

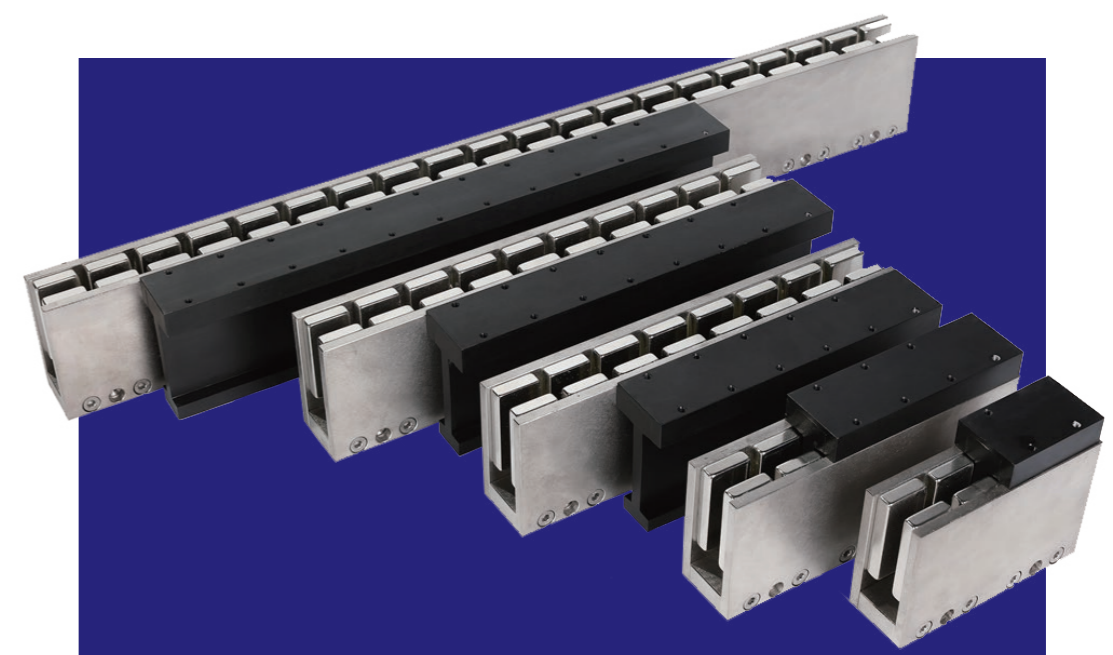
			Peak Force (Fpk)							
Product Type			10N	100N	500N	1000N	5000N	10000N	15000N	20000N
Ironless Technology	AUM	AUM 1,2,3,4,5,6	[Bar chart showing force range from 10N to 20000N]							
	AWM	AWM 1,2,3,4,5	[Bar chart showing force range from 10N to 20000N]							
	ACR	ACR 240,335,820,1525	[Bar chart showing force range from 10N to 20000N]							
Iron Core Technology	AJM	AJM 30,50,80,100	[Bar chart showing force range from 10N to 20000N]							
	AQM	AQM 8,24,30,50,80	[Bar chart showing force range from 10N to 20000N]							
	AKM	AKM 30,50,100,150,200	[Bar chart showing force range from 10N to 20000N]							

Flexible structure design contributes to excellent and simple high-precision control system:

- Multi-carriage structure
- Optional moving track design instead of moving coil, eliminating cable management and potential cable damage
- Multiple coils can be connected in series or parallel to generate higher force and faster speed while maintaining compact size

Please contact Akribis Sales engineers for more details (cust-service@akribis-sys.com).

Applications & Industries: electronics, semiconductor, solar energy, lithium battery, PCB, FPD, HDD, LED, lathe, vehicle electronics, packaging, printing, optics, biomedical and many more.



AUM SERIES

- ▶ Ironless technology
- ▶ Zero cogging force
- ▶ Patented technology
- ▶ Small electrical and mechanical constant
- ▶ High continuous force and peak force

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Introduction

AUM series Ironless DC brushless linear motors are compact in size but high in force density, achieving larger thrust force.

F_{cn} (Continuous force) = 3N ~ 2340N

F_{pk} (Peak force) = 11.9N ~ 16200N

Applications

Applicable to point-to-point micron/nanometer level positioning; unlimited travel stroke with top speed of 5m/s or faster; low velocity ripple during both fast and low speed scanning; precise force control with fine resolution.

Applications & Industries: high speed and precision machines for positioning, motion profile tracking, velocity controlling used in front-end & back-end wafer handling and inspection, photovoltaic and lithium battery systems, glass and LCD applications, biomedical equipment, printing machines, and laser processing machines.

Features

- ▶ Ironless technology and no cogging force
- ▶ High continuous and peak force
- ▶ Optional hall sensors
- ▶ High motor constant
- ▶ Wide range of forces and sizes to choose from
- ▶ Optional air cooling and water cooling configurations

Model	Coil Length (mm)	Continuous Force (F _{cn}) / Peak Force (F _{pk})								Unit: N
		10	50	100	500	1000	1500	2000	...	
AUM1-S1 to AUM1-S5	22	3.0 / 11.9								
	43	6.0 / 23.8								
	64	8.9 / 35.7								
	85	11.9 / 47.6								
	106	14.9 / 59.5								
AUM2-S1 to AUM2-S8	31	8.8 / 44								
	61	17.6 / 88								
	91	26.4 / 132								
	121	35.2 / 176								
	241	70.4 / 352								
AUM3-S1 to AUM3-S6	61	28 / 144								
	121	57 / 289								
	181	85 / 433								
	241	113 / 578								
	361	170 / 867								
AUM4-S1 to AUM4-S8	61	55 / 312								
	121	110 / 624								
	181	166 / 936								
	241	221 / 1248								
	301	276 / 1560								
	361	331 / 1872								
	481	442 / 2496								
	505	590 / 4244								
AUM5-S1 to AUM5-S12-V107	85	98 / 707								
	169	197 / 1415								
	253	295 / 2112								
	337	393 / 2830								
	421	491 / 3537								
	505	590 / 4244								
	673	786 / 5659								
	757	884 / 6367								
	841	983 / 7078								
	1009	1179 / 8489								
AUM6-P5-S4 to AUM6-P8-S12	337	780 / 5400								
	505	1170 / 8100								
	673	1560 / 10800								
	757	1755 / 12150								
	841	1950 / 13500								
	1009	2340 / 16200								

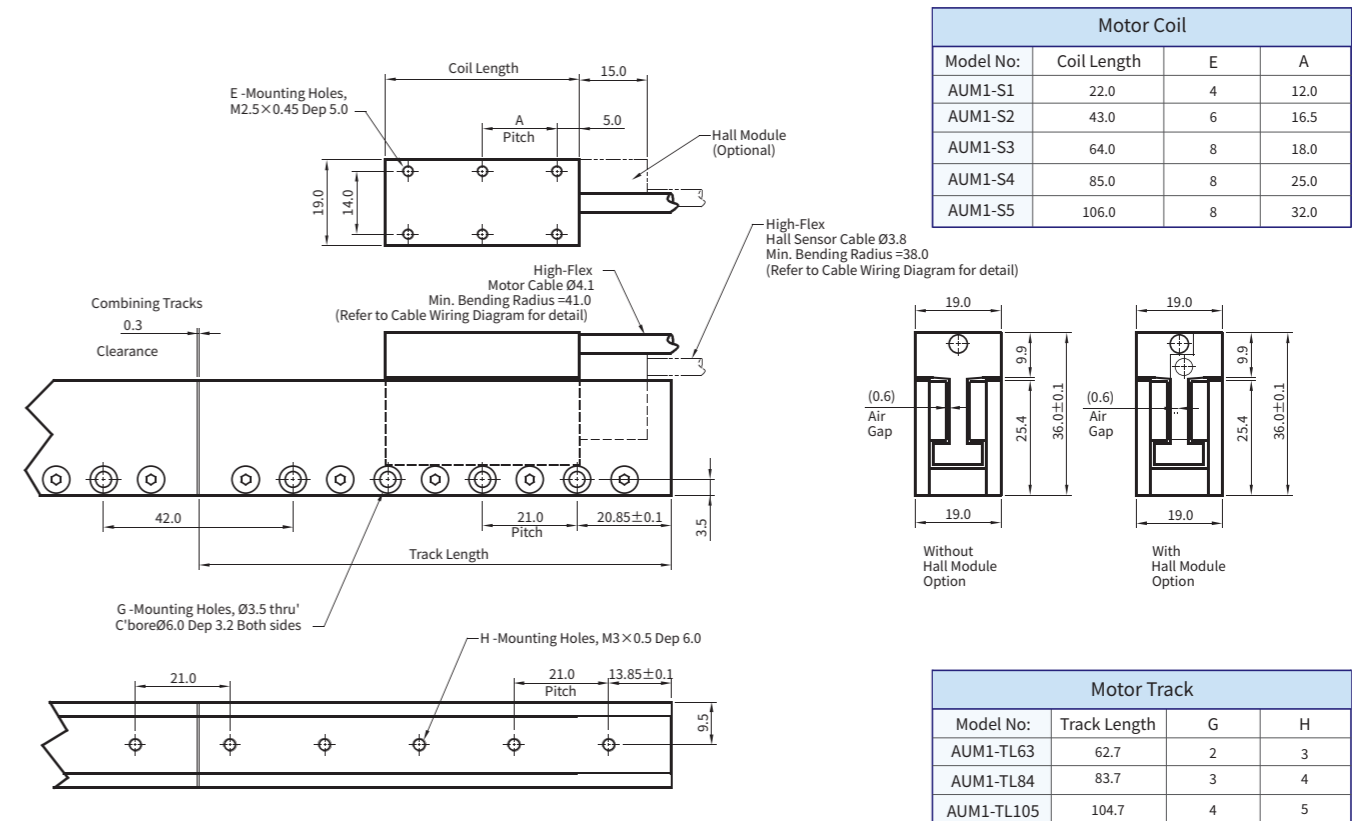
① No hall sensor.
② Continuous force is measured under the condition of self-cooling. Please refer to the detail parameters table for the continuous force under the condition of air cooling or water cooling.

AUM1

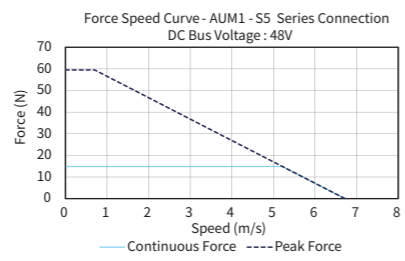
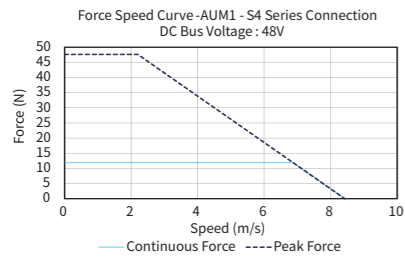
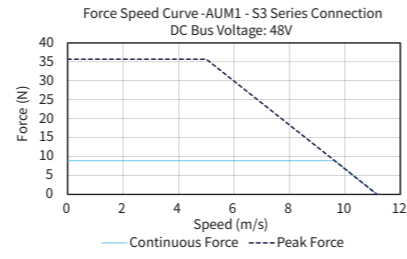
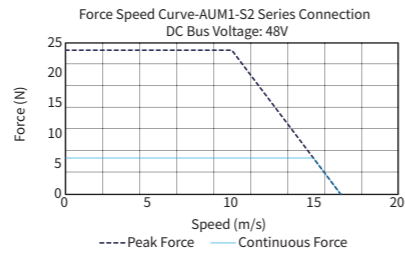
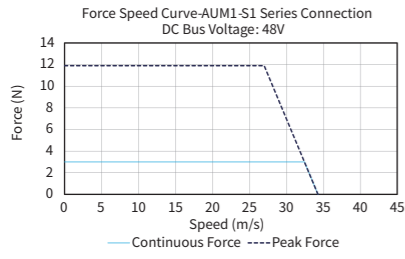
	Symbol	Unit	AUM1-S1	AUM1-S2	AUM1-S3	AUM1-S4	AUM1-S5
Performance Parameters							
Continuous Force (NC) @100°C	F _{cn}	N	3.0	6.0	8.9	11.9	14.9
Peak Force	F _{pk}	N	11.9	23.8	35.7	47.6	59.5
Force Constant ±10%	K _f	N/Arms	1.75	3.50	5.25	7.00	8.75
Back EMF Constant ±10%	K _e	Vpeak/(m/s)	1.4	2.9	4.3	5.7	7.1
Motor Constant @25°C	K _m	N/Sqrt(W)	1.4	1.9	2.4	2.8	3.1
Resistance (L-L) 25°C ±10%	R ₂₅	Ω	1.11	2.18	3.18	4.18	5.18
Inductance (L-L) ±40%	L	mH	0.15	0.30	0.44	0.59	0.72
Electrical Time Constant	τ _e	ms	0.14	0.14	0.14	0.14	0.14
Continuous Current (NC) @100°C	I _{cn}	Arms	1.7	1.7	1.7	1.7	1.7
Peak Current	I _{pk}	Arms	6.8	6.8	6.8	6.8	6.8
Continuous Power Dissipation (NC) @100°C	P _{cn}	W	6.20	12.18	17.77	23.32	28.94
Max. Coil Temperature	t _{max}	°C	100	100	100	100	100
Thermal Dissipation Constant (NC)	K _{thn}	W/°C	0.1	0.2	0.2	0.3	0.4
Max. Bus Voltage	U _{bus}	Vdc	330	330	330	330	330
Magnetic Period	τ _M	mm	21.0	21.0	21.0	21.0	21.0
Attraction Force	F _a	kN	0	0	0	0	0
Mechanical Parameters							
Coil Mass (NC)	m _{cn}	kg	0.03	0.05	0.08	0.10	0.13
Coil Length (NC)	L _{cn}	mm	22.0	43.0	64.0	85.0	106.0
Track Mass Per Meter	m _{track}	kg/m	2.37	2.37	2.37	2.37	2.37
Other Information							
Insulation Class	Class B (130°C)						
Protection Grade	IP00						
Compliance with Global Standards	RoHS, CE						
Ambient Temperature	Operation	0°C to 40°C (non-freezing)					
	Storage	-15°C to 70°C (non-freezing)					
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)					
	Storage	10%RH to 90%RH (non-condensing)					
Recommended Ambience	Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.						

- ① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling, AC-Air Cooling, WC-Water Cooling.
- ② Resistance is measured by DC current with standard 0.5 m cable.
- ③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%. The contents of datasheet are subject to change without prior notice.

Dimension



Force-Speed Curve



Part Numbering

Motor Coil

AUM1-S-S3-HF-0.5-FB

Motor: **AUM1**

Connection: **S=Series**

Size: **S1/S2/S3/S4/S5**

Motor Cable Options: **FB/NFB**

Cable Length (m): **0.5/3.0**

Hall Cable Option: **NH/HF**

- ① NH = Without Hall Sensor cable (Standard)
- ② HF = With Built-in hall sensor & hall cable comes with flying leads
- ③ FB = With ferrite bead
- ④ NFB = No ferrite bead

Motor Track

AUM1-TL63

Model: **AUM1**

Track Length: **TL63/TL84/TL105**

AUM2

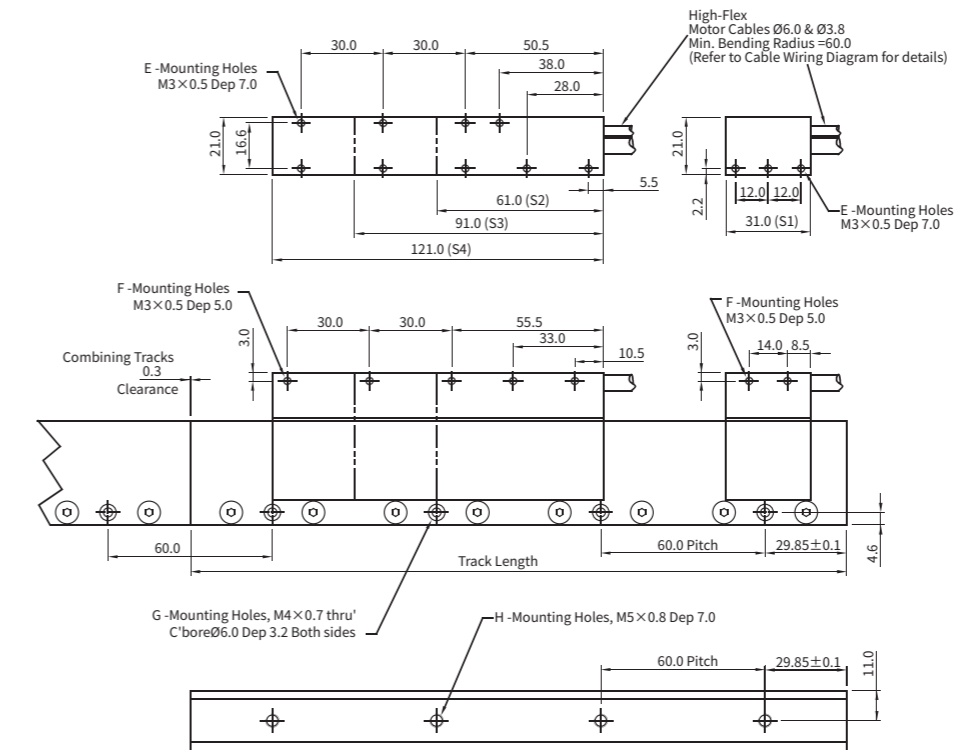
			AUM2-S1	AUM2-S2	AUM2-S3	AUM2-S4	AUM2-S8
Performance Parameters			Series	Series	Parallel	Series	Parallel
Continuous Force (NC) @100°C ^①	F _{cn}	N	8.8	17.6	17.6	26.4	26.6
Peak Force	F _{pk}	N	44.0	88.0	88.0	132.0	132.8
Force Constant ±10%	K _f	N/Arms	5.5	11.0	5.5	16.5	8.3
Back EMF Constant ±10%	K _e	Vpeak/(m/s)	4.5	9.0	4.5	13.5	6.8
Motor Constant @25°C	K _m	N/Sqrt(W)	2.5	3.6	3.4	4.4	4.5
Resistance (L-L) 25°C ±10% ^②	R ₂₅	Ω	3.15	6.30	1.79	9.57	2.26
Inductance (L-L) ±40% ^③	L	mH	1.04	1.96	0.51	2.94	0.73
Electrical Time Constant	τ _e	ms	0.33	0.31	0.29	0.31	0.32
Continuous Current (NC) @100°C ^①	I _{cn}	Arms	1.6	1.6	3.2	1.6	3.2
Peak Current	I _{pk}	Arms	8.0	8.0	16.0	8.0	16.0
Continuous Power Dissipation (NC) @100°C ^①	P _{cn}	W	15.6	31.2	35.4	47.4	44.7
Max. Coil Temperature	t _{max}	°C	100	100	100	100	100
Thermal Dissipation Constant (NC) ^①	K _{thn}	W/°C	0.2	0.4	0.5	0.6	0.6
Max. Bus Voltage	U _{bus}	V _{dc}	330	330	330	330	330
Magnetic Period	T _{WN}	mm	30.0	30.0	30.0	30.0	30.0
Attraction Force	F _a	kN	0	0	0	0	0

Mechanical Parameters			Series		Parallel		Series		Parallel	
Coil Mass (NC)	m _{cn}	kg	0.06	0.12	0.12	0.18	0.18	0.24	0.24	0.47
Coil Length (NC)	L _{cn}	mm	31.0	61.0	61.0	91.0	91.0	121.0	121.0	241.0
Track Mass Per Meter	m _{track}	kg/m	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90

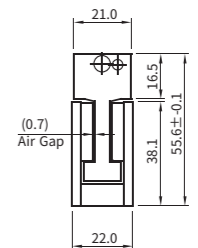
Other Information		Class B (130°C)	
Insulation Class	Class B (130°C)		
Protection Grade	IP00		
Compliance with Global Standards	RoHS, CE		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)	
	Storage	-15°C to 70°C (non-freezing)	
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)	
	Storage	10%RH to 90%RH (non-condensing)	
Recommended Ambience	Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.		

- ① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling, AC-Air Cooling, WC-Water Cooling.
- ② Resistance is measured by DC current with standard 0.5 m cable.
- ③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%. The contents of datasheet are subject to change without prior notice.

Dimension

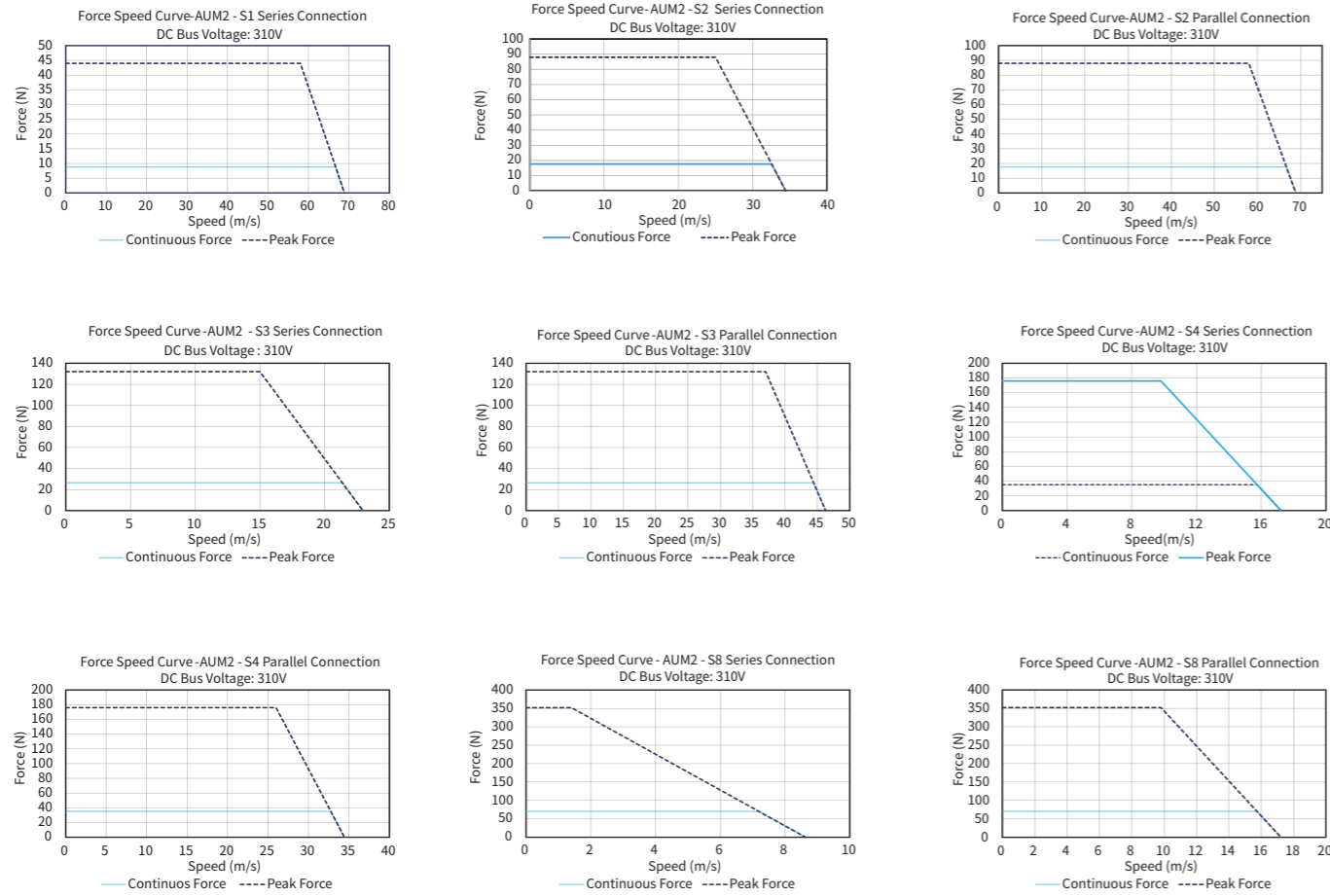


Motor Coil			
Model No.	Coil Length	E	F
AUM2-S1	31.0	3	2
AUM2-S2	61.0	5	5
AUM2-S3	91.0	7	7
AUM2-S4	121.0	9	9
AUM2-S8	241.0	17	17



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

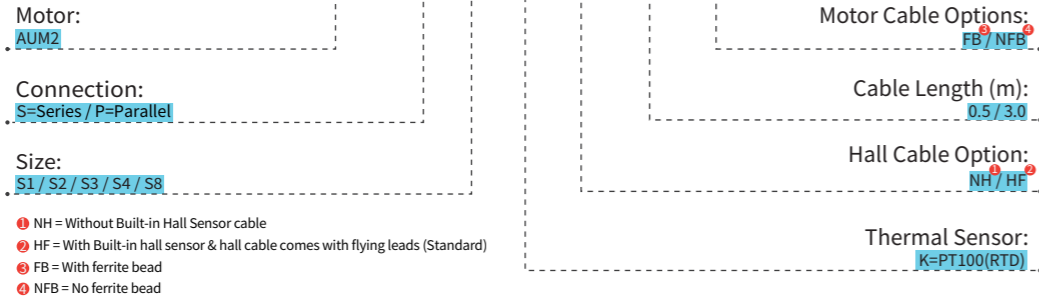
Force-Speed Curve



Part Numbering

Motor Coil

AUM2-S-S3-K-HF-0.5-FB



Motor Track

AUM2-TL120

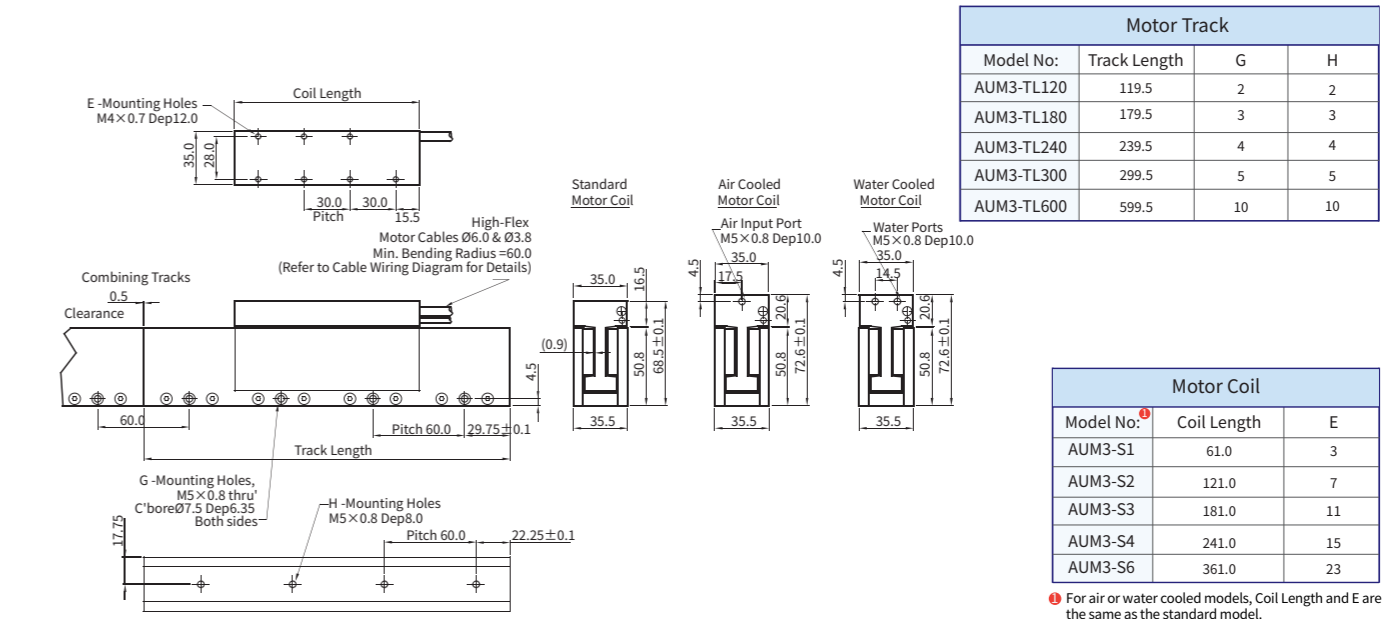


AUM3

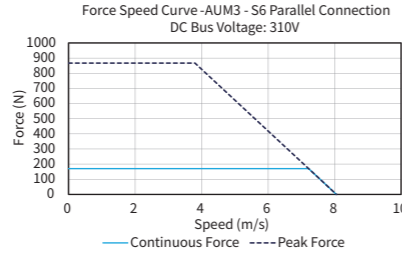
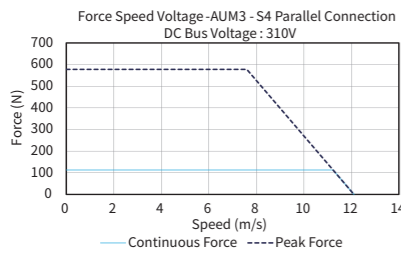
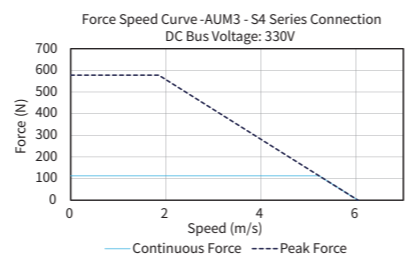
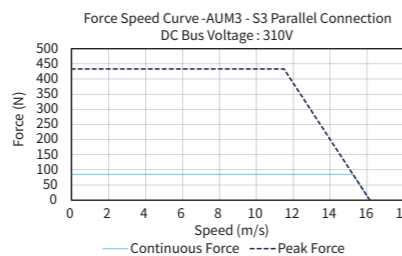
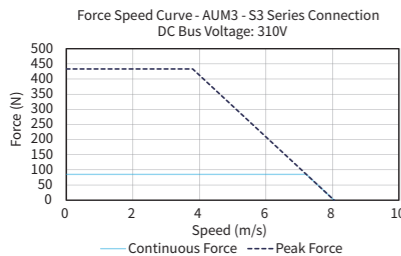
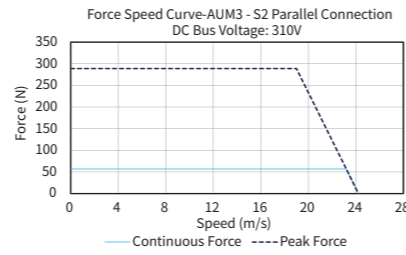
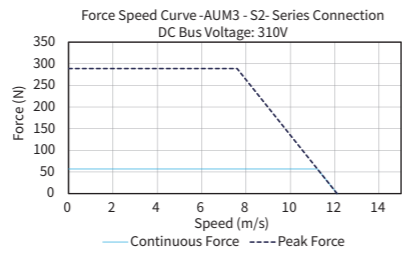
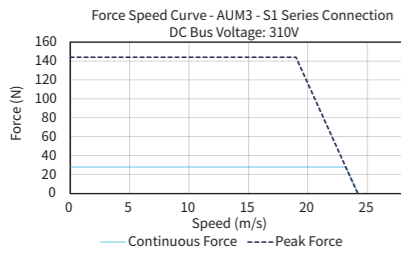
Performance Parameters	Symbol	Unit	AUM3-S1	AUM3-S2	AUM3-S3	AUM3-S4	AUM3-S6				
			Series	Series	Parallel	Series	Parallel	Series	Parallel		
Continuous Force (NC) @100°C	F _{cn}	N	28	57	57	85	85	113	113	170	170
Continuous Force (AC) @100°C	F _{ca}	N	34	68	68	102	102	136	136	203	203
Continuous Force (WC) @100°C	F _{cw}	N	37	73	73	110	110	147	147	220	220
Peak Force	F _{pk}	N	144	289	289	433	433	578	578	867	867
Force Constant ±10%	K _f	N/Arms	15.7	31.4	15.7	47.1	23.6	62.8	31.4	94.2	47.1
Back EMF Constant ±10%	K _e	Vpeak/(m/s)	12.8	25.6	12.8	38.5	19.2	51.3	25.6	76.9	38.5
Motor Constant @25°C	K _m	N/Sqrt(W)	5.8	8.4	8.0	10.3	9.9	11.9	11.6	13.9	14.7
Resistance (L-L) @25°C ±10%	R _{zs}	Ω	4.95	9.22	2.57	13.92	3.74	18.62	4.92	30.42	6.87
Inductance (L-L) ±40%	L	mH	3.13	6.26	1.57	9.53	2.38	12.90	3.36	19.50	4.70
Electrical Time Constant	T _e	ms	0.63	0.68	0.61	0.68	0.64	0.69	0.68	0.64	0.68
Continuous Current (NC) @100°C	I _{cn}	Arms	1.8	1.8	3.6	1.8	3.6	1.8	3.6	1.8	3.6
Continuous Current (AC) @100°C	I _{ca}	Arms	2.2	2.2	4.3	2.2	4.3	2.2	4.3	2.2	4.3
Continuous Current (WC) @100°C	I _{cw}	Arms	2.3	2.3	4.7	2.3	4.7	2.3	4.7	2.3	4.7
Peak Current	I _{pk}	Arms	9.2	9.2	18.4	9.2	18.4	9.2	18.4	9.2	18.4
Continuous Power Dissipation (NC) @100°C	P _{cn}	W	31.0	57.8	64.3	87.2	93.6	116.6	123.3	190.5	172.2
Continuous Power Dissipation (AC) @100°C	P _{ca}	W	44.6	83.2	92.6	125.6	134.8	168.0	177.6	274.4	247.9
Continuous Power Dissipation (WC) @100°C	P _{cw}	W	52.4	97.6	108.7	147.4	158.2	197.1	208.4	322.0	291.0
Max. Coil Temperature	T _{max}	°C	100	100	100	100	100	100	100	100	100
Thermal Dissipation Constant (NC)	K _{thn}	W/°C	0.4	0.8	0.9	1.2	1.2	1.6	1.6	2.5	2.3
Thermal Dissipation Constant (AC)	K _{tha}	W/°C	0.6	1.1	1.2	1.7	1.8	2.2	2.4	3.7	3.3
Thermal Dissipation Constant (WC)	K _{thw}	W/°C	0.7	1.3	1.4	2.0	2.1	2.6	2.8	4.3	3.9
Max. Bus Voltage	U _{bus}	Vdc	330	330	330	330	330	330	330	330	330
Magnetic Period	T _{MN}	mm	60	60	60	60	60	60	60	60	60
Attraction Force	F _a	kN	0	0	0	0	0	0	0	0	0
Mechanical Parameters											
Coil Mass (NC)	m _{cn}	kg	0.22	0.45	0.45	0.68	0.68	0.91	0.91	1.37	1.37
Coil Length (NC)	L _{cn}	mm	61.0	121.0	121.0	181.0	181.0	241.0	241.0	361.0	361.0
Coil Length (AC)	L _{ca}	mm	61.0	121.0	121.0	181.0	181.0	241.0	241.0	361.0	361.0
Coil Length (WC)	L _{cw}	mm	61.0	121.0	121.0	181.0	181.0	241.0	241.0	361.0	361.0
Track Mass Per Meter	m _{track}	kg/m	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33
Other Information											
Insulation Class	Class B (130°C)										
Protection Grade	IP00										
Compliance with Global Standards	RoHS, CE										
Ambient Temperature	Operation	0°C to 40°C (non-freezing)									
	Storage	-15°C to 70°C (non-freezing)									
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)									
	Storage	10%RH to 90%RH (non-condensing)									
Recommended Ambience	Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.										

- ① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling, AC-Air Cooling, WC-Water Cooling.
- ② Resistance is measured by DC current with standard 0.5 m cable.
- ③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%. The contents of datasheet are subject to change without prior notice.

Dimension



Force-Speed Curve



Part Numbering

Motor Coil

AUM3-S-S3-K-HF-0.5-FB

Motor:

AUM3

Cooling Option:

(Blank)=Natural Convection
A=Air Cooled / W=Water Cooled

Connection:

S=Series / P=Parallel

Size:

S1 / S2 / S3 / S4 / S6

- NH = Without Built-in Hall Sensor cable
- HF = With Built-in hall sensor & hall cable comes with flying leads (Standard)
- FB = With ferrite bead
- NFB = No ferrite bead

Motor Cable Options:

FB / NFB

Cable Length (m):

0.5 / 3.0

Hall Cable Option:

NH / HF

Thermal Sensor:

J=Thermostat(standard) / K=PT100(RTD)

Motor Track

AUM3-TL120

Model:

AUM3

Track Length:

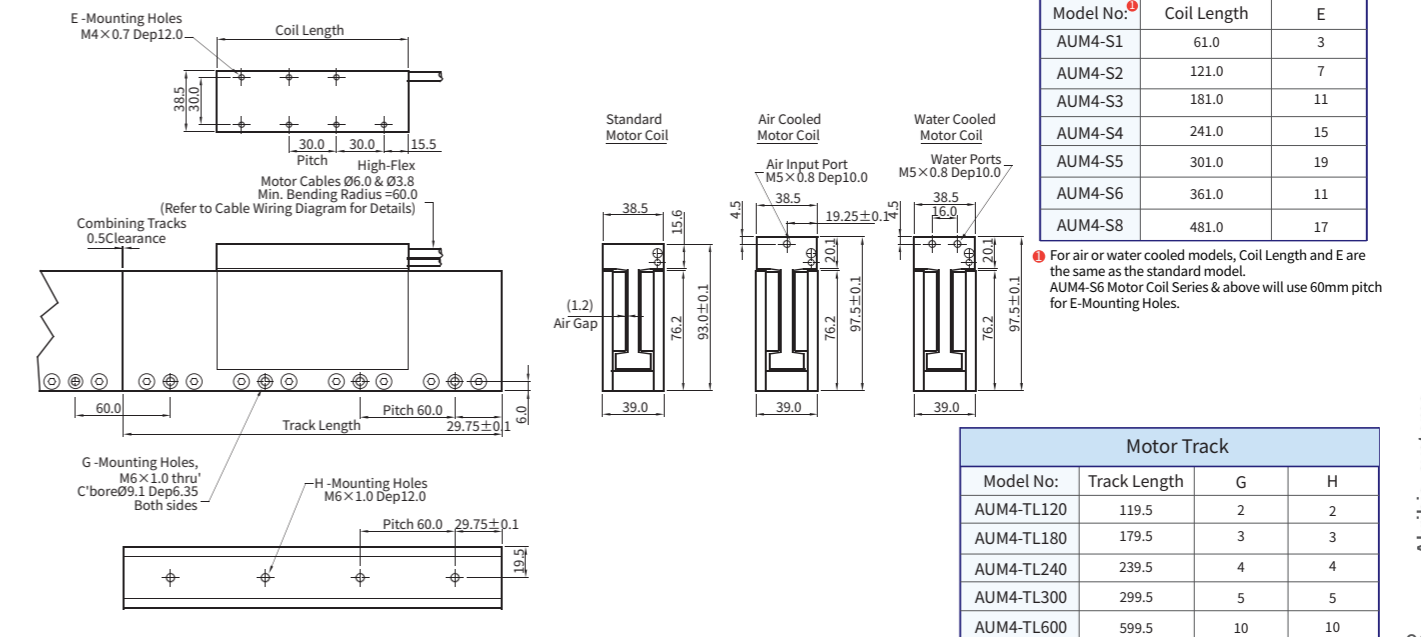
TL120 / TL180 / TL240 / TL300 / TL600

AUM4

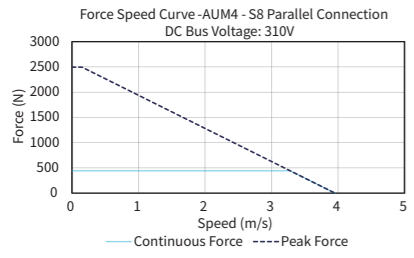
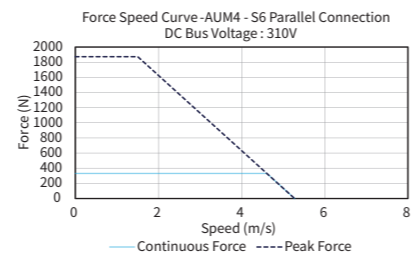
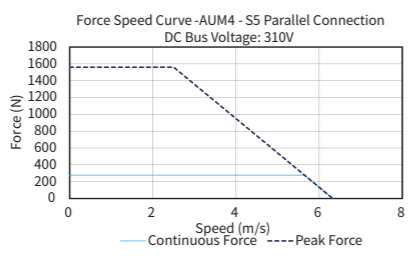
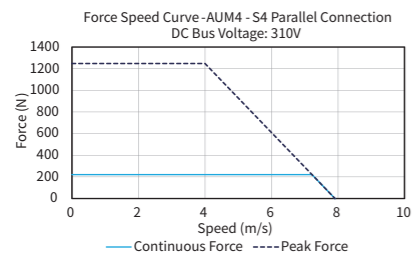
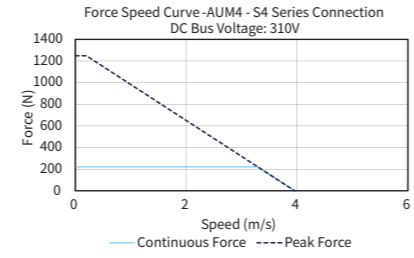
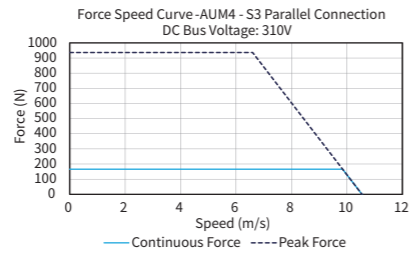
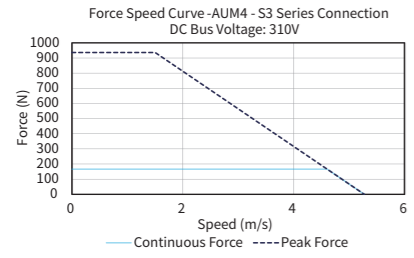
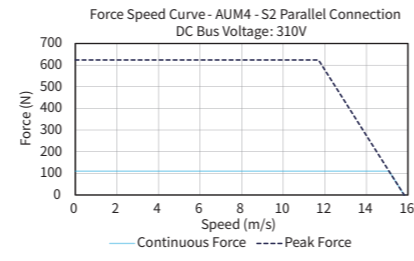
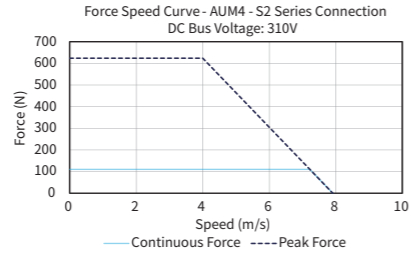
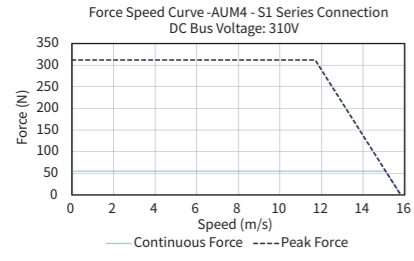
			AUM4-S1	AUM4-S2	AUM4-S3	AUM4-S4	AUM4-S5	AUM4-S6	AUM4-S8
Performance Parameters			Series	Series	Parallel	Series	Parallel	Parallel	Parallel
Continuous Force (NC) @100°C	F _{cn}	N	55	110	110	166	166	221	221
Continuous Force (AC) @100°C	F _{ca}	N	66	132	132	199	199	265	265
Continuous Force (WC) @100°C	F _{cw}	N	72	144	144	215	215	287	287
Peak Force	F _{pk}	N	312	624	624	936	936	1248	1248
Force Constant ±10%	K _f	N/Arms	24.0	48.0	24.0	72.0	36.0	96.0	48.0
Back EMF Constant ±10%	K _e	Vpeak/(m/s)	19.6	39.2	19.6	58.8	29.4	78.4	39.2
Motor Constant @25°C	K _m	N/Sqrt(W)	9.3	13.0	12.7	15.9	15.7	18.4	18.6
Resistance (L-L) @25°C ±10%	R ₂₅	Ω	4.42	9.02	2.37	13.62	3.52	18.22	4.42
Inductance (L-L) ±40%	L	mH	3.50	7.00	1.82	10.50	2.65	14.00	3.48
Electrical Time Constant	τ _e	ms	0.79	0.78	0.77	0.77	0.75	0.77	0.79
Continuous Current (NC) @100°C	I _{cn}	Arms	2.3	2.3	4.6	2.3	4.6	2.3	4.6
Continuous Current (AC) @100°C	I _{ca}	Arms	2.8	2.8	5.5	2.8	5.5	2.8	5.5
Continuous Current (WC) @100°C	I _{cw}	Arms	3.0	3.0	6.0	3.0	6.0	3.0	6.0
Peak Current	I _{pk}	Arms	13.0	13.0	26.0	13.0	26.0	13.0	26.0
Continuous Power Dissipation (NC) @100°C	P _{cn}	W	45	92	97	139	144	186	181
Continuous Power Dissipation (AC) @100°C	P _{ca}	W	65	133	139	201	207	268	260
Continuous Power Dissipation (WC) @100°C	P _{cw}	W	76	156	164	235	243	315	306
Max. Coil Temperature	t _{max}	°C	100	100	100	100	100	100	100
Thermal Dissipation Constant (NC)	K _{thn}	W/°C	0.6	1.2	1.3	1.9	1.9	2.5	2.4
Thermal Dissipation Constant (AC)	K _{tha}	W/°C	0.9	1.8	1.9	2.7	2.8	3.6	3.5
Thermal Dissipation Constant (WC)	K _{thw}	W/°C	1.0	2.1	2.2	3.1	3.2	4.2	4.1
Max. Bus Voltage	U _{bus}	Vdc	330	330	330	330	330	330	330
Magnetic Period	T _N	mm	60	60	60	60	60	60	60
Attraction Force	F _a	kN	0	0	0	0	0	0	0
Mechanical Parameters									
Coil Mass (NC)	m _{cn}	kg	0.28	0.56	0.56	0.89	0.89	1.19	1.19
Coil Length (NC)	L _{cn}	mm	61.0	121.0	121.0	181.0	181.0	241.0	241.0
Coil Length (AC)	L _{ca}	mm	61.0	121.0	121.0	181.0	181.0	241.0	241.0
Coil Length (WC)	L _{cw}	mm	61.0	121.0	121.0	181.0	181.0	241.0	241.0
Track Mass Per Meter	m _{track}	kg/m	14.75	14.75	14.75	14.75	14.75	14.75	14.75
Other Information			Class B (130°C)						
Insulation Class			Class B (130°C)						
Protection Grade			IP00						
Compliance with Global Standards			RoHS, CE						
Ambient Temperature	Operation	0°C to 40°C (non-freezing)							
	Storage	-15°C to 70°C (non-freezing)							
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)							
	Storage	10%RH to 90%RH (non-condensing)							
Recommended Ambience			Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.						

- Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling, AC-Air Cooling, WC-Water Cooling.
- Resistance is measured by DC current with standard 0.5 m cable.
- Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%. The contents of datasheet are subject to change without prior notice.

Dimension

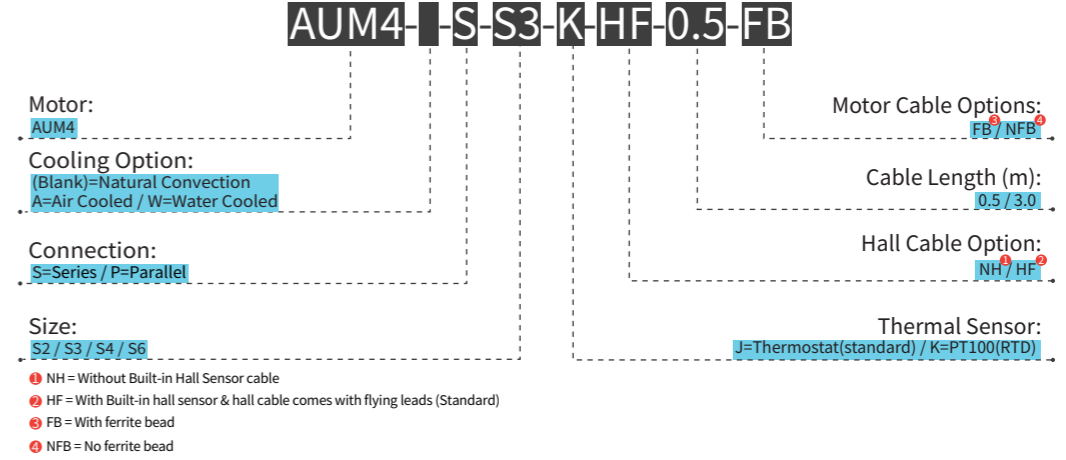


Force-Speed Curve



Part Numbering

Motor Coil



Motor Track

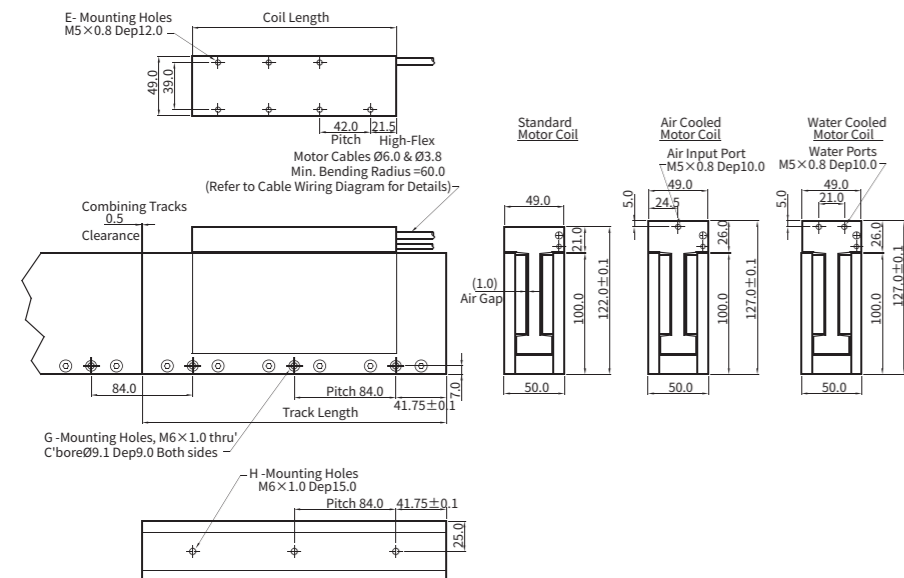


AUM5

			AUM5-S1	AUM5-S2	AUM5-S3	AUM5-S4	AUM5-S5	AUM5-S6	AUM5-S8-V107	AUM5-S9-V80	AUM5-S10-V107	AUM5-S12-V107
Performance Parameters												
Continuous Force (NC) @100°C	F _{cn}	N	98	197	197	295	295	393	393	491	590	786
Continuous Force (AC) @100°C	F _{ca}	N	118	236	236	354	354	472	472	590	707	884
Continuous Force (WC) @100°C	F _{cw}	N	128	255	255	383	383	511	511	639	766	983
Peak Force	F _{pk}	N	707	1415	1415	2122	2122	2830	2830	3537	4244	5659
Force Constant ±10%	K _f	N/Arms	39.3	78.6	39.3	117.9	59.0	157.2	78.6	117.9	98.3	117.9
Back EMF Constant ±10%	K _e	Vpeak/(m/s)	32.1	64.2	32.1	96.3	48.1	128.4	64.2	96.3	80.3	96.3
Motor Constant @25°C	K _m	N/Sqrt(W)	16.0	22.4	21.9	27.8	27.1	31.5	32.0	35.6	38.9	46.3
Resistance (L-L) @25°C ±10%	R ₂₅	Ω	4.02	8.22	2.15	12.02	3.15	16.62	4.02	5.07	6.12	1.92
Inductance (L-L) ±40%	L	mH	6.50	13.00	3.25	18.97	4.73	26.00	6.25	8.13	9.75	3.25
Electrical Time Constant	τ _e	ms	1.62	1.58	1.51	1.58	1.50	1.56	1.55	1.60	1.59	1.69
Continuous Current (NC) @100°C	I _{cn}	Arms	2.5	2.5	5.0	2.5	5.0	2.5	5.0	5.0	10.0	10.0
Continuous Current (AC) @100°C	I _{ca}	Arms	3.0	3.0	6.0	3.0	6.0	3.0	6.0	6.0	6.0	6.0
Continuous Current (WC) @100°C	I _{cw}	Arms	3.3	3.3	6.5	3.3	6.5	3.3	6.5	6.5	6.5	6.5
Peak Current	I _{pk}	Arms	18.0	18.0	36.0	18.0	36.0	18.0	36.0	36.0	36.0	36.0
Continuous Power Dissipation (NC) @100°C	P _{cn}	W	49	99	104	145	152	201	194	245	296	372
Continuous Power Dissipation (AC) @100°C	P _{ca}	W	70	143	149	209	219	289	280	353	426	537
Continuous Power Dissipation (WC) @100°C	P _{cw}	W	82	168	175	245	257	339	328	414	500	625
Max. Coil Temperature	t _{max}	°C	100	100	100	100	100	100	100	100	100	100
Thermal Dissipation Constant (NC)	K _{thn}	W/°C	0.6	1.3	1.4	1.9	2.0	2.7	2.6	3.3	3.9	5.0
Thermal Dissipation Constant (AC)	K _{tha}	W/°C	0.9	1.9	2.0	2.8	2.9	3.9	3.7	4.7	5.7	7.5
Thermal Dissipation Constant (WC)	K _{thw}	W/°C	1.1	2.2	2.3	3.3	3.4	4.5	4.4	5.5	6.7	8.9
Max. Bus Voltage	U _{bus}	V _{dc}	330	330	330	330	330	330	330	330	330	330
Magnetic Period	T _{mn}	mm	84	84	84	84	84	84	84	84	84	84
Attraction Force	F _a	kN	0	0	0	0	0	0	0	0	0	0
Mechanical Parameters												
Coil Mass (NC)	m _{cn}	kg	0.73	1.45	1.45	2.16	2.16	2.88	2.88	3.60	4.32	5.73
Coil Length (NC)	L _{cn}	mm	85.0	169.0	169.0	253.0	253.0	337.0	337.0	421.0	505.0	673.0
Coil Length (AC)	L _{ca}	mm	85.0	169.0	169.0	253.0	253.0	337.0	337.0	421.0	505.0	673.0
Coil Length (WC)	L _{cw}	mm	85.0	169.0	169.0	253.0	253.0	337.0	337.0	421.0	505.0	673.0
Track Mass Per Meter	m _{track}	kg/m	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50
Other Information												
Insulation Class	Class B (130°C)											
Protection Grade	IP00											
Compliance with Global Standards	RoHS, CE											
Ambient Temperature	Operation	0°C to 40°C (non-freezing)										
	Storage	-15°C to 70°C (non-freezing)										
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)										
	Storage	10%RH to 90%RH (non-condensing)										
Recommended Ambience	Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.											

- Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling, AC-Air Cooling, WC-Water Cooling.
 - Resistance is measured by DC current with standard 0.5 m cable.
 - Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%.
- The contents of datasheet are subject to change without prior notice.

Dimension

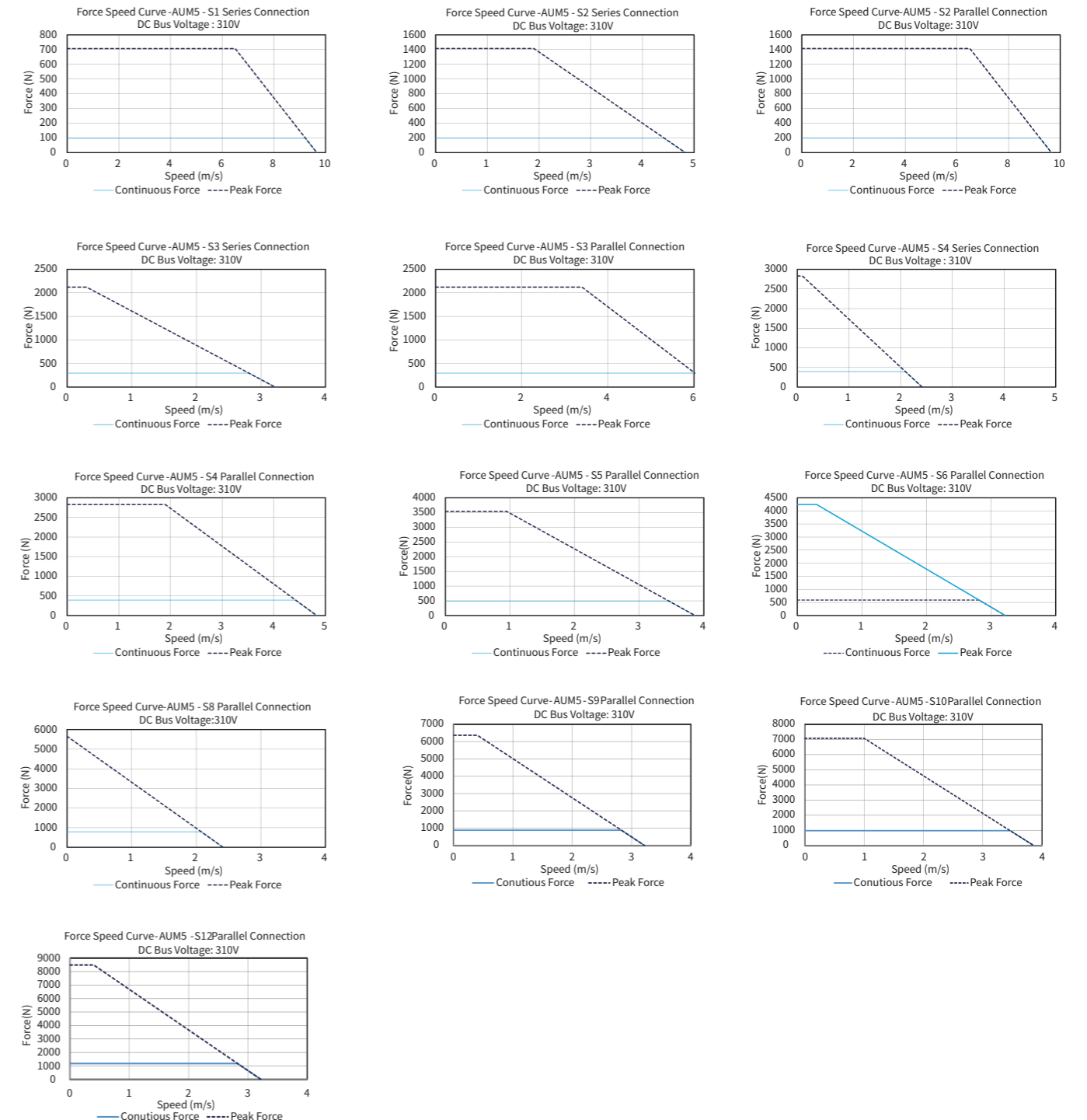


Motor Coil		
Model No.	Coil Length	E
AUM5-S2	169.0	7
AUM5-S3	253.0	11
AUM5-S4	337.0	15
AUM5-S5	421.0	19
AUM5-S6	505.0	23
AUM5-P5-S8-V107	673.0	8
AUM5-P7-S9-V80	757.0	9
AUM5-P5-S10-V107	841.0	10
AUM5-P5-S12-V107	1009.0	12

For air or water cooled models, Coil Length and E are the same as the standard model.

Motor Track			
Model No.	Track Length	G	H
AUM5-TL168	167.5	2	2
AUM5-TL252	251.5	3	3
AUM5-TL420	419.5	5	5

Force-Speed Curve



Part Numbering

Motor Coil

AUM5-S-S3-K-HF-0.5-FB

Motor:

AUM5

Cooling Option:

(Blank)=Natural Convection
A=Air Cooled / W=Water Cooled

Connection:

S=Series / P=Parallel

Size:

S1 / S2 / S3 / S4 / S6

- ① NH = Without Built-in Hall Sensor cable
- ② HF = With Built-in hall sensor & hall cable comes with flying leads (Standard)
- ③ FB = With ferrite bead
- ④ NFB = No ferrite bead
- ⑤ V80 = Only for AUM5-S8 and AUM5-S9
- ⑥ V107 = Only for AUM5-S10 & AUM5-S12

Custom Type:
(Blank) / V80 / V107

Motor Cable Options:
FB / NFB

Cable Length (m):
0.5 / 3.0

Hall Cable Option:
NH / HF

Thermal Sensor:
J=Thermostat(standard) / K=PT100(RTD)

Motor Track

AUM5-TL168

Model:

AUM5

Track Length:

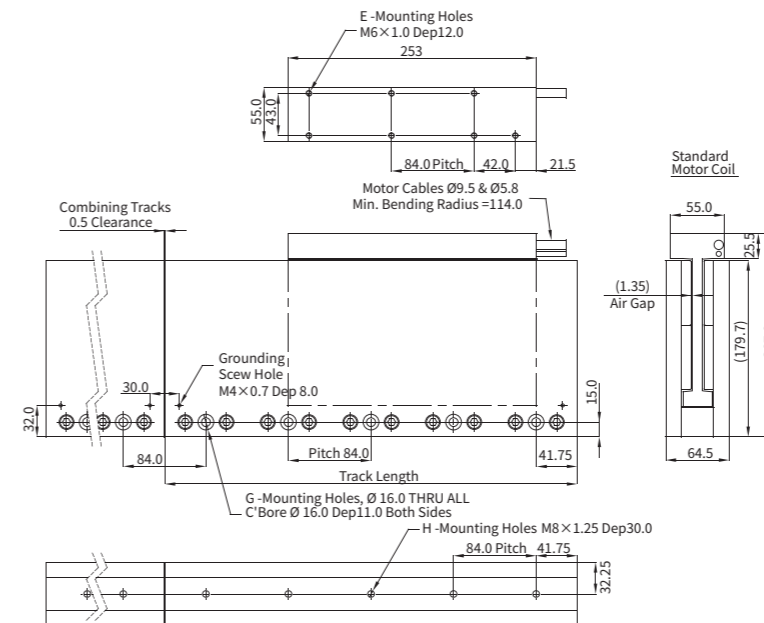
TL168 / TL252 / TL420

AUM6

			AUM6-P5-S4	AUM6-P8-S6	AUM6-P5-S8	AUM6-P8-S9	AUM6-P7-S10	AUM6-P8-S12
Performance Parameters								
Continuous Force (NC) @100°C ^①	F _{cn}	N	780	1170	1560	1755	1950	2340
Peak Force	F _{pk}	N	5400	8100	10800	12150	13500	16200
Force Constant ±10%	K _f	N/Arms	75.0	75.0	150.0	112.5	150.0	150.0
Back EMF Constant ±10%	K _e	Vpeak/(m/s)	61.2	61.2	122.5	91.9	122.5	122.5
Motor Constant @25°C	K _m	N/Sqrt(W)	53.3	67.5	72.9	79.9	82.2	90.7
Resistance (L-L) @25°C ±10% ^②	R ₂₅	Ω	1.32	0.82	2.82	1.32	2.22	1.82
Inductance (L-L) ±40% ^③	L	mH	2.65	1.77	5.30	2.65	4.24	3.53
Electrical Time Constant	τ _e	ms	2.00	2.15	1.88	2.00	1.91	1.94
Continuous Current (NC) @100°C ^①	I _{cn}	Arms	10.4	15.6	10.4	15.6	13.0	15.6
Peak Current	I _{pk}	Arms	72.0	108.0	72.0	108.0	90.0	108.0
Continuous Power Dissipation (NC) @100°C ^①	P _{cn}	W	276	387	590	622	726	857
Max. Coil Temperature	t _{max}	°C	100	100	100	100	100	100
Thermal Dissipation Constant (NC) ^①	K _{thn}	W/°C	3.7	5.2	7.9	8.3	9.7	11.4
Max. Bus Voltage	U _{bus}	Vdc	330	330	330	330	330	330
Magnetic Period	T _N	mm	84	84	84	84	84	84
Attraction Force	F _a	kN	0	0	0	0	0	0
Mechanical Parameters								
Coil Mass (NC)	m _{cn}	kg	4.50	6.75	9.00	10.13	11.25	13.50
Coil Length (NC)	L _{cn}	mm	337.0	505.0	673.0	757.0	841.0	1009.0
Track Mass Per Meter	m _{track}	kg/m	66.67	66.67	66.67	66.67	66.67	66.67
Other Information								
Insulation Class	Class B (130°C)							
Protection Grade	IP00							
Compliance with Global Standards	RoHS, CE							
Ambient Temperature	Operation	0°C to 40°C (non-freezing)						
	Storage	-15°C to 70°C (non-freezing)						
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)						
	Storage	10%RH to 90%RH (non-condensing)						
Recommended Ambience	Indoor (no direct sunlight); No corrosive gas, inflammable gas, oil mist or dust.							

- ① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling, AC-Air Cooling, WC-Water Cooling.
- ② Resistance is measured by DC current with standard 0.5 m cable.
- ③ Inductance is measured by current frequency of 1 kHz. The variation range of AUM inductance is ±40% because three phase inductances are different. The value in the catalog is the average between the maximum and minimum values. For each phase, the variation range is ±20%. The contents of datasheet are subject to change without prior notice.

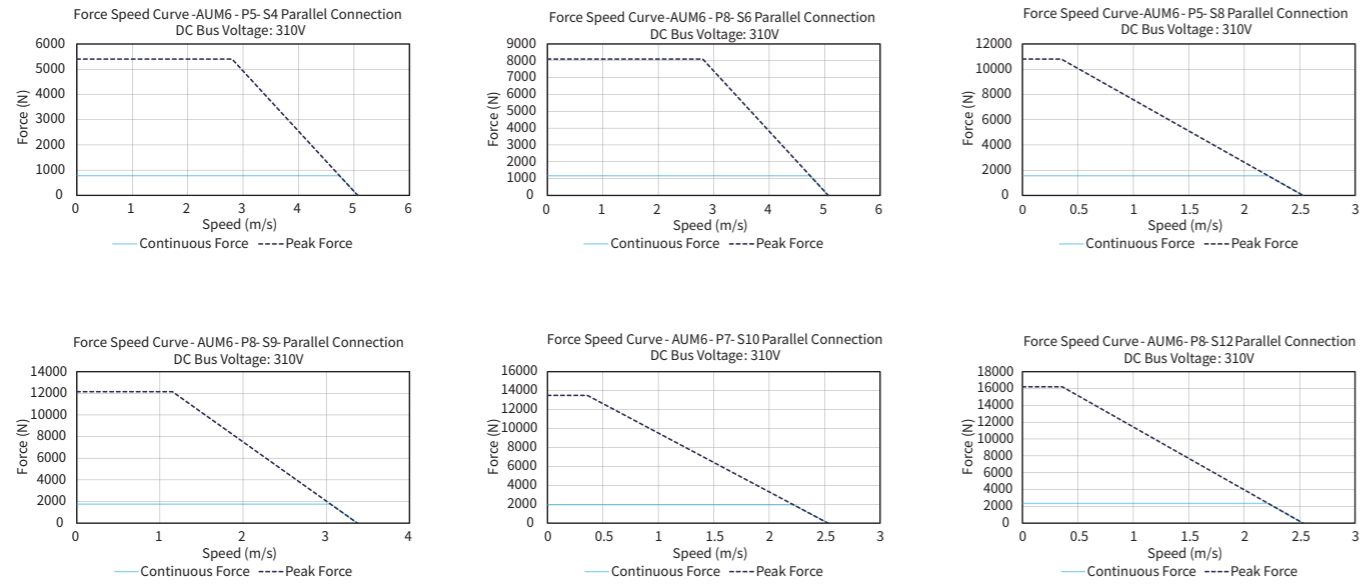
Dimension



Motor Coil		
Model No:	Coil Length	E
AUM6-P5-S4	337.0	9
AUM6-P8-S6	505.0	13
AUM6-P5-S8	673.0	17
AUM6-P8-S9	757.0	19
AUM6-P7-S10	841.0	21
AUM6-P8-S12	1009.0	25

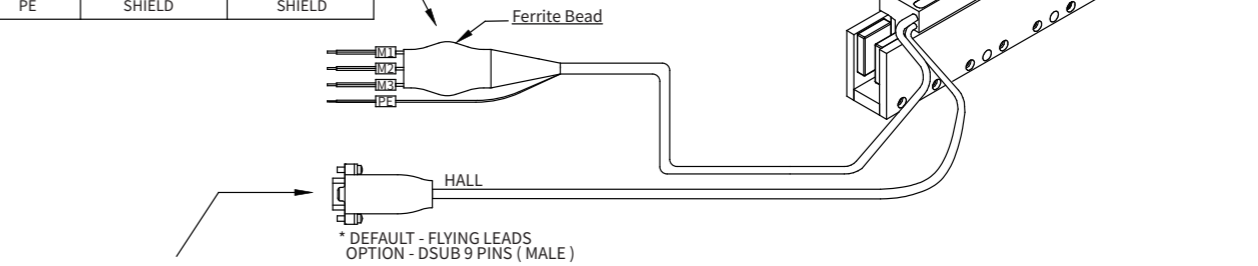
Motor Track			
Model No:	Track Length	G	H
AUM6-TL168	167.5	2	2
AUM6-TL252	251.5	3	3
AUM6-TL420	419.5	5	5

Force-Speed Curve



AUM1 Series Motor Cable Connection

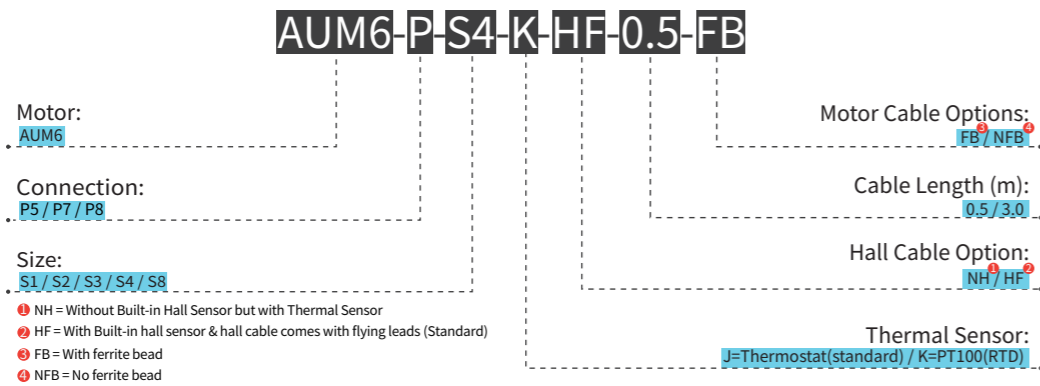
MOTOR CABLE			
PIN	DESCRIPTION	NO FERRITE BEAD	FERRITE BEAD
-	M1	BROWN	YELLOW / GREY
-	M2	WHITE	BLUE / ORANGE
-	M3	GREEN	RED / GREEN
-	PE	SHIELD	SHIELD



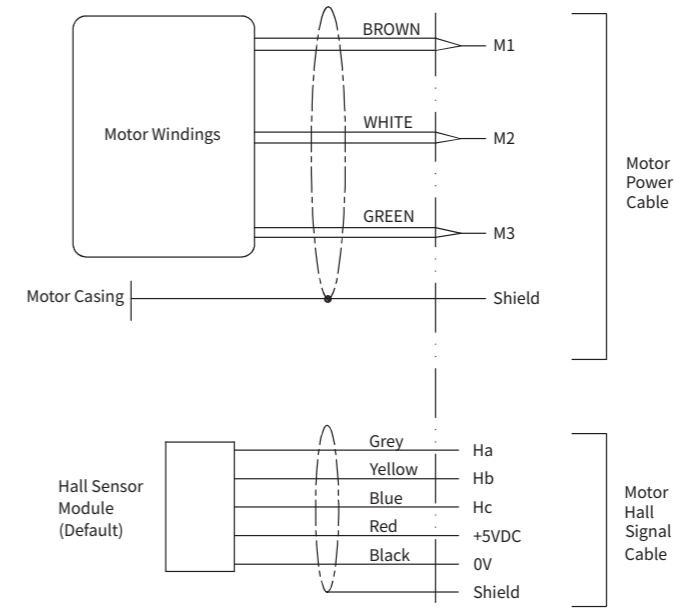
HALL CABLE		
PIN	DESCRIPTION	COLOR
1	HA	GREY
2	HB	YELLOW
3	HC	BLUE
4	5VDC	RED
5	0VDC	BLACK

Part Numbering

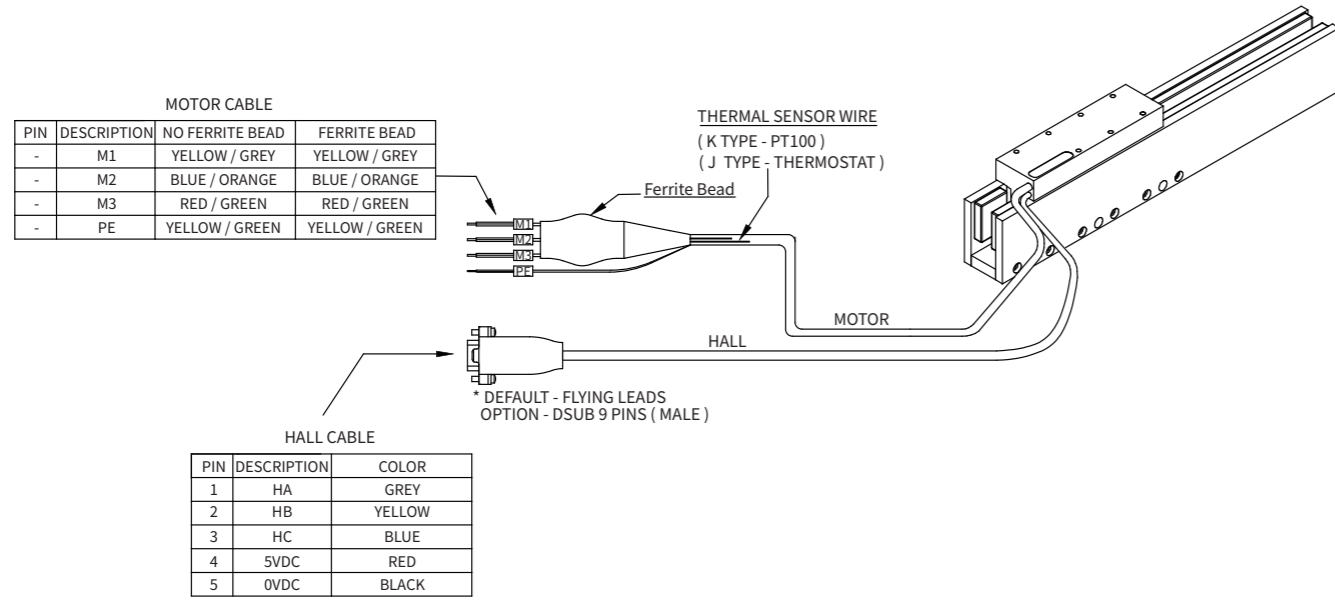
Motor Coil



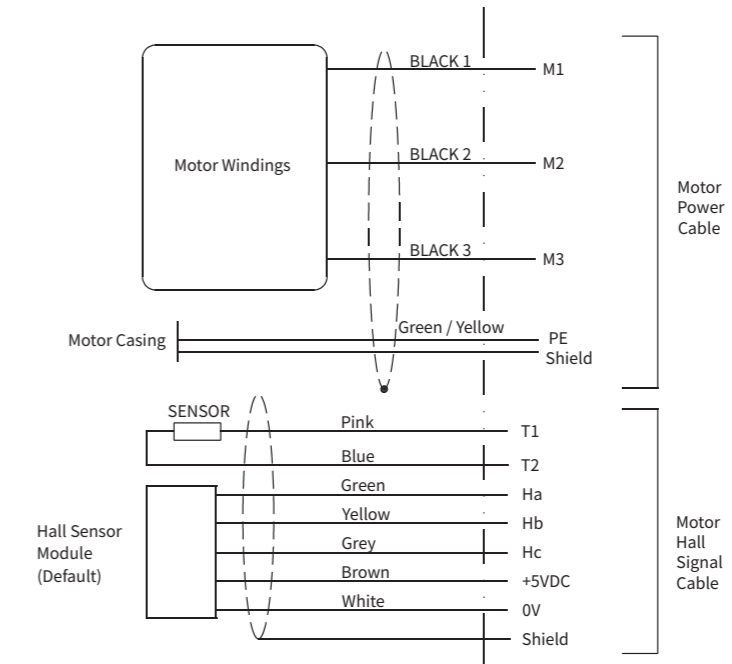
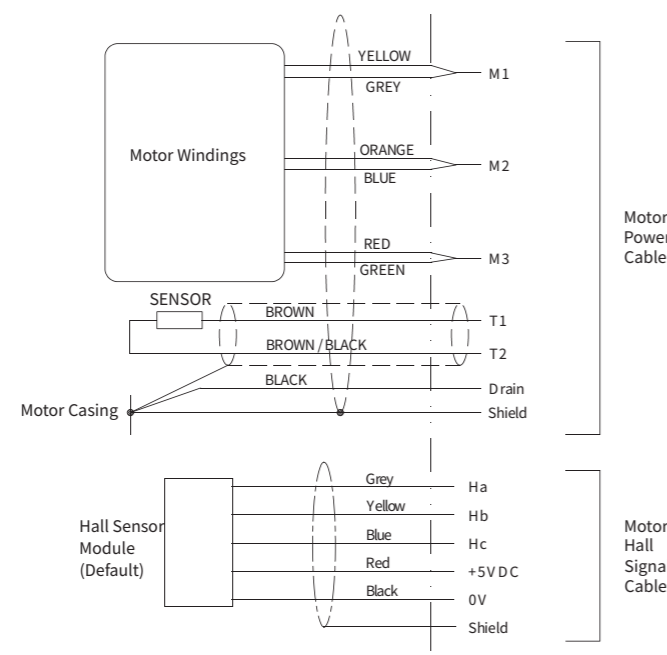
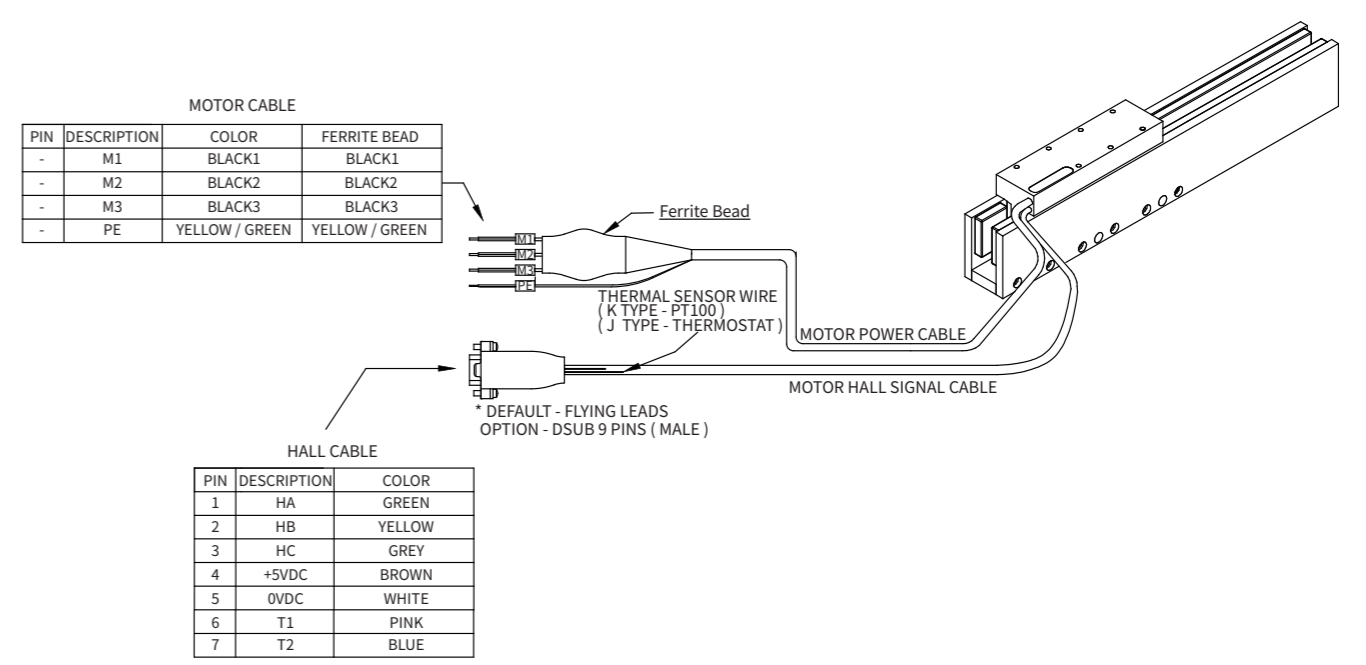
Motor Track



AUM2 / 3 / 4 / 5 Series Motor Cable Connection



AUM6 Series Motor Cable Connection



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