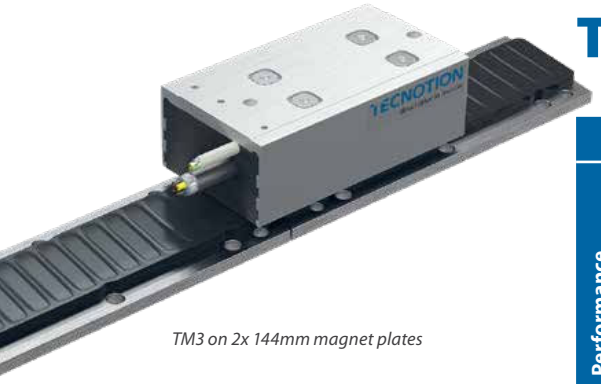
TMX series



TM3 on 2x 144mm magnet plates

	Parameter	Remarks	Symbol	Unit	TMX3		TMX6		TMX12	TMX18	
Performance	Winding type				S	Z	S	Z	S	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	141		283		565	848	
	Peak force @ 6 K/s increase	magnets @ 25°C	F_p	N	124		247		495	742	
	Continuous force[1]	coils @ 100°C	F_c	N	71		141		283	424	
	Maximum speed[2]	@ U_{max} @ F_c	v_{max}	m/s	10	32	10	32	10	5.1	10
	Motor force constant	$I \leq I_c$	K_f	N/A_{rms}	46	15	46	15	46	93	46
	Motor constant	coils @ 25°C	S	N^2/W	130	137	261	275	522	802	827
Electrical	Ultimate current	magnets @ 25°C	I_u	A_{rms}	4.1	12.6	8.2	25.1	16.4	12.3	25.1
	Peak current	magnets @ 25°C	I_p	A_{rms}	3.1	9.5	6.2	18.9	12.4	9.2	18.9
	Continuous current[1]	coils @ 100°C	I_c	A_{rms}	1.5	4.7	3.0	9.3	6.0	4.5	9.3
	Back EMF ph-ph$_{peak}$		K_e	V_{dc}/m/s	38	13	38	13	38	77	38
	Resistance per phase	coils @ 25°C ex. cable	R_{ph}	Ω	5.4	0.56	2.7	0.28	1.35	3.6	0.85
	Induction per phase	$I < 0.6\ I_p$	L_{ph}	mH	36.1	3.8	17.5	1.9	9.0	24	5.7
	Electrical time constant		τ_e	ms	6.7						
Thermal	Continuous power loss[1]	coils @ 100°C	P_c	W	49		99		197	296	
	Thermal resistance	coils to mount. sfc.	R_{th}	K/W	1.5		0.75		0.38	0.25	
	Thermal time constant		τ_{th}	s	75						
	Temperature sensor				PTC 1kΩ / KTY 83-122						
Mechanical	Coil unit mass	ex. cables	m	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	400		700		1250	1800	
	Magnet pitch NN		τ	mm	24						
	Cable mass	all cables		kg/m	0.18						
	Cable type (power FLEX)	length 3 m	d	mm (AWG)	8.3 (18)						
	Cable type (sensor)	length 3 m	d	mm (AWG)	4.7 (26)						
	Cable life (power FLEX)[3]	minimum		cycles	5,000,000						
	Bending radius static (power FLEX)	minimum			4x cable diameter						
	Bending radius dynamic (power FLEX)	minimum			10x cable diameter						

All specifications ±10%

[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.*

[3] *Depending on bending radius, velocity and acceleration.*

FLEX cable

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

Magnet plate dimensions

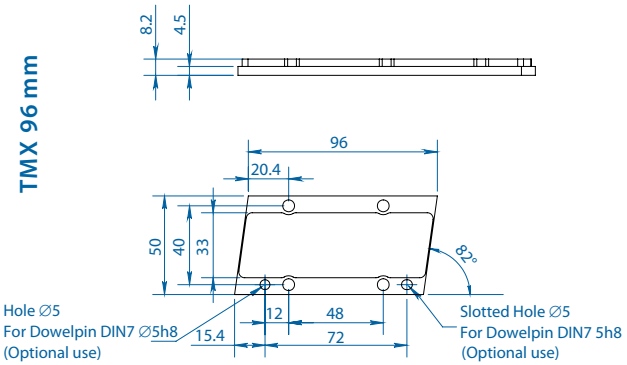
Le (mm)	96	144	384
M5 bolts	4	6	16
Mass (kg/m)		2.3	

Magnet plates can be butted together.

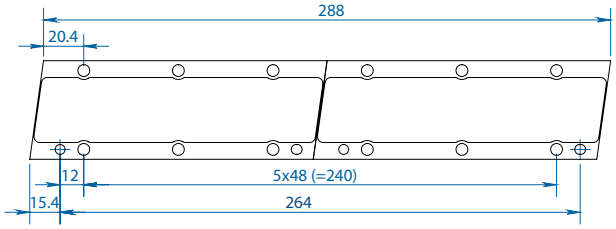
Approvals

Magnet plates

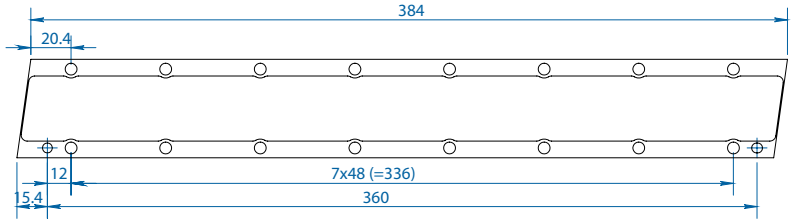
TMX 96 mm

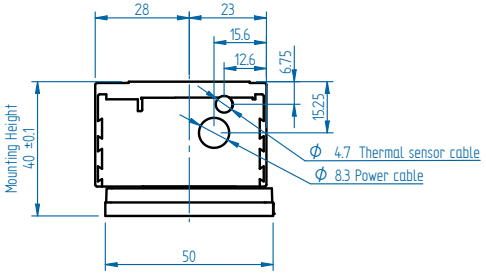


2x TMX 144 mm



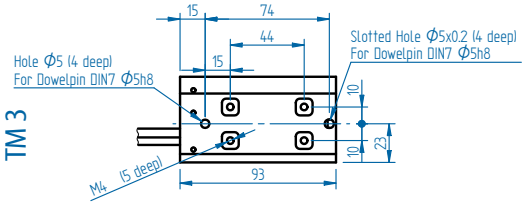
TMX 384 mm



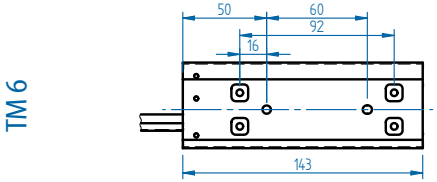


Coil units

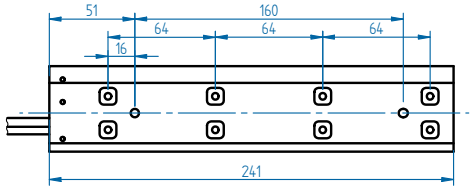
TM 3



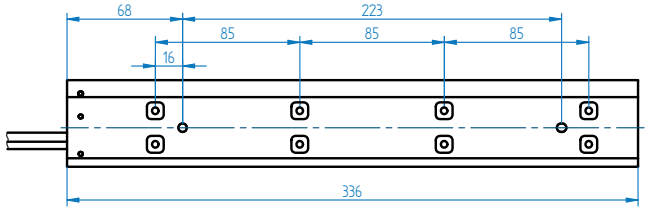
TM 6



TM 12



TM 18



Mounting instructions and flatness or parallelism requirements can be found in the iron core installation manual. CAD files and the manual can be downloaded from our website.

** All sizes are in mm*