



**Introduction**

Iron core AJM series linear motors provide compact size, high force density, and quick response.

F<sub>cn</sub> (Continuous force) = 68.1N ~ 446.8N

F<sub>pk</sub> (Peak force) = 214.7N ~ 1409.1N

**Features**

- ▶ Iron core technology and low cogging force
- ▶ High continuous and peak force
- ▶ Optional hall sensors
- ▶ High motor constant

**Applications**

Best suited for point-to-point motion with micron level positioning ; unlimited travel stroke with top speed of 5m/s or faster (stroke of 100m or longer).

Applications & Industries: high speed positioning systems for product handling in semiconductor, photovoltaic and lithium battery, glass and LCD applications, as well as industrial printing machines, laser processing machines with demanding precision and motion control requirements.

	Series	Coil Length (mm)	Continuous Force (F <sub>cn</sub> ) / Peak Force (F <sub>pk</sub> )						Unit: N	
			100	150	200	250	300	400	500	....
	AJM30-B2	96	● 68.1 / ■ 214.7							
	AJM30-B4	176	● 136.2 / ■ 429.4							
	AJM50-B2	96	● 117.0 / ■ 369.0							
	AJM50-B4	176	● 234.0 / ■ 738.1							
	AJM80-B2	96	● 174.5 / ■ 550.2							
	AJM80-B4	176	● 348.9 / ■ 1100.4							
	AJM100-B2	96	● 223.4 / ■ 704.5							
	AJM100-B4	176	● 446.8 / ■ 1409.1							

● No hall sensor.



AJM50-B4

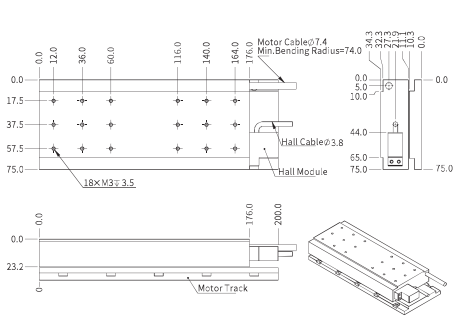
AJM50-B4			
Performance Parameters	Symbol	Unit	Parallel
Continuous Force (NC) @100°C	$F_{cn}$	N	234.0
Peak Force	$F_{pk}$	N	738.1
Force Constant $\pm 10\%$	$K_f$	N/Arms	59.9
Back EMF Constant $\pm 10\%$	$K_e$	Vpeak/(m/s)	41.5
Motor Constant @25°C	$K_m$	N/Sqrt(W)	23.8
Resistance (L-L) 25°C $\pm 10\%$	$R_{25}$	$\Omega$	3.1
Inductance (L-L) $\pm 30\%$	L	mH	13.0
Electrical Time Constant	$T_e$	ms	4.2
Continuous Current (NC) @100°C	$I_{cn}$	Arms	4.6
Peak Current	$I_{pk}$	Arms	18.0
Continuous Power Dissipation (NC) @100°C	$R_n$	W	124.8
Max. Coil Temperature	$t_{max}$	°C	100
Thermal Dissipation Constant (NC)	$K_{thn}$	W/°C	1.7
Max. Bus Voltage	$U_{bus}$	Vdc	600
Magnetic Period	$T_{MN}$	mm	20
Attraction Force	$F_a$	N	1299

Mechanical Parameters			
Coil Mass (NC)	$m_{cn}$	kg	1.7
Coil Length (NC)	$L_{cn}$	mm	176
Track Mass Per Meter	$m_{track}$	kg/m	5.0

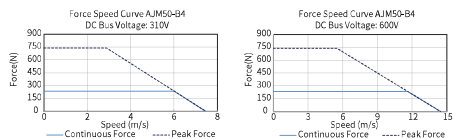
Other Information			
Insulation Class	Class B (130°C)		
Protection Grade	IP00		
Compliance with Global Standards	Chinese RoHS, CE		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)	
	Storage	-15°C to 70°C (non-freezing)	
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)	
	Storage	10%RH 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.
  - Resistance is measured by DC current with standard 0.5 m cable.
  - Inductance is measured by current frequency of 1 kHz.
- The contents of datasheet are subject to change without prior notice.

Dimension



Force-Speed Curve



AJM80-B2

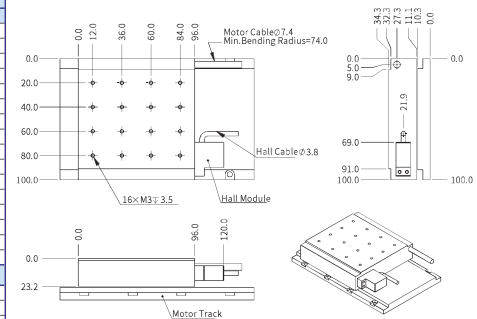
AJM80-B2			
Performance Parameters	Symbol	Unit	Series
Continuous Force (NC) @100°C	$F_{cn}$	N	174.5
Peak Force	$F_{pk}$	N	552.2
Force Constant $\pm 10\%$	$K_f$	N/Arms	75.9
Back EMF Constant $\pm 10\%$	$K_e$	Vpeak/(m/s)	61.9
Motor Constant @25°C	$K_m$	N/Sqrt(W)	21.4
Resistance (L-L) 25°C $\pm 10\%$	$R_{25}$	$\Omega$	8.4
Inductance (L-L) $\pm 30\%$	L	mH	37.3
Electrical Time Constant	$T_e$	ms	4.5
Continuous Current (NC) @100°C	$I_{cn}$	Arms	2.3
Peak Current	$I_{pk}$	Arms	9.0
Continuous Power Dissipation (NC) @100°C	$R_n$	W	85.5
Max. Coil Temperature	$t_{max}$	°C	100
Thermal Dissipation Constant (NC)	$K_{thn}$	W/°C	1.1
Max. Bus Voltage	$U_{bus}$	Vdc	600
Magnetic Period	$T_{MN}$	mm	20
Attraction Force	$F_a$	N	960

Mechanical Parameters			
Coil Mass (NC)	$m_{cn}$	kg	1.2
Coil Length (NC)	$L_{cn}$	mm	96
Track Mass Per Meter	$m_{track}$	kg/m	7.0

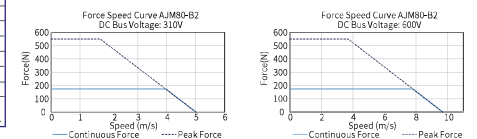
Other Information			
Insulation Class	Class B (130°C)		
Protection Grade	IP00		
Compliance with Global Standards	Chinese RoHS, CE		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)	
	Storage	-15°C to 70°C (non-freezing)	
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)	
	Storage	10%RH 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.
  - Resistance is measured by DC current with standard 0.5 m cable.
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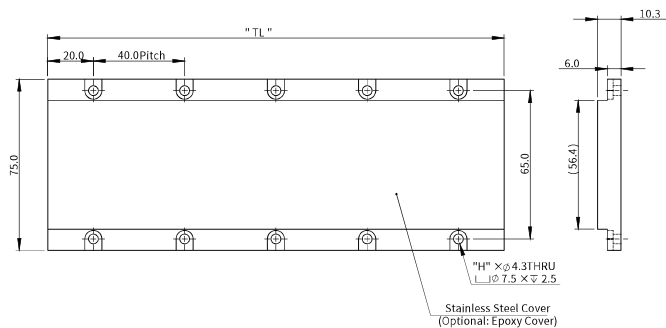
Dimension



Force-Speed Curve



AJM50 Track



Magnet Track P/N:	Track Length "L"	No. of Holes "H"
AJM50-TL80-S	80.0	4
AJM50-TL200-S	200.0	10
AJM50-TL400-S	400.0	20

For epoxy cover option, change "S" to "E". (e.g. AJM50-TL80-E)

AJM80-B4

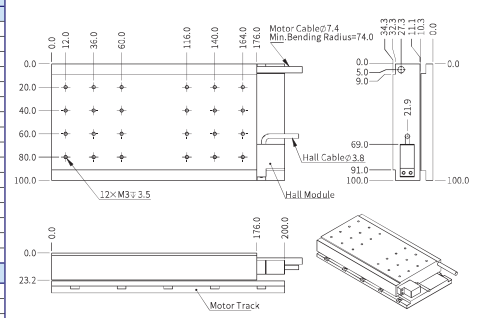
AJM80-B4			
Performance Parameters	Symbol	Unit	Parallel
Continuous Force (NC) @100°C	$F_{cn}$	N	348.9
Peak Force	$F_{pk}$	N	1100.4
Force Constant $\pm 10\%$	$K_f$	N/Arms	75.9
Back EMF Constant $\pm 10\%$	$K_e$	Vpeak/(m/s)	61.9
Motor Constant @25°C	$K_m$	N/Sqrt(W)	30.1
Resistance (L-L) 25°C $\pm 10\%$	$R_{25}$	$\Omega$	4.2
Inductance (L-L) $\pm 30\%$	L	mH	18.6
Electrical Time Constant	$T_e$	ms	4.4
Continuous Current (NC) @100°C	$I_{cn}$	Arms	4.6
Peak Current	$I_{pk}$	Arms	18.0
Continuous Power Dissipation (NC) @100°C	$R_n$	W	173.5
Max. Coil Temperature	$t_{max}$	°C	100
Thermal Dissipation Constant (NC)	$K_{thn}$	W/°C	2.3
Max. Bus Voltage	$U_{bus}$	Vdc	600
Magnetic Period	$T_{MN}$	mm	20
Attraction Force	$F_a$	N	1937

Mechanical Parameters			
Coil Mass (NC)	$m_{cn}$	kg	2.3
Coil Length (NC)	$L_{cn}$	mm	176
Track Mass Per Meter	$m_{track}$	kg/m	7.0

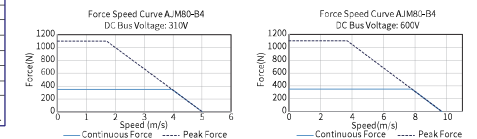
Other Information			
Insulation Class	Class B (130°C)		
Protection Grade	IP00		
Compliance with Global Standards	Chinese RoHS, CE		
Ambient Temperature	Operation	0°C to 40°C (non-freezing)	
	Storage	-15°C to 70°C (non-freezing)	
Ambient Humidity	Operation	10%RH to 80%RH (non-condensing)	
	Storage	10%RH 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.
  - Resistance is measured by DC current with standard 0.5 m cable.
  - Inductance is measured by current frequency of 1 kHz.
- The contents of datasheet are subject to change without prior notice.

Dimension



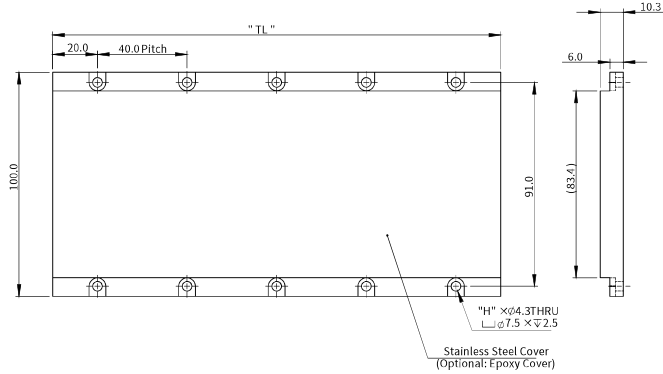
Force-Speed Curve



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AJM80 Track



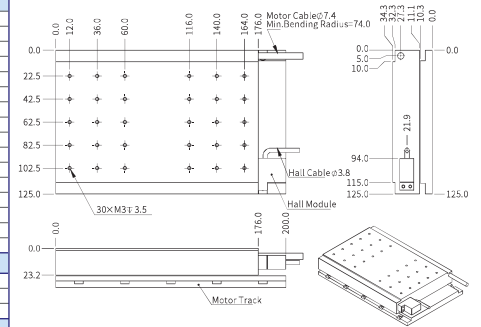
Magnet Track P / N:	Track Length "TL"	No. of Holes "H"
AJM80-TL80-S	80.0	4
AJM80-TL200-S	200.0	10
AJM80-TL400-S	400.0	20

For epoxy cover option, change "S" to "E". (e.g. AJM80-TL80-E)

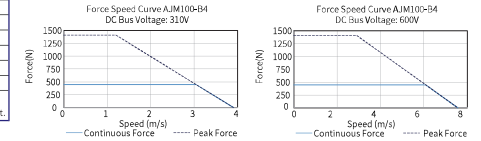
AJM100-B4

AJM100-B4			
Performance Parameters	Symbol	Unit	Parallel
Continuous Force (NC) @100°C	F <sub>cn</sub>	N	445.8
Peak Force	F <sub>pk</sub>	N	1409.1
Force Constant ±10%	K <sub>f</sub>	N/Arms	97.1
Back EMF Constant ±10%	K <sub>e</sub>	Vpeak/(m/s)	79.3
Motor Constant @25°C	K <sub>m</sub>	N/Sqrt(W)	34.8
Resistance (L-L) 25°C ±10%	R <sub>25</sub>	Ω	5.2
Inductance (L-L) ±30%	L	mH	23.6
Electrical Time Constant	T <sub>e</sub>	ms	4.5
Continuous Current (NC) @100°C	I <sub>cn</sub>	Arms	4.6
Peak Current	I <sub>pk</sub>	Arms	18.0
Continuous Power Dissipation (NC) @100°C	P <sub>cn</sub>	W	213.0
Max. Coil Temperature	t <sub>max</sub>	°C	100
Thermal Dissipation Constant (NC)	K <sub>thn</sub>	W/°C	2.8
Max. Bus Voltage	U <sub>bus</sub>	Vdc	600
Magnetic Period	T <sub>M</sub>	mm	20
Attraction Force	F <sub>a</sub>	N	2481
Mechanical Parameters			
Coil Mass (NC)	m <sub>cn</sub>	kg	2.9
Coil Length (NC)	L <sub>cn</sub>	mm	176
Track Mass Per Meter	m <sub>track</sub>	kg/m	8.8
Other Information			
Insulation Class	Class B (130°C)		
Protection Grade	IP00		
Compliance with Global Standards	Chinese 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.		

Dimension



Force-Speed Curve

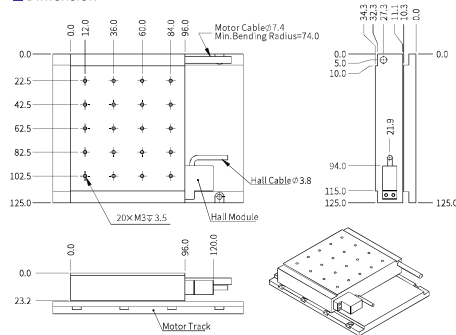


- Measurement is taken at ambient temperature 25°C. Value depends on the thermal environment. Abbreviations: NC-Natural Cooling.
  - Resistance is measured by DC current with standard 0.5 m cable.
  - Inductance is measured by current frequency of 1 kHz.
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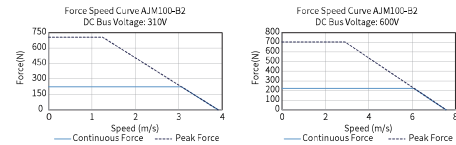
AJM100-B2

AJM100-B2			
Performance Parameters	Symbol	Unit	Series
Continuous Force (NC) @100°C	F <sub>cn</sub>	N	222.4
Peak Force	F <sub>pk</sub>	N	704.5
Force Constant ±10%	K <sub>f</sub>	N/Arms	97.1
Back EMF Constant ±10%	K <sub>e</sub>	Vpeak/(m/s)	79.3
Motor Constant @25°C	K <sub>m</sub>	N/Sqrt(W)	24.7
Resistance (L-L) 25°C ±10%	R <sub>25</sub>	Ω	10.3
Inductance (L-L) ±30%	L	mH	47.2
Electrical Time Constant	T <sub>e</sub>	ms	4.6
Continuous Current (NC) @100°C	I <sub>cn</sub>	Arms	2.3
Peak Current	I <sub>pk</sub>	Arms	9.0
Continuous Power Dissipation (NC) @100°C	P <sub>cn</sub>	W	105.3
Max. Coil Temperature	t <sub>max</sub>	°C	100
Thermal Dissipation Constant (NC)	K <sub>thn</sub>	W/°C	1.4
Max. Bus Voltage	U <sub>bus</sub>	Vdc	600
Magnetic Period	T <sub>M</sub>	mm	20
Attraction Force	F <sub>a</sub>	N	1240
Mechanical Parameters			
Coil Mass (NC)	m <sub>cn</sub>	kg	1.5
Coil Length (NC)	L <sub>cn</sub>	mm	96
Track Mass Per Meter	m <sub>track</sub>	kg/m	8.8
Other Information			
Insulation Class	Class B (130°C)		
Protection Grade	IP00		
Compliance with Global Standards	Chinese 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.		

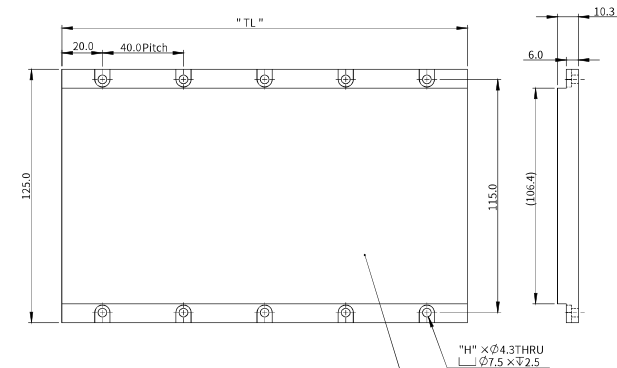
Dimension



Force-Speed Curve



AJM100 Track



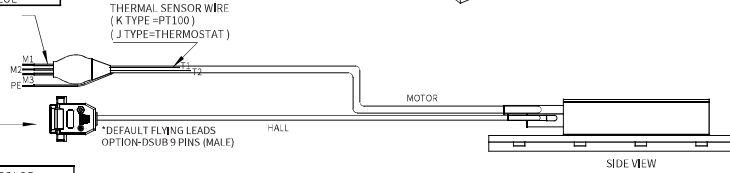
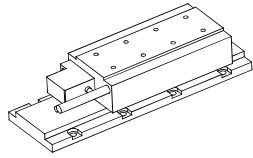
Magnet Track P / N:	Track Length "TL"	No. of Holes "H"
AJM100-TL80-S	80.0	4
AJM100-TL200-S	200.0	10
AJM100-TL400-S	400.0	20

For epoxy cover option, change "S" to "E". (e.g. AJM100-TL80-E)

Motor Cable Connection

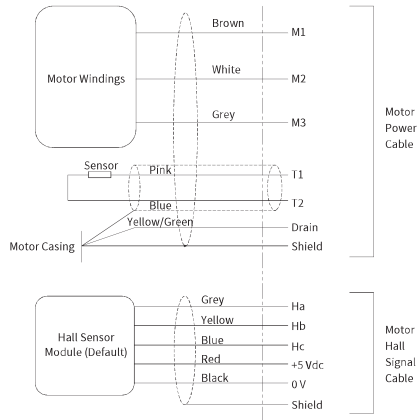
MOTOR CABLE

PIN	DESCRIPTION	COLOR
-	M1	BROWN
-	M2	WHITE
-	M3	GREY
-	PE	YELLOW/GREEN
-	T1	PINK
-	T2	BLUE



HALL CABLE

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



Part Numbering

Motor Coil

**AJM30-B2-J-NH-0.5-NFB**

Model: [AJM30 / AJM50 / AJM80 / AJM100](#)

Size: [B2 / B4](#)

Thermal Sensor: [J=Thermosist\(Standard\) / K=PT100\(RTD\) \(contact us for other thermal sensor\)](#)

Motor Cable Option: [NFB / FB](#)

Cable Length(m): [0.5 / 3.0 \(Contact us for other lengths\)](#)

Hall Cable Option: [NH / HF](#)

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

Motor Track

**AJM30-TL200-S**

Model: [AJM30 / AJM50 / AJM80 / AJM100](#)

Track Length: [TL80 / TL200 / TL400](#)

Cover Type: [S / E](#)

- S = Stainless steel cover
- E = Epoxy cover

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