

Table 7-39 1FK7042

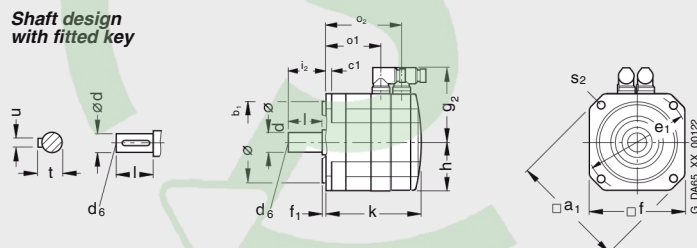
Technical data	Code	Unit	-5AF21	
Configuration data				
Rated speed	n_N	RPM	3000	
No. of poles	2p		8	
Rated torque (100 K)	M_N (100 K)	Nm	2.6	
Rated current (100 K)	I_N	A	3.5	
Static torque (60 K)	M_0 (60 K)	Nm	2.5	
Static torque (100 K)	M_0 (100 K)	Nm	3.0	
Stall current (60 K)	I_0 (60 K)	A	3.2	
Stall current (100 K)	I_0 (100 K)	A	3.9 3.73	
Moment of inertia (with brake)	J_{MotBr}	10^{-4} kgm ²	3.01	
Moment of inertia (without brake)	J_{Mot}	10^{-4} kgm ²		
	n_{opt}	RPM	3000	
Optimum operating point	P_{opt}	kW	0.82	
Optimum speed	$n_{max\ mech}$	RPM	9000	
Optimum power	$n_{max\ Inv}$	RPM	5910	
Limiting data	M_{max}	RPM	10.5	
Max. permissible speed (mech.)	I_{max}	Nm	13.3	
Max. permissible speed (converter)		A		
Max. torque	k_T	Nm/A	0.77	
Max. current	k_E	V/1000 RPM	49	
Physical constants	R_{Str}	Ohm	1.42 8.0	
Torque constant	L_D	mH	5.6 2.16	
Voltage constant	T_{el}	ms	30	
Winding resistance at 20°C	T_{mech}	ms	16000	
Cyclic inductance	T_{th}	min	5.4	
Electrical time constant	C_t	Nm/rad	4.9	
Mechanical time constant	m_{MotBr}	kg		
Thermal time constant	m_{Mot}	kg	3.9	
Shaft torsional stiffness		A	7.8	
Weight with brake		A	6	
Weight without brake		Nm		
Recommended power module 6SL3210-1SB14-0UA0				
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						
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	without brake			with brake ko ₁			
													k LB	o ₁ —	o ₂ —	k LB—	o ₁ —	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}																			
Shaft height	Type	without brake			with brake			without brake			with brake ko ₁			d D	d ₆ —	l E	t GA	u F	
		k LB	o ₁ —	o ₂ —	k LB	o ₁ —	o ₂ —	k LB	o ₁ —	o ₂ —	k LB—	o ₁ —	o ₂ —						
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)	135 (5.31)	163 (6.42)	155 (6.10)	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)	182 (7.17)	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)	180 (7.09)	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)	225 (8.86)	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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