

42D00336 Data sheet MMA100-5-FA1 (34 V_{AC} / 48 V_{DC})



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42D00336 ata sheet MMA100-5-FA1 (34 V_{AC} / 48 V_{DC})

1 Characteristic Performance Data

Parameter	Unit	Value
S1 Torque (max.)	[Nm]	114.5
S1 Current (max.)	[A _{RMS}]	363.7
S1 Base Speed	[rpm]	1500
S1 Torque at base speed	[Nm]	105
S1 Power at base speed	[kW]	16.5
S1 Efficiency at base speed	[%]	91.82
Max. Torque (S2 60s)	[Nm]	172.94
Max. Current (S2 60s)	[A _{RMS}]	630
Max. Speed	[rpm]	6000
Instant Torque (30s)	[Nm]	135
Instant Speed	[rpm]	1000

- Recommended Inverter (for shown performance data): Emsiso L30 450-650-60
- Performance data were determined with S1-temperatures with UDC = 48 V, with a thermally decoupled electrical machine and a coolant temperature of 60°C at 10 l/min (Water-Ethylenglycol 50-50)

2 Electrical Data

Parameter	Unit	Value
k _{E, ph}	[V _{RMS} /krpm]	12.52
k _T	[Nm/A]	0.316
R _{Ph,20}	[Ohm]	0.002497
L _d	[mH]	0.038
L _q	[mH]	0.046
Connection		Y

3 Additional Data

Parameter	Unit	Value
Weight	[kg]	28.7
Protection class		IP67
Thermal class		H
Maximum motor temperature	[°C]	170
S1 motor temperature	[°C]	140
Thermal monitoring		PT1000
Cooling type		Liquid 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 / Oil
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.

4 Efficiency map

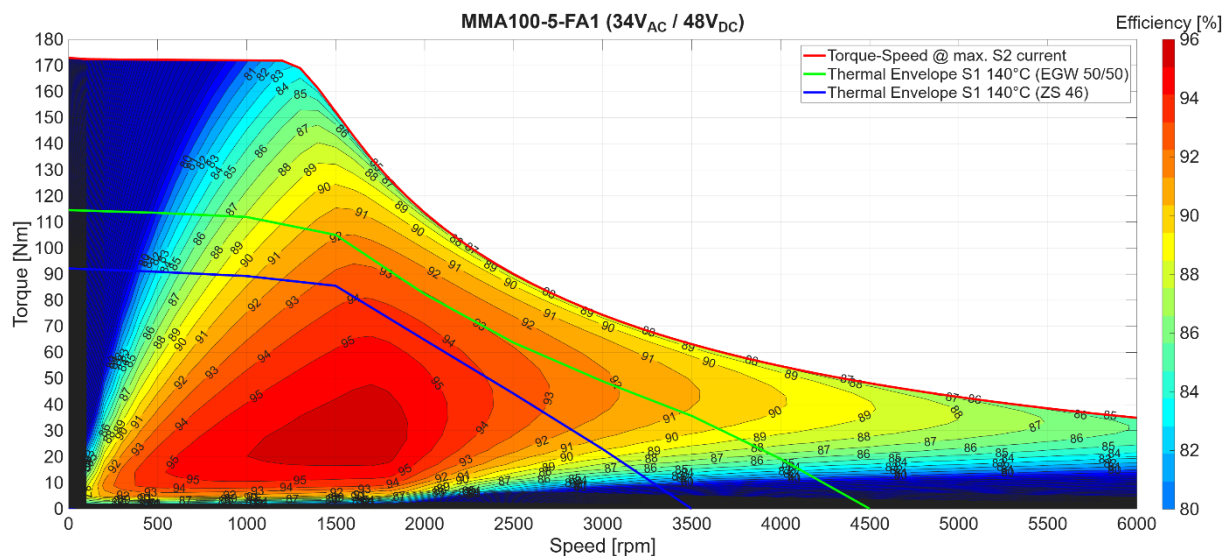
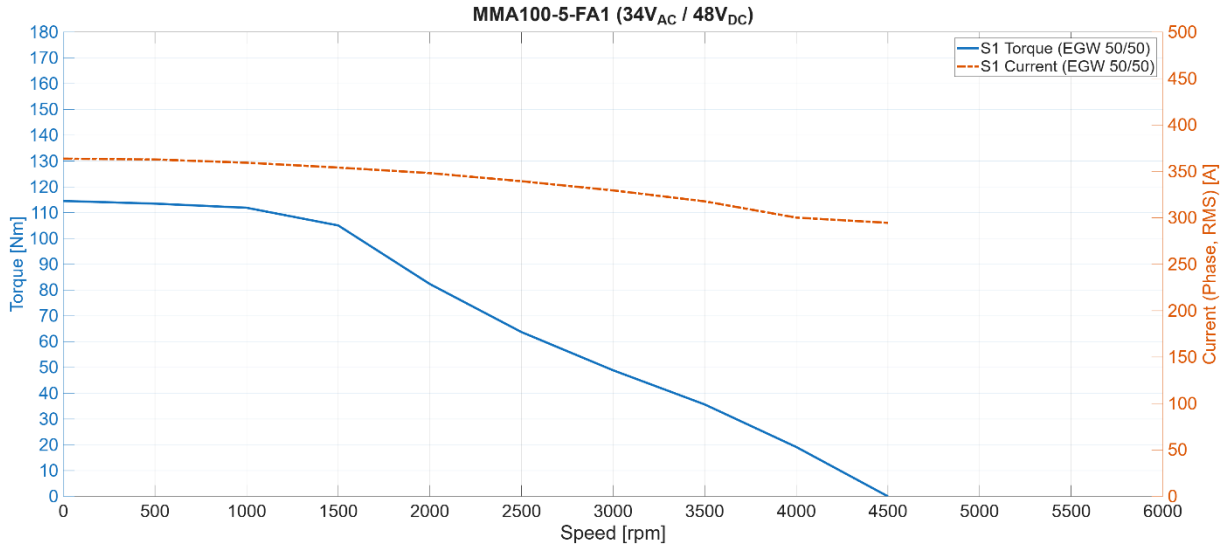


Figure 1 Efficiency map and Torque Speed curves

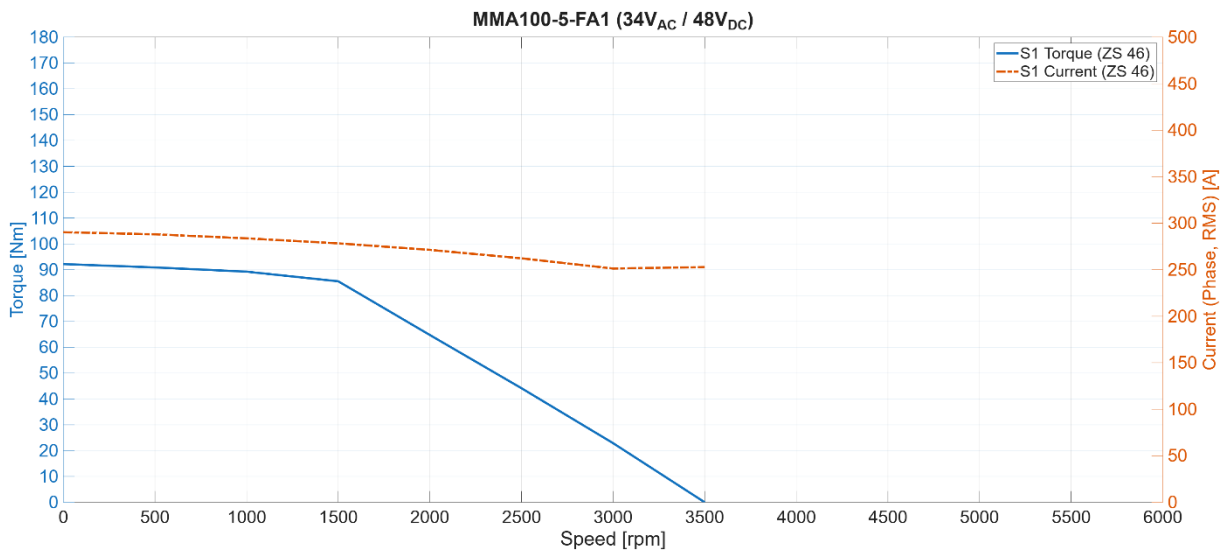
- o Recommended Inverter (for shown efficiency map): Emsiso L30 450-650-60
- o Performance data were determined with S1-temperatures with $U_{DC} = 48\text{ V}$, with a thermally decoupled electrical machine and a coolant temperature of 60°C at 10 l/min (Water-Ethylenglycol 50-50) or Oil (Equivis ZS 46) respectively

5 Thermal Envelope S1 140°C (Water-Ethylenglycol 50-50)



- o Thermal Envelope for S1 (140°C) performance was determined with $U_{DC} = 48$ V, with a thermally decoupled electrical machine and a coolant temperature of 60°C at 10 l/min (Water-Ethylenglycol 50-50)

6 Thermal Envelope S1 140°C (Oil: Equivis ZS 46)



- o Thermal Envelope for S1 (140°C) performance was determined with $U_{DC} = 48$ V, with a thermally decoupled electrical machine and a coolant temperature of 60°C at 10 l/min (Oil: Equivis ZS 46)

7 Specified characteristics (according to DIN EN 60349-4)

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

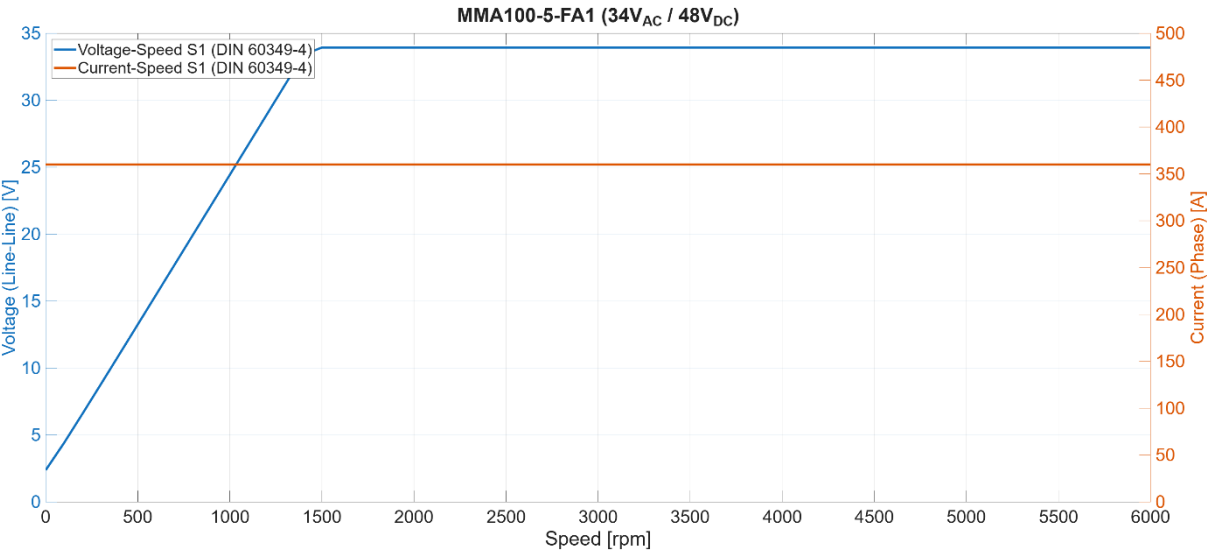


Figure 2 Phase voltage and current over speed (DIN EN 60349-4)

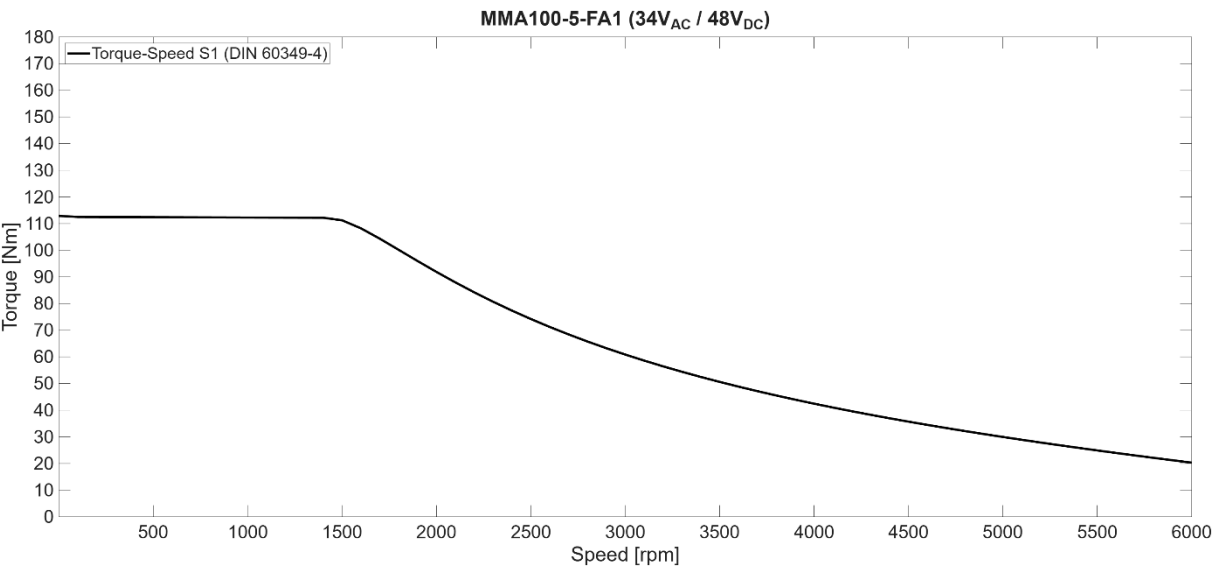


Figure 3 Torque-Speed curve S1 (DIN EN 60349-4)