



TB12 on 2xTBX 288mm magnet plates

TBX series

Magnet plate dimensions		
Le (mm)	192	288
M5 bolts	8	12
Mass (kg/m)	10.8	
Magnet plates can be butted together.		

Approvals



	Parameter	Remarks	Sym	Unit	TBX12		TBX15		TBX18	TBX24	TBX30	
Performance	Winding type				N	S	N	S	N	N	N	S
	Motor type, max voltage ph-ph	3-phase synchronous	U _{max}	V _{ac,rms} (V _{dc})	400 (565)							
	Ultimate force @ 10 K/s increase	magnets @ 25°C	F _u	N	2065		2581		3097	4129	5162	
	Peak force @ 6 K/s increase	magnets @ 25°C	F _p	N	1835		2294		2753	3670	4588	
	Continuous force ¹	coils @ 100°C	F _c	N	872		1090		1308	1743	2179	
	Maximum speed ²	@ U _{max} @ F _c	V _{max}	m/s	2.2	4.7	1.8	4.7	2.2	1.7	1.8	4.7
	Motor force constant	I ≤ I _c	K _f	N/A _{rms}	213	107	258	107	213	266	258	107
	Motor constant	coils @ 25°C	S	N ² /W	2408	2371	2921	2921	3613	4721	5842	5835
Electrical	Ultimate current	magnets @ 25°C	I _u	A _{rms}	13.0	26	13.5	33	20	21	27	66
	Peak current	magnets @ 25°C	I _p	A _{rms}	10.0	20	10.0	25	15	16	20	50
	Continuous current ¹	coils @ 100°C	I _c	A _{rms}	4.1	8.2	4.2	10.2	6.1	6.6	8.5	20.5
	Back EMF ph-ph _{peak}		K _e	V _{dc} /m/s	174	87	210	87	174	217	210	87
	Resistance per phase	coils @ 25°C ex. cable	R _{ph}	Ω	6.3	1.6	7.6	1.3	4.2	5.0	3.8	0.65
	Induction per phase	I < 0.6 I _p	L _{ph}	mH	53	13.4	62	10.3	35	41	31	5.3
	Electrical time constant		τ _e	ms	8.2							
Thermal	Continuous power loss ¹	coils @ 100°C	P _c	W	430		530		640	853	1060	
	Thermal resistance	coils to mount. sfc.	R _{th}	K/W	0.15		0.12		0.11	0.08	0.06	
	Thermal time constant		τ _{th}	s	90							
	Temperature sensor				PTC 1kΩ / KTY 83-122							
Mechanical	Coil unit mass	ex. cables	m	kg	4.9		5.9		6.9	9.4	11.6	
	Coil unit length	ex. cables	L	mm	244		290		336	434	562	
	Motor attraction force	rms @ 0 A	F _a	N	4400		5350		6300	8750	10700	
	Magnet pitch NN		τ	mm	24							
	Cable mass	all cables		kg/m	0.3							
	Cable type (power)	length 1 m	d	mm (AWG)	11.4 (14)							
	Cable type (sensor)	length 1 m	d	mm (AWG)	4.7 (26)							

¹ These values are only applicable when the mounting surface is at 20°C and the motor is driven at continuous current. If these values differ in your application, please check our simulation tool.

² Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.

All specifications ±10%

Magnet plates		Coil units	
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

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25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

2x TBX 192 mm

