

2.1 Speed–torque diagrams

Table 2-9 Standard 1FT5072 motor

1FT5072						
Technical data	Code	Units	–□AC71	–□AF71	–□AG71	–□AK71
Engineering data						
Rated speed	n_N	RPM	2000	3000	4000	6000
Rated torque (100 K)	M_N (100 K)	Nm	9.5	8.5	7.5	5.0
Rated current	I_N	A	6.3	8.4	9.8	9.9
Standstill torque (60 K)	M_0 (60 K)	Nm	10.0	10.0	10.0	10.0
Standstill torque (100 K)	M_0 (100 K)	Nm	12.0	12.0	12.0	12.0
Standstill current (60 K)	I_0 (60 K)	A	6.1	9.1	12.0	17.5
Standstill current (100 K)	I_0 (100 K)	A	7.3	11.0	14.5	21.0
Moment of inertia (with brake)	J_{mot}	10^{-4} kgm ²	30.3	30.3	30.3	30.3
Moment of inertia (without brake)	J_{mot}	10^{-4} kgm ²	22.8	22.8	22.8	22.8
Limiting data						
Maximum speed	n_{max}	RPM	3200	4800	6300	7000
Maximum torque	M_{max}	Nm	40	40	40	40
Max. current	I_{max}	A	29.0	43.0	60.0	89.0
Limiting torque	M_{limit}	Nm	15.0	16.0	18.0	16.0
Physical constants						
Torque constant	k_T	Nm/A	1.64	1.10	0.84	0.57
Voltage constant	k_E	V/1000 RPM	186	124	95	65
Winding resistance	$R_{ph.}$	Ohm	2.6	1.2	0.63	0.32
Rotating field inductance	L_D	mH	23.2	10.3	5.7	2.9
Electrical time constant	T_{el}	ms	11	11	11	11
Mechanical time constant	T_{mech}	ms	4.4	4.4	4.4	4.4
Thermal time constant	T_{th}	min	35	35	35	35
Weight (with brake)	m	kg	15	15	15	15
Weight (without brake)	m	kg	13.5	13.5	13.5	13.5

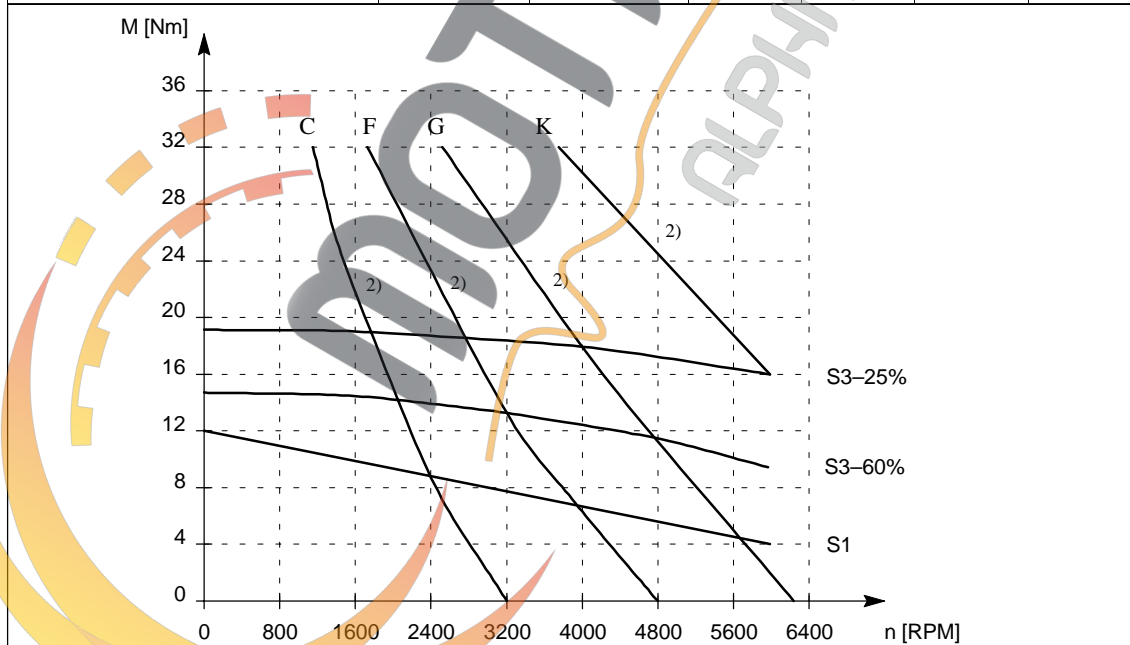


Fig. 2-9 Speed–torque diagram, 1FT5072

2) applies for a 600 V DC link voltage

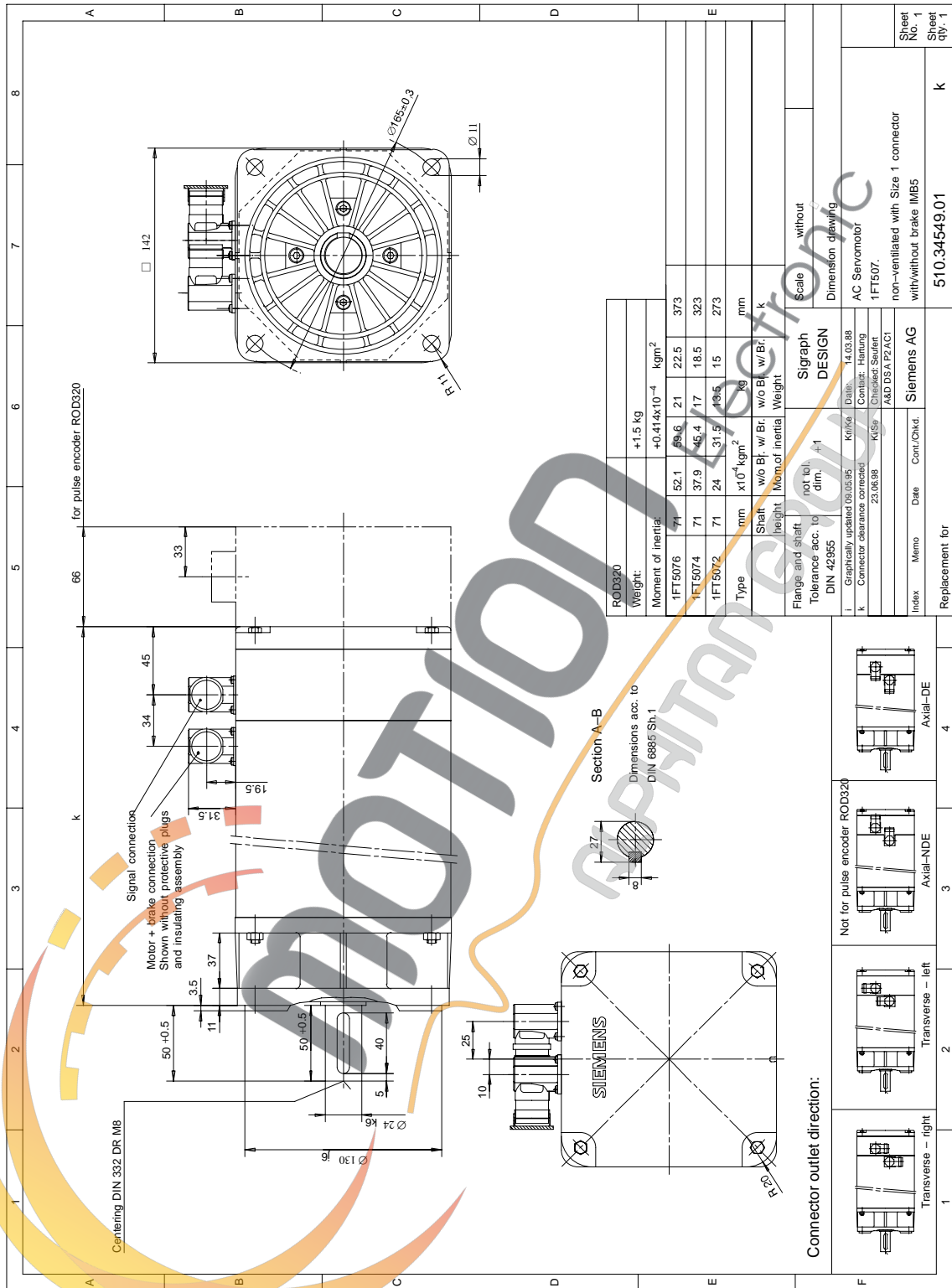


Fig. 4-4 1FT507□ non-ventilated with Size 1 connector