

UL3 in 210mm magnet yoke shown

# UL Series Ironless

Parameter	Remarks	Symbol	Unit	UL3		UL6		UL9		UL12		UL15			
				N	S	N	S	N	S	N	S	N	S		
Winding type				3-phase synchronous Ironless, 230V <sub>ac rms</sub> (325V <sub>dc</sub> )											
Motor type, max voltage ph-ph				3-phase synchronous Ironless, 230V <sub>ac rms</sub> (325V <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			
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		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			
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											
Coil unit weight	ex. cables	W	kg	0.25		0.47		0.69		0.91		1.13			
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)			

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.				



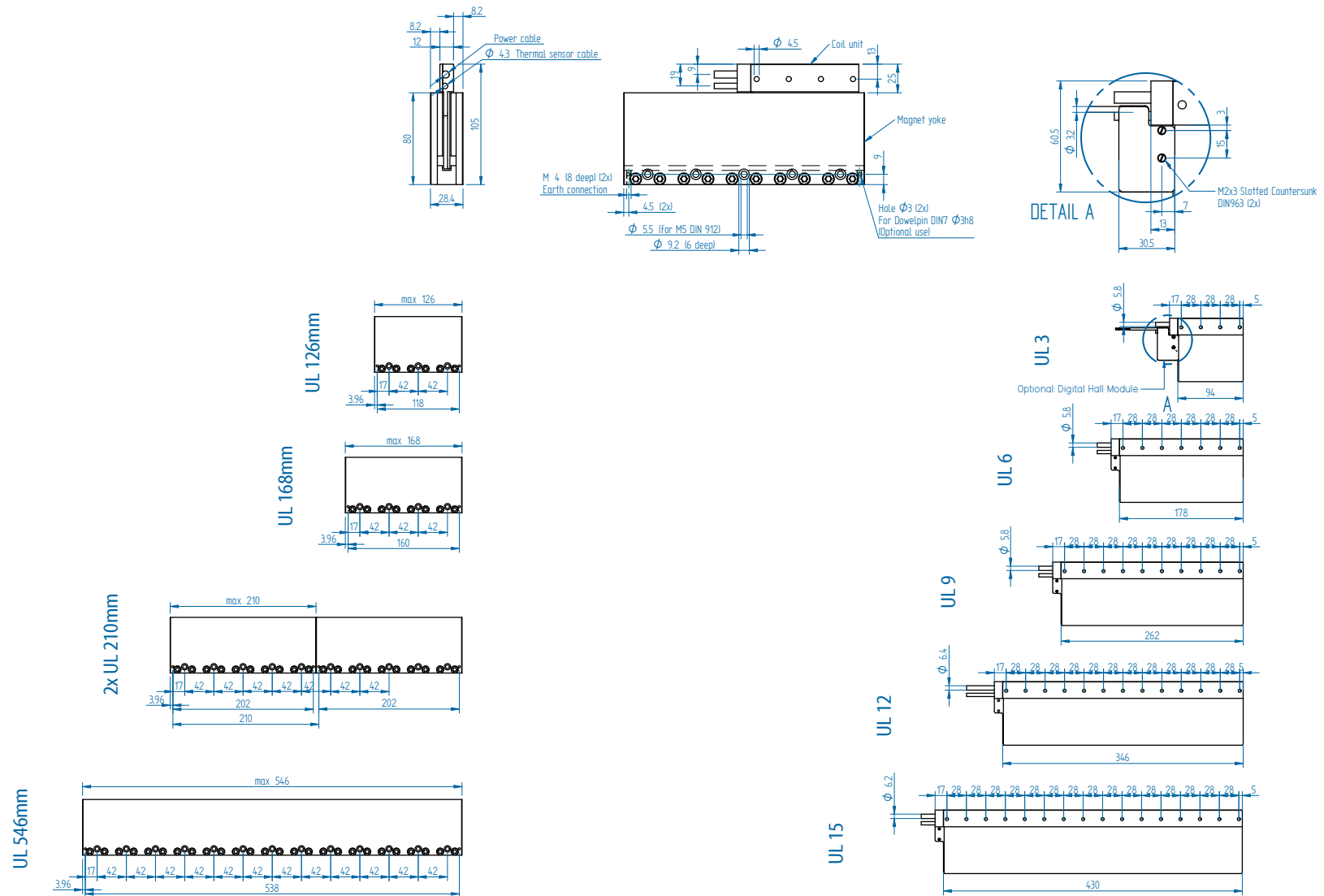
All specifications ±10%

\* 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.

## Magnet yokes

## Coil units



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

\* All sizes are in mm