Table 7-2 1FK7015 CT

Technical data	Code	Unit	–5AK71	
Configuration data				
Rated speed	n_N	RPM	6000	
No. of poles	2p		8	
Rated torque (100 K)	$M_{N\ (100\ K)}$	Nm	0.16	
Rated current (100 K)	I_N	A	0.85	
Static torque (60 K)	$M_{0\ (60\ K)}$	Nm	0.29	
Static torque (100 K)	$M_{0\ (100\ K)}$	Nm	0.35 1.2	
Stall current (60 K)	$I_{0\ (60\ K)}$	A	1.5	
Stall current (100 K)	$I_{0\ (100\ K)}$	A	0.102	
Moment of inertia (with brake)	J_{MotBr}	10^{-4} kgm^2	0.083	
Moment of inertia (without brake)	J_{Mot}	10^{-4} kgm^2		
Optimum operating point	n_{opt}	RPM	5000	
	P_{opt}	kW	0.12	
Optimum speed	$n_{max\ mech}$	RPM	8000	
Optimum power	$n_{max\ Inv}$	RPM	8000	
Limiting data	M_{max}	Nm	1	
Max. permissible speed (mech.)	I_{max}	A	4.2	
Max. permissible speed (converter)			0.24	
Max. torque	k_T	Nm/A	16	
Max. current	k_E	V/1000 RPM	4.3	
Physical constants	R_{Str}	Ohm	8.4	
	L_D	mH	2	
Torque constant	T_{el}	ms	1.9	
Voltage constant	T_{mech}	ms	16 1300	
Winding resistance at 20°C	T_{th}	min	1.2	
Cyclic inductance	c_t	Nm/rad	1.1	
Electrical time constant	m_{MotBr}	kg		
Mechanical time constant	m_{Mot}	kg		
Thermal time constant			3	
Shaft torsional stiffness			6	
Weight with brake		A	1	
Weight without brake		A		
		Nm		
Recommended motor module 6SL312_-_TE13-0AA_				
Rated current converter	$I_{N\ Inv}$			
Max. current converter	$I_{max\ Inv}$			
Max. torque at $I_{max\ Inv}$	$M_{max\ Inv}$			

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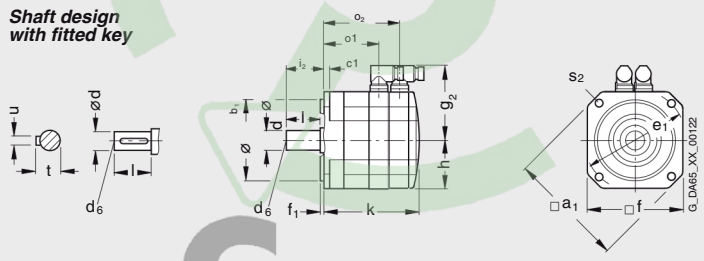
For motor		Dimensions in mm (in)											Resolver					
													without brake			with		
Shaft height	Type	DIN IEC	a_1 P	b_1 N	c_1 LA	e_1 M	f AB	f_1 T	g_2 –	h H	i_2 –	s_2 S	k LB	o_1 –	o_2 –	brake ko_1 LB–	o_2 –
1FK7 Compact, type IM B5, natural cooling, with connector, with/without brake																		
20	1FK7011-5	–		30 (1.18)	7 (0.28)	46 (1.81)	40 (1.57)	2.5 (0.10)	65.5 (2.58)	20 (0.79)	18 (0.71)	4.5 (0.18)	140 (5.51)	89 (3.50)	118 (4.65)	140 (5.51)	89 (3.50)	118 (4.65)
	1FK7015-5	–		30 (1.18)	7 (0.28)	46 (1.81)	40 (1.57)	2.5 (0.10)	65.5 (2.58)	20 (0.79)	18 (0.71)	4.5 (0.18)	165 (6.50)	114 (4.49)	143 (5.63)	165 (6.50)	114 (4.49)	143 (5.63)
28	1FK7022-5	–		40 (1.57)	10 (0.39)	63 (2.48)	55 (2.17)	2.5 (0.10)	75 (2.95)	27.5 (1.08)	20 (0.79)	5.4 (0.21)	153 (6.02)	95 (3.74)	128 (5.04)	175 (6.89)	95 (3.74)	150 (5.91)
36	1FK7032-5		92 (3.62)	60 (2.36)	8 (0.31)	75 (2.95)	72 (2.83)	3 (0.12)	81 (3.19)	36 (1.42)	30 (1.18)	6.5 (0.26)	150 (5.91)	90 (3.54)	125 (4.92)	175 (6.89)	90 (3.54)	149 (5.87)
	1FK7034-5		92 (3.62)	60 (2.36)	8 (0.31)	75 (2.95)	72 (2.83)	3 (0.12)	81 (3.19)	36 (1.42)	30 (1.18)	6.5 (0.26)	175 (6.89)	115 (4.53)	150 (5.91)	200 (7.87)	115 (4.53)	174 (6.85)
48	1FK7040-5		120 (4.72)	80 (3.15)	10 (0.39)	100 (3.94)	96 (3.78)	3 (0.12)	90 (3.54)	48 (1.89)	40 (1.57)	7 (0.28)	134 (5.28)	73 (2.87)	106 (4.17)	163 (6.42)	73 (2.87)	135 (5.31)
	1FK7042-5		120 (4.72)	80 (3.15)	10 (0.39)	100 (3.94)	96 (3.78)	3 (0.12)	90 (3.54)	48 (1.89)	40 (1.57)	7 (0.28)	162 (6.38)	101 (3.98)	134 (5.28)	191 (7.52)	101 (3.98)	163 (6.42)
63	1FK7060-5		155 (6.10)	110 (4.33)	10 (0.39)	130 (5.12)	126 (4.96)	3.5 (0.14)	105 (4.13)	63 (2.48)	50 (1.97)	9 (0.35)	157 (6.18)	94 (3.70)	126 (4.96)	200 (7.87)	94 (3.70)	169 (6.65)
	1FK7063-5		155 (6.10)	110 (4.33)	10 (0.39)	130 (5.12)	126 (4.96)	3.5 (0.14)	105 (4.13)	63 (2.48)	50 (1.97)	9 (0.35)	202 (7.95)	139 (5.47)	171 (6.73)	245 (9.65)	139 (5.47)	214 (8.43)

		Basic absolute encoder (EnDat) (shaft height 48 and larger), Incremental encoder sin/cos1 V_{pp}						Absolute encoder (EnDat)										
		without brake			with brake			without brake			with							
Shaft height	Type	k LB	o_1 –	o_2 –	k LB	o_1 –	o_2 –	k LB	o_1 –	o_2 –	brake ko_1 LB–	o_2 –	d D	d_6 –	l E	t GA	u F
20	1FK7011-5	155 (6.10)	89 (3.50)	118 (4.64)	155 (6.10)	89 (3.50)	118 (4.64)	155 (6.10)	98 (3.50)	118 (4.64)	155 (6.10)	89 (3.50)	118 (4.64)	8 (0.31)	M3	18 (0.71)	8.8 (0.35)	2 (0.08)
	1FK7015-5	180 (7.08)	114 (4.48)	143 (5.63)	180 (7.08)	114 (4.48)	143 (5.63)	180 (7.08)	114 (4.48)	143 (5.63)	180 (7.08)	114 (4.48)	143 (5.63)	8 (0.31)	M3	18 (0.71)	8.8 (0.35)	2 (0.08)
28	1FK7022-5	178 (7.01)	95 (3.74)	128 (5.04)	200 (7.87)	95 (3.74)	150 (5.91)	178 (7.01)	95 (3.74)	128 (5.04)	200 (7.87)	95 (3.74)	150 (5.91)	9 (0.35)	M3	20 (0.79)	10.2 (0.40)	3 (0.12)
36	1FK7032-5	175 (6.89)	90 (3.54)	125 (4.92)	200 (7.87)	90 (3.54)	149 (5.87)	175 (6.89)	90 (3.54)	125 (4.92)	200 (7.87)	90 (3.54)	149 (5.87)	14 (0.55)	M5	30 (1.18)	16 (0.63)	5 (0.20)
	1FK7034-5	200 (7.87)	115 (4.53)	150 (5.91)	225 (8.86)	115 (4.53)	174 (6.85)	200 (7.87)	115 (4.53)	150 (5.91)	225 (8.86)	115 (4.53)	174 (6.85)	14 (0.55)	M5	30 (1.18)	16 (0.63)	5 (0.20)
48	1FK7040-5	155 (6.10)	73 (2.87)	106 (4.17)	184 (7.24)	73 (2.87)	135 (5.31)	163 (6.42)	73 (2.87)	106 (4.17)	192 (7.56)	73 (2.87)	135 (5.31)	19 (0.75)	M6	40 (1.57)	21.5 (0.85)	6 (0.24)
	1FK7042-5	182 (7.17)	101 (3.98)	134 (5.28)	211 (8.31)	101 (3.98)	163 (6.42)	191 (7.52)	101 (3.98)	134 (5.28)	220 (8.66)	101 (3.98)	163 (6.42)	19 (0.75)	M6	40 (1.57)	21.5 (0.85)	6 (0.24)
63	1FK7060-5	180 (7.09)	94 (3.70)	126 (4.96)	223 (8.78)	94 (3.70)	169 (6.65)	188 (7.40)	94 (3.70)	126 (4.96)	231 (9.09)	94 (3.70)	169 (6.65)	24 (0.94)	M8	50 (1.97)	27 (1.06)	8 (0.31)
	1FK7063-5	225 (8.86)	139 (5.47)	171 (6.73)	268 (10.55)	139 (5.47)	214 (8.43)	233 (9.17)	139 (5.47)	171 (6.73)	276 (10.87)	139 (5.47)	214 (8.43)	24 (0.94)	M8	50 (1.97)	27 (1.06)	8 (0.31)

1FK701 . –5
1FK702 . –5
1FK703 . –5
1FK704 . –5
1FK706 . –5

Shaft design with fitted key



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