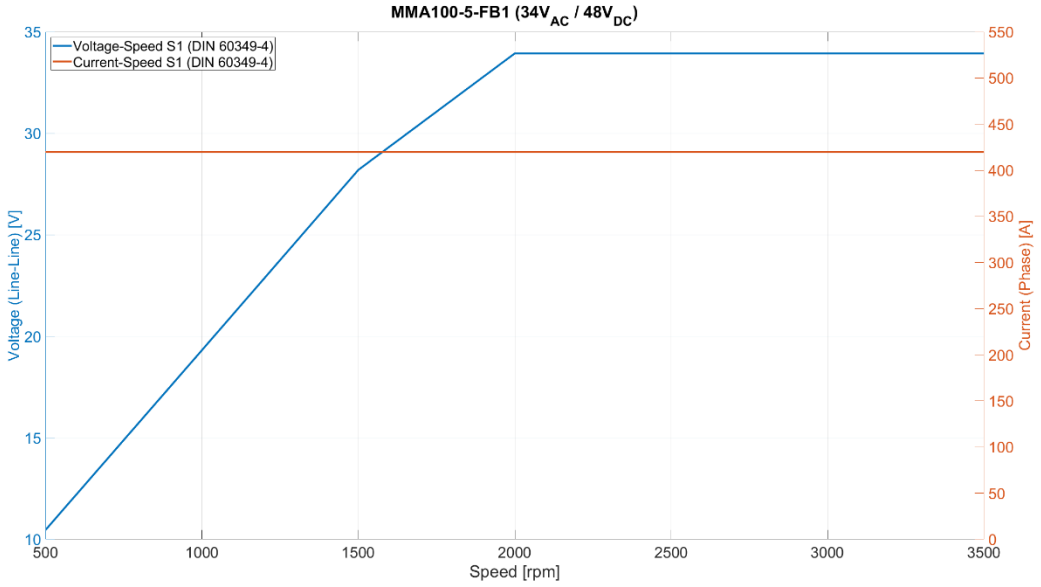

Figure 2 Phase voltage and current over speed (DIN EN 60349-4)

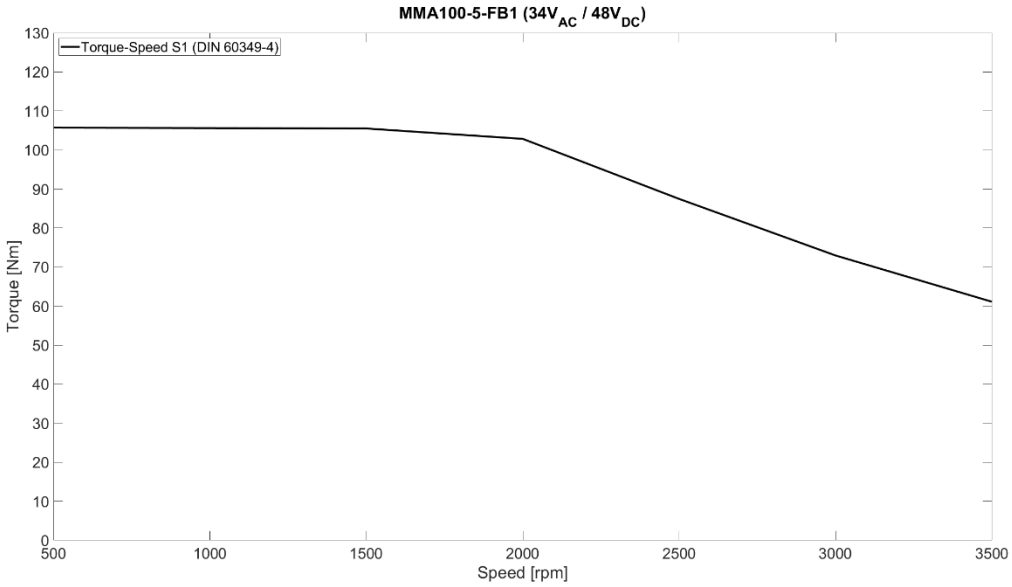

Figure 3 Torque-Speed curve S1 (DIN EN 60349-4)

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