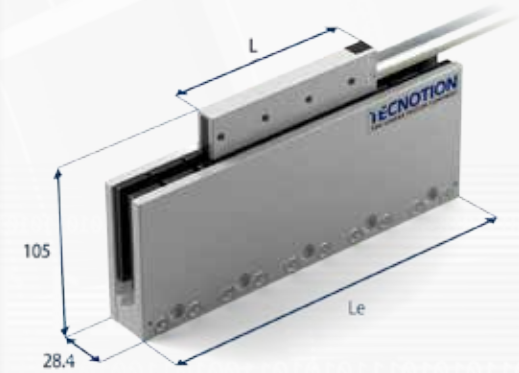


	Parameter	Remarks	Symbol	Unit	UL3		UL6		UL9		UL12		UL15	
Performance	Winding type				N	S	N	S	N	S	N	S	N	S
	Motortype, max voltage ph-ph				3-phase synchronous Ironless, 230V <sub>ac rms</sub> (300V <sub>dc</sub> )									
	Peak Force @ 20°C/s increase	magnet @ 25°C	F <sub>p</sub>	N	240		480		720		960		1200	
	Continuous Force*	coils @ 110°C	F <sub>c</sub>	N	70		140		210		280		350	
	Maximum Speed**	@ 300 V	v <sub>max</sub>	m/s	5	12	5	12	5	12	5	12	5	12
	Motor Force Constant	mount. sfc. @ 20°C	K	N/A <sub>rms</sub>	68	27.5	68	27.5	68	27.5	68	27.5	67.5	27.5
	Motor Constant	coils @ 25°C	S	N <sup>2</sup> /W	97		195		290		390		485	
Electrical	Peak Current	magnet @ 25°C	I <sub>p</sub>	A <sub>rms</sub>	3.5	8.7	7	17.5	10.5	26.2	14.1	35	17.8	44
	Maximum Continuous Current	coils @ 110°C	I <sub>c</sub>	A <sub>rms</sub>	1.03	2.6	2.1	5.1	3.1	7.6	4.2	10.2	5.2	12.9
	Back EMF Phase-Phase <sub>peak</sub>		B <sub>emf</sub>	V/m/s	55.5	22.5	55.5	22.5	55.5	22.5	55.5	22.5	55.5	22.5
	Resistance per Phase*	coils @ 25°C ex. cable	R <sub>ph</sub>	Ω	15.9	2.6	8.0	1.28	5.3	0.85	4.0	0.64	3.3	0.53
	Induction per Phase	I < 0.6 Ip	L <sub>ph</sub>	mH	13	2.0	6.5	1.0	4.2	0.7	3.2	0.5	3	0.4
	Electrical Time Constant*	coils @ 25°C	τ <sub>e</sub>	ms	0.8		0.8		0.8		0.8		0.8	
Thermal	Maximum Continuous Power Loss	all coils	P <sub>c</sub>	W	67		134		200		270		335	
	Thermal Resistance	coils to mount. sfc.	R <sub>th</sub>	°C/W	1.3		0.65		0.43		0.32		0.26	
	Thermal Time Constant*	up to 63% max. coiltemp.	τ <sub>th</sub>	s	72		72		72		72		72	
	Temperature Cut-off / Sensor				PTC 1kΩ / NTC									
Mechanical	Coil Unit Weight	ex. cables	W	kg	0.250		0.470		0.690		0.910		1.130	
	Coil Unit Length	ex. cables	L	mm	106		190		274		358		442	
	Motor Attraction Force		F <sub>a</sub>	N	0		0		0		0		0	
	Magnet Pitch NN		τ	mm	42		42		42		42		42	
	Cable Mass		m	kg/m	0.09		0.09		0.09		0.105		0.105	
	Cable Type (Power)	length 1 m	d	mm (AWG)	5.8 (20)						6.4 (18)			
	Cable Type (Sensor)	length 1 m	d	mm (AWG)	4.3 (26)						4.3 (26)			



UL3 in 210mm magnet yoke shown

Approvals



#### Magnet yoke dimensions

Le (mm)	126	168	210	546
M5 bolts	3	4	5	13
Mass (kg/m)	11.2			

Magnet yokes can be butted together.

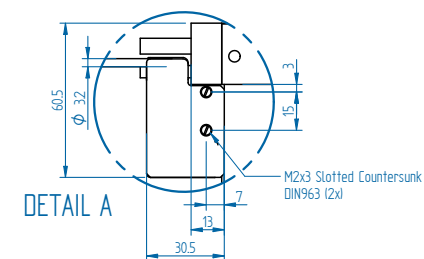
All specifications ±10%

\* 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.

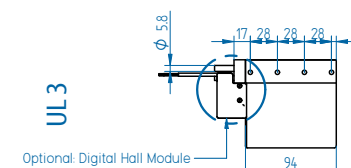
\*\* Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.

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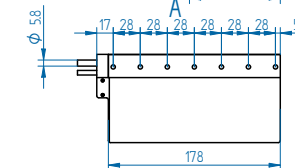
UL 546mm



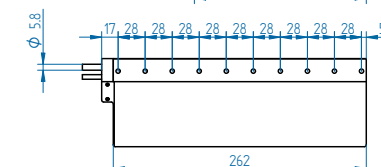
### DETAIL A



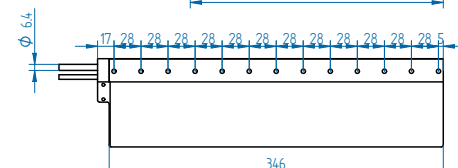
## UL3



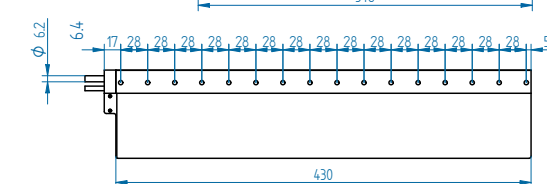
## UL 6



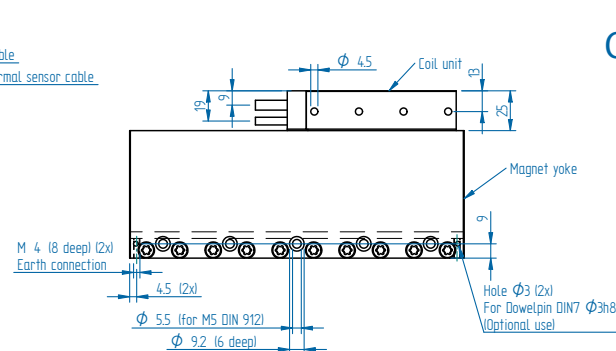
## 67n



## UL 12



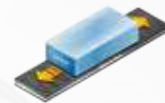
## UL 15



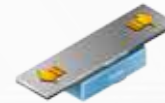
### [ DIRECT DRIVE ADVANTAGES ]

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:



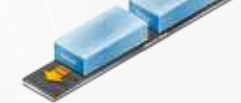
1. single moving coil



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

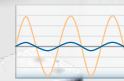
Optimized iron core motor design, for smooth motion and position accuracy in your application.

#### 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.