

Table 3-57 1FT6105, water cooled

1FT6105					
Technical data	Code	Units	-8WC7	-8WF7	
Engineering data					
Rated speed	n_N	rpm	2000	3000	
Number of poles	2p		8	8	
Rated torque (100 K)	$M_{N(100\text{ K})}$	Nm	82	78	
Rated current (100K)	I_N	A	60	82	
Stall torque (60K)	$M_{0(60\text{ K})}$	Nm	70	70	
Stall torque (100K)	$M_{0(100\text{ K})}$	Nm	85	85	
Stall current (60K)	$I_{0(60\text{ K})}$	A	47	67	
Stall current (100K)	$I_{0(100\text{ K})}$	A	58	83	
Moment of inertia (with brake)	J_{mot}	10^{-4} kgm^2	199	199	
Moment of inertia (without brake)	J_{mot}	10^{-4} kgm^2	168	168	
Optimum operating point					
Optimum speed	n_{opt}	rpm	2000	3000	
Optimum power	P_{opt}	kW	17.2	24.5	
Limiting data					
Max. permissible speed (mech.)	n_{max}	rpm	5600	5600	
Maximum torque	M_{max}	Nm	140	140	
Maximum current	I_{max}	A	155	221	
Physical constants					
Torque constant	k_T	Nm/A	1.45	1.02	
Voltage constant	k_E	V/1000 rpm	99	70	
Winding resistance at 20 °C	R_{ph}	Ohm	0.098	0.048	
Rotating field inductance	L_D	mH	2.1	1.0	
Electrical time constant	T_{el}	ms	21	21	
Shaft torsional stiffness	c_t	Nm/rad	11300	11300	
Mechanical time constant	T_{mech}	ms	0 2.3	0 2.3	
Thermal time constant	T_{th}	min	1.5	1.5	
Weight with brake	m	kg	50	50	
Weight without brake	m	kg	45.5	45.5	

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