1.2 Order designation

Structure of the order designation

The order designation comprises a combination of digits and letters. It is sub–divided into four hyphenated blocks.

The first block has seven positions and designates the machine type. Additional features are coded in the second block. The third and fourth blocks are provided for additional data.

1.2.1 Order designation, standard types

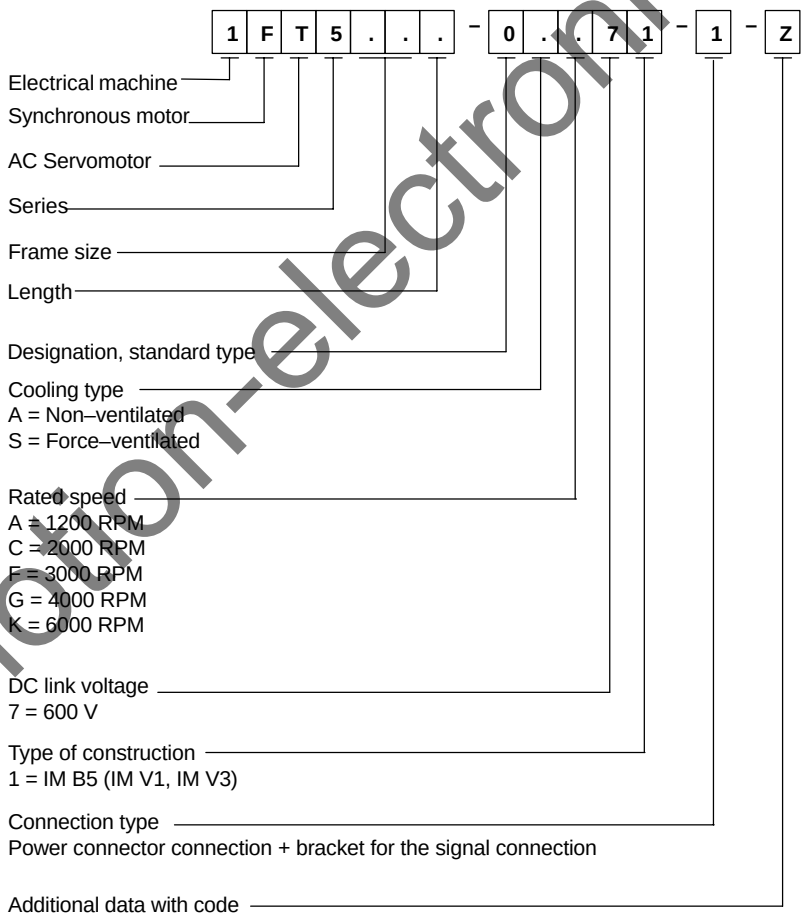

Table 2-2 Standard 1FT5036 motor

1FT5036				
Technical data	Code	Units	–□AK71	
Engineering data				
Rated speed	n_N	RPM	6000	
Rated torque (100 K)	$M_{N\ (100\ K)}$	Nm	1.0	
Rated current	I_N	A	2.0	
Standstill torque (60 K)	$M_{0\ (60\ K)}$	Nm	1.0	
Standstill torque (100 K)	$M_{0\ (100\ K)}$	Nm	1.3	
Standstill current (60 K)	$I_{0\ (60\ K)}$	A	1.7	
Standstill current (100 K)	$I_{0\ (100\ K)}$	A	2.3	
Moment of inertia (with brake)	J_{mot}	10^{-4} kgm^2	1.03	
Moment of inertia (without brake)	J_{mot}	10^{-4} kgm^2	0.96	
Limiting data				
Maximum speed	n_{max}	RPM	9000	
Maximum torque	M_{max}	Nm	5.2	
Max. current	I_{max}	A	9.5	
Limiting torque	M_{limit}	Nm	2.5	
Physical constants				
Torque constant	k_T	Nm/A	0.58	
Voltage constant	k_E	V/1000 RPM	70	
Winding resistance	$R_{ph.}$	Ohm	8.6	
Rotating field inductance	L_D	mH	13.7	
Electrical time constant	T_{el}	ms	1.5	
Mechanical time constant	T_{mech}	ms	4.9	
Thermal time constant	T_{th}	min	45	
Weight (with brake)	m	kg	3.3	
Weight (without brake)	m	kg	3.1	

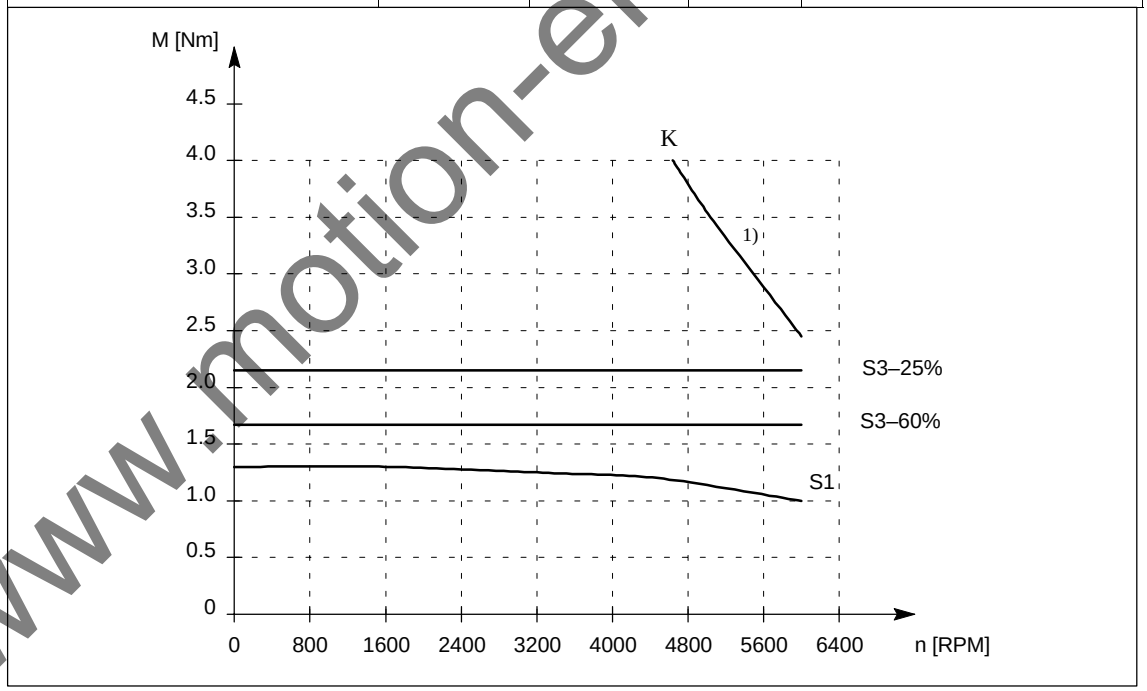

Fig. 2-2 Speed–torque diagram, 1FT5036

1) applies for a 600 V DC link voltage

3.3 Holding brake

For a description of the function, refer to the ”General Section” documentation.

The holding brake can be retrofitted!
This does not change the motor length.

Table 3-5 Technical data of the holding brakes used for 1FT5 motors

Motor type	Brake type	Holding torques M_4 [1] [Nm] 20 °C	Holding torques M_4 [1] [Nm] 120 °C	Dyn. torque M_{1m} [Nm] 120 °C	DC current [A]	Power drain [W]	Opening time t_2 [1] [ms]	Closing time [1] [ms]	Moment of inertia [10^{-4} kgm^2]	Highest switching work [2] [4] [J]
Standard motors, force–ventilated										
1FT503□	EBD 0.11B	1.2	1.0	0.75	0.3	7.5	20	10	0.07	24
1FT504□	EBD 0.2B	2.0	1.5	1.3	0.6	13	40	20	0.4	122
1FT506□	EBD 0.8B	12	10	7	0.7	16	55	15	1.1	291
1FT507□	EBD 2B	28	23	13	0.93	22	100	30	7.6	1005
1FT510□	EBD 4B	100	80	43	1.4	32	180	20	32	2150 [3]
1FT513□	EBD 8B	200	140	60	1.7	40	260	70	76	9870
Short motors										
1FT507□	EBD 0.4B	6.5	5	3.5	0.8	20	30	15	1.1	148
1FT510□	EBD 2.2B	20	15	13	0.9	22	70	35	9.5	987

M_{1m} = Average dynamic torque determined from the slip time t_3
M_4 = Torque which can be transmitted taking into account the max. solenoid temperature, fluctuations in the frictional coefficient and spread of characteristic data

Refer to the ”General Section” documentation for a definition of torques and switching times in compliance with VDE 0580.

1) Standardized acc. to VDE 0580 with resistor and diode
2) for each emergency stop with n=3000 RPM
3) for each emergency stop with n=2000 RPM
4) $W=1/2 * Jtot * \omega^2$;
Jtot in [kgm^2],
ω in [1/s], W in [J]

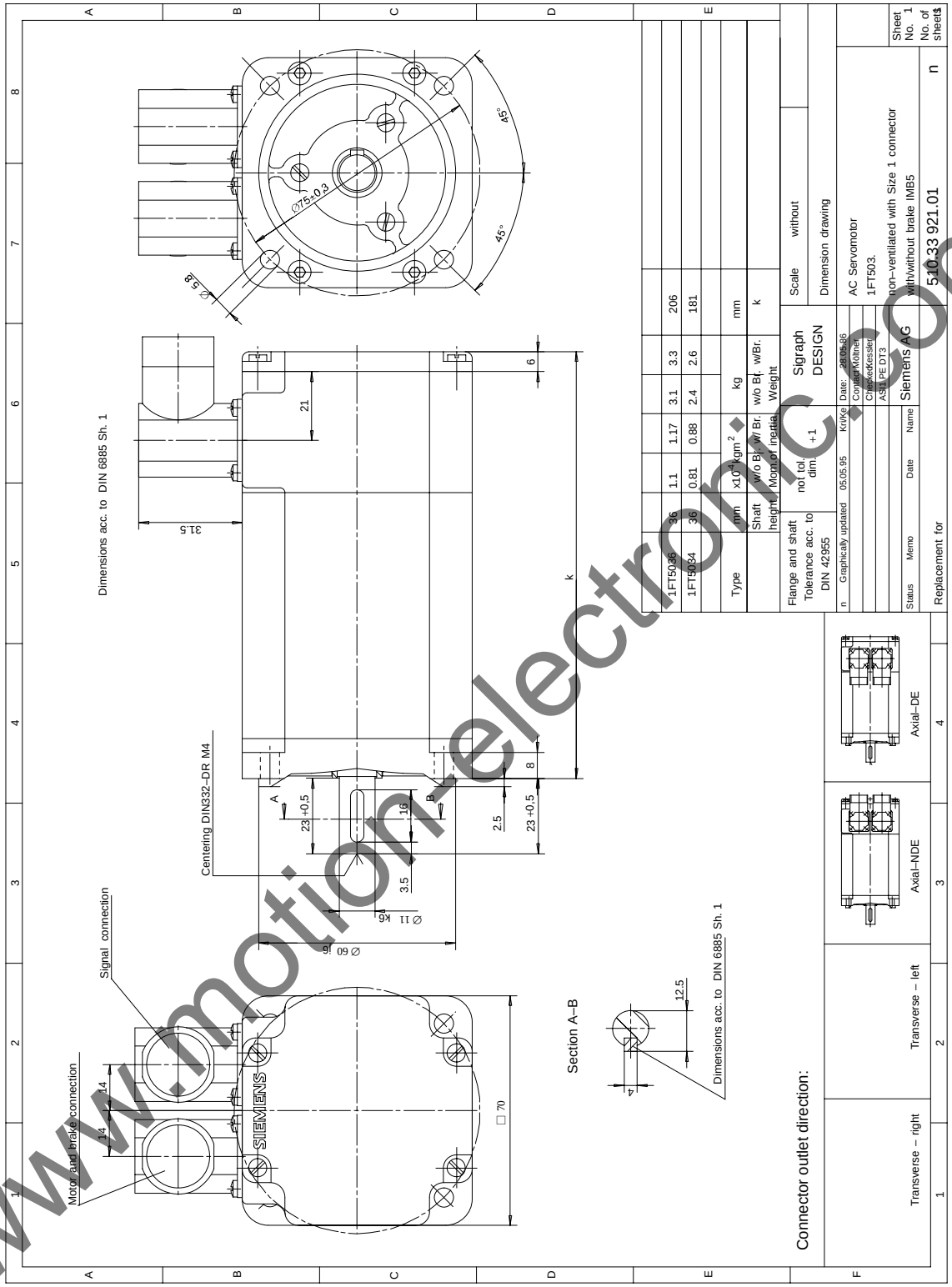

Fig. 4-1 1FT503□ non–ventilated with Size 1 connector