	Parameter	Remarks	Sym	Unit	TM3	TM6	TM12	TM18	
Performance	Winding type				S	S	S	N	S
	Motortype, max voltage ph-ph				3-phase synchronous Iron core, $400V_{ac\ rms}$ ($600V_{dc}$)				
	Ultimate Force @ 10°C/s increase	magnet @ 25°C	F_u	N	120	240	480	720	
	Peak Force @ 6°C/s increase	magnet @ 25°C	F_p	N	105	210	420	630	
	Continuous Force*	coils @ 100°C	F_c	N	60	120	240	360	
	Maximum Speed**	@ 600 V	v_{max}	m/s	12	12	12	4.5	10.0
	Motor Force Constant	mount. sfc. @ 20°C	K	N/A_{rms}	39	39	39	79	39
	Motor Constant	coils @ 25°C	S	N^2/W	95	190	380	570	
Electrical	Ultimate Current	magnet @ 25°C	I_u	A_{rms}	4.1	8.2	16.4	12.3	25.1
	Peak Current	magnet @ 25°C	I_p	A_{rms}	3.1	6.2	12.4	9.2	18.9
	Maximum Continuous Current*	coils @ 100°C	I_c	A_{rms}	1.5	3	6	4.5	9.3
	Back EMF Phase-$Phase_{peak}$		B_{emf}	V/m/s	32	32	32	65	32
	Resistance per Phase*	coils @ 25°C ex. cable	R_{ph}	Ω	5.4	2.7	1.35	3.6	0.85
	Induction per Phase	I < 0.6 Ip	L_{ph}	mH	35	17	9	23	5.5
	Electrical Time Constant*	coils @ 25°C	τ_e	ms	6.5	6.5	6.5	6.5	
Thermal	Maximum Continuous Power Loss	all coils	P_c	W	49	99	197	296	
	Thermal Resistance	coils to mount. sfc.	R_{th}	°C/W	1.5	0.75	0.38	0.25	
	Thermal Time Constant*	up to 63% max. coiltemp.	τ_{th}	s	75	75	75	75	
	Temperature Cut-off / Sensor				PTC 1kΩ / KTY 83-122				
Mechanical	Coil Unit Weight	ex. cables	W	kg	0.6	0.9	1.6	2.3	
	Coil Unit Length	ex. cables	L	mm	93	143	241	336	
	Motor Attraction Force	rms @ 0 A	F_a	N	300	500	900	1300	
	Magnet Pitch NN		τ	mm	24	24	24	24	
	Cable Mass		m	kg/m	0.18	0.18	0.18	0.18	
	Cable Type (Power FLEX)	length 3 m	d	mm (AWG)	8.3 (≥18)				
	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

Approvals

See page 28 for Analog hall

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.			

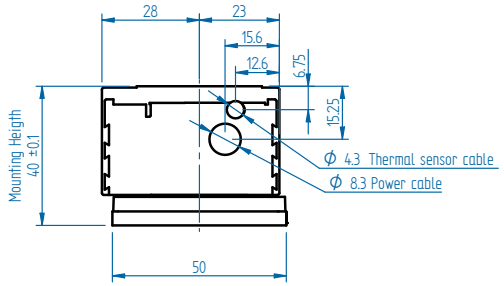
** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*

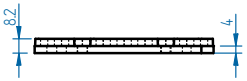
*** Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.*

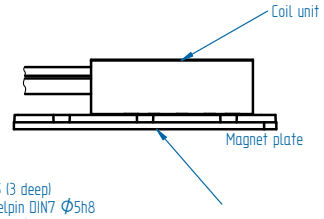
**** Depending on Bending Radius, Velocity and Acceleration.*

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

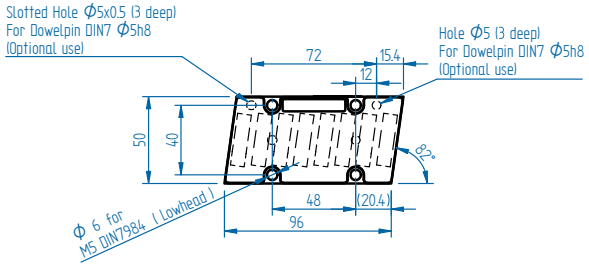
MAGNET PLATES



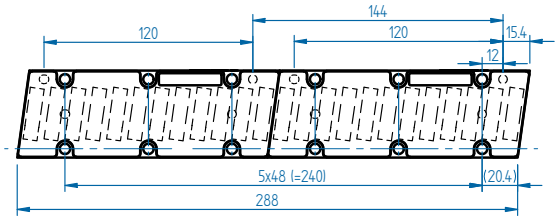




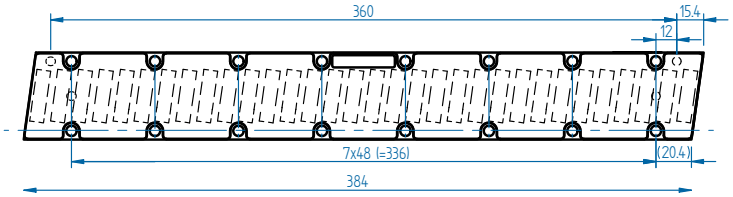
TM 96mm



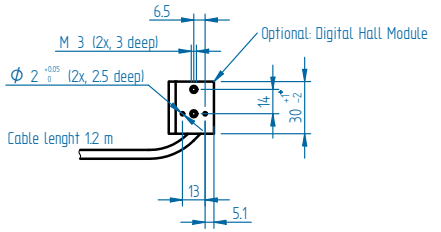
2x TM 144mm



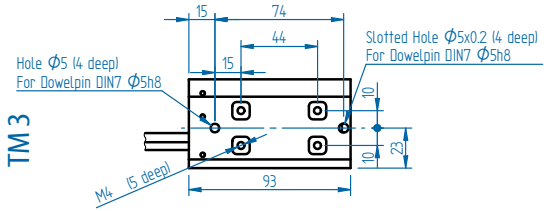
TM 384mm



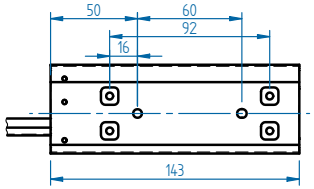
COIL UNITS



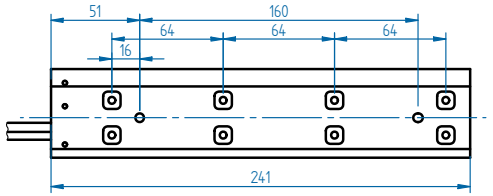
TM 3



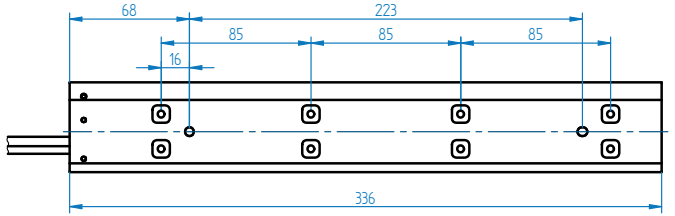
TM 6



TM 12



TM 18



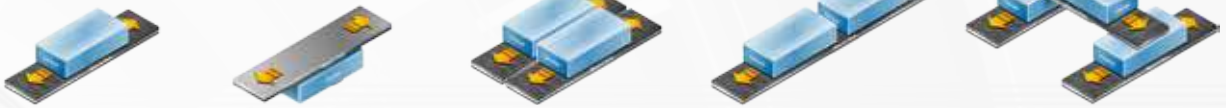
Features

Tecnotion's linear motor performances advantages

[DIRECT DRIVE ADVANTAGES]

The direct drive technology of linear motors is a perfect way to enhance productivity, accuracy, and dynamic performance. Linear motors eliminate the need for mechanical transmissions like rack and pinion, belts and speed reducers. Between coil unit and magnets there is no contact, this means no mechanical wear. The technology makes designs slimmer, modular and reduces costs.

Modular system. All motors can be used in various configurations:



1. single moving coil *2. moving magnet* *3. parallel coupled coil* *4. in-line on a single track* *5. crosstable or gantry*

High force density

More force in a smaller packing means lowering footprint and fits better in smal(ler) spaces.

Low cogging

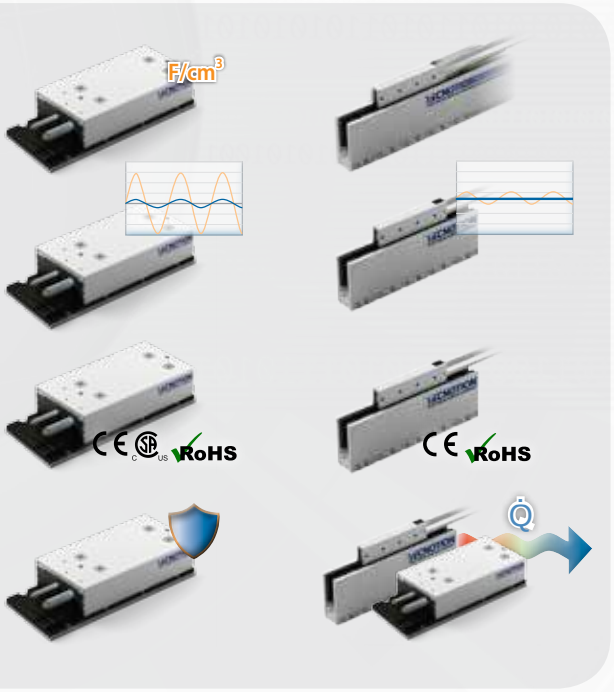
Optimized iron core motor design, for smooth motion and position accuracy in your application.

Approved for CSA and CE, ROHS

Iron core motors are approved for CE, CSA and ROHS.

Aluminium housed design

Housed design with integrated water cooling for TBW- and TL series.



High acceleration and dynamics

The outstanding force to mass ratio of the ironless coils enables unmatched system dynamics.

No cogging, extremely low force ripple

Ironless motors have no cogging effects. Offering smooth motion and position accuracy in your application.

Approved for CE and ROHS

Ironless motors are CE and RoHS approved.

Low thermal resistance

Allowing good heat transfer, achieving an extremely high continuous force for all motors when using a descent size heatsink or active cooling.