



TB12 on 288mm magnet plate

TB series

Magnet plate dimensions

Le (mm)	192	288
M5 bolts	8	12
Mass (kg/m)	10.5	

Magnet plates can be butted together.

Approvals



	Parameter	Remarks	Sym	Unit	TB12		TB15		TB18	TB24	TB30	
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	1800		2250		2700	3600	4500	
	Peak force @ 6 K/s increase	magnets @ 25°C	F _p	N	1600		2000		2400	3200	4000	
	Continuous force ¹	coils @ 100°C	F _c	N	760		950		1140	1520	1900	
	Maximum speed ²	@ U _{max} @ F _c	v _{max}	m/s	2.4	5.0	2.0	5.0	2.4	1.9	2.0	5.0
	Motor force constant	I ≤ I _c	K _f	N/A _{rms}	186	93	225	93	186	232	225	93
	Motor constant	coils @ 25°C	S	N ² /W	1830	1802	2220	2218	2746	3588	4441	4435
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	152	76	183	76	152	189	183	76
	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	51	13	60	10	34	40	30	5.1
	Electrical time constant		τ _e	ms	8.0							
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	3400		4150		4900	6800	8300	
	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%

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