TECNOTION THE LINEAR MOTOR COMPANY | TB Series Iron Core

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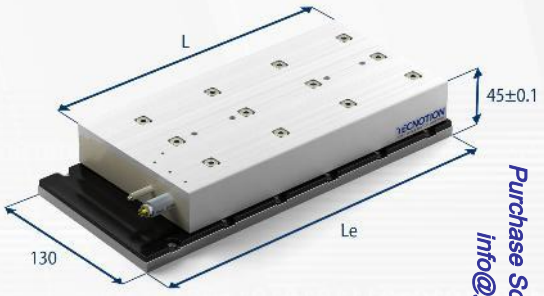
	Parameter	Remarks	Symbol	Unit	TB12		TB15		TB30	
Performance	Winding type				N	S	N	S	N	S
	Motortype, max voltage ph-ph				3-phase synchronous Iron core, 600V_{dc}					
	Ultimate Force @ 10°C/s	magnet @ 25°C	F_u	N	1800		2250		4500	
	Peak Force @ 6°C/s	magnet @ 25°C	F_p	N	1600		2000		4000	
	Continuous Force*	coils @ 100°C	F_c	N	760		950		1900	
	Maximum Speed**	@ 560 V	v_{max}	m/s	3	6	2.5	6	2.5	6
	Motor Force Constant	I < 0.6 Ip	K	N/A_{rms}	186	93	225	93	225	93
	Motor Constant	coils @ 25°C	S	N^2/W	1750		2150		4300	
Electrical	Ultimate Current	magnet @ 25°C	I_u	A_{rms}	13.0	26	13.5	33	27	66
	Peak Current	magnet @ 25°C	I_p	A_{rms}	10.0	20	10.0	25	20	50
	Maximum Continuous Current	coils @ 100°C	I_c	A_{rms}	4.1	8.2	4.2	10.2	8.5	20.5
	Back EMF Phase-Phase		B_{emf}	V_{rms} / m/s	152	76	183	76	183	76
	Resistance per Phase	coils @ 25°C ex. cable	R_f	Ω	6.3	1.6	7.6	1.3	3.8	0.65
	Induction per Phase	I < 0.6 Ip	L_f	mH	51	13	60	10	30	5
	Electrical Time Constant	coils @ 25°C	τ_e	ms	8		8		8	
Thermal	Maximum Continuous Power Loss	all coils	P_c	W	430		530		1060	
	Thermal Resistance		R_{th}	°C/W	0.15		0.12		0.06	
	Thermal Time Constant	minimum	τ_{th}	s	90		90		90	
	Temperature Sensors				PTC 1kΩ and KTY21-6					
Mechanical	Coil Unit Weight	ex. cables	M	kg	4.9		5.9		11.6	
	Coil Unit Length	ex. cables	L	mm	244		290		568	
	Motor Attraction Force	rms	F_a	N	3400		4150		8300	
	Magnet Pitch NN		τ	mm	24		24		24	
	Cable Weight		m	gr/m	300		300		300	
	Cable Type (Power)	length 1 m	d	mm (AWG)	11.9 (14)					
	Cable Type (Sensor)	length 1 m	d	mm (AWG)	4.3 (26)					



TB12 on 288mm magnet plate shown

All specifications ±10%

Magnet plate dimensions		
Le (mm)	192	288
M5 bolts	8	12
Mass (kg/m)	10.5	
Magnet plates can be butted together.		

*Max. continuous force depends on the thermal resistance, cooling surface and ambient temperature of your application. Download our simulation tool to check the motor's thermal behavior in the application.

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

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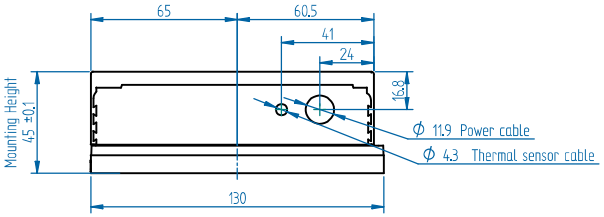
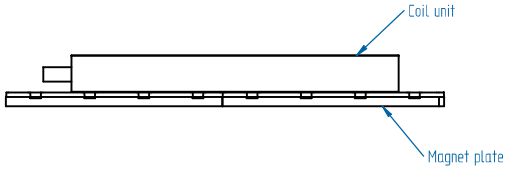
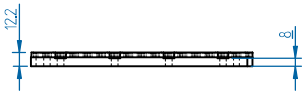
Mounting instructions and flatness or parallelism requirements can be found in the Iron Core installation manual. CAD files and 3D models can be downloaded from our website.

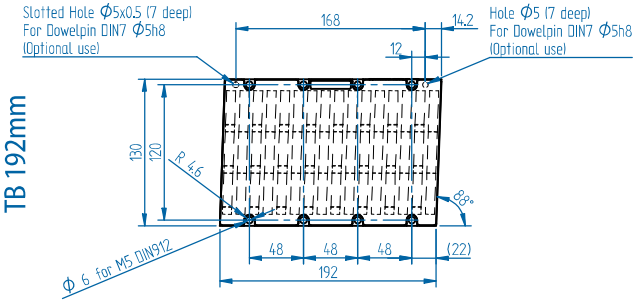
MAGNET PLATES



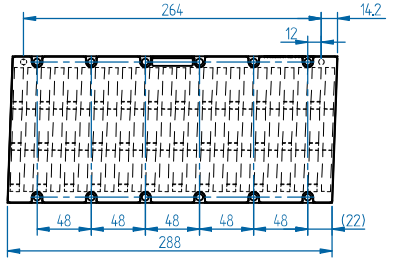




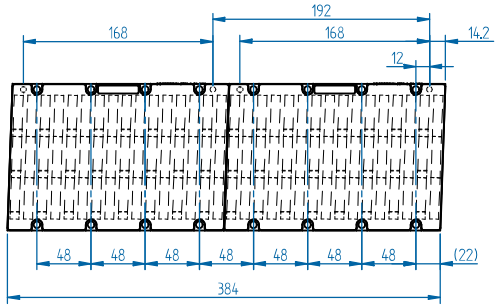
TB 192mm



TB 288mm

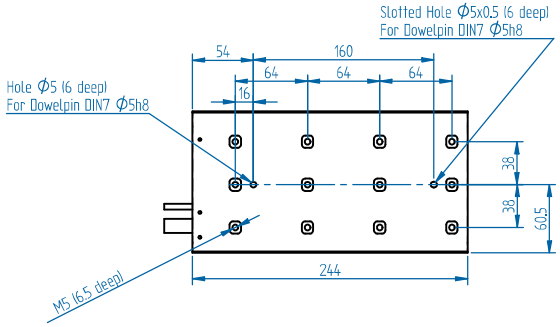


2x TB 192 mm

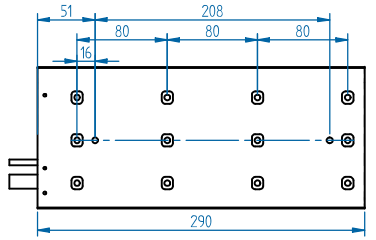


COIL UNITS

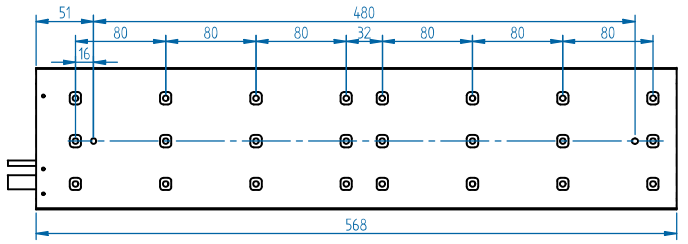
TB12



TB15



TB30



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