

2.1 Speed–torque diagrams

Table 2-5 Standard 1FT5046 motor

1FT5046					
Technical data	Code	Units	–□AF71	–□AK71	
Engineering data					
Rated speed	n_N	RPM	3000	6000	
Rated torque (100 K)	M_N (100 K)	Nm	3.4	2.7	
Rated current	I_N	A	3.9	5.1	
Standstill torque (60 K)	M_0 (60 K)	Nm	2.8	2.8	
Standstill torque (100 K)	M_0 (100 K)	Nm	3.7	3.7	
Standstill current (60 K)	I_0 (60 K)	A	3.0	4.8	
Standstill current (100 K)	I_0 (100 K)	A	3.9	6.3	
Moment of inertia (with brake)	J_{mot}	10^{-4} kgm ²	5.31	5.31	
Moment of inertia (without brake)	J_{mot}	10^{-4} kgm ²	4.93	4.93	
Limiting data					
Maximum speed	n_{max}	RPM	5500	8300	
Maximum torque	M_{max}	Nm	14.8	14.8	
Max. current	I_{max}	A	16.0	26.0	
Limiting torque	M_{limit}	Nm	8.0	6.0	
Physical constants					
Torque constant	k_T	Nm/A	0.95	0.59	
Voltage constant	k_E	V/1000 RPM	115	71	
Winding resistance	$R_{ph.}$	Ohm	3.1	1.2	
Rotating field inductance	L_D	mH	11.7	4.6	
Electrical time constant	T_{el}	ms	3.8	3.8	
Mechanical time constant	T_{mech}	ms	3.4	3.4	
Thermal time constant	T_{th}	min	50	50	
Weight (with brake)	m	kg	6.7	6.7	
Weight (without brake)	m	kg	6.4	6.4	

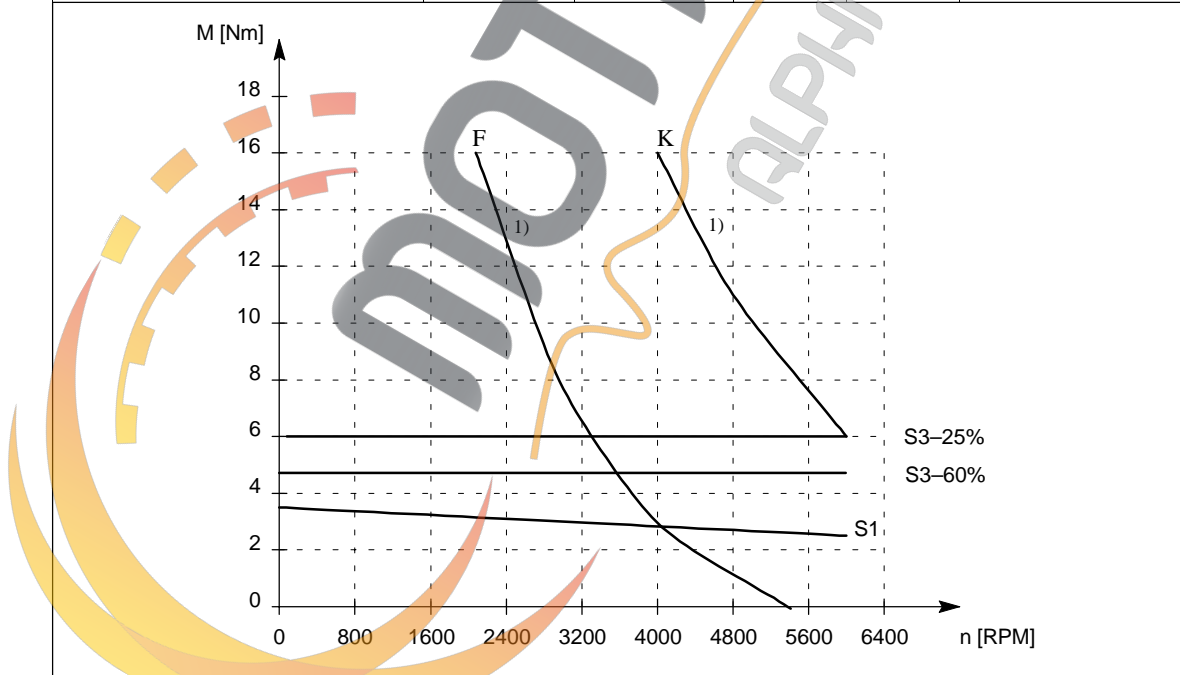


Fig. 2-5 Speed–torque diagram, 1FT5046

1) applies for a 600 V DC link voltage

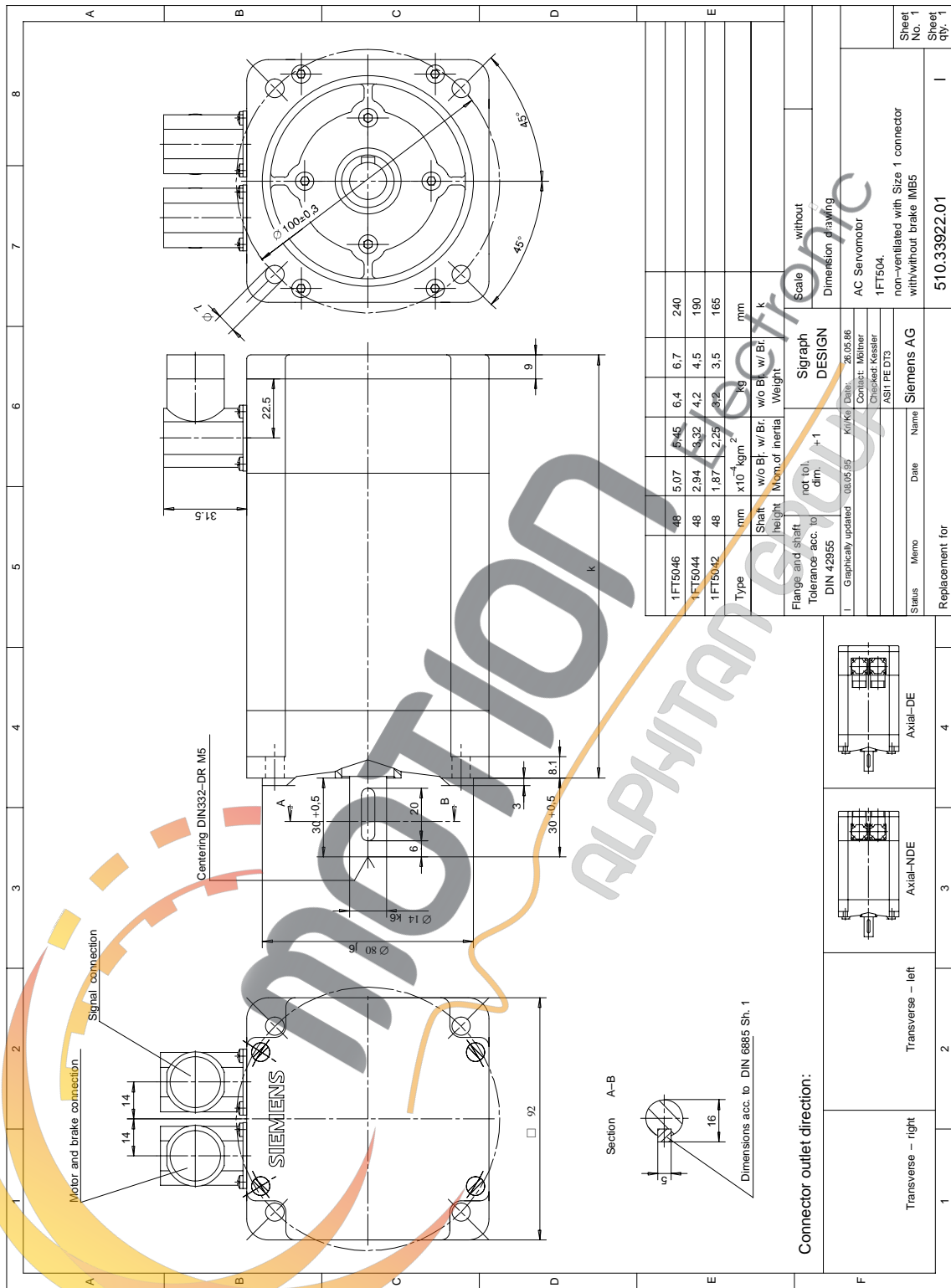


Fig. 4-2 1FT504□ non-ventilated with Size 1 connector