

Table 3-3 1FT6031 natural cooling

1FT6031				
Technical data	Code	Units	-4AK71	
Engineering data				
Rated speed	n_N	rpm	6000	
Number of poles	2p		4	
Rated torque (100 K)	$M_{N(100\text{ K})}$	Nm	0.75	
Rated current (100K)	I_N	A	1.2	
Stall torque (60K)	$M_{0(60\text{ K})}$	Nm	0.83	
Stall torque (100K)	$M_{0(100\text{ K})}$	Nm	1.0	
Stall current (60K)	$I_{0(60\text{ K})}$	A	1.1	
Stall current (100K)	$I_{0(100\text{ K})}$	A	1.4	
Moment of inertia (with brake)	J_{mot}	10^{-4} kgm^2	0.77	
Moment of inertia (without brake)	J_{mot}	10^{-4} kgm^2	0.65	
Optimum operating point				
Optimum speed	n_{opt}	rpm	6000	
Optimum power	P_{opt}	kW	0.47	
Limiting data				
Max. permissible speed (mech.)	n_{max}	rpm	9700	
Maximum torque	M_{max}	Nm	4	
Maximum current	I_{max}	A	5.8	
Physical constants				
Torque constant				
Voltage constant	k_T	Nm/A	0.72	
Winding resistance at 20 °C	k_E	V/1000 rpm	47	
Rotating field inductance	R_{ph}	Ohm	6.9	
Electrical time constant	L_D	mH	18	
Shaft torsional stiffness	T_{el}	ms	2.6	
Mechanical time constant	α_t	Nm/rad	7500	
Thermal time constant	T_{mech}	ms	2.6	
Weight with brake	T_{th}	min	20	
Weight without brake	m	kg	3.5	
	m	kg	3.1	

e-Servo



Fig. 6-2