

Tecnotion presents its full range of TBW-motors

The TBW-motor is developed, based on the successful TB-motor. It has the same outstanding performance as all other Tecnotion iron core based linear motors. Where there is the high performance over volume ratio, its lightweight, excellent motor constant, very low attraction force and high peak force that results in very dynamic movements with extreme accelerations against relative low heat dissipation.

The TBW-motor has a fully integrated efficient cooling system that enables the user to get even higher constant forces and duty-cycles, without the dissipated heat flowing into the machine's construction. This makes the TBW-motor very suitable for machines that combine speed, high dynamics and high accuracy.



Specifications

	Symbol	Unit	TBW 18		TBW 30		TBW 45	
			N	S	N	S	N	S
Motortype, max. voltage ph-ph			3-phase synchronous Ironless, 600 Veff					
Ultimate Force 10°C/s magnet @25°C	Fu	N	2700		4500		6750	
Ultimate Current magnet @25°C	Iu	Arms	19.6	40.6	27	65	41	98
Peak Force 6°C/s magnet @25°C	Fp	N	2400		4000		6000	
Peak Current magnet @25°C	Ip	Arms	15.0	31.1	20.7	50	31	75
Continuous Force watercooled coils @100°C	Fcw	N	1200		2000		3000	
Continuous Current watercooled coils @100°C	Icw	Arms	6.5	13.4	8.9	21.5	13.4	32.3
Continuous Force aircooled * coils @100°C	Fc	N	600..1140		1000..1900		1500..2850	
Maximum Continuous Power Loss all coils	Pc	W	726		1209		1814	
Maximum speed @560V	Vmax	m/s	5	10	5	10	5	10
Motor Force Constant motor @25°C	K	N/A	186	89.8	225	93.0	225	93.0
Back EMF phase-phase peak	Bemf	Vdc / m/s	152	73	183	76	183	76
Motor Constant	S	N ² /W	2580		4300		6450	
Magnet Pitch NN	τ	mm	24		24		24	
Resistance per phase coils @25°C	Rf	Ω	4.4	1.0	3.9	0.66	2.6	0.44
Induction per phase	Lf	mH	35	8	31	5	21	3
Electrical time constant coils @25°C	τe	ms	8		8		8	
Thermal Resistance	Rth	°C/W	0.10		0.06		0.04	
Thermal Time Constant minimum	τ th	s	87		87		87	
Motor Attraction Force	Fa	N	4900		8300		12450	
Length of Coil unit	L	mm	344		580		852	
Weight of Coil unit ex. cables	M	kg	7.3		12.3		18.2	
Weight of Cables	m	kg/m	0.3		0.6		0.6	
Watercooling Flow for ΔT=3K	Φw	l/min	3.1		5.2		7.8	
Watercooling Pressuredrop indication	ΔPw	bar	1.0		1.5		2.5	
Temperature Sensors			PTC 1kΩ and KTY 21					

* Depends on application: cooling surface, air speed and ambient temperature.

This leaflet gives you the TBW's vital technical data. For additional information, please contact

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Dimensions Magnetplates

Le	192 mm	288 mm
M5 bolts	8x	12x
Mass	10,5 kg/m	

Magnetplates can be butted together.

