

## 42D00221 Data sheet MMA100-5-FE1 (400 V<sub>AC</sub> / 565 V<sub>DC</sub>) water cooled



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Version 1.0

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### 1 Characteristic operating points

Parameter		Unit	Operation Mode		
			S1	S2	S2
Feasible operation time	t <sub>on</sub>		continuous	60 s	10 s
Torque	T	[Nm]	90	130	200
Power	P	[kW]	28.2	40.8	62.8
Speed	n	[rpm]	3000	3000	3000
Phase Current	I <sub>rms</sub>	[A]	51	78	127
Line-Line Voltage	U <sub>rms</sub>	[V]	381	399.5	399.5
Rated Battery Voltage	U <sub>DC</sub>	[V]	565	565	565
Electric frequency	f <sub>el</sub>	[Hz]	250	250	250
Efficiency	η	[%]	95.8	94	88

- Recommended Inverter (for shown operating points S1 and S2 60 s): Emsiso H20 800V
- Performance data were determined with a thermally decoupled engine and a coolant temperature of 60°C at 10 l/min (Water/Ethylenglycol 50/50)

### 2 Electrical Data

Parameter	Unit	Value
<b>Phase:</b>		
k <sub>E</sub>	[V <sub>RMS</sub> /krpm]	169.65
k <sub>T</sub>	[Nm/A]	0.6
R <sub>Ph,20</sub>	[Ohm]	0.08
L <sub>d</sub>	[mH]	1.044
L <sub>q</sub>	[mH]	29.5
Connection		Y

### 3 Additional Data

<b>Max. Speed</b>	[rpm]	6000
<b>Moment of inertia</b>	[kgm <sup>2</sup> ]	0.007
<b>Weight</b>	[kg]	28.7
<b>Protection class</b>		IP67
<b>Thermal class</b>		H
<b>Maximum motor temperature</b>	[°C]	170
<b>S1 motor temperature</b>	[°C]	140
<b>Thermal monitoring</b>		PT1000
<b>Cooling type</b>		Water cooled
<b>Min flow rate (motor coolant)</b>	[l/min]	10
<b>Rated flow rate (motor coolant)</b>	[l/min]	10
<b>Max flow rate (motor coolant)</b>	[l/min]	30
<b>Pressure drop @ rated flow rate</b>	[bar]	0.02
<b>Coolant</b>		Water/Ethylenglycol 50/50
<b>Max. cooling pressure (motor coolant)</b>	[bar]	3
<b>Coolant max temperature</b>	[°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

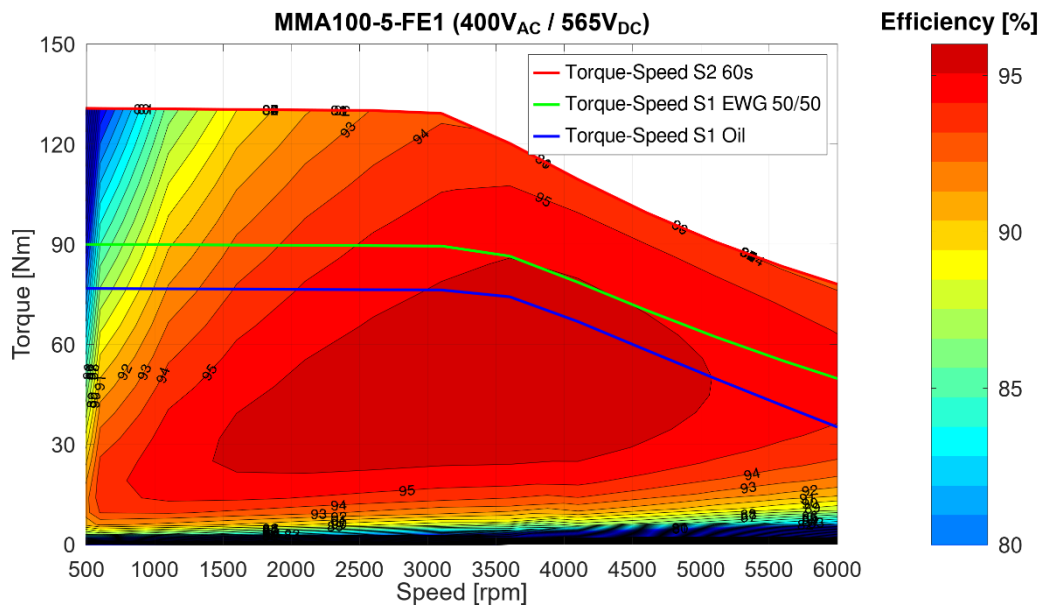


Figure 1 Efficiency map and Torque Speed curves

- o Recommended Inverter (for shown efficiency map): Emsiso H20 800V
- o 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)

## 5 Specified characteristics (according to DIN EN 60349-4)

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

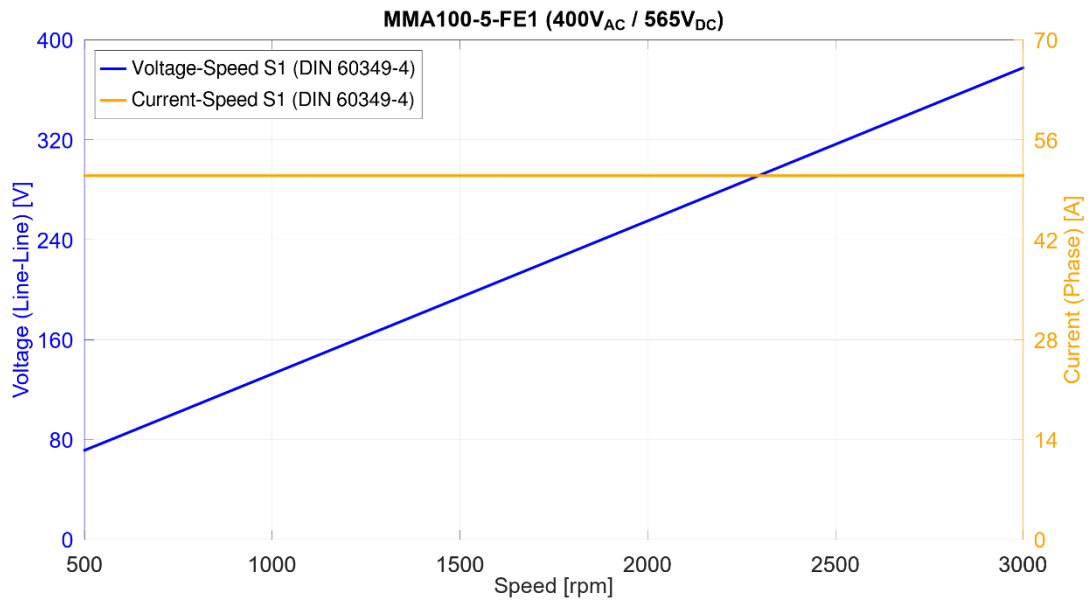


Figure 2 Phase voltage and current over speed (DIN EN 60349-4)

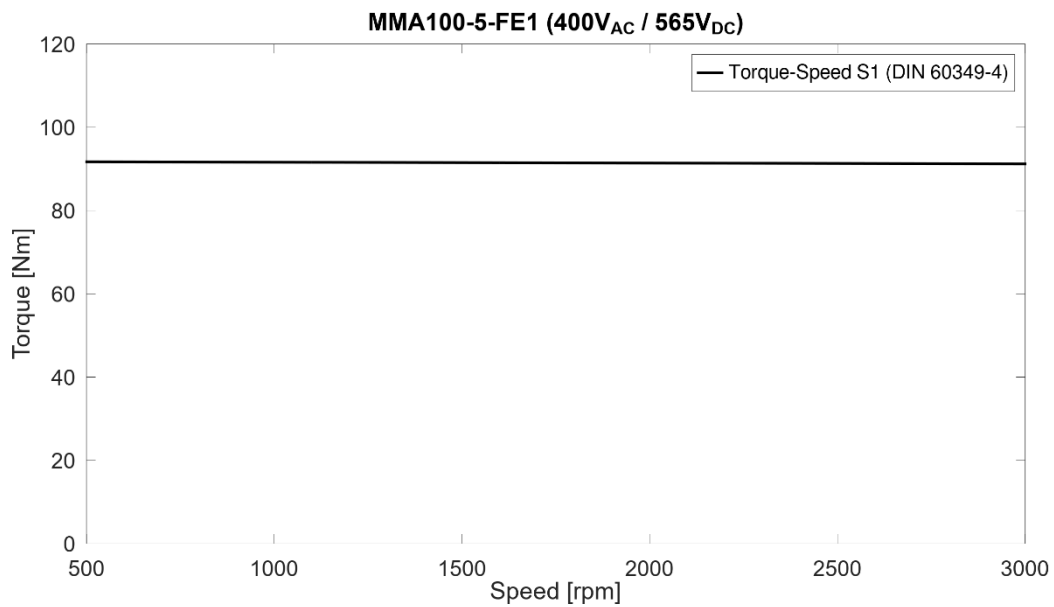


Figure 3 Torque-Speed curve S1 (DIN EN 60349-4)