

UM series ironless



UM3 in 150mm magnet yoke shown

Magnet yoke dimensions

Le (mm)	90	120	150	390
M4 bolts	3	4	5	13
Mass (kg/m)	4.8			

Magnet yokes can be butted together.

Approvals



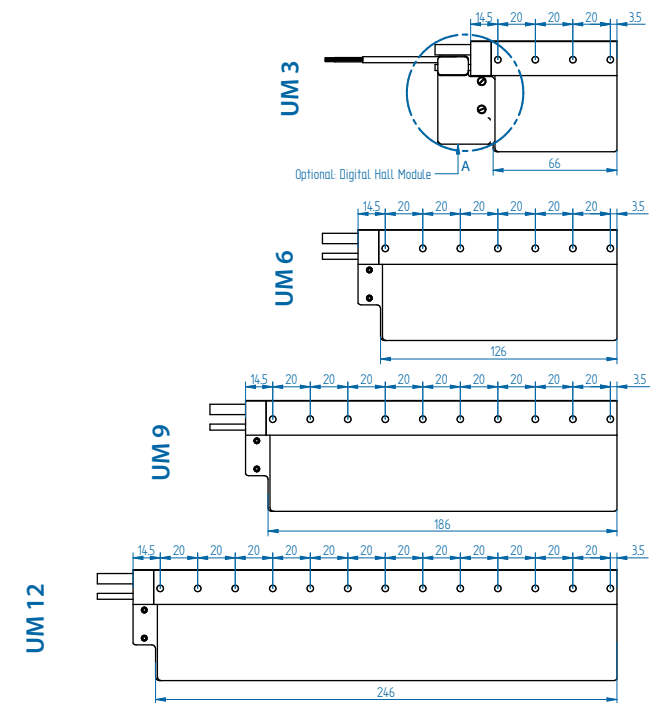
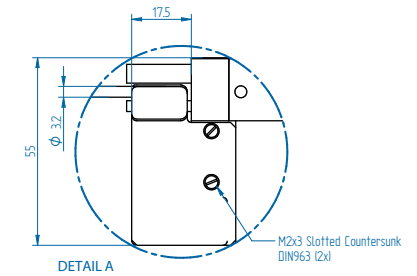
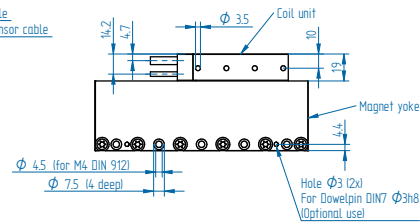
Parameter		Remarks	Symbol	Unit	UM3		UM6		UM9		UM12	
Performance	Winding type				N	S	N	S	N	S	N	S
	Motor type, max voltage ph-ph	3-phase synchronous	U _{max}	V _{ac,rms} (V _{dc})	230 (325)							
	Peak force @ 20 K/s increase	magnets @ 25°C	F _p	N	100		200		300		400	
	Continuous force ¹	coils @ 110°C	F _c	N	29		58		87		116	
	Continuous force ^{1,3}	coils @ 105°C	F _c	N	28		57		85		113	
	Maximum speed ²	@ U _{max} @ F _c	v _{max}	m/s	10	18	10	18	10	18	10	18
	Motor force constant	I ≤ I _c	K _f	N/A _{rms}	36.3	19.9	36.3	19.9	36.3	19.9	36.3	19.9
	Motor constant	coils @ 25°C	S	N ² /W	24	24	47	47	71	73	95	94
Electrical	Peak current	magnets @ 25°C	I _p	A _{rms}	2.8	5.0	5.5	10	8.3	15	11	20
	Continuous current ¹	coils @ 110°C	I _c	A _{rms}	0.8	1.5	1.6	2.9	2.4	4.4	3.2	5.8
	Continuous current ^{1,3}	coils @ 105°C	I _c	A _{rms}	0.8	1.4	1.6	2.8	2.3	4.2	3.1	5.7
	Back EMF ph-ph _{peak}		K _e	V _{dc} /m/s	30	16	30	16	30	16	30	16
	Resistance per phase	coils @ 25°C ex. cable	R _{ph}	Ω	18.5	5.5	9.3	2.8	6.2	1.8	4.6	1.4
	Induction per phase		L _{ph}	mH	6.5	1.8	3.3	0.9	2.2	0.6	1.5	0.4
	Electrical time constant		τ _e	ms	0.35							
Thermal	Continuous power loss ¹	coils @ 110°C	P _c	W	47		95		142		190	
	Continuous power loss ^{1,3}	coils @ 105°C	P _c	W	44		89		133		178	
	Thermal resistance	coils to mount. sfc.	R _{th}	K/W	1.8		0.9		0.6		0.45	
	Thermal time constant		τ _{th}	s	36							
	Temperature sensor				PTC 1kΩ / NTC							
Mechanical	Coil unit mass	ex. cables	m	kg	0.100		0.162		0.240		0.318	
	Coil unit length	ex. cables	L	mm	78		138		198		258	
	Motor attraction force	rms @ 0 A	F _a	N	0							
	Magnet pitch NN		τ	mm	30							
	Cable mass	all cables		kg/m	0.08							
	Cable type (power)	length 1 m	d	mm (AWG)	5.5 (22)							
	Cable type (sensor)	length 1 m	d	mm (AWG)	3.2 (26)							

All specifications ±10%

¹ These values are only applicable when the mounting surface is at 20°C and the motor is driven at continuous current. If these values differ in your application, please check our simulation tool.

² Actual values depend on bus voltage. Please check the F/v diagram in our simulation tool.

³ The maximum coil temperature for CSA certification is 105°C. The maximum coil temperature without CSA certification is 110°C.

[illegible][illegible]

* All sizes are in mm