

AVA SERIES

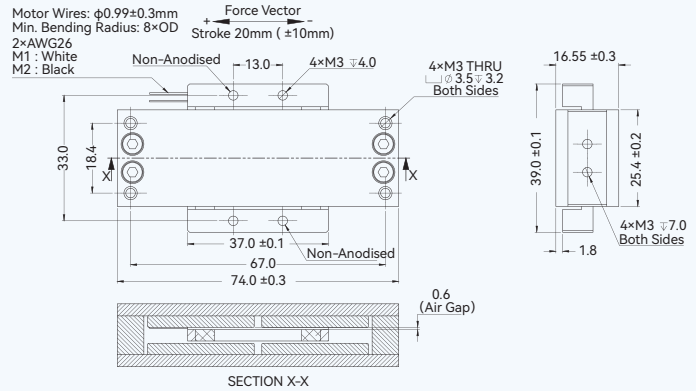
- ▶ Direct drive, zero cogging, zero backlash voice coil motors
- ▶ Low coil mass with very fast response and bandwidth
- ▶ No contact between coil and core movement (no wear and tear)
- ▶ Smooth motion at low speeds with limitless resolution
(depends on feedback device)

EN-26.3.1

AVA1-20

Performance Parameters		Symbol	Unit	AVA1-20
Stroke	S	mm		20
Continuous Force @100°C ①②	F _c	N		3.84
Peak Force ③	F _{pk}	N		11.5
Force Constant ±10% ④	K _f	N/A		1.92
Back EMF Constant ±10% ⑤	K _e	V/(m/s)		1.92
Motor Constant @25°C ⑥	K _m	N/Sqrt(W)		1.62
Resistance @25°C ±10% ⑦	R ₂₅	Ω		1.40
Inductance ±20% ⑧	L	mH		0.27
Electrical Time Constant	τ _e	ms		0.19
Continuous Current @100°C ①	I _c	A		2.0
Peak Current	I _{pk}	A		6.0
Continuous Power Dissipation @100°C ①	P _c	W		7.2
Max. Coil Temperature	t _{max}	°C		100
Thermal Dissipation Constant ①	K _{th}	W/°C		0.096
Max.Voltage	U _{max}	V _{dc}		60
Mechanical Parameters				
Coil Mass	m _{coil}	g		17
Core Mass	m _{core}	g		186
Running Clearance	L _{gap}	mm		0.6
Other Information				
Insulation Class	Class A (105°C)			
Protection Grade	IP20			
Compliance with Global Standards	RoHS			
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.			

Dimension



NOTE:

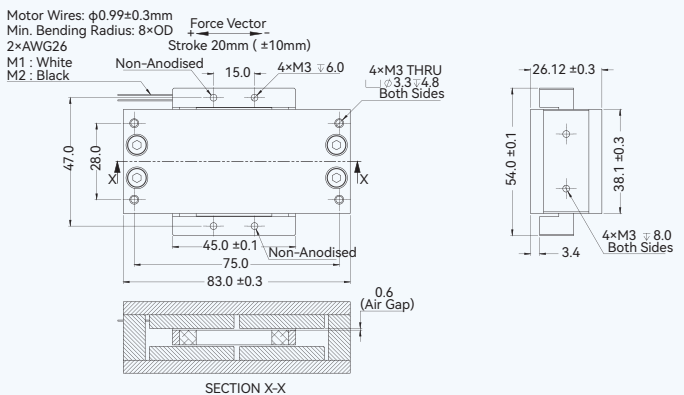
- User to ensure the coil is shielded/ grounded through the 2 pcs of non-anodised tap holes.
- The default cable length is 0.5m; comes with flying leads.
- A positive (+ve) voltage applied to the white lead will produce a force on the coil assembly in the positive (+ve) force vector direction.

- ① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
 - ② The values are at mid stroke.
 - ③ Resistance is measured by DC current with standard 0.5 m lead wire.
 - ④ Inductance is measured by current frequency of 1 kHz.
- The contents of datasheet are subject to change without prior notice.

AVA2-20

Performance Parameters		Symbol	Unit	AVA2-20
Stroke	S	mm		20
Continuous Force @100°C ①②	F _c	N		11.69
Peak Force ③	F _{pk}	N		35.1
Force Constant ±10% ④	K _f	N/A		8.35
Back EMF Constant ±10% ⑤	K _e	V/(m/s)		8.35
Motor Constant @25°C ⑥	K _m	N/Sqrt(W)		4.34
Resistance @25°C ±10% ⑦	R ₂₅	Ω		3.7
Inductance ±20% ⑧	L	mH		1.24
Electrical Time Constant	τ _e	ms		0.34
Continuous Current @100°C ①	I _c	A		1.4
Peak Current	I _{pk}	A		4.2
Continuous Power Dissipation @100°C ①	P _c	W		9.3
Max. Coil Temperature	t _{max}	°C		100
Thermal Dissipation Constant ①	K _{th}	W/°C		0.125
Max.Voltage	U _{max}	V _{dc}		60
Mechanical Parameters				
Coil Mass	m _{coil}	g		45
Core Mass	m _{core}	g		496
Running Clearance	L _{gap}	mm		0.6
Other Information				
Insulation Class	Class A (105°C)			
Protection Grade	IP20			
Compliance with Global Standards	RoHS			
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.			

Dimension



NOTE:

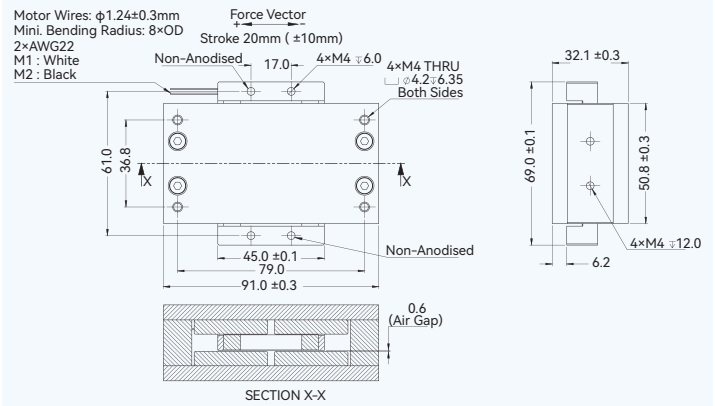
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- A positive (+ve) voltage applied to the white lead will produce a force on the coil assembly in the positive (+ve) force vector direction.

- ① Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment.
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AVA3-20

Performance Parameters	Symbol	Unit	AVA3-20
Stroke	S	mm	20
Continuous Force @100°C ① ②	F _c	N	26.32
Peak Force ②	F _{pk}	N	79.0
Force Constant ±10% ②	K _f	N/A	9.40
Back EMF Constant ±10% ②	K _e	V/(m/s)	9.40
Motor Constant @25°C ②	K _m	N/Sqrt(W)	7.43
Resistance @25°C ±10% ③	R ₂₅	Ω	1.6
Inductance ±20% ④	L	mH	0.7
Electrical Time Constant	τ _e	ms	0.44
Continuous Current @100°C ①	I _c	A	2.8
Peak Current	I _{pk}	A	8.4
Continuous Power Dissipation @100°C ①	P _t	W	16.2
Max. Coil Temperature	t _{max}	°C	100
Thermal Dissipation Constant ①	K _{th}	W/°C	0.216
Max.Voltage	U _{max}	Vdc	60
Mechanical Parameters			
Coil Mass	m _{coil}	g	72
Core Mass	m _{core}	g	930
Running Clearance	L _{gap}	mm	0.6
Other Information			
Insulation Class	Class A (105°C)		
Protection Grade	IP20		
Compliance with Global Standards	RoHS		
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.		

Dimension



NOTE:

- User to ensure the coil is shielded / grounded through the 2 pcs of non-anodized threaded holes.
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Part Numbering

