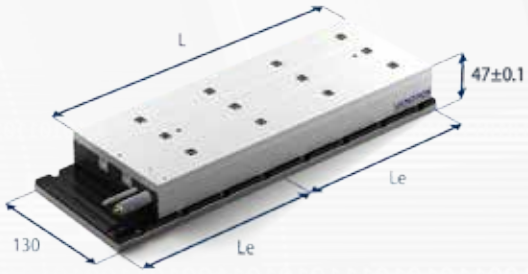
	Parameter	Remarks	Symbol	Unit	TBW18		TBW30		TBW45	
Performance	Winding type				N	S	N	S	N	S
	Motortype, max voltage ph-ph				3-phase synchronous Iron core, $400V_{ac\ rms}$ ($600V_{dc}$)					
	Ultimate Force @ 10°C/s increase	magnet @ 25°C	F_u	N	2700		4500		6750	
	Peak Force @ 6°C/s increase	magnet @ 25°C	F_p	N	2400		4000		6000	
	Continuous Force Watercooled*	coils @ 100°C	F_{cw}	N	1200		2000		3000	
	Continuous Force Aircooled*	coils @ 100°C	F_c	N	1140		1900		2850	
	Maximum Speed**	@ 560 V	v_{max}	m/s	3	6	2.5	6	2.5	6
	Motor Force Constant	mount. sfc. @ 20°C	K	N/A_{rms}	186	90	225	93	225	93
	Motor Constant	coils @ 25°C	S	N^2/W	2580		4300		6450	
Electrical	Ultimate Current	magnet @ 25°C	I_u	A_{rms}	19.6	41	27	65	41	98
	Peak Current	magnet @ 25°C	I_p	A_{rms}	15.0	31.1	20.7	50	31	75
	Continuous Current Watercooled*	coils @ 100°C	I_{cw}	A_{rms}	6.5	13.4	8.9	21.5	13.4	32.3
	Back EMF Phase-$Phase_{peak}$		B_{emf}	V/m/s	152	76	183	76	183	76
	Resistance per Phase*	coils @ 25°C ex. cable	R_{ph}	Ω	4.4	1.0	3.9	0.66	2.6	0.44
	Induction per Phase	I < 0.6 Ip	L_{ph}	mH	35	8	31	5	21	3
	Electrical Time Constant*	coils @ 25°C	τ_e	ms	8		8		8	
Thermal	Maximum Continuous Power Loss	all coils	P_c	W	726		1209		1804	
	Thermal Resistance	coils to mount. sfc.	R_{th}	°C/W	0.10		0.06		0.04	
	Thermal Time Constant*	up to 63% max. coiltemp.	τ_{th}	s	87		87		87	
	Watercooling Flow	for ΔT=3K	Φw	l/min	3.1		5.2		7.8	
	Watercooling Pressure-drop	order of magnitude	ΔP_w	bar	1.0		1.5		2.5	
	Temperature Cut-off / Sensor				PTC 1kΩ / KTY 83-122					
Mechanical	Coil Unit Weight	ex. cables	W	kg	7.3		12.3		18.2	
	Coil Unit Length	ex. cables	L	mm	344		580		852	
	Motor Attraction Force	rms @ 0 A	F_a	N	4900		8300		12450	
	Magnet Pitch NN		τ	mm	24		24		24	
	Cable Mass		m	kg/m	0.3		0.6			
	Cable Type (Power)	length 1 m	d	mm (AWG)	11.9 (14)		16.9 (10)			
	Cable Type (Sensor)	length 1 m	d	mm (AWG)	4.3 (26)					

All specifications ±10%



TBW18 on 2x192mm magnet plate shown

Approvals

See page 28 for Analog hall

Water cooling

All TBW motors feature integrated cooling channels that allow for the easy setup of a liquid cooled system, at no additional cost.

Magnet plate dimensions

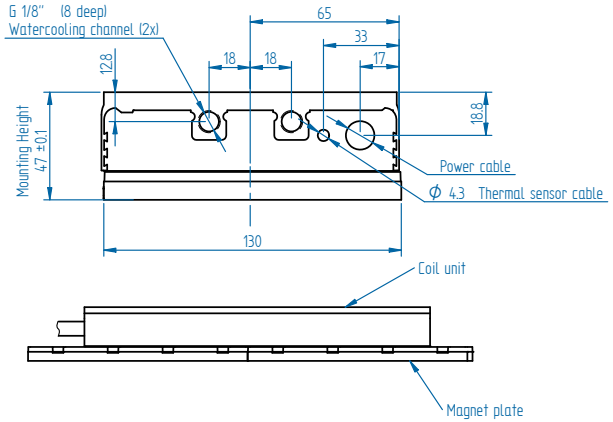
Le (mm)	192	288
M5 bolts	8	12
Mass (kg/m)	10.5	
Magnet plates can be butted together.		

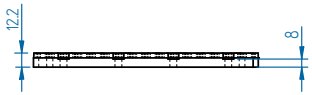
** These values are only applicable when the mounting surface is at 20°C and the motor is driven at maximum continuous current. If these values differ in your application, please check our simulation tool.*

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

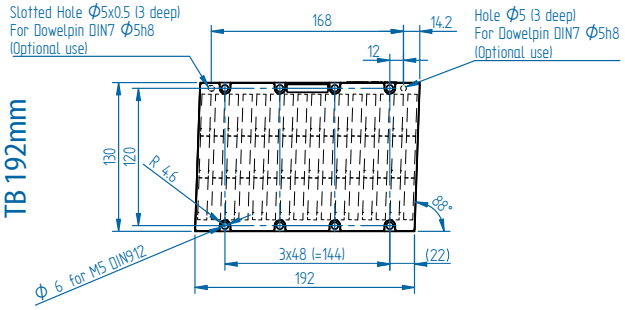
Mounting instructions and flatness or parallelism requirements can be found in the Iron Core installation manual. CAD files, 3D models and the manual can be downloaded from our website.

MAGNET PLATES

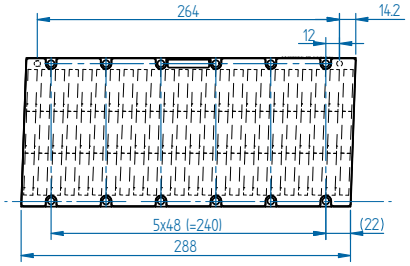




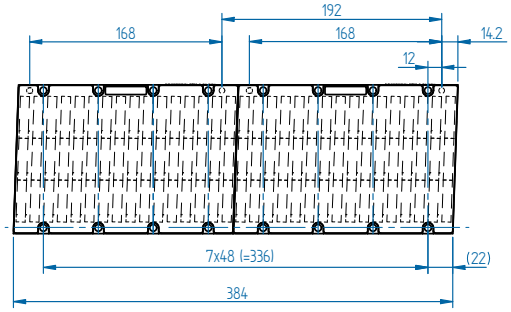
TB 192mm



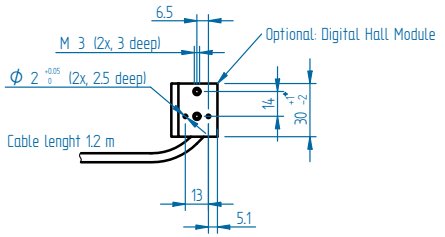
TB 288mm



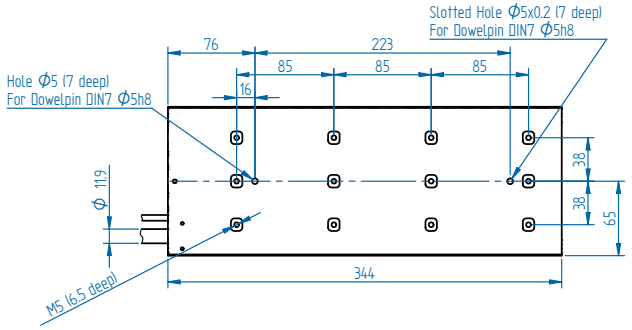
2x TB 192 mm



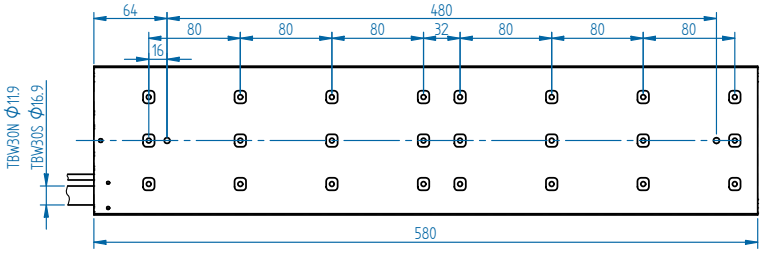
COIL UNITS



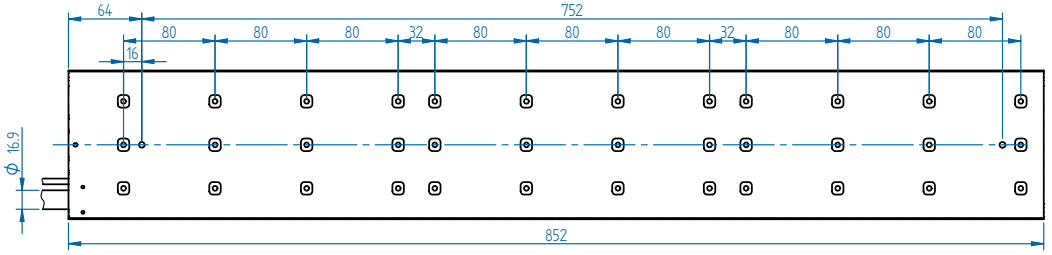
TBW18



TBW30



TBW45



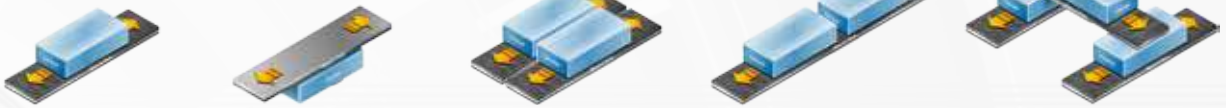
Features

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

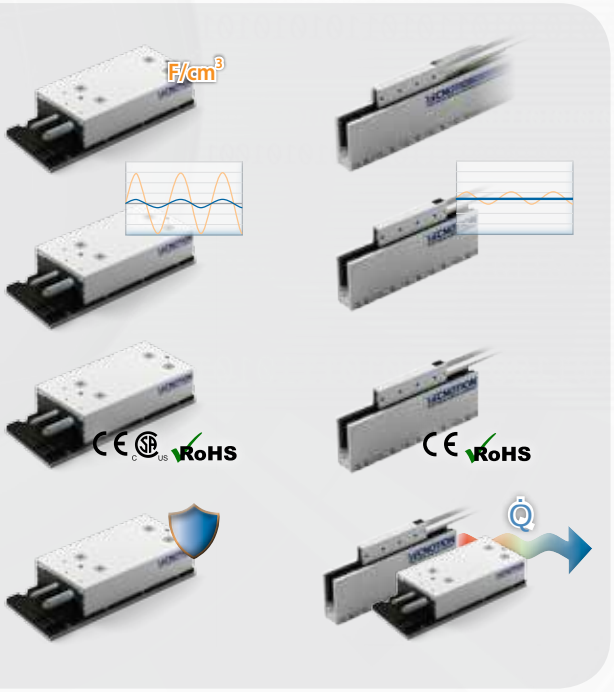
Optimized iron core motor design, for smooth motion and position accuracy in your application.

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.