TECNOTION THE LINEAR MOTOR COMPANY | TM Series Iron Core

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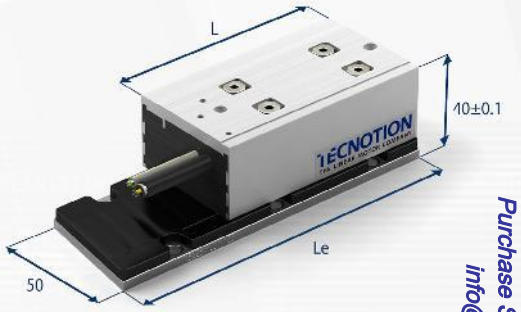
	Parameter	Remarks	Symbol	Unit	TM3	TM6	TM12
Performance	Winding type				S	S	S
	Motortype, max voltage ph-ph				3-phase synchronous Iron core, 600V_{dc}		
	Ultimate Force @ 10°C/s	magnet @ 25°C	F_u	N	120	240	480
	Peak Force @ 6°C/s	magnet @ 25°C	F_p	N	105	210	420
	Continuous Force*	coils @ 100°C	F_c	N	60	120	240
	Maximum Speed**	@ 600 V	v_{max}	m/s	12	12	12
	Motor Force Constant	coils @ 25°C	K	N/A_{rms}	39	39	39
	Motor Constant	coils @ 25°C	S	N^2/W	95	190	380
Electrical	Ultimate Current	magnet @ 25°C	I_u	A_{rms}	4.1	8.2	16.4
	Peak Current	magnet @ 25°C	I_p	A_{rms}	3.1	6.2	12.4
	Maximum Continuous Current*	coils @ 100°C	I_c	A_{rms}	1.5	3	6
	Back EMF Phase-Phase		B_{emf}	V_{rms} / m/s	32	32	32
	Resistance per Phase	coils @ 25°C ex. cable	R_f	Ω	5.4	2.7	1.35
	Induction per Phase	I < 0.6 Ip	L_f	mH	35	17	9
	Electrical Time Constant	coils @ 25°C	τ_e	ms	6.5	6.5	6.5
Thermal	Maximum Continuous Power Loss	all coils	P_c	W	49	99	197
	Thermal Resistance		R_{th}	°C/W	1.5	0.75	0.38
	Thermal Time Constant	minimum	τ_{th}	s	75	75	75
	Temperature Sensors				PTC 1kΩ and KTY21-6		
Mechanical	Coil Unit Weight	ex. cables	M	kg	0.6	0.9	1.6
	Coil Unit Length	ex. cables	L	mm	93	143	241
	Motor Attraction Force	rms	F_a	N	300	500	900
	Magnet Pitch NN		τ	mm	24	24	24
	Cable Weight		m	gr/m	180	180	180
	Cable Type (Power FLEX)	length 3 m	d	mm (AWG)	9.0 (21)		
	Cable Type (Sensor)	length 3 m	d	mm (AWG)	4.3 (26)		
	Cable Life (Power FLEX)	minimum			5,000,000 cycles		
	Bending Radius Static	minimum			4x cable diameter		
	Bending Radius Dynamic	minimum			10x cable diameter		

All specifications ±10%



TM3 on 144mm magnet plate shown

FLEX Cable

The TM series comes standard with a 3m long FLEX power cable.

Magnet plate dimensions			
Le (mm)	96	144	384
M5 bolts	4	6	16
Mass (kg/m)	2.1		
Magnet plates can be butted together.			

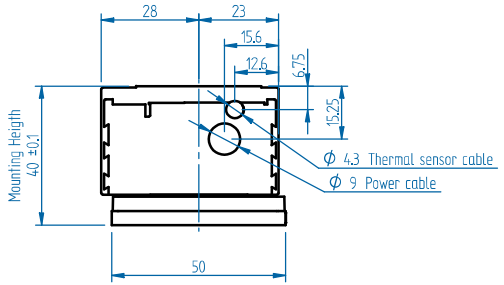
**Max. continuous force depends on the thermal resistance, cooling surface and ambient temperature of your application. Download our simulation tool to check the motor's thermal behavior in the application.*

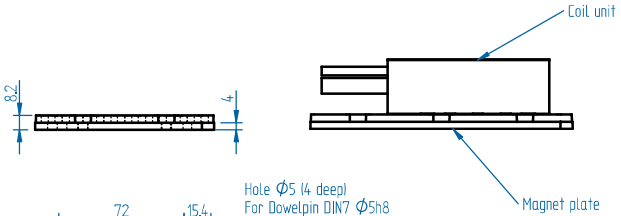
*** Actual values depend on bus voltage. Please check the F/V diagram in our simulation tool.*

Purchase Source: GROUP SIX (USA & CAN) info@grp6.com 978-752-2255

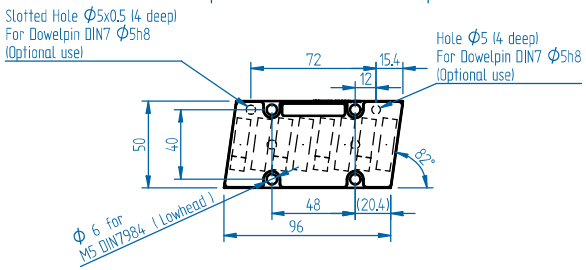
Mounting instructions and flatness or parallelism requirements can be found in the Iron Core installation manual. CAD files and 3D models can be downloaded from our website.

MAGNET PLATES

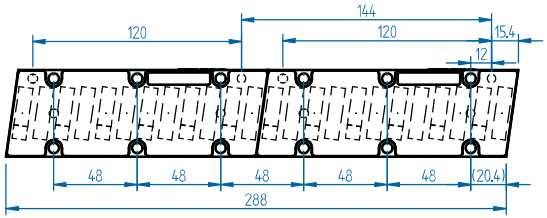




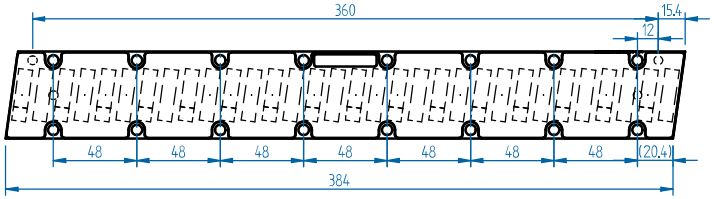
TM 96mm



2x TM 144mm

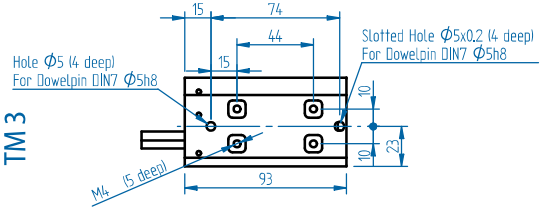


TM 384mm

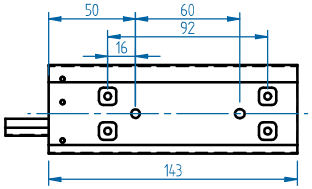


COIL UNITS

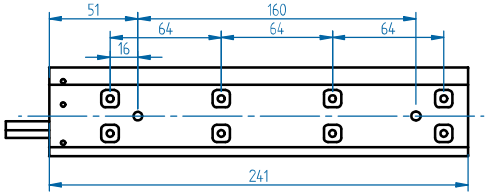
TM 3



TM 6



TM 12



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