

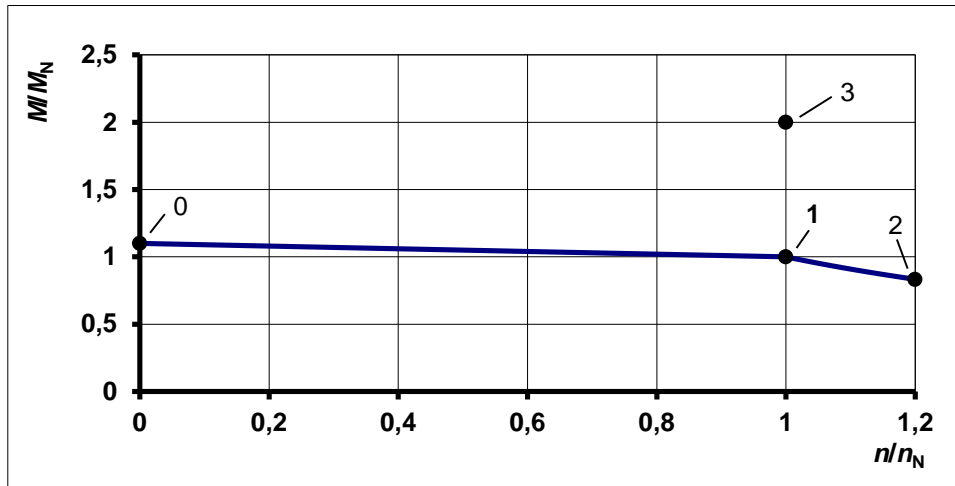
# Three-Phase-Synchronous-Motor with Permanent-Magnet

## Operating and Installation Data:

Rated-				
-power	$P_N$ :	500 kW	Connection	: Y
-voltage	$U_N$ :	690 V	Class of rating	: S1
-frequency	$f_N$ :	86.7 Hz	Absolute altitude	: <1000 m ab.s.l.
-current	$I_N$ :	480 A	Coolant temperature	: 38 °C
-speed	$n_N$ :	650 1/min	Water (l/min)	: 30
-torque	$M_N$ :	7350 Nm	Therm. class (design/util.)	: 155 (F) / 130 (B)
Power factor	$\cos\varphi$ :	0.95		

Standard: IEC/EN 60034-1

Tolerances: IEC/EN 60034-1



## Calculated partial load data (sinusoidal supply):

		0	1	2	3
Torque	$M$ / Nm	11550	<b>7350</b>	6125	14700
Speed	$n$ / min <sup>-1</sup>	0	<b>650</b>	780	650
Power	$P$ / kW	0	<b>500</b>	500	1000
Voltage	$U$ / V	8	<b>649</b>	690	690
Current	$I$ / A	745	<b>480</b>	431	980
Efficiency	$\eta$ / %		<b>97.2</b>	97.2	
Power factor	$\cos\varphi$ / -		<b>0.95</b>	1.00	

## Additional technical ratings and information:

Operation with converter: Puls-frequency  $f_p = 2.5$  kHz

Utilization acc. thermal class 155(F): 670V, 650rpm, 670kW; I = 640A

Efficiency  $\eta > 97.0\%$  for rated torque within speed range 350 - 750rpm

				Date	20.10.2014	<b>Electrical Data Sheet</b>	
				Name	SCHERER		
				Exam.	ANKOWSKI		
				Std.			
				PD LD P MF-NMA EN		Type 1FW4 405-1HZ70-1AA0-Z	
				<b>SIEMENS AG</b>		AGT - 489864 - 00001 E001	
IND.	Text	Date	Name				

# Three-Phase-Synchronous-Motor with Permanent-Magnet

## Operating and Installation Data:

Rated-				
-power	$P_N$ :	500 kW		
-voltage	$U_N$ :	690 V	Connection	: Y
-frequency	$f_N$ :	86.7 Hz	Class of rating	: S1
-current	$I_N$ :	480 A	Absolute altitude	: <1000 m ab.s.l.
-speed	$n_N$ :	650 1/min	Coolant temperature	: 38 °C
-torque	$M_N$ :	7350 Nm	Water (l/min)	: 30
Power factor	$\cos\varphi$ :	0.95	Therm. class (design/util.)	: 155 (F) / 130 (B)

Standard: IEC/EN 60034-1  
Tolerances: IEC/EN 60034-1

## Calculated Partial Load Data:

P/P <sub>N</sub>	1.00	0.75	0.50	0.25	0.10
cos φ	0.95	0.97	0.98	0.99	~1.00
η [%]	97.2	97.0	96.4	94.0	86.5

## Physical data

Torque constant	15.4	Nm/A
Voltage constant	1067	V/min <sup>-1</sup>
Electrical time constant	90.28	ms
Mechanical time constant	2.31	ms
Thermal time constant	42.06	min
Winding resistance (cold) / phase	4.609	mΩ
Phase sequence inductance	0.590	mH
Steady-state short-circuit current	1245	A
Max. short-circuit current	2403	A
Max. speed	780	min <sup>-1</sup>



				Date	20.10.2014	<b>Additional data sheet</b>	
				Name	SCHERER		
				Exam.	ANKOWSKI		
				Std.			
				PD LD P MF-NMA EN		Type 1FW4 405-1HZ70-1AA0-Z	
				<b>SIEMENS AG</b>		AGT - 489864 - 00001 E002	
IND.	Text	Date	Name				