

2.1 Speed–torque diagrams

Table 2-22 1FT6102 non-ventilated

1FT6102					
Technical data	Code	Units	–8AF7□	–8AH7□	
Engineering data					
Rated speed	n_N	RPM	3000	4500	
Number of poles	2p		8	8	
Rated torque (100K)	M_N (100K)	Nm	19.5	12	
Rated current (100K)	I_N (100K)	A	13.2	12	
Standstill torque (60K)	M_0 (60K)	Nm	22.4	22.4	
Standstill torque (100K)	M_0 (100K)	Nm	27	27	
Standstill current (60K)	I_0 (60K)	A	13.7	19.7	
Standstill current (100K)	I_0 (100K)	A	16.9	24.1	
Moment of inertia (with brake)	J_{mot}	10^{-4} kgm ²	130	130	
Moment of inertia (without brake)	J_{mot}	10^{-4} kgm ²	99	99	
Optimum operating point					
Optimum speed	n_{opt}	RPM	3000	3000	
Optimum power	P_{opt}	kW	6.13	6.13	
Limiting data					
Max. perm. speed (mech.)	n_{max}	RPM	5600	5600	
Maximum torque	M_{max}	Nm	80	80	
Maximum current	I_{max}	A	82	118	
Physical constants					
Torque constant	k_T	Nm/A	1.60	1.12	
Voltage constant	k_E	V/1000 RPM	102	71	
Winding resistance at 20°C	R_{ph}	Ohm	0.22	0.11	
Rotating field inductance	L_D	mH	4	1.9	
Electrical time constant	T_{el}	ms	18	17	
Shaft torsional stiffness	c_t	Nm/rad	137000	137000	
Mechanical time constant	T_{mech}	ms	2.6	2.6	
Thermal time constant	T_{th}	min	45	45	
Weight with brake	m	kg	32	32	
Weight without brake	m	kg	27.5	27.5	



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4.1 Non-ventilated 1FT6 motors

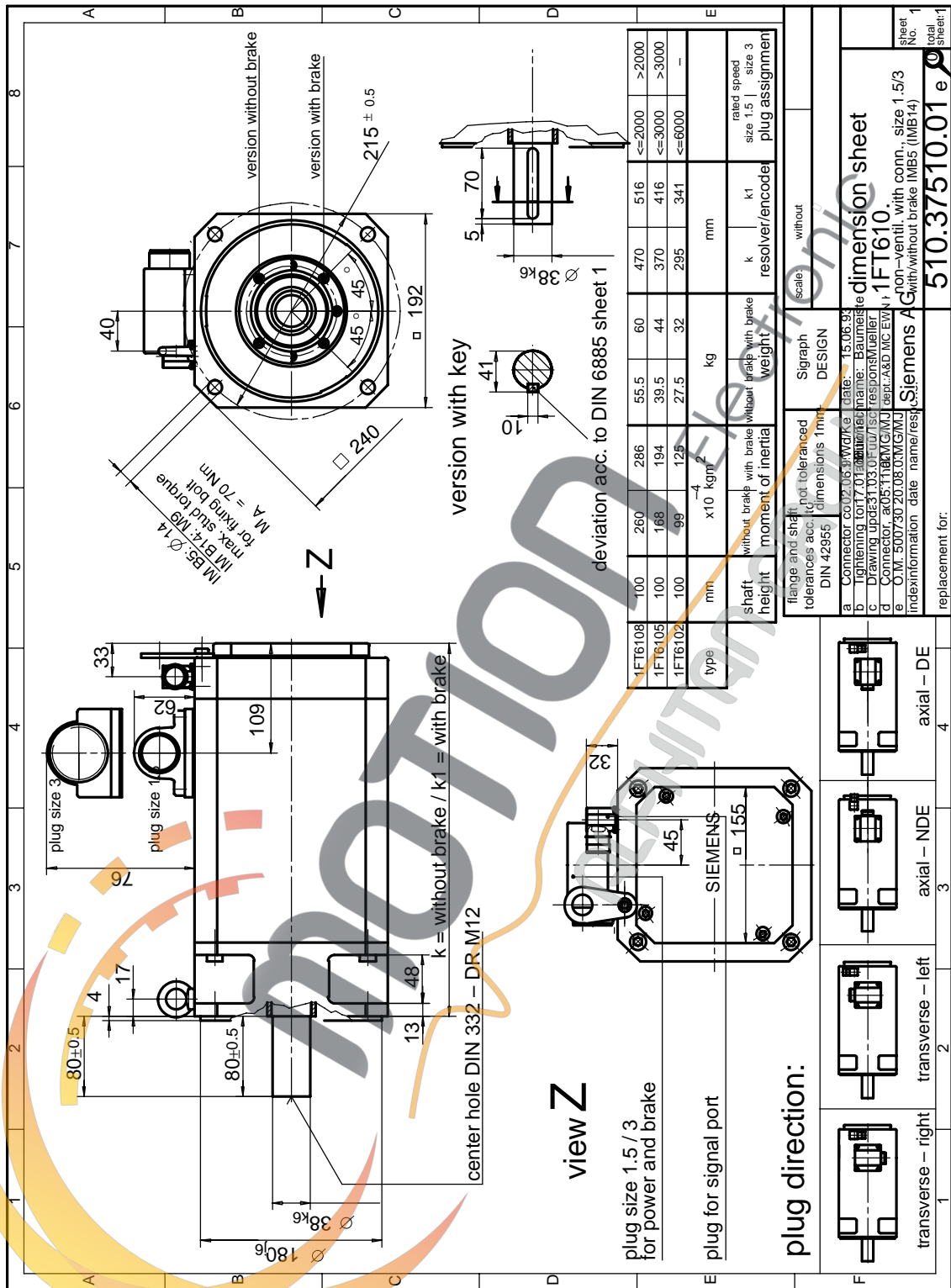


Fig. 4-6 1FT610 non-ventilated with connector, Size 1.5