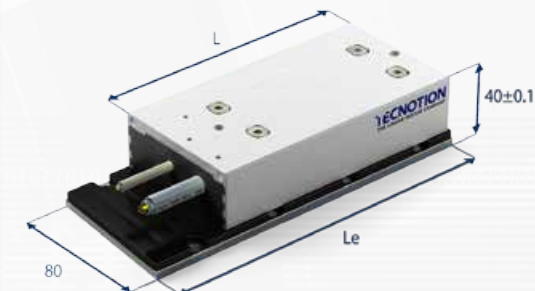


	Parameter	Remarks	Sym	Unit	TL6		TL9		TL12		TL15		TL18		TL24	
					N	S	N	S	N	S	N	S	N	S	N	S
Performance	Winding type				N	S	N	S	N	S	N	S	N	S	N	S
	Motortype, max voltage ph-ph				3-phase synchronous Iron core, 400V _{ac rms} (600V _{dc})											
	Ultimate Force @ 10°C/s increase	magnet @ 25°C	F _u	N	450	675	900	1125	1350	1800						
	Peak Force @ 6°C/s increase	magnet @ 25°C	F _p	N	400	600	800	1000	1200	1600						
	Continuous Force Watercooled*	coils @ 100°C	F _{cw}	N	210	315	420	525	630	840						
	Continuous Force	coils @ 100°C	F _c	N	200	300	400	500	600	800						
	Maximum Speed**	@ 560 V	v _{max}	m/s	3.5	7	2,5	7	3.5	7	3.5	7	3.5	7	3.5	7
	Motor Force Constant	mount. sfc. @ 20°C	K	N/A _{rms}	93	46.5	140	46.5	93	46.5	112	46.5	93	44.9	93	46.5
Electrical	Motor Constant	coils @ 25°C	S	N ² /W	380	570	760	950	1140	1520						
	Ultimate Current	magnet @ 25°C	I _u	A _{rms}	6.5	13.1	6.5	19.6	13.1	26.2	13.5	32.7	19.6	41	26.2	52
	Peak Current	magnet @ 25°C	I _p	A _{rms}	5.0	10.0	5.0	15.0	10.0	20.0	10.4	25.0	15.0	31.0	20.0	40.0
	Continuous Current Watercooled*	coils @ 100°C	I _{cw}	A _{rms}	2.26	4.5	2.26	6.8	4.5	9.0	4.7	11.3	6.8	14.0	9.0	18.1
	Back EMF Phase-Phase _{peak}		B _{emf}	V/m/s	76	38	114	38	76	38	92	38	76	38	76	38
	Resistance per Phase*	coils @ 25°C ex. cable	R _{ph}	Ω	7.2	1.80	10.8	1.21	3.6	0.90	4.3	0.72	2.41	0.59	1.81	0.46
	Induction per Phase	l < 0.6 lp	L _{ph}	mH	54	14	81	9.0	27	7.0	32	5.4	18	4.4	14	3.4
	Electrical Time Constant*	coils @ 25°C	τ _e	ms	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Thermal	Maximum Continuous Power Loss	all coils	P _c	W	150	225	300	375	450	600						
	Thermal Resistance	coils to mount. sfc.	R _{th}	°C/W	0.48	0.32	0.24	0.19	0.16	0.12						
	Thermal Time Constant*	up to 63% max. coiltemp.	τ _{th}	s	77	77	77	77	77	77						
	Watercooling Flow	for ΔT=3K	Φ _w	l/min	0.7	1.1	1.4	1.8	2.2	2.9						
	Watercooling Pressure-drop	order of magnitude	ΔP _w	bar	1	1	2	2	2	3						
	Temperature Cut-off / Sensor				PTC 1kΩ / KTY 83-122											
Mechanical	Coil Unit Weight	ex. cables	W	kg	1.5	2.0	2.6	3.2	3.8	5.2						
	Coil Unit Length	ex. cables	L	mm	146	194	244	290	336	468						
	Motor Attraction Force	rms @ 0 A	F _a	N	950	1325	1700	2075	2450	3400						
	Magnet Pitch NN		τ	mm	24	24	24	24	24	24						
	Cable Mass		m	kg/m	0.18	0.18	0.18	0.18	0.18	0.30						
	Cable Type (Power)	length 1 m	d	mm (AWG)	9.6 (18)						11.9 (14)					
Cable Type (Sensor)	length 1 m	d	mm (AWG)	4.3 (26)						4.3 (26)						

* 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.



TL6 on 192mm magnet plate shown

Approvals



See page 28 for Analog hall

Water cooling

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

Magnet plate dimensions

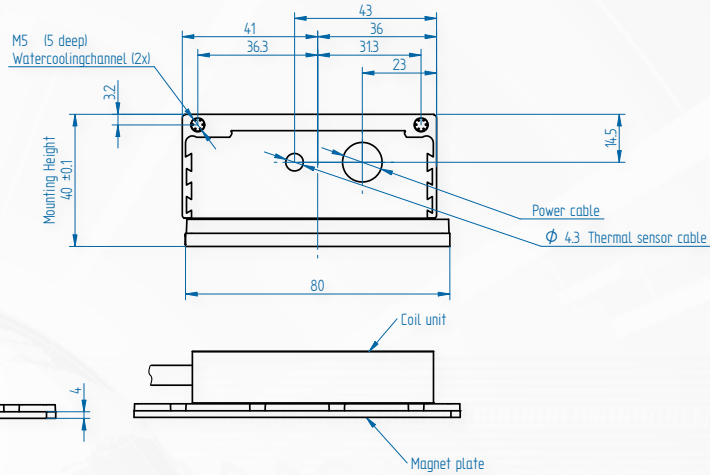
Le (mm)	192	288
M5 bolts	8	12
Mass (kg/m)	3.8	

Magnet plates can be butted together.

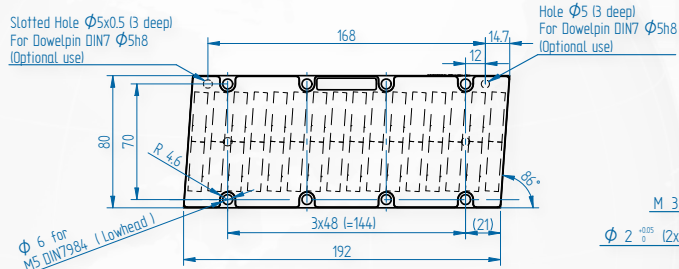
All specifications ±10%

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.

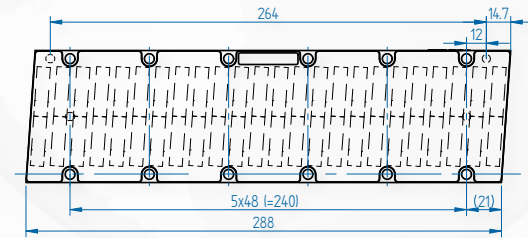
MAGNET PLATES



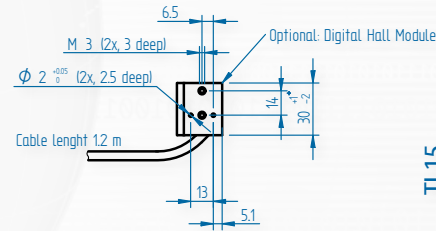
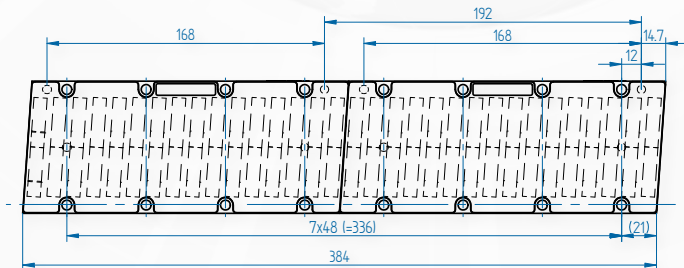
TL 192mm



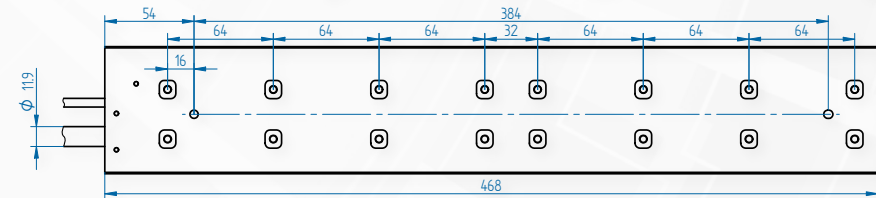
TL 288mm



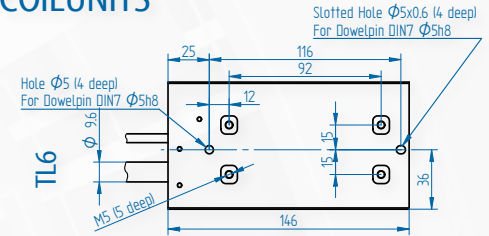
2x TL 192mm



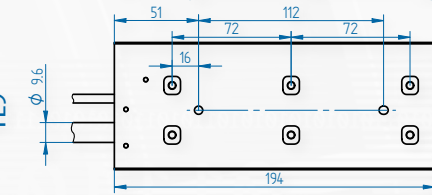
TL24



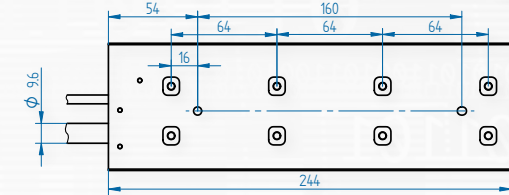
COIL UNITS



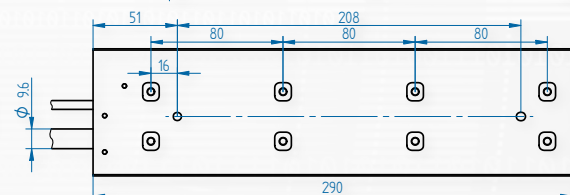
TL9



TL12



TL15



TL18

