

2.1 Speed–torque diagrams

Table 2-15 1FT6082 non–ventilated

1FT6082					
Technical data	Code	Units	–8AC7□	–□AF7□	
<b>Engineering data</b>					
Rated speed	$n_N$	RPM	2000	3000	
Number of poles	$2p$		8	8	
Rated torque (100K)	$M_N$ (100K)	Nm	11.4	10.3	
Rated current (100K)	$I_N$ (100K)	A	6.6	8.7	
Standstill torque (60K)	$M_0$ (60K)	Nm	10.8	10.8	
Standstill torque (100K)	$M_0$ (100K)	Nm	13	13	
Standstill current (60K)	$I_0$ (60K)	A	5.4	7.8	
Standstill current (100K)	$I_0$ (100K)	A	6.6	9.6	
Moment of inertia (with brake)	$J_{mot}$	$10^{-4}$ kgm <sup>2</sup>	33.8	33.8	
Moment of inertia (without brake)	$J_{mot}$	$10^{-4}$ kgm <sup>2</sup>	30	30	
<b>Optimum operating point</b>					
Optimum speed	$n_{opt}$	RPM	2000	3000	
Optimum power	$P_{opt}$	kW	2.39	3.24	
<b>Limiting data</b>					
Max. perm. speed (mech.)	$n_{max}$	RPM	7900	7900	
Maximum torque	$M_{max}$	Nm	42	42	
Maximum current	$I_{max}$	A	28	41	
<b>Physical constants</b>					
Torque constant	$k_T$	Nm/A	1.96	1.35	
Voltage constant	$k_E$	V/1000 RPM	125	86	
Winding resistance at 20°C	$R_{ph}$	Ohm	1.48	0.69	
Rotating field inductance	$L_D$	mH	13.6	6.2	
Electrical time constant	$T_{el}$	ms	9.2	9.0	
Shaft torsional stiffness	$c_t$	Nm/rad	90000	90000	
Mechanical time constant	$T_{mech}$	ms	3.5	3.4	
Thermal time constant	$T_{th}$	min	35	35	
Weight with brake	$m$	kg	16.5	16.5	
Weight without brake	$m$	kg	15	15	



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4.1 Non-ventilated 1FT6 motors

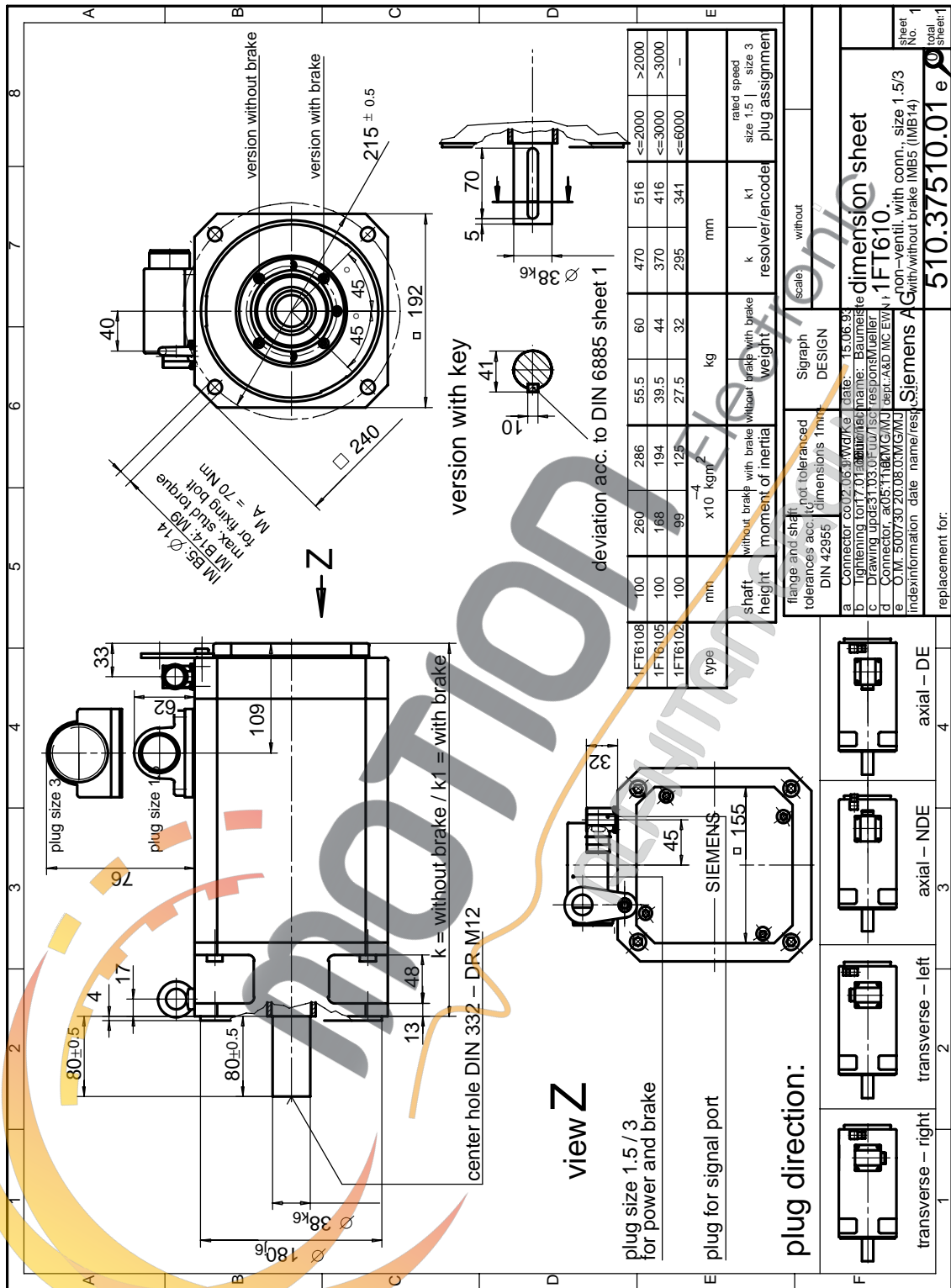


Fig. 4-6 1FT610 □ non-ventilated with connector, Size 1.5