

AUM Series (Patented)

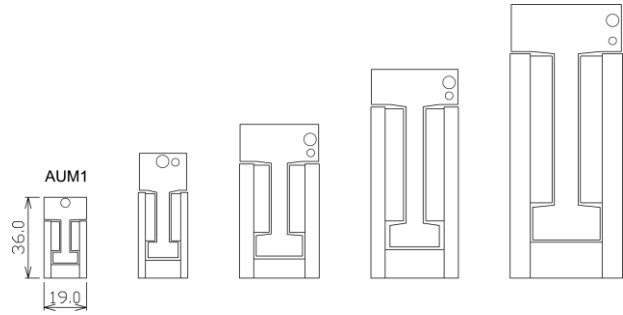
Ironless Brushless Linear Motor



- Ironless technology
- Zero cogging force
- Patented technology
- Ironless linear motors with the highest motor constant and shortest coils lengths
- Large continuous force and peak force

AUM1 Specifications

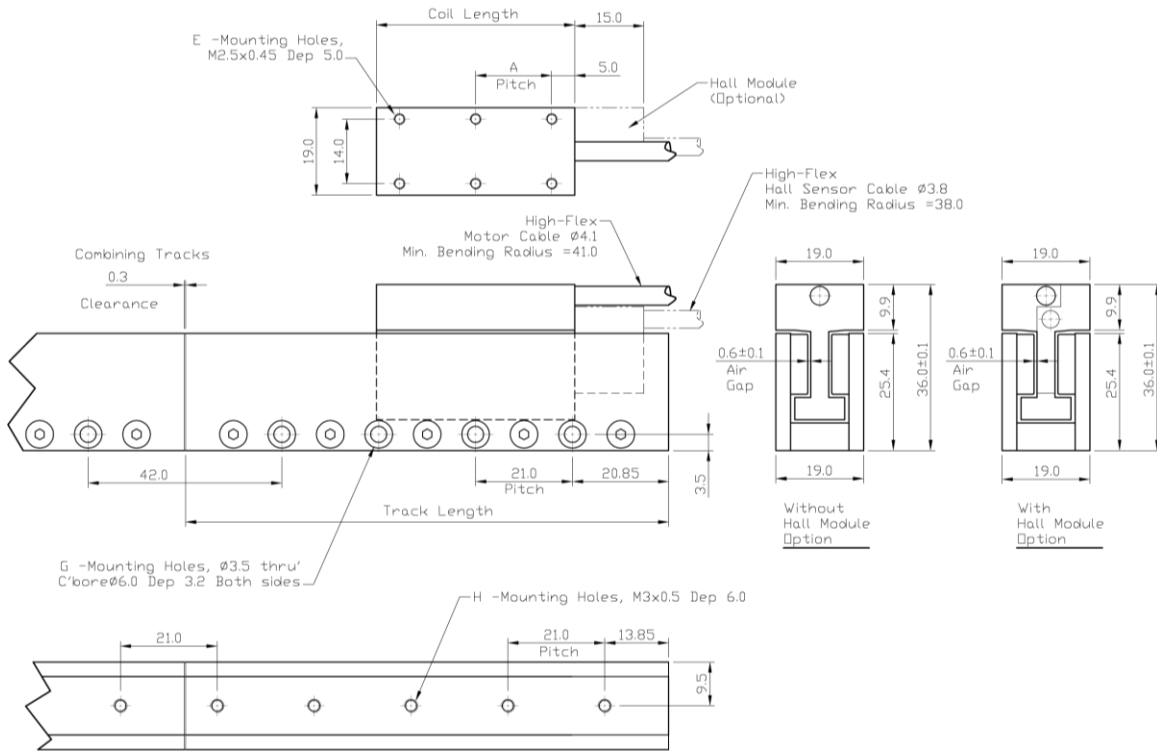
- Maximum continuous force of 11.9 N
- Maximum peak force of 47.6 N



Specifications		AUM1-S1	AUM1-S2	AUM1-S3	AUM1-S4
Performance Parameters	Unit	Series	Series	Series	Series
Continuous Force, coil @100 °C	N	3.0	6.0	8.9	11.9
Peak Force	N	11.9	23.8	35.7	47.6
Motor Constant	N/SqRt(W)	1.67	2.42	2.98	3.46
Continuous Power	W	3.2	6.1	9.0	11.8
Peak Power	W	50.9	97.1	143.3	189.6
Electrical Cycle	mm	21	21	21	21
Max Bus Voltage	V	60	60	60	60
Max Coil Temperature	°C	125	125	125	125
Thermal Dissipation Constant	W/°C	0.04	0.08	0.12	0.16
Continuous Current	Arms	1.7	1.7	1.7	1.7
Peak Current	Arms	6.8	6.8	6.8	6.8
Force Constant	N/Arms	1.75	3.50	5.25	7.00
Back EMF Constant	Vpeak/(m/s)	1.4	2.9	4.3	5.7
Inductance	mH	0.11	0.22	0.31	0.41
Terminal Resistance @25 °C	Ohms	1.10	2.10	3.10	4.10
Electrical Time Constant	ms	0.10	0.10	0.10	0.10
Mechanical Parameters					
Coil Mass	g	25.0	50.0	75.0	100.0
Coil Length	mm	22	43	64	85
Track Mass (per 63 mm)	g	149			
Magnetic Attraction	N	0			

Continuous current is measured with coil mounted to an aluminum plate with same length as coil, 2X width, and thickness 12mm.

AUM1 Series Dimensions



Motor Coil			
Model No:	Coil Length	E	A
AUM1-S1	22.0	4	12.0
AUM1-S2	43.0	6	16.5
AUM1-S3	64.0	8	18.0
AUM1-S4	85.0	8	25.0

Motor Track			
Model No:	Track Length	G	H
AUM1-TL63	62.7	2	3
AUM1-TL84	83.7	3	4
AUM1-TL105	104.7	4	5

Part Numbering

Motor Coil

Model	Connection	Size	Hall Options	Cable Length (m)
AUM1	S = Series	S1-S4	Blank = with hall module	0.3 (300mm)
			NH = without hall module	

Example: AUM1-S-S2-0.3; AUM1-S-NH-0.3

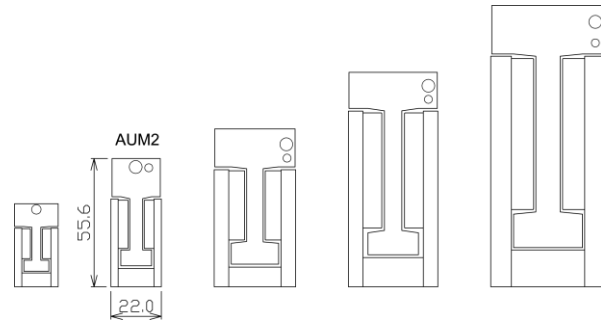
Motor Track

Model	Track Length
AUM1	TL63
	TL84
	TL105

Example: AUM1-TL63

AUM2 Specifications

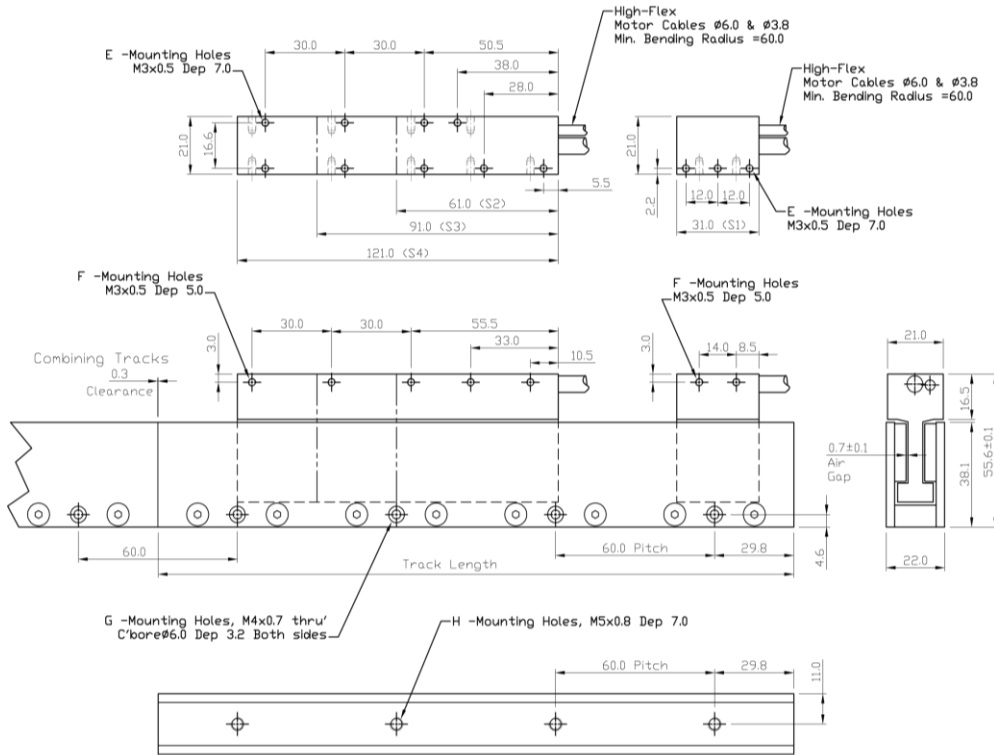
- Maximum continuous force of 44 N
- Maximum peak force of 176 N



Specifications		AUM2-S1	AUM2-S2		AUM2-S3		AUM2-S4	
Performance Parameters	Unit	Series	Series	Parallel	Series	Parallel	Series	Parallel
Continuous Force, coil @100 °C	N	8.8	17.6		26.4		35.2	
Peak Force	N	44.0	88.0		132.0		176.0	
Motor Constant	N/SqRt(W)	3.05	4.31		5.28		6.10	
Continuous Power	W	13.0	26.0		39.0		52.0	
Peak Power	W	208	416		624		832	
Electrical Cycle	mm	30	30		30		30	
Max Bus Voltage	V	330	330		330		330	
Max Coil Temperature	°C	125	125		125		125	
Thermal Dissipation Constant	W/ °C	0.17	0.35		0.52		0.69	
Continuous Current	Arms	1.6	1.6	3.2	1.6	3.2	1.6	3.2
Peak Current	Arms	8.0	8.0	16.0	8.0	16.0	8.0	16.0
Force Constant	N/Arms	5.5	11.0	5.5	16.5	8.3	22.0	11.0
Back EMF Constant	Vpeak/(m/s)	4.5	9.0	4.5	13.5	6.7	18.0	9.0
Inductance	mH	0.75	1.50	0.38	2.25	0.56	3.00	0.75
Terminal Resistance @25 °C	Ohms	3.25	6.50	1.63	9.75	2.44	13.00	3.25
Electrical Time Constant	ms	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Mechanical Parameters								
Coil Mass	Kg	0.059	0.118		0.177		0.236	
Coil Length	mm	31	61		91		121	
Track Mass (per 120 mm)	Kg	0.468						
Magnetic Attraction	N	0						

Continuous current is measured with coil mounted to an aluminum plate with same length as coil, 2X width, and thickness 12 mm

AUM2 Series Dimensions



Motor Coil			
Model No:	Coil Length	E	F
AUM2-S1	31.0	3	2
AUM2-S2	61.0	5	5
AUM2-S3	91.0	7	7
AUM2-S4	121.0	9	9

Motor Track			
Model No:	Track Length	G	H
AUM2-TL120	119.7	2	2
AUM2-TL180	179.7	3	3
AUM2-TL240	239.7	4	4
AUM2-TL300	299.7	5	5

Part Numbering

Motor Coil

Model	Connection	Size	Thermal Sensor	Cable Length (m)
AUM2	S = Series P = Paralle ¹	S1-S4	K = Thermocouple ²	3.0

Example: AUM2-S-S2-K-3.0

Motor Track

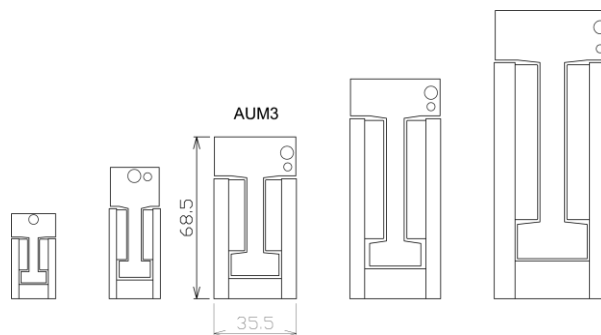
Model	Track Length
AUM2	TL120
	TL180
	TL240
	TL300

Example: AUM2-TL120

- 1 Parallel connection is not applicable to S1 motor coil.
- 2 K = PT100 (RTD) is standard for AUM2, Thermostat is not available.

AUM3 Specifications

- Maximum continuous force of 144 N
- Maximum peak force of 576 N

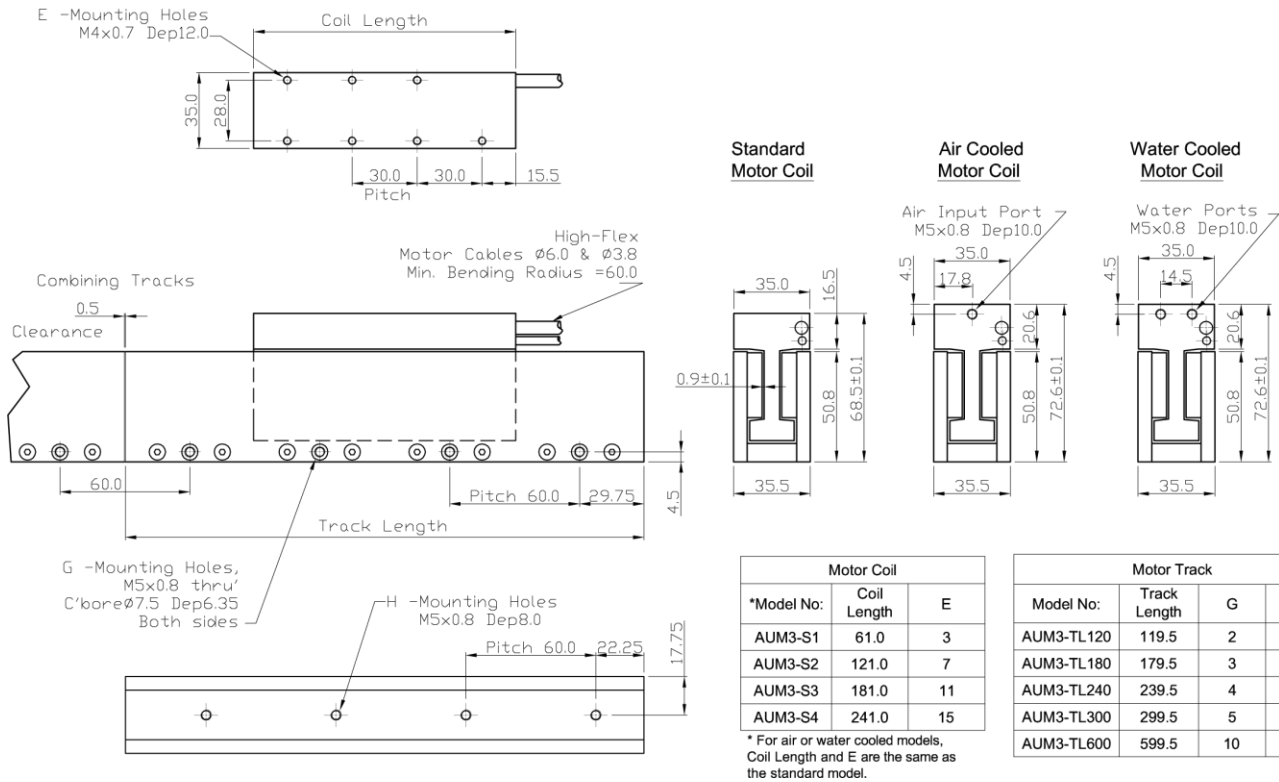


Specifications		AUM3-S1	AUM3-S2		AUM3-S3		AUM3-S4		AUM3-S6	
Performance Parameters	Unit	Series	Series	Parallel	Series	Parallel	Series	Parallel	Series	Parallel
Continuous Force, coil @100 °C	N	28	57		85		113		170	
Continuous Force, AC, coil @100 °C	N	34	68		102		136		203	
Continuous Force, WC, coil @100 °C	N	37	73		110		147		220	
Peak Force	N	144	289		433		578		867	
Motor Constant	N/SqRt(W)	7.2	10.2		12.5		14.5		17.7	
Continuous Power	W	24.9	49.7		74.6		99.5		149.2	
Peak Power	W	398	796		1,193		1,591		2,387	
Electrical Cycle	mm	60	60		60		60		60	
Max Bus Voltage	V	330	330		330		330		330	
Max Coil Temperature	°C	125	125		125		125		125	
Thermal Dissipation Constant	W/ °C	0.33	0.66		0.99		1.33		1.99	
Continuous current	Arms	1.8	1.8	3.6	1.8	3.6	1.8	3.6	1.8	3.6
Continuous current, AC	Arms	2.2	2.2	4.3	2.2	4.3	2.2	4.3	2.2	4.3
Continuous current, WC	Arms	2.3	2.3	4.7	2.3	4.7	2.3	4.7	2.3	4.7
Peak current	Arms	9.2	9.2	18.4	9.2	18.4	9.2	18.4	9.2	18.4
Force Constant	N/Arms	15.7	31.4	15.7	47.1	23.6	62.8	31.4	94.2	47.1
Back EMF Constant	Vpeak/(m/s)	12.8	25.6	12.8	38.5	19.2	51.3	25.6	76.9	38.5
Inductance	mH	3.13	6.26	1.57	9.39	2.35	12.52	3.13	18.78	4.70
Terminal Resistance @25 °C	Ohms	4.70	9.40	2.35	14.10	3.53	18.80	4.70	28.20	7.05
Electrical Time Constant	ms	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Mechanical Parameters										
Coil Mass	Kg	0.22	0.45		0.68		0.91		1.37	
Coil Length	mm	61	121		181		241		361	
Track Mass (per 120 mm)	Kg	1.00								
Magnetic Attraction	N	0								

AC- Air Cool, WC-Water Cool

Continuous current is measured with coil mounted to an aluminum plate with same length as coil, 2X width, and thickness 12 mm

AUM3 Series Dimensions



Part Numbering

Motor Coil

Model	Cooling Options	Connection	Size	Thermal Sensor	Cable Length (m)
AUM3	Blank = natural convection A = Air cooled W = Water cooled	S = Series P = Parallel ¹	S1- S4	J = Thermostat (standard) K = Thermocouple	3.0

Example: AUM3-S-S2-J-3.0

Motor Track

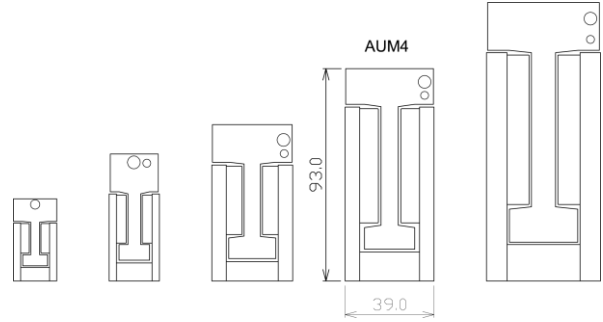
Model	Track Length
AUM3	TL120
	TL180
	TL240
	TL300
	TL600

Example: AUM3-TL600

¹ Parallel connection is not applicable to S1 motor coil

AUM4 Specifications

- Maximum continuous force of 336 N
- Maximum peak force of 1872 N



Specifications		AUM4-S1	AUM4-S2		AUM4-S3		AUM4-S4	
Performance Parameters	Unit	Series	Series	Parallel	Series	Parallel	Series	Parallel
Continuous Force, coil @100 °C	N	55	110		166		221	
Continuous Force, AC, coil @100 °C	N	66	132		199		265	
Continuous Force, WC, coil @100 °C	N	77	154		230		307	
Peak Force	N	312	624		936		1,248	
Motor Constant	N/SqRt(W)	11.2	15.8		19.4		22.4	
Continuous Power	W	24.3	48.7		73.0		97.3	
Peak Power	W	777	1,555		2,332		3,110	
Electrical Cycle	mm	60	60		60		60	
Max Bus Voltage	V	330	330		330		330	
Max Coil Temperature	°C	125	125		125		125	
Thermal Dissipation Constant	W/°C	0.32	0.65		0.97		1.30	
Continuous current	Arms	2.3	2.3	4.6	2.3	4.6	2.3	4.6
Continuous current, AC	Arms	2.8	2.8	5.5	2.8	5.5	2.8	5.5
Continuous current, WC	Arms	3.2	3.2	6.4	3.2	6.4	3.2	6.4
Peak current	Arms	13.0	13.0	26.0	13.0	26.0	13.0	26.0
Force Constant	N/Arms	24.0	48.0	24.0	72.0	36.0	96.0	48.0
Back EMF Constant	V _{peak} /(m/s)	19.6	39.2	19.6	58.8	29.4	78.4	39.2
Inductance	mH	3.50	7.00	1.75	10.50	2.63	14.00	3.50
Terminal Resistance @25 °C	Ohms	4.60	9.20	2.30	13.80	3.45	18.40	4.60
Electrical Time Constant	ms	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Mechanical Parameters								
Coil Mass	Kg	0.28	0.56		0.89		1.19	
Coil Length	mm	61	121		181		241	
Track Mass (per 120 mm)	Kg	1.77						
Magnetic Attraction	N	0						

AC- Air Cool, WC-Water Cool

Continuous current is measured with coil mounted to an aluminum plate with same length as coil, 2X width, and thickness 12 mm

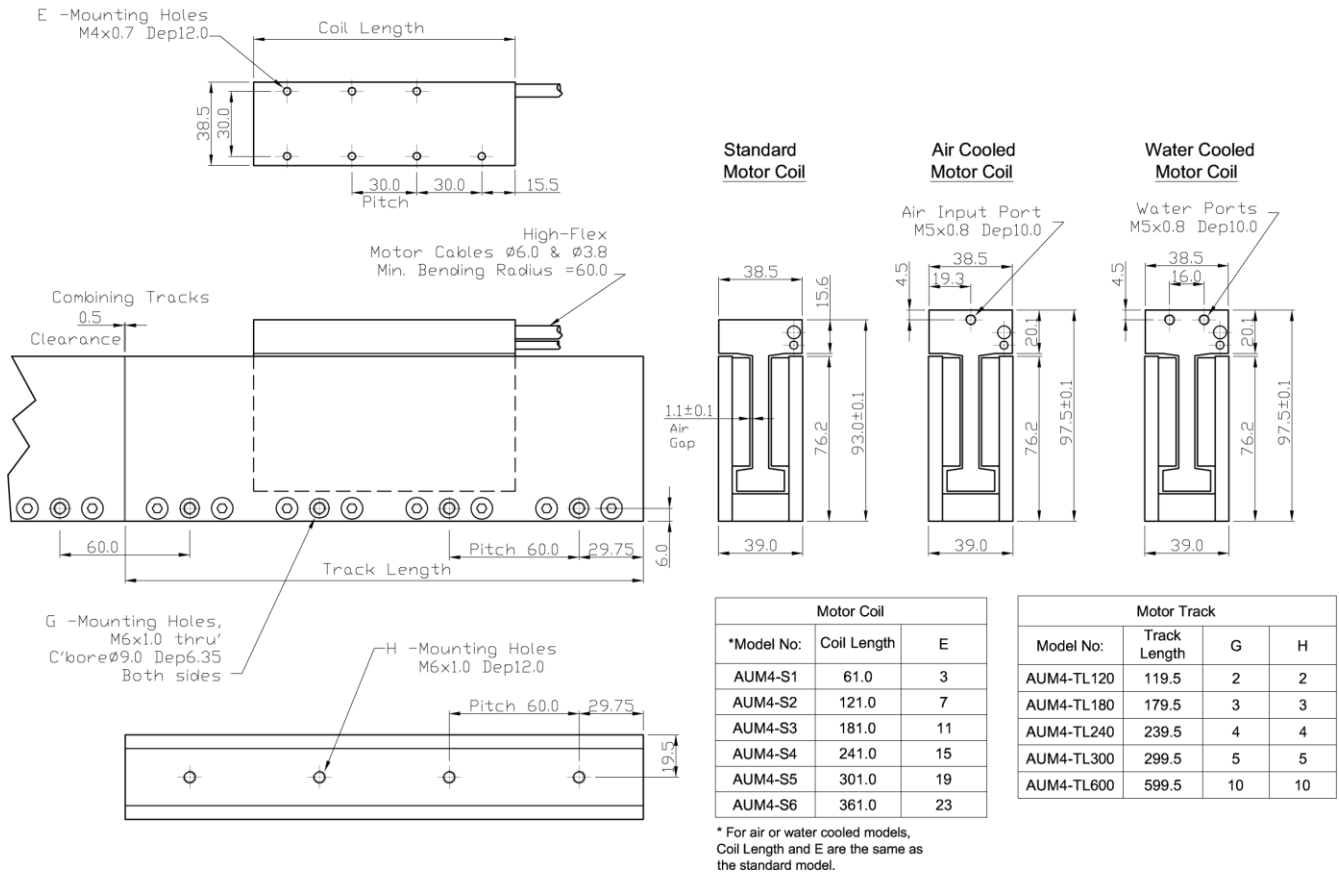
Aluminum AUM4-S2 mass: 300g

Specifications		AUM4-S5		AUM4-S6		AUM4-S8	
Performance Parameters	Unit	Series	Parallel	Series	Parallel	Series	Parallel
Continuous Force, coil @100 °C	N	276		331		442	
Continuous Force, AC, coil @100 °C	N	331		397		530	
Continuous Force, WC, coil @100 °C	N	384		461		614	
Peak Force	N	1,560		1,872		2,496	
Motor Constant	N/SqRt(W)	25.0		27.4		31.65	
Continuous Power	W	121.7		146.0		194.7	
Peak Power	W	3,887		4,664		6219.2	
Electrical Cycle	mm	60		60		60	
Max Bus Voltage	V	330		330		330	
Max Coil Temperature	°C	125		125		125	
Thermal Dissipation Constant	W/°C	1.62		1.95		2.60	
Continuous current	Arms	2.3	4.6	2.3	4.6	2.3	4.6
Continuous current, AC	Arms	2.8	5.5	2.8	5.5	2.8	5.5
Continuous current, WC	Arms	3.2	6.4	3.2	6.4	3.2	6.4
Peak current	Arms	13.0	26.0	13.0	26.0	13.0	26.0
Force Constant	N/Arms	120.0	60.0	144.0	72.0	192.0	96.0
Back EMF Constant	Vpeak/(m/s)	98.0	49.0	117.6	58.8	156.8	78.4
Inductance	mH	17.50	4.38	21.00	5.25	28.00	7.00
Terminal Resistance @25 °C	Ohms	23.00	5.75	27.60	6.90	36.80	9.20
Electrical Time Constant	ms	0.76	0.76	0.76	0.76	0.76	0.76
Mechanical Parameters							
Coil Mass	Kg	1.49		1.78		2.37	
Coil Length	mm	301		361		481	
Track Mass (per 120 mm)	Kg	1.77					
Magnetic Attraction	N	0					

AC- Air Cool, WC-Water Cool

Continuous current is measured with coil mounted to an Aluminum plate with same length as coil, 2X width, and thickness 12 mm

AUM4 Series Dimensions



Part Numbering

Motor Coil

Model	Cooling Options	Connection	Size	Thermal Sensor	Cable Length (m)
AUM4	Blank = natural convection A = Air cooled W = Water cooled	S = Series P = Parallel ¹	S1- S6	J = Thermostat (standard) K = Thermocouple	3.0

Example: AUM4-P-S4-J-3.0; AUM4-A-P-S4-J-3.0; AUM4-W-P-S4-J-3.0

Motor Track

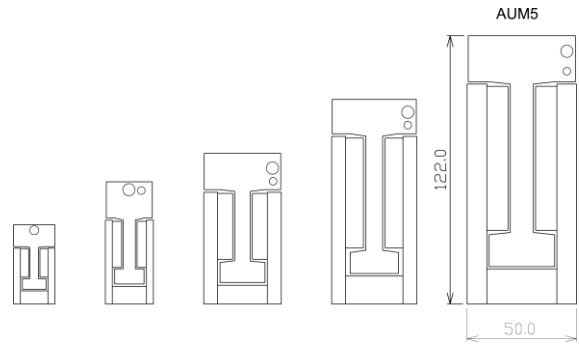
Model	Track Length
AUM4	TL120
	TL180
	TL240
	TL300
	TL600

Example: AUM4-TL600

¹ Parallel connection is not applicable to S1 motor coil

AUM 5 Specifications

- Maximum continuous force of 784 N
- Maximum peak force of 5659 N



Specifications		AUM5-S1	AUM5-S2		AUM5-S3		AUM5-S4		AUM5-S5	
Performance Parameters	Unit	Series	Series	Parallel	Series	Parallel	Series	Parallel	Series	Parallel
Continuous Force, coil @100 °C	N	98	197		295		393		491	
Continuous Force, AC, coil @100 °C	N	118	236		354		472		590	
Continuous Force, WC, coil @100 °C	N	128	255		383		511		639	
Peak Force	N	707	1,415		2,122		2,830		3,537	
Motor Constant	N/SqRt(W)	19.2	27.1		33.2		38.4		42.9	
Continuous Power	W	26.3	52.5		78.8		105.0		131.3	
Peak Power	W	1,361	2,722		4,082		5,443		6,804	
Electrical Cycle	mm	84.0	84.0		84.0		84.0		84.0	
Max Bus Voltage	V	330	330		330		330		330	
Max Coil Temperature	°C	125	125		125		125		125	
Thermal Dissipation Constant	W/ °C	0.35	0.70		1.05		1.40		1.75	
Continuous current	Arms	2.5	2.5	5.0	2.5	5.0	2.5	5.0	2.5	5.0
Continuous current, AC	Arms	3.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Continuous current, WC	Arms	3.3	3.3	6.5	3.3	6.5	3.3	6.5	3.3	6.5
Peak current	Arms	18.0	18.0	36.0	18.0	36.0	18.0	36.0	18.0	36.0
Force Constant	N/Arms	39.3	78.6	39.3	117.9	59.0	157.2	78.6	196.5	98.3
Back EMF Constant	Vpeak/(m/s)	32.1	64.2	32.1	96.3	48.1	128.4	64.2	160.4	80.2
Inductance	mH	6.50	13.00	3.25	19.50	4.88	26.00	6.50	32.50	8.13
Terminal Resistance @25 °C	Ohms	4.20	8.40	2.10	12.60	3.15	16.80	4.20	21.00	5.25
Electrical Time Constant	ms	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Mechanical Parameters										
Coil Mass	Kg	0.73	1.45		2.16		2.88		3.60	
Coil Length	mm	85.0	169.0		253.0		337.0		421.0	
Track Mass (per 168 mm)	Kg	4.26								
Magnetic Attraction	N	0								

AC- Air Cool, WC-Water Cool

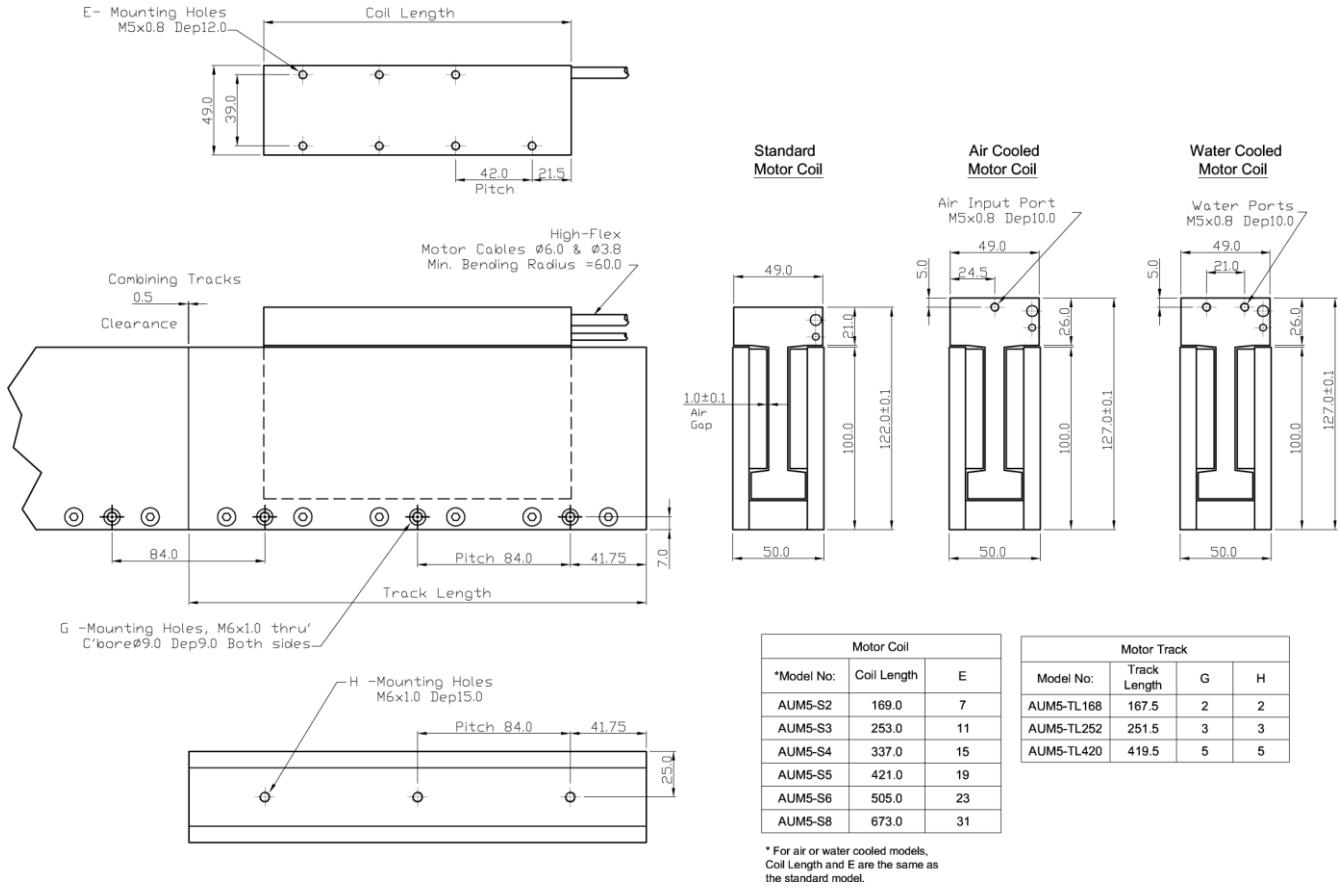
Continuous current is measured with coil mounted to an aluminum plate with same length as coil, 2X width, and thickness 12 mm

Specifications		AUM5-S6		AUM5-S8		AUM5-S9	
Performance Parameters	Unit	Series	Parallel	Series	Parallel	Series	Parallel
Continuous Force, coil @100 °C	N	590		786		884	
Continuous Force, AC, coil @100 °C	N	707		943		1,061	
Continuous Force, WC, coil @100 °C	N	766		1,022		1,150	
Peak Force	N	4,244		5,659		6,367	
Motor Constant	N/SqRt(W)	47.0		54.2		57.5	
Continuous Power	W	157.5		210.0		236.3	
Peak Power	W	8,165		10,886		12,247	
Electrical Cycle	mm	84.0		84.0		84.0	
Max Bus Voltage	V	330		330		330	
Max Coil Temperature	°C	125		125		125	
Thermal Dissipation Constant	W/ °C	2.10		2.80		3.15	
Continuous current	Arms	2.5	5.0	2.5	5.0	2.5	5.0
Continuous current, AC	Arms	3.0	6.0	3.0	6.0	3.0	6.0
Continuous current, WC	Arms	3.3	6.5	3.3	6.5	3.3	6.5
Peak current	Arms	18.0	36.0	18.0	36.0	18.0	36.0
Force Constant	N/Arms	235.8	117.9	314.4	157.2	353.7	176.9
Back EMF Constant	V _{peak} /(m/s)	192.5	96.3	256.7	128.4	288.8	144.4
Inductance	mH	39.00	9.75	52.00	13.00	58.50	14.63
Terminal Resistance @25 °C	Ohms	25.20	6.30	33.60	8.40	37.80	9.45
Electrical Time Constant	ms	1.55	1.55	1.55	1.55	1.55	1.55
Mechanical Parameters							
Coil Mass	Kg	4.32		5.76		6.48	
Coil Length	mm	505.0		673.0		757.0	
Track Mass (per 168 mm)	Kg	4.26					
Magnetic Attraction	N	0					

AC- Air Cool, WC-Water Cool

Continuous current is measured with coil mounted to an aluminum plate with same length as coil, 2X width, and thickness 12 mm

AUM5 Series Dimensions



Part Numbering

Motor Coil

Model	Cooling Options	Connection	Size	Thermal Sensor	Cable Length (m)
AUM5	Blank = natural convection A = Air cooled W = Water cooled	S = Series P = Parallel ¹	S1- S6 S8	J = Thermostat (standard) K = Thermocouple	3.0

Example: AUM5-P-S4-J-3.0; AUM5-A-P-S4-J-3.0; AUM5-W-P-S4-J-3.0

Motor Track

Model	Track Length
AUM5	TL168
	TL252
	TL420

Example: AUM5-TL600

¹ Parallel connection is not applicable to S1 motor coil