

2.1 Speed–torque diagrams

Table 2-17 1FT6084 non-ventilated

1FT6084						
Technical data	Code	Units	–8AC7□	–□AF7□		
Engineering data						
Rated speed	n_N	RPM	2000	3000		
Number of poles	$2p$		8	8		
Rated torque (100K)	M_N (100K)	Nm	16.9	14.7		
Rated current (100K)	I_N (100K)	A	8.3	11		
Standstill torque (60K)	M_0 (60K)	Nm	16.6	16.6		
Standstill torque (100K)	M_0 (100K)	Nm	20	20		
Standstill current (60K)	I_0 (60K)	A	7.2	10.7		
Standstill current (100K)	I_0 (100K)	A	8.8	13.2		
Moment of inertia (with brake)	J_{mot}	10^{-4} kgm ²	61.1	61.1		
Moment of inertia (without brake)	J_{mot}	10^{-4} kgm ²	48	48		
Optimum operating point						
Optimum speed	n_{opt}	RPM	2000	3000		
Optimum power	P_{opt}	kW	3.54	4.62		
Limiting data						
Max. perm. speed (mech.)	n_{max}	RPM	7900	7900		
Maximum torque	M_{max}	Nm	65	65		
Maximum current	I_{max}	A	38	56		
Physical constants						
Torque constant	k_T	Nm/A	2.26	1.52		
Voltage constant	k_E	V/1000 RPM	144	97		
Winding resistance at 20°C	R_{ph}	Ohm	0.91	0.41		
Rotating field inductance	L_D	mH	10.4	4.8		
Electrical time constant	T_{el}	ms	11.4	11.7		
Shaft torsional stiffness	c_t	Nm/rad	76000	76000		
Mechanical time constant	T_{mech}	ms	2.6	2.6		
Thermal time constant	T_{th}	min	42	42		
Weight with brake	m	kg	24	24		
Weight without brake	m	kg	20.5	20.5		



