

Rack and Pinion System

L Series

*α*STEP AZ Series Equipped



How to Read Specifications Table

Specifications

Frame Size		60 mm	80 mm	
Actuator Product Name	Standard	LM2□500AZAC-□	LM4□500AZAC-□	
	with Electromagnetic Brake	LM2□500AZMC-□	LM4□500AZMC-□	
Driver Product Name	Built-in Controller Type	AZD-AD (Single-Phase 100-120 VAC) , AZD-CD (Single-Phase/Three-Phase 200-240 VAC)		
	Pulse Input Type with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC) , AZD-CX (Single-Phase/Three-Phase 200-240 VAC)		
	Pulse Input Type	AZD-A (Single-Phase 100-120 VAC) , AZD-C (Single-Phase/Three-Phase 200-240 VAC)		
Equipped Motor (AZ Series)		AZM66		
①	Maximum Speed	mm/s	500	
②	Transportable Mass	kg	10 (250 mm/s) 7 (500 mm/s)	20 (250 mm/s) 7 (500 mm/s)
③	Maximum Acceleration	m/s ²	1	
④	Thrust*1	N	110 (250 mm/s) 77 (500 mm/s)	220 (250 mm/s) 77 (500 mm/s)
⑤	Push Force	N	110	220
⑥	Holding Force	Power On N	110	220
⑦	Holding Force	with Electromagnetic Brake N	110	220
⑦	Minimum Travel Amount	mm	0.01	
⑧	Rotor Inertia	J·kg · m ²	370×10 ⁻⁷ (530×10 ⁻⁷)*2	
⑨	Stroke	mm	100, 200, 300, 400, 500, 600, 700, or 800	100, 200, 300, 400, 500, 600, 700, 800, 900, or 1000
Power Supply Input		Voltage and Frequency	Single-Phase 100-120 VAC, Single-Phase/Three-Phase 200-240 VAC -15 to +6% 50/60Hz	
		Input Current A	Single-Phase 100-120 VAC	3.8
			Single-Phase 200-240 VAC	2.3
			Three-Phase 200-240 VAC	1.4
Control Power Supply		24 VDC±5%*3 0.25 A (0.5A)*2		

● Depending on the product, limitations and caution may be required for usage. For details, refer to the notes on each product page.

① Maximum Speed

The maximum speed allowed when transporting the transportable mass.

② Transportable Mass

Mass that can be moved under operating performance of the rack and pinion motor.

③ Maximum Acceleration

The maximum acceleration allowed when the transportable mass is transferred.

④ Thrust

The force that the rack can push the load during constant speed operation.

⑤ Push Force

The pressure applied to the load at push-motion operation.

⑥ Holding Force

Holding force when the motor is stopped or when the electromagnetic brake is operating, while power is supplied.

⑦ Minimum Travel Amount

The minimum distant that the rack travels. (Factory setting)

⑧ Rotor Inertia

This refers to the inertia of the rotor inside the equipped motor.

⑨ Stroke

The maximum distance the rack can be pushed and pulled.

Rack and Pinion System

L Series α STEP AZ Series Equipped AC Power Supply Input

For technical references, regulations,
and standards related to these products,
please see the Oriental Motor website.

Product Number

Rack and Pinion Motors

LM 4 F 500 AZ M C - 1

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Series Name	LM: L Series Rack and Pinion Motor					
②	Frame Size	2: 60 mm 4: 80 mm					
③	Moving Direction of Rack	F: Vertical to Mounting Foot Surface B: Horizontal to Mounting Foot Surface					
④	Rack Maximum Speed	40: 40 mm/s 90: 90 mm/s 500: 500 mm/s					
⑤	Equipped Motor	AZ: AZ Series					
⑥	Motor Type	A: Standard M: with Electromagnetic Brake					
⑦	Motor Power Supply Input	C: AC Power Supply Input Specifications					
⑧	Stroke	1: 100 mm 2: 200 mm 3: 300 mm 4: 400 mm 5: 500 mm 6: 600 mm 7: 700 mm 8: 800 mm 9: 900 mm 10: 1000 mm					

Drivers

AZD - C D

① ② ③

①	Driver Type	AZD: AZ Series Driver
②	Power Supply Input	A: Single-Phase 100-120 VAC C: Single-Phase/Three-Phase 200-240 VAC
③	Type	D: Built-in Controller Type X: Pulse Input Type with RS-485 Communication Blank: Pulse Input Type

Connection Cable Sets/Flexible Connection Cable Sets

CC 050 V Z F B

① ② ③ ④ ⑤ ⑥

①		CC: Cable			
②	Length	005: 0.5 m	010: 1 m	015: 1.5 m	020: 2 m
		025: 2.5 m	030: 3 m	040: 4 m	050: 5 m
		070: 7 m	100: 10 m	150: 15 m	200: 20 m
③	Reference Number				
④	Applicable Model	Z: AZ Series			
⑤	Cable Type	F: Connection Cable Set R: Flexible Connection Cable Set			
⑥	Electromagnetic Brake	Blank: without Electromagnetic Brake B: with Electromagnetic Brake			

Product Line

- Rack and Pinion Motors
- ◇ High-Speed Type



Frame Size	Product Name	List Price
60 mm	LM2□500AZAC-1	
	LM2□500AZAC-2	
	LM2□500AZAC-3	
	LM2□500AZAC-4	
	LM2□500AZAC-5	
	LM2□500AZAC-6	
	LM2□500AZAC-7	
	LM2□500AZAC-8	
80 mm	LM4□500AZAC-1	
	LM4□500AZAC-2	
	LM4□500AZAC-3	
	LM4□500AZAC-4	
	LM4□500AZAC-5	
	LM4□500AZAC-6	
	LM4□500AZAC-7	
	LM4□500AZAC-8	
	LM4□500AZAC-9	
	LM4□500AZAC-10	

- ◇ High-Speed Type with Electromagnetic Brake



Frame Size	Product Name	List Price
60 mm	LM2□500AZMC-1	
	LM2□500AZMC-2	
	LM2□500AZMC-3	
	LM2□500AZMC-4	
	LM2□500AZMC-5	
	LM2□500AZMC-6	
	LM2□500AZMC-7	
	LM2□500AZMC-8	
80 mm	LM4□500AZMC-1	
	LM4□500AZMC-2	
	LM4□500AZMC-3	
	LM4□500AZMC-4	
	LM4□500AZMC-5	
	LM4□500AZMC-6	
	LM4□500AZMC-7	
	LM4□500AZMC-8	
	LM4□500AZMC-9	
	LM4□500AZMC-10	

- ◇ Large Transportable Mass Type



Frame Size	Product Name	List Price
60 mm	LM2□90AZAC-1	
	LM2□90AZAC-2	
	LM2□90AZAC-3	
	LM2□90AZAC-4	
	LM2□90AZAC-5	
	LM2□90AZAC-6	
	LM2□90AZAC-7	
	LM2□90AZAC-8	
80 mm	LM4□40AZAC-1	
	LM4□40AZAC-2	
	LM4□40AZAC-3	
	LM4□40AZAC-4	
	LM4□40AZAC-5	
	LM4□40AZAC-6	
	LM4□40AZAC-7	
	LM4□40AZAC-8	
	LM4□40AZAC-9	
	LM4□40AZAC-10	

- ◇ Large Transportable Mass Type with Electromagnetic Brake



Frame Size	Product Name	List Price
60 mm	LM2□90AZMC-1	
	LM2□90AZMC-2	
	LM2□90AZMC-3	
	LM2□90AZMC-4	
	LM2□90AZMC-5	
	LM2□90AZMC-6	
	LM2□90AZMC-7	
	LM2□90AZMC-8	
80 mm	LM4□40AZMC-1	
	LM4□40AZMC-2	
	LM4□40AZMC-3	
	LM4□40AZMC-4	
	LM4□40AZMC-5	
	LM4□40AZMC-6	
	LM4□40AZMC-7	
	LM4□40AZMC-8	
	LM4□40AZMC-9	
	LM4□40AZMC-10	

● Either **F** (vertical to the mounting foot surface) or **B** (horizontal to the mounting foot surface) indicating the rack moving direction is entered where the box □ is located within the product name.

Drivers

◇ Built-in Controller Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AD	
Single-Phase/Three-Phase 200-240 VAC	AZD-CD	



◇ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AX	
Single-Phase/Three-Phase 200-240 VAC	AZD-CX	



◇ Pulse Input Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-A	
Single-Phase/Three-Phase 200-240 VAC	AZD-C	



Connection Cable Sets/Flexible Connection Cable Sets

Use the flexible connection cable in application where the cable is bent and flexed.

The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use a connection cable.

◇ For Motors/Encoders



Product Line	Length L (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZF	
	1	CC010VZF	
	1.5	CC015VZF	
	2	CC020VZF	
	2.5	CC025VZF	
	3	CC030VZF	
	4	CC040VZF	
	5	CC050VZF	
	7	CC070VZF	
	10	CC100VZF	
	15	CC150VZF	
	20	CC200VZF	
Flexible Connection Cable Sets	0.5	CC005VZR	
	1	CC010VZR	
	1.5	CC015VZR	
	2	CC020VZR	
	2.5	CC025VZR	
	3	CC030VZR	
	4	CC040VZR	
	5	CC050VZR	
	7	CC070VZR	
	10	CC100VZR	
	15	CC150VZR	
	20	CC200VZR	

◇ For Motors/Encoders/Electromagnetic Brakes



Product Line	Length L (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZFB	
	1	CC010VZFB	
	1.5	CC015VZFB	
	2	CC020VZFB	
	2.5	CC025VZFB	
	3	CC030VZFB	
	4	CC040VZFB	
	5	CC050VZFB	
	7	CC070VZFB	
	10	CC100VZFB	
	15	CC150VZFB	
	20	CC200VZFB	
Flexible Connection Cable Sets	0.5	CC005VZRB	
	1	CC010VZRB	
	1.5	CC015VZRB	
	2	CC020VZRB	
	2.5	CC025VZRB	
	3	CC030VZRB	
	4	CC040VZRB	
	5	CC050VZRB	
	7	CC070VZRB	
	10	CC100VZRB	
	15	CC150VZRB	
	20	CC200VZRB	

Included

● Rack and Pinion Motors

Type	Included	Operating Manual
Common to All Types		1 Copy

● Drivers

Type	Included	Connector	Operating Manual
Common to All Types		<ul style="list-style-type: none"> · CN1 Connector (1 pc.) · CN4 Connector (1 pc.) · CN5 Connector (1 pc.) · Connector Lever (1 pc.) 	1 Copy

● Connection Cable Sets/Flexible Connection Cable Sets

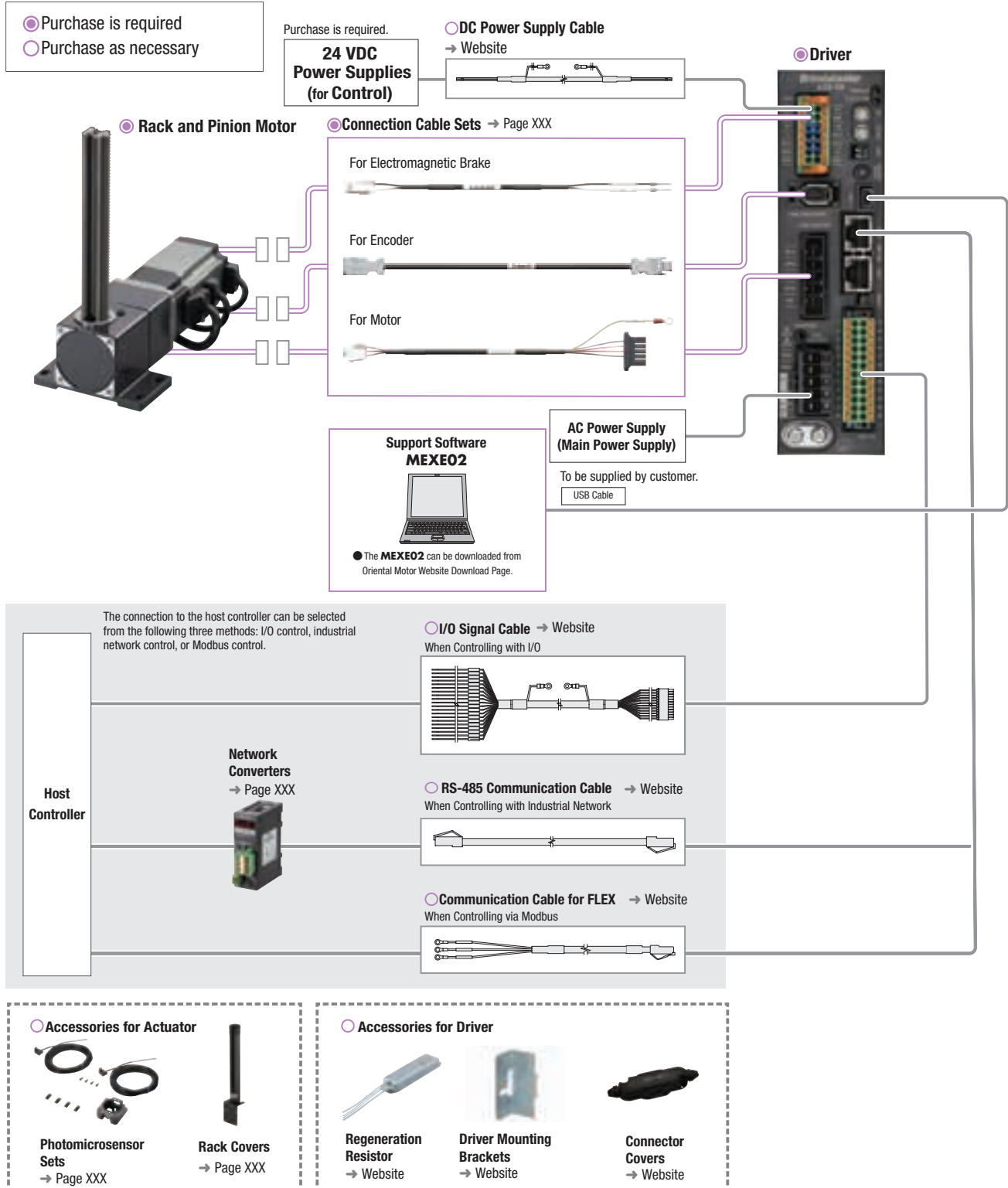
Type	Included	Operating Manual
Connection Cable Set		-
Flexible Connection Cable Set		1 Copy

System Configuration

Combination of L Series with Electromagnetic Brake and either Built-in Controller Type Driver or Pulse Input Type Driver with RS-485 Communication

This is an example of a configuration using I/O control or RS-485 communication in a built-in controller type driver.

Rack and pinion motors, drivers, and connection cable sets/flexible connection cable sets need to be ordered separately.



Example of System Configuration Pricing

Rack and Pinion Motor	+	Driver	+	Cable	
LM2F90AZMC-1		AZD-CD		Connection Cable Set (1 m)	I/O Signal Cable with Connector (1 m)
				CC010VZFB	CC24D010C-1

● The system configuration shown above is an example. Other combinations are also available.





Note:

● The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use a connection cable.

This is an example of a single-axis system configuration using a programmable controller (with pulse generating function).

- ☒ Purchase is required
- ☐ Purchase as necessary



Rack and Pinion Motor		Driver		Cable	
LM2F90AZMC-1	+	AZD-C	+	Connection Cable Set (1 m)	I/O Signal Cable with Connector (1 m)
				CC010VZFB	CC24D010C-1
					

Note:

● The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use a connection cable.

High-Speed Type

Specifications

Frame Size		60 mm	80 mm
Actuator Product Name	Standard	LM2 □ 500AZAC -□	LM4 □ 500AZAC -□
	with Electromagnetic Brake	LM2 □ 500AZMC -□	LM4 □ 500AZMC -□
Driver Product Name	Built-in Controller Type	AZD-AD (Single-Phase 100-120 VAC) , AZD-CD (Single-Phase/Three-Phase 200-240 VAC)	
	Pulse Input Type with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC) , AZD-CX (Single-Phase/Three-Phase 200-240 VAC)	
	Pulse Input Type	AZD-A (Single-Phase 100-120 VAC) , AZD-C (Single-Phase/Three-Phase 200-240 VAC)	
Equipped Motor (AZ Series)		AZM66	
Maximum Speed	mm/s	500	
Transportable Mass	kg	10 (250 mm/s) 7 (500 mm/s)	20 (250 mm/s) 7 (500 mm/s)
Maximum Acceleration	m/s ²	1	
Thrust*1	N	110 (250 mm/s) 77 (500 mm/s)	220 (250 mm/s) 77 (500 mm/s)
Push Force	N	110	220
Holding Force	Power On	110	220
	with Electromagnetic Brake	110	220
Minimum Travel Amount	mm	0.01	
Rotor Inertia	J·kg · m ²	370×10 ⁻⁷ (530×10 ⁻⁷)*2	
Stroke	mm	100, 200, 300, 400, 500, 600, 700, or 800	100, 200, 300, 400, 500, 600, 700, 800, 900, or 1000
Power Supply Input	Voltage and Frequency		Single-Phase 100-120 VAC, Single-Phase/Three-Phase 200-240 VAC -15 to +6% 50/60Hz
	Input Current A	Single-Phase 100-120 VAC	3.8
		Single-Phase 200-240 VAC	2.3
		Three-Phase 200-240 VAC	1.4
Control Power Supply		24 VDC±5%*3 0.25 A (0.5A)*2	

● Either **F** (vertical to the mounting foot surface) or **B** (horizontal to the mounting foot surface) indicating the rack moving direction is entered where the box □ is located within the product name.

A number indicating the rack stroke is entered where the box □ is located within the product name.

● When the rack is moved in the vertical direction, the load mass that can be driven is the value obtained by subtracting the rack mass from the transportable mass. Refer to 'Dimensions' for the rack mass.

*1 For a value obtained by adding the acceleration thrust of a load to the load thrust, do not exceed the thrust amount.

*2 The bracket () indicates the value for the product with an electromagnetic brake.

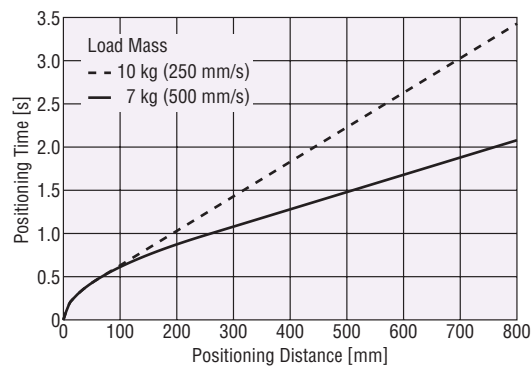
*3 For the type with an electromagnetic brake, a 24 VDC±4% specification applies if the wiring distance between the motor and the driver is extended to 20 m using a cable.

Positioning Distance - Positioning Time

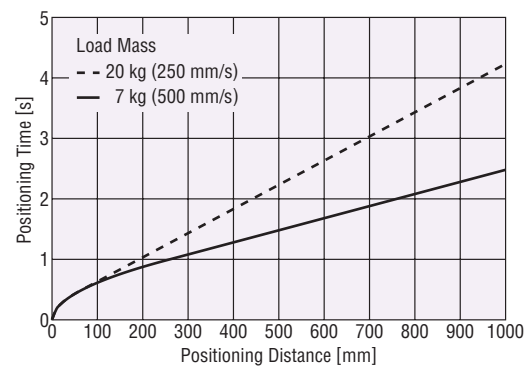
Check the positioning time (reference) from the positioning distance.

The positioning time differs depending on the transportable mass.

LM2



LM4

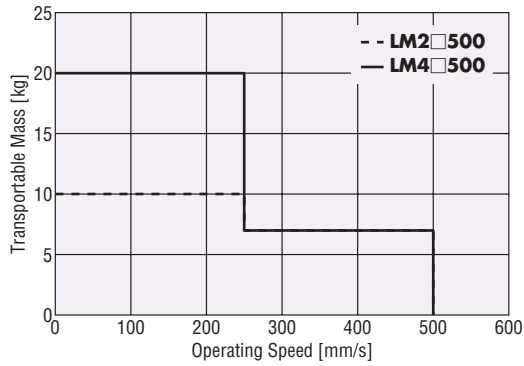


Repetitive Positioning Accuracy (Reference Value)

It is the value measured with the transportable mass. It varies depending on load, driving condition or mounting direction.

Product Name	Rack Moving Direction	Repetitive Positioning Accuracy [mm]
LM2	Horizontal Direction	± 0.25
LM4		
LM2	Vertical Direction	± 0.07
LM4		

Operating Speed - Transportable Mass



Note:

- The operating speed - transportable mass characteristics shows the data based on Oriental Motor's measurement conditions. The characteristics may change depending on the conditions of the power supply voltage and the ambient temperature.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL/CSA Standards, it is required to keep the temperature of the motor case at 75°C or less since the motor is recognized as resistant class A.)

Large Transportable Mass Type

Specifications

Frame Size		60 mm	80 mm
Actuator Product Name	Standard	LM2□90AZAC-□	LM4□40AZAC-□
	with Electromagnetic Brake	LM2□90AZMC-□	LM4□40AZMC-□
Driver Product Name	Built-in Controller Type	AZD-AD (Single-Phase 100-120 VAC) , AZD-CD (Single-Phase/Three-Phase 200-240 VAC)	
	Pulse Input Type with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC) , AZD-CX (Single-Phase/Three-Phase 200-240 VAC)	
	Pulse Input Type	AZD-A (Single-Phase 100-120 VAC) , AZD-C (Single-Phase/Three-Phase 200-240 VAC)	
Equipped Motor (AZ Series)		AZM66	
Maximum Speed	mm/s	90	40
Transportable Mass	kg	30	100 (20 mm/s) 70 (40 mm/s)
Maximum Acceleration	m/s ²	0.187	0.074
Thrust*1	N	306	1008 (20 mm/s) 705 (40 mm/s)
Push Force	N	306	1008
Holding Force	Power On	306	1008
	with Electromagnetic Brake	306	1008
Minimum Travel Amount	mm	0.001	
Rotor Inertia	J·kg · m ²	370×10 ⁻⁷ (530×10 ⁻⁷) *2	
Stroke	mm	100, 200, 300, 400, 500, 600, 700, or 800	100, 200, 300, 400, 500, 600, 700, 800, 900, 1000
Power Supply Input	Voltage and Frequency		Single-Phase 100-120 VAC, Single-Phase/Three-Phase 200-240 VAC -15 to +6% 50/60Hz
	Input Current A	Single-Phase 100-120 VAC	3.8
		Single-Phase 200-240 VAC	2.3
		Three-Phase 200-240 VAC	1.4
Control Power Supply		24 VDC±5%*3 0.25 A (0.5 A) *2	

● Either **F** (vertical to the mounting foot surface) or **B** (horizontal to the mounting foot surface) indicating the rack moving direction is entered where the box □ is located within the product name.

A number indicating the rack stroke is entered where the box □ is located within the product name.

● When the rack is moved in the vertical direction, the load mass that can be driven is the value obtained by subtracting the rack mass from the transportable mass. Refer to 'Dimensions' for the rack mass.

*1 For a value obtained by adding the acceleration thrust of a load to the load thrust, do not exceed the thrust amount.

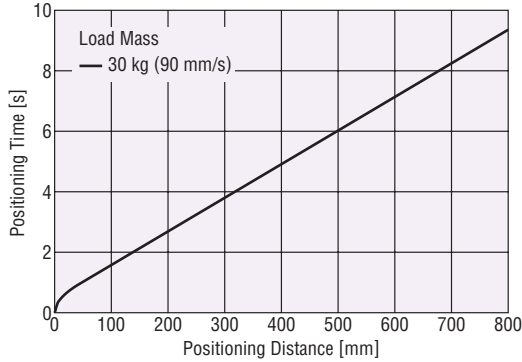
*2 The bracket () indicates the value for the product with an electromagnetic brake.

*3 For the type with an electromagnetic brake, a 24 VDC±4% specification applies if the wiring distance between the motor and the driver is extended to 20 m using a cable.

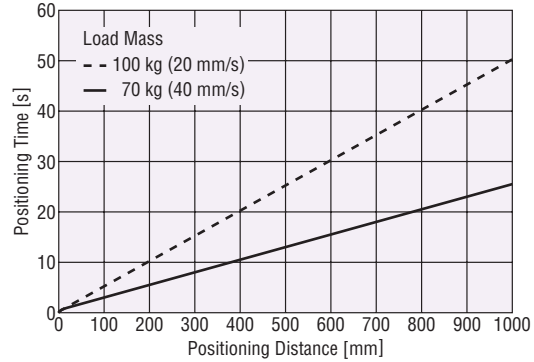
Positioning Distance - Positioning Time

Check the positioning time (reference) from the positioning distance.
The positioning time differs depending on the transportable mass.

LM2



LM4

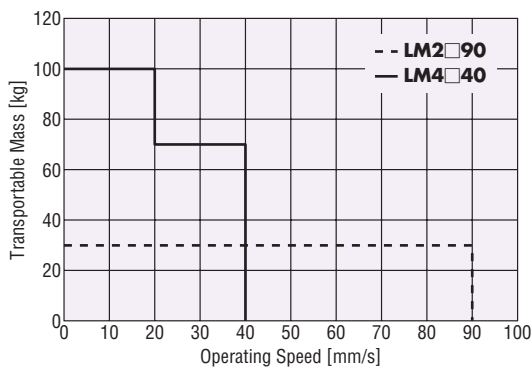


Repetitive Positioning Accuracy (Reference Value)

It is the value measured with the transportable mass. It varies depending on load, driving condition or mounting direction.

Product Name	Rack Moving Direction	Repetitive Positioning Accuracy [mm]
LM2	Horizontal Direction	±0.25
LM4		
LM2	Vertical Direction	±0.07
LM4		

Operating Speed - Transportable Mass



Note:

- The operating speed - transportable mass characteristics shows the data based on Oriental Motor's measurement conditions. The characteristics may change depending on the conditions of the power supply voltage and the ambient temperature.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL/CSA Standards, it is required to keep the temperature of the motor case at 75°C or less since the motor is recognized as resistant class A.)

Electromagnetic Brake Specifications

Product Name	LM2	LM4
Brake Type	Power Off Activated Type	
Power Supply Voltage	24 V DC \pm 5%*	
Power Supply Current	A	0.25
Brake Operating Time	ms	20
Brake Releasing Time	ms	30
Time Rating	Continuous	

*For the type with an electromagnetic brake, a 24 VDC \pm 4% specification applies if the wiring distance between the motor and the driver is extended to 20 m using a cable.

General Specifications



		Driver	
		Built-in Controller Type Pulse Input Type with RS-485 Communication	Pulse Input Type
Thermal Class		130 (B) [UL/CSA Recognized 105 (A)]	
Insulation Resistance		100 M Ω or more when a 500 VDC megger is applied between the following places: · Case – Motor Windings · Case – Electromagnetic Brake Windings*2	
Dielectric Strength		Sufficient to withstand the following for 1 minute: · Case – Motor Windings 1.5 kVAC, 50 Hz or 60 Hz · Case – Electromagnetic Brake Windings*2 1.5 kVAC, 50 Hz or 60 Hz	
Operating Environment	Ambient Temperature	0 to +40°C (Non-freezing)*3	
	Ambient Humidity	85% or less (Non-condensing)	
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water or oil.	
Degree of Protection		IP30 (Excluding rack moving part and connector part)	IP10 IP20
Multiple Rotation Detection Range in Power OFF State (Motor Output Shaft)		\pm 900 Rotations (1800 Rotations)	

*1 The motor product name (not the actuator product name) is recognized by UL under the UL and Canada Standards.

The motor product name (not the actuator product name) conforms to the standards to affix the CE Marking.

*2 Only for products with an electromagnetic brake.

*3 It is based on Oriental Motor's measurement conditions.

*4 When installing a motor to a heat sink of a capacity at least equivalent to an aluminum plate of 200 \times 200 mm, thickness 2 mm.

Note:

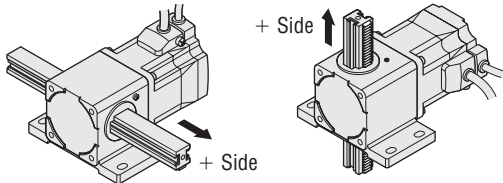
● Disconnect the motor and driver when taking an insulation resistance measurement or performing a dielectric voltage withstand test. Also, do not perform these tests on the absolute sensor part of the motor.

Moving Direction

At the time of shipment, the moving direction of the rack is set as shown below.

B Type

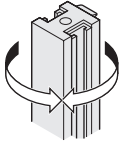
F Type



Rack Permissible Rotational Torque (Moment)

Product Name	Rack Permissible Rotational Torque (Moment)
LM2	0.3 N·m max.
LM4	0.5 N·m max.

- Keep the rotational torque below the permissible value.
If the rotational torque is applied too much, the rack bushing will wear in a short time.



Rotational torque (moment)

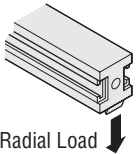
Permissible Radial Load

Unit: N

Stroke mm	LM2□90	LM2□500	LM4□40	LM4□500
100	25	25 ^{*1}	120	60 ^{*1}
200	20	20 ^{*1}	90	40 ^{*1}
300	10	10 ^{*1}	70	30 ^{*1}
400	10	10 ^{*1}	60	25 ^{*1}
500	7	7 ^{*1}	50	20 ^{*1}
600	*2	*2	40	15 ^{*1}
700	*2	*2	40	10 ^{*1}
800	*2	*2	25	7 ^{*1}
900	-	-	20	*2
1000	-	-	15	*2

- Either **F** (vertical to the mounting foot surface) or **B** (horizontal to the mounting foot surface) indicating the rack moving direction is entered where the box □ is located within the product name.

*1 The value is the operation speed up to 90 mm/s. When operating at a speed exceeding 90 mm/s, do not apply a radial load to the rack by providing a guide, etc..
*2 Do not apply a radial load to the rack by providing a guide, etc. since the rack is damaged.



Radial Load

Rack and Pinion System

L Series α STEP AZ Series Equipped DC Power Supply Input

For technical references, regulations,
and standards related to these products,
please see the Oriental Motor website.

Product Number

Rack and Pinion Motors

LM 4 F 150 AZ M K - 1

	①	②	③	④	⑤	⑥	⑦	⑧
①	Series Name	LM : L Series Rack and Pinion Motor						
②	Frame Size	2 : 60 mm 4 : 80 mm						
③	Moving Direction of Rack	F : Vertical to Mounting Foot Surface B : Horizontal to Mounting Foot Surface						
④	Rack Maximum Speed	20 : 20 mm/s 50 : 50 mm/s 150 : 150 mm/s 200 : 200 mm/s						
⑤	Equipped Motor	AZ : AZ Series						
⑥	Motor Type	A : Standard M : with Electromagnetic Brake						
⑦	Motor Power Supply Input	K : DC Power Supply Input Specifications						
⑧	Stroke	1 : 100 mm 2 : 200 mm 3 : 300 mm 4 : 400 mm 5 : 500 mm 6 : 600 mm 10 : 1000 mm						

Drivers

AZD - K D

	①	②	③
①	Driver Type	AZD : AZ Series Driver	
②	Power Supply Input	K : 24/48 VDC	
③	Type	D : Built-in Controller Type X : Pulse Input Type with RS-485 Communication Blank : Pulse Input Type	

Connection Cable Sets/Flexible Connection Cable Sets

CC 050 V Z F B 2

	①	②	③	④	⑤	⑥	⑦
①	CC : Cable						
②	Length	005 : 0.5 m 010 : 1 m 015 : 1.5 m 020 : 2 m 025 : 2.5 m 030 : 3 m 040 : 4 m 050 : 5 m 070 : 7 m 100 : 10 m 150 : 15 m 200 : 20 m					
③	Reference Number						
④	Applicable Model	Z : AZ Series					
⑤	Cable Type	F : Connection Cable Set R : Flexible Connection Cable Set					
⑥	Electromagnetic Brake	Blank: without Electromagnetic Brake B : with Electromagnetic Brake					
⑦	Power Supply Cable	2 : DC Power Supply Input					

Product Line

- Rack and Pinion Motors
- ◇ High-Speed Type



Frame Size	Product Name	List Price
60 mm	LM2□200AZAK-1	
	LM2□200AZAK-2	
	LM2□200AZAK-3	
	LM2□200AZAK-4	
	LM2□200AZAK-5	
80 mm	LM4□150AZAK-1	
	LM4□150AZAK-2	
	LM4□150AZAK-3	
	LM4□150AZAK-4	
	LM4□150AZAK-5	
	LM4□150AZAK-10	

- ◇ High-Speed Type with Electromagnetic Brake



Frame Size	Product Name	List Price
60 mm	LM2□200AZMK-1	
	LM2□200AZMK-2	
	LM2□200AZMK-3	
	LM2□200AZMK-4	
	LM2□200AZMK-5	
80 mm	LM4□150AZMK-1	
	LM4□150AZMK-2	
	LM4□150AZMK-3	
	LM4□150AZMK-4	
	LM4□150AZMK-5	
	LM4□150AZMK-10	

- ◇ Large Transportable Mass Type



Frame Size	Product Name	List Price
60 mm	LM2□50AZAK-1	
	LM2□50AZAK-2	
	LM2□50AZAK-3	
	LM2□50AZAK-4	
	LM2□50AZAK-5	
80 mm	LM4□20AZAK-1	
	LM4□20AZAK-2	
	LM4□20AZAK-3	
	LM4□20AZAK-4	
	LM4□20AZAK-5	
	LM4□20AZAK-10	

- ◇ Large Transportable Mass Type with Electromagnetic Brake



Frame Size	Product Name	List Price
60 mm	LM2□50AZMK-1	
	LM2□50AZMK-2	
	LM2□50AZMK-3	
	LM2□50AZMK-4	
	LM2□50AZMK-5	
80 mm	LM4□20AZMK-1	
	LM4□20AZMK-2	
	LM4□20AZMK-3	
	LM4□20AZMK-4	
	LM4□20AZMK-5	
	LM4□20AZMK-10	

● Either **F** (vertical to the mounting foot surface) or **B** (horizontal to the mounting foot surface) indicating the rack moving direction is entered where the box □ is located within the product name.

Note:

LM4□20AZAK-10 and LM4□20AZMK-10 cannot be used in combination with the Multi-Axis Driver SSCNET III /H Compatible.

● Drivers

◇ Built-in Controller Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KD	



◇ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KX	



◇ Pulse Input Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-K	

● Connection Cable Sets/Flexible Connection Cable Sets

Use the flexible connection cable in application where the cable is bent and flexed.

The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use a connection cable.

◇ For Motors/Encoders



For Motors



For Encoders

Product Line	Length (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZF2	
	1	CC010VZF2	
	1.5	CC015VZF2	
	2	CC020VZF2	
	2.5	CC025VZF2	
	3	CC030VZF2	
	4	CC040VZF2	
	5	CC050VZF2	
	7	CC070VZF2	
	10	CC100VZF2	
	15	CC150VZF2	
	20	CC200VZF2	
Flexible Connection Cable Sets	0.5	CC005VZR2	
	1	CC010VZR2	
	1.5	CC015VZR2	
	2	CC020VZR2	
	2.5	CC025VZR2	
	3	CC030VZR2	
	4	CC040VZR2	
	5	CC050VZR2	
	7	CC070VZR2	
	10	CC100VZR2	
	15	CC150VZR2	
	20	CC200VZR2	

◇ For Motors/Encoders/Electromagnetic Brakes



For Motors



For Encoders



For Electromagnetic Brakes

Product Line	Length (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZFB2	
	1	CC010VZFB2	
	1.5	CC015VZFB2	
	2	CC020VZFB2	
	2.5	CC025VZFB2	
	3	CC030VZFB2	
	4	CC040VZFB2	
	5	CC050VZFB2	
	7	CC070VZFB2	
	10	CC100VZFB2	
	15	CC150VZFB2	
	20	CC200VZFB2	
Flexible Connection Cable Sets	0.5	CC005VZRB2	
	1	CC010VZRB2	
	1.5	CC015VZRB2	
	2	CC020VZRB2	
	2.5	CC025VZRB2	
	3	CC030VZRB2	
	4	CC040VZRB2	
	5	CC050VZRB2	
	7	CC070VZRB2	
	10	CC100VZRB2	
	15	CC150VZRB2	
	20	CC200VZRB2	

■ Included

● Rack and Pinion Motors

Type	Included	Operating Manual
Common to All Types		1 Copy

● Drivers

Type	Included	Connector	Operating Manual
Common to All Types		· CN1 Connector (1 pc.) · CN4 Connector (1 pc.)	1 Copy

● Connection Cable Sets/Flexible Connection Cable Sets

Type	Included	Operating Manual
Connection Cable Set		-
Flexible Connection Cable Set		1 Copy

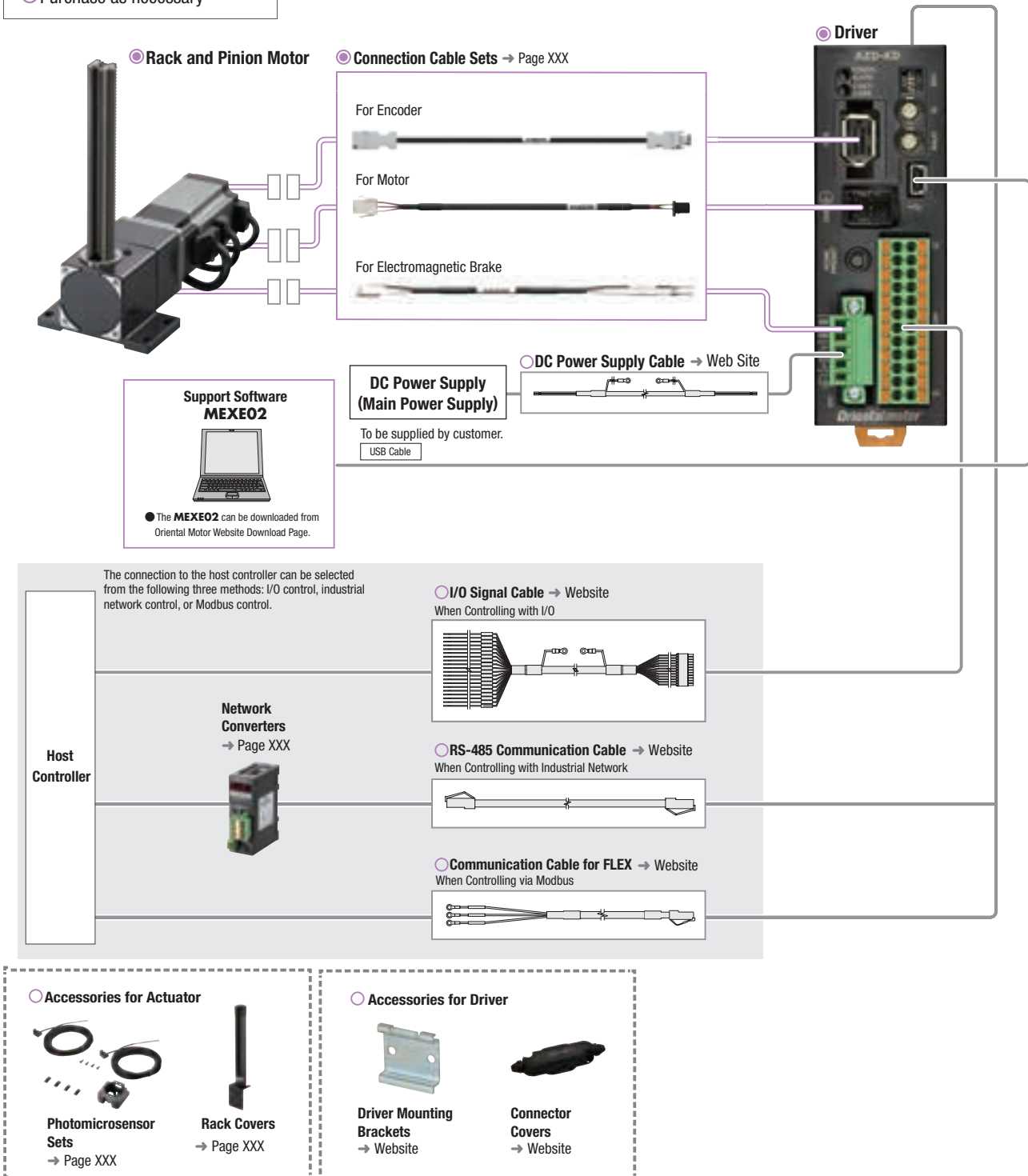
System Configuration

Combination of L Series with Electromagnetic Brake and either Built-in Controller Type Driver or Pulse Input Type Driver with RS-485 Communication

This is an example of a configuration using I/O control or RS-485 communication in a built-in controller type driver.

Rack and pinion motors, drivers, and connection cable sets/flexible connection cable sets need to be ordered separately.

- Purchase is required
- Purchase as necessary



● Example of System Configuration Pricing

Rack and Pinion Motor		Driver		Cable	
				Connection Cable Set (1 m)	I/O Signal Cable with Connector (1 m)
LM2F50AZMK-1		AZD-KD		CC010VZFB2	CC24D010C-1
○		○		○	○

● The system configuration shown above is an example. Other combinations are also available.

Note:

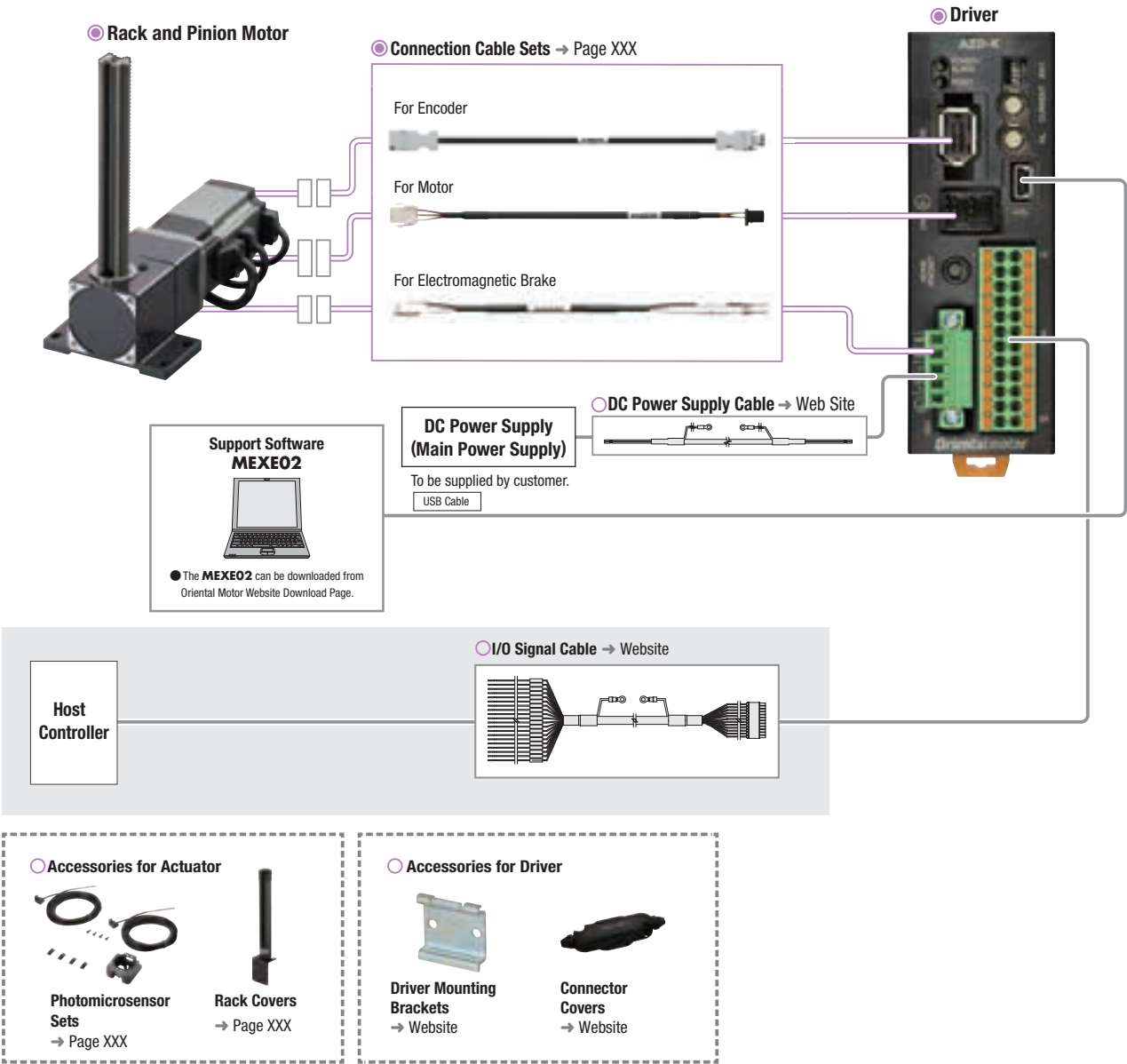
● The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use a connection cable.

●Combination of L Series with Electromagnetic Brake and Pulse Input Type Driver





This is an example of a single-axis system configuration using a programmable controller (with pulse generating function).
Rack and pinion motors, drivers, and connection cable sets/flexible connection cable sets need to be ordered separately.

- Purchase is required

Purchase as necessary



● Example of System Configuration Pricing

Rack and Pinion Motor		+	Driver	+	Cable	
					Connection Cable Set (1 m)	I/O Signal Cable with Connector (1 m)
LM2F50AZMK-1			AZD-K		CC010VZFB2	CC24D010C-1
						

● The system configuration shown above is an example. Other combinations are also available.

Note:

● The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use a connection cable.

High-Speed Type

Specifications

Frame Size			60 mm	80 mm
Actuator Product Name	Standard		LM2 □ 200AZAK -□	LM4 □ 150AZAK -□
	with Electromagnetic Brake		LM2 □ 200AZMK -□	LM4 □ 150AZMK -□
Driver Product Name	Built-in Controller Type		AZD-KD	
	Pulse Input Type with RS-485 Communication		AZD-KX	
	Pulse Input Type		AZD-K	
Equipped Motor (AZ Series)			AZM66	
Maximum Speed	24 VDC	mm/s	200	150
	48 VDC	mm/s	250	250
Transportable Mass	24 VDC	Kg	10 (100 mm/s) 5 (200 mm/s)	20 (60 mm/s) 7 (150 mm/s)
	48 VDC	Kg	10 (250 mm/s)	20 (150 mm/s) 7 (250 mm/s)
Maximum Acceleration		m/s ²	1	
Thrust*1	24 VDC	N	110 (100 mm/s) 55 (200 mm/s)	220 (60 mm/s) 77 (150 mm/s)
	48 VDC	N	110 (250 mm/s)	220 (150 mm/s) 77 (250 mm/s)
Push Force		N	110	220
Holding Force	Power On	N	110	220
	with Electromagnetic Brake	N	110	220
Minimum Travel Amount		mm	0.01	
Rotor Inertia		J:kg·m ²	370×10^{-7} $(530 \times 10^{-7})^{*2}$	
Stroke		mm	100, 200, 300, 400, 500	100, 200, 300, 400, 500, 600, 1000
Power Supply Input	Voltage		24 VDC $\pm 5\%^{*3}$ /48 VDC $\pm 5\%$	
	Input Current	A	3.55 (3.8)*2	

● Either **F** (vertical to the mounting foot surface) or **B** (horizontal to the mounting foot surface) indicating the rack moving direction is entered where the box □ is located within the product name.

A number indicating the rack stroke is entered where the box □ is located within the product name.

● When the rack is moved in the vertical direction, the load mass that can be driven is the value obtained by subtracting the rack mass from the transportable mass. Refer to 'Dimensions' for the rack mass.

*1 For a value obtained by adding the acceleration thrust of a load to the load thrust, do not exceed the thrust amount.

*2 The bracket () indicates the value for the product with an electromagnetic brake.

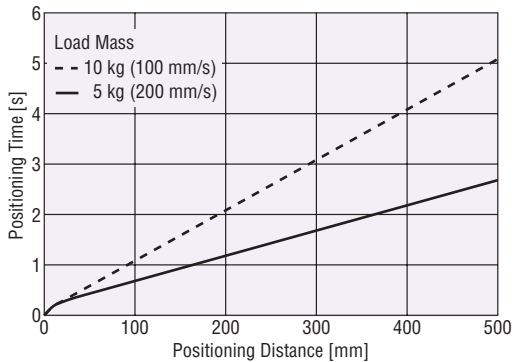
*3 For the type with an electromagnetic brake, a 24 VDC $\pm 4\%$ specification applies if the wiring distance between the motor and the driver is extended to 20 m using a cable.

Positioning Distance - Positioning Time

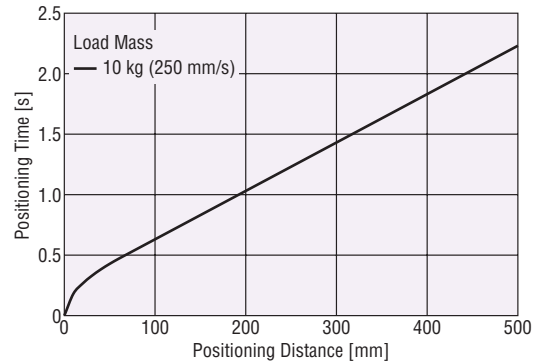
Check the positioning time (reference) from the positioning distance.
The positioning time differs depending on the transportable mass.

LM2

24 VDC

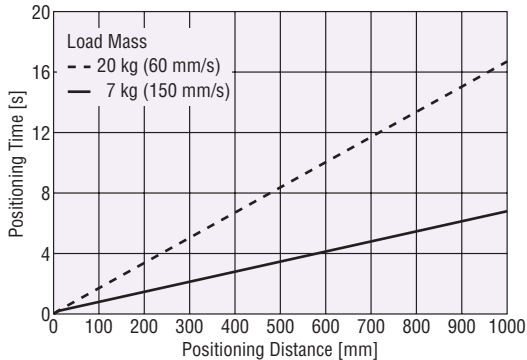


48 VDC

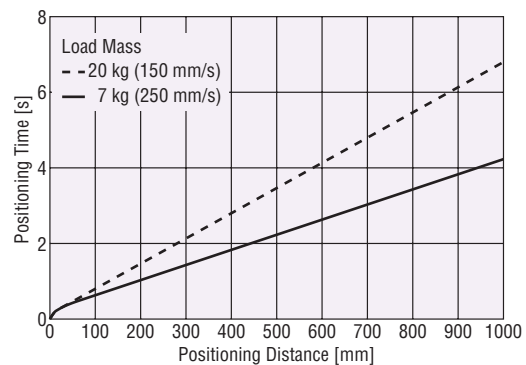


LM4

24 VDC



48 VDC



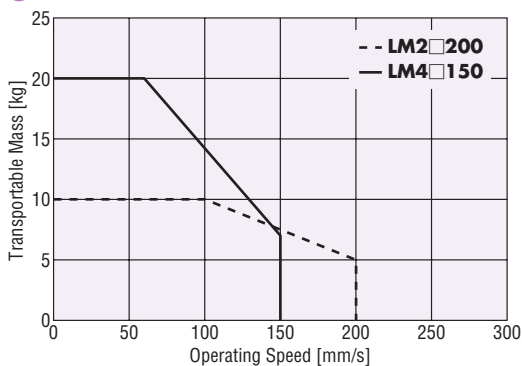
Repetitive Positioning Accuracy (Reference Value)

It is the value measured with the transportable mass. It varies depending on load, driving condition or mounting direction.

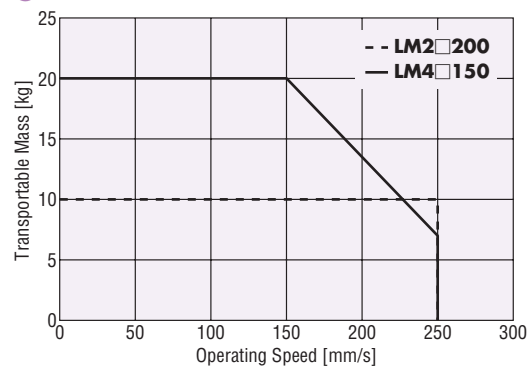
Product Name	Rack Moving Direction	Repetitive Positioning Accuracy [mm]
LM2	Horizontal Direction	± 0.25
LM4		
LM2	Vertical Direction	± 0.07
LM4		

Operating Speed - Transportable Mass

24 VDC



48 VDC



Note:

- The operating speed - transportable mass characteristics shows the data based on Oriental Motor's measurement conditions. The characteristics may change depending on the conditions of the power supply voltage and the ambient temperature.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL/CSA Standards, it is required to keep the temperature of the motor case at 75°C or less since the motor is recognized as resistant class A.)

Large Transportable Mass Type

Specifications

Frame Size			60 mm	80 mm
Actuator Product Name	Standard		LM2 □ 50AZAK -□	LM4 □ 20AZAK -□
	with Electromagnetic Brake		LM2 □ 50AZMK -□	LM4 □ 20AZMK -□
Driver Product Name	Built-in Controller Type		AZD-KD	
	Pulse Input Type with RS-485 Communication		AZD-KX	
	Pulse Input Type		AZD-K	
Equipped Motor (AZ Series)			AZM66	
Maximum Speed	24 VDC	mm/s	50	20
	48 VDC	mm/s	60	25
Transportable Mass	24 VDC	Kg	30	100 (10 mm/s) 50 (20 mm/s)
	48 VDC	Kg	30	100 (15 mm/s) 50 (25 mm/s)
Maximum Acceleration		m/s ²	0.187	0.074
Thrust*1	24 VDC	N	306	1008 (10 mm/s) 504 (20 mm/s)
	48 VDC	N	306	1008 (15mm/s) 504 (25mm/s)
Push Force		N	306	1008
Holding Force	Power On	N	306	1008
	with Electromagnetic Brake	N	306	1008
Minimum Travel Amount		mm	0.001	
Rotor Inertia		J:kg·m ²	370×10^{-7} $(530 \times 10^{-7})^{*2}$	
Stroke		mm	100, 200, 300, 400, 500	100, 200, 300, 400, 500, 600, 1000
Power Supply Input	Voltage		24 VDC ±5% ^{*3} /48 VDC ±5%	
	Input Current	A	3.55 (3.8) ^{*2}	

● Either **F** (vertical to the mounting foot surface) or **B** (horizontal to the mounting foot surface) indicating the rack moving direction is entered where the box □ is located within the product name.

A number indicating the rack stroke is entered where the box □ is located within the product name.

● When the rack is moved in the vertical direction, the load mass that can be driven is the value obtained by subtracting the rack mass from the transportable mass. Refer to 'Dimensions' for the rack mass.

*1 For a value obtained by adding the acceleration thrust of a load to the load thrust, do not exceed the thrust amount.

*2 The bracket () indicates the value for the product with an electromagnetic brake.

*3 For the type with an electromagnetic brake, a 24 VDC±4% specification applies if the wiring distance between the motor and the driver is extended to 20 m using a cable.

Note:

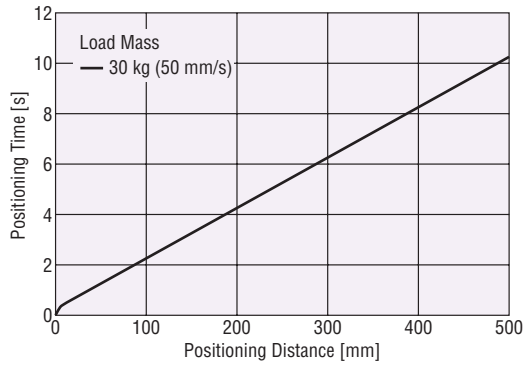
LM4□**20AZAK-10** and **LM4**□**20AZMK-10** cannot be used in combination with the Multi-Axis Driver SSCNET III /H Compatible.

Positioning Distance - Positioning Time

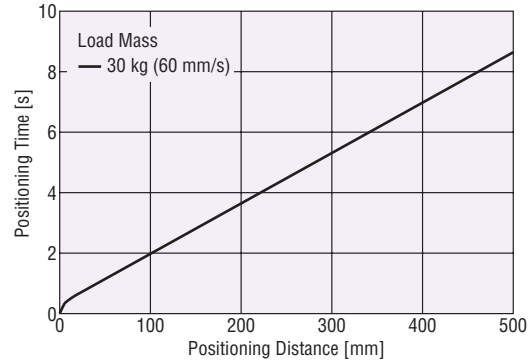
Check the positioning time (reference) from the positioning distance.
The positioning time differs depending on the transportable mass.

LM2

24 VDC

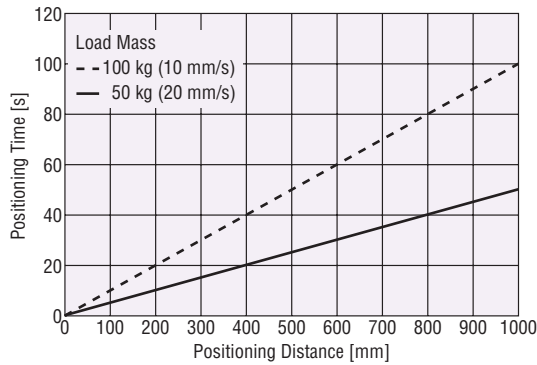


48 VDC

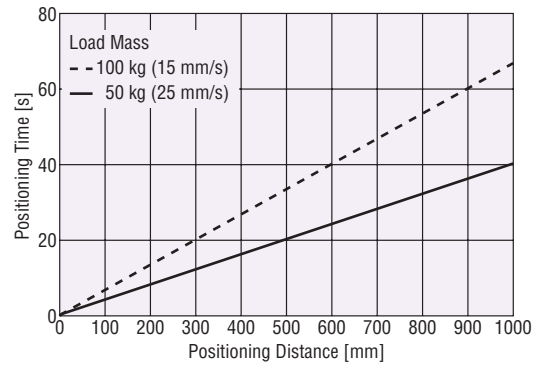


LM4

24 VDC



48 VDC



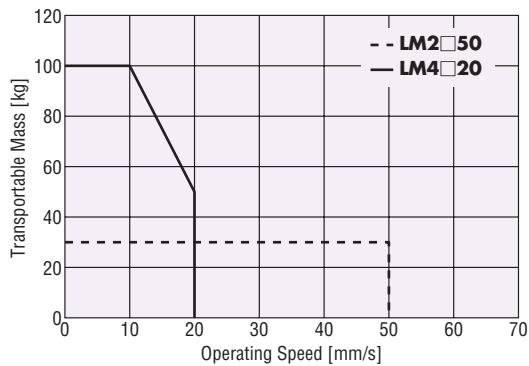
Repetitive Positioning Accuracy (Reference Value)

It is the value measured with the transportable mass. It varies depending on load, driving condition or mounting direction.

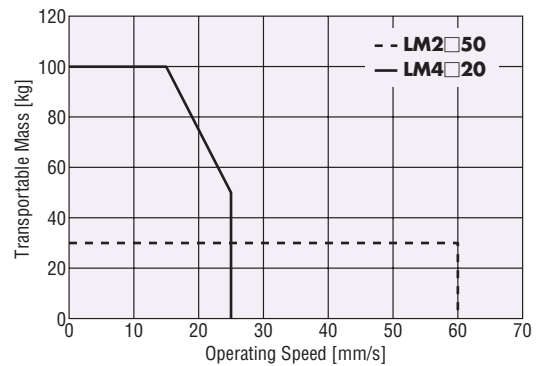
Product Name	Rack Moving Direction	Repetitive Positioning Accuracy [mm]
LM2	Horizontal Direction	±0.25
LM4		
LM2	Vertical Direction	±0.07
LM4		

Operating Speed - Transportable Mass

24 VDC



48 VDC



Note:

- The operating speed - transportable mass characteristics shows the data based on Oriental Motor's measurement conditions. The characteristics may change depending on the conditions of the power supply voltage and the ambient temperature.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL/CSA Standards, it is required to keep the temperature of the motor case at 75°C or less since the motor is recognized as resistant class A.)

Electromagnetic Brake Specifications

Product Name	LM2	LM4
Brake Type	Power Off Activated Type	
Power Supply Voltage	24 V DC \pm 5%*	
Power Supply Current	0.25	
Brake Operating Time	20	
Brake Releasing Time	30	
Time Rating	Continuous	

*For the type with an electromagnetic brake, a 24 VDC \pm 4% specification applies if the wiring distance between the motor and the driver is extended to 20 m using a cable.

General Specifications

 *1*2 *1

		Rack and Pinion Motor	Driver
Thermal Class		130 (B) [UL/CSA Recognized 105 (A)]	—
Insulation Resistance		100 M Ω or more when a 500 VDC megger is applied between the following places: · Case – Motor Windings · Case – Electromagnetic Brake Windings*3	100 M Ω or more when a 500 VDC megger is applied between the following places: · Protective Earth Terminal – Power Supply Terminal
Dielectric Strength		Sufficient to withstand the following for 1 minute: · Case – Motor Windings 1.0 kVAC 50Hz or 60Hz · Case – Electromagnetic Brake Windings*3 1.0 kVAC 50Hz or 60Hz	—
Operating Environment	Ambient Temperature	0 to +40°C (Non-freezing)*4	0 to +50°C (Non-freezing)
	Ambient Humidity	85% or less (Non-condensing)	
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water or oil.	
Degree of Protection		IP30 (Excluding rack moving part and connector part)	IP10
Multiple Rotation Detection Range in Power OFF State (Motor Output Shaft)		\pm 900 Rotations (1800 Rotations)	

*1 The motor product name (not the actuator product name) is recognized by UL under UL and Canada Standards.

The motor product name (not the actuator product name) conforms to the standards to affix the CE Marking.

*2 Only for the motor part.

*3 Only for products with an electromagnetic brake.

*4 It is based on Oriental Motor's measurement conditions.

Note:

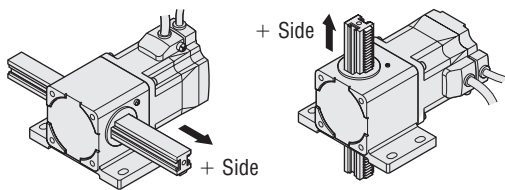
● Disconnect the motor and driver when taking an insulation resistance measurement or performing a dielectric voltage withstand test. Also, do not perform these tests on the absolute sensor part of the motor.

Moving Direction

At the time of shipment, the moving direction of the rack is set as shown below.

B Type

F Type



Rack Permissible Rotational Torque (Moment)

Product Name	Rack Permissible Rotational Torque (Moment)
LM2	0.3 N·m max.
LM4	0.5 N·m max.

- Keep the rotational torque below the permissible value.
If the rotational torque is applied too much, the rack bushing will wear in a short time.

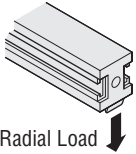


Rotational torque (moment)

Permissible Radial Load

Stroke mm	LM2□50	LM2□200	LM4□20	LM4□150
100	25	25*1	120	60*1
200	20	20*1	90	40*1
300	10	10*1	70	30*1
400	10	10*1	60	25*1
500	7	7*1	50	20*1
600	-	-	40	15*1
1000	-	-	15	*2

- Either **F** (vertical to the mounting foot surface) or **B** (horizontal to the mounting foot surface) indicating the rack moving direction is entered where the box □ is located within the product name.
- *1 The value is the operation speed up to 90 mm/s. When operating at a speed exceeding 90 mm/s, do not apply a radial load to the rack by providing a guide, etc..
- *2 Do not apply a radial load to the rack by providing a guide, etc. since the rack is damaged.



Radial Load

Dimensions (Unit: mm)

LM2 B Type

◇ Frame Size 60 mm High-Speed Type

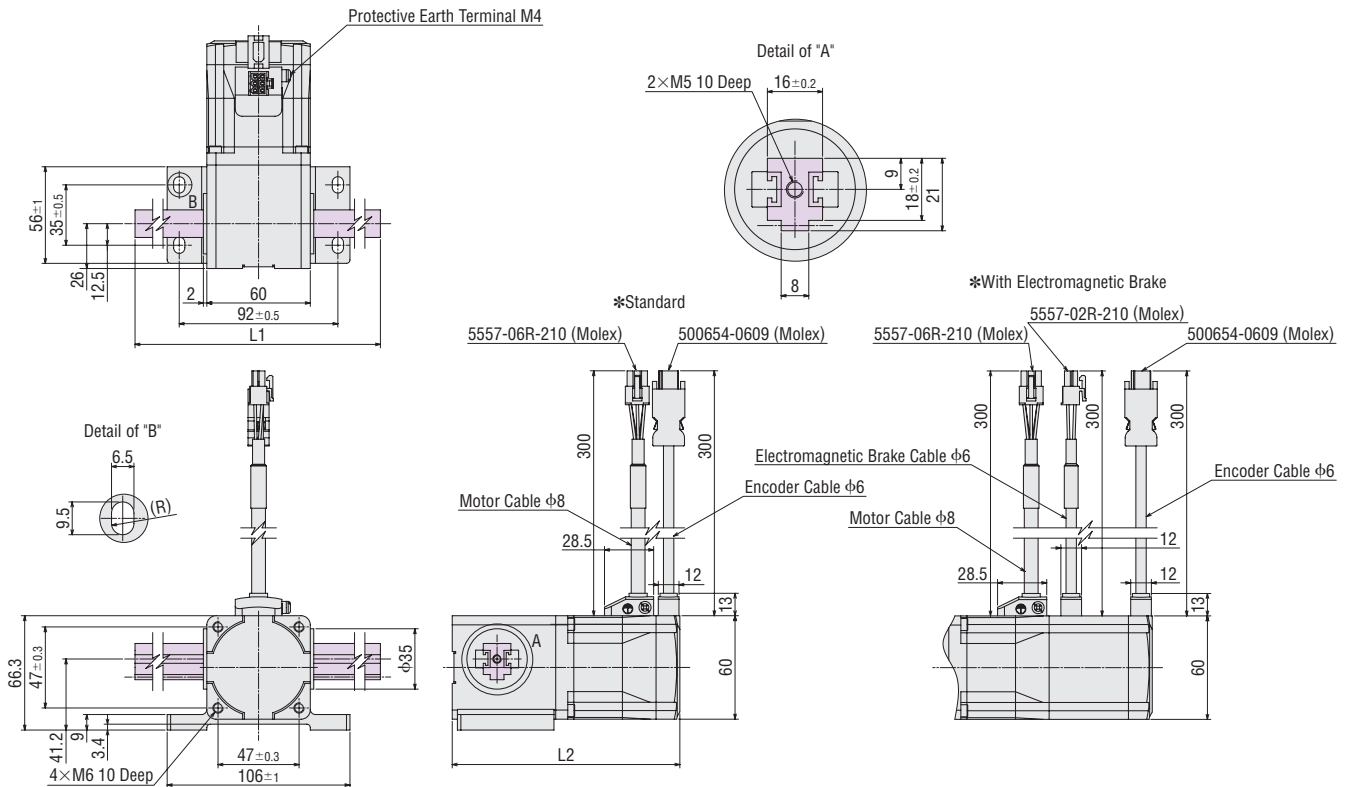
2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg	Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input					
100	LM2B500AZAC-1	LM2B200AZAK-1	229.4	132	1.9	0.5	D7818
200	LM2B500AZAC-2	LM2B200AZAK-2	330.0		2.0	0.6	D7819
300	LM2B500AZAC-3	LM2B200AZAK-3	430.4		2.2	0.8	D7820
400	LM2B500AZAC-4	LM2B200AZAK-4	531.0		2.4	1.0	D7821
500	LM2B500AZAC-5	LM2B200AZAK-5	631.5		2.6	1.2	D7822
600	LM2B500AZAC-6	-	731.4		2.8	1.4	D7823
700	LM2B500AZAC-7	-	829.5		3.0	1.6	D7824
800	LM2B500AZAC-8	-	930.4		3.2	1.8	D7825

◇ Frame Size 60 mm High-Speed Type with Electromagnetic Brake

2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg	Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input					
100	LM2B500AZMC-1	LM2B200AZMK-1	229.4	178	2.2	0.5	D7826
200	LM2B500AZMC-2	LM2B200AZMK-2	330.0		2.3	0.6	D7827
300	LM2B500AZMC-3	LM2B200AZMK-3	430.4		2.5	0.8	D7828
400	LM2B500AZMC-4	LM2B200AZMK-4	531.0		2.7	1.0	D7829
500	LM2B500AZMC-5	LM2B200AZMK-5	631.5		2.9	1.2	D7830
600	LM2B500AZMC-6	-	731.4		3.1	1.4	D7831
700	LM2B500AZMC-7	-	829.5		3.3	1.6	D7832
800	LM2B500AZMC-8	-	930.4		3.5	1.8	D7833



● The shaded areas are moving parts.

● LM2 F Type

◇ Frame Size 60 mm High-Speed Type

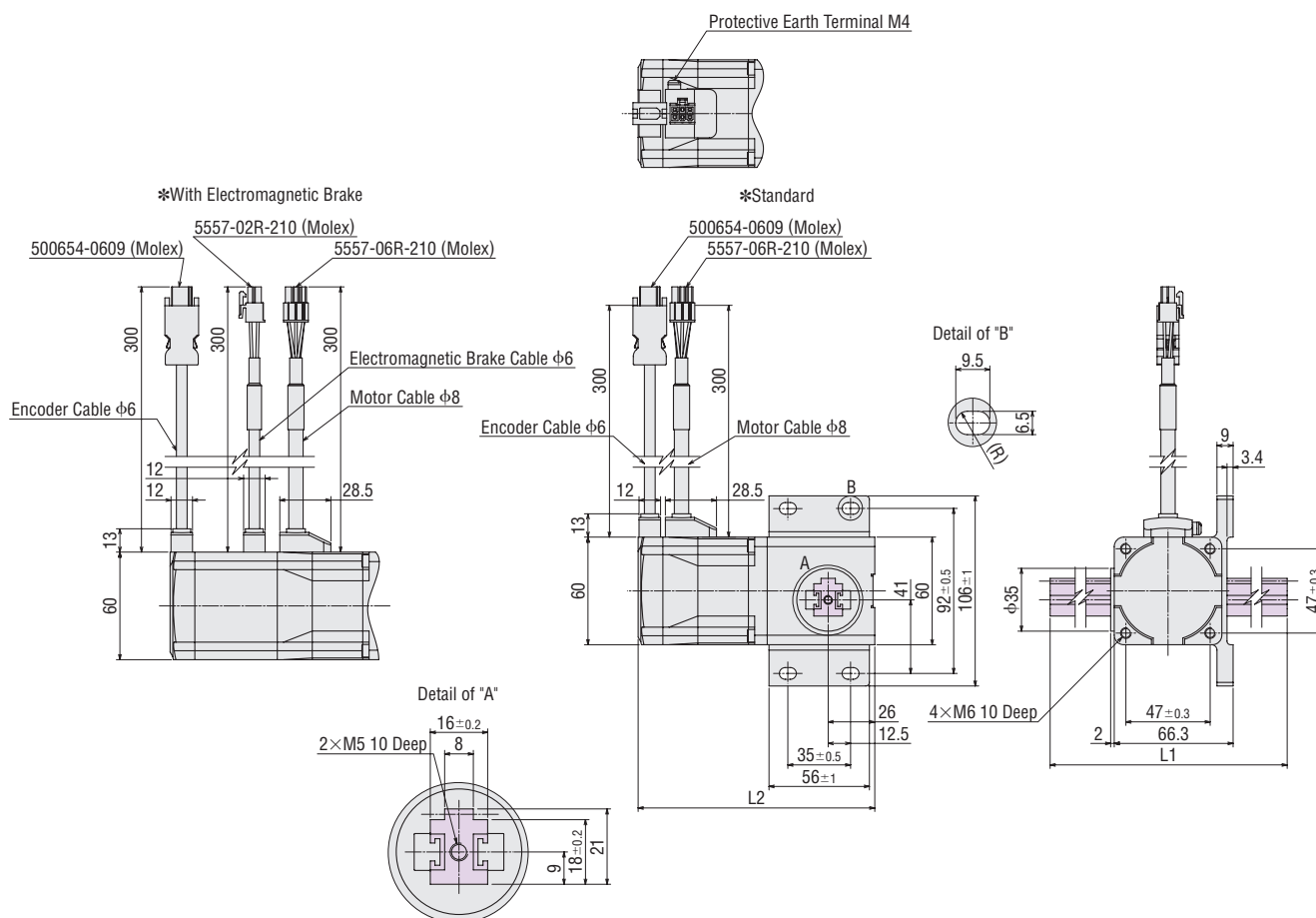
2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg	Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input					
100	LM2F500AZAC-1	LM2F200AZAK-1	229.4	132	1.9	0.5	D7786
200	LM2F500AZAC-2	LM2F200AZAK-2	330.0		2.0	0.6	D7787
300	LM2F500AZAC-3	LM2F200AZAK-3	430.4		2.2	0.8	D7788
400	LM2F500AZAC-4	LM2F200AZAK-4	531.0		2.4	1.0	D7789
500	LM2F500AZAC-5	LM2F200AZAK-5	631.5		2.6	1.2	D7790
600	LM2F500AZAC-6	-	731.4		2.8	1.4	D7791
700	LM2F500AZAC-7	-	829.5		3.0	1.6	D7792
800	LM2F500AZAC-8	-	930.4		3.2	1.8	D7793

◇ Frame Size 60 mm High-Speed Type with Electromagnetic Brake

2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg	Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input					
100	LM2F500AZMC-1	LM2F200AZMK-1	229.4	178	2.2	0.5	D7794
200	LM2F500AZMC-2	LM2F200AZMK-2	330.0		2.3	0.6	D7795
300	LM2F500AZMC-3	LM2F200AZMK-3	430.4		2.5	0.8	D7796
400	LM2F500AZMC-4	LM2F200AZMK-4	531.0		2.7	1.0	D7797
500	LM2F500AZMC-5	LM2F200AZMK-5	631.5		2.9	1.2	D7798
600	LM2F500AZMC-6	-	731.4		3.1	1.4	D7799
700	LM2F500AZMC-7	-	829.5		3.3	1.6	D7800
800	LM2F500AZMC-8	-	930.4		3.5	1.8	D7801



● The shaded areas are moving parts.

● **LM2 B Type**

◇Frame Size 60 mm Large Transportable Mass Type

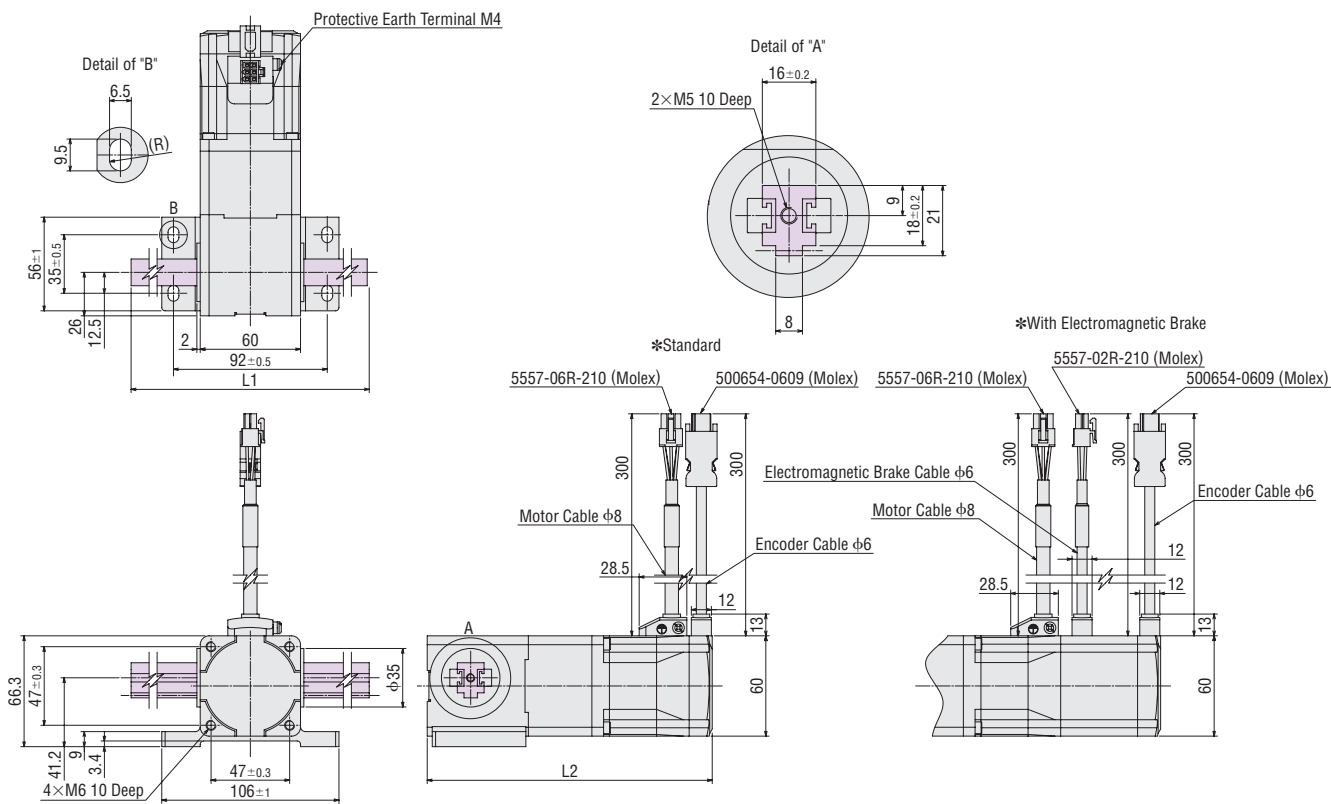
2D & 3D CAD


Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg	Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input					
100	LM2B90AZAC-1	LM2B50AZAK-1	229.4	170.5	2.1	0.5	D7802
200	LM2B90AZAC-2	LM2B50AZAK-2	330.0		2.2	0.6	D7803
300	LM2B90AZAC-3	LM2B50AZAK-3	430.4		2.4	0.8	D7804
400	LM2B90AZAC-4	LM2B50AZAK-4	531.0		2.6	1.0	D7805
500	LM2B90AZAC-5	LM2B50AZAK-5	631.5		2.8	1.2	D7806
600	LM2B90AZAC-6	-	731.4		3.0	1.4	D7807
700	LM2B90AZAC-7	-	829.5		3.2	1.6	D7808
800	LM2B90AZAC-8	-	930.4		3.4	1.8	D7809

◇ Frame Size 60 mm Large Transportable Mass Type with Electromagnetic Brake

2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg	Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input					
100	LM2B90AZMC-1	LM2B50AZMK-1	229.4	216.5	2.5	0.5	D7810
200	LM2B90AZMC-2	LM2B50AZMK-2	330.0		2.6	0.6	D7811
300	LM2B90AZMC-3	LM2B50AZMK-3	430.4		2.8	0.8	D7812
400	LM2B90AZMC-4	LM2B50AZMK-4	531.0		3.0	1.0	D7813
500	LM2B90AZMC-5	LM2B50AZMK-5	631.5		3.2	1.2	D7814
600	LM2B90AZMC-6	-	731.4		3.4	1.4	D7815
700	LM2B90AZMC-7	-	829.5		3.6	1.6	D7816
800	LM2B90AZMC-8	-	930.4		3.8	1.8	D7817



● The  shaded areas are moving parts.

● LM2 F Type

◆ Frame Size 60 mm Large Transportable Mass Type

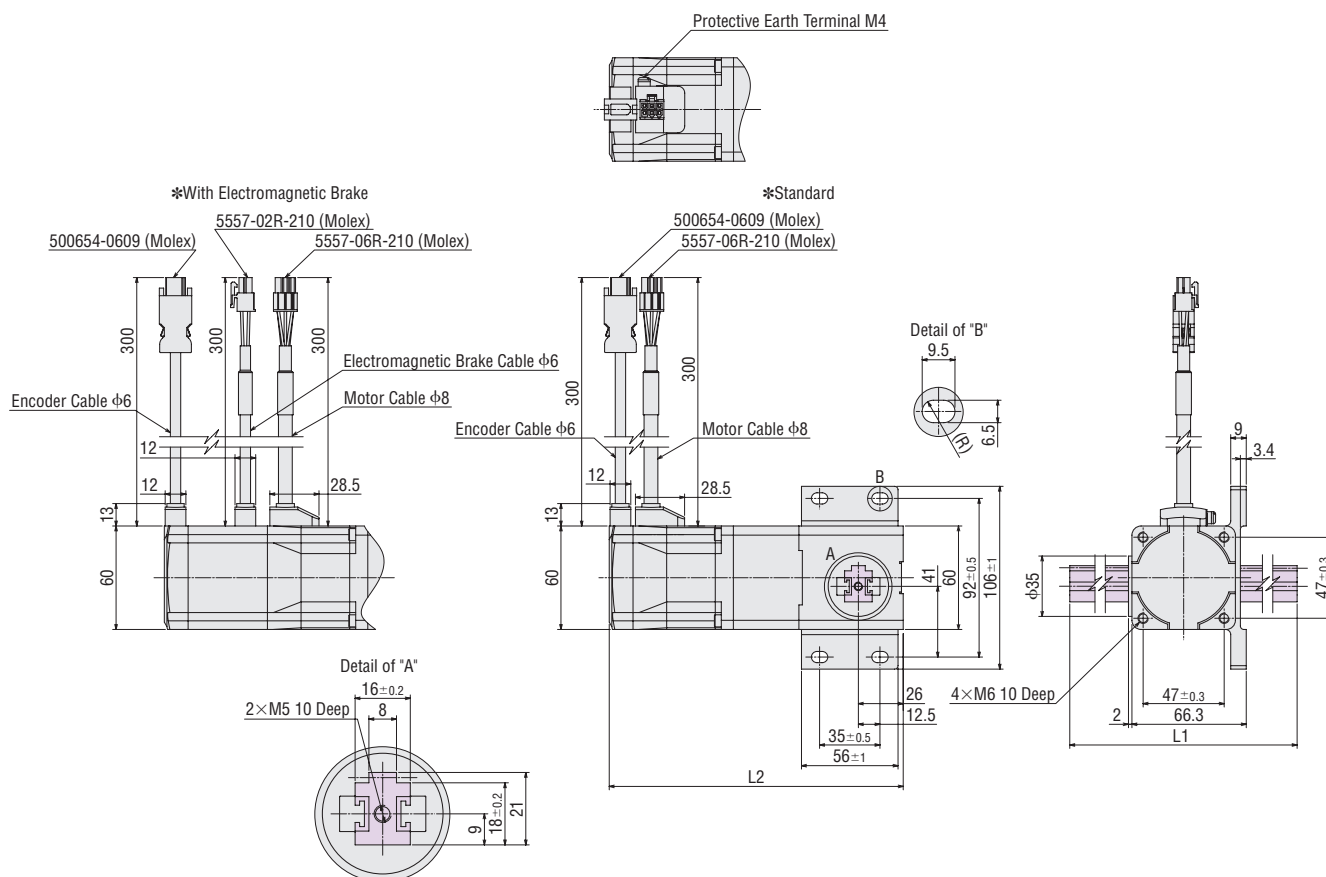
2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg	Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input					
100	LM2F90AZAC-1	LM2F50AZAK-1	229.4	170.5	2.1	0.5	D7770
200	LM2F90AZAC-2	LM2F50AZAK-2	330.0		2.2	0.6	D7771
300	LM2F90AZAC-3	LM2F50AZAK-3	430.4		2.4	0.8	D7772
400	LM2F90AZAC-4	LM2F50AZAK-4	531.0		2.6	1.0	D7773
500	LM2F90AZAC-5	LM2F50AZAK-5	631.5		2.8	1.2	D7774
600	LM2F90AZAC-6	-	731.4		3.0	1.4	D7775
700	LM2F90AZAC-7	-	829.5		3.2	1.6	D7776
800	LM2F90AZAC-8	-	930.4		3.4	1.8	D7777

◆ Frame Size 60 mm Large Transportable Mass Type with Electromagnetic Brake

2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg	Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input					
100	LM2F90AZMC-1	LM2F50AZMK-1	229.4	216.5	2.5	0.5	D7778
200	LM2F90AZMC-2	LM2F50AZMK-2	330.0		2.6	0.6	D7779
300	LM2F90AZMC-3	LM2F50AZMK-3	430.4		2.8	0.8	D7780
400	LM2F90AZMC-4	LM2F50AZMK-4	531.0		3.0	1.0	D7781
500	LM2F90AZMC-5	LM2F50AZMK-5	631.5		3.2	1.2	D7782
600	LM2F90AZMC-6	-	731.4		3.4	1.4	D7783
700	LM2F90AZMC-7	-	829.5		3.6	1.6	D7784
800	LM2F90AZMC-8	-	930.4		3.8	1.8	D7785



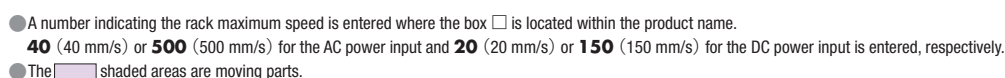
● The shaded areas are moving parts.

◇ Frame Size 80 mm

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg		Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input			High-Speed Type	Large Transportable Mass Type		
100	LM4B□AZAC-1	LM4B□AZAK-1	243.5	177.7	2.8	2.9	0.7	D7844
200	LM4B□AZAC-2	LM4B□AZAK-2	341.6		3.1	3.2	1.0	D7845
300	LM4B□AZAC-3	LM4B□AZAK-3	443.7		3.4	3.5	1.3	D7846
400	LM4B□AZAC-4	LM4B□AZAK-4	541.9		3.6	3.7	1.5	D7847
500	LM4B□AZAC-5	LM4B□AZAK-5	640.1		3.9	4.0	1.8	D7848
600	LM4B□AZAC-6	LM4B□AZAK-6	742.2		4.2	4.3	2.1	D7849
700	LM4B□AZAC-7	-	840.4		4.5	4.6	2.4	D7850
800	LM4B□AZAC-8	-	942.5		4.8	4.9	2.7	D7851
900	LM4B□AZAC-9	-	1040.7		5.1	5.2	3.0	D7852
1000	LM4B□AZAC-10	LM4B□AZAK-10	1142.8		5.4	5.5	3.3	D7853

2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg		Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input			High-Speed Type	Large Transportable Mass Type		
100	LM4B□AZMC-1	LM4B□AZMK-1	243.5	223.7	3.2	3.3	0.7	D7864
200	LM4B□AZMC-2	LM4B□AZMK-2	341.6		3.5	3.6	1.0	D7865
300	LM4B□AZMC-3	LM4B□AZMK-3	443.7		3.8	3.9	1.3	D7866
400	LM4B□AZMC-4	LM4B□AZMK-4	541.9		4.0	4.1	1.5	D7867
500	LM4B□AZMC-5	LM4B□AZMK-5	640.1		4.3	4.4	1.8	D7868
600	LM4B□AZMC-6	LM4B□AZMK-6	742.2		4.6	4.7	2.1	D7869
700	LM4B□AZMC-7	-	840.4		4.9	5.0	2.4	D7870
800	LM4B□AZMC-8	-	942.5		5.2	5.3	2.7	D7871
900	LM4B□AZMC-9	-	1040.7		5.5	5.6	3.0	D7872
1000	LM4B□AZMC-10	LM4B□AZMK-10	1142.8		5.8	5.9	3.3	D7873



● **LM4 F Type**

◇ **Frame Size 80 mm**

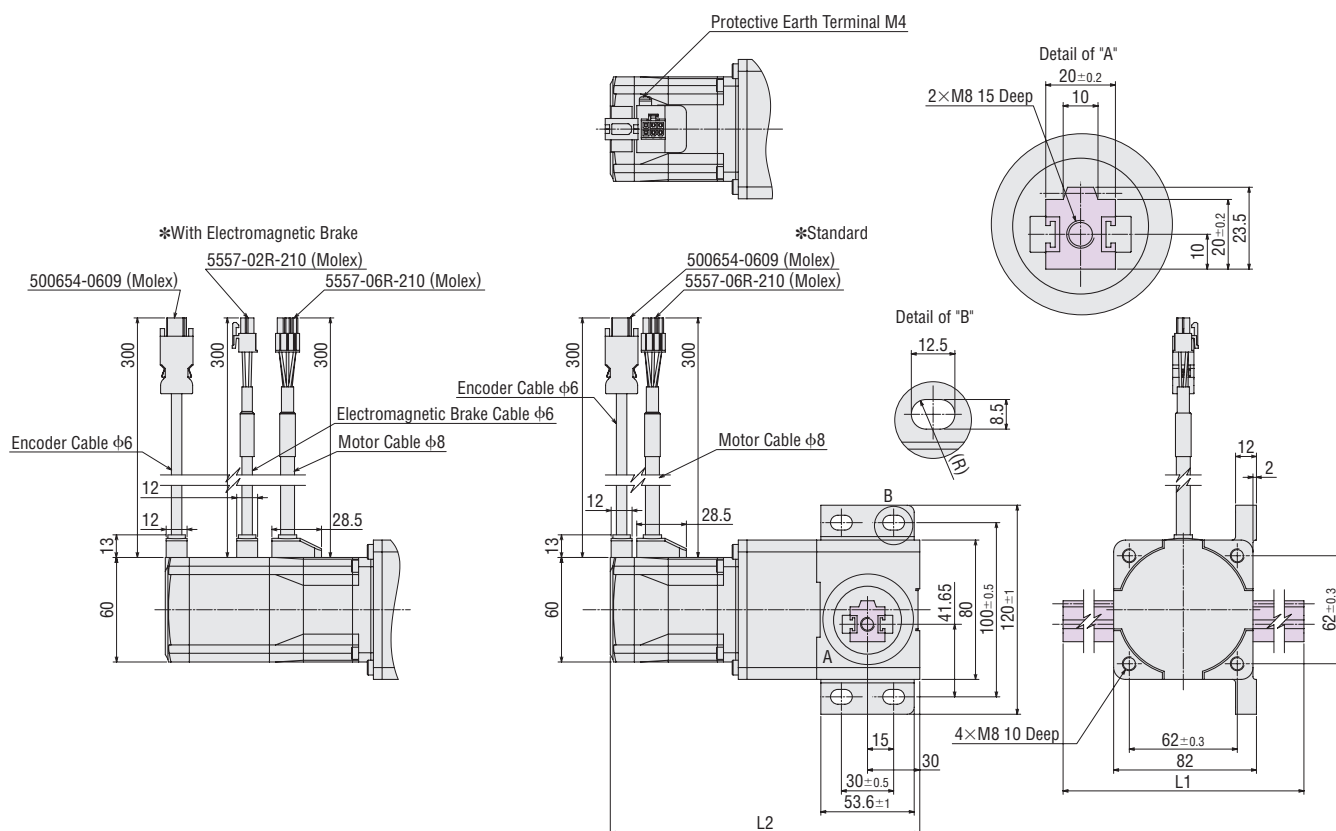
2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg		Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input			High-Speed Type	Large Transportable Mass Type		
100	LM4F □ AZAC-1	LM4F □ AZAK-1	243.5	177.7	2.8	2.9	0.7	D7834
200	LM4F □ AZAC-2	LM4F □ AZAK-2	341.6		3.1	3.2	1.0	D7835
300	LM4F □ AZAC-3	LM4F □ AZAK-3	443.7		3.4	3.5	1.3	D7836
400	LM4F □ AZAC-4	LM4F □ AZAK-4	541.9		3.6	3.7	1.5	D7837
500	LM4F □ AZAC-5	LM4F □ AZAK-5	640.1		3.9	4.0	1.8	D7838
600	LM4F □ AZAC-6	LM4F □ AZAK-6	742.2		4.2	4.3	2.1	D7839
700	LM4F □ AZAC-7	-	840.4		4.5	4.6	2.4	D7840
800	LM4F □ AZAC-8	-	942.5		4.8	4.9	2.7	D7841
900	LM4F □ AZAC-9	-	1040.7		5.1	5.2	3.0	D7842
1000	LM4F □ AZAC-10	LM4F □ AZAK-10	1142.8		5.4	5.5	3.3	D7843

◇ **Frame Size 80 mm with Electromagnetic Brake**

2D & 3D CAD

Stroke mm	Product Name		L1	L2	Mass (Rack Mass Included) kg		Rack Mass kg	2D CAD
	AC Power Supply Input	DC Power Supply Input			High-Speed Type	Large Transportable Mass Type		
100	LM4F □ AZMC-1	LM4F □ AZMK-1	243.5	223.7	3.2	3.3	0.7	D7854
200	LM4F □ AZMC-2	LM4F □ AZMK-2	341.6		3.5	3.6	1.0	D7855
300	LM4F □ AZMC-3	LM4F □ AZMK-3	443.7		3.8	3.9	1.3	D7856
400	LM4F □ AZMC-4	LM4F □ AZMK-4	541.9		4.0	4.1	1.5	D7857
500	LM4F □ AZMC-5	LM4F □ AZMK-5	640.1		4.3	4.4	1.8	D7858
600	LM4F □ AZMC-6	LM4F □ AZMK-6	742.2		4.6	4.7	2.1	D7859
700	LM4F □ AZMC-7	-	840.4		4.9	5.0	2.4	D7860
800	LM4F □ AZMC-8	-	942.5		5.2	5.3	2.7	D7861
900	LM4F □ AZMC-9	-	1040.7		5.5	5.6	3.0	D7862
1000	LM4F □ AZMC-10	LM4F □ AZMK-10	1142.8		5.8	5.9	3.3	D7863



● A number indicating the rack maximum speed is entered where the box □ is located within the product name.

● **40** (40 mm/s) or **500** (500 mm/s) for the AC power input and **20** (20 mm/s) or **150** (150 mm/s) for the DC power input is entered, respectively.

● The shaded areas are moving parts.

Peripheral Equipment

Photomicrosensor Sets

A photomicrosensor set, which consists of a photomicrosensor (with flexible cable), sensor mounting bracket, shielding plate and installation screw, is provided to facilitate easy return-to-home operation.

All parts needed for return-to-home operation are included in the set, so you will spend less time designing, fabricating or procuring parts in connection with sensor installation.

Features

● Compact

This is a compact sensor that takes into consideration the installation space. It is easy to detect the rack position.

● Two Output Signals are Available

By installing a sensor on both sides of the rack, it is possible to detect two signals at the both moving ends or the signals at the moving end and the intermediate stop position, separately.

● Product Line

Product Name	Applicable Product	List Price
PARP-PS2B	LM2	
PARP-PS4B	LM4	

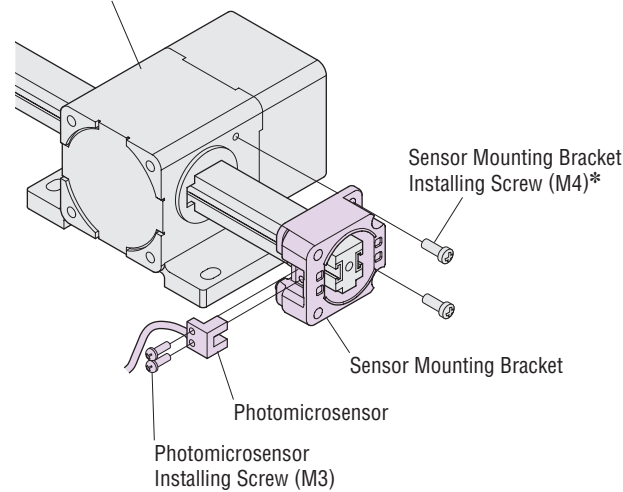
The following items are included with the product.
Photomicrosensors* (2 pieces), Shielding Plates (4 pieces), Sensor Mounting Bracket (1 piece), Photomicrosensor Installation Screws (4 pieces), Operating Manual
*With Flexible Cable (3 m)

● Specifications

Product Name	EE-SX951-R (OMRON)
Power Supply Voltage	5 to 24 VDC \pm 10%, Ripple (Peak to Peak) 10% max.
Consumption Current	15 mA or less
Control Output	NPN Open-Collector Output, 5 to 24 VDC, 50 mA or less Residual Voltage: 0.7 VDC or less (At load current of 50 mA) : 0.4 VDC or less (At load current of 5 mA)
Indicator LED	Detection Indication (Red)
Logic	Normally Open/Normally Closed (Possible to switch by connection)



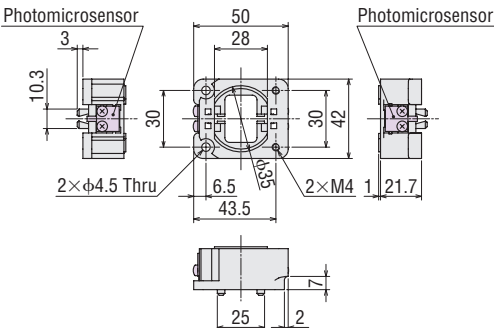
● Installation Example Rack Case



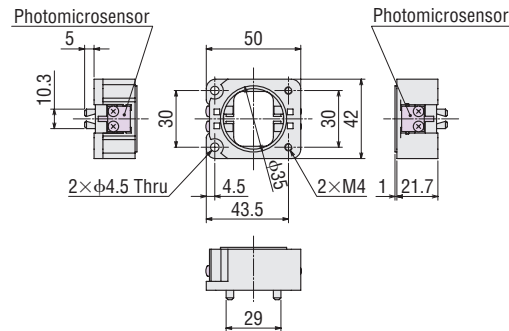
*Use the screws included with the rack case.

● Dimensions (Unit: mm)

PARP-PS2B



PARP-PS4B



● The dimensions with photomicrosensor set attached to L Series are available.
Refer to the Oriental Motor website.

Rack Cover (For Photomicrosensor)

It is a simple cover that protects the rack from impact and particles adhesion.
It also prevents grease from adhering to human body, equipment and so on. Use it together with photomicrosensor set sold separately.

Product Name	Applicable Product	Applicable Stroke (mm)	List Price
2LSC-P02	LM2	100, 200	
2LSC-P04		300, 400	
4LSC-P02	LM4	100, 200	
4LSC-P04		300, 400	

