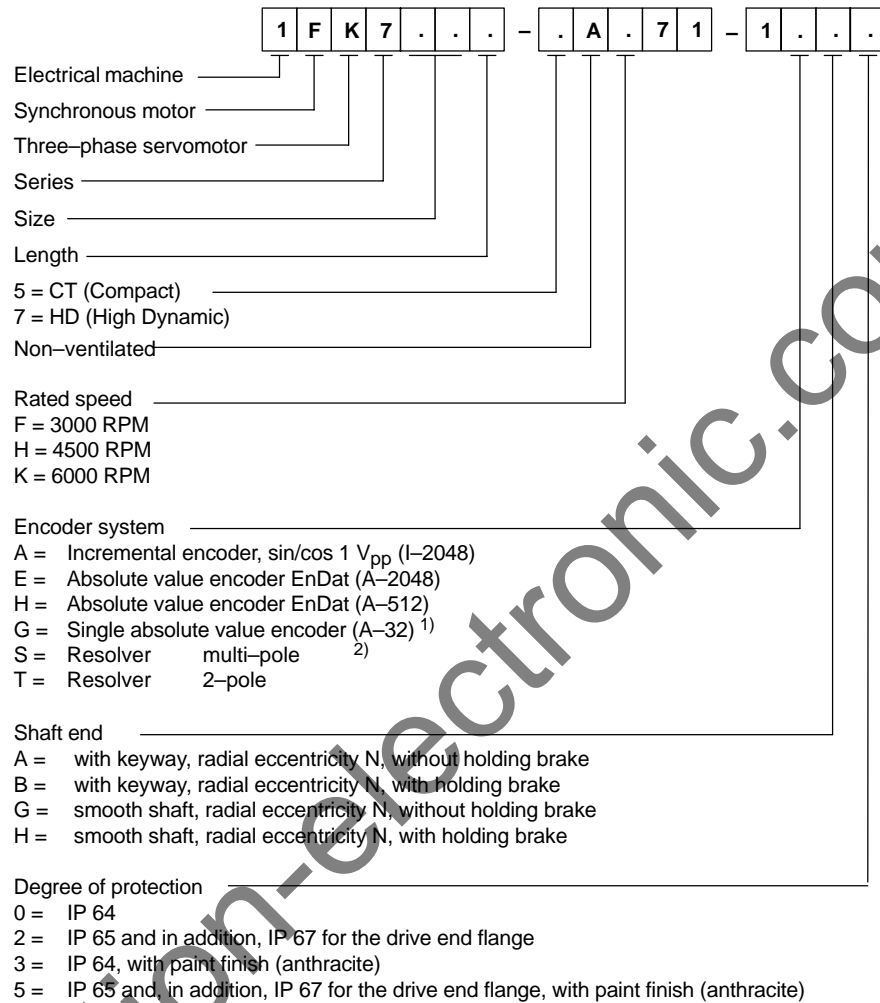


### Explanation of the order designation



<sup>1)</sup> Not for shaft heights 28 and 36

<sup>2)</sup> The encoder pole number corresponds to that of the motor

2.1 Speed–torque diagrams 1FK7 CT

Table 2-5 1FK7060 CT

Technical data	Code	Units	–5AF71	–5AH71
<b>Engineering data</b>				
Rated speed	$n_N$	RPM	3000	4500
Pole number	2p		8	8
Rated torque (100 K)	$M_N$ (100 K)	Nm	4.7	3.7
Rated current	$I_N$	A	3.7	4.1
Standstill torque (60K)	$M_0$ (60 K)	Nm	5.0	5.0
Standstill torque (100K)	$M_0$ (100 K)	Nm	6.0	6.0
Standstill current (60K)	$I_0$ (60 K)	A	3.7	5.1
Standstill current (100K)	$I_0$ (100 K)	A	4.5	6.2
Moment of inertia (with brake)	$J_{mot}$	$10^{-4}$ kgm <sup>2</sup>	10.2	10.2
Moment of inertia (without brake)	$J_{mot}$	$10^{-4}$ kgm <sup>2</sup>	7.95	7.95
<b>Optimum operating point</b>				
Optimum speed	$n_{opt}$	RPM	3000	4500
Optimum power	$P_{opt}$	kW	1.48	1.74
<b>Limiting data</b>				
Max. perm. speed (mechan.)	$n_{max}$	RPM	7200	7200
Max. torque	$M_{max}$	Nm	18	18
Peak current	$I_{max}$	A	15	19.5
<b>Physical constants</b>				
Torque constant	$k_T$	Nm/A	1.33	0.95
Voltage constant	$k_E$	V/1000 RPM	84.5	60.5
Winding resistance at 20°C	$R_{phase}$	Ohm	1.44	0.73
Rotating field inductance	$L_D$	mH	14.7	7.0
Electrical time constant	$T_{el}$	ms	10.2	9.6
Shaft torsional stiffness	$c_t$	Nm/rad	42000	42000
Mechanical time constant	$T_{mech}$	ms	1.94	1.93
Thermal time constant	$T_{th}$	min	30	30
Weight with brake	m	kg	8	8
Weight without brake	m	kg	7	7

### 3.3 Holding brake

Function description, refer to Section AL.

Table 3-5 Technical data of the holding brakes used for 1FK7 motors

Motor type	Brake type	Holding torque $M_4$ <sup>1)</sup>	DC current	Opening time with varistor	Closing time with varistor	Highest switching work
		[Nm]	[A]	[ms]	[ms]	[J]
<b>1FK7 CT</b>						
1FK7022	EBD 0.11 BN	1.1	0.3	25	15	8
1FK7032	EBD 0.13 BN	1.3	0.4	45	25	17
1FK704□	EBD 0.3 BV	3.8	0.6	70	20	74
1FK706□	EBD 0.8 BK	13	0.8	90	20	350
1FK7080	EBD 1.5 BN	10	0.7	90	20	400
1FK7083	EBD 2 BY	22	0.9	100	30	1400
1FK7100	EBD 2 BY	22	0.9	100	30	1400
1FK7101	EBD 3.5 BV	41	1.0	140	50	3000
1FK7103	EBD 3.5 BV	41	1.0	140	50	3000
<b>1FK7 HD</b>						
1FK7033	1EB 14–30	1.3	0.45	70	35	14
1FK704□	1EB 20–40	4.0	0.60	110	40	96
1FK706□	1EB 28–60	12.0	0.80	150	45	230
1FK708□	1EB 35–80	22.0	1.20	190	50	700

#### Holding torque

The holding torque  $M_4$  is the minimum brake torque in steady-state operation (when the motor is at a standstill).

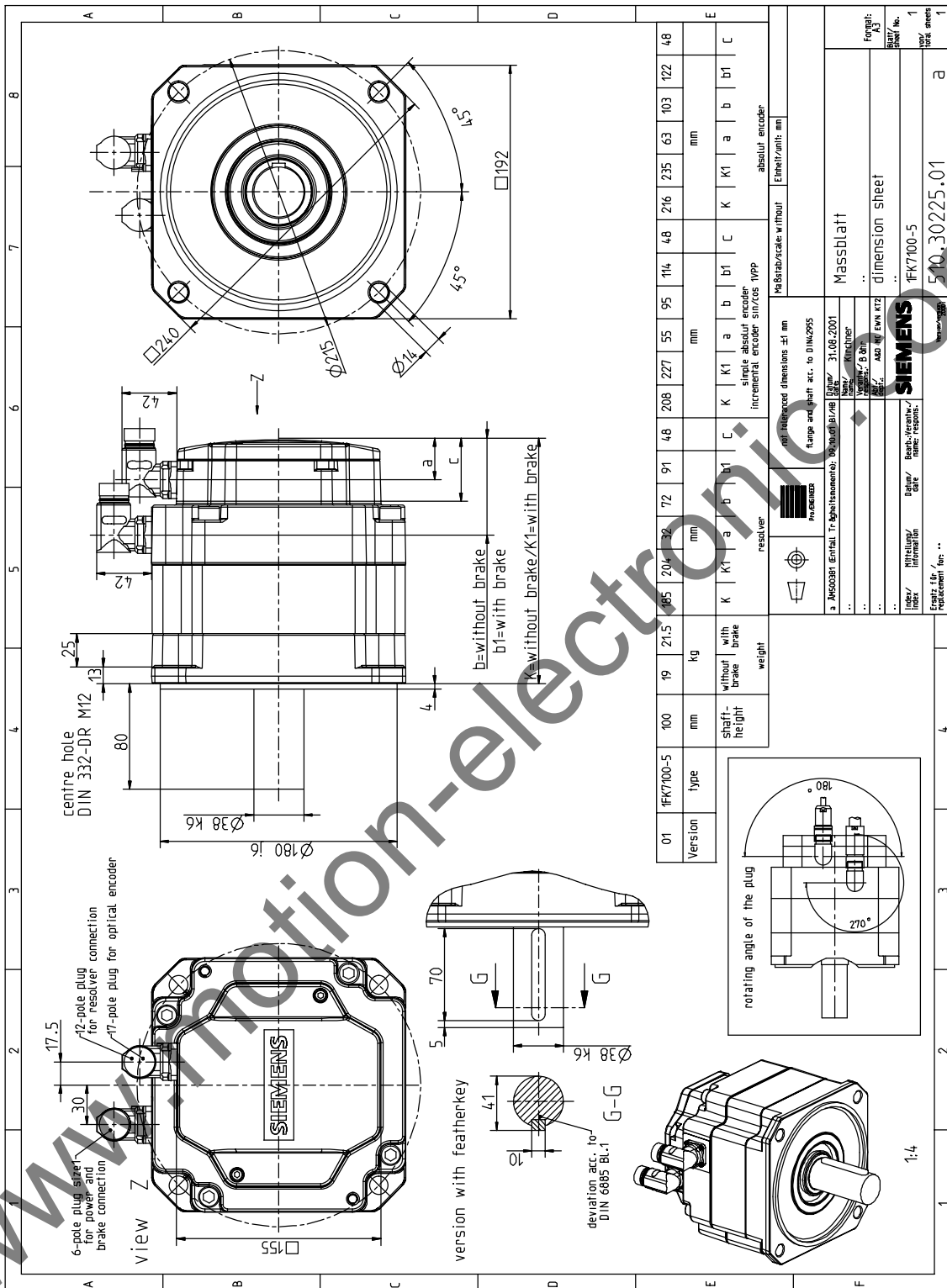


Fig. 4-6 1FK7100-5, non-ventilated with angled connector, Size 1

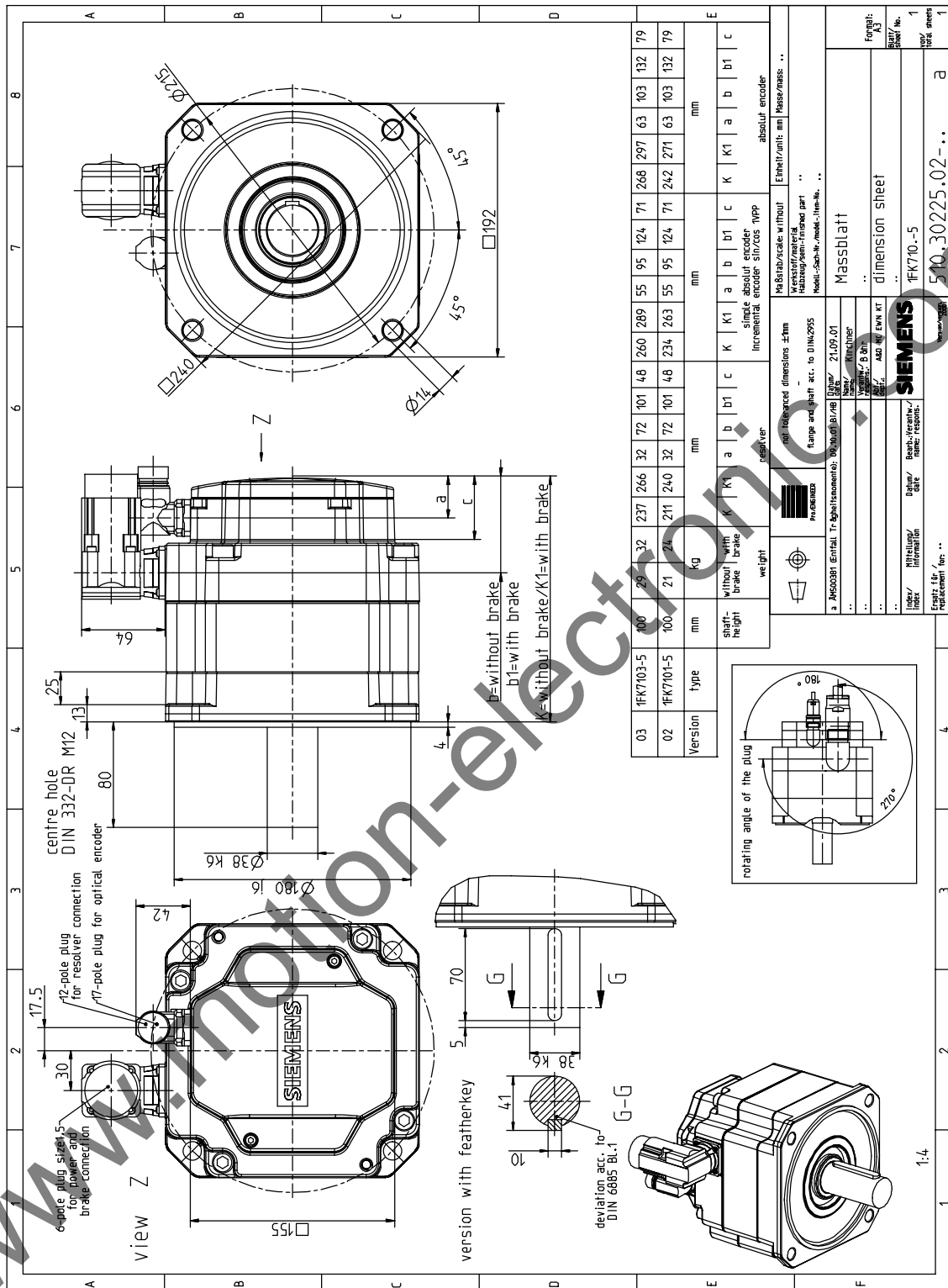


Fig. 4-7 1FK710-5, non-ventilated with angled connector, Size 1.5