

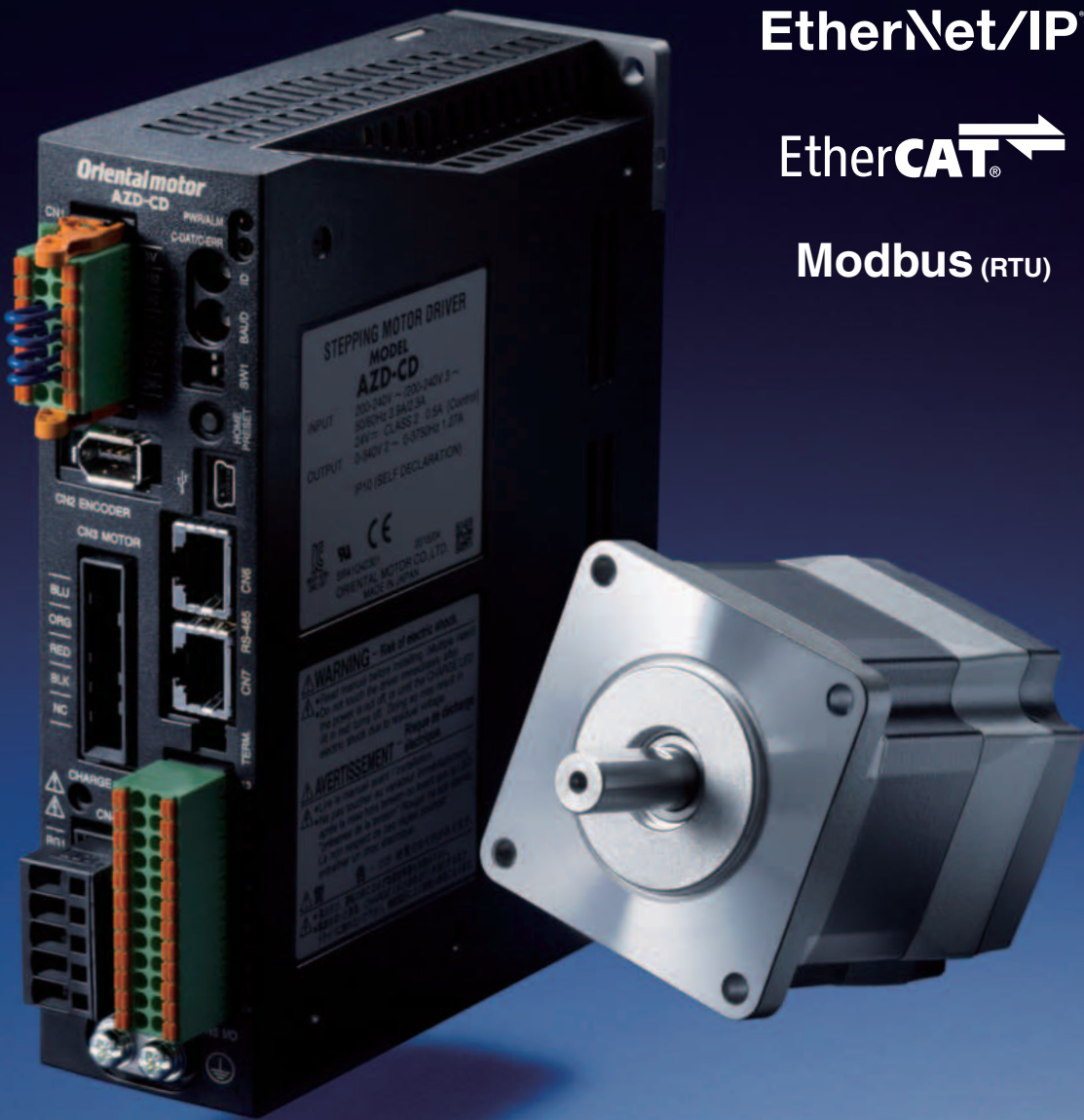
Orientalmotor

AZ Series

Battery-Free Absolute Mechanical Sensor Equipped Motor

Hybrid Control System

αSTEP
ALPHA



EtherNet/IP®

EtherCAT®

Modbus (RTU)

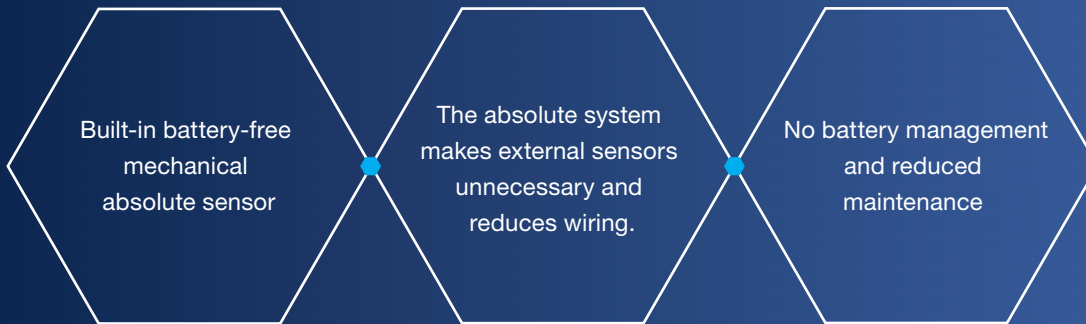
Absolute + Battery-free = Advanced Positioning

Hybrid Control System α STEP **AZ Series** Built-In Battery-Free Absolute Sensor

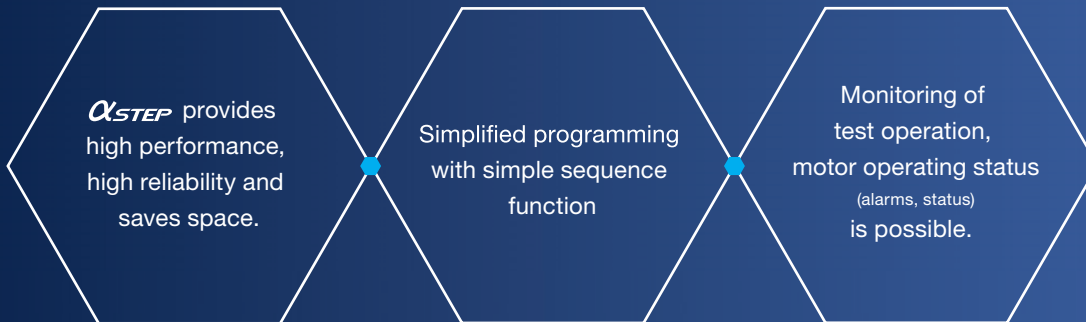


The **AZ Series** has a built-in absolute sensor (patented), which provides a battery-free absolute system. The drive system uses a hybrid control system α STEP. This provides both ease of use and reliability.

● Equipped with absolute sensor. Provides battery-free absolute system



● Hybrid control system α STEP. Compact, high response, high reliability, high efficiency motors



What is the α STEP Hybrid Control System?

α STEP are stepper motor-based motors which provide unique control that are a hybrid of the advantages of both open loop control and closed loop control. The motor's position is always monitored, and it can automatically switch between the two control types depending on conditions. It normally operates in open loop control, and activates synchronously with commands, providing high responsiveness. Under an overload condition, the motor position is corrected and it operates in the closed loop control mode. These motors combine ease of use with reliability.



AZ Series Product Line

A product line compatible with a variety of equipment, controls and systems is available.

Motor

Standard Type



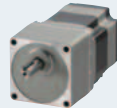
Frame Size 20 mm to 85 mm
(0.79 in. to 3.35 in.)

TS Geared Type

<Spur gear mechanism>

Backlash-free

High-speed Operation



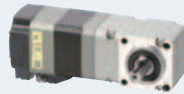
Frame Size 42 mm to 90 mm
(1.65 in. to 3.54 in.)

Right-Angle FC Geared Type

<Face gear mechanism>

Backlash-free

Space Saving



Frame Size 42 mm, 60 mm
(1.65 in., 2.36 in.)

PS Geared Type

<Planetary gear mechanism>

Backlash-free

Space Saving



Frame Size 28 mm to 90 mm
(1.10 in. to 3.54 in.)

PLE Geared Type

<Planetary gear mechanism>

Backlash-free

Space Saving



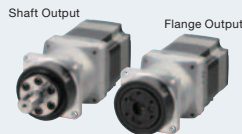
Frame Size 42 mm to 90 mm
(1.65 in. to 3.54 in.)

HPG Geared Type

<Harmonic Planetary>

Backlash-free

Space Saving



Frame Size 40 mm to 90 mm
(1.57 in. to 3.54 in.)

Harmonic Geared Type

<Harmonic Drive>

Non-Backlash

High Torque and High Accuracy



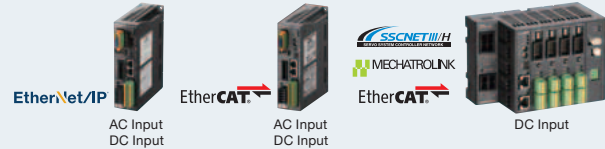
Frame Size 30 mm to 90 mm
(1.18 in. to 3.54 in.)

Driver

Network Compatible Drivers

FA Network Control

Drivers compatible with a variety of networks, including EtherNet/IP™, EtherCAT, SSCNET III/H and MECHATROLINK-III are available.

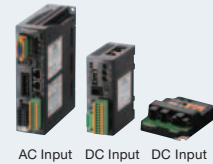


Built-in Controller Type

FLEX

Set positioning data to the driver (256 points). FA Network control is possible through the use of a network converter (sold separately).

I/O control
or
Modbus control

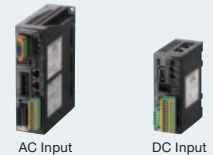


FLEX is the collective name for products that support I/O control, Modbus (RTU) control, and FA network control via network converters.

RS-485 Communication Pulse Input Type

Pulse Signal Control

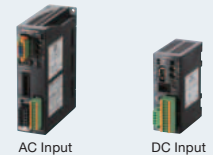
The motor position, speed, torque, alarms and temperature can be monitored via RS-485 communication.



Pulse Input Type

Pulse Signal Control

Controls the motor using a positioning module (pulse generator).



Product Line of Linear & Rotary Actuators Equipped with AZ Series

Wiring, control, and maintenance parts have been standardized, since the same motors and drivers are equipped, which reduces the startup time and simplifies operation.

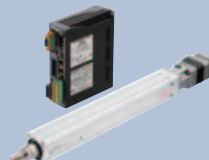
Electric Linear Slides

EZS Series

- Simple dustproofing function, cleanroom-compatible



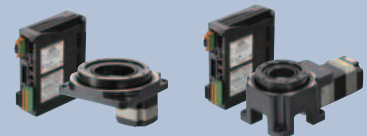
Electric Cylinders EAC Series



Hollow Rotary Actuators

DGII Series

- The motor is integrated with a large-diameter hollow rotary table
- High power and high rigidity



Compact Electric Cylinders

DR Series

DRS2 Series

- Compact actuator that integrates the motor and ball screw
- Optimal for minute feeding with linear motion and high positioning accuracy



Rack-and-Pinion

L Series

- A compact and strong linear motion mechanism
- Long stroke
- High transportable mass



Electric Gripper

EH Series

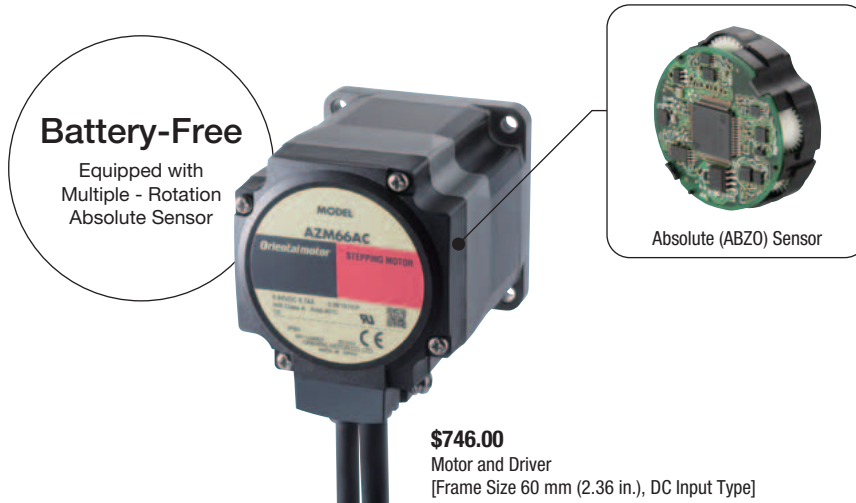
- Provides delicate grip
- Compact and lightweight



Equipped with a Newly Developed Absolute Mechanical Sensor, Advanced Technology is Available at an Affordable Price.

Newly Developed Absolute Mechanical Sensor

A newly developed compact, low cost, battery-free absolute mechanical sensor (patented) is developed which contributes to productivity improvements and cost reductions.



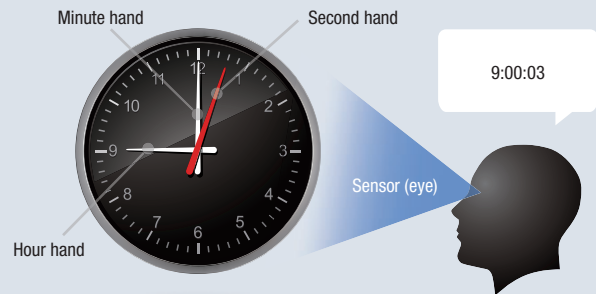
Mechanical Sensor

Analog clocks measure the current time based on the positions of the second hand, minute hand and hour hand. The newly developed sensor is a mechanical sensor equipped with multiple gears equivalent to the hands on a clock. Because it detects positioning information by detecting the angles of the respective gears, a battery is not required.

Multiple - Rotation Absolute System

Absolute position detection is possible with ± 900 rotations (1800 rotations)* of the motor shaft from the home position.
*The frame sizes 20 mm (0.79 in.) and 28 mm (1.10 in.) are ± 450 rotations (900 rotations).

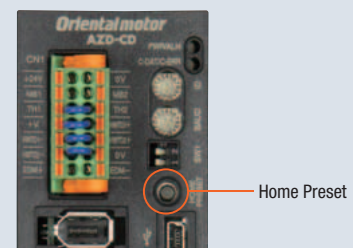
- Basic principles are like an analog clock



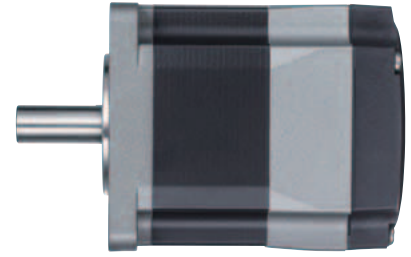
Home Setting Method

By pressing the switch on the driver surface, home position can be set simply, and the home position can be saved with the sensor. Furthermore, it is possible to set the home position using the support software (**MEXE02**) or the external input signal.

- Home Position Setting



High Reliability and High Efficiency with α STEP Technology



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

High Reliability

The **AZ** Series uses our proprietary control system, by linking the benefits of open loop control and closed loop control to achieves high reliability.

Keeps Driving Even in the Case of Sudden Load Changes or Sudden Acceleration

Normally it drives with open loop control in sync with the pulse commands. At times of overload, control instantly switches to closed loop, and perform positioning correction.

Outputs an Alarm Signal in Case of an Abnormality

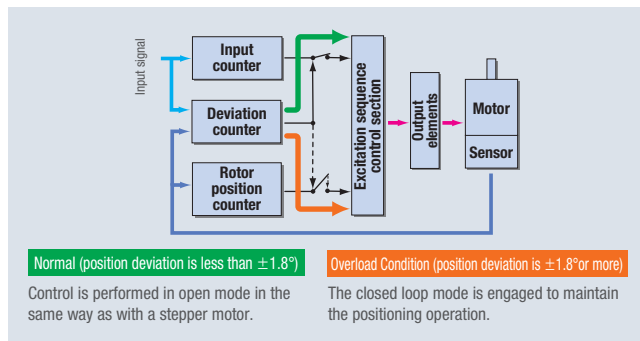
When overload continuously occurs, an alarm signal is output. When positioning determination is complete, a signal is output to support high reliability.

Tuning Not Required

In normal operation, it drives with open loop control, when there is a change in load, such as in the belt mechanism, cam and chain drive, the positioning can be determined without gain adjustment.

No Hunting

During positioning, the motor stops using its own holding torque without hunting. Therefore it is suitable for use in a situation where vibration could cause a problem when stopping as in a low-rigidity mechanism.



Energy Saving and Low Heat Generation

Energy saving is achieved by reducing the motor's heat generation through high efficiency.

Lower Heat Generation

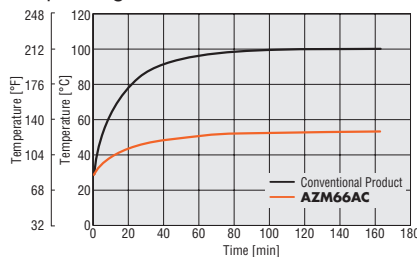
Heat generation by the motor has been significantly reduced through higher efficiency.

● Temperature Distribution by Thermography



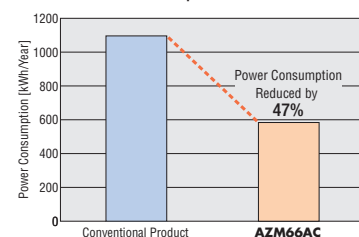
Comparison under the same conditions.

● Motor Surface Temperature under Same Operating Conditions



47% Less Power Consumption than Conventional Oriental Motor Products Due to Energy-Saving Features

● Power Consumption



*Operating Condition

- Speed: 1000 r/min, load factor: 50%
- Operating Time: 24 hours of operation, 365 days/year (70% operating, 25% stand-by, 5% off)

Eliminate Extra Sensors with a Battery-Free Absolute System.

No External Sensors Required

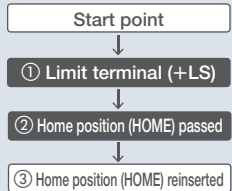
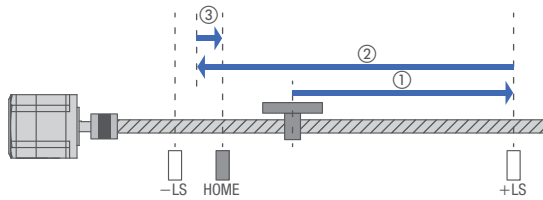
External sensors such as the home sensor or limit sensor are not required with an absolute system.

High Speed Return-to-Home + Improved Return-to-Home Accuracy

Because return-to-home is possible without using an external sensor, return-to-home can be performed at high speed without taking the sensor sensitivity into account, allowing for a shortened machine cycle. Furthermore, as return-to-home can be performed without concern for differences in the home sensor, it is possible to improve home position accuracy.

Previous Home Detection Example

The home position is detected at low speed by detecting the limit sensor (\pm LS) and home sensor (HOME).

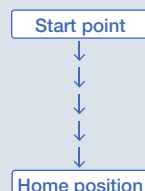
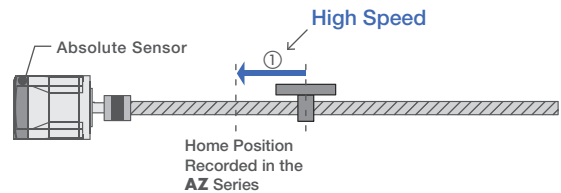


Return-to-home takes time ...



Return-to-Home Operation of the AZ Series

There is no need to detect the limit sensor, and it moves directly at high speed to the home position recorded by the absolute sensor.



Through high speed return-to-home, machine cycle can be shortened!



Reduced Costs

Sensor costs and wiring costs can be reduced, allowing for lower system costs.

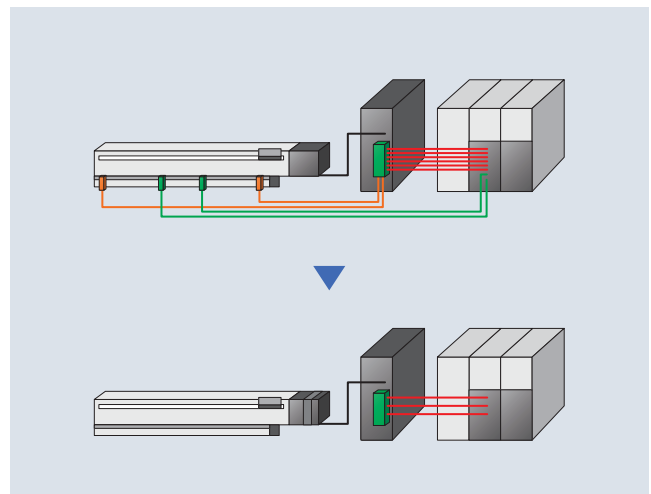
Simple Wiring

Wiring is simplified and the degree of freedom for equipment design is increased.

Not Affected by Sensor Malfunctions

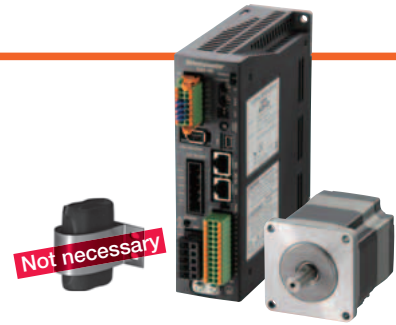
There is no concern about sensor malfunctions (when operating in environments filled with oil mist or filled with metal pieces due to metal processing), sensor failures or sensor wire disconnections.

- In systems where limit switches are not possible, software limits can be used to prevent the limit values being exceeded.



Battery-Free Absolute Mechanical Sensor

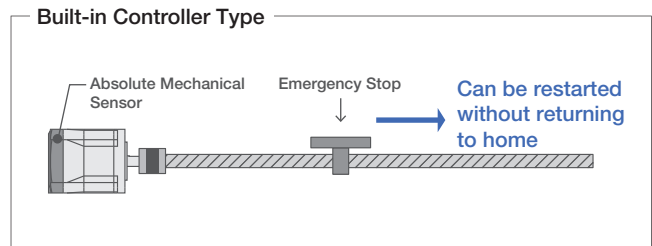
This is an absolute mechanical sensor, which does not require a battery. The positioning information is managed mechanically in the sensor.



Maintaining Positioning Information

Even if the power shuts down during a positioning operation, the positioning information is retained. Furthermore, for built-in controller types, positioning operations can restart without performing a return-to-home operation when recovering from an emergency stop of the production line or a power outage.

- If the motor is temporarily replaced it is necessary to reset the home position as the positioning information is stored in the sensor.



Reduced Maintenance

Because there is no battery that needs replacement, maintenance time and costs can be reduced.

Unlimited Driver Installation Possibilities

Because there is no need to secure space for battery replacement, there are no restrictions on the installation location of the driver, improving the flexibility and freedom of the layout design of the control box.

• Maintenance

Battery Type		AZ Series	
Deployment of electrical components	Electrical component design	Deployment of electrical components	Electrical component design
↓	↓	↓	↓
Replace battery every few years	Secure space for exchanging batteries	Maintenance is reduced	Freedom for device layout

There are restrictions on electrical component design...

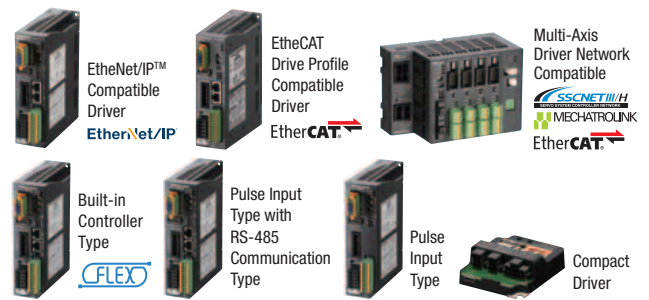
Replacing the battery is hard work...

Increases degree of freedom for electrical component design!

Maintenance is reduced as the battery is not required!

- Stepper Motors **AZ**
- Linear Slides **EZS**
- Cylinders **EAC**
- Compact Cylinders **DR**
- Rack & Pinion **L**
- Gripper **EH**
- Rotary Actuators **DGII**

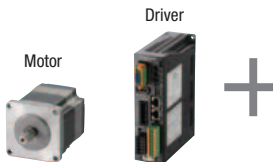
Seven Drivers to Choose from Based on the Master Control System.



Built-in Controller Type AC DC

The built-in controller (Stored Data) type driver allows for up-to 256 items of operating data, such as motor speed, position, acceleration / deceleration, interrupts, etc to be executed by a master controller via (1) EtherNet/IP, (2) EtherCAT (3) Modbus (RTU) or (4) I/O.

Basic Setting (Factory Setting)



Operation Data Setting Parameter Changing



AZ Series Motors and Linear & Rotary Actuators
 ● The Products shown below are representative examples.

AC Input / DC Input

AZ Series

Hollow Rotary Actuators
DGII Series
Equipped with **AZ Series**

Electric Linear Slides
EZS Series
Equipped with **AZ Series**

Electric Cylinders
EAC Series
Equipped with **AZ Series**

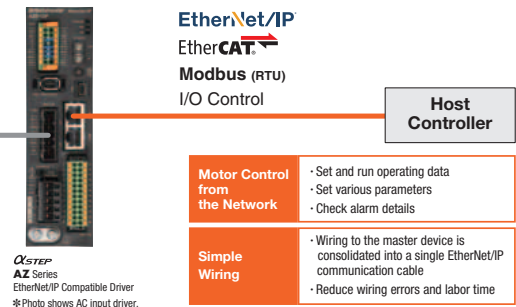
Rack and Pinion Systems
L Series
Equipped with **AZ Series**

DC Input Only

Compact Electric Cylinders
DR Series

Compact Electric Cylinders
DR52 Series

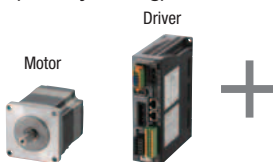
Electric Gripper
EH Series



Modbus (RTU) AC DC

The built-in controller (Stored Data) type driver allows for up-to 256 items of operating data, such as motor speed, position, acceleration / deceleration, interrupts, etc to be executed by a master controller via (1) I/O, (2) Modbus (RTU)/RS-485 or (3) FA network.

Basic Setting (Factory Setting)

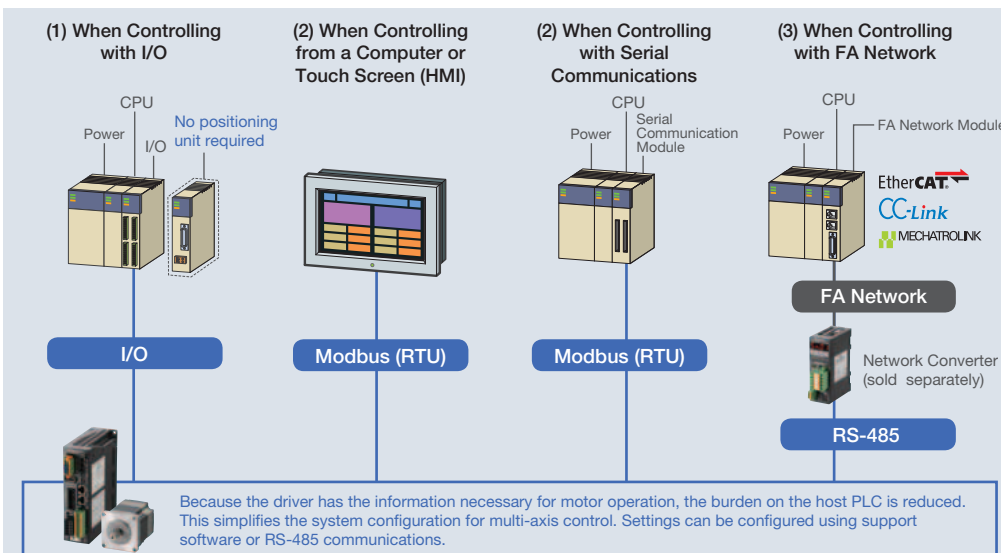


Operation Data Setting Parameter Changing



● Setting via RS-485 communications is also possible.

FLEX is the collective name for products that support I/O control, Modbus (RTU) control, and FA network control via network converters.



● EtherCAT is a registered trademark for which a license is provided by Beckhoff Automation GmbH in Germany.
 ● CC-Link is a registered trademark of CC-Link Partner Association and MECHATROLINK is a registered trademark of MECHATROLINK Members Association.

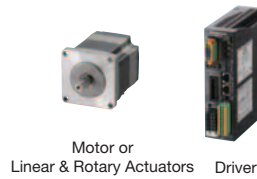
Pulse Input Type with RS-485 Communication

AC

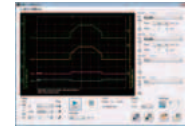
DC

This type executes operations by inputting pulses into the driver. The motor is controlled using a positioning unit (pulse generator) provided by the customer. The use of RS-485 communication makes it possible to monitor motor status information (position, speed, torque, alarms, temperature, etc.).

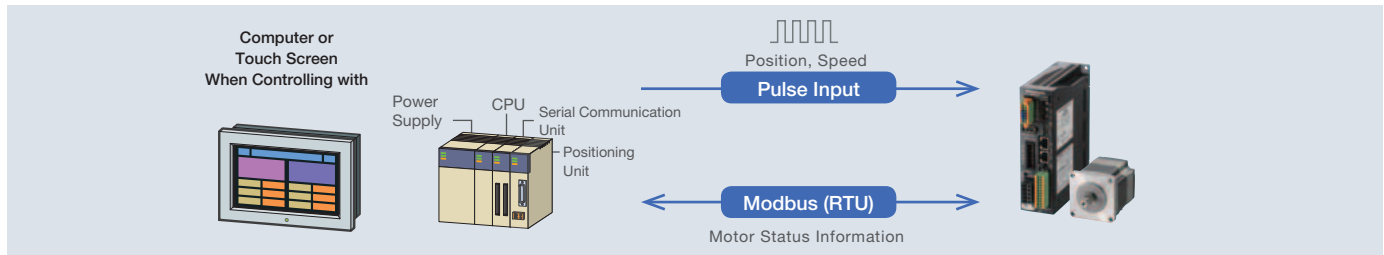
Basic Setting (Factory Setting)



Change I/O Assignment Change Parameters Support Software (MEXE02)



It is possible to check the alarm history and monitor all conditions using the support software (MEXE02).



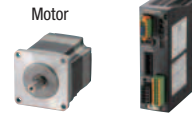
Pulse Input Type

AC

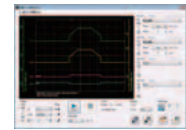
DC

The pulse input type driver is driven by a pulse and direction input from a host PLC. Motion control is carried out via a pulse generator. An add on module to the PLC must be added by the customer.

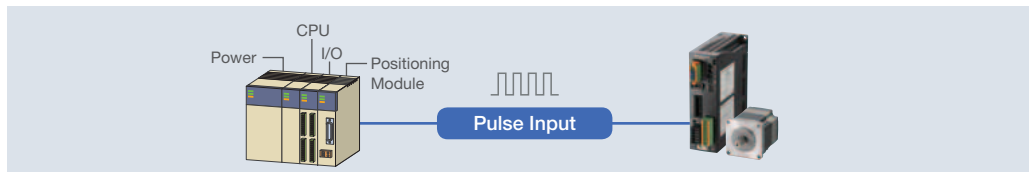
Basic Setting (Factory Setting)



Operation Data Setting Parameter Changing Support software (MEXE02)



By using the support software (MEXE02), it is possible to confirm alarm history and monitor the various states.



● Support software (MEXE02) can be downloaded from the website.

Features

Motors AC Input

Motors DC Input

Ethernet/IP Compatible Drivers

EtherCAT Compatible Drivers

Built-in Controller Drivers

Pulse Input Drivers with RS-485

Pulse Input Drivers

Network Multi-Axis Drivers

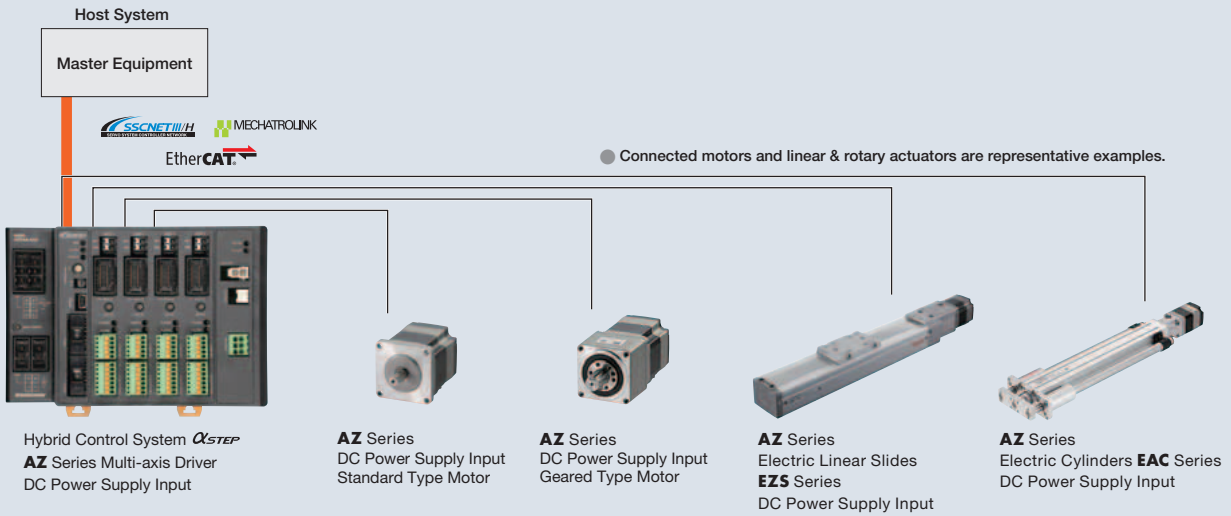
Compact Drivers

Cables / Accessories

Actuators AZ Series Equipped

Network Compatible Multi-Axis Driver DC

This is a multi-axis driver that supports SSCNET III/H, MECHATROLINK-III and EtherCAT drive profiles. It can be connected to the **AZ** Series DC input motors and DC input linear & rotary actuators that incorporate them. Drivers are available that can connect to 2-axis, 3-axis and 4-axis types.



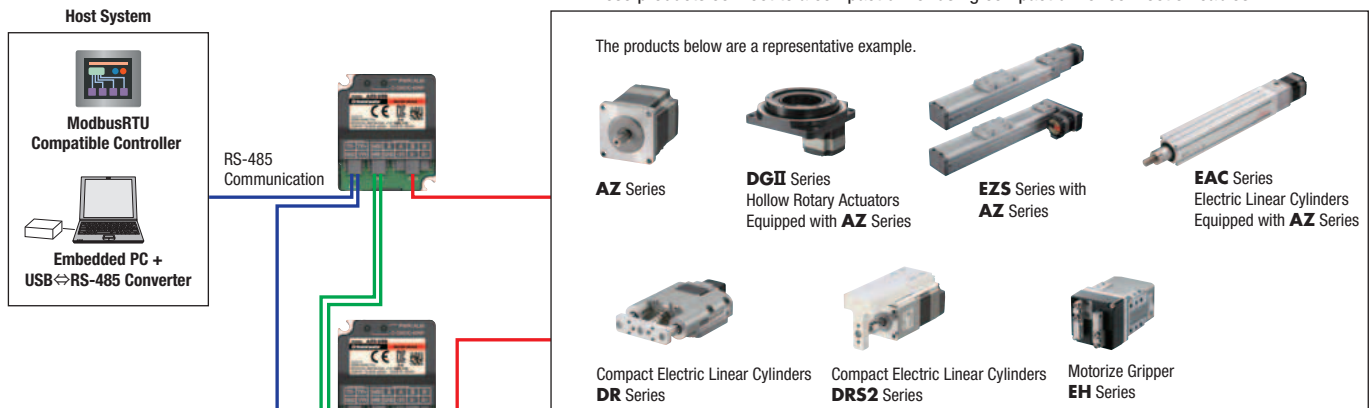
- SSCNET III/H is a registered trademark of Mitsubishi Electric Corporation.
- CC-Link is a registered trademark of CC-Link Partner Association and MECHATROLINK is a registered trademark of MECHATROLINK Members Association.
- EtherCAT is a registered trademark licensed by Beckhoff Automation GmbH, Germany.
- The support software (**MEXE02**) can be downloaded from the Oriental Motor website.

Compact Single Axis Stored Data Driver, Modbus (RTU) DC

The **AZ** Series Compact (Stored data) Driver works with a variety of α STEP **AZ** Series, DC input products. This driver can be controlled using RS-485 communication and daisy chained to maximize design, space and improve installation time. The Compact Driver is also designed to be close to the motor, making it ideal for Robotic type applications. The elimination of switches and I/O connectors allows for a compact and lightweight design. Utilizes the **MEXE02** Support Software, available for free download.

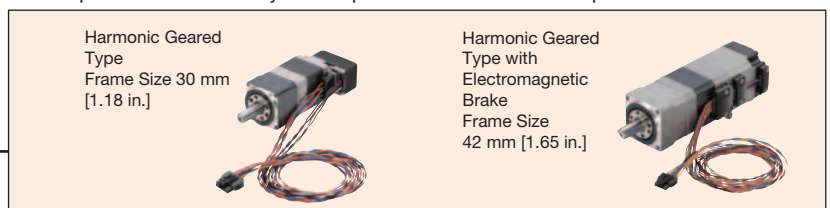
● AZ Series Motors / AZ Series Equipped Actuators

These products connect to a compact driver using compact driver connection cables.



● AZ Series Direct Connection Motor for Compact Drivers

These products connect directly to a compact driver without use of compact driver connection cables.

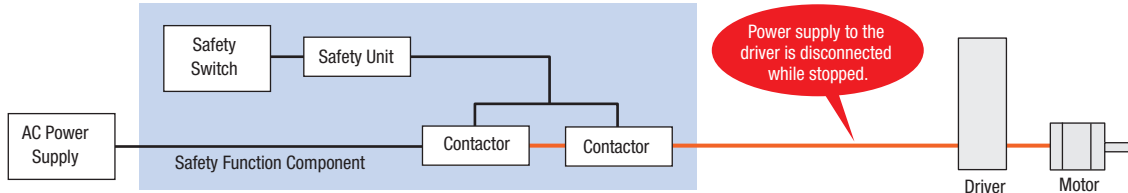


The *α*STEP AZ Series is Now “Functional Safety”^{*} Certified.

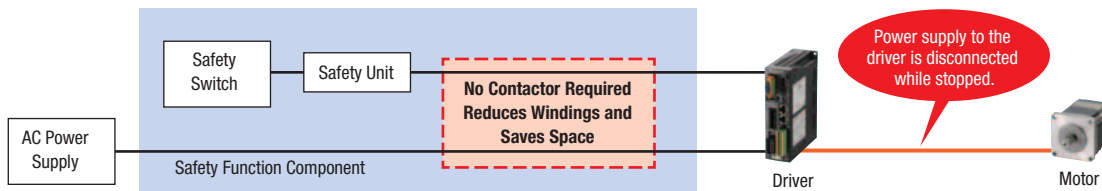
^{*}Incorporates the STO (Safe Torque Off) Function

This certification simplifies the handling of safety Systems. It makes it possible to reduce peripheral equipment, simplifies wiring and saves space.

- When using a driver without a built-in safety function



- When using the **AZ** Series (Drivers with a built-in safety function)



SIL3, PL-e Functional Safety^{*} Certification Has Been Obtained

This certification simplifies the handling of safety systems.

It makes it possible to reduce peripheral equipment, simplifies wiring and saves space.

^{*}Incorporates the STO (Safe Torque Off) function

Applicable Standards	Safety Level
IEC 61800-5-2, EN 61800-5-2	SIL 3
IEC 61508-1, EN 61508-1	
IEC 61508-2, EN 61508-2	
IEC 62061, EN 62061	SILCL 3
ISO 13849-1, EN ISO 13849-1	PL e (Category 3)

Applicable Products

Power Supply Input	Driver Type
AC Power Supply Input	Built-in Controller Type
	Pulse Input Type with RS-485 Communication
	Pulse Input Type

- The certification document can be downloaded from the Oriental Motor website.
The TÜV SÜD mark will be applied to certified products.



- Features
- Motors AC Input
- Motors DC Input
- Ethernet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

Easy Setting and Useful Functions.



MEXE02 Support Software

AZ Series

The support software can be downloaded from the website.

Simple Settings, Simple Operations

The **MEXE02** support software performs basic settings, such as operating data compilation and parameter settings. Sequence control is also possible with the built-in controller type, making it possible to incorporate simple systems without a higher sequence.

Unit Setting Wizard

This is a function that allows the traveling amount, speed, etc. to be displayed and input in the designated units.

Since values can be displayed and set in the unit that suits the mechanism being used (mm, deg), it is easy to input operating data without any unit conversion.



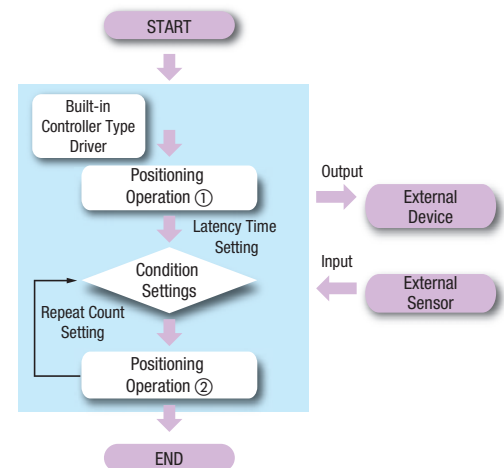
Program Simplification with Easy Sequence Function

Built-in controller (stored data) type

Sequence control program simplification is possible with the built-in controller type by incorporating output signals for controlling other devices and external input signals, such as sensors.

Simple System Can Be Realized Without Master Controller.

The built-in controller type driver can set and execute independently, up-to 256 items of operating data, such as motor speed and index length. With the sequential control, it is possible to form a simple system without a master controller. This is ideal for index and return operations or aligned transportation, such as lifespan or durability tests.



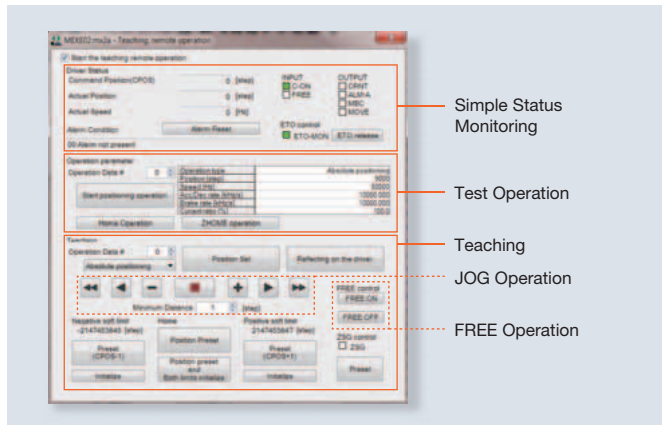
- Number of positioning operation data settings (up to 256 data settings)
- Number of general-purpose input/output points (9 input points, 6 output points)
- Number of input/output points for communication (16 input points, 16 output points)

Test Function

This function allows the motor to operate by itself and to confirm connection with the host system. Using this function at equipment startup leads to shortening the time needed.

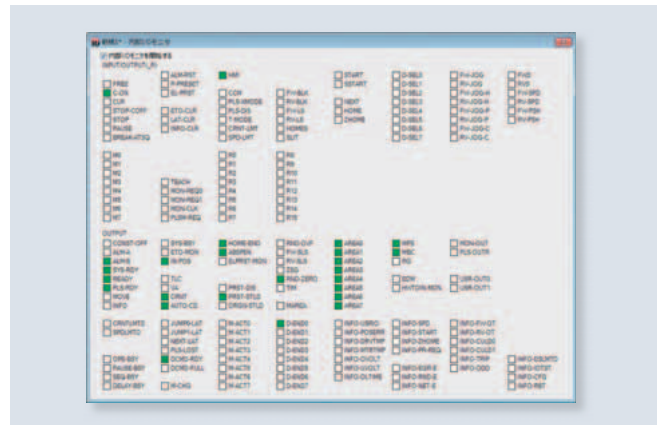
Teaching and Remote Operations At startup

It is possible to easily set the home position and drive the motor from the support software. Teaching and test operation are performed before connecting to the host system, which shortens the equipment's startup time.



I/O Testing At startup While running

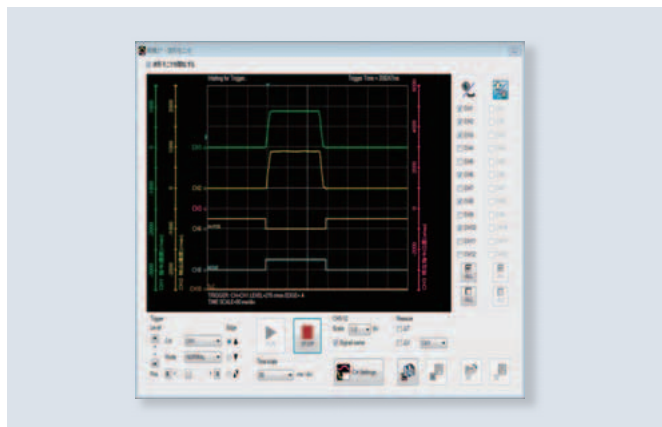
Easily performs input signal monitoring and forced output of output signals. This is a convenient function for checking connection with the host system and network I/O operations.



Various Monitoring Functions

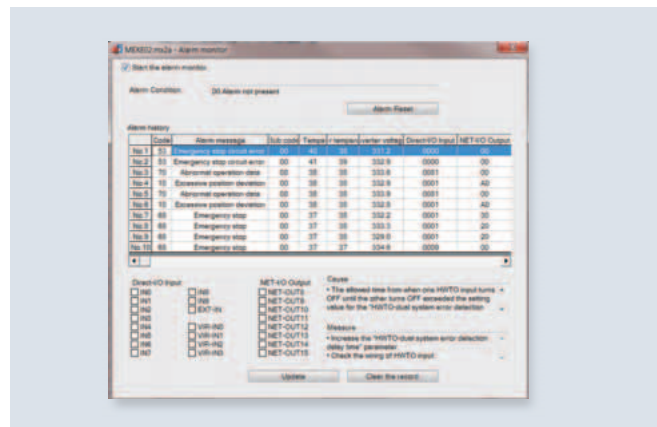
Waveform Monitoring At startup

Monitors the motor's operating status and output signal status with oscilloscope-like images. Use at equipment startup, adjustment, etc.



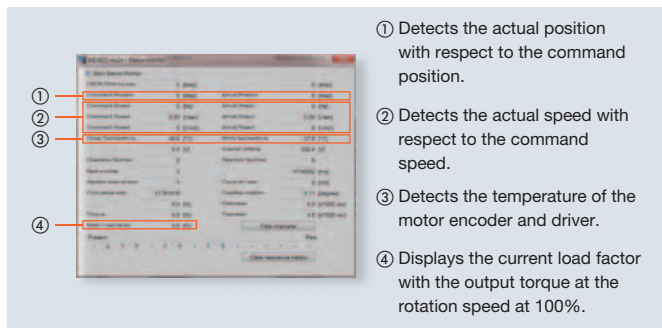
Alarm Monitoring At startup

When any abnormality occurs, the details of the abnormality, operating status and countermeasure can be verified.



Status Monitoring At startup

Besides operating speed, motor and driver temperature, load factor monitoring, and cumulative rotations, etc., can also be monitored since the start of use. The desired signals can be output for these items, allowing for efficient maintenance.



Multi-Monitoring Compatibility

Several setting screens for data setting, test operation, monitoring, etc. can be opened and used on separate screens at the same time. This makes equipment startup, adjustment, etc. easier.

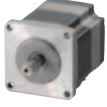




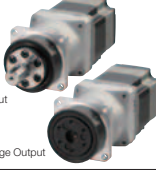




AZ Series Product Line


Motor

AC : Single-Phase 100-120 VAC, Single-Phase/Three-Phase 200-240 VAC input

DC : 24/48 VDC Input

	Type	Electromagnetic Brake	Frame Size				
			20 mm (0.79 in.)	28 mm (1.10 in.) ^{*6}	42 mm (1.65 in.) ^{*2}	60 mm (2.36 in.)	85 mm (3.35 in.) 90 mm (3.54 in.) ^{*4}
Linear Slides EZS	Standard  Motor Shaft Configuration Single Flat Face/Straight/With Key Motor Cable Configuration Horizontal Outlet Direction	Not equipped	DC ^{*1}	DC ^{*1}	AC DC	AC DC	AC
		Equipped	—	—	AC DC ^{*3} DC ^{*3}	AC DC	AC ^{*5}
Cylinders EAC	TS Geared (Spur gear mechanism)  Cable Outlet Direction Can be Selected Down/Up/Right/Left Low Gear Ratio, High-Speed Operation is possible Gear ratio 3.6, 7.2, 10, 20, 30	Not equipped	—	—	AC DC	AC DC	AC
		Equipped	—	—	AC DC	AC DC	AC
Compact Cylinders DR	Right-Angle FC Geared Type (Face gear mechanism)  Right-angle shaft gear for positioning Gear ratio 7.2, 10, 20, 30	Not equipped	—	—	AC DC	AC DC	—
		Equipped	—	—	AC DC	AC DC	—
Rack & Pinion L	PS Geared (Planetary gear mechanism)  Gear ratios useful for angle indexing Gear ratio 5, 7.2, 10, 25, 36, 50	Not equipped	—	DC ^{*1}	AC DC	AC DC	AC
		Equipped	—	—	AC DC	AC DC	AC
Gripper EH	PLE Geared (Planetary gear mechanism)  See Website for Specifications Gear ratios useful for angle indexing Gear ratio 5, 10, 20, 40	Not equipped	—	—	AC DC	AC DC	AC
		Equipped	—	—	AC DC	AC DC	AC
Rotary Actuators DGI	HPG Geared (Harmonic Planetary [®])  Shaft Output Flange Output High positioning accuracy Gear ratio 5, 9, 15	Not equipped	—	—	AC DC	AC DC	AC
		Equipped	—	—	AC DC	AC DC	AC
Backlash-free	Harmonic Geared Type (Harmonic Drive [®])  High positioning accuracy Gear ratio 50, 100	Not equipped	—	DC ^{*1}	AC DC	AC DC	AC
		Equipped	—	—	AC DC	AC DC	AC
Non-Backlash	Harmonic Geared Type (Harmonic Drive [®])  High positioning accuracy Gear ratio 50, 100	Not equipped	—	DC ^{*1}	AC DC	AC DC	AC
		Equipped	—	—	AC DC	AC DC	AC

*1 24 VDC only *2 HPG geared type is 40 mm *3 AZM46 only *4 Geared type only *5 AZM98 only *6 Harmonic geared type is 30 mm *7 PLE Gear to motor assembly required

- Note**
- The values above are references to illustrate the differences between each type. These values vary depending on the motor frame size and gear ratio.
 - Harmonic Planetary, Harmonic Drive and  are registered trademarks of Harmonic Drive Systems Inc.

Permissible Torque and Max. Instantaneous Torque [N·m (lb-in)]	Backlash [arcminute]	Basic Resolution [°/pulse]	Output Shaft Speed [r/min]
Excitation Max. Holding Torque 4 (35)	—	0.36	6000
Permissible Torque Maximum Instantaneous Torque 25 (220) 45 (390)	10 (0.17°)	0.012	833
Permissible torque 10.5 (92)	10 (0.17°)	0.012	416
Permissible Torque Maximum Instantaneous Torque 37 (320) 60 (530)	7 (0.12°)	0.0072	600
Permissible Torque Maximum Instantaneous Torque 110 (970)	3 (0.05°)	0.009	112
Permissible Torque Maximum Instantaneous Torque 24 (210) 33 (290)	3 (0.05°)	0.024	900
Permissible Torque Maximum Instantaneous Torque 52 (460) 107 (940)	0	0.0036	70

Driver

Type	AC	DC
EtherNet/IP™ Compatible Type EtherNet/IP		
EtherCAT Drive Profile Compatible Type EtherCAT		
Built-in Controller Type FLEX		
Pulse Input Type with RS-485 Communication		
Pulse Input Type		
Network Compatible multi Axis Driver SSCNET III/H MECHATROLINK EtherCAT		
Compact Driver (Built-in Controller Type) Modbus (RTU)		

● **FLEX** FLEX is the collective name for products that support I/O control, Modbus (RTU) control, and FA network control via network converters. ● **SSCNET III/H** is a registered trademark of Mitsubishi Electric Corporation. ● **MECHATROLINK** is a registered trademark of MECHATROLINK Members Association. ● **EtherCAT** is registered trademark licensed by Beckhoff Automation GmbH, Germany.

Oriental Motor offers geared motors, which have been pre-assembled with gears, as variations of the **AZ** Series. Based on torque, accuracy (backlash) and price, the optimal type can be selected from the various geared motors.

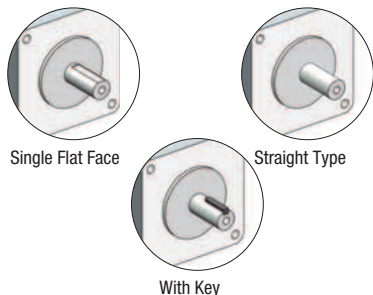


The shaft type and cable outlet direction can be selected to suit the application.

● Standard Type Motor Shaft Type

Select the motor shaft type that best suits the connection method to the equipment.

- * Frame size 20 mm (0.79 in.), 28 mm (1.10 in.) are flat section only
- * Frame size 42 mm (1.65 in.) key only on **AZM48**

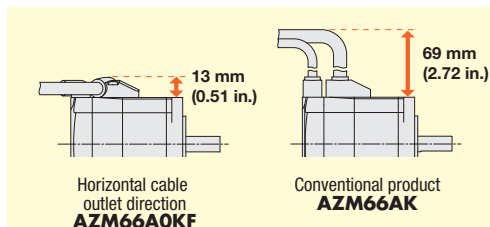


● Standard Type Horizontal Cable Outlet (DC Input Only)

Ideal for installation of a motor in narrow spaces or when motor cables would interfere with equipment.

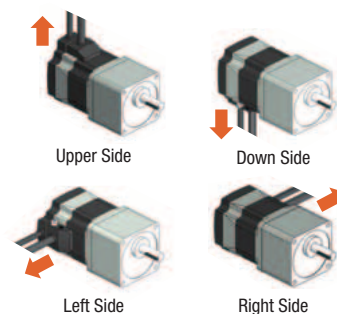


- * Frame size 42 mm (1.65 in.), 60 mm (2.36 in.) only



● TS Geared Type Cable outlet direction can be selected

There is a choice of four cable outlet directions in relation to the output shaft.



Product Line of Actuators Equipped with **AZ** Series

Series Name	Features	Main Specifications
QSTEP AZ Series Type Electric Linear Slides EZS Series AC Power Supply DC Power Supply	<ul style="list-style-type: none"> ·Small, high-rigidity ·Simple dust-resistant structure 	<ul style="list-style-type: none"> ·Stroke: 50 to 850 mm ·Max. speed: 800 mm/s ·Max. transportable mass: 60 kg (horizontal) 30 kg (vertical)
QSTEP AZ Series Type Electric Cylinders EAC Series AC Power Supply DC Power Supply	<ul style="list-style-type: none"> ·High-speed driving is possible from light loads to heavy loads. ·Stable movement even at low speed (1.25 mm/s). ·Small, high-rigidity 	<ul style="list-style-type: none"> ·Stroke: 50 to 300 mm ·Max. speed: 600 mm/s ·Max. transportable mass: 60 kg (horizontal) 30 kg (vertical)
QSTEP AZ Series Type Compact Electric Cylinders DR Series DC Power Supply	<ul style="list-style-type: none"> ·Table, Wide Table, Rod and Rod with Guide types ·Ground or Rolled ball screw ·Significantly fewer parts ·Reduced assembly time 	<ul style="list-style-type: none"> ·Stroke: 25 mm, 30 mm ·Max. speed: 100 mm/s ·Max transportable mass: 4 kg (horizontal) 4 kg (vertical)
QSTEP AZ Series Type Rack and Pinion System L Series AC Power Supply	<ul style="list-style-type: none"> ·Horizontal or Vertical movement ·High-Speed or High-Transportable-Mass Type ·Electromagnetic Brake options 	<ul style="list-style-type: none"> ·Stroke: 100 to 1000 mm ·Max. speed: 500 mm/s ·Max transportable mass: 100 kg
QSTEP AZ Series Type Electric Gripper EH Series DC Power Supply	<ul style="list-style-type: none"> ·Provides Delicate, Human-like Grip for Robotic Applications ·Allows for Reduction in Equipment Size and Weight ·Gripping force can be pre-set 	<ul style="list-style-type: none"> ·Stroke: 12.5 mm (one side) 25 mm (both sides) ·Max. speed: 78 mm/s (one side) 156 mm/s (both sides) ·Max gripping force: 25 N
QSTEP AZ Series Type Hollow Rotary Actuators DGII Series AC Power Supply DC Power Supply	<ul style="list-style-type: none"> ·Hollow output table makes cable and actuator wiring simple. ·Direct installation of table and arms is possible. 	<ul style="list-style-type: none"> ·Max. permissible torque: 12 N·m (106 lb-in) ·Max. permissible moment: 50 N·m (440 lb-in) ·Max. permissible axial load: 2000 N (450 lb.)

Product Number Code

● Motor

◇ Standard Type

AZM 6 6 A C

① ② ③ ④ ⑤

◇ PS, HPG, Harmonic Geared Type

AZM 6 6 A C - HP 15 F

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

● TS Geared Type

AZM 6 6 A C - TS 7.2 U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

● FC Geared Type

AZM 6 6 A C - FC 7.2 U A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

● Driver

AZD - C D

① ② ③

● Connection Cable Set / Flexible Connection Cable Set

CC 050 V Z F B

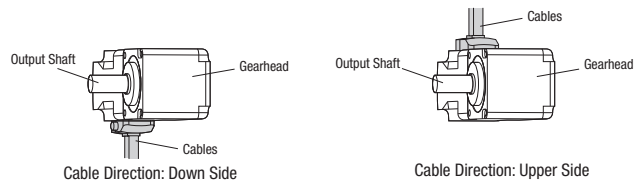
① ② ③ ④ ⑤ ⑥

①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	4: 42 mm (1.65 in.) (HPG Geared Type: 40 mm (1.57 in.)) 6: 60 mm (2.36 in.) 9: 85 mm (3.35 in.) (Geared Type: 90 mm (3.54 in.))
	Motor Case Length	
	Output Shaft Configuration	A: Single Shaft M: Electromagnetic Brake Type
⑤	Motor Specifications	C: AC Power Supply Input Specifications
⑥	Gear Type	PS: PS Geared Type HP: HPG Geared Type HS: Harmonic Geared Type
	Gear Ratio	
	Output Shaft Type	HPG Geared Type Blank: Shaft Output F: Flange Output

①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.) 9: 90 mm (3.54 in.)
	Motor Case Length	
	Output Shaft Type	A: Single Shaft M: Electromagnetic Brake Type
⑤	Motor Type	C: AC Power Supply Input Specifications
⑥	Geared Type	TS: TS Geared Type
	Gear Ratio	
⑧	Cable Outlet Direction	U: Upper Side L: Left Side R: Right Side

①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.)
	Motor Case Length	
④	Output Shaft Type	A: Single Shaft M: Electromagnetic Brake Type
⑤	Motor Type	C: AC Power Supply Input Specifications
⑥	Geared Type	FC: FC Geared Type
⑦	Gear Ratio	
⑧	Cable Outlet Direction*	D: Down Side U: Upper Side
⑨	Identification Symbol	A: Solid Shaft

*The cable direction is when viewed from the gearhead side with the output shaft facing left.



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
	Type	EP: EtherNet/IP Compatible Type ED: EtherCAT Drive Profile Compatible Type D: Built-in Controller Type X: Pulse Input Type with RS-485 Communication Blank: Pulse Input Type

①	Length	CC: Cable 010: 1 m (3.3 ft.) 020: 2 m (6.6 ft.) 030: 3 m (9.8 ft.) 050: 5 m (16.4 ft.) 070: 7 m (23 ft.) 100: 10 m (32.8 ft.) 150: 15 m (49.2 ft.) 200: 20 m (65.6 ft.)
	Reference Number	
	Applicable Product	Z: AZ Series
	Cable Type	F: Connection Cable Set R: Flexible Connection Cable Set
	Description	Blank: Without Electromagnetic Brake B: With Electromagnetic Brake

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Product Line and List Price

Motors, drivers, and connection cables must be ordered separately.

Linear
Slides
EZS

● Motor

◇ Standard Type



Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46AC	\$307.00
	AZM46A0C	\$307.00
	AZM48AC	\$319.00
	AZM48A0C	\$319.00
	AZM48A1C	\$330.00
60 mm (2.36 in.)	AZM66AC	\$362.00
	AZM66A0C	\$362.00
	AZM66A1C	\$373.00
	AZM69AC	\$367.00
	AZM69A0C	\$367.00
85 mm (3.35 in.)	AZM69A1C	\$379.00
	AZM98AC	\$390.00
	AZM98A0C	\$390.00
	AZM98A1C	\$401.00
	AZM911AC	\$412.00
	AZM911A0C	\$412.00
	AZM911A1C	\$424.00



◇ Standard Type with Electromagnetic Brake

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MC	\$466.00
	AZM46MOC	\$466.00
	AZM66MC	\$565.00
60 mm (2.36 in.)	AZM66MOC	\$565.00
	AZM66M1C	\$576.00
	AZM69MC	\$571.00
	AZM69MOC	\$571.00
	AZM69M1C	\$582.00
85 mm (3.35 in.)	AZM98MC	\$616.00
	AZM98MOC	\$616.00
	AZM98M1C	\$627.00

Rack &
Pinion
L

Gripper
EH

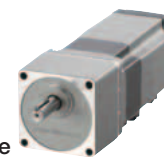
Rotary
Actuators
DGII

◇ TS Geared Type



Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46AC-TS3.6	\$441.00
	AZM46AC-TS3.6R	*
	AZM46AC-TS3.6U	*
	AZM46AC-TS3.6L	*
	AZM46AC-TS7.2	\$441.00
	AZM46AC-TS7.2R	*
	AZM46AC-TS7.2U	*
	AZM46AC-TS7.2L	*
	AZM46AC-TS10	\$457.00
	AZM46AC-TS10R	*
	AZM46AC-TS10U	*
	AZM46AC-TS10L	*
	AZM46AC-TS20	\$457.00
	AZM46AC-TS20R	*
	AZM46AC-TS20U	*
	AZM46AC-TS20L	*
	AZM46AC-TS30	\$457.00
	AZM46AC-TS30R	*
	AZM46AC-TS30U	*
	AZM46AC-TS30L	*
60 mm (2.36 in.)	AZM66AC-TS3.6	\$519.00
	AZM66AC-TS3.6R	*
	AZM66AC-TS3.6U	*
	AZM66AC-TS3.6L	*
	AZM66AC-TS7.2	\$519.00
	AZM66AC-TS7.2R	*
	AZM66AC-TS7.2U	*
	AZM66AC-TS7.2L	*
	AZM66AC-TS10	\$534.00
	AZM66AC-TS10R	*
	AZM66AC-TS10U	*
	AZM66AC-TS10L	*
	AZM66AC-TS20	\$534.00
	AZM66AC-TS20R	*
	AZM66AC-TS20U	*
	AZM66AC-TS20L	*
AZM66AC-TS30	\$534.00	
AZM66AC-TS30R	*	
AZM66AC-TS30U	*	
AZM66AC-TS30L	*	

◇ TS Geared Type with Electromagnetic Brake



Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MC-TS3.6	\$599.00
	AZM46MC-TS3.6R	*
	AZM46MC-TS3.6U	*
	AZM46MC-TS3.6L	*
	AZM46MC-TS7.2	\$599.00
	AZM46MC-TS7.2R	*
	AZM46MC-TS7.2U	*
	AZM46MC-TS7.2L	*
	AZM46MC-TS10	\$615.00
	AZM46MC-TS10R	*
	AZM46MC-TS10U	*
	AZM46MC-TS10L	*
	AZM46MC-TS20	\$615.00
	AZM46MC-TS20R	*
	AZM46MC-TS20U	*
	AZM46MC-TS20L	*
	AZM46MC-TS30	\$615.00
	AZM46MC-TS30R	*
	AZM46MC-TS30U	*
	AZM46MC-TS30L	*
60 mm (2.36 in.)	AZM66MC-TS3.6	\$722.00
	AZM66MC-TS3.6R	*
	AZM66MC-TS3.6U	*
	AZM66MC-TS3.6L	*
	AZM66MC-TS7.2	\$722.00
	AZM66MC-TS7.2R	*
	AZM66MC-TS7.2U	*
	AZM66MC-TS7.2L	*
	AZM66MC-TS10	\$738.00
	AZM66MC-TS10R	*
	AZM66MC-TS10U	*
	AZM66MC-TS10L	*
	AZM66MC-TS20	\$738.00
	AZM66MC-TS20R	*
	AZM66MC-TS20U	*
	AZM66MC-TS20L	*
AZM66MC-TS30	\$738.00	
AZM66MC-TS30R	*	
AZM66MC-TS30U	*	
AZM66MC-TS30L	*	

*Contact our sales office for price.

*Contact our sales office for price.



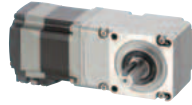
◇ **TS Geared Type**

Frame Size	Product Name	List Price
90 mm (3.54 in.)	AZM98AC-TS3.6	\$573.00
	AZM98AC-TS3.6R	\$573.00
	AZM98AC-TS3.6U	\$573.00
	AZM98AC-TS3.6L	\$573.00
	AZM98AC-TS7.2	\$573.00
	AZM98AC-TS7.2R	\$573.00
	AZM98AC-TS7.2U	\$573.00
	AZM98AC-TS7.2L	\$573.00
	AZM98AC-TS10	\$589.00
	AZM98AC-TS10R	\$589.00
	AZM98AC-TS10U	\$589.00
	AZM98AC-TS10L	\$589.00
	AZM98AC-TS20	\$589.00
	AZM98AC-TS20R	\$589.00
	AZM98AC-TS20U	\$589.00
	AZM98AC-TS20L	\$589.00
	AZM98AC-TS30	\$589.00
	AZM98AC-TS30R	\$589.00
AZM98AC-TS30U	\$589.00	
AZM98AC-TS30L	\$589.00	



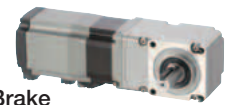
◇ **TS Geared Type with Electromagnetic Brake**

Frame Size	Product Name	List Price
90 mm (3.54 in.)	AZM98MC-TS3.6	\$799.00
	AZM98MC-TS3.6R	\$799.00
	AZM98MC-TS3.6U	\$799.00
	AZM98MC-TS3.6L	\$799.00
	AZM98MC-TS7.2	\$799.00
	AZM98MC-TS7.2R	\$799.00
	AZM98MC-TS7.2U	\$799.00
	AZM98MC-TS7.2L	\$799.00
	AZM98MC-TS10	\$815.00
	AZM98MC-TS10R	\$815.00
	AZM98MC-TS10U	\$815.00
	AZM98MC-TS10L	\$815.00
	AZM98MC-TS20	\$815.00
	AZM98MC-TS20R	\$815.00
	AZM98MC-TS20U	\$815.00
	AZM98MC-TS20L	\$815.00
	AZM98MC-TS30	\$815.00
	AZM98MC-TS30R	\$815.00
AZM98MC-TS30U	\$815.00	
AZM98MC-TS30L	\$815.00	



◇ **FC Geared Type**

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46AC-FC7.2UA	\$595.00
	AZM46AC-FC7.2DA	\$595.00
	AZM46AC-FC10UA	\$595.00
	AZM46AC-FC10DA	\$595.00
	AZM46AC-FC20UA	\$595.00
	AZM46AC-FC20DA	\$595.00
	AZM46AC-FC30UA	\$595.00
	AZM46AC-FC30DA	\$595.00
60 mm (2.36 in.)	AZM66AC-FC7.2UA	\$707.00
	AZM66AC-FC7.2DA	\$707.00
	AZM66AC-FC10UA	\$707.00
	AZM66AC-FC10DA	\$707.00
	AZM66AC-FC20UA	\$707.00
	AZM66AC-FC20DA	\$707.00
	AZM66AC-FC30UA	\$707.00
	AZM66AC-FC30DA	\$707.00



◇ **FC Geared Type with Electromagnetic Brake**

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MC-FC7.2UA	\$756.00
	AZM46MC-FC7.2DA	\$756.00
	AZM46MC-FC10UA	\$756.00
	AZM46MC-FC10DA	\$756.00
	AZM46MC-FC20UA	\$756.00
	AZM46MC-FC20DA	\$756.00
	AZM46MC-FC30UA	\$756.00
	AZM46MC-FC30DA	\$756.00
60 mm (2.36 in.)	AZM66MC-FC7.2UA	\$914.00
	AZM66MC-FC7.2DA	\$914.00
	AZM66MC-FC10UA	\$914.00
	AZM66MC-FC10DA	\$914.00
	AZM66MC-FC20UA	\$914.00
	AZM66MC-FC20DA	\$914.00
	AZM66MC-FC30UA	\$914.00
	AZM66MC-FC30DA	\$914.00



◇ **PS Geared Type**

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46AC-PS5	\$567.00
	AZM46AC-PS7.2	\$567.00
	AZM46AC-PS10	\$567.00
	AZM46AC-PS25	\$624.00
	AZM46AC-PS36	\$624.00
	AZM46AC-PS50	\$624.00
60 mm (2.36 in.)	AZM66AC-PS5	\$678.00
	AZM66AC-PS7.2	\$678.00
	AZM66AC-PS10	\$678.00
	AZM66AC-PS25	\$757.00
	AZM66AC-PS36	\$757.00
	AZM66AC-PS50	\$757.00
90 mm (3.54 in.)	AZM98AC-PS5	\$785.00
	AZM98AC-PS7.2	\$785.00
	AZM98AC-PS10	\$785.00
	AZM98AC-PS25	\$921.00
	AZM98AC-PS36	\$921.00
	AZM98AC-PS50	\$921.00



◇ **PS Geared Type with Electromagnetic Brake**

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MC-PS5	\$725.00
	AZM46MC-PS7.2	\$725.00
	AZM46MC-PS10	\$725.00
	AZM46MC-PS25	\$782.00
	AZM46MC-PS36	\$782.00
	AZM46MC-PS50	\$782.00
60 mm (2.36 in.)	AZM66MC-PS5	\$881.00
	AZM66MC-PS7.2	\$881.00
	AZM66MC-PS10	\$881.00
	AZM66MC-PS25	\$961.00
	AZM66MC-PS36	\$961.00
	AZM66MC-PS50	\$961.00
90 mm (3.54 in.)	AZM98MC-PS5	\$1,011.00
	AZM98MC-PS7.2	\$1,011.00
	AZM98MC-PS10	\$1,011.00
	AZM98MC-PS25	\$1,147.00
	AZM98MC-PS36	\$1,147.00
	AZM98MC-PS50	\$1,147.00

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Stepper Motors AZ



◇ **HPG Geared Type**

Frame Size	Product Name	List Price
40 mm (1.57 in.)	AZM46AC-HP5	\$669.00
	AZM46AC-HP5F	\$658.00
	AZM46AC-HP9	\$669.00
	AZM46AC-HP9F	\$658.00
60 mm (2.36 in.)	AZM66AC-HP5	\$904.00
	AZM66AC-HP5F	\$887.00
	AZM66AC-HP15	\$1,070.00
	AZM66AC-HP15F	\$1,053.00
90 mm (3.54 in.)	AZM98AC-HP5	\$1,139.00
	AZM98AC-HP5F	\$1,116.00
	AZM98AC-HP15	\$1,264.00
	AZM98AC-HP15F	\$1,242.00

◇ **PLE Geared Type**

See Oriental Motor website for parts list and pricing.

◇ **Harmonic Geared Type**



Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46AC-HS50	\$901.00
	AZM46AC-HS100	\$901.00
60 mm (2.36 in.)	AZM66AC-HS50	\$1,215.00
	AZM66AC-HS100	\$1,215.00
90 mm (3.54 in.)	AZM98AC-HS50	\$1,458.00
	AZM98AC-HS100	\$1,458.00

● **Driver**

◇ **EtherNet/IP Compatible Type**



Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AEP	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CEP	\$656.00

◇ **Built-in Controller Type**



Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AD	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CD	\$588.00

◇ **Pulse Input Type**

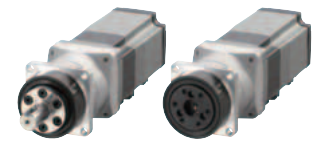


Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-A	\$531.00
Single-Phase/Three-Phase 200-240 VAC	AZD-C	\$531.00

● **Extension Cable Sets / Flexible Extension Cable Sets**

Use a flexible connection cable set or flexible extension cable set if the cable will be bent repeatedly. Extension cable sets and flexible extension cable sets that can be used to extend the connection cable sets are available.

◇ **HPG Geared Type with Electromagnetic Brake**



Frame Size	Product Name	List Price
40 mm (1.57 in.)	AZM46MC-HP5	\$827.00
	AZM46MC-HP5F	\$816.00
	AZM46MC-HP9	\$827.00
	AZM46MC-HP9F	\$816.00
60 mm (2.36 in.)	AZM66MC-HP5	\$1,107.00
	AZM66MC-HP5F	\$1,090.00
	AZM66MC-HP15	\$1,274.00
	AZM66MC-HP15F	\$1,257.00
90 mm (3.54 in.)	AZM98MC-HP5	\$1,365.00
	AZM98MC-HP5F	\$1,342.00
	AZM98MC-HP15	\$1,490.00
	AZM98MC-HP15F	\$1,468.00

◇ **Harmonic Geared Type with Electromagnetic Brake**



Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MC-HS50	\$1,059.00
	AZM46MC-HS100	\$1,059.00
60 mm (2.36 in.)	AZM66MC-HS50	\$1,418.00
	AZM66MC-HS100	\$1,418.00
90 mm (3.54 in.)	AZM98MC-HS50	\$1,684.00
	AZM98MC-HS100	\$1,684.00

◇ **EtherCAT Drive Profile Compatible Type**



Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AED	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CED	\$656.00

◇ **Pulse Input Type with RS-485 Communication**



Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AX	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CX	\$588.00

Included

Motor

Type	Included	Parallel Key	Motor Installation Screws	Operating Manual
Standard		—	—	1 pc
TS Geared	Frame Size 42 mm (1.65 in.)	—	—	
	Frame Size 60 mm (2.36 in.)	1 pc	M4×60 P0.7 (4 pcs)	
	Frame Size 90 mm (3.54 in.)	1 pc	M8×90 P1.25 (4 pcs)	
FC Geared	1 pc	—	—	
PS Geared	1 pc	—	—	
HPG Geared	Shaft Output	1 pc	—	
	Flange Output	—	—	
Harmonic Geared	1 pc	—	—	

● Please refer to the operating manual (function edition) for the functions and operating methods of the product. The function edition is not supplied with the product. Please contact the nearest Oriental Motor sales office, or download it from the Oriental Motor website.

Driver

Type	Included	Connector	Operating Manual
EtherNet/IP Compatible EtherCat Drive Profile Compatible		<ul style="list-style-type: none"> • CN4 connector (1 pc) • CN1 connector (1 pc) • CN7 connector (1 pc) • Connector wiring lever (1 pc) 	1 pc
	Built-in Controller Type Pulse Input Type with RS-485 Communication Pulse Input Type	<ul style="list-style-type: none"> • CN4 connector (1 pc) • CN1 connector (1 pc) • CN5 connector (1 pc) • Connector wiring lever (1 pc) 	1 pc

αSTEP AZ Series Estimated Output

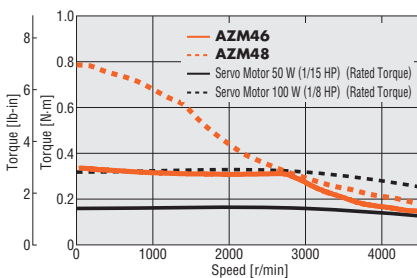
The output power (W) for AC servo motors is shown as the “Rated output power” (W) when the motor is rotating at the “Rated speed”. However, there is no “Rated speed” for the αSTEP AZ Series which features high positioning accuracy and high torque at mid to low speeds, so the “Rated output power” is not listed.

To illustrate the torque of the AZ Series standard type motor, the wattage of a servo motor with the equivalent rated torque is shown below for reference.

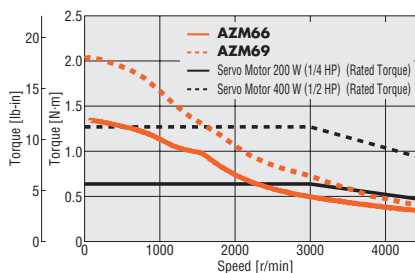
AZ Series (Standard Type)			Motor with equivalent rated torque (estimated)
Frame Size	Product Name	Price*	
42 mm (1.65 in.)	AZM46	\$873.00~	50 to 100 W (1/15 to 1/8 HP) rated torque equivalent
	AZM48	\$885.00~	
60 mm (2.36 in.)	AZM66	\$928.00~	100 to 200 W (1/8 to 1/4 HP) rated torque equivalent
	AZM69	\$933.00~	
85 mm (3.35 in.)	AZM98	\$956.00~	400 to 750 W (1/2 to 1 HP) rated torque equivalent
	AZM911	\$978.00~	

*Example for total price of motor, driver and 1 m (3.3 ft.) connection cable.

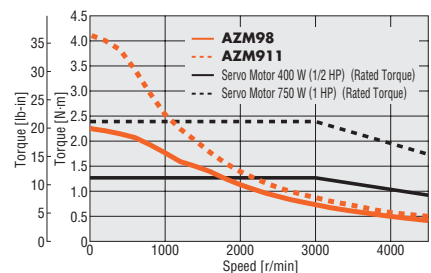
● Frame Size 42 mm (1.65 in.)



● Frame Size 60 mm (2.36 in.)



● Frame Size 85 mm (3.35 in.)



● Data for the speed – torque characteristics is based on Oriental Motor’s internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Standard Type Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.), 85 mm (3.35 in.)



Specifications

Motor	Single Shaft	AZM46A□C	AZM48A□C	AZM66A□C	AZM69A□C	AZM98A□C	AZM911A□C	
	Electromagnetic Brake	AZM46M□C	—	AZM66M□C	AZM69M□C	AZM98M□C	—	
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC), AZD-CEP (Single-Phase/Three-Phase 200-240 VAC)						
	EtherCat Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC), AZD-CED (Single-Phase/Three-Phase 200-240 VAC)						
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC), AZD-CD (Single-Phase/Three-Phase 200-240 VAC)						
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC), AZD-CX (Single-Phase/Three-Phase 200-240 VAC)						
	Pulse Input	AZD-A (Single-Phase 100-120 VAC), AZD-C (Single-Phase/Three-Phase 200-240 VAC)						
Maximum Holding Torque	N·m (oz·in)	0.3 (42)	0.77 (109)	1.2 (170)	2 (280)	2 (280)	4 (560)	
Holding Torque at Standstill	Power ON	N·m (oz·in)	0.15 (21)	0.38 (53)	0.6 (85)	1 (141)	1 (141)	2 (280)
	Electromagnetic Brake	N·m (oz·in)	0.15 (21)	—	0.6 (85)	1 (141)	1 (141)	—
Rotor Inertia	J: kg·m ² (oz·in ²)	55×10 ⁻⁷ (0.30) [71×10 ⁻⁷ (0.39)]*1	115×10 ⁻⁷ (0.63)	370×10 ⁻⁷ (2) [530×10 ⁻⁷ (2.9)]*1	740×10 ⁻⁷ (4) [900×10 ⁻⁷ (4.9)]*1	1090×10 ⁻⁷ (6) [1250×10 ⁻⁷ (6.8)]*1	2200×10 ⁻⁷ (12)	
Resolution	Set to 1000 P/R	0.36°/Pulse						
Voltage/Frequency		Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC		-15~+6% 50/60 Hz		
Power Supply Input	Input	Single-Phase 100-120 VAC	2.7	2.7	3.8	5.4	6.4	
	Current	Single-Phase 200-240 VAC	1.7	1.6	2.3	3.3	3.9	
		Three-Phase 200-240 VAC	1.0	1.0	1.4	2.0	2.3	
Control Power Supply	24 VDC±5%*2 0.25 A [0.33 A]*1		24 VDC±5% 0.25 A [0.5 A]		24 VDC±5%*2 0.25 A [0.5 A]*1			

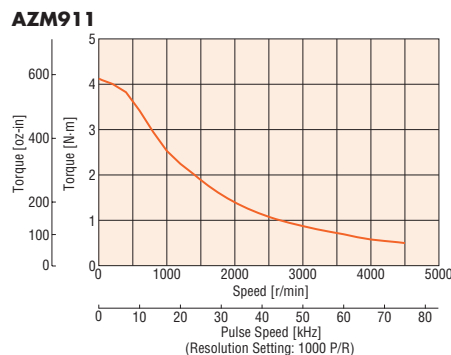
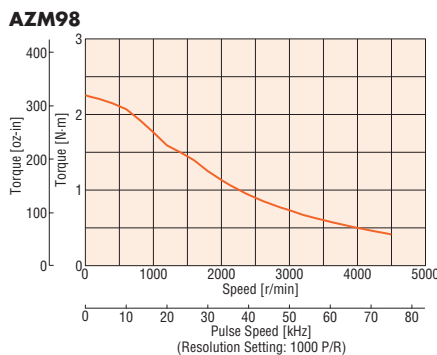
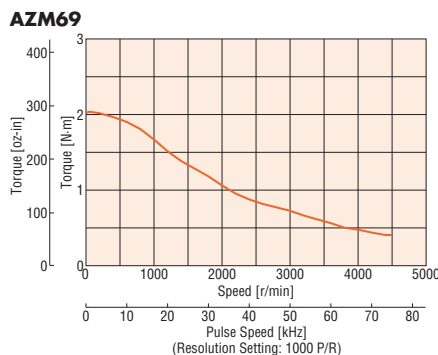
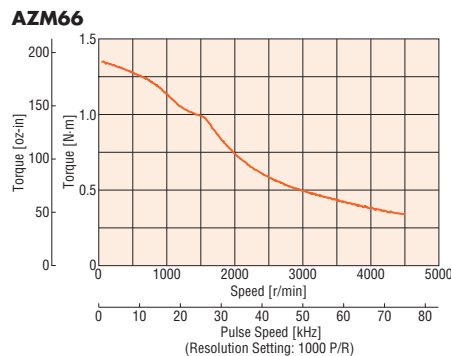
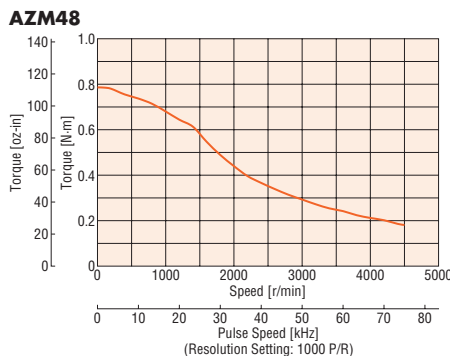
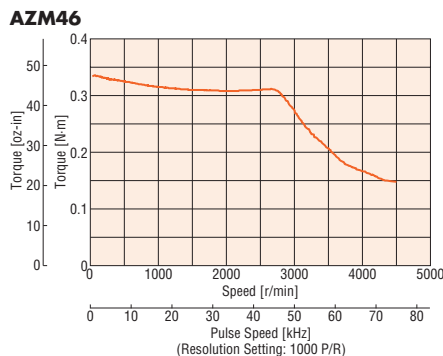
● The □ in the product name indicates additional functionality: "0" for straight and "1" for keyed. (AZM46 is straight only). No text is entered for single flat face.

● For detailed information regarding standards, please visit the Oriental Motor website.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

*2 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC±4%.

Speed – Torque Characteristics (Reference values)



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

Explanation of Terms in Specifications Table

Maximum Holding Torque	: The maximum holding torque (holding force) the motor has when power (rated current) is being supplied but the motor shaft is at standstill. (With geared types, the value of holding torque considers the permissible strength of the gear.)
Permissible Torque	: This is the maximum torque continuously applied to the gear output shaft.
Max. Instantaneous Torque	: This is the maximum torque that can be applied to the gear output shaft during acceleration/deceleration, such as when an inertial load is started and stopped.
Holding Torque at Standstill	When Power is ON : This is the holding torque when the automatic current cutback function is activated. Electromagnetic Brake : This is the static friction torque that the electromagnetic brake can generate at rest. (Electromagnetic brake is power off activated type.)

TS Geared Type Frame Size 42 mm (1.65 in.)

Specifications



Motor	Single Shaft	AZM46AC-TS3.6	AZM46AC-TS7.2	AZM46AC-TS10	AZM46AC-TS20	AZM46AC-TS30
	Electromagnetic Brake	AZM46MC-TS3.6	AZM46MC-TS7.2	AZM46MC-TS10	AZM46MC-TS20	AZM46MC-TS30
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC),		AZD-CEP (Single-Phase/Three-Phase 200-240 VAC)		
	EtherCat Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC),		AZD-CED (Single-Phase/Three-Phase 200-240 VAC)		
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC),		AZD-CD (Single-Phase/Three-Phase 200-240 VAC)		
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC),		AZD-CX (Single-Phase/Three-Phase 200-240 VAC)		
	Pulse Input	AZD-A (Single-Phase 100-120 VAC),		AZD-C (Single-Phase/Three-Phase 200-240 VAC)		
Maximum Holding Torque	N·m (lb·in)	0.65 (5.7)	1.2 (10.6)	1.7 (15)	2 (17.7)	2.3 (20)
Rotor Inertia	J: kg·m ² (oz·in ²)	55 × 10 ⁻⁷ (0.30) [71 × 10 ⁻⁷ (0.39)]* ¹				
Gear Ratio		3.6	7.2	10	20	30
Resolution	Set to 1000 P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Permissible Torque	N·m (lb·in)	0.65 (5.7)	1.2 (10.6)	1.7 (15)	2 (17.7)	2.3 (20)
Max. Instantaneous Torque	N·m (lb·in)	0.85 (7.5)	1.6 (14.1)	2 (17.7)	3 (26)	
Holding Torque at Standstill	Power ON	N·m (lb·in)	1 (8.8)	1.5 (13.2)	1.9 (16.8)	2.2 (19.4)
	Electromagnetic Brake	N·m (lb·in)	0.54 (4.7)	1 (8.8)	1.5 (13.2)	1.9 (16.8)
Speed Range	r/min	0~833	0~416	0~300	0~150	0~100
Backlash	arcmin (degrees)	45 (0.75°)	25 (0.42°)		15 (0.25°)	
Voltage/Frequency		Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC	-15~+6% 50/60 Hz	
Power Input	Single-Phase 100-120 VAC	2.7				
Supply Input	Current	1.7				
	A	1.0				
Control Power Supply		24 VDC ± 5%* ² 0.25 A [0.33 A]* ¹				

● The □ in the product name indicates the cable outlet direction: "R" for right side, "U" for upper side and "L" for left side.

No letter is entered for the down side direction.

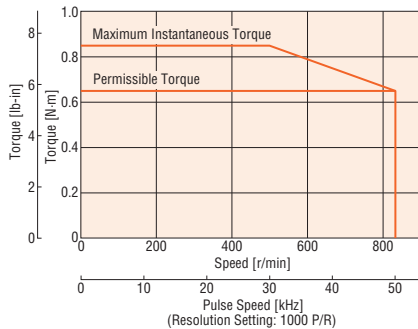
● For detailed information regarding standards, please visit the Oriental Motor website.

*¹ The brackets [] indicate the specifications for the electromagnetic brake type.

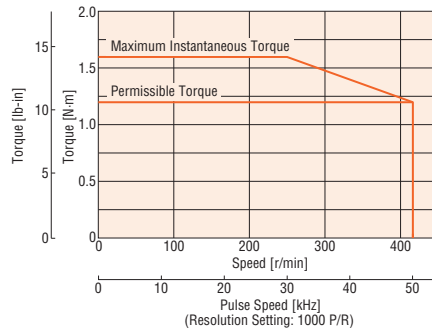
*² If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC ± 4%.

Speed – Torque Characteristics (Reference values)

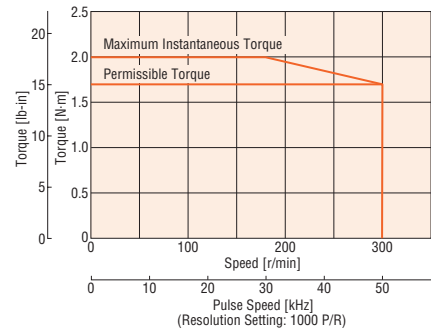
AZM46 Gear Ratio 3.6



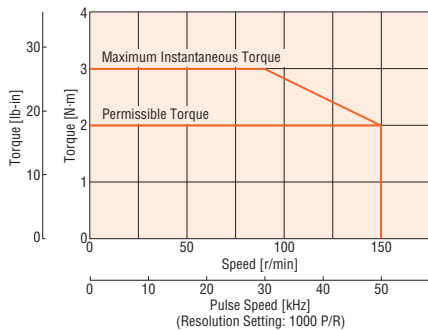
AZM46 Gear Ratio 7.2



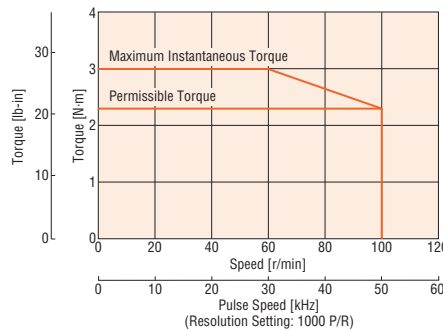
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20



AZM46 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

Features
Motors
AC Input
Motors
DC Input
Ethernet/IP
Compatible
Drivers
EtherCAT
Compatible
Drivers
Built-in
Controller
Drivers
Pulse Input
Drivers with
RS-485
Pulse Input
Drivers
Network
Multi-Axis
Drivers
Compact
Drivers
Cables /
Accessories
Actuators
AZ Series
Equipped

TS Geared Type Frame Size 60 mm (2.36 in.)

Specifications



Motor	Single Shaft	AZM66AC-TS3.6	AZM66AC-TS7.2	AZM66AC-TS10	AZM66AC-TS20	AZM66AC-TS30	
	Electromagnetic Brake	AZM66MC-TS3.6	AZM66MC-TS7.2	AZM66MC-TS10	AZM66MC-TS20	AZM66MC-TS30	
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC),		AZD-CEP (Single-Phase/Three-Phase 200-240 VAC)			
	EtherCat Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC),		AZD-CED (Single-Phase/Three-Phase 200-240 VAC)			
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC),		AZD-CD (Single-Phase/Three-Phase 200-240 VAC)			
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC),		AZD-CX (Single-Phase/Three-Phase 200-240 VAC)			
Pulse Input	AZD-A (Single-Phase 100-120 VAC),		AZD-C (Single-Phase/Three-Phase 200-240 VAC)				
Maximum Holding Torque	N-m (lb-in)	1.8 (15.9)	3 (26)	4 (35)	5 (44)	6 (53)	
Rotor Inertia	J: kg-m ² (oz-in ²)	370×10 ⁻⁷ (2) [530×10 ⁻⁷ (2.9)]*1					
Gear Ratio		3.6	7.2	10	20	30	
Resolution	Set to 1000 P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	N-m (lb-in)	1.8 (15.9)	3 (26)	4 (35)	5 (44)	6 (53)	
Max. Instantaneous Torque*	N-m (lb-in)	*	4.5 (39)	6 (53)	8 (70)	10 (88)	
Holding Torque at Standstill	Power ON	N-m (lb-in)	1.3 (11.5)	2.6 (23)	3.7 (32)	5 (44)	6 (53)
	Electromagnetic Brake	N-m (lb-in)	1.3 (11.5)	2.6 (23)	3.7 (32)	5 (44)	6 (53)
Speed Range	r/min	0~833	0~416	0~300	0~150	0~100	
Backlash	arcmin (degrees)	35 (0.59°)	15 (0.25°)		10 (0.17°)		
Voltage/Frequency		Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC		-15~+6% 50/60 Hz	
Power Input	Single-Phase 100-120 VAC	3.8					
Supply Input	Current	Single-Phase 200-240 VAC		2.3			
	A	Three-Phase 200-240 VAC		1.4			
Control Power Supply		24 VDC±5%*2 0.25 A [0.5 A]*1					

* For the geared motor output torque, refer to the speed – torque characteristics.

● The □ in the product name indicates the cable outlet direction: "R" for right side, "U" for upper side and "L" for left side. No letter is entered for the down side direction.

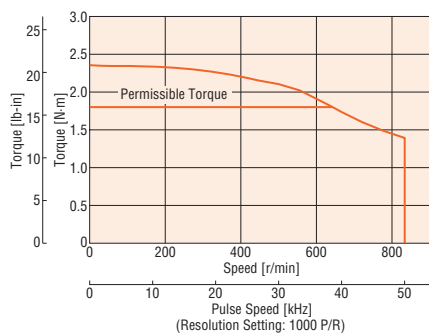
● For detailed information regarding standards, please visit the Oriental Motor website.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

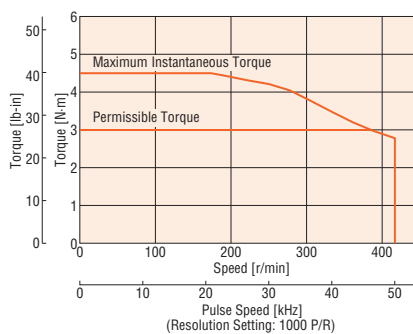
*2 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC±4%.

Speed – Torque Characteristics (Reference values)

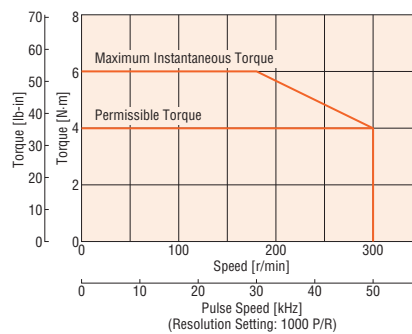
AZM66 Gear Ratio 3.6



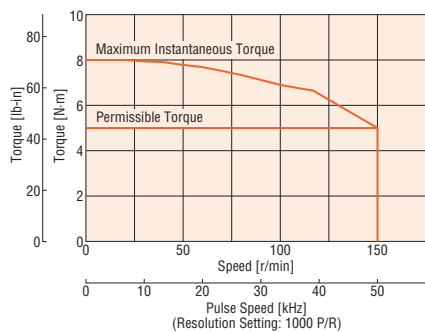
AZM66 Gear Ratio 7.2



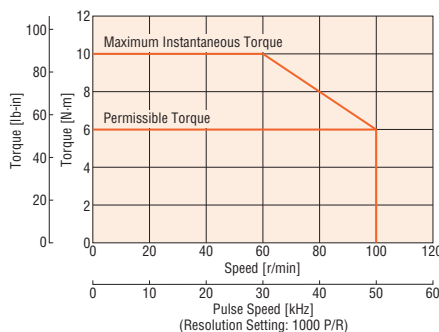
AZM66 Gear Ratio 10



AZM66 Gear Ratio 20



AZM66 Gear Ratio 30



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (175°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

TS Geared Type Frame Size 90 mm (3.54 in.)

Specifications

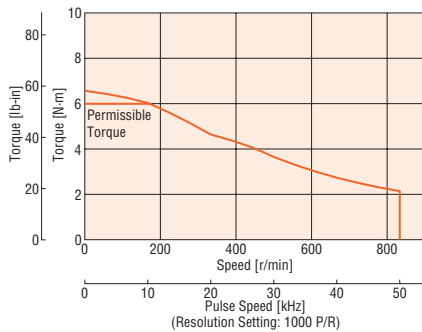


Motor	Single Shaft	AZM98AC-TS3.6□	AZM98AC-TS7.2□	AZM98AC-TS10□	AZM98AC-TS20□	AZM98AC-TS30□	
Electromagnetic Brake		AZM98MC-TS3.6□	AZM98MC-TS7.2□	AZM98MC-TS10□	AZM98MC-TS20□	AZM98MC-TS30□	
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC), AZD-AED (Single-Phase 100-120 VAC),		AZD-CEP (Single-Phase/Three-Phase 200-240 VAC), AZD-CED (Single-Phase/Three-Phase 200-240 VAC)			
	EtherCat Drive Profile Compatible	AZD-AD (Single-Phase 100-120 VAC),		AZD-CD (Single-Phase/Three-Phase 200-240 VAC)			
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC),		AZD-CD (Single-Phase/Three-Phase 200-240 VAC)			
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC),		AZD-CX (Single-Phase/Three-Phase 200-240 VAC)			
	Pulse Input	AZD-A (Single-Phase 100-120 VAC),		AZD-C (Single-Phase/Three-Phase 200-240 VAC)			
Maximum Holding Torque	N·m (lb·in)	6 (53)	10 (88)	14 (123)	20 (177)	25 (220)	
Rotor Inertia	J: kg·m ² (oz·in ²)	1090×10 ⁻⁷ (6) [1250×10 ⁻⁷ (6.8)]*1					
Gear Ratio		3.6	7.2	10	20	30	
Resolution	Set to 1000 P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	N·m (lb·in)	6 (53)	10 (88)	14 (123)	20 (177)	25 (220)	
Max. Instantaneous Torque*	N·m (lb·in)	*	*	20 (177)	*	45 (390)	
Holding Torque at Standstill	Power ON	N·m (lb·in)	3.6 (31)	7.2 (63)	10 (88)	20 (177)	25 (220)
	Electromagnetic Brake	N·m (lb·in)	3.6 (31)	7.2 (63)	10 (88)	20 (177)	25 (220)
Speed Range	r/min	0~833	0~416	0~300	0~150	0~100	
Backlash	arcmin (degrees)	25 (0.42°)	15 (0.25°)		10 (0.17°)		
Voltage/Frequency		Single-Phase 100-120 VAC Single-Phase/Three-Phase 200-240 VAC -15~+6% 50/60 Hz					
Power Input	Single-Phase 100-120 VAC	5.5					
Supply Input	Current	3.3					
	A	2.0					
Control Power Supply		24 VDC±5%*2 0.25 A [0.5 A]*1					

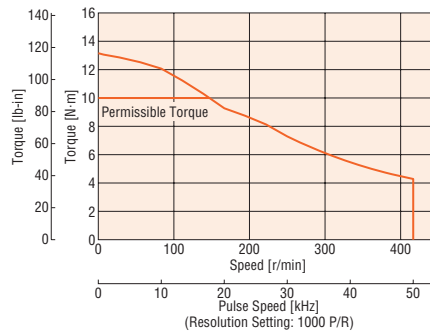
- * For the geared motor output torque, refer to the speed – torque characteristics.
- The □ in the product name indicates the cable outlet direction: "R" for right side, "U" for upper side and "L" for left side. No letter is entered for the down side direction.
- For detailed information regarding standards, please visit the Oriental Motor website.
- *1 The brackets [] indicate the specifications for the electromagnetic brake type.
- *2 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC±4%.

Speed – Torque Characteristics (Reference values)

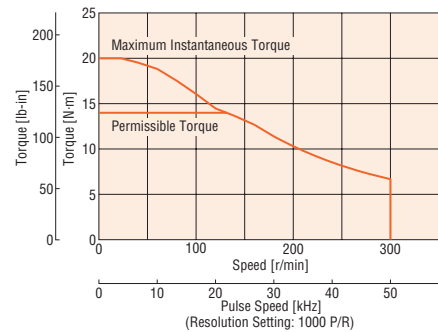
AZM98 Gear Ratio 3.6



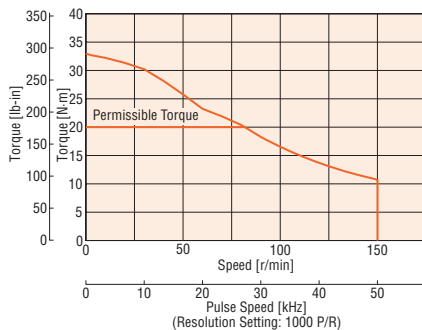
AZM98 Gear Ratio 7.2



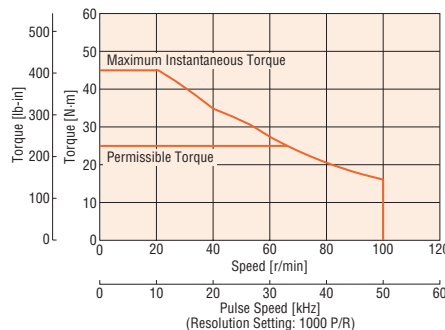
AZM98 Gear Ratio 10



AZM98 Gear Ratio 20



AZM98 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

Features
Motors
AC Input
Motors
DC Input
Ethernet/IP
Compatible
Drivers
EtherCAT
Compatible
Drivers
Built-in
Controller
Drivers
Pulse Input
Drivers
with
RS-485
Pulse Input
Drivers
Network
Multi-Axis
Drivers
Compact
Drivers
Cables /
Accessories
Actuators
AZ Series
Equipped

FC Geared Type Frame Size 42 mm (1.65 in.)

Specifications



Motor	Single Shaft	AZM46AC-FC7.2□A	AZM46AC-FC10□A	AZM46AC-FC20□A	AZM46AC-FC30□A	
	Electromagnetic Brake	AZM46MC-FC7.2□A	AZM46MC-FC10□A	AZM46MC-FC20□A	AZM46MC-FC30□A	
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC), AZD-AED (Single-Phase 100-120 VAC)		AZD-CEP (Single-Phase/Three-Phase 200-240 VAC), AZD-CED (Single-Phase/Three-Phase 200-240 VAC)		
	EtherCat Drive Profile Compatible	AZD-AD (Single-Phase 100-120 VAC), AZD-AD (Single-Phase 100-120 VAC)		AZD-CD (Single-Phase/Three-Phase 200-240 VAC), AZD-CD (Single-Phase/Three-Phase 200-240 VAC)		
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC), AZD-AD (Single-Phase 100-120 VAC)		AZD-CD (Single-Phase/Three-Phase 200-240 VAC), AZD-CD (Single-Phase/Three-Phase 200-240 VAC)		
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC), AZD-AX (Single-Phase 100-120 VAC)		AZD-CX (Single-Phase/Three-Phase 200-240 VAC), AZD-CX (Single-Phase/Three-Phase 200-240 VAC)		
Rack & Pinion L	Pulse Input	AZD-A (Single-Phase 100-120 VAC), AZD-A (Single-Phase 100-120 VAC)		AZD-C (Single-Phase/Three-Phase 200-240 VAC), AZD-C (Single-Phase/Three-Phase 200-240 VAC)		
	Maximum Holding Torque	N·m (lb-in)	0.7 (6.1)	1 (8.8)	2 (17)	3 (26)
	Rotor Inertia	J: kg·m ² (oz-in ²)	55×10 ⁻⁷ (0.30) [71×10 ⁻⁷ (0.39)] ^{*1}			
	Gear Ratio		7.2	10	20	30
	Resolution	Set to 1000 P/R	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Gripper EH	Permissible Torque	N·m (lb-in)	0.7 (6.1)	1 (8.8)	2 (17)	3 (26)
	Holding Torque at Standstill	Power ON N·m (lb-in)	0.7 (6.1)	1 (8.8)	2 (17)	3 (26)
Rotary Actuators DGI		Electromagnetic Brake N·m (lb-in)	0.7 (6.1)	1 (8.8)	2 (17)	3 (26)
	Speed Range	r/min	0~416	0~300	0~150	0~100
	Backlash	arcmin (degrees)	25 (0.42°)		15 (0.25°)	
	Power Supply	Voltage/Frequency	Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC -15~+6% 50/60 Hz	
Input	Input	Single-Phase 100-120 VAC	2.7			
	Current	Single-Phase 200-240 VAC	1.7			
	A	Three-Phase 200-240 VAC	1.0			
Control Power Supply		DC24V±5% ^{*2} 0.25A [0.33A] ^{*1}				

● The □ in the product name indicates the cable outlet direction: "U" for upper side and "D" for down side.

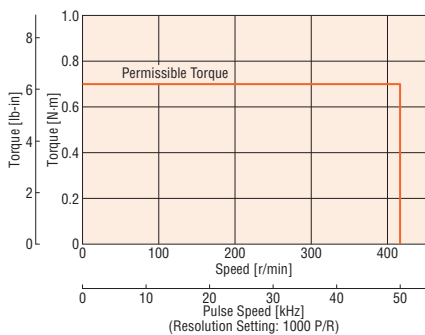
● For detailed information regarding standards, please visit the Oriental Motor website.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

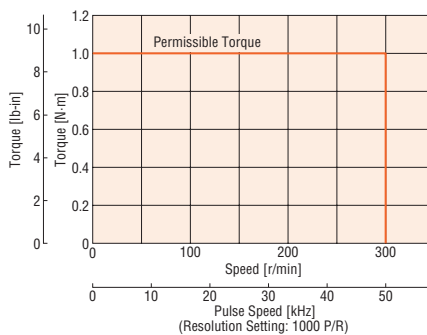
*2 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC±4%.

Speed – Torque Characteristics (Reference values)

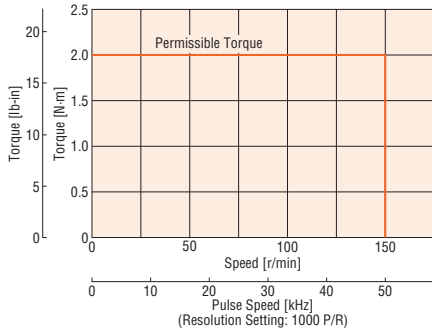
AZM46 Gear Ratio 7.2



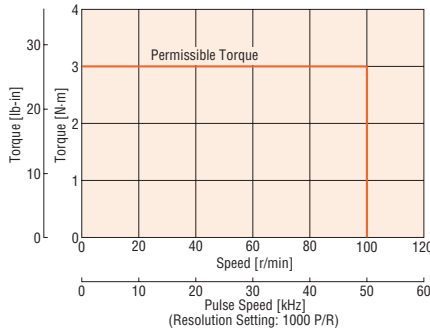
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20



AZM46 Gear Ratio 30



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

FC Geared Type Frame Size 60 mm (2.36 in.)

Specifications



Motor	Single Shaft	AZM66AC-FC7.2□A	AZM66AC-FC10□A	AZM66AC-FC20□A	AZM66AC-FC30□A	
	Electromagnetic Brake	AZM66MC-FC7.2□A	AZM66MC-FC10□A	AZM66MC-FC20□A	AZM66MC-FC30□A	
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC),		AZD-CEP (Single-Phase/Three-Phase 200-240 VAC)		
	EtherCat Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC),		AZD-CED (Single-Phase/Three-Phase 200-240 VAC)		
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC),		AZD-CD (Single-Phase/Three-Phase 200-240 VAC)		
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC),		AZD-CX (Single-Phase/Three-Phase 200-240 VAC)		
	Pulse Input	AZD-A (Single-Phase 100-120 VAC),		AZD-C (Single-Phase/Three-Phase 200-240 VAC)		
Maximum Holding Torque	N·m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)	
Rotor Inertia	J: kg·m ² (oz-in ²)	370×10 ⁻⁷ (2) [530×10 ⁻⁷ (2.9)]* ¹				
Gear Ratio		7.2	10	20	30	
Resolution	Set to 1000 P/R	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	N·m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)	
Holding Torque at Standstill	Power ON	N·m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)
	Electromagnetic Brake	N·m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)
Speed Range	r/min	0~416	0~300	0~150	0~100	
Backlash	arcmin (degrees)	15 (0.25°)		10 (0.17°)		
Power Supply Input	Voltage/Frequency		Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC	-15~+6% 50/60 Hz
	Input	Single-Phase 100-120 VAC				3.8
	Current	Single-Phase 200-240 VAC				2.3
	A	Three-Phase 200-240 VAC				1.4
Control Power Supply						DC24V±5%* ² 0.25A [0.5A]* ¹

● The □ in the product name indicates the cable outlet direction: "U" for upper side and "D" for down side.

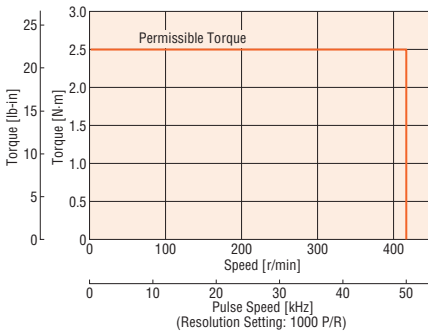
● For detailed information regarding standards, please visit the Oriental Motor website.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

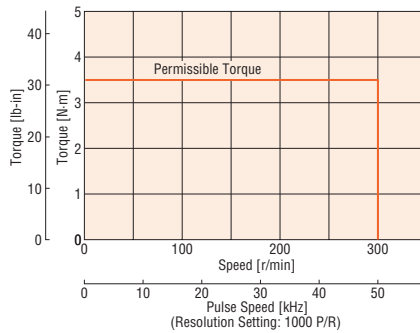
*2 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC±4%.

Speed – Torque Characteristics (Reference values)

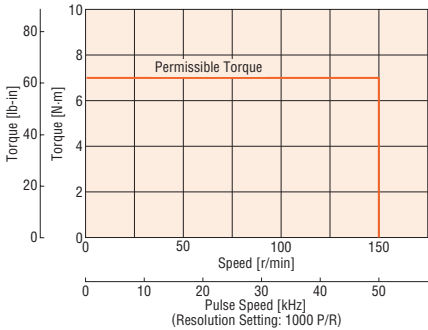
AZM66 Gear Ratio 7.2



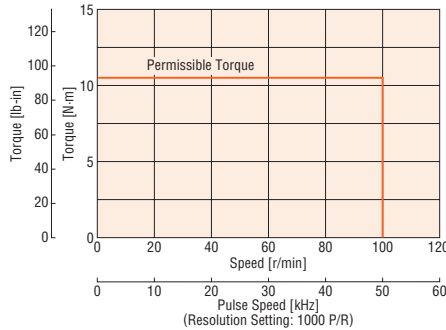
AZM66 Gear Ratio 10



AZM66 Gear Ratio 20



AZM66 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

PS Geared Type Frame Size 42 mm (1.65 in.)

Specifications



Cylinders EAC	Motor	Single Shaft	AZM46AC-PS5	AZM46AC-PS7.2	AZM46AC-PS10	AZM46AC-PS25	AZM46AC-PS36	AZM46AC-PS50	
		Electromagnetic Brake	AZM46MC-PS5	AZM46MC-PS7.2	AZM46MC-PS10	AZM46MC-PS25	AZM46MC-PS36	AZM46MC-PS50	
Compact Cylinders DR	Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC),			AZD-CEP (Single-Phase 200-240 VAC)			
		EtherCAT Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC),			AZD-CED (Single-Phase 200-240 VAC)			
		Built-in Controller	AZD-AD (Single-Phase 100-120 VAC),			AZD-CD (Single-Phase 200-240 VAC)			
		Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC),			AZD-CX (Single-Phase 200-240 VAC)			
		Pulse Input	AZD-A (Single-Phase 100-120 VAC),			AZD-C (Single-Phase 200-240 VAC)			
Rack & Pinion L	Maximum Holding Torque	N·m (lb·in)	1 (8.8)	1.5 (13.2)		2.5 (22)		3 (26)	
	Rotor Inertia	J: kg·m ² (oz·in ²)	55 × 10 ⁻⁷ (0.3) [71 × 10 ⁻⁷ (0.39)]*1						
Gripper EH	Gear Ratio		5	7.2	10	25	36	50	
	Resolution	Set to 1000 P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse	
	Permissible Torque	N·m (lb·in)	1 (8.8)	1.5 (13.2)		2.5 (22)		3 (26)	
Rotary Actuators DGI	Max. Instantaneous Torque	N·m (lb·in)	1.5 (13.2)	2 (17.7)		6 (53)			
	Holding Torque at	Power ON	N·m (lb·in)	0.75 (6.6)	1 (8.8)	1.5 (13.2)	2.5 (22)	3 (26)	
		Standstill	Electromagnetic Brake	N·m (lb·in)	0.75 (6.6)	1 (8.8)	1.5 (13.2)	2.5 (22)	3 (26)
	Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60	
	Backlash	arcmin (degrees)	15 (0.25°)						
Power Supply Input	Voltage/Frequency		Single-Phase 100-120 VAC Single-Phase/Three-Phase 200-240 VAC -15~+6% 50/60 Hz						
	Input	Single-Phase 100-120 VAC	2.7						
	Current	Single-Phase 200-240 VAC	1.7						
	A	Three-Phase 200-240 VAC	1.0						
Control Power Supply	24 VDC ± 5%*2 0.25 A [0.33 A]*1								

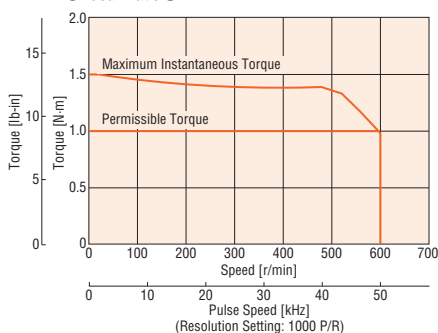
● For detailed information regarding standards, please visit the Oriental Motor website.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

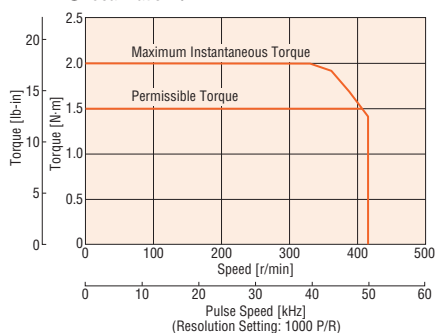
*2 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC ± 4%.

Speed – Torque Characteristics (Reference values)

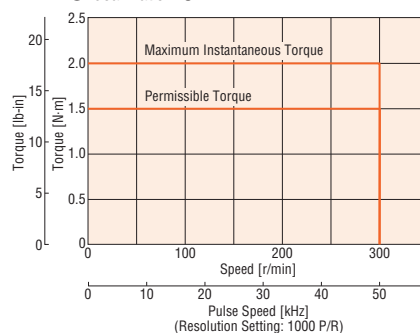
AZM46 Gear Ratio 5



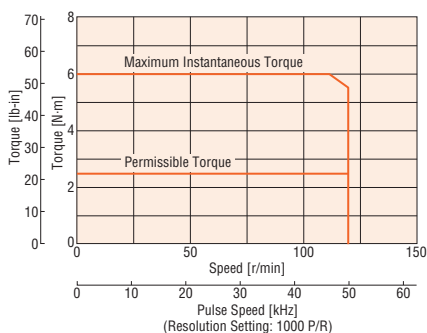
AZM46 Gear Ratio 7.2



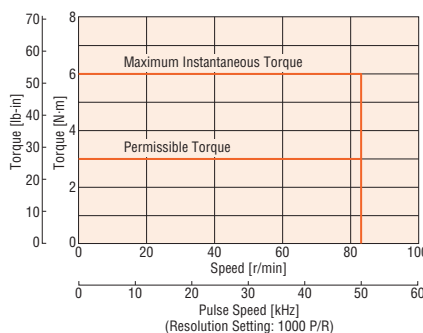
AZM46 Gear Ratio 10



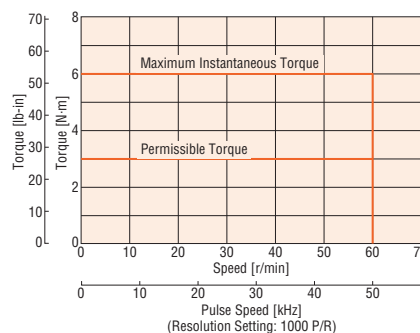
AZM46 Gear Ratio 25



AZM46 Gear Ratio 36



AZM46 Gear Ratio 50



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (175°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

PS Geared Type Frame 60 mm (2.36 in.)

Specifications

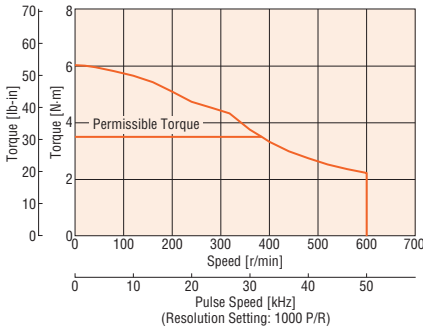


Motor	Single Shaft	AZM66AC-PS5	AZM66AC-PS7.2	AZM66AC-PS10	AZM66AC-PS25	AZM66AC-PS36	AZM66AC-PS50
	Electromagnetic Brake	AZM66MC-PS5	AZM66MC-PS7.2	AZM66MC-PS10	AZM66MC-PS25	AZM66MC-PS36	AZM66MC-PS50
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC),		AZD-CEP (Single-Phase 200-240 VAC)			
	EtherCAT Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC),		AZD-CED (Single-Phase 200-240 VAC)			
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC),		AZD-CD (Single-Phase 200-240 VAC)			
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC),		AZD-CX (Single-Phase 200-240 VAC)			
	Pulse Input	AZD-A (Single-Phase 100-120 VAC),		AZD-C (Single-Phase 200-240 VAC)			
Maximum Holding Torque	N·m (lb-in)	3.5 (30)	4 (35)	5 (44)	8 (70)		
Rotor Inertia	J: kg·m ² (oz-in ²)	370×10 ⁻⁷ (2) [530×10 ⁻⁷ (2.9)]*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Set to 1000 P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	N·m (lb-in)	3.5 (30)	4 (35)	5 (44)	8 (70)		
Max. Instantaneous Torque*	N·m (lb-in)	*	*	11 (97)	16 (141)	20 (177)	
Holding Torque at Standstill	Power ON	N·m (lb-in)	3 (26)	4 (35)	5 (44)	8 (70)	
	Electromagnetic Brake	N·m (lb-in)	3 (26)	4 (35)	5 (44)	8 (70)	
Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin (degrees)	7 (0.12°)			9 (0.15°)		
Power Supply Input	Voltage/Frequency		Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC		-15~+6% 50/60 Hz
	Input	Current	Single-Phase 100-120 VAC		3.8		
	Input	Current	Single-Phase 200-240 VAC		2.3		
	Input	Current	Three-Phase 200-240 VAC		1.4		
Control Power Supply		24 VDC±5%*2 0.25 A [0.5 A]*1					

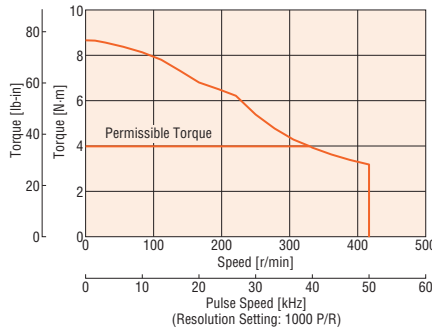
- * For the geared motor output torque, refer to the speed – torque characteristics.
- For detailed information regarding standards, please visit the Oriental Motor website.
- *1 The brackets [] indicate the specifications for the electromagnetic brake type.
- *2 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC±4%.

Speed – Torque Characteristics (Reference values)

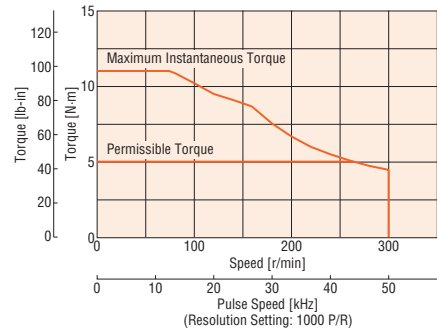
AZM66 Gear Ratio 5



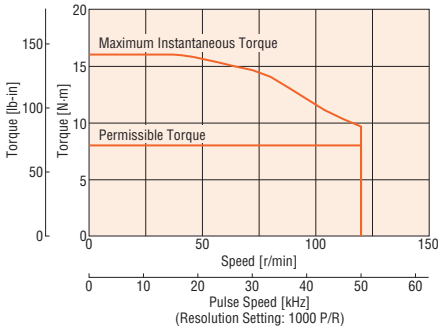
AZM66 Gear Ratio 7.2



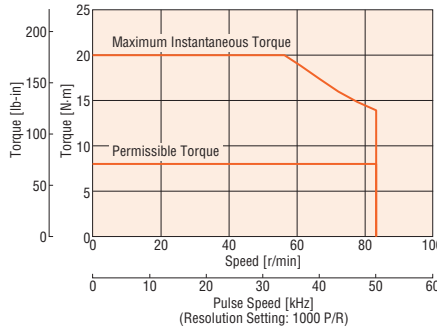
AZM66 Gear Ratio 10



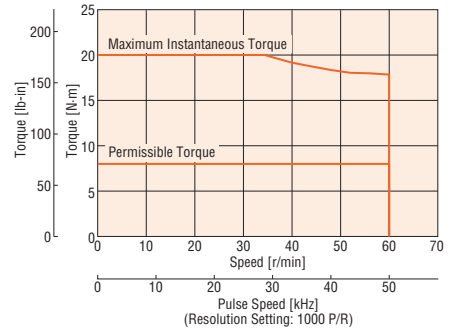
AZM66 Gear Ratio 25



AZM66 Gear Ratio 36



AZM66 Gear Ratio 50



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

Features
Motors
AC Input
Motors
DC Input
EtherNet/IP
Compatible
Drivers
EtherCAT
Compatible
Drivers
Built-in
Controller
Drivers
Pulse Input
Drivers with
RS-485
Pulse Input
Drivers
Network
Multi-Axis
Drivers
Compact
Drivers
Cables /
Accessories
AZ Series
Actuators
Equipped

PS Geared Type Frame Size 90 mm (3.54 in.)

Specifications



Motor	Single Shaft	AZM98AC-PS5	AZM98AC-PS7.2	AZM98AC-PS10	AZM98AC-PS25	AZM98AC-PS36	AZM98AC-PS50	
	Electromagnetic Brake	AZM98MC-PS5	AZM98MC-PS7.2	AZM98MC-PS10	AZM98MC-PS25	AZM98MC-PS36	AZM98MC-PS50	
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC),			AZD-CEP (Single-Phase 200-240 VAC)			
	EtherCAT Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC),			AZD-CED (Single-Phase 200-240 VAC)			
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC),			AZD-CD (Single-Phase 200-240 VAC)			
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC),			AZD-CX (Single-Phase 200-240 VAC)			
	Pulse Input	AZD-A (Single-Phase 100-120 VAC),			AZD-C (Single-Phase 200-240 VAC)			
Maximum Holding Torque	N-m (lb-in)	10 (88)	14 (123)	20 (177)	37 (320)			
Rotor Inertia	J: kg·m ² (oz-in ²)	1090×10 ⁻⁷ (6) [1250×10 ⁻⁷ (6.8)]*1						
Gear Ratio		5	7.2	10	25	36	50	
Resolution	Set to 1000 P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse	
Permissible Torque*	N-m (lb-in)	*	*	20 (177)	37 (320)			
Max. Instantaneous Torque*	N-m (lb-in)	*	*	*	*	60 (530)		
Holding Torque at	Power ON	N-m (lb-in)	5 (44)	7.2 (63)	10 (88)	25 (220)	36 (310)	37 (320)
	Standstill	Electromagnetic Brake	N-m (lb-in)	5 (44)	7.2 (63)	10 (88)	25 (220)	36 (310)
Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60	
Backlash	arcmin (degrees)	7 (0.12°)			9 (0.15°)			
Power Supply Input	Voltage/Frequency		Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC		-15~+6% 50/60 Hz	
	Input	Single-Phase 100-120 VAC						5.5
	Current	Single-Phase 200-240 VAC						3.3
	A	Three-Phase 200-240 VAC						2.0
Control Power Supply			24 VDC±5%*2 0.25 A [0.5 A]*1					

* For the geared motor output torque, refer to the speed – torque characteristics.

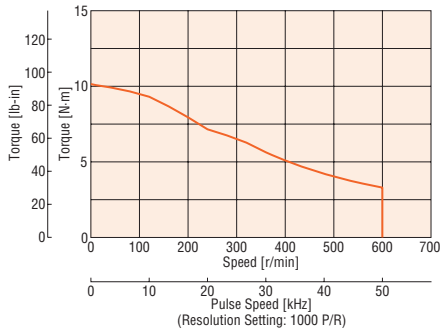
● For detailed information regarding standards, please visit the Oriental Motor website.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

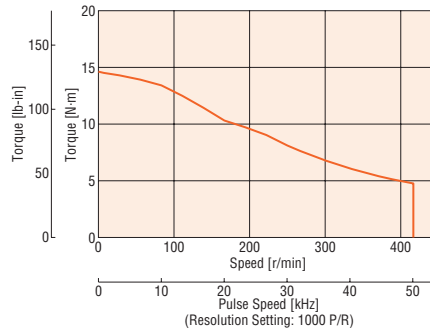
*2 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC±4%.

Speed – Torque Characteristics (Reference values)

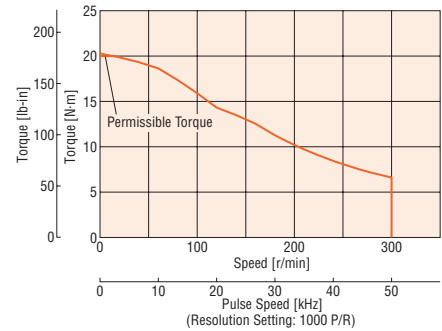
AZM98 Gear Ratio 5



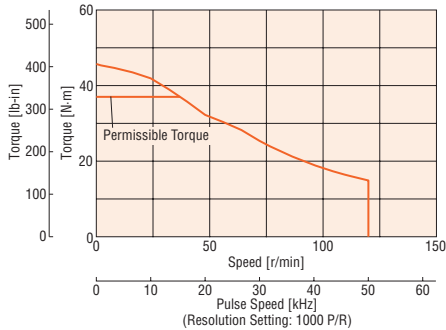
AZM98 Gear Ratio 7.2



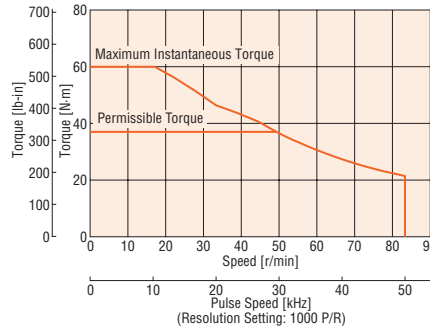
AZM98 Gear Ratio 10



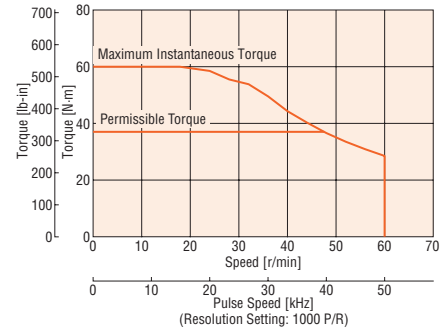
AZM98 Gear Ratio 25



AZM98 Gear Ratio 36



AZM98 Gear Ratio 50



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

HPG Geared Type Frame Size 40 mm (1.57 in.), 60 mm (2.36 in.), 90 mm (3.54 in.)

Specifications

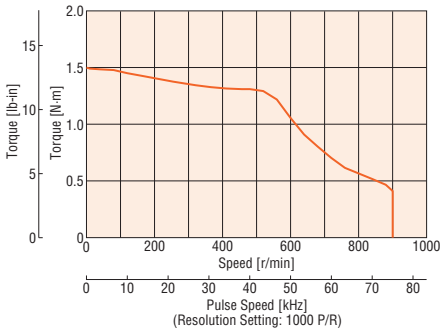


Motor	Single Shaft	AZM46AC-HP5	AZM46AC-HP9	AZM66AC-HP5	AZM66AC-HP15	AZM98AC-HP5	AZM98AC-HP15	
	Electromagnetic Brake	AZM46MC-HP5	AZM46MC-HP9	AZM66MC-HP5	AZM66MC-HP15	AZM98MC-HP5	AZM98MC-HP15	
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC)		AZD-CEP (Single-Phase 200-240 VAC)				
	EtherCAT Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC)		AZD-CED (Single-Phase 200-240 VAC)				
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC)		AZD-CD (Single-Phase 200-240 VAC)				
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC)		AZD-CX (Single-Phase 200-240 VAC)				
	Pulse Input	AZD-A (Single-Phase 100-120 VAC)		AZD-C (Single-Phase 200-240 VAC)				
Maximum Holding Torque	N·m (lb-in)	1.5 (13.2)	2.5 (22)	5.9 (52)	9 (79)	10 (88)	24 (210)	
Rotor Inertia	J: kg·m ² (oz-in ²)	55×10 ⁻⁷ (0.30) [71×10 ⁻⁷ (0.39)]*1		370×10 ⁻⁷ (2) [530×10 ⁻⁷ (2.9)]*1		1090×10 ⁻⁷ (6) [1250×10 ⁻⁷ (6.8)]*1		
Moment of Inertia*2	J: kg·m ² (oz-in ²)	5.8×10 ⁻⁷ (0.032) [4.2×10 ⁻⁷ (0.023)]	3.4×10 ⁻⁷ (0.019) [2.9×10 ⁻⁷ (0.016)]	92×10 ⁻⁷ (0.50) [86×10 ⁻⁷ (0.47)]	78×10 ⁻⁷ (0.43) [77×10 ⁻⁷ (0.42)]	629×10 ⁻⁷ (3.4) [589×10 ⁻⁷ (3.2)]	488×10 ⁻⁷ (2.7) [488×10 ⁻⁷ (2.7)]	
Gear Ratio		5	9	5	15	5	15	
Resolution	Set to 1000 P/R	0.072°/Pulse	0.04°/Pulse	0.072°/Pulse	0.024°/Pulse	0.072°/Pulse	0.024°/Pulse	
Permissible Torque*	N·m (lb-in)	*	2.5 (22)	5.9 (52)	9 (79)	*	24 (210)	
Max. Instantaneous Torque*	N·m (lb-in)	*	*	*	*	*	*	
Holding Torque at	Power ON	N·m (lb-in)	0.75 (6.6)	1.35 (11.9)	3 (26)	9 (79)	5 (44)	15 (132)
	Electromagnetic Brake	N·m (lb-in)	0.75 (6.6)	1.35 (11.9)	3 (26)	9 (79)	5 (44)	15 (132)
Standstill								
Speed Range	r/min	0~900	0~500	0~900	0~300	0~900	0~300	
Backlash	arcmin (degrees)	3 (0.05°)						
Power Supply	Voltage/Frequency		Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC		-15~+6% 50/60 Hz	
	Input	Single-Phase 100-120 VAC	2.7		3.8		5.5	
	Current	Single-Phase 200-240 VAC	1.7		2.3		3.3	
Input	A	Three-Phase 200-240 VAC	1.0		1.4		2.0	
Control Power Supply		24 VDC±5%*4 0.25 A [0.33 A]*1		24 VDC±5%*4 0.25 A [0.5 A]*1				
Runout of Output Flange Surface*3	mm (in.)	0.02 (0.0008)						
Runout of Output Flange Inner Diameter*3	mm (in.)	0.03 (0.0012)		0.04 (0.0016)				

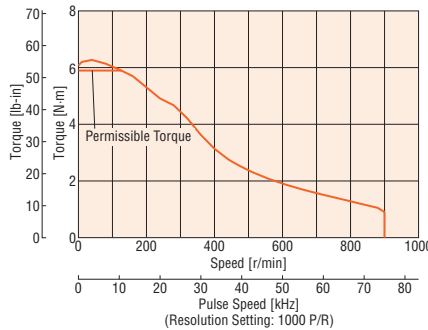
- * For the geared motor output torque, refer to the speed – torque characteristics.
- There is an F located in the box (□) within the product name if it is a flange output type.
- For detailed information regarding standards, please visit the Oriental Motor website.
- *1 The brackets [] indicate the specifications for the electromagnetic brake type.
- *2 This is the internal inertia of the gear converted to the motor shaft. The brackets () indicate the flange output type value.
- *3 Flange output type specifications.
- *4 If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC±4%.

Speed – Torque Characteristics (Reference values)

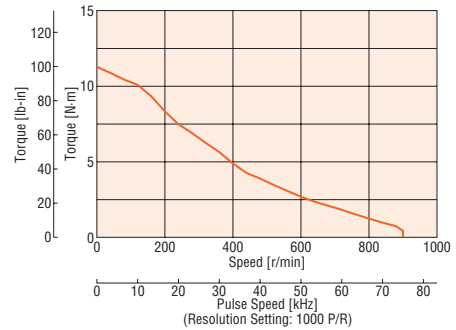
AZM46 Gear Ratio 5



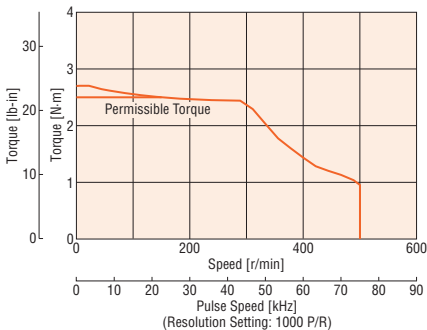
AZM66 Gear Ratio 5



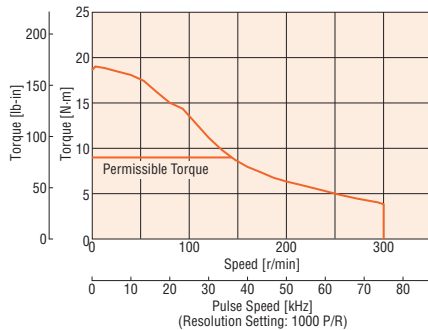
AZM98 Gear Ratio 5



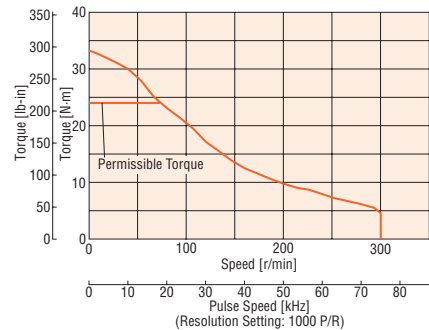
AZM46 Gear Ratio 9



AZM66 Gear Ratio 15



AZM98 Gear Ratio 15



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Harmonic Geared Type Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.), 90 mm (3.54 in.)

Specifications



Motor	Single Shaft	AZM46AC-HS50	AZM46AC-HS100	AZM66AC-HS50	AZM66AC-HS100	AZM98AC-HS50	AZM98AC-HS100	
	Electromagnetic Brake	AZM46MC-HS50	AZM46MC-HS100	AZM66MC-HS50	AZM66MC-HS100	AZM98MC-HS50	AZM98MC-HS100	
Driver	EtherNet/IP Compatible	AZD-AEP (Single-Phase 100-120 VAC)			AZD-CEP (Single-Phase 200-240 VAC)			
	EtherCAT Drive Profile Compatible	AZD-AED (Single-Phase 100-120 VAC)			AZD-CED (Single-Phase 200-240 VAC)			
	Built-in Controller	AZD-AD (Single-Phase 100-120 VAC)			AZD-CD (Single-Phase 200-240 VAC)			
	Pulse Input with RS-485 Communication	AZD-AX (Single-Phase 100-120 VAC)			AZD-CX (Single-Phase 200-240 VAC)			
	Pulse Input	AZD-A (Single-Phase 100-120 VAC)			AZD-C (Single-Phase 200-240 VAC)			
Maximum Holding Torque	N·m (lb·in)	3.5 (30)	5 (44)	7 (61)	10 (88)	33 (290)	52 (460)	
Rotor Inertia	J: kg·m ² (oz·in ²)	72 × 10 ⁻⁷ (0.39) [88 × 10 ⁻⁷ (0.48)]* ¹		405 × 10 ⁻⁷ (2.2) [565 × 10 ⁻⁷ (3.1)]* ¹		1290 × 10 ⁻⁷ (7.1) [1450 × 10 ⁻⁷ (7.9)]* ¹		
Gear Ratio		50	100	50	100	50	100	
Resolution	Set to 1000 P/R	0.0072°/Pulse	0.0036°/Pulse	0.0072°/Pulse	0.0036°/Pulse	0.0072°/Pulse	0.0036°/Pulse	
Permissible Torque	N·m (lb·in)	3.5 (30)	5 (44)	7 (61)	10 (88)	33 (290)	52 (460)	
Max. Instantaneous Torque*	N·m (lb·in)	8.3 (73)	11 (97)	23 (200)	36 (310)	*	107 (940)	
Holding Torque at Standstill	Power ON	N·m (lb·in)	3.5 (30)	5 (44)	7 (61)	10 (88)	33 (290)	52 (460)
	Electromagnetic Brake	N·m (lb·in)	3.5 (30)	5 (44)	7 (61)	10 (88)	33 (290)	52 (460)
Speed Range	r/min	0~70	0~35	0~70	0~35	0~70	0~35	
Lost Motion (Load Torque)		arcmin	1.5 max. (±0.16 N·m)	1.5 max. (±0.20 N·m)	0.7 max. (±0.28 N·m)	0.7 max. (±0.39 N·m)	0.7 max. (±1.2 N·m)	
Voltage/Frequency		Single-Phase 100-120 VAC		Single-Phase/Three-Phase 200-240 VAC		-15~+6% 50/60 Hz		
Power Supply Input	Input	Single-Phase 100-120 VAC	2.7		3.8		5.5	
	Current	Single-Phase 200-240 VAC	1.7		2.3		3.3	
	A	Three-Phase 200-240 VAC	1.0		1.4		2.0	
Control Power Supply		24 VDC ± 5%* ² 0.25 A [0.33 A]* ¹		24 VDC ± 5%* ² 0.25 A [0.5 A]* ¹				

* For the geared motor output torque, refer to the speed – torque characteristics.

● For detailed information regarding standards, please visit the Oriental Motor website.

*¹ The brackets [] indicate the specifications for the electromagnetic brake type.

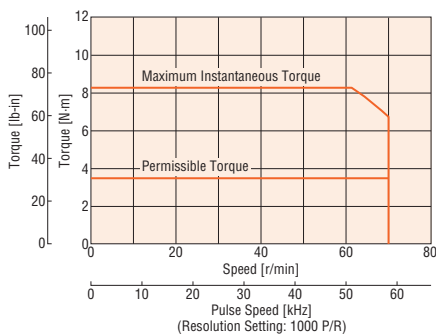
*² If the electromagnetic brake type is extended 20 m (65.6 ft.) with a cable, the specification becomes 24 VDC ± 4%.

Note

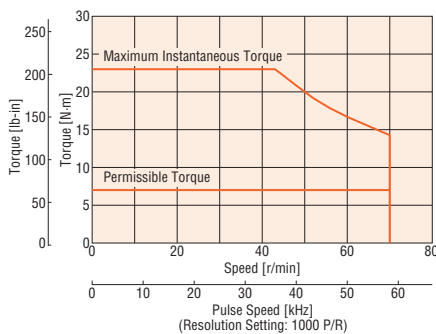
● The rotor inertia represents a sum of the inertia of the harmonic gear converted to motor shaft values.

Speed – Torque Characteristics (Reference values)

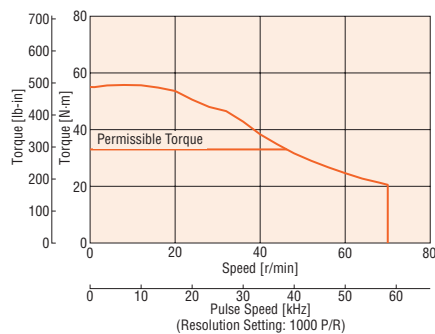
AZM46 Gear Ratio 50



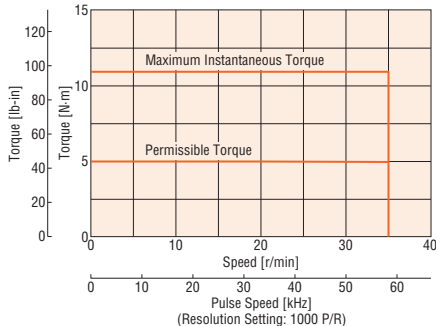
AZM66 Gear Ratio 50



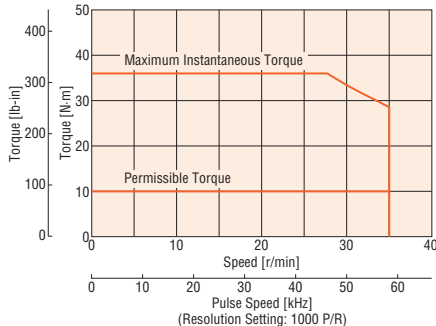
AZM98 Gear Ratio 50



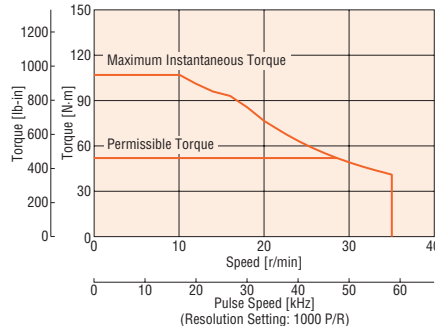
AZM46 Gear Ratio 100



AZM66 Gear Ratio 100



AZM98 Gear Ratio 100



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor.

(When conforming to the UL Standards, it is required to keep the temperature of the motor case at 75°C (167°F) max., since the motor is recognized as insulation class A.)

Common Specifications

General Specifications

	Motor	Driver	
		Built-in Controller Type, Pulse Input Type with RS-485 Communication	Pulse Input Type
Heat-Resistant Class	130(B) [UL is certified by 105(A)]	-	
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the following places: · Case – Motor windings · Case – Electromagnetic brake windings*1	100 MΩ or more when 500 VDC megger is applied between the following places: · Protective earth terminal – Power supply terminal · Encoder connector – Power supply terminal · I/O signal terminal – Power supply terminal	
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*1 1.5 kVAC 50 Hz or 60 Hz	Sufficient to withstand the following for 1 minute: · Protective earth terminal – Power supply terminal 1.5 kVAC 50 Hz or 60 Hz · Encoder connector – Power supply terminal 1.8 kVAC 50 Hz or 60 Hz · I/O signal terminal – Power supply terminal 1.8 kVAC 50 Hz or 60 Hz	
Operating Environment (In operation)	Ambient Temperature	0~+40°C (+32~+104°F) (non-freezing)*2	
	Ambient Humidity	85% max. (non-condensing)	
	Atmosphere	Use in an area without corrosive gases and dust. The product should not be exposed to water, oil or other liquids.	
Degree of Protection	IP66 (excluding installation surface and connectors)	IP10	IP20
Stop Position Accuracy	AZM46, AZM48: ±4 min. (±0.067°) AZM66, AZM69, AZM98, AZM911: ±3 min. (±0.05°)		
Shaft Runout	0.05 mm (0.002 in.) T.I.R.*4	-	
Concentricity of Installation Pilot to the Shaft	0.075 mm (0.003 in.) T.I.R.*4	-	
Perpendicularity of Installation Surface to the Shaft	0.075 mm (0.003 in.) T.I.R.*4	-	
Multiple-Rotation Detection Range when Power is Off	±900 rotations (1,800 rotations)		

*1 Electromagnetic brake type only.

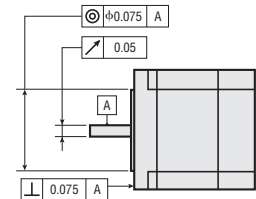
*2 According to Oriental Motor measurement conditions

*3 When a heat sink is installed that is equivalent to an aluminum plate with a size of 200×200 mm (7.87×7.87 in.), 2 mm (0.08 in.) thick is installed.

*4 T.I.R. (Total Indicator Reading): The total dial gauge reading when the measurement section is rotated one revolution centered on the reference axis center.

Note

- Do not measure insulation resistance or perform the dielectric strength test while the motor and driver are connected.
- Do not perform these tests with the motor sensor.



Electromagnetic Brake Specification

Product Name	AZM46	AZM66	AZM69	AZM98
Brake Type	Power Off Activated Type			
Power Supply Voltage	24 VDC ± 5%*			
Power Supply Current	A	0.08	0.25	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±4% specification applies if the wiring distance between the motor and driver is extended to 20 m (65.6 ft.) using a cable.

● The product names are listed such that the applicable product names can be determined.

Rotation Direction

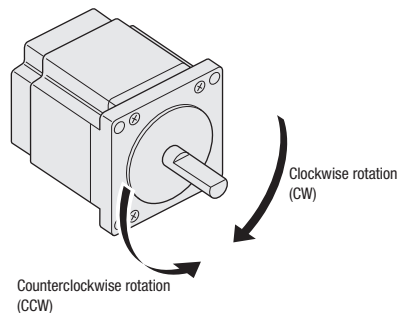
This refers to the rotation direction viewed from the output shaft side.

The rotation direction of the gear output shaft with respect to the standard type motor output shaft differs depending on the type of gear and gear ratio.

Refer to the following table.

Type	Gear Ratio	Rotation Direction with Respect to Motor Output Shaft
TS Geared	3.6, 7.2, 10	Same direction
	20, 30	Opposite direction
FC Geared	All gear ratios	Same direction
PS Geared		
HPG Geared		
Harmonic Geared	All gear ratios	Opposite direction

Standard Type Motor



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

● Permissible Radial Load/Permissible Axial Load

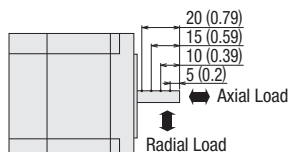
Unit: N (lb.)

Type	Motor Frame Size mm [in.]	Product Name	Gear Ratio	Permissible Radial Load					Permissible Axial Load			
				Distance from Shaft End mm [in.]								
				0 [0]	5 [0.2]	10 [0.39]	15 [0.59]	20 [0.79]				
Standard Type	42 (1.65)	AZM46	-	35 (7.8)	44 (9.9)	58 (13)	85 (19.1)	-	15 (3.3)			
		AZM48		30 (6.7)	35 (7.8)	44 (9.9)	58 (13)	85 (19.1)				
		AZM66, AZM69		90 (20)	100 (22)	130 (29)	180 (40)	270 (60)				
Cylinders EAC	85 (3.35)	AZM98, AZM911	-	260 (58)	290 (65)	340 (76)	390 (87)	480 (108)	60 (13.5)			
		TS Geared Type		42 (1.65)	AZM46	3.6, 7.2, 10	20 (4.5)	30 (6.7)	40 (9)	50 (11.2)	-	15 (3.3)
					20, 30		40 (8)	50 (11.2)	60 (13.5)	70 (15.7)	-	
AZM66	3.6, 7.2, 10		120 (27)		135 (30)		150 (33)	165 (37)	180 (40)	40 (9)		
Compact Cylinders DR	60 (2.36)	AZM66	20, 30	170 (38)	185 (41)	200 (45)	215 (48)	230 (51)	150 (33)			
		AZM98		3.6, 7.2, 10	300 (67)	325 (73)	350 (78)	375 (84)			400 (90)	
		20, 30		400 (90)	450 (101)	500 (112)	550 (123)	600 (135)				
Rack & Pinion L	90 (3.54)	AZM98	7.2, 10, 20, 30	180 (40)	200 (45)	220 (49)	250 (56)	-	100 (22)			
		AZM46		270 (60)	290 (65)	310 (69)	330 (74)	350 (78)				
		AZM66		180 (40)	200 (45)	220 (49)	250 (56)	-				
FC Geared Type	42 (1.65)	AZM46	7.2, 10, 20, 30	180 (40)	200 (45)	220 (49)	250 (56)	-	100 (22)			
		AZM66		270 (60)	290 (65)	310 (69)	330 (74)	350 (78)				
		AZM98		180 (40)	200 (45)	220 (49)	250 (56)	-				
Gripper EH	60 (2.36)	AZM46	-	70 (15.7)	80 (18)	95 (21)	120 (27)	-	100 (22)			
		5		80 (18)	90 (20)	110 (24)	140 (31)	-				
		7.2		85 (19.1)	100 (22)	120 (27)	150 (33)	-				
Rotary Actuators DGII	42 (1.65)	AZM46	-	120 (27)	140 (31)	170 (38)	210 (47)	-	100 (22)			
		25		130 (29)	160 (36)	190 (42)	240 (54)	-				
		36		150 (33)	170 (38)	210 (47)	260 (58)	-				
PS Geared Type	60 (2.36)	AZM66	-	170 (38)	200 (45)	230 (51)	270 (60)	320 (72)	200 (45)			
		5		200 (45)	220 (49)	260 (58)	310 (69)	370 (83)				
		7.2		220 (49)	250 (56)	290 (65)	350 (78)	410 (92)				
90 (3.54)	AZM98	-	300 (67)	340 (76)	400 (90)	470 (105)	560 (126)	600 (135)				
	25		340 (76)	380 (85)	450 (101)	530 (119)	630 (141)					
	36		380 (85)	430 (96)	500 (112)	600 (135)	700 (157)					
HPG Geared Type	40 (1.57)	AZM46	-	380 (85)	420 (94)	470 (105)	540 (121)	630 (141)	430 (96)			
		5		430 (96)	470 (105)	530 (119)	610 (137)	710 (159)				
		7.2		480 (108)	530 (119)	590 (132)	680 (153)	790 (177)				
60 (2.36)	AZM66	-	650 (146)	720 (162)	810 (182)	920 (200)	1070 (240)	1460 (320)				
	25		730 (164)	810 (182)	910 (200)	1040 (233)	1210 (270)					
	36		820 (184)	910 (200)	1020 (220)	1160 (260)	1350 (300)					
90 (3.54)	AZM98	-	820 (184)	910 (200)	1020 (220)	1160 (260)	1350 (300)	2030 (450)				
	5		150 (33)	170 (38)	190 (42)	230 (51)	270 (60)					
	7.2		180 (40)	200 (45)	230 (51)	270 (60)	320 (72)					
Harmonic Geared Type	42 (1.65)	AZM46	50, 100	250 (56)	270 (60)	300 (67)	330 (74)	360 (81)	700 (157)			
		AZM66		360 (81)	380 (85)	420 (94)	460 (103)	510 (114)				
		AZM98		5	600 (135)	630 (141)	670 (150)	710 (159)		750 (168)		
60 (2.36)	AZM66	-	5	600 (135)	630 (141)	670 (150)	710 (159)	750 (168)	1460 (320)			
	AZM98		15	830 (186)	880 (198)	930 (200)	980 (220)	1050 (230)				
	AZM46		15	830 (186)	880 (198)	930 (200)	980 (220)	1050 (230)				
90 (3.54)	AZM98	-	5	600 (135)	630 (141)	670 (150)	710 (159)	750 (168)	1460 (320)			
	AZM66		15	830 (186)	880 (198)	930 (200)	980 (220)	1050 (230)				
	AZM46		15	830 (186)	880 (198)	930 (200)	980 (220)	1050 (230)				

- The product name contains characters that can be used to identify the product.
- If the **PS** geared type or **HPG** geared type has either the permissible radial load or permissible axial load added, the service life of 20,000 hours is satisfied. For the service life of gearheads, please contact the nearest Oriental Motor sales office or visit the Oriental Motor website.

◇ Radial Load and Axial Load

Distance from Shaft End mm (in.)



● **Permissible Moment Load**

If an eccentric load is applied during output flange face installation, calculate the moment load with the following formula. Ensure that the axial load and the moment load do not exceed the permissible values in the following formula.

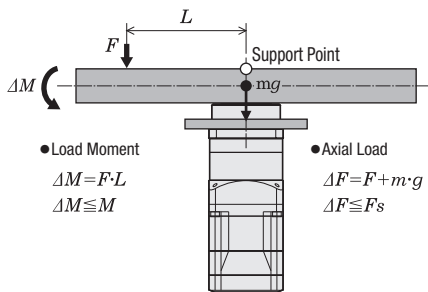
◇ **HPG Geared Type Flange Output Type**

Product Name	Gear Ratio	Permissible Axial Load N (lb.)	Permissible Moment Load N·m (lb-in)	Constant α m (in.)
AZM46	5	430 (96)	4.9 (43)	0.006
	9	510 (114)	5.9 (52)	(0.24)
AZM66	5	700 (157)	12.0 (106)	0.011
	15	980 (220)	17.2 (152)	(0.43)
AZM98	5	1460 (320)	38.7 (340)	0.0115
	15	2030 (450)	53.5 (470)	(0.45)

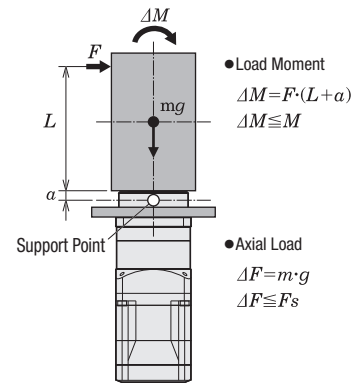
- m : Load mass (kg)
- g : Gravitational acceleration (m/s²)
- F : External force (N)
- L : Overhung distance (m)
- α : Constant (m)
- ΔF : Load applied to output flange face (N)
- F_s : Permissible axial load (N)
- ΔM : Load moment (N·m)
- M : Permissible moment load (N·m)

The load moment can be calculated with the following formula.

Example 1: When an external force F (N) is applied at a position projected L (m) in the horizontal direction from the center of the output flange.



Example 2: When an external force F (N) is applied at a position projected L (m) in the vertical direction from the output flange mounting surface.

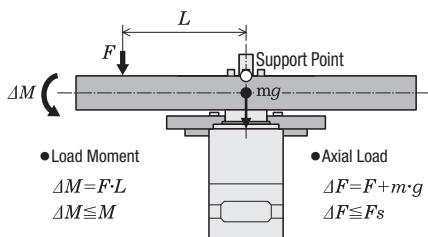


◇ **Harmonic Geared Type**

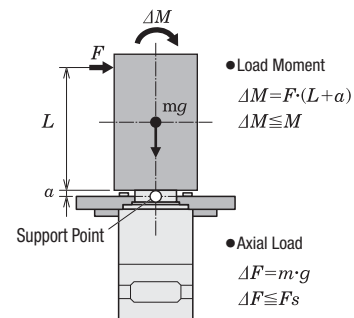
Motor Frame Size	Permissible Axial Load N (lb.)	Permissible Moment Load N·m (lb-in)	Constant α m (in.)
42 mm (1.65 in.)	220 (49)	5.6 (49)	0.009 (0.35)
60 mm (2.36 in.)	450 (101)	11.6 (102)	0.0114 (0.45)

The permissible moment load can be calculated with the following formula.

Example 1: When an external force F (N) is applied at a position projected L (m) in the horizontal direction from the center of the output flange.



Example 2: When an external force F (N) is applied at a position projected L (m) in the vertical direction from the output flange mounting surface.



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

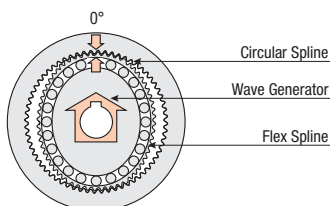
Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Details of the Harmonic Geared Type Accuracy

● Principle and Structure



● Details of the Accuracy

Unlike the conventional spur gear gearhead, the harmonic gear has no backlash. The harmonic gear has many teeth in simultaneous meshing engagement, and is designed to average out the effects of tooth pitch error and cumulative pitch error on rotation accuracy to ensure high positioning accuracy.

Also, harmonic gears have high gear ratios, so torsion when the load torque is applied to the output shaft is much smaller than a single motor and other geared motor. Rigidity is high and less subject to load fluctuation and enables stable positioning. When the high positioning accuracy and rigidity are required, refer to the following characteristics.

◇ Angular Transmission Accuracy

Angular transmission error is the difference between the theoretical rotation angle of the output shaft, as calculated from the input pulse count, and actual rotation angle. It is represented as the difference between the min. and max. error value in the set of measurements taken for a single rotation of the output shaft starting from an arbitrary position.

Product Name	Angular Transmission Accuracy [arcmin]
AZM24-HS □	2 (0.034°)
AZM46-HS □	1.5 (0.025°)
AZM66-HS □	
AZM98-HS □	1 (0.017°)

● Values in no-load condition (reference of gear part)

◇ Torque – Torsion Characteristics

In actual applications, there is always frictional load, and displacement is produced as a result of this load. If the frictional load is constant, the displacement will be constant for unidirectional operation. However, in bidirectional operation, double the displacement is produced over a round trip. This displacement can be estimated from the following torque – torsion characteristics. This displacement occurs when an external force is applied as the gear is stopped, or when the gear is driven under a frictional load. The slope can be approximated with the spring constant in the following 3 classes, depending on the size of the load torque, and can be estimated through calculation.

1. Load torque T_L is T_1 max.

$$\theta = \frac{T_L}{K_1} \text{ [min]}$$

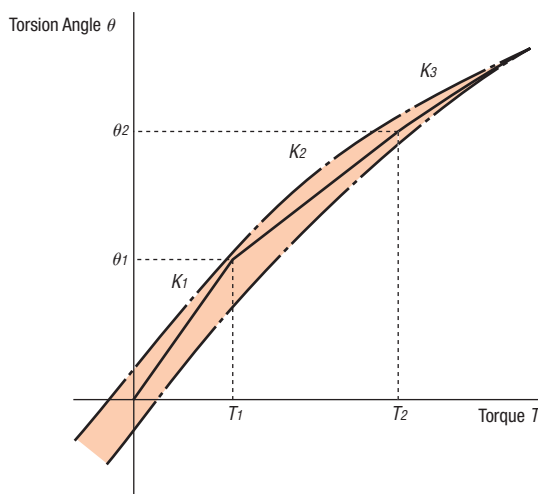
2. Load torque T_L exceeds T_1 and is T_2 max.

$$\theta = \theta_1 + \frac{T_L - T_1}{K_2} \text{ [min]}$$

3. Load torque T_L exceeds T_2

$$\theta = \theta_2 + \frac{T_L - T_2}{K_3} \text{ [min]}$$

The torsion angle of the harmonic gear alone is calculated according to the size of the load torque.



Torsion Angle – Torque Characteristics

Values for Determining Torsion Angle

Product Name	Gear Ratio	T1 N·m	K1 N·m/min	θ_1 min	T2 N·m	K2 N·m/min	θ_2 min	K3 N·m/min
AZM24-HS50	50	0.29	0.08	3.7	—	0.12	—	—
AZM24-HS100	100	0.29	0.1	2.9	1.5	0.15	11	0.21
AZM46-HS50	50	0.8	0.64	1.25	2	0.87	2.6	0.93
AZM46-HS100	100	0.8	0.79	1.02	2	0.99	2.2	1.28
AZM66-HS50	50	2	0.99	2	6.9	1.37	5.6	1.66
AZM66-HS100	100	2	1.37	1.46	6.9	1.77	4.2	2.1
AZM98-HS50	50	7	3.8	1.85	25	5.2	5.3	6.7
AZM98-HS100	100	7	4.7	1.5	25	7.3	4	8.4

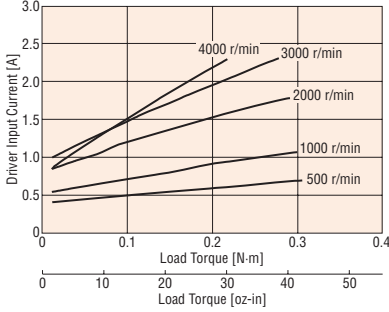
Load Torque – Driver Input Current Characteristics

This is the relationship between the load torque and driver input current at each speed when the motor is actually operated. From these characteristics, the current capacity required when used for multiple axes can be estimated. For geared motors, convert to torque and speed at the motor axis.

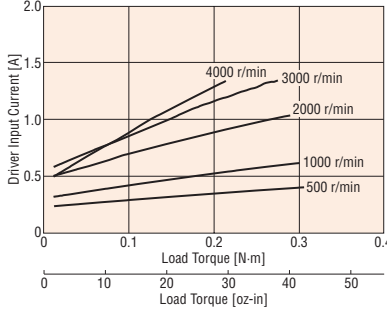
$$\text{Motor shaft speed} = \text{Gear output shaft speed} \times \text{Gear ratio} \text{ [r/min]}$$

$$\text{Motor shaft torque} = \frac{\text{Gear output shaft torque}}{\text{Gear ratio}} \text{ N}\cdot\text{m (oz}\cdot\text{in)}$$

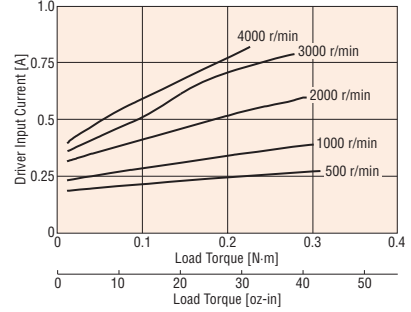
● Single-Phase 100-120 VAC
AZM46□C



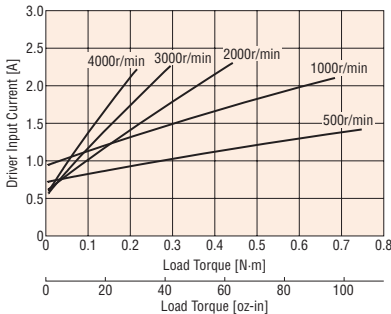
● Single-Phase 200-240 VAC
AZM46□C



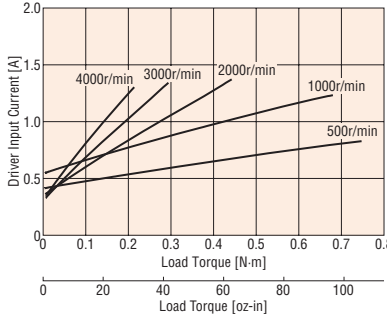
● Three-Phase 200-240 VAC
AZM46□C



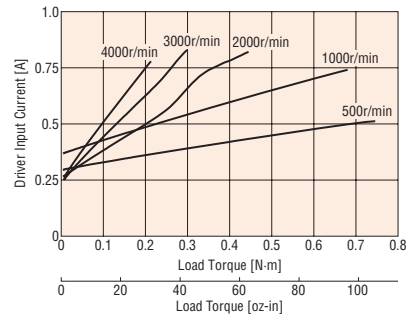
AZM48□C



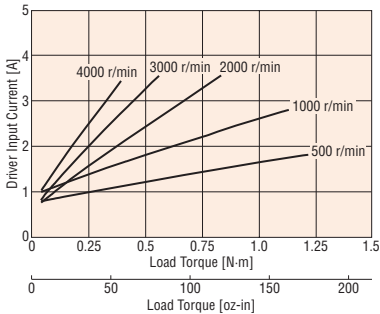
AZM48□C



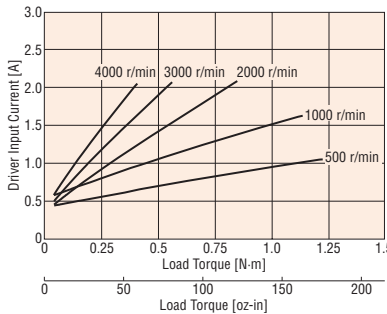
AZM48□C



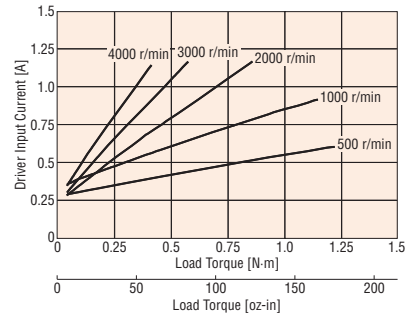
AZM66□C



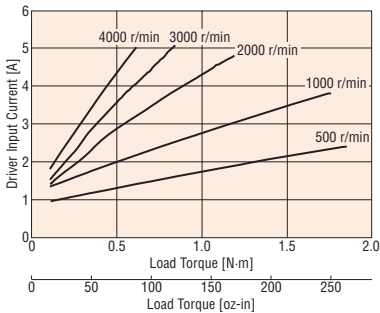
AZM66□C



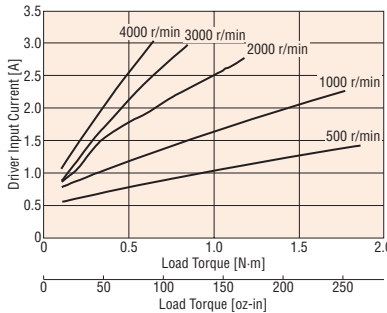
AZM66□C



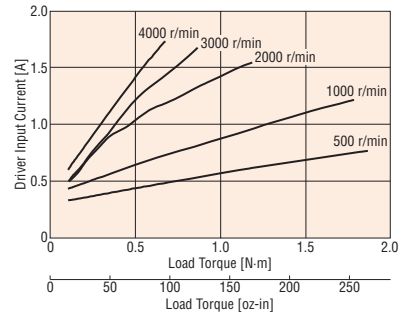
AZM69□C



AZM69□C



AZM69□C



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

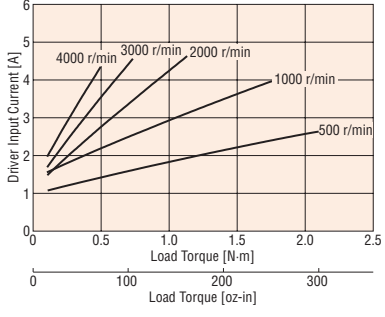
Compact
Drivers

Cables /
Accessories

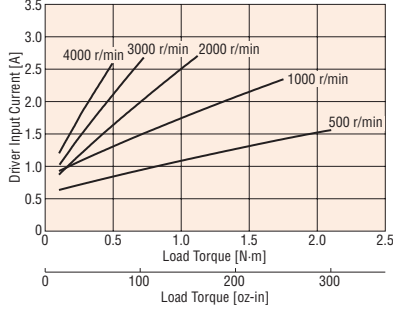
Actuators
AZ Series
Equipped

- Stepper Motors **AZ**
- Linear Slides **EZS**
- Cylinders **EAC**
- Compact Cylinders **DR**
- Rack & Pinion **L**
- Gripper **EH**
- Rotary Actuators **DGI**

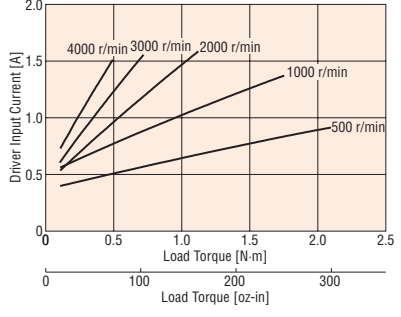
● Single-Phase 100-120 VAC
AZM98□C



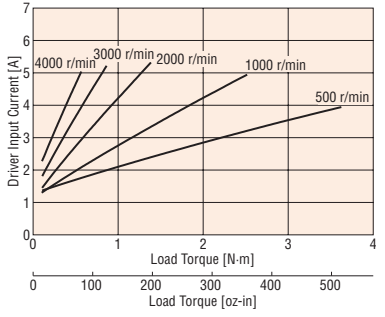
● Single-Phase 200-240 VAC
AZM98□C



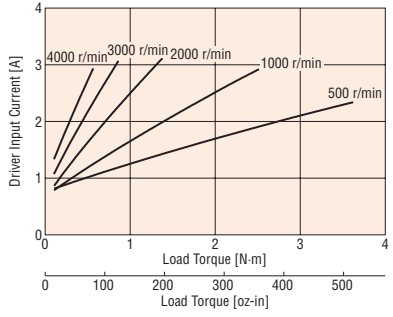
● Three-Phase 200-240 VAC
AZM98□C



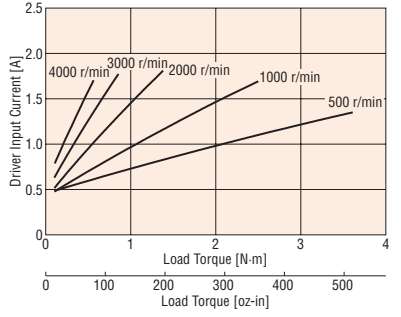
AZM911□C



AZM911□C



AZM911□C



Dimensions Unit: mm (in.)

● Motor

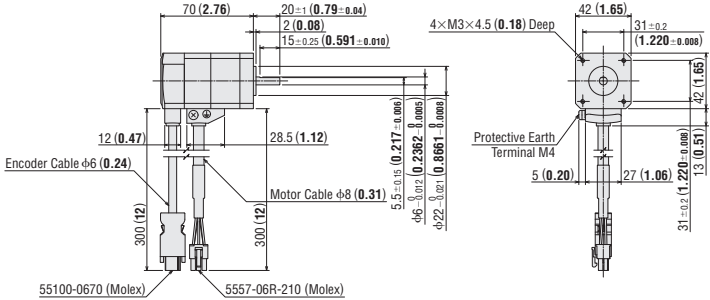
◇ Standard Type

Frame Size 42 mm (1.65 in.)

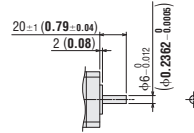
2D & 3D CAD

Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM46AC	0.44 (0.97)	B1092
Round Shaft	AZM46AOC		B1288

Shaft Flat on One Side



Round Shaft

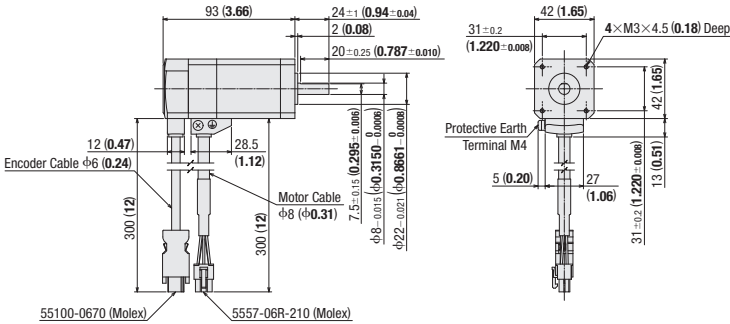


Frame Size 42 mm (1.65 in.)

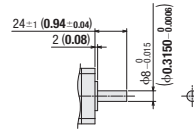
2D & 3D CAD

Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM48AC	0.68	B1312
Round Shaft	AZM48AOC		B1289
With Key	AZM48A1C		B1299

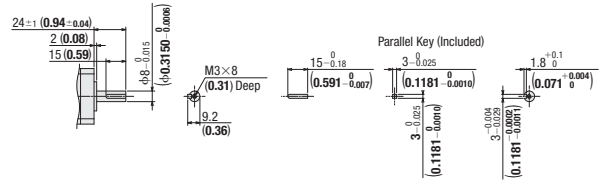
Shaft Flat on One Side



Round Shaft



With Key

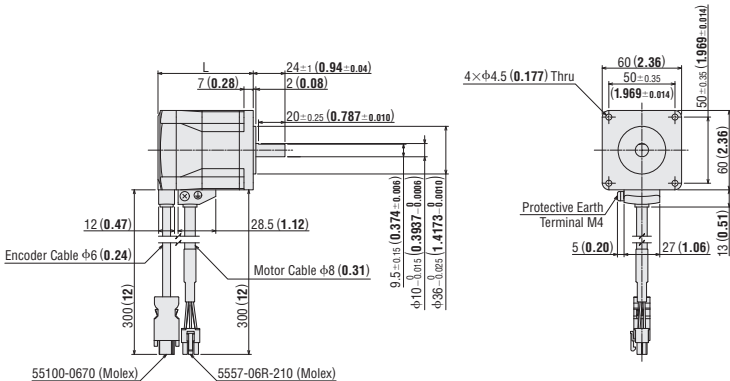


Frame Size 60 mm (2.36 in.)

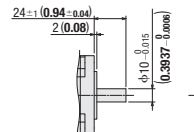
2D & 3D CAD

Motor Shaft Type	Product Name	L	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM66AC	72 (2.83)	0.91 (2.0)	B1093
Round Shaft	AZM66AOC			B1290
With Key	AZM66A1C			B1300
Shaft Flat on One Side	AZM69AC	97.5 (3.84)	1.4 (3.1)	B1129
Round Shaft	AZM69AOC			B1291
With Key	AZM69A1C			B1301

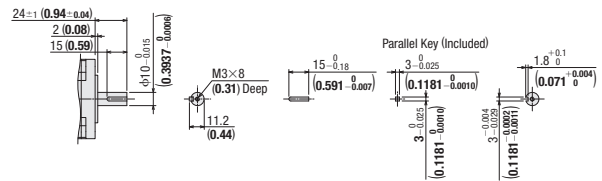
Shaft Flat on One Side



Round Shaft



With Key



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

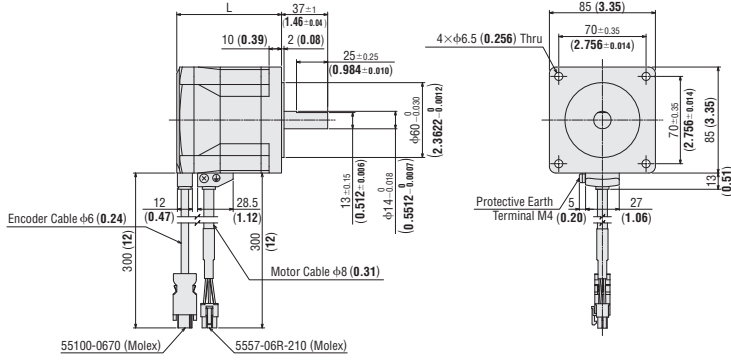
- Stepper Motors
AZ
- Linear Slides
EZS
- Cylinders
EAC
- Compact Cylinders
DR
- Rack & Pinion
L
- Gripper
EH
- Rotary Actuators
DGI

Frame Size 85 mm (3.35 in.)

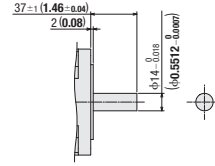
2D & 3D CAD

Motor Shaft Type	Product Name	L	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM98AC	84 (3.31)	1.9 (4.2)	B1181
Round Shaft	AZM98A0C			B1292
With Key	AZM98A1C			B1302
Shaft Flat on One Side	AZM911AC	114 (4.49)	3 (6.6)	B1183
Round Shaft	AZM911A0C			B1293
With Key	AZM911A1C			B1303

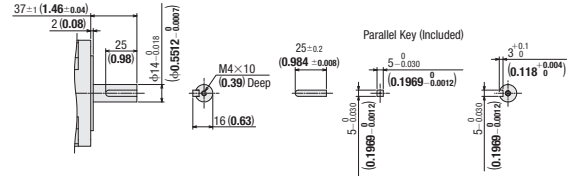
Shaft Flat on One Side



Round Shaft



With Key



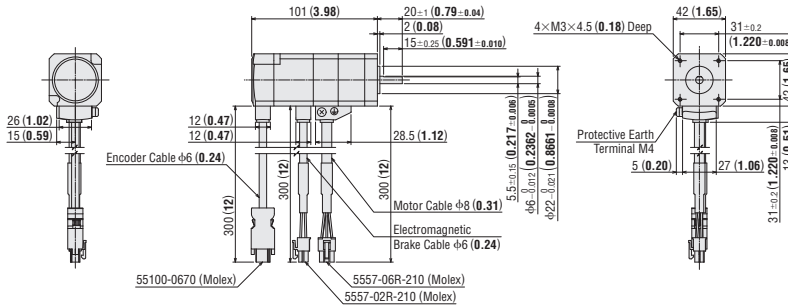
Standard Type with Electromagnetic Brake

Frame Size 42 mm (1.65 in.)

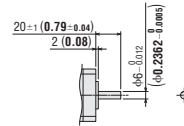
2D & 3D CAD

Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM46MC	0.61 (1.34)	B1154
Round Shaft	AZM46MOC		B1294

Shaft Flat on One Side



Round Shaft

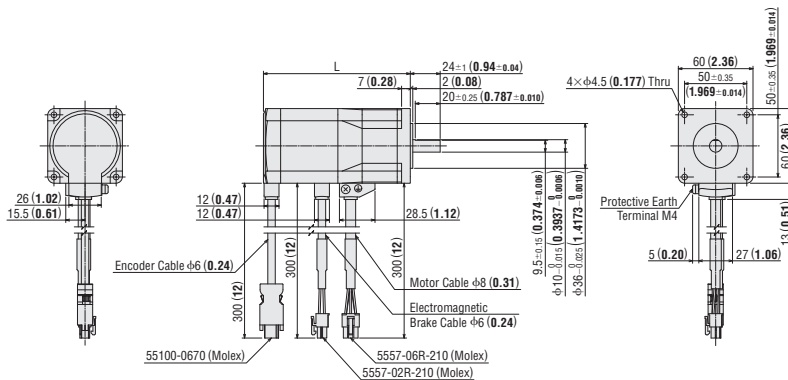


Frame Size 60 mm (2.36 in.)

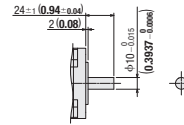
2D & 3D CAD

Motor Shaft Type	Product Name	L	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM66MC	118 (4.65)	1.3 (2.9)	B1155
Round Shaft	AZM66MOC			B1295
With Key	AZM66M1C			B1305
Shaft Flat on One Side	AZM69MC	143.5 (5.65)	1.8 (4.0)	B1156
Round Shaft	AZM69MOC			B1296
With Key	AZM69M1C			B1306

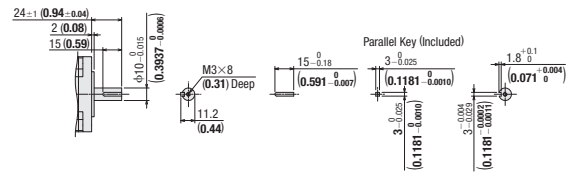
Shaft Flat on One Side



Round Shaft



With Key

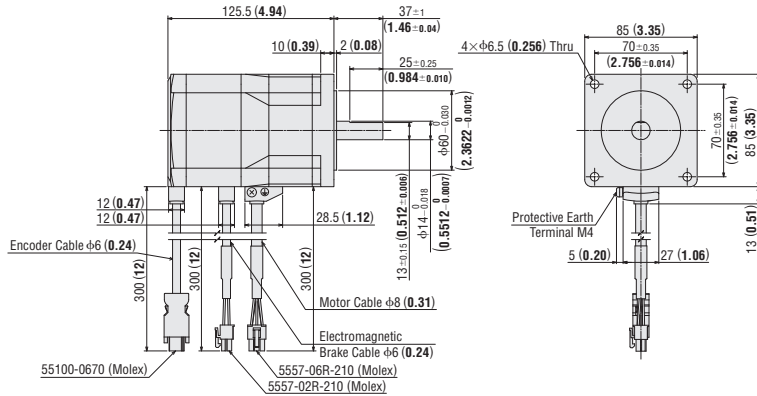


Frame Size 85 mm (3.35 in.)

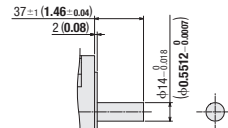
2D & 3D CAD

Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM98MC	2.5 (5.5)	B1182
Round Shaft	AZM98MOC		B1297
With Key	AZM98M1C		B1307

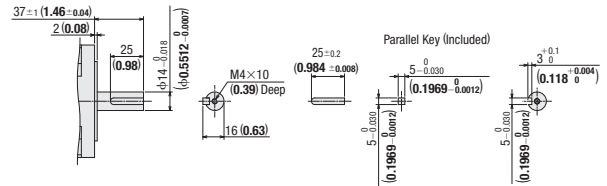
Shaft Flat on One Side



Round Shaft



With Key



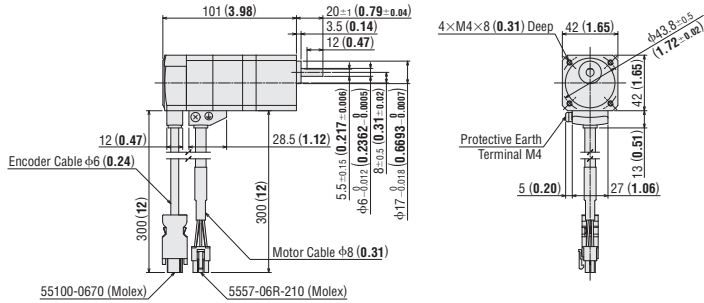
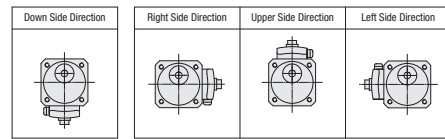
◇ TS Geared Type

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM46AC-TS	3.6, 7.2, 10, 20, 30	0.59 (1.30)	B1157
Right Side Direction	AZM46AC-TS R			B1272
Upper Side Direction	AZM46AC-TS U			B1270
Left Side Direction	AZM46AC-TS L			B1271

● Cable Outlet Direction

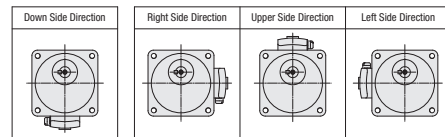


Frame Size 60 mm (2.36 in.)

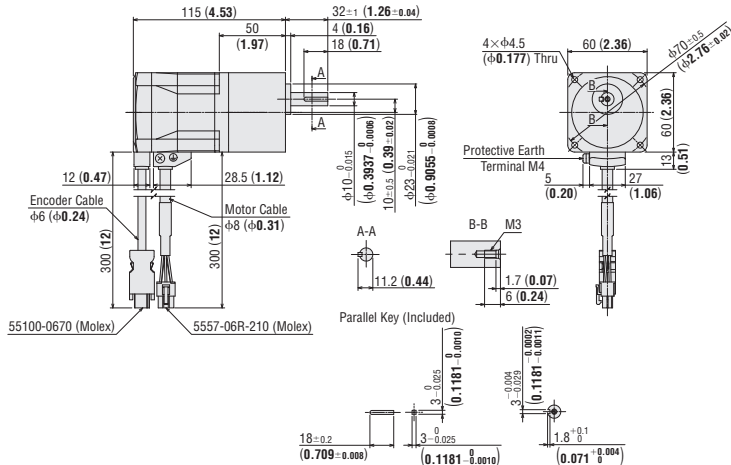
2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM66AC-TS	3.6, 7.2, 10, 20, 30	1.3 (2.9)	B1158
Right Side Direction	AZM66AC-TS R			B1275
Upper Side Direction	AZM66AC-TS U			B1273
Left Side Direction	AZM66AC-TS L			B1274

● Cable Outlet Direction



● Installation Screws: M4×60 P0.7 (4 included)



● Enter the gear ratio in the box () within the product name.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

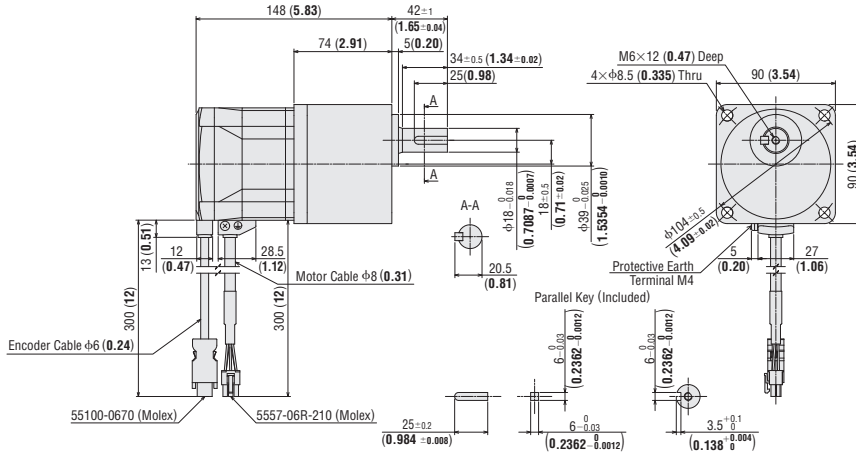
Actuators
AZ Series
Equipped

Frame Size 90 mm (3.54 in.)

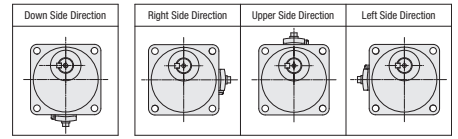
2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM98AC-TS <input type="checkbox"/>	3.6, 7.2, 10, 20, 30	3.1 (6.9)	B1184
Right Side Direction	AZM98AC-TS <input type="checkbox"/> R			B1278
Upper Side Direction	AZM98AC-TS <input type="checkbox"/> U			B1276
Left Side Direction	AZM98AC-TS <input type="checkbox"/> L			B1277

● Installation Screws: M8×90 P1.25 (4 included)



● Cable Outlet Direction

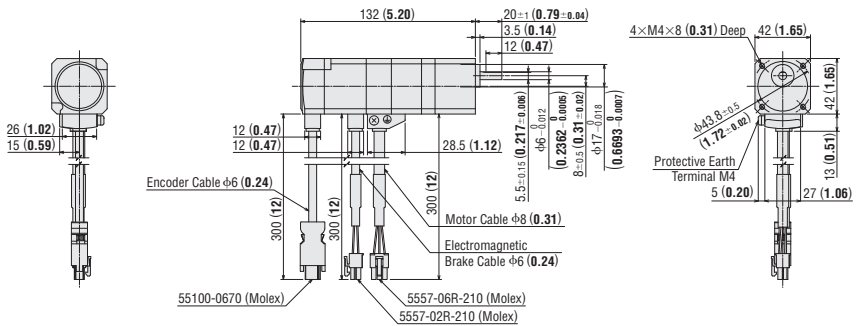


◇ TS Geared Type with Electromagnetic Brake

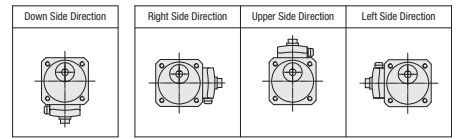
Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM46MC-TS <input type="checkbox"/>	3.6, 7.2, 10, 20, 30	0.76 (1.67)	B1216
Right Side Direction	AZM46MC-TS <input type="checkbox"/> R			B1284
Upper Side Direction	AZM46MC-TS <input type="checkbox"/> U			B1282
Left Side Direction	AZM46MC-TS <input type="checkbox"/> L			B1283



● Cable Outlet Direction

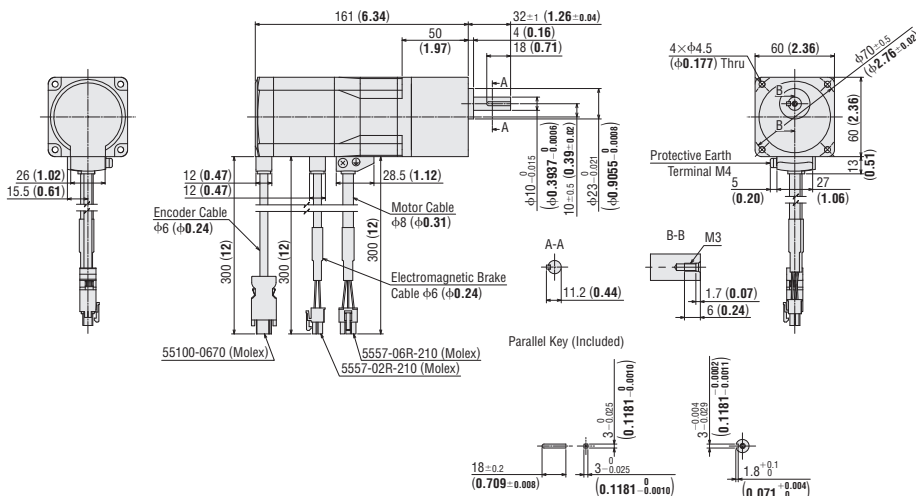


Frame Size 60 mm (2.36 in.)

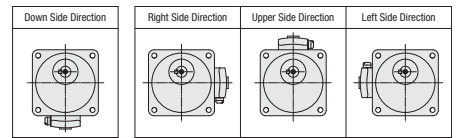
2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM66MC-TS <input type="checkbox"/>	3.6, 7.2, 10, 20, 30	1.7 (3.7)	B1217
Right Side Direction	AZM66MC-TS <input type="checkbox"/> R			B1287
Upper Side Direction	AZM66MC-TS <input type="checkbox"/> U			B1285
Left Side Direction	AZM66MC-TS <input type="checkbox"/> L			B1286

● Installation Screws: M4×60 P0.7 (4 included)



● Cable Outlet Direction



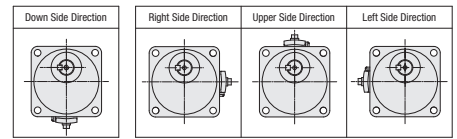
● Enter the gear ratio in the box within the product name.

Frame Size 90 mm (3.54 in.)

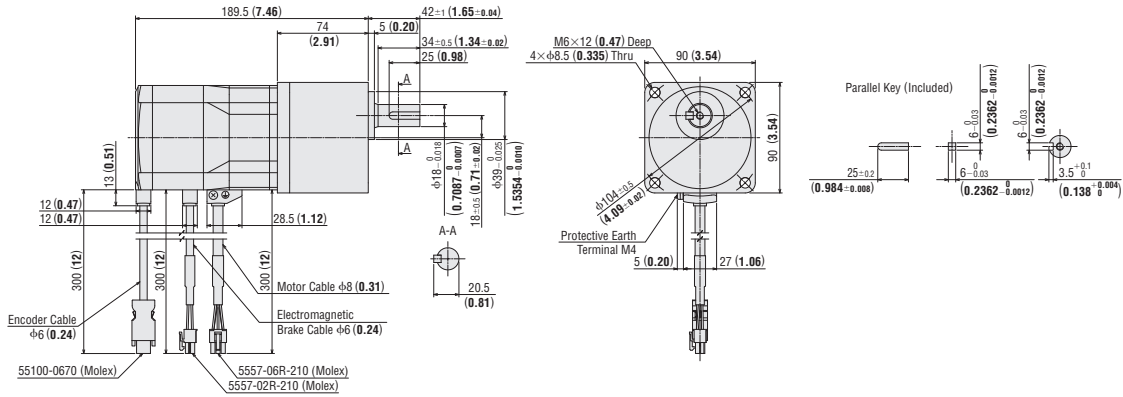
2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM98MC-TS ■	3.6, 7.2, 10, 20, 30	3.7 (8.1)	B1190
Right Side Direction	AZM98MC-TS ■ R			B1281
Upper Side Direction	AZM98MC-TS ■ U			B1279
Left Side Direction	AZM98MC-TS ■ L			B1280

● Cable Outlet Direction



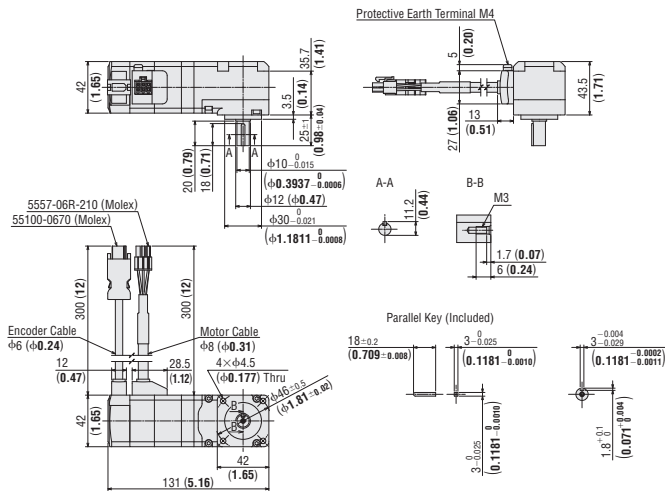
● Installation Screws: M8×90 P1.25 (4 included)



◇ FC Geared Type

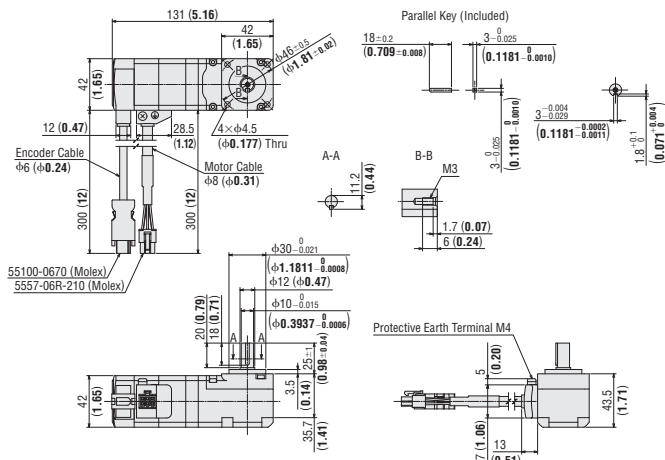
Frame Size 42 mm (1.65 in.) Cable Outlet Direction Upper Side Direction 2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AC-FC ■ UA	7.2, 10, 20, 30	0.79 (1.74)	B1314



Frame Size 42 mm (1.65 in.) Cable Outlet Direction Down Side Direction 2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AC-FC ■ DA	7.2, 10, 20, 30	0.79 (1.74)	B1313



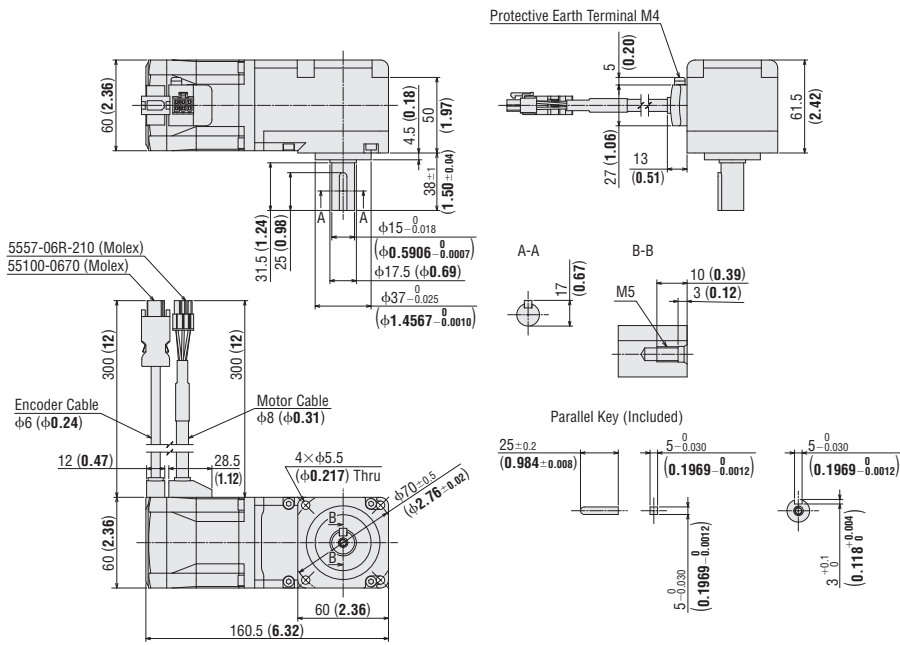
● Enter the gear ratio in the box (■) within the product name.

- Features
- Motors
AC Input
- Motors
DC Input
- Ethernet/IP
Compatible
Drivers
- EtherCAT
Compatible
Drivers
- Built-in
Controller
Drivers
- Drivers with
RS-485
- Pulse Input
Drivers
- Network
Multi-Axis
Drivers
- Compact
Drivers
- Cables /
Accessories
- Actuators
AZ Series
Equipped

- Stepper Motors **AZ**
- Linear Slides **EZS**
- Cylinders **EAC**
- Compact Cylinders **DR**
- Rack & Pinion **L**
- Gripper **EH**
- Rotary Actuators **DGI**

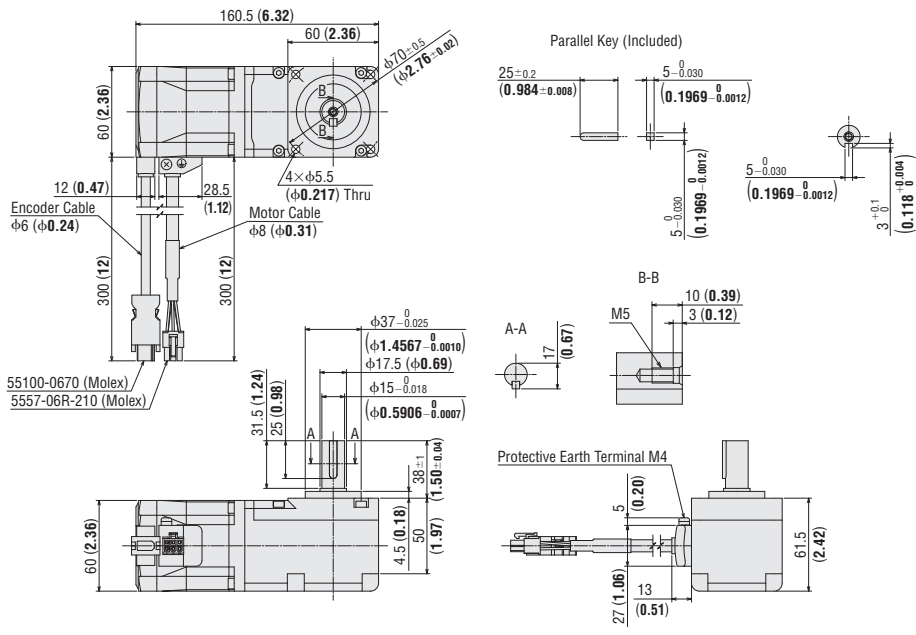
Frame Size 60 mm (2.36 in.) Cable Outlet Direction Upper Side Direction **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AC-FC UA	7.2, 10, 20, 30	1.8 (4.0)	B1318



Frame Size 60 mm (2.36 in.) Cable Outlet Direction Down Side Direction **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AC-FC DA	7.2, 10, 20, 30	1.8 (4.0)	B1317

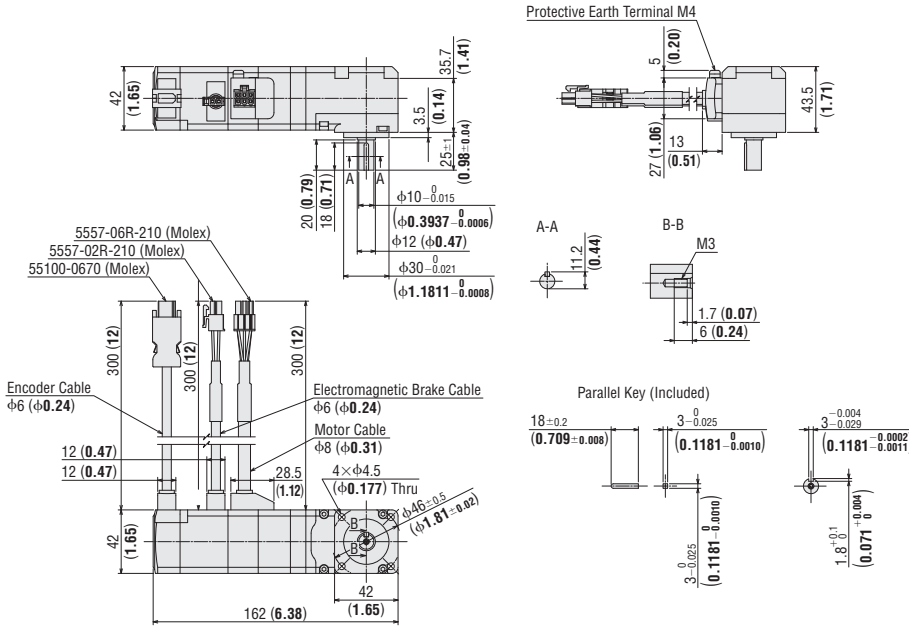


● Enter the gear ratio in the box (■) within the product name.

◇ FC Geared Type with Electromagnetic Brake

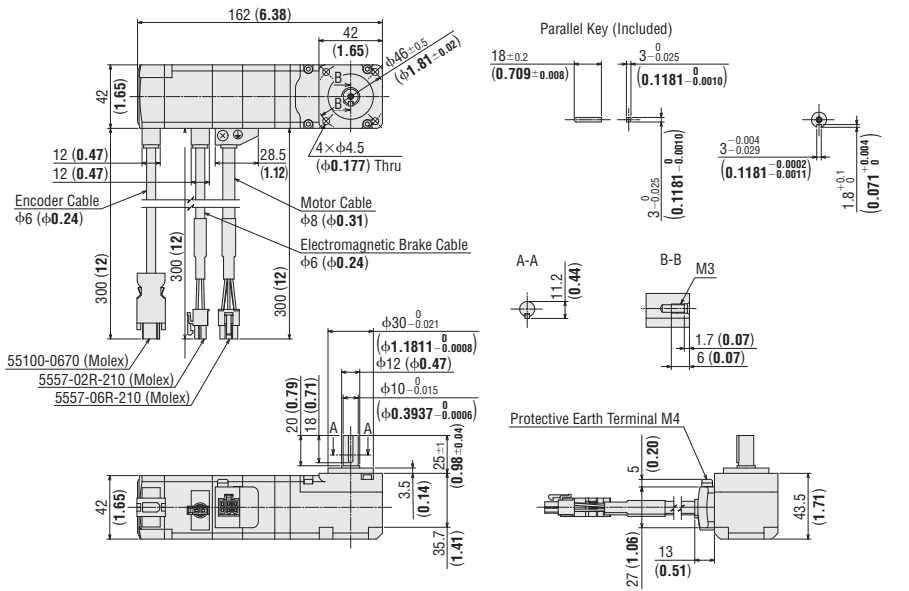
Frame Size 42 mm (1.65 in.) Cable Outlet Direction Upper Side Direction **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MC-FC <input type="checkbox"/> UA	7.2, 10, 20, 30	0.96 (2.1)	B1316



Frame Size 42 mm (1.65 in.) Cable Outlet Direction Down Side Direction **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MC-FC <input type="checkbox"/> DA	7.2, 10, 20, 30	0.96 (2.1)	B1315



● Enter the gear ratio in the box () within the product name.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

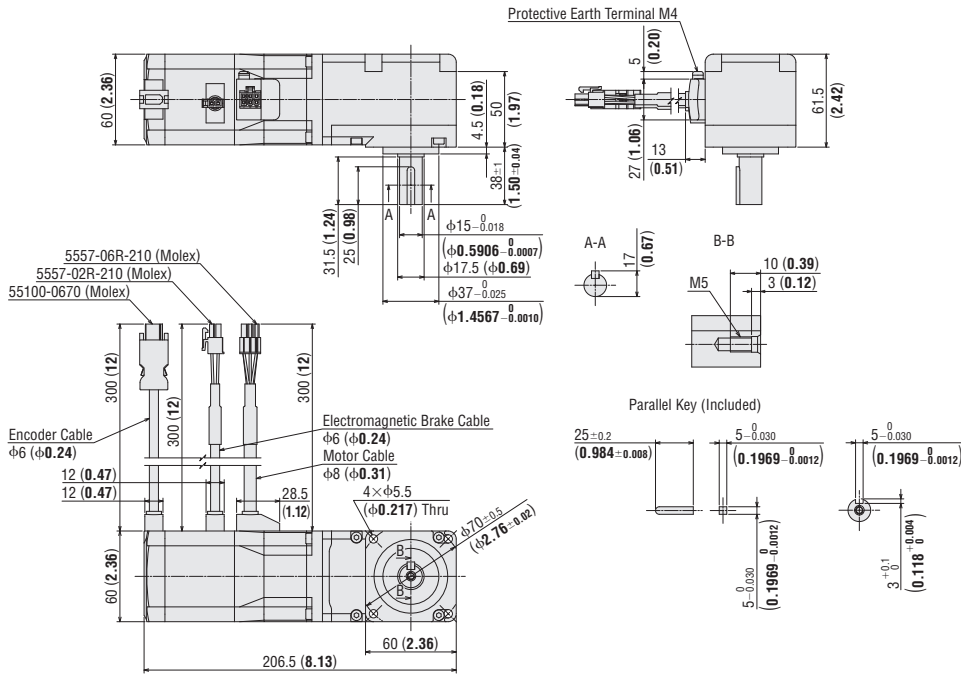
Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

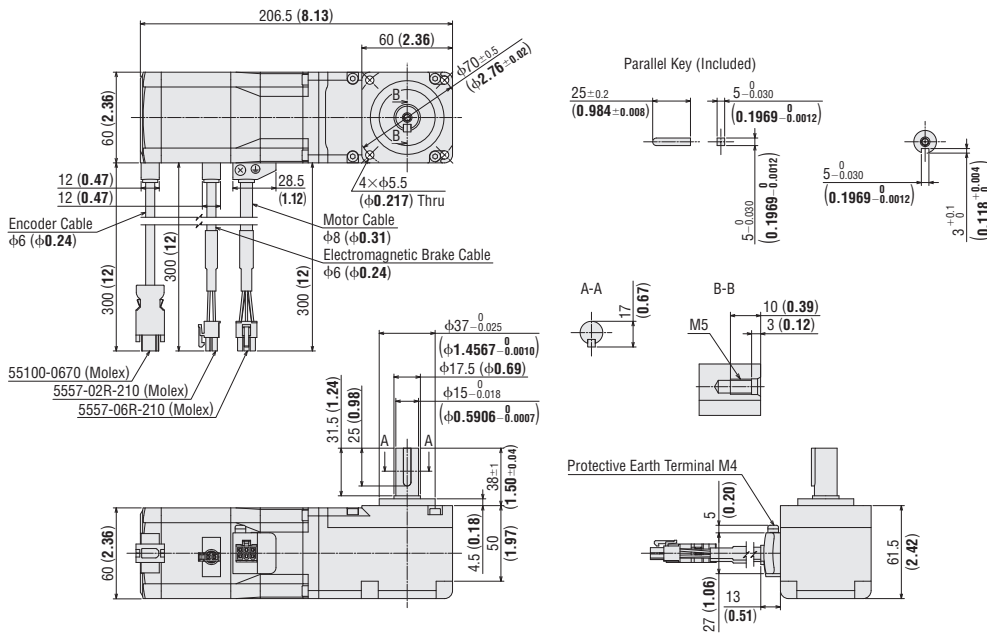
Frame Size 60 mm (2.36 in.) Cable Outlet Direction Upper Side Direction 2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MC-FC UA	7.2, 10, 20, 30	2.2 (4.8)	B1320



Frame Size 60 mm (2.36 in.) Cable Outlet Direction Down Side Direction 2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MC-FC DA	7.2, 10, 20, 30	2.2 (4.8)	B1319



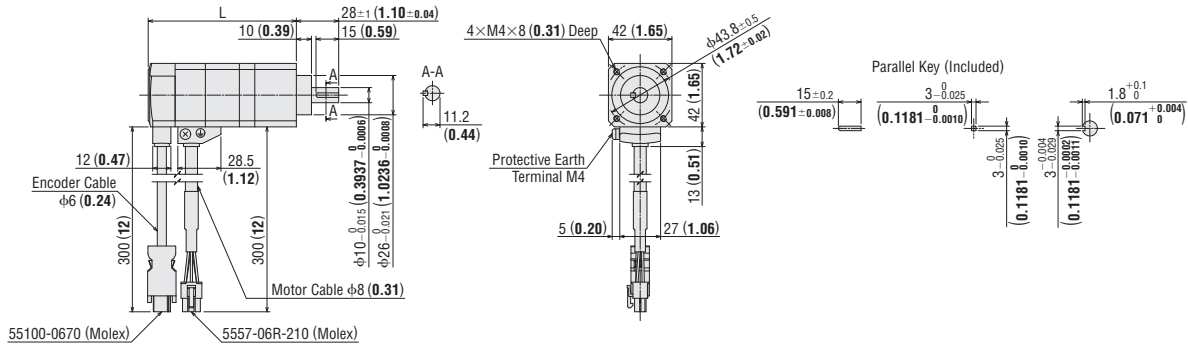
Enter the gear ratio in the box () within the product name.

◆ PS Gearing Type

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

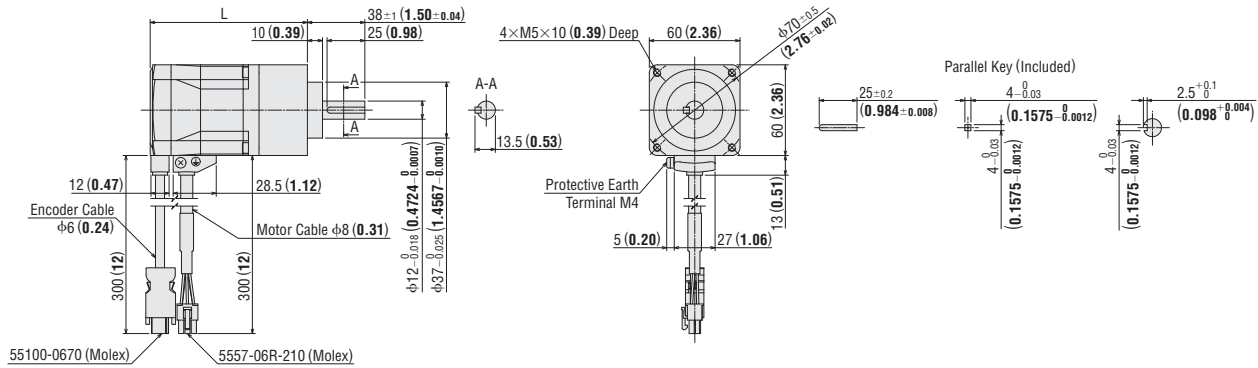
Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM46AC-PS <input type="checkbox"/>	5, 7.2, 10	98 (3.86)	0.64 (1.41)	B1159
	25, 36, 50	121.5 (4.78)	0.79 (1.74)	B1160



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

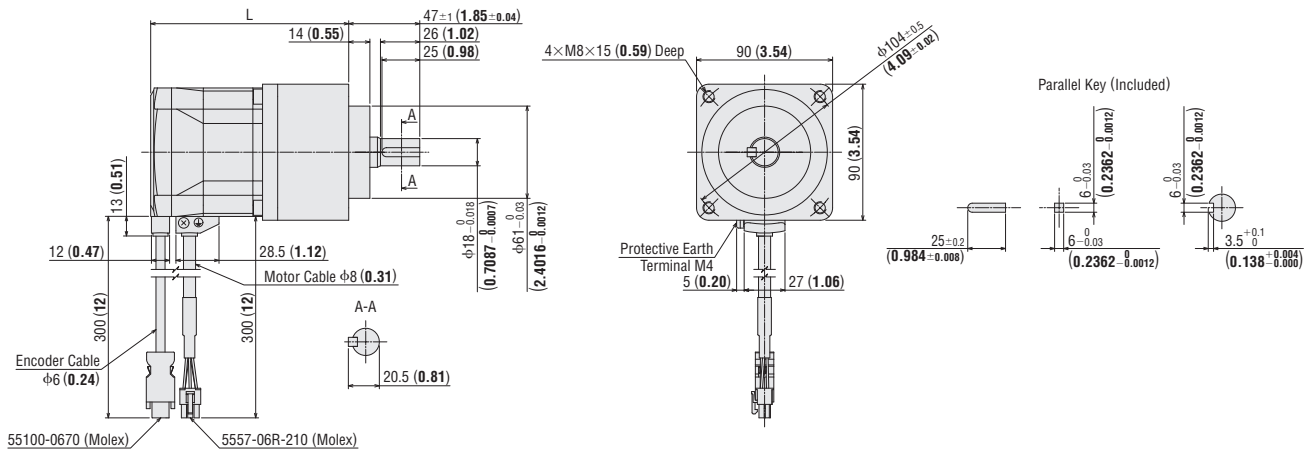
Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM66AC-PS <input type="checkbox"/>	5, 7.2, 10	104 (4.09)	1.3 (2.9)	B1161
	25, 36, 50	124 (4.88)	1.6 (3.5)	B1162



Frame Size 90 mm (3.54 in.)

2D & 3D CAD

Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM98AC-PS <input type="checkbox"/>	5, 7.2, 10	131 (5.16)	3.3 (7.3)	B1185
	25, 36, 50	158.5 (6.24)	4.1 (9.0)	B1186



● Enter the gear ratio in the box () within the product name.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

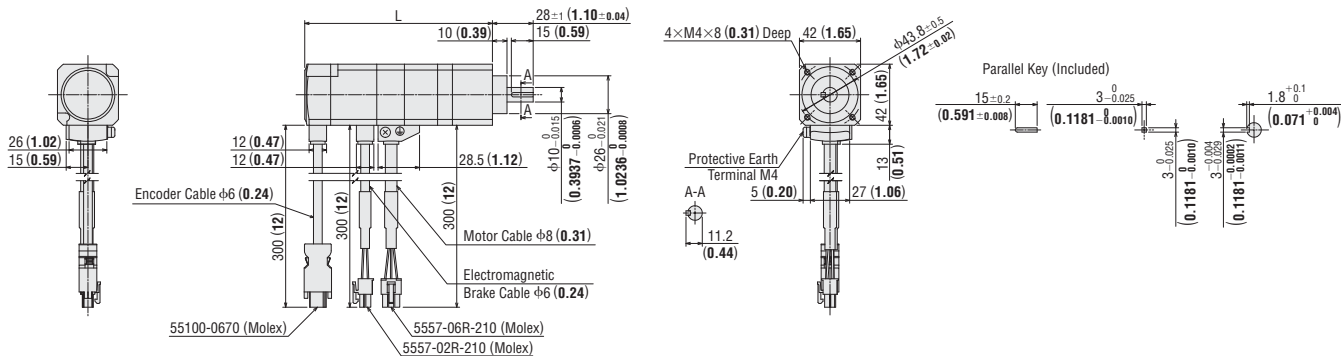
Actuators
AZ Series
Equipped

◇ PS Geared Type with Electromagnetic Brake

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

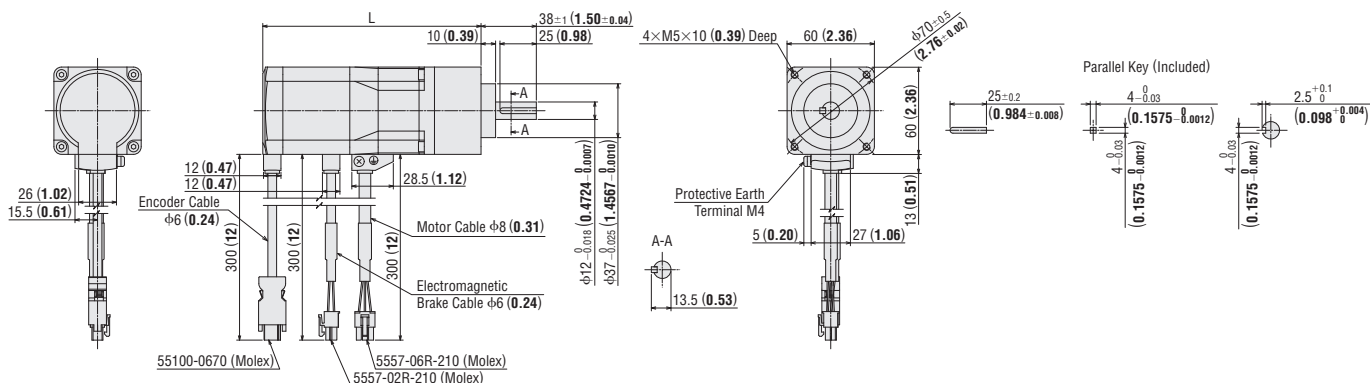
Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM46MC-PS <input type="checkbox"/>	5, 7.2, 10	129 (5.08)	0.81 (1.78)	B1218
	25, 36, 50	152 (5.98)	0.96 (2.1)	B1219



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

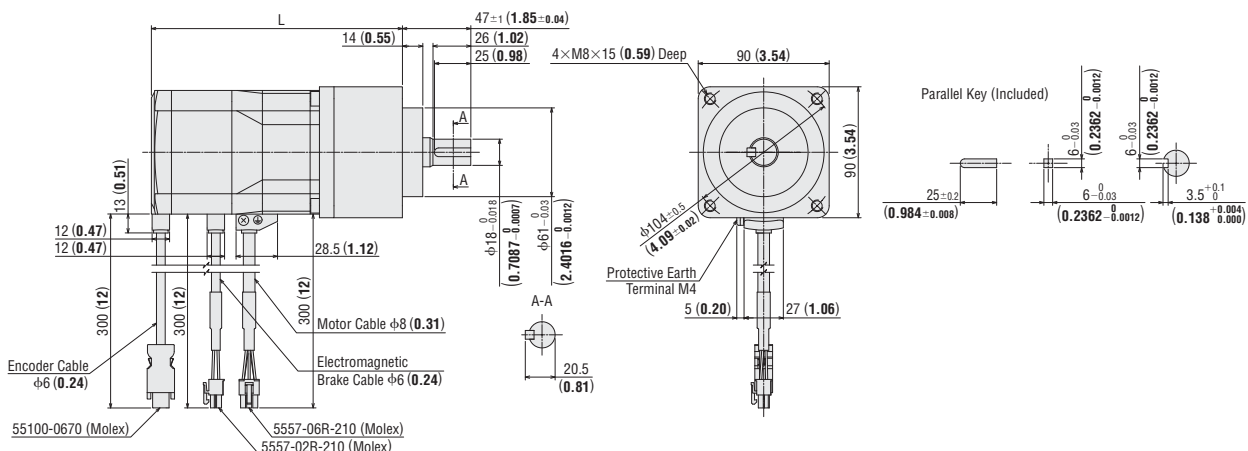
Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM66MC-PS <input type="checkbox"/>	5, 7.2, 10	150 (5.91)	1.7 (3.7)	B1220
	25, 36, 50	170 (6.69)	2.0 (4.4)	B1221



Frame Size 90 mm (3.54 in.)

2D & 3D CAD

Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM98MC-PS <input type="checkbox"/>	5, 7.2, 10	172.5 (6.79)	3.9 (8.6)	B1191
	25, 36, 50	200 (7.87)	4.7 (10.3)	B1192



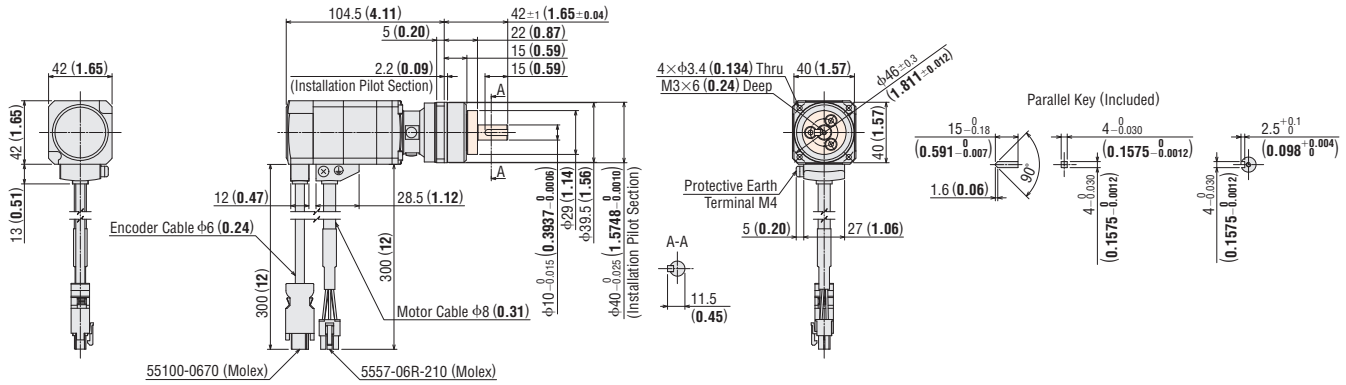
● Enter the gear ratio in the box (■) within the product name.

◆ HPG Geared Type Shaft Output Type

Frame Size 40 mm (1.57 in.)

2D & 3D CAD

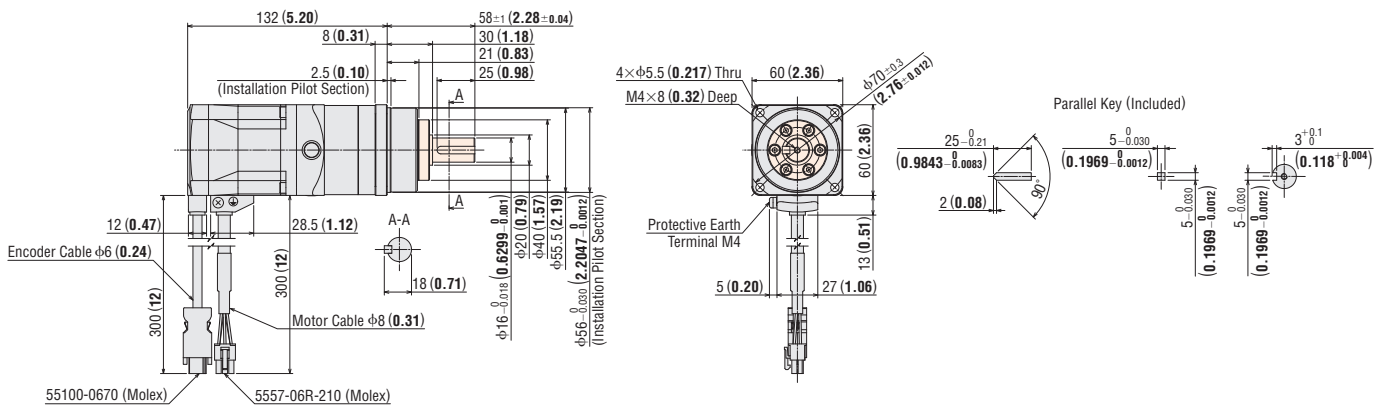
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AC-HP 	5, 9	0.71 (1.56)	B1163



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

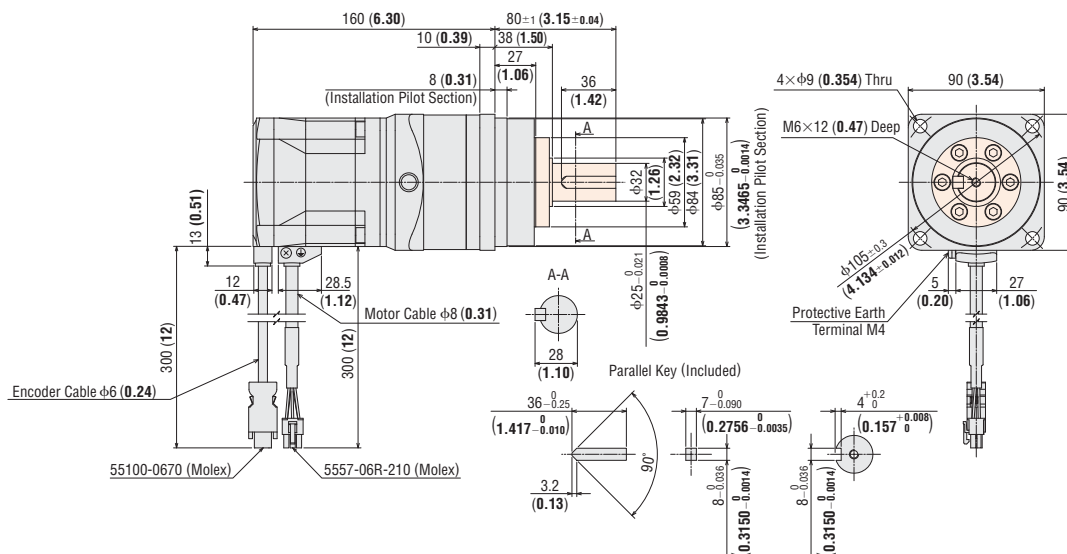
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AC-HP 	5, 15	1.9 (4.2)	B1165



Frame Size 90 mm (3.54 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM98AC-HP 	5, 15	4.8 (10.6)	B1187



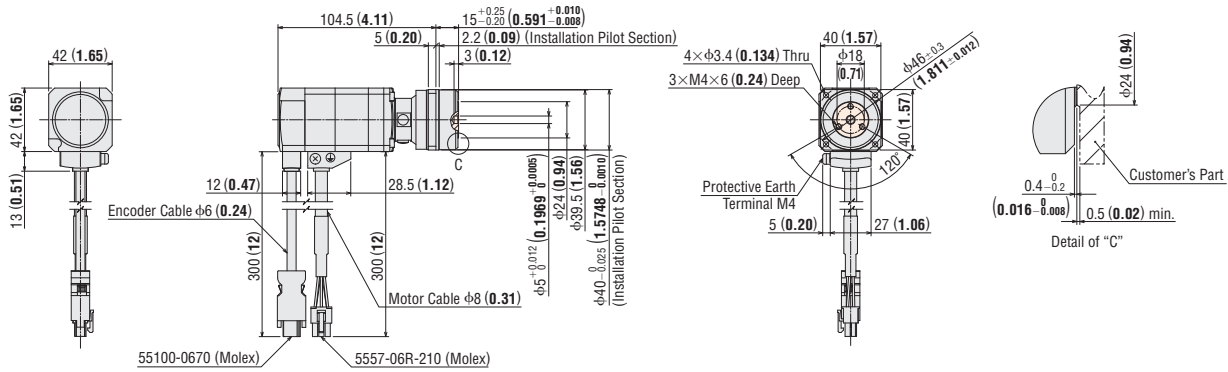
- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

- Features
- Motors
AC Input
- Motors
DC Input
- Ethernet/IP
Compatible
Drivers
- EtherCAT
Compatible
Drivers
- Built-in
Controller
Drivers
- Pulse Input
Drivers with
RS-485
- Pulse Input
Drivers
- Network
Multi-Axis
Drivers
- Compact
Drivers
- Cables /
Accessories
- Actuators
AZ Series
Equipped

◇ HPG Geared Type Flange Output Type
Frame Size 40 mm (1.57 in.)

2D & 3D CAD

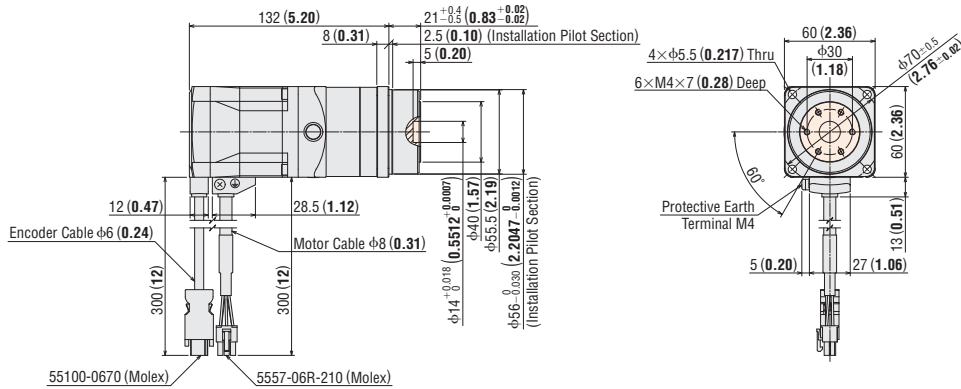
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AC-HP <input type="checkbox"/> F	5, 9	0.66 (1.45)	B1164



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

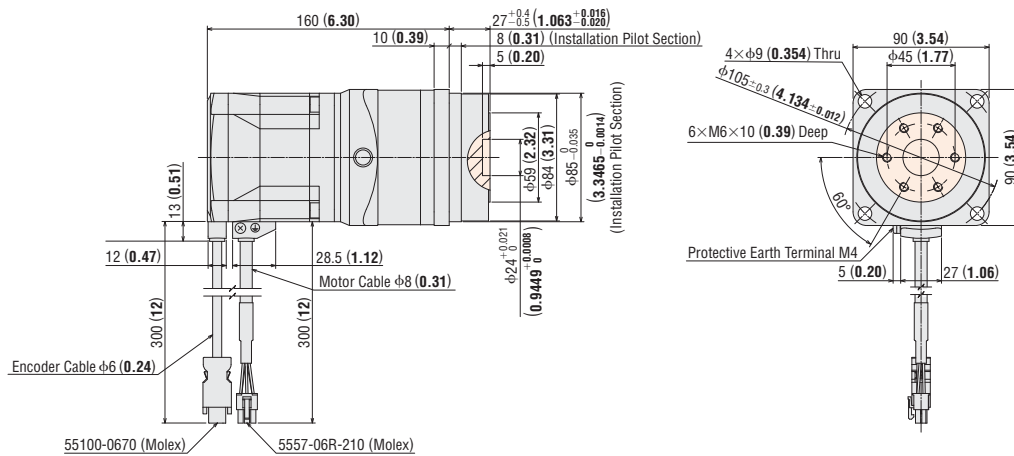
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AC-HP <input type="checkbox"/> F	5, 15	1.8 (4.0)	B1166



Frame Size 90 mm (3.54 in.)

2D & 3D CAD

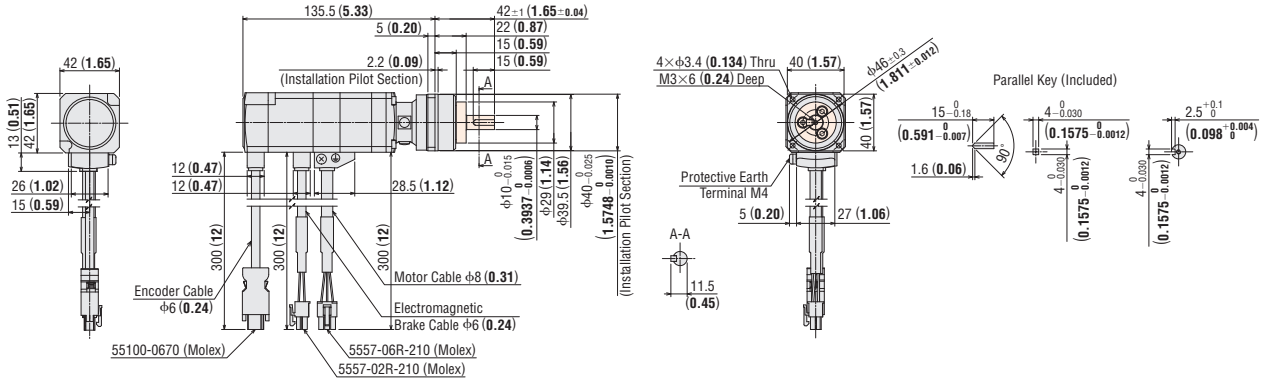
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM98AC-HP <input type="checkbox"/> F	5	4.5 (9.9)	B1188
	15	4.4 (9.7)	



● The color in the dimensions drawing indicates the rotating part.
 ● Enter the gear ratio in the box within the product name.

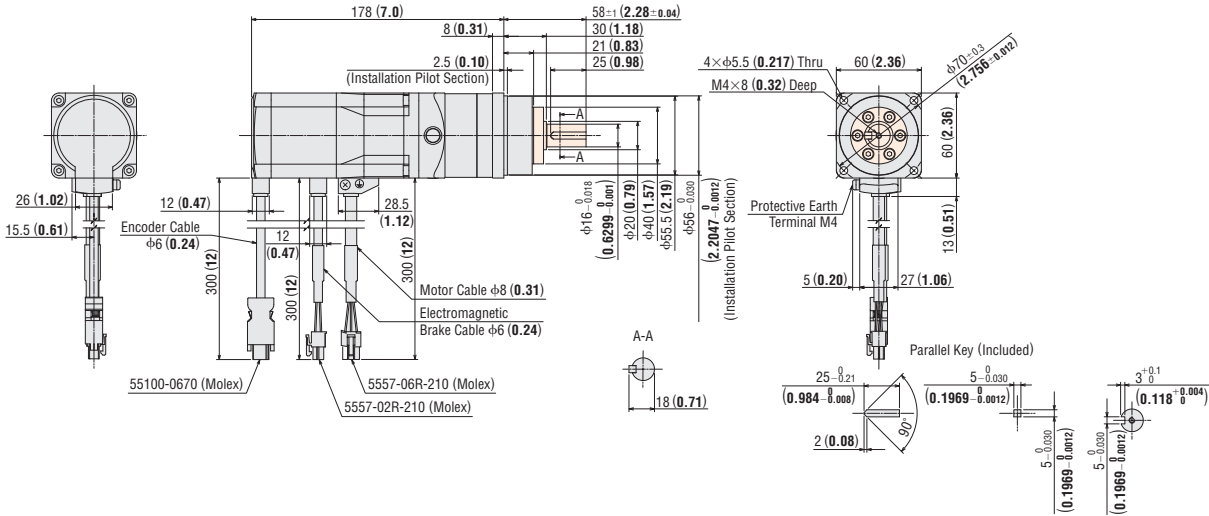
◆ **HPG Geared Type with Electromagnetic Brake Shaft Output Type**
Frame Size 40 mm (1.57 in.) **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MC-HP 	5, 9	0.88 (1.94)	B1222



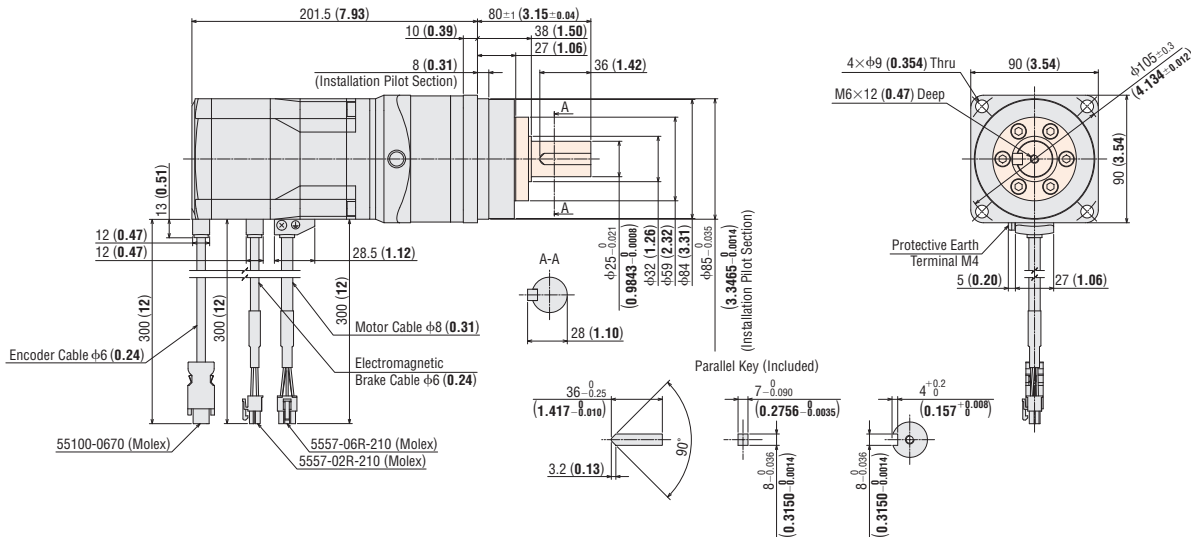
Frame Size 60 mm (2.36 in.) **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MC-HP 	5, 15	2.3 (5.1)	B1224



Frame Size 90 mm (3.54 in.) **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM98MC-HP 	5, 15	5.4 (11.9)	B1193



- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

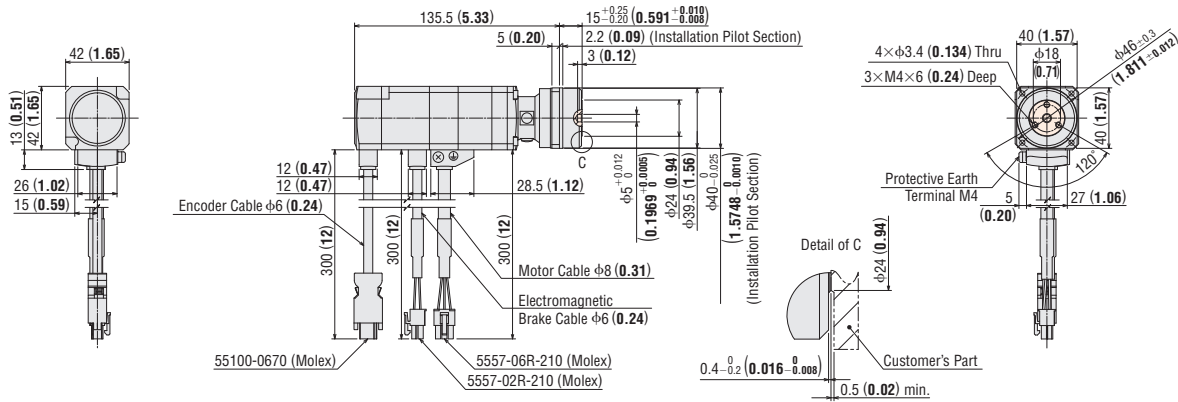
- Features
- Motors
AC Input
- Motors
DC Input
- Ethernet/IP
Compatible
Drivers
- EtherCAT
Compatible
Drivers
- Built-in
Controller
Drivers
- Pulse Input
Drivers with
RS-485
- Pulse Input
Drivers
- Network
Multi-Axis
Drivers
- Compact
Drivers
- Cables /
Accessories
- Actuators
AZ Series
Equipped

◇ HPG Geared Type with Electromagnetic Brake Flange Output Type

Frame Size 40 mm (1.57 in.)

2D & 3D CAD

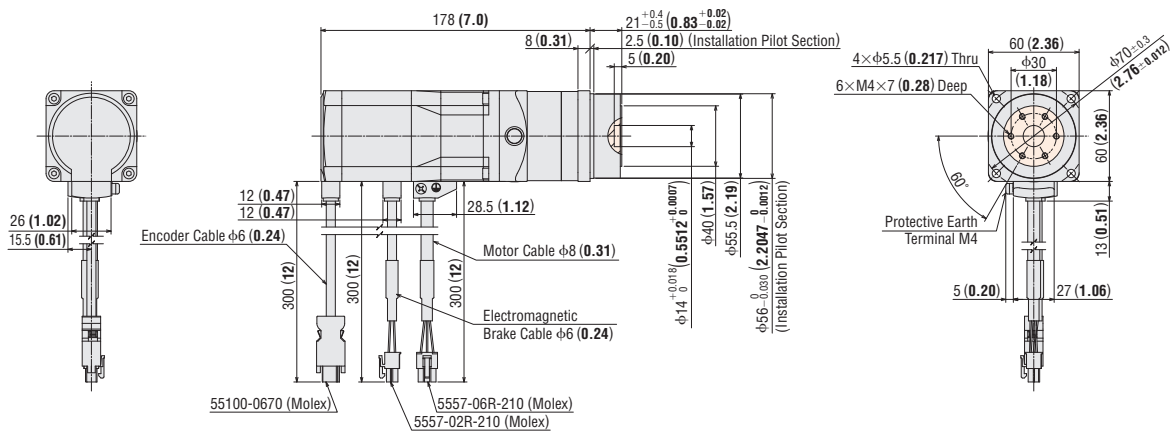
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MC-HP F	5, 9	0.83 (1.83)	B1223



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

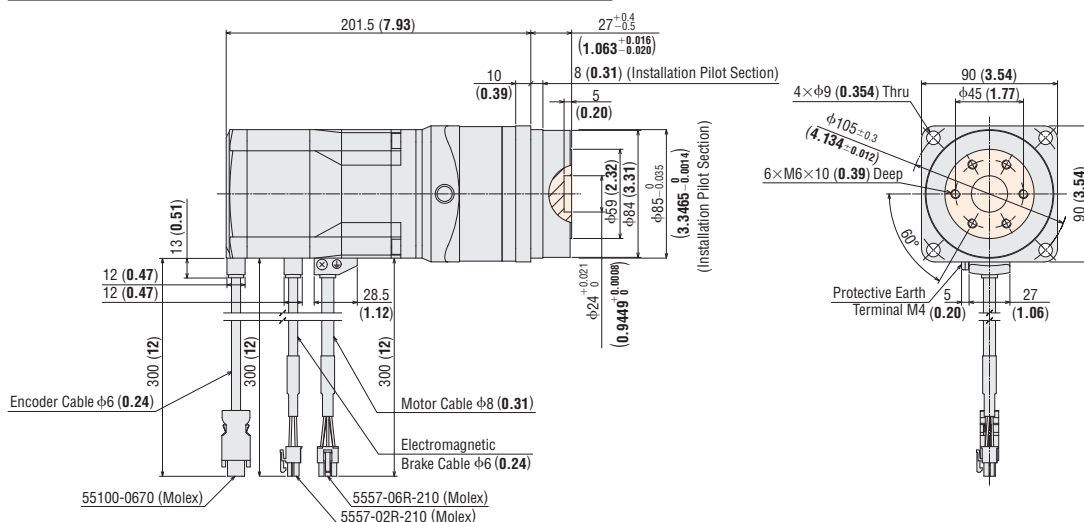
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MC-HP F	5, 15	2.2 (4.8)	B1225



Frame Size 90 mm (3.54 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM98MC-HP F	5	5.1 (11.2)	B1194
	15	5 (11.0)	

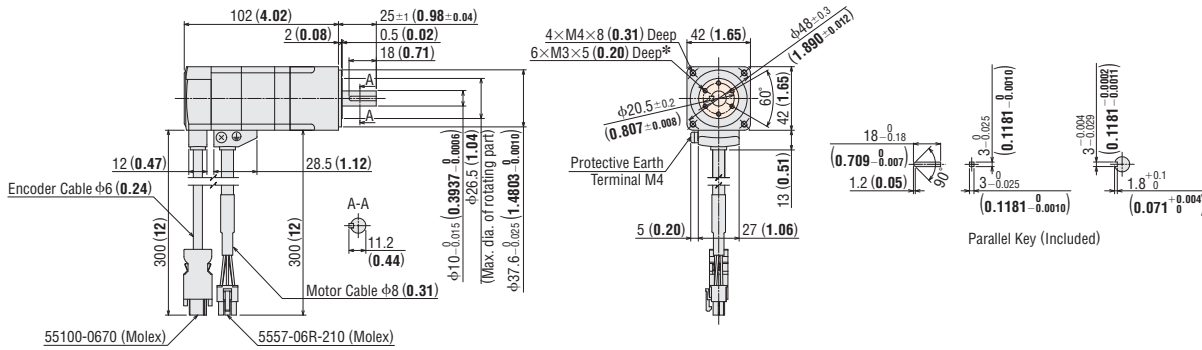


- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

◆ Harmonic Geared Type
Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AC-HS 	50, 100	0.65 (1.43)	B1167

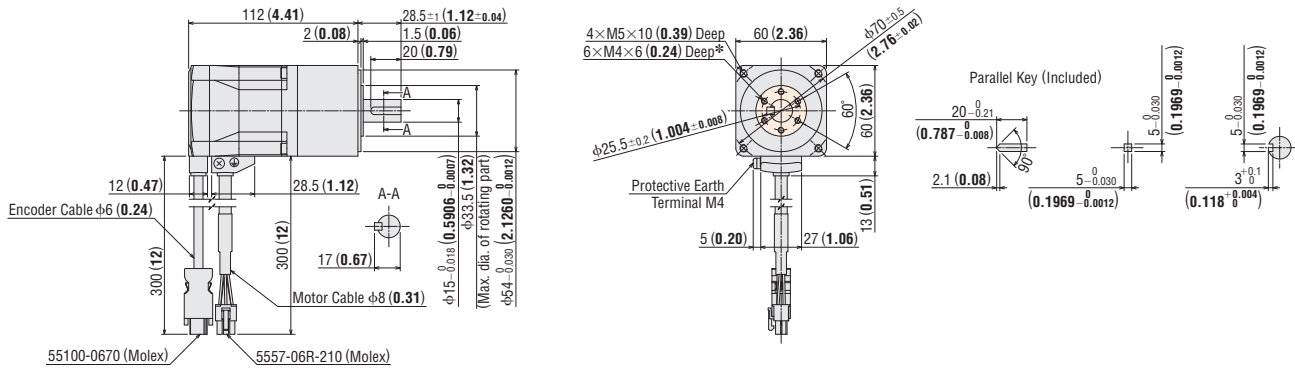


*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

Frame Size 60 mm (2.36 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AC-HS 	50, 100	1.4 (3.1)	B1168

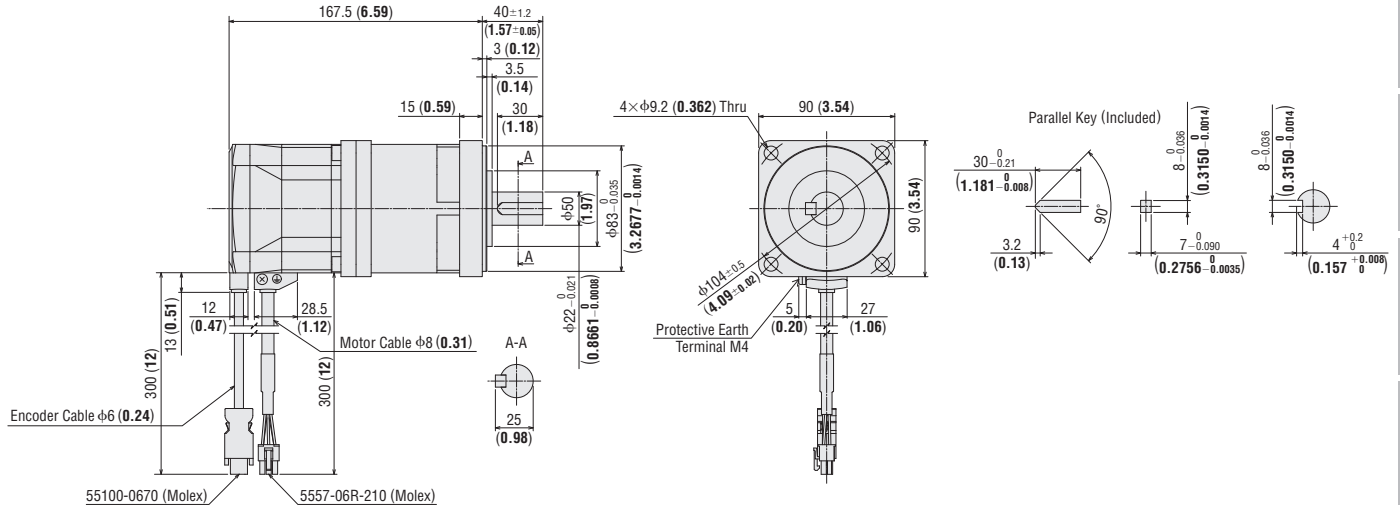


*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

Frame Size 90 mm (3.54 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM98AC-HS 	50, 100	3.9 (8.6)	B1189



- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

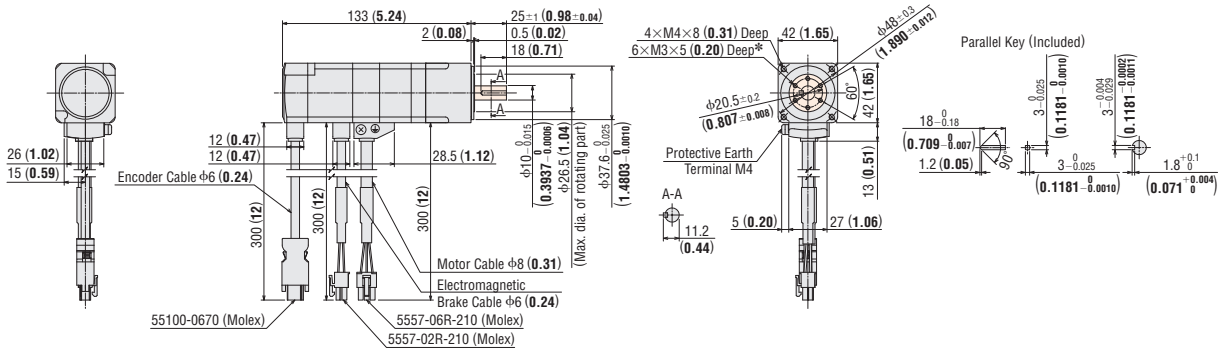
Stepper Motors
AZ

◇ Harmonic Geared Type with Electromagnetic Brake

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MC-HS 	50, 100	0.82 (1.8)	B1226

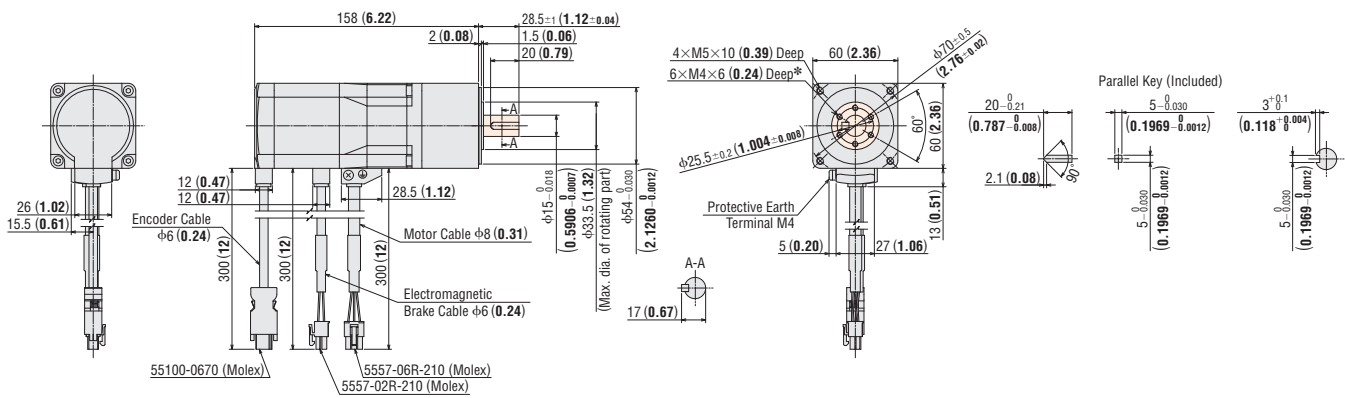


*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

Frame Size 60 mm (2.36 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MC-HS 	50, 100	1.8 (4.0)	B1227

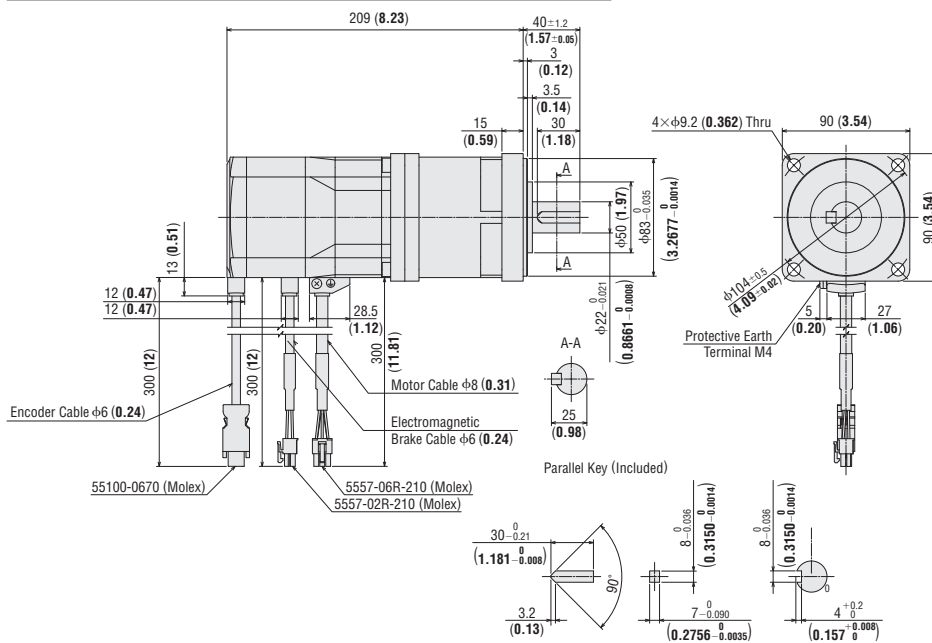


*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

Frame Size 90 mm (3.54 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM98MC-HS 	50, 100	4.5 (9.9)	B1195



- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

Features	Motors AC Input	Motors DC Input	Ethernet/IP Compatible Drivers	EtherCAT Compatible Drivers	Built-in Controller Drivers	Pulse Input Drivers with RS-485	Pulse Input Drivers	Network Multi-Axis Drivers	Compact Drivers	Cables / Accessories	Actuators AZ Series Equipped
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Product Number Code

● Motor

◇ Standard Type

AZM 6 6 A 0 K F

① ② ③ ④ ⑤ ⑥ ⑦

◇ PS, HPG, Harmonic Geared Type

AZM 6 6 A K - HP 15 F

① ② ③ ④ ⑥ ⑧ ⑨ ⑩

● TS Geared Type

AZM 6 6 A K - TS 7.2 U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

● FC Geared Type

AZM 6 6 A K - FC 7.2 U A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

● Driver

AZD - K D

① ② ③

● Connection Cable Set / Flexible Connection Cable Set

CC 050 V Z □ F B 2

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	1: 20 mm (0.79 in.) 2: 28 mm (1.10 in.) (Harmonic geared type is 30 mm (1.18 in.)) 4: 42 mm (1.65 in.) (HPG Geared Type: 40 mm (1.57 in.)) 6: 60 mm (2.36 in.)
	Motor Case Length	
	Output Shaft Configuration	A: Single Shaft M: Electromagnetic Brake Type
⑤	Motor Specifications*	0: Straight 1: Keyed
⑥	Gear Type	K: DC Power Supply Input Specifications
⑦	Motor Cable Configuration	F: Horizontal Outlet Direction
⑧	Geared Type	PS: PS Geared Type HP: HPG Geared Type HS: Harmonic Geared Type
	Gear Ratio	
	Output Shaft Type	HPG Geared Type Blank: Shaft Output F: Flange Output

*For standard type, if there is no number indicating additional functionality, the product is the single flat face specification.

①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.)
③	Motor Case Length	
④	Output Shaft Type	A: Single M: Type with Electromagnetic Brake
⑤	Motor Type	K: DC Input Specification
⑥	Geared Type	TS: TS Geared Type
⑦	Gear Ratio	
⑧	Cable Outlet Direction	U: Upper Side L: Left Side R: Right Side

①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.)
③	Motor Case Length	
④	Output Shaft Type	A: Single M: Type with Electromagnetic Brake
⑤	Motor Type	K: DC Input Specification
⑥	Geared Type	FC: FC Geared Type
⑦	Gear Ratio	
⑧	Cable Outlet Direction*	D: Down Side U: Upper Side
⑨	Identification Symbol	A: Solid Shaft

*The cable The cable direction is when viewed from the gearhead side with the output shaft facing left.



①	Driver Type	AZD: AZ Series Driver
②	Power Supply Input	K: 24/48 VDC
③	Type	EP: EtherNet/IP Compatible Type ED: EtherCAT Drive Profile Compatible Type D: Built-in Controller Type X: Pulse Input Type with RS-485 Communication Blank: Pulse Input Type

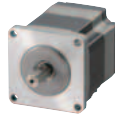
①		CC: Cable
②	Length	010: 1 m (3.3 ft.) 020: 2 m (6.6 ft.) 030: 3 m (9.8 ft.) 050: 5 m (16.4 ft.) 070: 7 m (23 ft.) 100: 10 m (32.8 ft.) 150: 15 m (49.2 ft.) 200: 20 m (65.6 ft.)
	Reference Number	
	Applicable Product	Z: AZ Series
⑤	Reference Number	Blank: Frame Size 42 mm (1.65 in.) [HPG Geared Type is 40 mm (1.57 in.), 60 mm (2.36 in.)] 2: Frame Size 20 mm (0.79 in.), 28 mm (1.10 in.) [Harmonic Geared Type is 30 mm (1.18 in.)]
	Cable Type	F: Connection Cable Set R: Flexible Connection Cable Set
⑦	Description	Blank: Without Electromagnetic Brake B: Electromagnetic Brake Type
⑧	Cable Specifications	2: DC Power Supply Input

Product Line and List Price

Motors, drivers, and connection cables must be ordered separately.

Motor

Standard Type



Frame Size	Product Name	List Price
20 mm (0.79 in.)	AZM14AK	\$283.00
	AZM15AK	\$283.00
28 mm (1.10 in.)	AZM24AK	\$283.00
	AZM26AK	\$283.00
42 mm (1.65 in.)	AZM46AK	\$307.00
	AZM46AOK	\$307.00
	AZM46AOKF	*
	AZM48AK	\$319.00
	AZM48AOK	\$319.00
	AZM48AOKF	*
	AZM48A1K	\$330.00
60 mm (2.36 in.)	AZM66AK	\$362.00
	AZM66AOK	\$362.00
	AZM66AOKF	*
	AZM66A1K	\$373.00
	AZM69AK	\$367.00
	AZM69AOK	\$367.00
	AZM69A1K	\$379.00

*Contact our sales office for price.

TS Geared Type



Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46AK-TS3.6	\$441.00
	AZM46AK-TS3.6R	*
	AZM46AK-TS3.6U	*
	AZM46AK-TS3.6L	*
	AZM46AK-TS7.2	\$441.00
	AZM46AK-TS7.2R	*
	AZM46AK-TS7.2U	*
	AZM46AK-TS7.2L	*
	AZM46AK-TS10	\$457.00
	AZM46AK-TS10R	*
	AZM46AK-TS10U	*
	AZM46AK-TS10L	*
	AZM46AK-TS20	\$457.00
	AZM46AK-TS20R	*
	AZM46AK-TS20U	*
	AZM46AK-TS20L	*
	AZM46AK-TS30	\$457.00
	AZM46AK-TS30R	*
	AZM46AK-TS30U	*
	AZM46AK-TS30L	*
60 mm (2.36 in.)	AZM66AK-TS3.6	\$519.00
	AZM66AK-TS3.6R	*
	AZM66AK-TS3.6U	*
	AZM66AK-TS3.6L	*
	AZM66AK-TS7.2	\$519.00
	AZM66AK-TS7.2R	*
	AZM66AK-TS7.2U	*
	AZM66AK-TS7.2L	*
	AZM66AK-TS10	\$534.00
	AZM66AK-TS10R	*
	AZM66AK-TS10U	*
	AZM66AK-TS10L	*
	AZM66AK-TS20	\$534.00
	AZM66AK-TS20R	*
	AZM66AK-TS20U	*
	AZM66AK-TS20L	*
	AZM66AK-TS30	\$534.00
	AZM66AK-TS30R	*
	AZM66AK-TS30U	*
	AZM66AK-TS30L	*

*Contact our sales office for price.

Standard Type with Electromagnetic Brake



Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MK	\$466.00
	AZM46MOK	\$466.00
	AZM46MOKF	*
60 mm (2.36 in.)	AZM66MK	\$565.00
	AZM66MOK	\$565.00
	AZM66MOKF	*
	AZM66M1K	\$576.00
	AZM69MK	\$571.00
	AZM69MOK	\$571.00
	AZM69MOKF	*
AZM69M1K	\$582.00	

*Contact our sales office for price.

TS Geared Type with Electromagnetic Brake



Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MK-TS3.6	\$599.00
	AZM46MK-TS3.6R	*
	AZM46MK-TS3.6U	*
	AZM46MK-TS3.6L	*
	AZM46MK-TS7.2	\$599.00
	AZM46MK-TS7.2R	*
	AZM46MK-TS7.2U	*
	AZM46MK-TS7.2L	*
	AZM46MK-TS10	\$615.00
	AZM46MK-TS10R	*
	AZM46MK-TS10U	*
	AZM46MK-TS10L	*
	AZM46MK-TS20	\$615.00
	AZM46MK-TS20R	*
	AZM46MK-TS20U	*
	AZM46MK-TS20L	*
	AZM46MK-TS30	\$615.00
	AZM46MK-TS30R	*
	AZM46MK-TS30U	*
	AZM46MK-TS30L	*
60 mm (2.36 in.)	AZM66MK-TS3.6	\$722.00
	AZM66MK-TS3.6R	*
	AZM66MK-TS3.6U	*
	AZM66MK-TS3.6L	*
	AZM66MK-TS7.2	\$722.00
	AZM66MK-TS7.2R	*
	AZM66MK-TS7.2U	*
	AZM66MK-TS7.2L	*
	AZM66MK-TS10	\$738.00
	AZM66MK-TS10R	*
	AZM66MK-TS10U	*
	AZM66MK-TS10L	*
	AZM66MK-TS20	\$738.00
	AZM66MK-TS20R	*
	AZM66MK-TS20U	*
	AZM66MK-TS20L	*
	AZM66MK-TS30	\$738.00
	AZM66MK-TS30R	*
	AZM66MK-TS30U	*
	AZM66MK-TS30L	*

*Contact our sales office for price.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

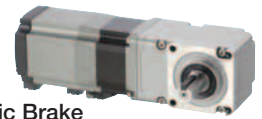
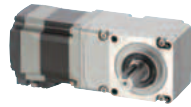
Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped



◇ FC Geared Type

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46AK-FC7.2UA	\$595.00
	AZM46AK-FC7.2DA	\$595.00
	AZM46AK-FC10UA	\$595.00
	AZM46AK-FC10DA	\$595.00
	AZM46AK-FC20UA	\$595.00
	AZM46AK-FC20DA	\$595.00
	AZM46AK-FC30UA	\$595.00
	AZM46AK-FC30DA	\$595.00
60 mm (2.36 in.)	AZM66AK-FC7.2UA	\$707.00
	AZM66AK-FC7.2DA	\$707.00
	AZM66AK-FC10UA	\$707.00
	AZM66AK-FC10DA	\$707.00
	AZM66AK-FC20UA	\$707.00
	AZM66AK-FC20DA	\$707.00
	AZM66AK-FC30UA	\$707.00
	AZM66AK-FC30DA	\$707.00

◇ FC Geared Type with Electromagnetic Brake

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MK-FC7.2UA	\$756.00
	AZM46MK-FC7.2DA	\$756.00
	AZM46MK-FC10UA	\$756.00
	AZM46MK-FC10DA	\$756.00
	AZM46MK-FC20UA	\$756.00
	AZM46MK-FC20DA	\$756.00
	AZM46MK-FC30UA	\$756.00
	AZM46MK-FC30DA	\$756.00
60 mm (2.36 in.)	AZM66MK-FC7.2UA	\$914.00
	AZM66MK-FC7.2DA	\$914.00
	AZM66MK-FC10UA	\$914.00
	AZM66MK-FC10DA	\$914.00
	AZM66MK-FC20UA	\$914.00
	AZM66MK-FC20DA	\$914.00
	AZM66MK-FC30UA	\$914.00
	AZM66MK-FC30DA	\$914.00

Linear Slides
EZS

Cylinders
EAC

Compact Cylinders
DR

Rack & Pinion
L

Gripper
EH

Rotary Actuators
DGII



◇ PS Geared Type

Frame Size	Product Name	List Price
28 mm (1.10 in.)	AZM24AK-PS7.2	\$565.00
	AZM24AK-PS10	\$565.00
42 mm (1.65 in.)	AZM46AK-PS5	\$567.00
	AZM46AK-PS7.2	\$567.00
	AZM46AK-PS10	\$567.00
	AZM46AK-PS25	\$624.00
	AZM46AK-PS36	\$624.00
	AZM46AK-PS50	\$624.00
60 mm (2.36 in.)	AZM66AK-PS5	\$678.00
	AZM66AK-PS7.2	\$678.00
	AZM66AK-PS10	\$678.00
	AZM66AK-PS25	\$757.00
	AZM66AK-PS36	\$757.00
	AZM66AK-PS50	\$757.00

◇ PS Geared Type with Electromagnetic Brake

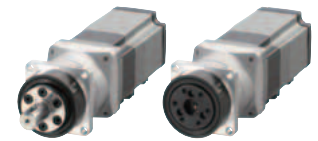
Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MK-PS5	\$725.00
	AZM46MK-PS7.2	\$725.00
	AZM46MK-PS10	\$725.00
	AZM46MK-PS25	\$782.00
	AZM46MK-PS36	\$782.00
	AZM46MK-PS50	\$782.00
60 mm (2.36 in.)	AZM66MK-PS5	\$881.00
	AZM66MK-PS7.2	\$881.00
	AZM66MK-PS10	\$881.00
	AZM66MK-PS25	\$961.00
	AZM66MK-PS36	\$961.00
	AZM66MK-PS50	\$961.00

◇ HPG Geared Type

Frame Size	Product Name	List Price
40 mm (1.57 in.)	AZM46AK-HP5	\$669.00
	AZM46AK-HP5F	\$658.00
	AZM46AK-HP9	\$669.00
	AZM46AK-HP9F	\$658.00
60 mm (2.36 in.)	AZM66AK-HP5	\$904.00
	AZM66AK-HP5F	\$887.00
	AZM66AK-HP15	\$1,070.00
	AZM66AK-HP15F	\$1,053.00

◇ HPG Geared Type with Electromagnetic Brake

Frame Size	Product Name	List Price
40 mm (1.57 in.)	AZM46MK-HP5	\$827.00
	AZM46MK-HP5F	\$816.00
	AZM46MK-HP9	\$827.00
	AZM46MK-HP9F	\$816.00
60 mm (2.36 in.)	AZM66MK-HP5	\$1,107.00
	AZM66MK-HP5F	\$1,090.00
	AZM66MK-HP15	\$1,274.00
	AZM66MK-HP15F	\$1,257.00



◇ Harmonic Geared Type

Frame Size	Product Name	List Price
30 mm (1.18 in.)	AZM24AK-HS50	\$860.00
	AZM24AK-HS100	\$860.00
42 mm (1.65 in.)	AZM46AK-HS50	\$901.00
	AZM46AK-HS100	\$901.00
60 mm (2.36 in.)	AZM66AK-HS50	\$1,215.00
	AZM66AK-HS100	\$1,215.00

◇ Harmonic Geared Type with Electromagnetic Brake

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MK-HS50	\$1,059.00
	AZM46MK-HS100	\$1,059.00
60 mm (2.36 in.)	AZM66MK-HS50	\$1,418.00
	AZM66MK-HS100	\$1,418.00



● Driver



◇ EtherNet/IP Compatible Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KEP	\$506.00



◇ EtherCAT Drive Profile Compatible Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KED	\$506.00



◇ Built-in Controller Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KD	\$441.00



◇ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KX	\$441.00



◇ Pulse Input Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-K	\$384.00

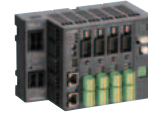


◇ Compact Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KRD	\$391.00

◇ Network Compatible Multi-Axis Drivers

Applicable Network	Power Supply Input	Product Name	No. of Axis	List Price
SSCNET III/H Compatible	24/48 VDC	AZD2A-KS3	2 axes	\$825.00
		AZD3A-KS3	3 axes	\$1,093.00
		AZD4A-KS3	4 axes	\$1,320.00
MECHATROLINK-III Compatible	24/48 VDC	AZD2A-KM3	2 axes	\$825.00
		AZD3A-KM3	3 axes	\$1,093.00
		AZD4A-KM3	4 axes	\$1,320.00
EtherCAT Drive Profile Compatible	24/48 VDC	AZD2A-KED	2 axes	\$825.00
		AZD3A-KED	3 axes	\$1,093.00
		AZD4A-KED	4 axes	\$1,320.00



● Extension Cable Sets / Flexible Extension Cable Sets

Use a flexible connection cable set or flexible extension cable set if the cable will be bent repeatedly. Extension cable sets and flexible extension cable sets that can be used to extend the connection cable sets are available. Refer to page 119.

■ Included

● Motor

Type	Included	Parallel Key	Motor Installation Screws	Operating Manual
Standard		–	–	1 pc
TS Geared Type	Frame Size 42 mm (1.65 in.)	–	–	
	Frame Size 60 mm (2.36 in.)	1 pc	M4×60 P0.7 (4 pcs)	
FC Geared Type		1 pc	–	
PS Geared Type	Frame Size 28 mm (1.10 in.)	–	–	
	Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.)	1 pc	–	
HPG Geared Type	Shaft Output	1 pc	–	
	Flange Output	–	–	
Harmonic Geared Type	Frame Size 30 mm (1.18 in.)	–	–	
	Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.)	1 pc	–	

● Please refer to the operating manual (function edition) for the functions and operating methods of the product. The function edition is not supplied with the product. Please contact the nearest Oriental Motor sales office, or download it from the Oriental Motor website.

● Driver

Type	Included	Connector	Operating Manual
EtherNet/IP Compatible EtherCat Drive Profile Compatible		· CN4 connector (1 pc) · CN1 connector (1 pc) · CN7 connector (1 pc)	1 pc
Built-in Controller Type Pulse Input Type with RS-485 Communication Pulse Input Type		· CN4 connector (1 pc) · CN1 connector (1 pc)	1 pc

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Standard Type Motor Frame Size 20 mm (0.79 in.), 28 mm (1.10 in.)

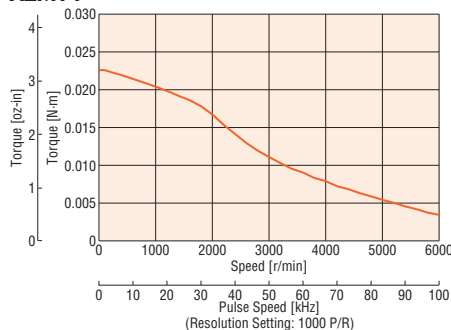
Specifications



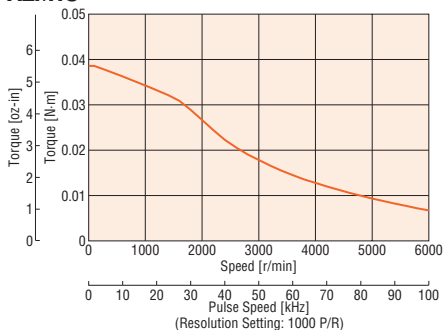
Motor	Single Shaft	AZM14AK	AZM15AK	AZM24AK	AZM26AK
Driver	EtherNet/IP Compatible	AZD-KEP			
	EtherCAT Drive Profile Compatible	AZD-KED			
	Built-in Controller	AZD-KD			
	Built-in Controller (Compact Type)	AZD-KRD			
	Pulse Input with RS-485 Communication	AZD-KX			
	Pulse Input	AZD-K			
Maximum Holding Torque	N·m (oz·in)	0.02 (2.8)	0.036 (5.0)	0.095 (13.4)	0.19 (26)
Holding Torque at Standstill	N·m (oz·in)	0.01 (1.42)	0.018 (2.5)	0.047 (6.6)	0.095 (13.4)
Rotor Inertia	J: kg·m ² (oz·in ²)	2.7×10^{-7} (0.0148)	3.9×10^{-7} (0.021)	9.2×10^{-7} (0.050)	17×10^{-7} (0.093)
Resolution	Set to 1000 P/R	0.36°/Pulse			

Speed – Torque Characteristics (Reference values)

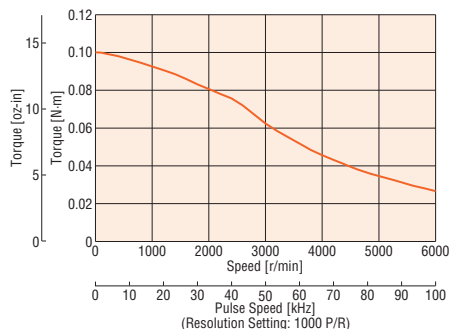
AZM14



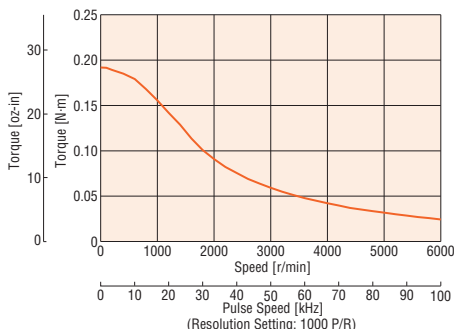
AZM15



AZM24



AZM26



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor.

Explanation of Terms in Specifications Table

Maximum Holding Torque	: The maximum holding torque (holding force) the motor has when power (rated current) is being supplied but the motor shaft is at standstill. (With geared types, the value of holding torque considers the permissible strength of the gear.)
Permissible Torque	: This is the maximum torque continuously applied to the gear output shaft.
Maximum Instantaneous Torque	: This is the maximum torque that can be applied to the gear output shaft during acceleration/deceleration, such as when an inertial load is started and stopped.
Holding Torque at Standstill, When power is ON	: This is the holding torque when the automatic current cutback function is activated.
Electromagnetic brake	: This is the static friction torque that the electromagnetic brake can generate at rest. (Electromagnetic brake is power off activated type.)

Standard Type Motor Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.)

Specifications



Motor	Single Shaft	AZM46A □□	AZM48A □□	AZM66A □□	AZM69A □□	
	Electromagnetic Brake Type	AZM46M □□	—	AZM66M □□	AZM69M □□	
Driver	EtherNet/IP Compatible	AZD-KEP				
	EtherCAT Drive Profile Compatible	AZD-KED				
	Built-in Controller	AZD-KD				
	Built-in Controller (Compact Type)	AZD-KRD				
	Pulse Input with RS-485 Communication	AZD-KX				
	Pulse Input	AZD-K				
Maximum Holding Torque	N-m (oz-in)	0.3 (42)	0.72 (101)	1 (141)	2 (280)	
Holding Torque at Standstill	Power ON	N-m (oz-in)	0.15 (21)	0.36 (50)	0.5 (70)	1 (141)
	Electromagnetic Brake	N-m (oz-in)	0.15 (21)	—	0.5 (70)	1 (141)
Rotor Inertia	J: kg·m ² (oz-in ²)	55×10^{-7} (0.30) [71×10^{-7} (0.38)]*1	115×10^{-7} (0.63)	370×10^{-7} (2.0) [530×10^{-7} (2.9)]*1	740×10^{-7} (4.0) [900×10^{-7} (4.9)]*1	
Resolution	Set to 1000 P/R	0.36°/Pulse				

● The □ in the product name indicates additional functionality: "O" for straight and "1" for keyed. (**AZM46** is straight only).

No text is entered for single flat face.

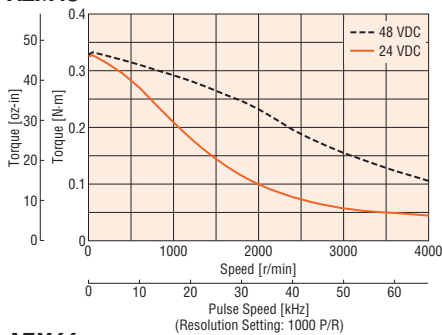
An F is entered in the □ in the product name if the motor cable pullout direction is horizontal.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

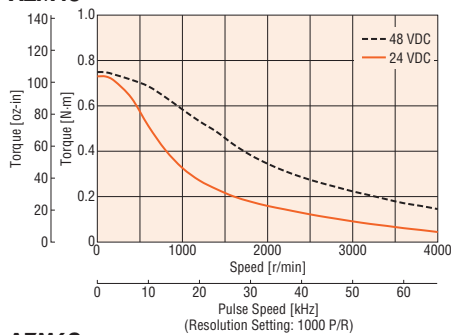
*2 Motor only

Speed – Torque Characteristics (Reference values)

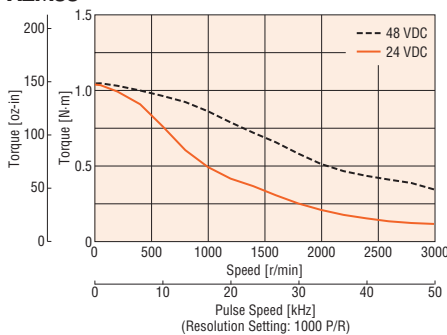
AZM46



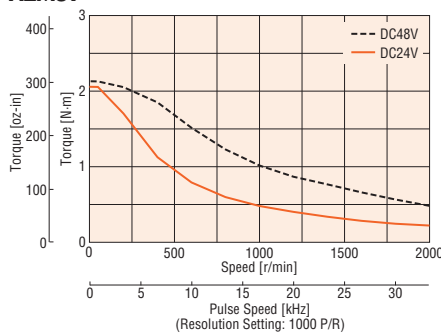
AZM48



AZM66



AZM69



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

TS Geared Type Frame Size 42 mm (1.65 in.)

Specifications



Motor	Single Shaft	AZM46AK-TS3.6 <input type="checkbox"/>	AZM46AK-TS7.2 <input type="checkbox"/>	AZM46AK-TS10 <input type="checkbox"/>	AZM46AK-TS20 <input type="checkbox"/>	AZM46AK-TS30 <input type="checkbox"/>	
	Electromagnetic Brake Type	AZM46MK-TS3.6 <input type="checkbox"/>	AZM46MK-TS7.2 <input type="checkbox"/>	AZM46MK-TS10 <input type="checkbox"/>	AZM46MK-TS20 <input type="checkbox"/>	AZM46MK-TS30 <input type="checkbox"/>	
Driver	EtherNet/IP Compatible	AZD-KEP					
	EtherCAT Drive Profile Compatible	AZD-KED					
	Built-in Controller	AZD-KD					
	Built-in Controller (Compact Type)	AZD-KRD					
	Pulse Input with RS-485 Communication	AZD-KX					
	Pulse Input	AZD-K					
Maximum Holding Torque	N·m (lb·in)	0.65 (5.7)	1.2 (10.6)	1.7 (15.0)	2 (17.7)	2.3 (20)	
Rotor Inertia	J: kg·m ² (oz·in ²)	55×10 ⁻⁷ (0.30) [71×10 ⁻⁷ (0.39)]*1					
Gear Ratio		3.6	7.2	10	20	30	
Resolution	Set to 1000 P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	N·m (lb·in)	0.65 (5.7)	1.2 (10.6)	1.7 (15.0)	2 (17.7)	2.3 (20)	
Max. Instantaneous Torque*	N·m (lb·in)	0.85 (7.5)	1.6 (14.1)	2 (17.7)	*	3 (26)	
Holding Torque at Standstill	Power ON	N·m (lb·in)	0.54 (4.7)	1 (8.8)	1.5 (13.2)	1.8 (15.9)	2.3 (20)
	Electromagnetic Brake	N·m (lb·in)	0.54 (4.7)	1 (8.8)	1.5 (13.2)	1.8 (15.9)	2.3 (20)
Speed Control Range	r/min	0~833	0~416	0~300	0~150	0~100	
Backlash	arcmin	45 (0.75)	25 (0.42)		15 (0.25)		

● The in the product name indicates the cable outlet direction: "R" for right side, "U" for upper side and "L" for left side. No letter is entered for the down direction.

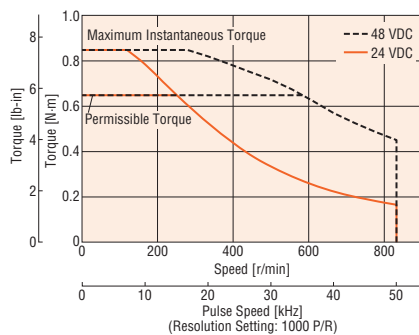
* For the geared motor output torque, refer to the speed – torque characteristics.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

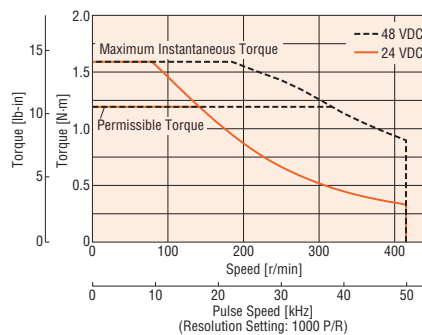
*2 Motor only

Speed – Torque Characteristics (Reference values)

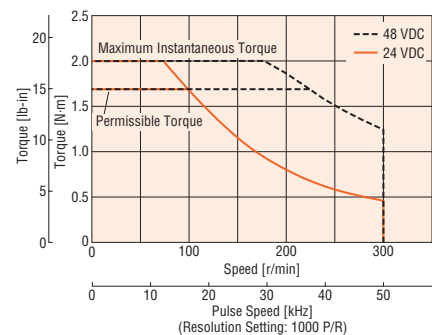
AZM46 Gear Ratio 3.6



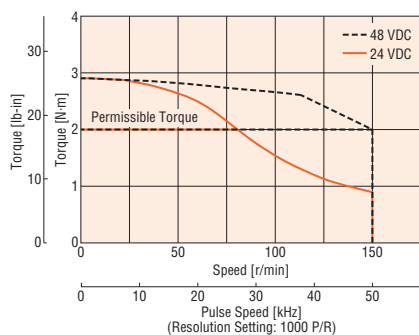
AZM46 Gear Ratio 7.2



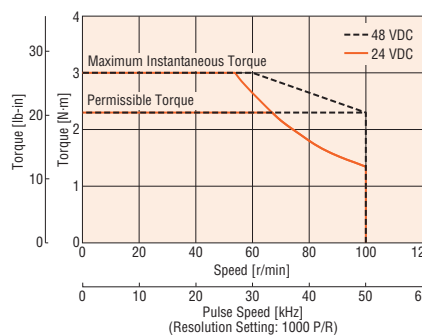
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20



AZM46 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

TS Geared Type Frame Size 60 mm (2.36 in.)

Specifications



Motor	Single Shaft	AZM66AK-TS3.6□	AZM66AK-TS7.2□	AZM66AK-TS10□	AZM66AK-TS20□	AZM66AK-TS30□	
Electromagnetic Brake Type		AZM66MK-TS3.6□	AZM66MK-TS7.2□	AZM66MK-TS10□	AZM66MK-TS20□	AZM66MK-TS30□	
Driver	EtherNet/IP Compatible	AZD-KEP					
	EtherCAT Drive Profile Compatible	AZD-KEP					
	Built-in Controller	AZD-KD					
	Built-in Controller (Compact Type)	AZD-KRD					
	Pulse Input with RS-485 Communication	AZD-KX					
	Pulse Input	AZD-K					
Maximum Holding Torque	N·m (lb·in)	1.8 (15.9)	3 (26)	4 (35)	5 (44)	6 (53)	
Rotor Inertia	J: kg·m ² (oz·in ²)	370×10 ⁻⁷ (2.0) [530×10 ⁻⁷ (2.9)]*1					
Gear Ratio		3.6	7.2	10	20	30	
Resolution	Set to 1000 P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	N·m (lb·in)	1.8 (15.9)	3 (26)	4 (35)	5 (44)	6 (53)	
Max. Instantaneous Torque*	N·m (lb·in)	*	*	*	8 (70)	10 (88)	
Holding Torque at Standstill	Power ON	N·m (lb·in)	1.1 (9.7)	2.2 (19.4)	3 (26)	5 (44)	6 (53)
	Electromagnetic Brake	N·m (lb·in)	1.1 (9.7)	2.2 (19.4)	3 (26)	5 (44)	6 (53)
Speed Control Range	r/min	0~833	0~416	0~300	0~150	0~100	
Backlash	arcmin	35 (0.59°)	15 (0.25°)		10 (0.17°)		

● The □ in the product name indicates the cable outlet direction: "R" for right side, "U" for upper side and "L" for left side. No letter is entered for the down direction.

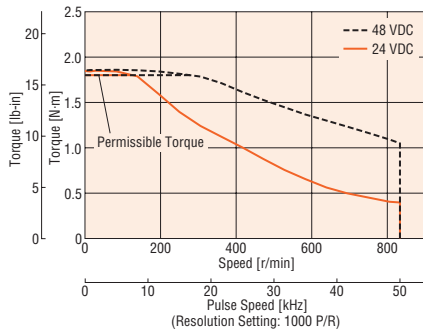
* For the geared motor output torque, refer to the speed – torque characteristics.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

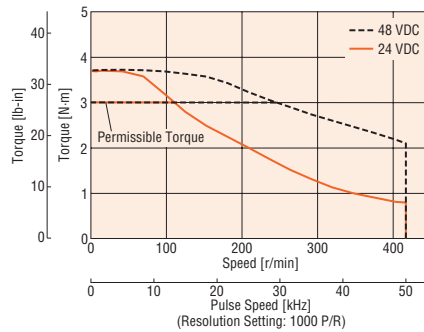
*2 Motor only

Speed – Torque Characteristics (Reference values)

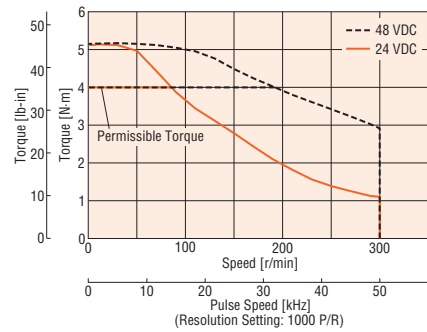
AZM66 Gear Ratio 3.6



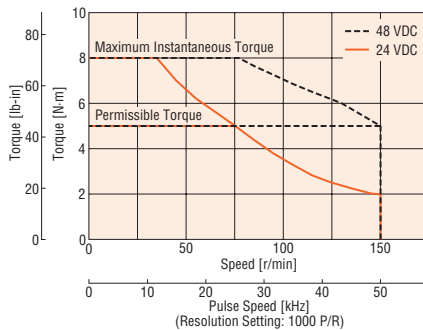
AZM66 Gear Ratio 7.2



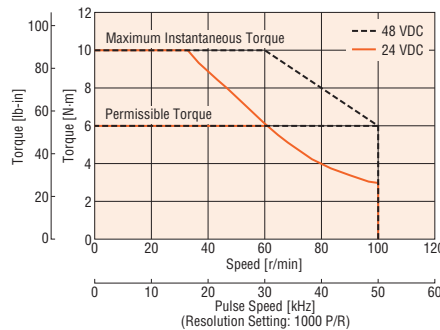
AZM66 Gear Ratio 10



AZM66 Gear Ratio 20



AZM66 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

FC Geared Type Frame Size 42mm (1.65 in.)

Specifications



Motor	Single Shaft	AZM46AK-FC7.2 □ A	AZM46AK-FC10 □ A	AZM46AK-FC20 □ A	AZM46AK-FC30 □ A
	Electromagnetic Brake Type	AZM46MK-FC7.2 □ A	AZM46MK-FC10 □ A	AZM46MK-FC20 □ A	AZM46MK-FC30 □ A
Driver	EtherNet/IP Compatible	AZD-KEP			
	EtherCAT Drive Profile Compatible	AZD-KED			
	Built-in Controller	AZD-KD			
	Built-in Controller (Compact Type)	AZD-KRD			
	Pulse Input with RS-485 Communication	AZD-KX			
	Pulse Input	AZD-K			
Maximum Holding Torque	N·m (lb-in)	0.7 (6.1)	1 (8.8)	2 (17)	3 (26)
Rotor Inertia	J: kg·m ² (oz-in ²)	55×10 ⁻⁷ (0.30) [71×10 ⁻⁷ (0.39)]*1			
Gear Ratio		7.2	10	20	30
Resolution	Set to 1000 P/R	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Permissible Torque	N·m (lb-in)	0.7 (6.1)	1 (8.8)	2 (17)	3 (26)
Holding Torque at Standstill	Power ON	N·m (lb-in)	0.7 (6.1)	1 (8.8)	2 (17)
	Electromagnetic Brake	N·m (lb-in)	0.7 (6.1)	1 (8.8)	2 (17)
Speed Control Range	r/min	0~416	0~300	0~150	0~100
Backlash	arcmin	25 (0.42°)		15 (0.25°)	

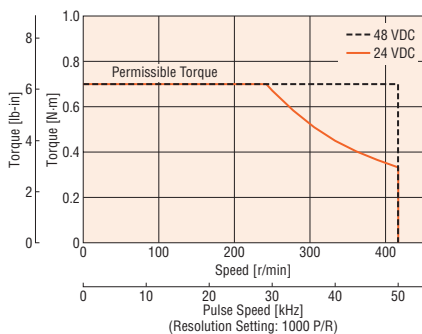
● The □ in the product name indicates the cable outlet direction: "U" for upper side and "D" for down side.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

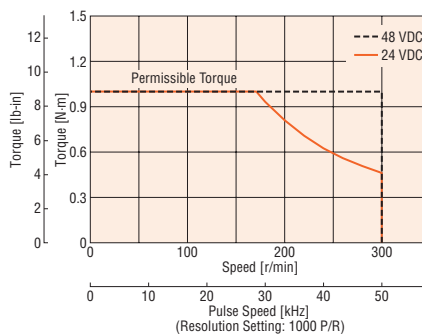
*2 Motor only

Speed – Torque Characteristics (Reference values)

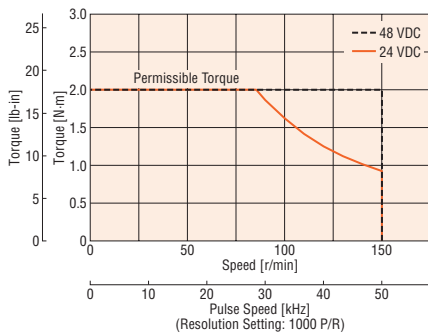
AZM46 Gear Ratio 7.2



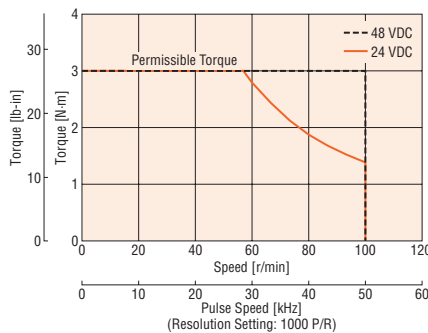
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20



AZM46 Gear Ratio 30



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

FC Geared Type Frame Size 60 mm (2.36 in.)

Specifications



Motor	Single Shaft	AZM66AK-FC7.2□A	AZM66AK-FC10□A	AZM66AK-FC20□A	AZM66AK-FC30□A	
	Electromagnetic Brake Type	AZM66MK-FC7.2□A	AZM66MK-FC10□A	AZM66MK-FC20□A	AZM66MK-FC30□A	
Driver	EtherNet/IP Compatible	AZD-KEP				
	EtherCAT Drive Profile Compatible	AZD-KED				
	Built-in Controller	AZD-KD				
	Built-in Controller (Compact Type)	AZD-KRD				
	Pulse Input with RS-485 Communication	AZD-KX				
	Pulse Input	AZD-K				
Maximum Holding Torque	N-m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)	
Rotor Inertia	J: kg-m ² (oz-in ²)	370×10 ⁻⁷ (2.0) [530×10 ⁻⁷ (2.9)]*1				
Gear Ratio		7.2	10	20	30	
Resolution	Set to 1000 P/R	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	N-m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)	
	Power ON	N-m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)
Holding Torque at Standstill	Electromagnetic Brake	N-m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)
		N-m (lb-in)	2.5 (22)	3.5 (30)	7 (61)	10.5 (92)
Speed Control Range	r/min	0~416	0~300	0~150	0~100	
Backlash	arcmin	15 (0.25°)		10 (0.17°)		

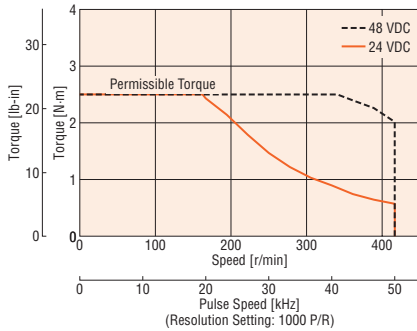
● The □ in the product name indicates the cable outlet direction: "U" for upper side and "D" for down side.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

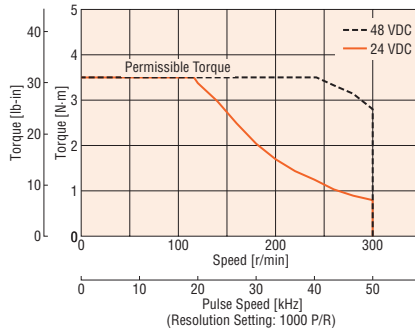
*2 Motor only

Speed – Torque Characteristics (Reference values)

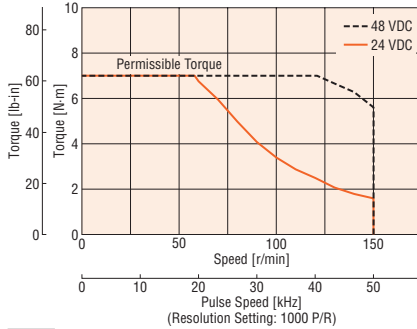
AZM66 Gear Ratio 7.2



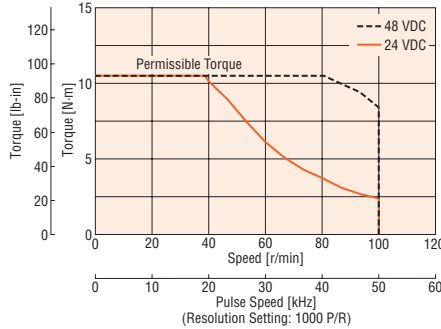
AZM66 Gear Ratio 10



AZM66 Gear Ratio 20



AZM66 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

PS Geared Type Frame Size 28 mm (1.1 in.)

Specifications

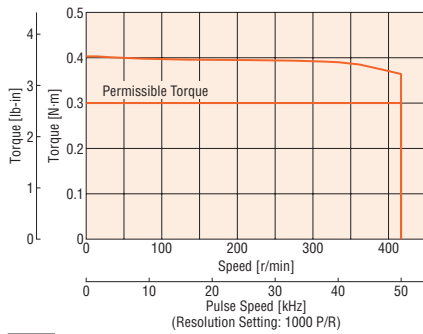


Motor	Single Shaft	AZM24AK-PS7.2	AZM24AK-PS10
Driver	EtherNet/IP Compatible	AZD-KEP	
	EtherCAT Drive Profile Compatible	AZD-KED	
	Built-in Controller	AZD-KD	
	Built-in Controller (Compact Type)	AZD-KRD	
	Pulse Input with RS-485 Communication	AZD-KX	
	Pulse Input	AZD-K	
Maximum Holding Torque	N·m (lb·in)	0.3 (42)	0.5 (70)
Rotor Inertia	J: kg·m ² (oz·in ²)	9.2×10 ⁻⁷ (0.05)	
Gear Ratio		7.2	10
Resolution	Set to 1000 P/R	0.05°/Pulse	0.036°/Pulse
Permissible Torque	N·m (lb·in)	0.3 (42)	0.5 (70)
Max. Instantaneous Torque*	N·m (lb·in)	*	—
Holding Torque at Standstill	N·m (lb·in)	0.2 (28)	0.27 (38)
Speed Control Range	r/min	0~416	0~300
Backlash	arcmin	35 (0.59°)	

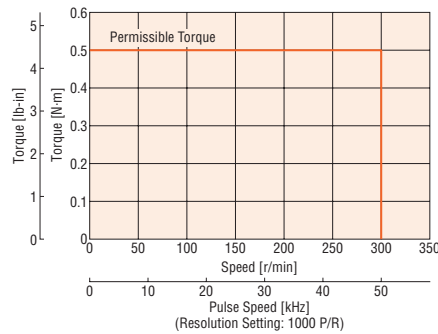
* For the geared motor output torque, refer to the speed – torque characteristics.

Speed – Torque Characteristics (Reference values)

AZM24 Gear Ratio 7.2



AZM24 Gear Ratio 10



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor.

PS Geared Type Frame Size 42 mm (1.65 in.)

Specifications

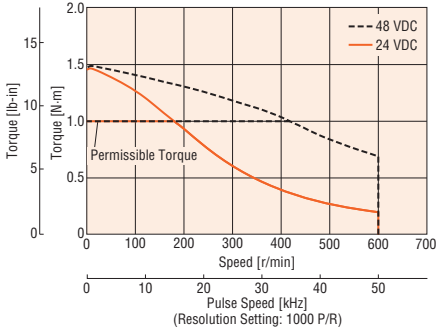


Motor	Single Shaft	AZM46AK-PS5	AZM46AK-PS7.2	AZM46AK-PS10	AZM46AK-PS25	AZM46AK-PS36	AZM46AK-PS50
	Electromagnetic Brake Type	AZM46MK-PS5	AZM46MK-PS7.2	AZM46MK-PS10	AZM46MK-PS25	AZM46MK-PS36	AZM46MK-PS50
Driver	EtherNet/IP Compatible	AZD-KEP					
	EtherCAT Drive Profile Compatible	AZD-KED					
	Built-in Controller	AZD-KD					
	Built-in Controller (Compact Type)	AZD-KRD					
	Pulse Input with RS-485 Communication	AZD-KX					
	Pulse Input	AZD-K					
Maximum Holding Torque	N·m (lb·in)	1 (8.8)	1.5 (13.2)	2.5 (22)	3 (26)		
Rotor Inertia	J: kg·m ² (oz·in ²)	55×10 ⁻⁷ (0.30) [71×10 ⁻⁷ (0.39)]*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Set to 1000 P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	N·m (lb·in)	1 (8.8)	1.5 (13.2)	2.5 (22)	3 (26)		
Max. Instantaneous Torque*	N·m (lb·in)	*	2 (17.7)	6 (53)	*	6 (53)	
Holding Torque at Standstill	Power ON	N·m (lb·in)	0.75 (6.6)	1 (8.8)	1.5 (13.2)	2.5 (22)	3 (26)
	Electromagnetic Brake	N·m (lb·in)	0.75 (6.6)	1 (8.8)	1.5 (13.2)	2.5 (22)	3 (26)
Speed Control Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin	15 (0.25°)					

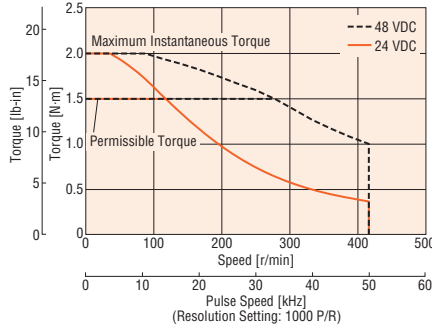
- * For the geared motor output torque, refer to the speed – torque characteristics.
- *1 The brackets [] indicate the specifications for the electromagnetic brake type.
- *2 Motor only

Speed – Torque Characteristics (Reference values)

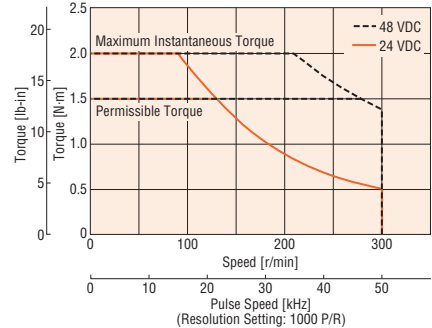
AZM46 Gear Ratio 5



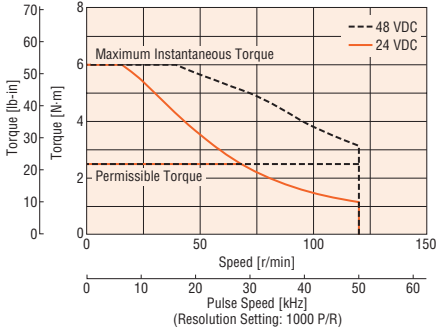
AZM46 Gear Ratio 7.2



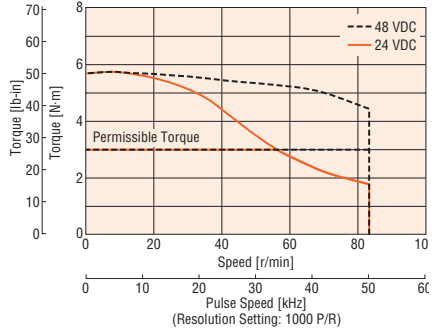
AZM46 Gear Ratio 10



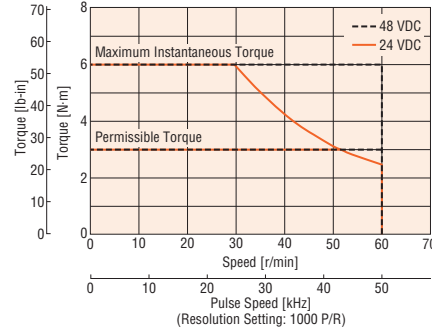
AZM46 Gear Ratio 25



AZM46 Gear Ratio 36



AZM46 Gear Ratio 50



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

PS Geared Type Frame Size 60 mm (2.36 in.)

Specifications



Motor	Single Shaft	AZM66AK-PS5	AZM66AK-PS7.2	AZM66AK-PS10	AZM66AK-PS25	AZM66AK-PS36	AZM66AK-PS50
	Electromagnetic Brake Type	AZM66MK-PS5	AZM66MK-PS7.2	AZM66MK-PS10	AZM66MK-PS25	AZM66MK-PS36	AZM66MK-PS50
Driver	EtherNet/IP Compatible	AZD-KEP					
	EtherCAT Drive Profile Compatible	AZD-KED					
	Built-in Controller	AZD-KD					
	Built-in Controller (Compact Type)	AZD-KRD					
	Pulse Input with RS-485 Communication	AZD-KX					
	Pulse Input	AZD-K					
Maximum Holding Torque	N-m (lb-in)	3.5 (30)	4 (35)	5 (44)	8 (70)		
Rotor Inertia	J: kg-m ² (oz-in ²)	370×10 ⁻⁷ (2.0) [530×10 ⁻⁷ (2.9)]*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Set to 1000 P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	N-m (lb-in)	3.5 (30)	4 (35)	5 (44)	8 (70)		
Max. Instantaneous Torque*	N-m (lb-in)	*	*	*	*	*	20
Holding Torque at Standstill	Power ON	N-m (lb-in)	2.5 (22)	3.6 (31)	5 (44)	7.6 (67)	8 (70)
	Electromagnetic Brake	N-m (lb-in)	2.5 (22)	3.6 (31)	5 (44)	7.6 (67)	8 (70)
Speed Control Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin	7 (0.12)			9 (0.15)		

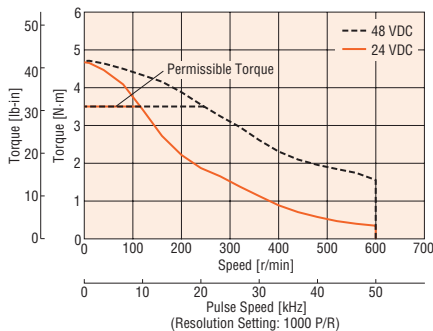
* For the geared motor output torque, refer to the speed – torque characteristics.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

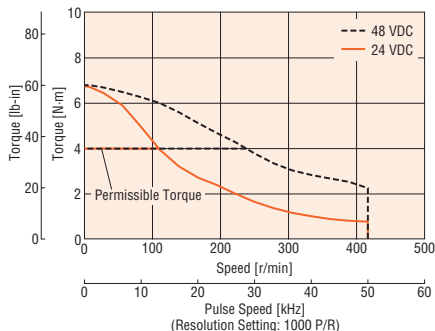
*2 Motor only

Speed – Torque Characteristics (Reference values)

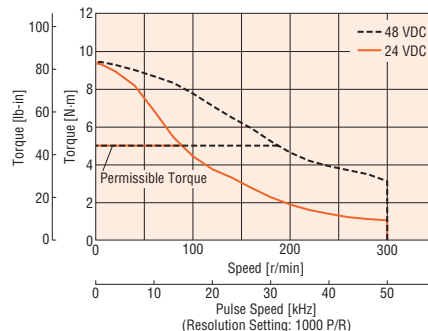
AZM66 Gear Ratio 5



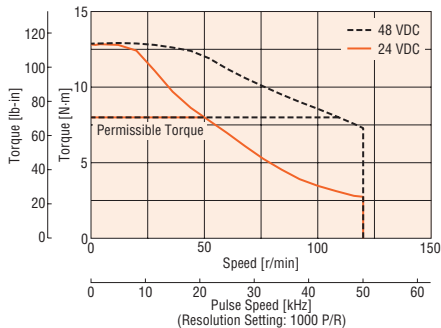
AZM66 Gear Ratio 7.2



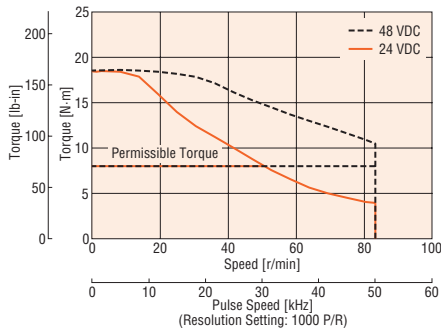
AZM66 Gear Ratio 10



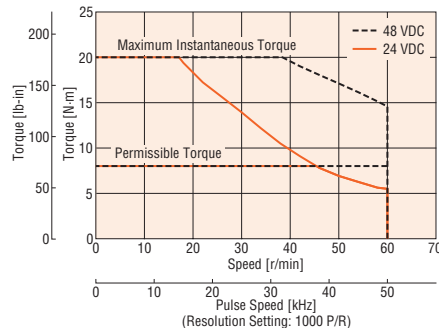
AZM66 Gear Ratio 25



AZM66 Gear Ratio 36



AZM66 Gear Ratio 50



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

HPG Geared Type Frame Size 40 mm (1.57 in.), 60 mm (2.36 in.)

Specifications

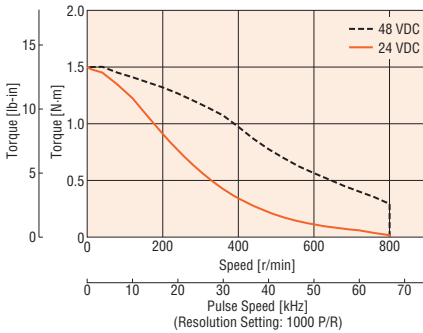


Motor	Single Shaft	AZM46AK-HP5	AZM46AK-HP9	AZM66AK-HP5	AZM66AK-HP15	
Electromagnetic Brake Type		AZM46MK-HP5	AZM46MK-HP9	AZM66MK-HP5	AZM66MK-HP15	
Driver	EtherNet/IP Compatible	AZD-KEP				
	EtherCAT Drive Profile Compatible	AZD-KED				
	Built-in Controller	AZD-KD				
	Built-in Controller (Compact Type)	AZD-KRD				
	Pulse Input with RS-485 Communication	AZD-KX				
	Pulse Input	AZD-K				
Maximum Holding Torque	N·m (lb·in)	1.5 (13.2)	2.5 (22)	5 (44)	9 (79)	
Rotor Inertia	J: kg·m ² (oz·in ²)	55×10 ⁻⁷ (0.30) [71×10 ⁻⁷ (0.39)]*1		370×10 ⁻⁷ (2.0) [530×10 ⁻⁷ (2.9)]*1		
Inertia*2	J: kg·m ² (oz·in ²)	5.8×10 ⁻⁷ (0.032) [4.2×10 ⁻⁷ (0.023)]	3.4×10 ⁻⁷ (0.019) [2.9×10 ⁻⁷ (0.016)]	92×10 ⁻⁷ (0.5) [86×10 ⁻⁷ (0.47)]	78×10 ⁻⁷ (0.43) [77×10 ⁻⁷ (0.42)]	
Gear Ratio		5	9	5	15	
Resolution	Set to 1000 P/R	0.072°/Pulse	0.04°/Pulse	0.072°/Pulse	0.024°/Pulse	
Permissible Torque*	N·m (lb·in)	*	2.5 (22)	*	9 (79)	
Max. Instantaneous Torque*	N·m (lb·in)	*	*	*	*	
Holding Torque at Standstill	Power ON	N·m (lb·in)	0.75 (6.6)	1.35 (11.9)	2.5 (22)	7.5 (66)
	Electromagnetic Brake	N·m (lb·in)	0.75 (6.6)	1.35 (11.9)	2.5 (22)	7.5 (66)
Speed Control Range	r/min	0~800	0~444	0~600	0~200	
Backlash	arcmin	3 (0.05°)				
Runout of Output Flange Surface*3	mm	0.02				
Runout of Output Flange Inner Diameter*3	mm	0.03		0.04		

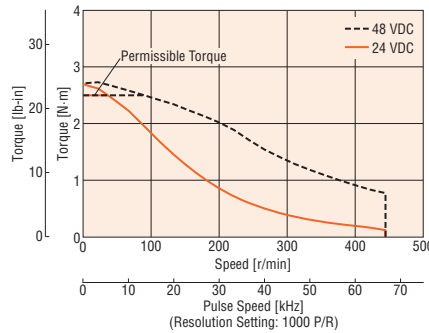
- * For the geared motor output torque, refer to the speed – torque characteristics.
- There is an **F** located in the box (■) within the product name if it is a flange output type.
- *1 The brackets [] indicate the specifications for the electromagnetic brake type.
- *2 This is the internal inertia of the gear converted to the motor shaft. The brackets [] indicate the flange output type value.
- *3 Flange output type specifications.
- *4 Motor only

Speed – Torque Characteristics (Reference values)

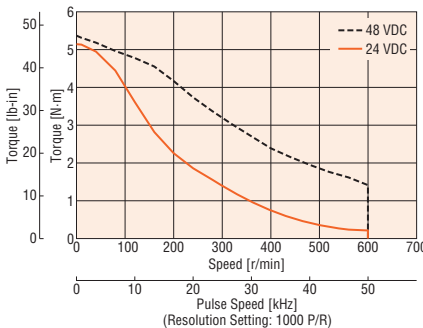
AZM46 Gear Ratio 5



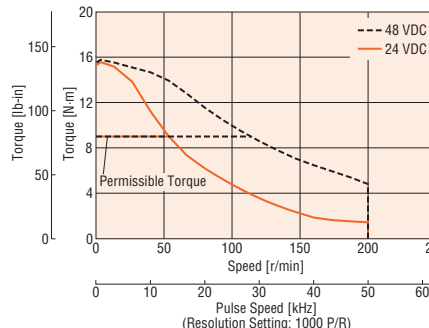
AZM46 Gear Ratio 9



AZM66 Gear Ratio 5



AZM66 Gear Ratio 15



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

Features
Motors AC Input
Motors DC Input
Ethernet/IP Compatible Drivers
EtherCAT Compatible Drivers
Built-in Controller Drivers
Pulse Input Drivers with RS-485
Pulse Input Drivers
Network Multi-Axis Drivers
Compact Drivers
Cables / Accessories
Actuators AZ Series Equipped

Harmonic Geared Type Frame Size 30 mm (1.18 in.), 42 mm (1.65 in.), 60 mm (2.36 in.)

Specifications



Motor	Single Shaft	AZM24AK-HS50	AZM24AK-HS100	AZM46AK-HS50	AZM46AK-HS100	AZM66AK-HS50	AZM66AK-HS100	
	Electromagnetic Brake Type	—	—	AZM46MK-HS50	AZM46MK-HS100	AZM66MK-HS50	AZM66MK-HS100	
Driver	EtherNet/IP Compatible	AZD-KEP						
	EtherCAT Drive Profile Compatible	AZD-KED						
	Built-in Controller	AZD-KD						
	Built-in Controller (Compact Type)	AZD-KRD						
	Pulse Input with RS-485 Communication	AZD-KX						
	Pulse Input	AZD-K						
Maximum Holding Torque	N·m (lb·in)	1.8 (15)	2.4 (21)	3.5 (30)	5 (44)	7 (61)	10 (88)	
Rotor Inertia	J: kg·m ² (oz·in ²)	12×10 ⁻⁷ (0.066)		72×10 ⁻⁷ (0.39) [88×10 ⁻⁷ (0.48)]*1		405×10 ⁻⁷ (2.2) [565×10 ⁻⁷ (3.1)]*1		
Gear Ratio		50	100	50	100	50	100	
Resolution	Set to 1000 P/R	0.0072°/Pulse	0.0036°/Pulse	0.0072°/Pulse	0.0036°/Pulse	0.0072°/Pulse	0.0036°/Pulse	
Permissible Torque	N·m (lb·in)	1.8 (15)	2.4 (21)	3.5 (30)	5 (44)	7 (61)	10 (88)	
Max. Instantaneous Torque*	N·m (lb·in)	3.3 (29)	4.8 (42)	8.3 (73)	11 (97)	*	36 (310)	
Holding Torque at Standstill	Power ON	N·m	1.8 (15)	2.4 (21)	3.5 (30)	5 (44)	7 (61)	10 (88)
	Electromagnetic Brake	N·m (lb·in)	—	—	3.5 (30)	5 (44)	7 (61)	10 (88)
Speed Control Range	r/min	0~70	0~35	0~70	0~35	0~60	0~30	
Lost Motion (Load Torque)	arcmin	1.5 max. (±0.09N·m)	1.5 max. (±0.12N·m)	1.5 max. (±0.16 N·m)	1.5 max. (±0.20 N·m)	0.7 max. (±0.28 N·m)	0.7 max. (±0.39 N·m)	

* For the geared motor output torque, refer to the speed – torque characteristics.

*1 The brackets [] indicate the specifications for the electromagnetic brake type.

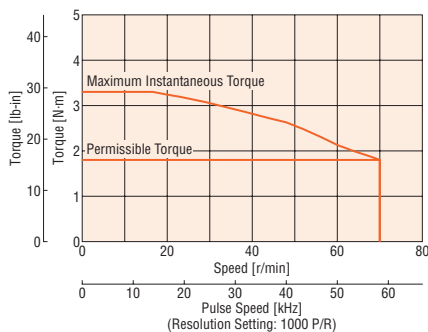
*2 Motor only [Excluding frame size 30 mm (1.18 in.)]

Note

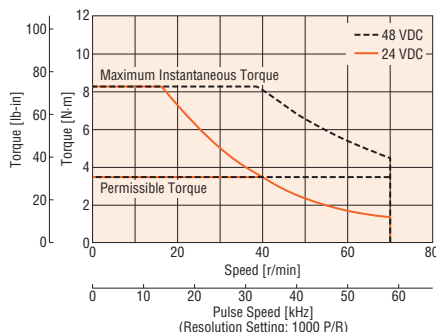
● The rotor inertia represents a sum of the inertia of the harmonic gear converted to motor shaft values.

Speed – Torque Characteristics (Reference values)

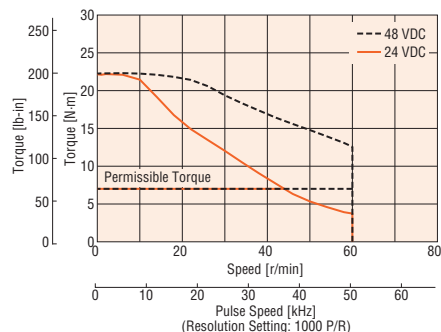
AZM24 Gear Ratio 50



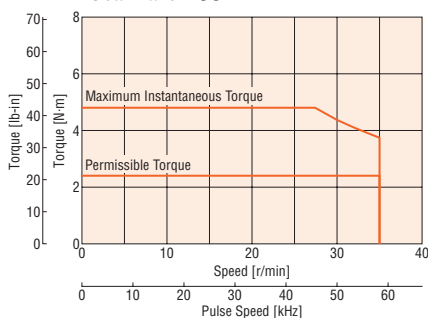
AZM46 Gear Ratio 50



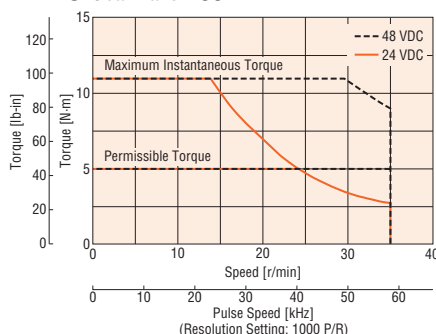
AZM66 Gear Ratio 50



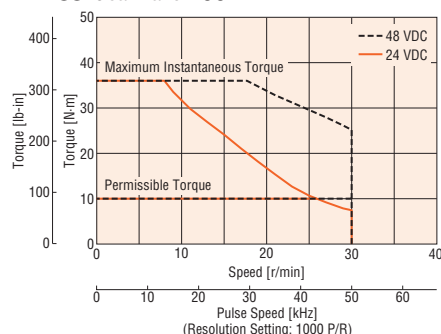
AZM24 Gear Ratio 100



AZM46 Gear Ratio 100



AZM66 Gear Ratio 100



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. Be sure to keep the motor case temperature at 80°C (176°F) max. in order to protect the motor sensor. (When conforming to the UL Standards, the temperature of the motor case must be kept at 75°C (167°F) max., since the motor is recognized as heat-resistance class A.)

Common Specifications

General Specifications

		Motor	Driver
Heat-Resistant Class		130(B)	—
Insulation Resistance		100 MΩ or more when 500 VDC megger is applied between the following places: • Case – Motor windings • Case – Electromagnetic brake windings*1	100 MΩ or more when 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: AZM14, AZM15, AZM24, AZM26 • Case – Motor windings 0.5 kVAC 50 Hz or 60 Hz AZM46, AZM48, AZM66, AZM69 • Case – Motor windings 1.0 kVAC 50 Hz or 60 Hz • Case – Electromagnetic brake windings*1 1.0 kVAC 50 Hz or 60 Hz	—
Operating Environment (In operation)	Ambient Temperature	0~+40°C (+32~+104°F) (non-freezing)	0~+50°C (+32~+122°F) (non-freezing)
	Ambient Humidity	85% max. (non-condensing)	
(In operation) Atmosphere		Use in an area without corrosive gases and dust. The product should not be exposed to water, oil or other liquids.	
Degree of Protection		AZM14, AZM15, AZM24, AZM26, AZM46*2, AZM48*2, AZM66*2, AZM69*2 : IP40 (excluding installation surface and connectors) AZM46, AZM48, AZM66, AZM69 : IP66 (excluding installation surface and connectors)	IP10
Stop Position Accuracy		AZM14, AZM15, AZM24, AZM26 : ±5 min (±0.083°) AZM46, AZM48 : ±4 min (±0.067°) AZM66, AZM69 : ±3 min (±0.05°)	
Shaft Runout		0.05 T.I.R. (mm)*3	—
Concentricity of Installation Pilot to the Shaft		0.075 T.I.R. (mm)*3	—
Perpendicularity of Installation Surface to the Shaft		0.075 T.I.R. (mm)*3	—
Multi-Rotation Detection Range when Power is Off		AZM14, AZM15, AZM24, AZM26 : ±450 rotations (900 rotations) AZM46, AZM48, AZM66, AZM69 : ±900 rotations (1,800 rotations)	

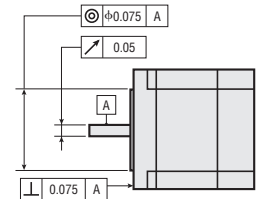
*1 Electromagnetic brake type only.

*2 When the cable outlet is in the horizontal direction with respect to the motor.

*3 T.I.R. (Total Indicator Reading): The total dial gauge reading when the measurement section is rotated one revolution centered on the reference axis center.

Note

- Do not measure insulation resistance or perform the dielectric strength test while the motor and driver are connected.
- Do not perform these tests with the motor sensor.



Electromagnetic Brake Specification

Product Name	AZM46	AZM66	AZM69
Brake Type	Power Off Activated Type		
Power Supply Voltage	24 VDC ± 5%*		
Power Supply Current	A 0.08	0.25	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 ± 4% specification applies if the wiring distance between the motor and driver is extended to 20 m (65.6 ft.) using a cable.

● The product names are listed such that the applicable product names can be determined.

Rotation Direction

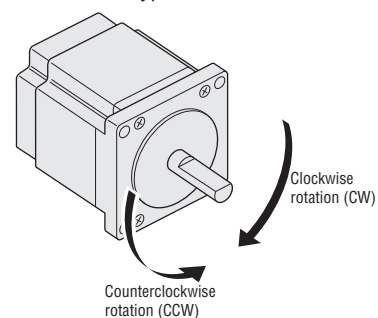
This refers to the rotation direction viewed from the output shaft side.

The rotation direction of the gear output shaft with respect to the standard type motor output shaft differs depending on the type of gear and gear ratio.

Refer to the following table.

Type	Gear Ratio	Rotation Direction with Respect to Motor Output Shaft
TS Geared	3.6, 7.2, 10	Same direction
	20, 30	Opposite direction
FC Geared	All gear ratios	Same direction
PS Geared		Same direction
HPG Geared		Same direction
Harmonic Geared	All gear ratios	Opposite direction

Standard Type Motor



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Stepper Motors AZ
Linear Slides EZS
Cylinders EAC
Compact Cylinders DR
Rack & Pinion L
Gripper EH
Rotary Actuators DGI

● Motor Installation

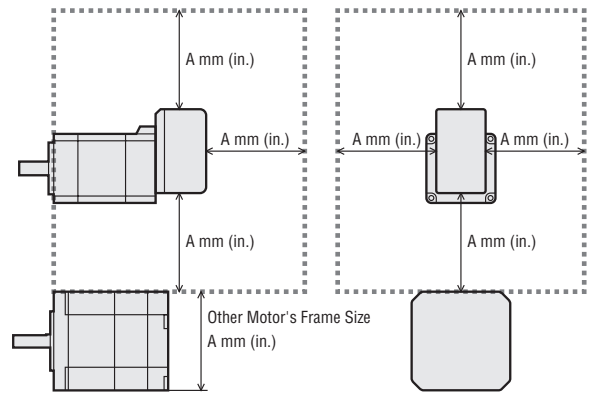
When installing the motor, pay close attention to the installation location, because the absolute sensor can easily be affected by magnetic force.

◇ Installation of a Motor with a Max. Frame Size of 28 mm (1.10 in.)

When installing the motor parts in parallel, leave a buffer space that is equal to or greater than the motor's size (frame size) both horizontally and vertically.

● Reference

The Other Motor	A mm (in.)
Frame Size 20 mm (0.79 in.)	20 (0.79)
Frame Size 28 mm (1.10 in.)	28 (1.10)
Frame Size 42 mm (1.65 in.)	42 (1.65)
Frame Size 60 mm (2.36 in.)	60 (2.36)



● Leave a buffer space equal to or greater than the motor's frame size A.

◇ Installing a Motor in an Environment Subject to a Magnetic Field System

Make sure that the magnetic flux density of the absolute sensor surface does not exceed the table value.

Motor Frame Size	Magnetic Flux Density
28 mm (1.10 in.) or less	2 mT*
42 mm (1.65 in.) or more	10 mT

*When the magnetic flux density is from 1 mT to 2 mT, use the motor with the ambient temperature from 20°C (68 °F) to 40°C (104 °F).

● Permissible Radial Load/Permissible Axial Load

Unit: N (lb.)

Type	Motor Frame Size mm [in.]	Product Name	Gear Ratio	Permissible Radial Load					Permissible Axial Load
				Distance from Shaft End mm [in.]					
				0 [0]	5 [0.2]	10 [0.39]	15 [0.59]	20 [0.79]	
Standard Type	20 (0.79)	AZM14, AZM15	-	12 (2.7)	15 (3.3)	-	-	-	3 (0.67)
	28 (1.10)	AZM24, AZM26		25 (5.6)	34 (7.6)	52 (11.7)	-	-	5 (1.12)
	42 (1.65)	AZM46		35 (7.8)	44 (9.0)	58 (13)	85 (19.1)	-	15 (3.3)
		AZM48		30 (6.7)	35 (7.8)	44 (9.0)	58 (13)	85 (19.1)	30 (6.7)
TS Geared Type	42 (1.65)	AZM46	3.6, 7.2, 10	20 (4.5)	30 (6.7)	40 (9)	50 (11.2)	-	15 (3.3)
			20, 30	40 (9)	50 (11.2)	60 (13.5)	70 (15.7)	-	40 (9)
	60 (2.35)	AZM66	3.6, 7.2, 10	120 (27)	135 (30)	150 (33)	165 (37)	180 (40)	230 (51)
FC Geared Type	42 (1.65)	AZM46	7.2, 10, 20, 30	180 (40)	200 (45)	220 (49)	250 (56)	-	100 (22)
	60 (2.35)	AZM66		270 (60)	290 (65)	310 (69)	330 (74)	350 (78)	200 (45)
PS Geared Type	42 (1.65)	AZM46	7.2, 10	45 (10.1)	60 (13.5)	80 (18)	100 (22)	-	40 (9)
			5	70 (15.7)	80 (18)	95 (21)	120 (27)	-	100 (22)
			7.2	80 (18)	90 (20)	110 (24)	140 (31)	-	200 (45)
			10	85 (19.1)	100 (22)	120 (27)	150 (33)	-	430 (96)
			25	120 (27)	140 (31)	170 (38)	210 (47)	-	510 (114)
	60 (2.35)	AZM66	36	130 (29)	160 (36)	190 (42)	240 (54)	-	700 (157)
			50	150 (33)	170 (38)	210 (47)	260 (58)	-	980 (220)
			5	170 (38)	200 (45)	230 (51)	270 (60)	320 (72)	140 (31)
			7.2	200 (45)	220 (49)	260 (58)	310 (69)	370 (83)	220 (49)
			10	220 (49)	250 (56)	290 (65)	350 (78)	410 (92)	450 (101)
HPG Geared Type	40 (1.57)	AZM46	5	150 (33)	170 (38)	190 (42)	230 (51)	270 (60)	320 (72)
			9	180 (40)	200 (45)	230 (51)	270 (60)	320 (72)	360 (81)
	60 (2.35)	AZM66	5	250 (56)	270 (60)	300 (67)	330 (74)	360 (81)	460 (103)
Harmonic Geared Type	30 (1.18)	AZM24	50, 100	100 (22)	135 (30)	175 (39)	250 (56)	-	140 (31)
	42 (1.65)	AZM46		180 (40)	220 (49)	270 (60)	360 (81)	510 (114)	220 (49)
	60 (2.35)	AZM66		320 (72)	370 (83)	440 (99)	550 (123)	720 (162)	450 (101)

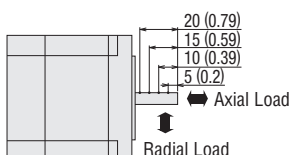
● The product name contains characters that can be used to identify the product.

● If the **PS** geared type or **HPG** geared type has either the permissible radial load or permissible axial load added, the service life of 20,000 hours is satisfied.

For the service life of gearheads, please contact the nearest Oriental Motor sales office or visit the Oriental Motor website.

◇ Radial Load and Axial Load

Distance from Shaft End mm (in.)



● Permissible Moment Load

If an eccentric load is applied during output flange face installation, calculate the moment load with the following formula. Ensure that the axial load and the moment load do not exceed the permissible values in the following formula.

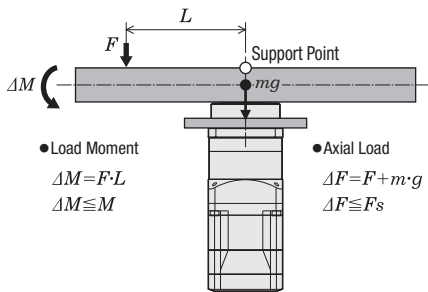
◇ HPG Geared Type Flange Output Type

Product Name	Gear Ratio	Permissible Axial Load [N]	Permissible Moment Load (N·m)	Constant a (m)
AZM46	5	430	4.9	0.006
	9	510	5.9	
AZM66	5	700	12.0	0.011
	15	980	17.2	

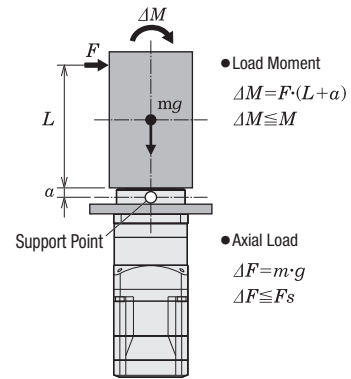
m : Load mass (kg)
 g : Gravitational acceleration (m/s²)
 F : External force (N)
 L : Overhung distance (m)
 a : Constant (m)
 ΔF : Load applied to output flange face (N)
 F_s : Permissible axial load (N)
 ΔM : Load moment (N·m)
 M : Permissible moment load (N·m)

The load moment can be calculated with the following formula.

Example 1: When an external force F (N) is applied at a position projected L (m) in the horizontal direction from the center of the output flange.



Example 2: When an external force F (N) is applied at a position projected L (m) in the vertical direction from the output flange mounting surface.

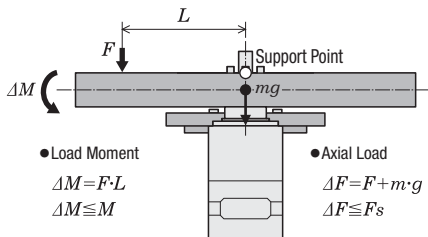


◇ Harmonic Geared Type

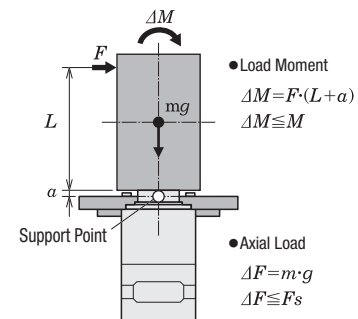
Motor Frame Size	Permissible Axial Load [N]	Permissible Moment Load (N·m)	Constant a (m)
30 mm (1.18 in.)	140	2.9	0.0073
42 mm (1.65 in.)	220	5.6	0.009
60 mm (2.36 in.)	450	11.6	0.0114

The permissible moment load can be calculated with the following formula.

Example 1: When an external force F (N) is applied at a position projected L (m) in the horizontal direction from the center of the output flange.



Example 2: When an external force F (N) is applied at a position projected L (m) in the vertical direction from the output flange mounting surface.



■ Accuracy of Harmonic Geared Type

→ Page 36

Load Torque – Driver Input Current Characteristics

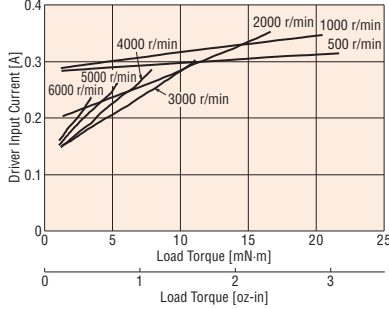
This is the relationship between the load torque and driver input current at each speed when the motor is actually operated. From these characteristics, the current capacity required when used for multiple axes can be estimated. For geared motors, convert to torque and speed at the motor axis.

$$\text{Motor shaft speed} = \text{Gear output shaft speed} \times \text{Gear ratio [r/min]}$$

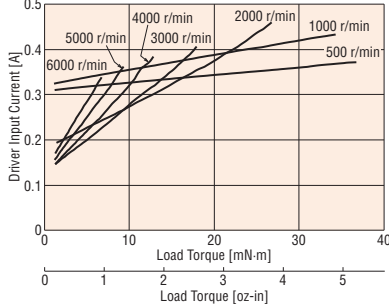
$$\text{Motor shaft torque} = \frac{\text{Gear output shaft torque}}{\text{Gear ratio}} \text{ N}\cdot\text{m (lb}\cdot\text{in)}$$

● 24 VDC

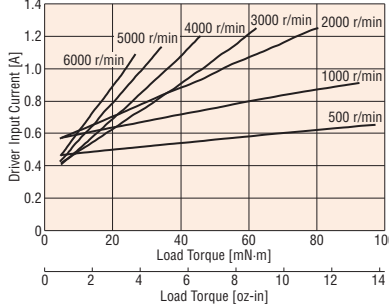
AZM14



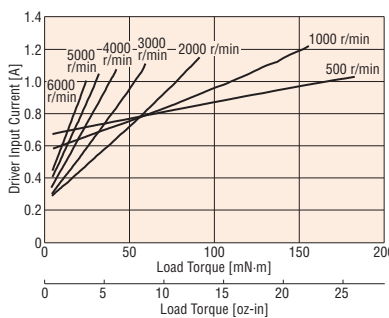
AZM15



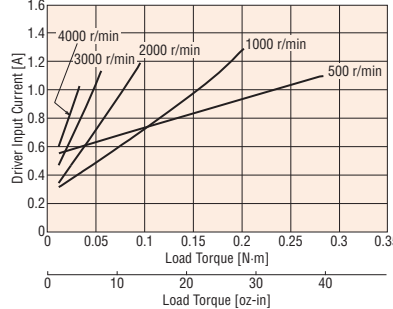
AZM24



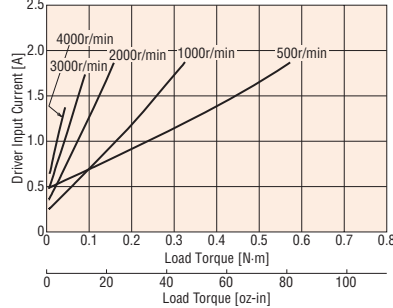
AZM26



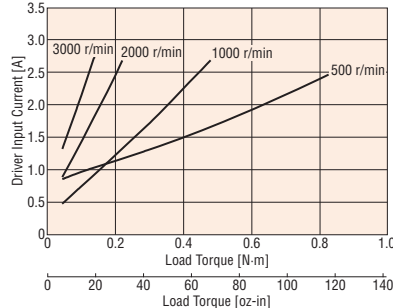
AZM46



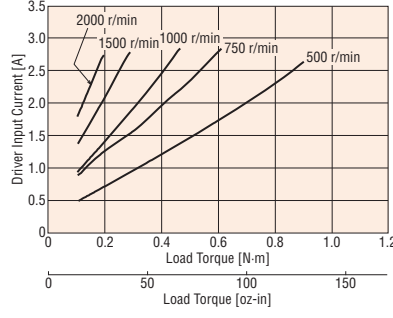
AZM48



AZM66

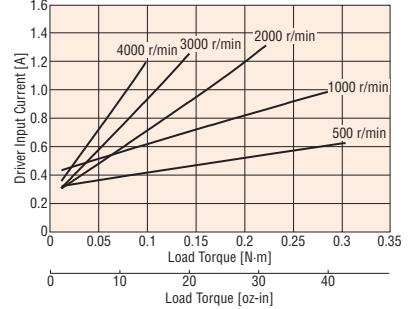


AZM69

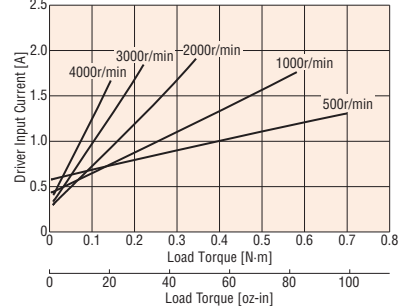


● 48 VDC

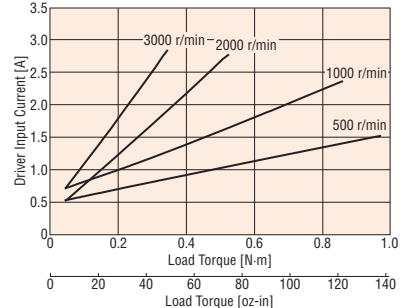
AZM46



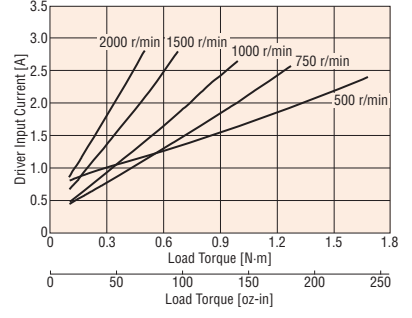
AZM48



AZM66



AZM69



Dimensions Unit: mm (in.)

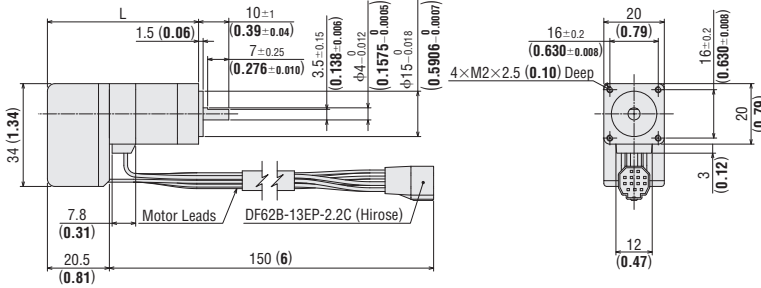
● Motor

◇ Standard Type

Frame Size 20 mm (0.79 in.)

2D & 3D CAD

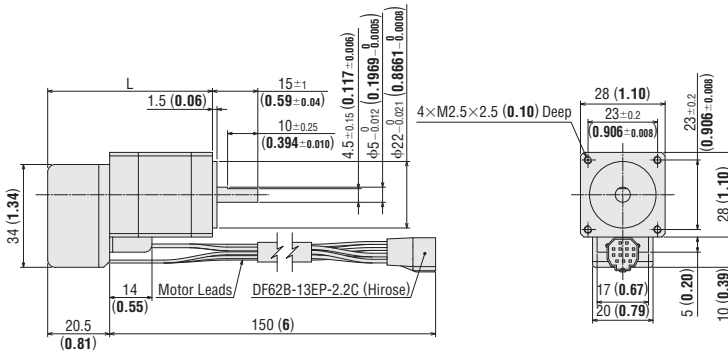
Product Name	L	Mass kg (lb.)	2D CAD
AZM14AK	50 (1.97)	0.08 (0.18)	B1212
AZM15AK	60 (2.36)	0.1 (0.22)	B1213



Frame Size 28 mm (1.10 in.)

2D & 3D CAD

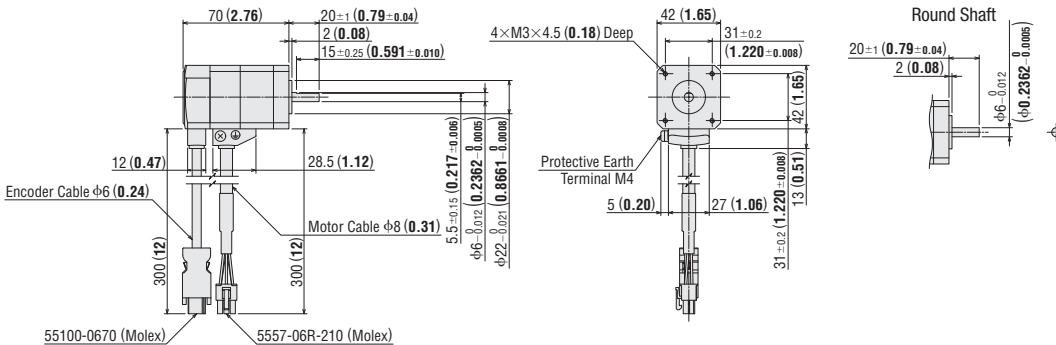
Product Name	L	Mass kg (lb.)	2D CAD
AZM24AK	54.5 (2.15)	0.15 (0.33)	B1214
AZM26AK	74 (2.91)	0.24 (0.53)	B1215



Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM46AK	0.44	B1092
Round Shaft	AZM46AOK		B1288



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

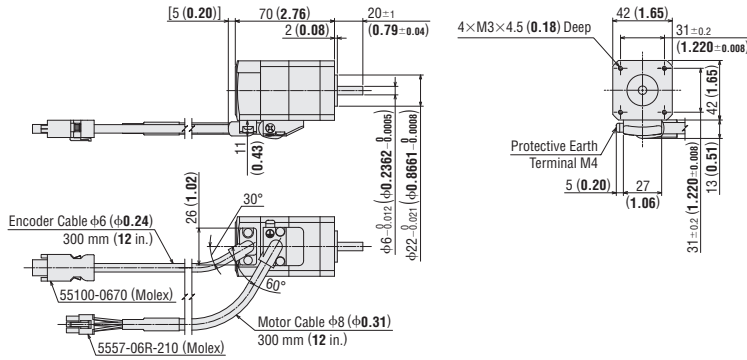
Actuators
AZ Series
Equipped

Frame Size 42 mm (1.65 in.)

Cable Outlet in Horizontal Direction

2D & 3D CAD

Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Round Shaft	AZM46AOKF	0.44	B1428

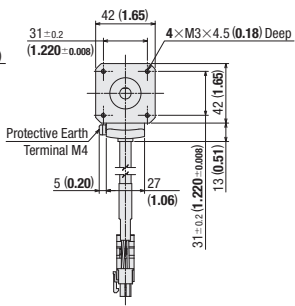
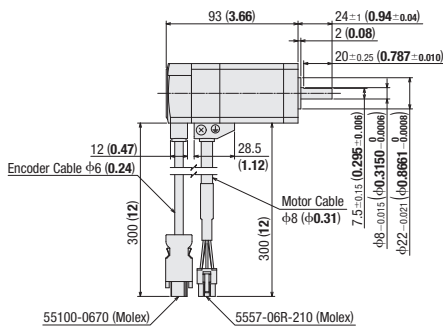


Frame Size 42 mm (1.65 in.)

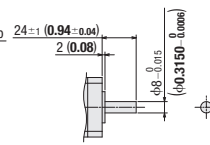
2D & 3D CAD

Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM48AK	0.68 (1.5)	B1312
Round Shaft	AZM48AOK		B1289
With Key	AZM48A1K		B1299

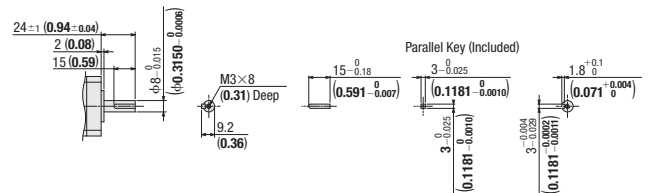
Shaft Flat on One Side



Round Shaft



With Key

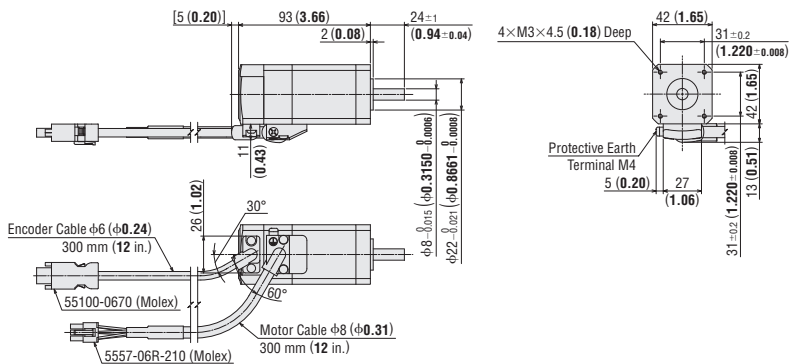


Frame Size 42 mm (1.65 in.)

Cable Outlet in Horizontal Direction

2D & 3D CAD

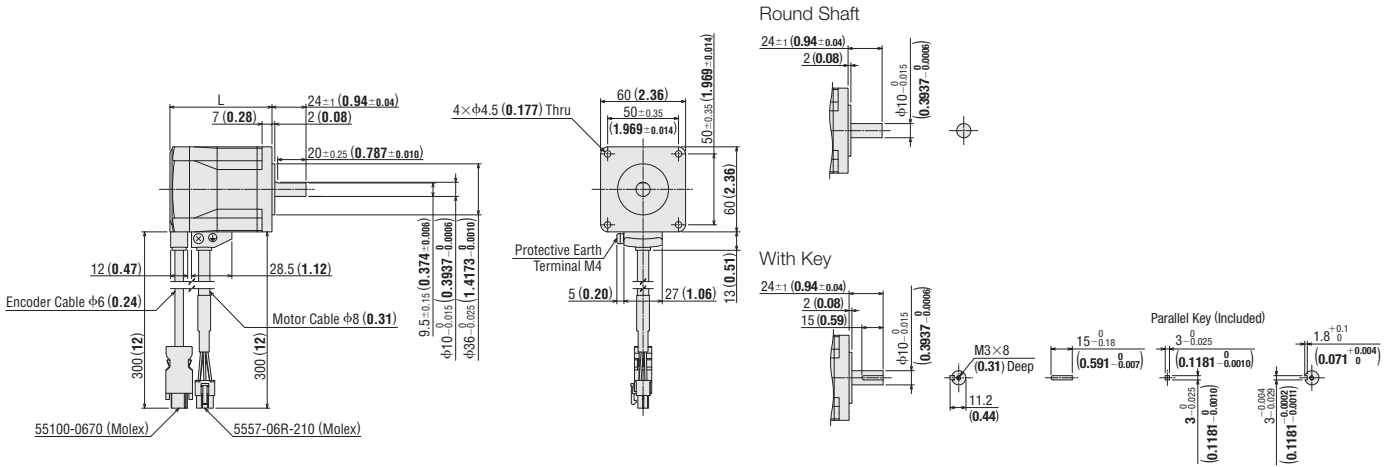
Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Round Shaft	AZM48AOKF	0.68 (1.5)	B1430



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

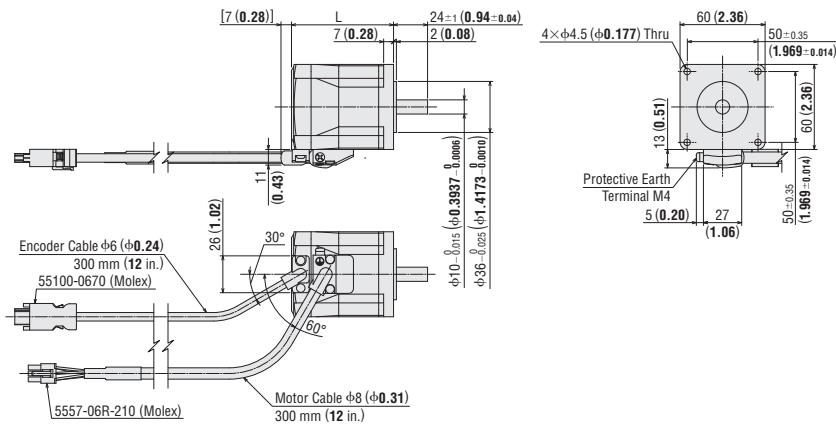
Motor Shaft Type	Product Name	L	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM66AK	72 (2.83)	0.91 (2.0)	B1093
Round Shaft	AZM66AOK			B1290
With Key	AZM66A1K			B1300
Shaft Flat on One Side	AZM69AK	97.5 (3.84)	1.4 (3.1)	B1129
Round Shaft	AZM69AOK			B1291
With Key	AZM69A1K			B1301



Frame Size 60 mm (2.36 in.) Cable Outlet in Horizontal Direction

2D & 3D CAD

Motor Shaft Type	Product Name	L	Mass kg (lb.)	2D CAD
Round Shaft	AZM66AOKF	72 (2.83)	0.91 (2.0)	B1431
	AZM69AOKF	97.5 (3.84)	1.4 (3.1)	B1433

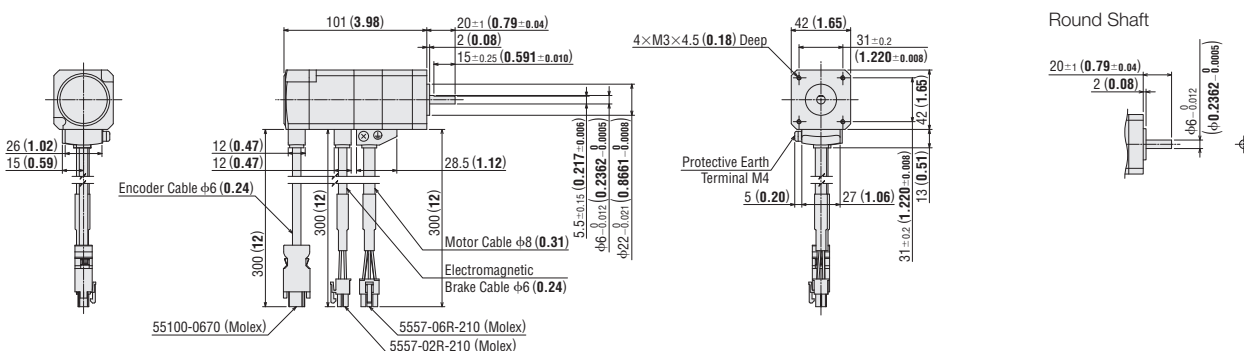


◇ Standard Type with Electromagnetic Brake

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM46MK	0.61 (1.34)	B1154
Round Shaft	AZM46MOK		B1294

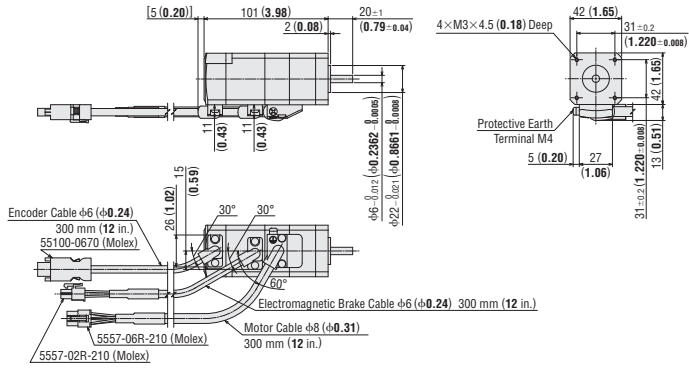


- Features
- Motors AC Input
- Motors DC Input
- Ethernet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

Frame Size 42 mm (1.65 in.)
Cable Outlet in Horizontal Direction

2D & 3D CAD

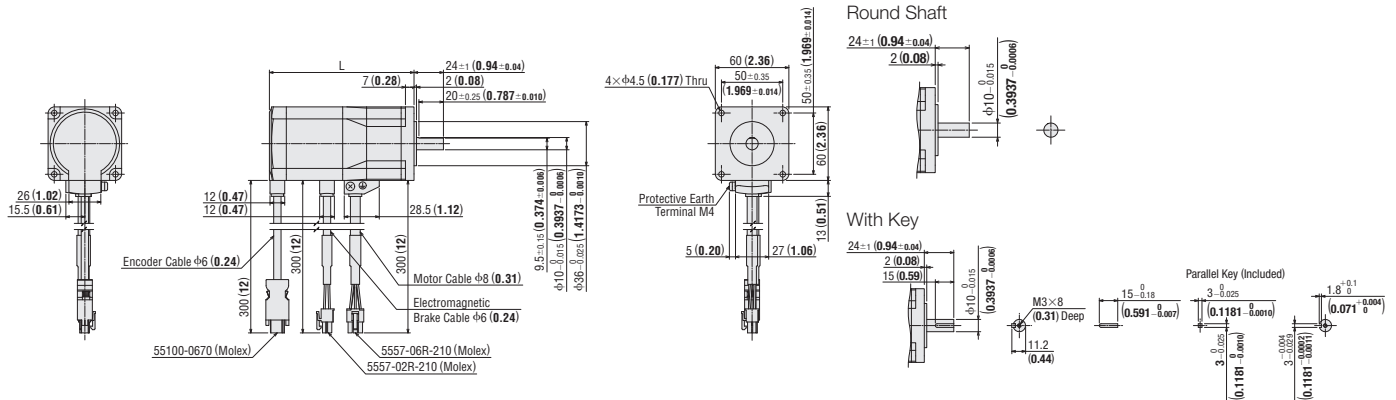
Motor Shaft Type	Product Name	Mass kg (lb.)	2D CAD
Round Shaft	AZM46MOKF	0.61 (1.34)	B1429



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

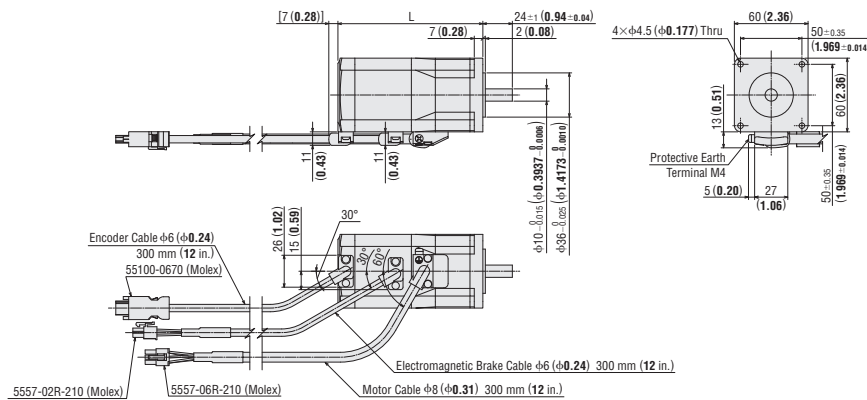
Motor Shaft Type	Product Name	L	Mass kg (lb.)	2D CAD
Shaft Flat on One Side	AZM66MK	118 (4.65)	1.3 (2.87)	B1155
Round Shaft	AZM66MOK			B1295
With Key	AZM66M1K			B1305
Shaft Flat on One Side	AZM69MK	143.5 (5.65)	1.8 (3.97)	B1156
Round Shaft	AZM69MOK			B1296
With Key	AZM69M1K			B1306



Frame Size 60 mm (2.36 in.) Cable Outlet in Horizontal Direction

2D & 3D CAD

Motor Shaft Type	Product Name	L	Mass kg (lb.)	2D CAD
Round Shaft	AZM66MOKF	118 (4.65)	1.3 (2.87)	B1432
	AZM69MOKF	143.5 (5.65)	1.8 (3.97)	B1434



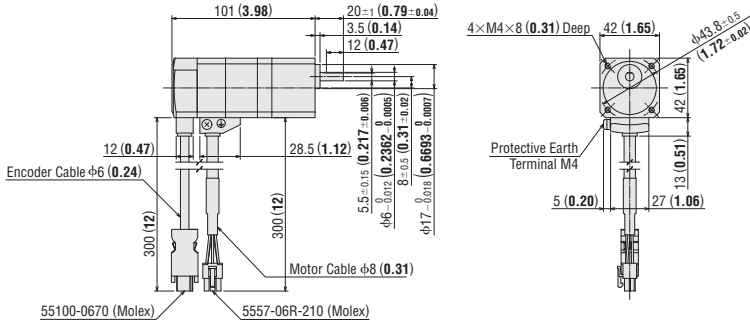
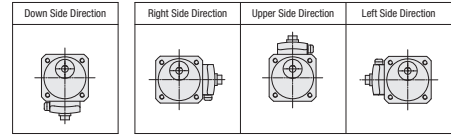
◇ **TS Geared Type**

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM46AK-TS <input type="checkbox"/>	3.6, 7.2, 10, 20, 30	0.59 (1.30)	B1157
Right Side Direction	AZM46AK-TS <input type="checkbox"/> R			B1272
Upper Side Direction	AZM46AK-TS <input type="checkbox"/> U			B1270
Left Side Direction	AZM46AK-TS <input type="checkbox"/> L			B1271

● Cable Outlet Direction

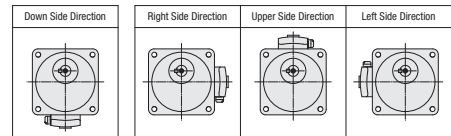


Frame Size 60 mm (2.36 in.)

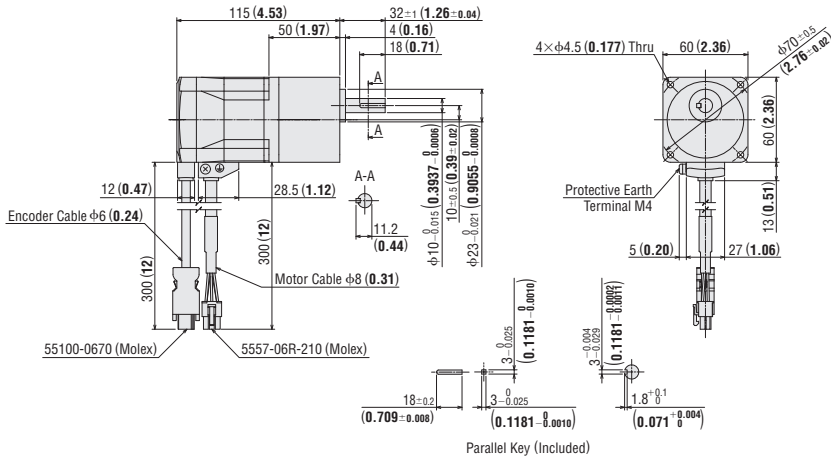
2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM66AK-TS <input type="checkbox"/>	3.6, 7.2, 10, 20, 30	1.3 (2.9)	B1158
Right Side Direction	AZM66AK-TS <input type="checkbox"/> R			B1275
Upper Side Direction	AZM66AK-TS <input type="checkbox"/> U			B1273
Left Side Direction	AZM66AK-TS <input type="checkbox"/> L			B1274

● Cable Outlet Direction



● Installation Screws: M4×60 P0.7 (4 pcs)



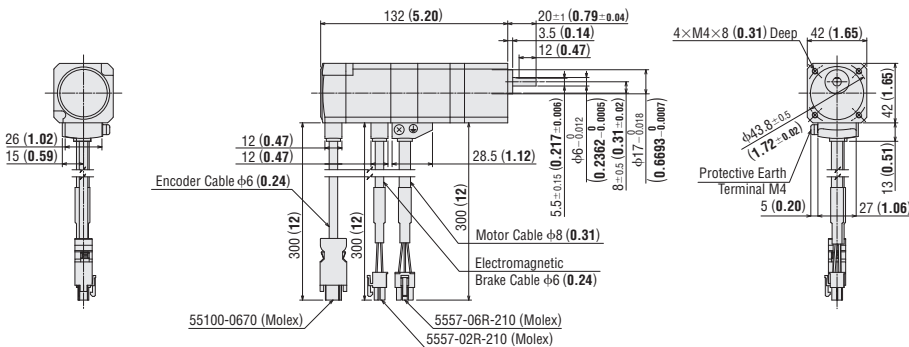
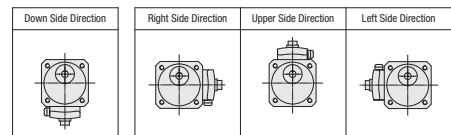
◇ **TS Geared Type with Electromagnetic Brake**

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM46MK-TS <input type="checkbox"/>	3.6, 7.2, 10, 20, 30	0.76 (1.68)	B1216
Right Side Direction	AZM46MK-TS <input type="checkbox"/> R			B1284
Upper Side Direction	AZM46MK-TS <input type="checkbox"/> U			B1282
Left Side Direction	AZM46MK-TS <input type="checkbox"/> L			B1283

● Cable Outlet Direction



● Enter the gear ratio in the box within the product name.

- Features
- Motors AC Input
- Motors DC Input
- Compatible/PP Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

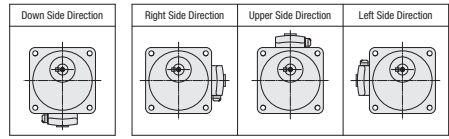
- Stepper Motors
AZ
- Linear Slides
EZS
- Cylinders
EAC
- Compact Cylinders
DR
- Rack & Pinion
L
- Gripper
EH
- Rotary Actuators
DGI

Frame Size 60 mm (2.36 in.)

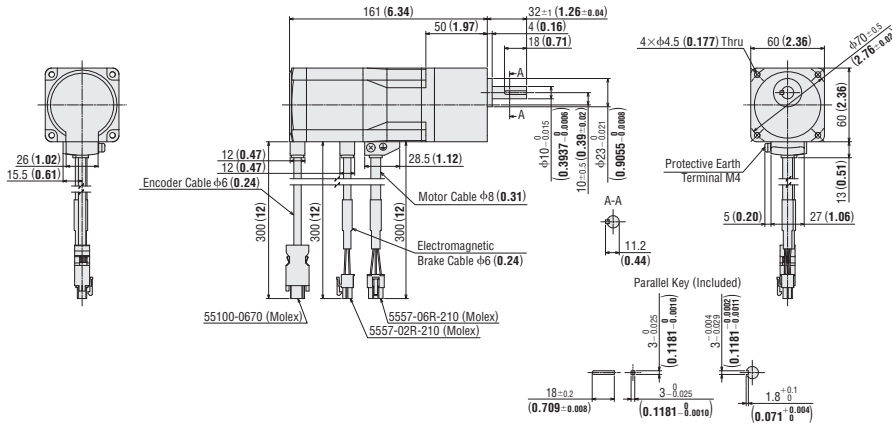
2D & 3D CAD

● Cable Outlet Direction

Cable Outlet Direction	Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Down Side Direction	AZM66MK-TS <input type="checkbox"/>	3.6, 7.2, 10, 20, 30	1.7 (3.7)	B1217
Right Side Direction	AZM66MK-TS <input checked="" type="checkbox"/>			B1287
Upper Side Direction	AZM66MK-TS <input type="checkbox"/>			B1285
Left Side Direction	AZM66MK-TS <input type="checkbox"/>			B1286



● Installation Screws: M4×60 P0.7 (4 pcs)

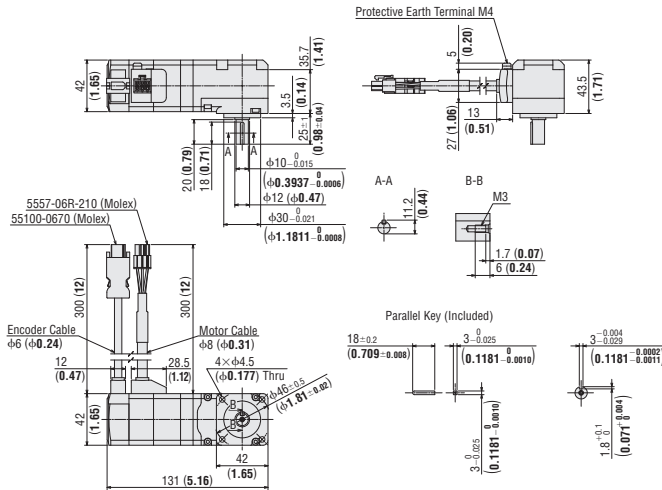


◇ **FC Geared Type**

Frame Size 42 mm (1.65 in.) Cable Outlet Direction Upper Side Direction

2D & 3D CAD

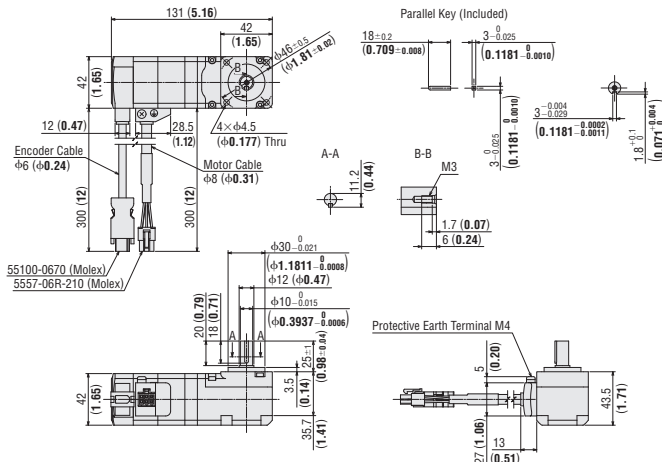
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AK-FC <input checked="" type="checkbox"/> UA	7.2, 10, 20, 30	0.79 (1.74)	B1314



Frame Size 42 mm (1.65 in.) Cable Outlet Direction Down Side Direction

2D & 3D CAD

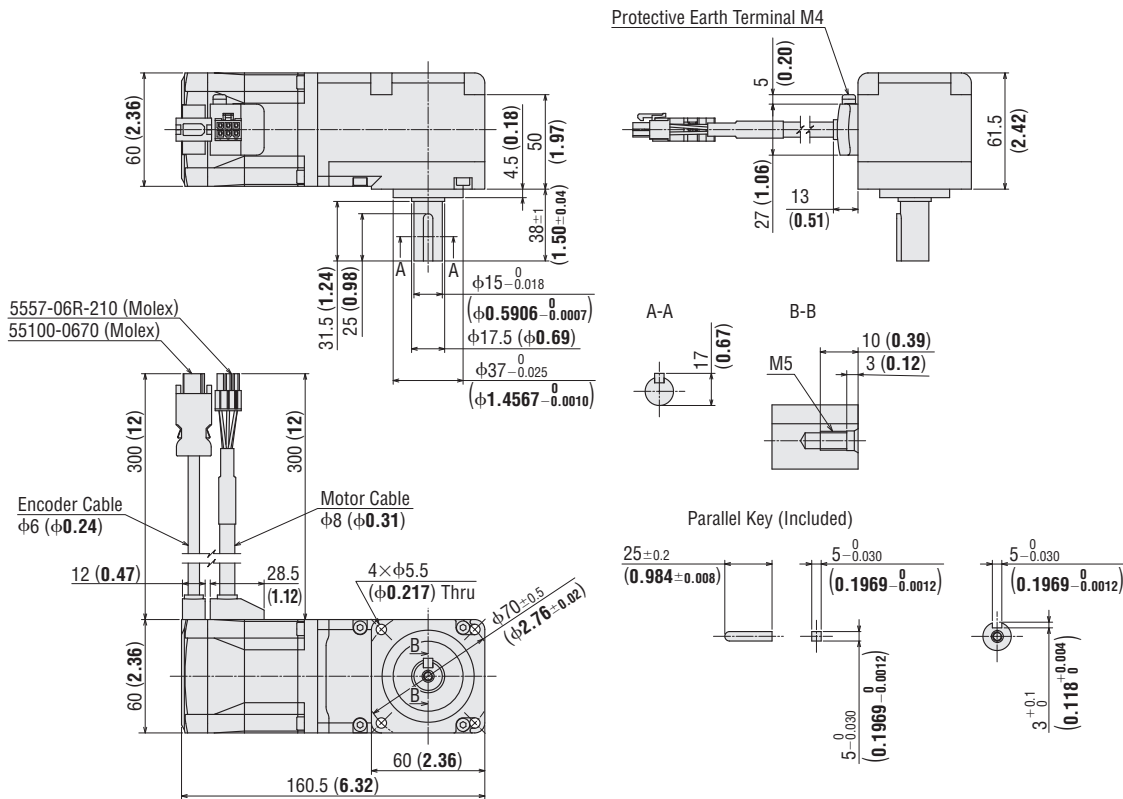
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AK-FC <input type="checkbox"/> DA	7.2, 10, 20, 30	0.79 (1.74)	B1313



● Enter the gear ratio in the box () within the product name.

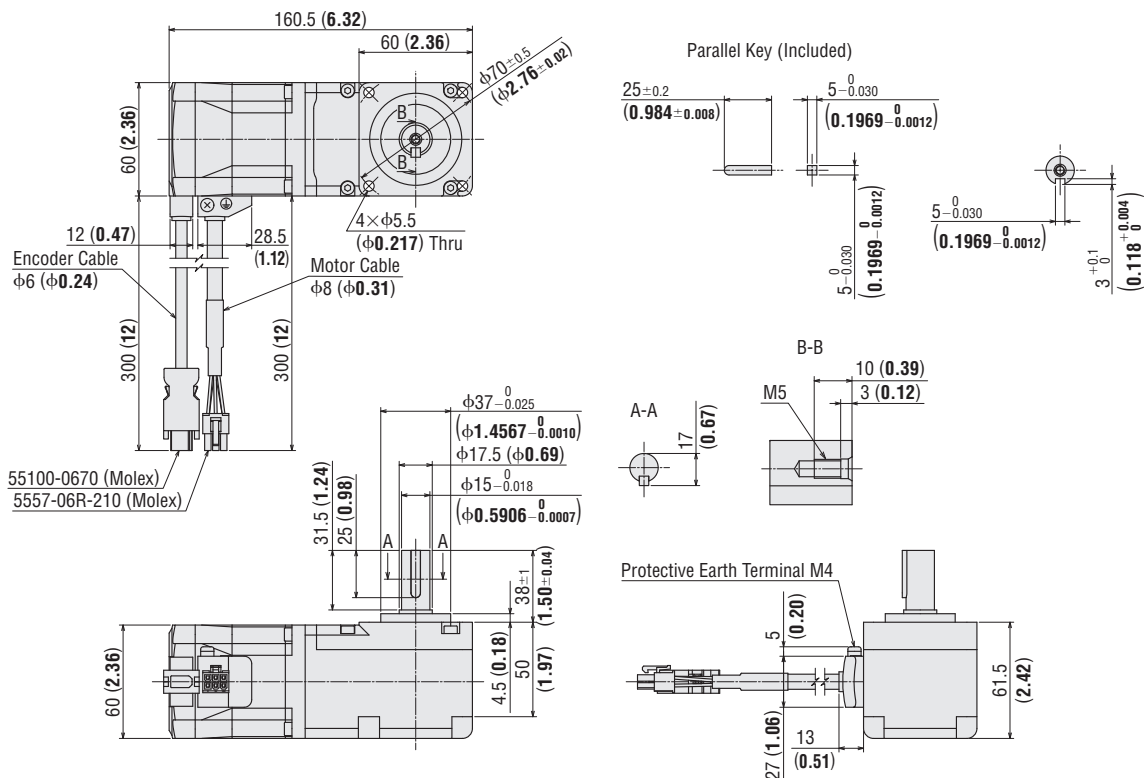
Frame Size 60 mm (2.36 in.) Cable Outlet Direction Upper Side Direction **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AK-FC <input type="checkbox"/> UA	7.2, 10, 20, 30	1.8 (4.0)	B1318



Frame Size 60 mm (2.36 in.) Cable Outlet Direction Down Side Direction **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AK-FC <input type="checkbox"/> DA	7.2, 10, 20, 30	1.8 (4.0)	B1317



● Enter the gear ratio in the box within the product name.

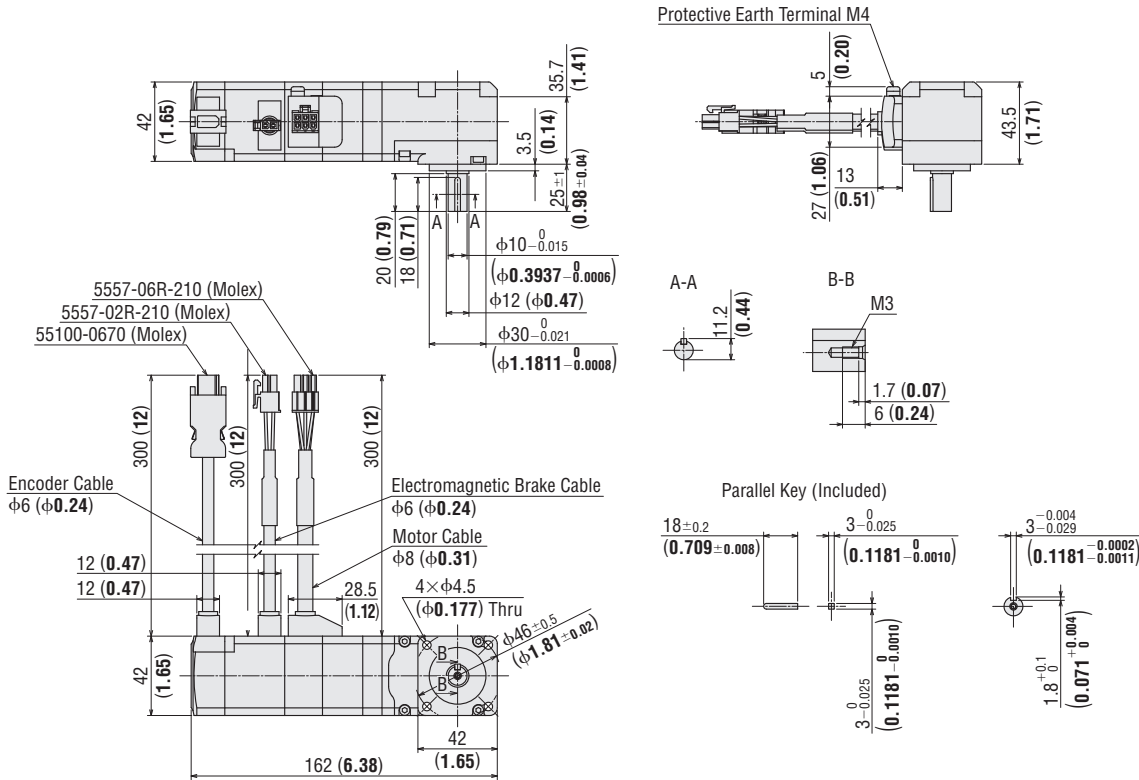
- Features
- Motors AC Input
- Motors DC Input
- Ethernet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

◇ FC Geared Type with Electromagnetic Brake

Frame Size 42 mm (1.65 in.) Cable Outlet Direction Upper Side Direction

2D & 3D CAD

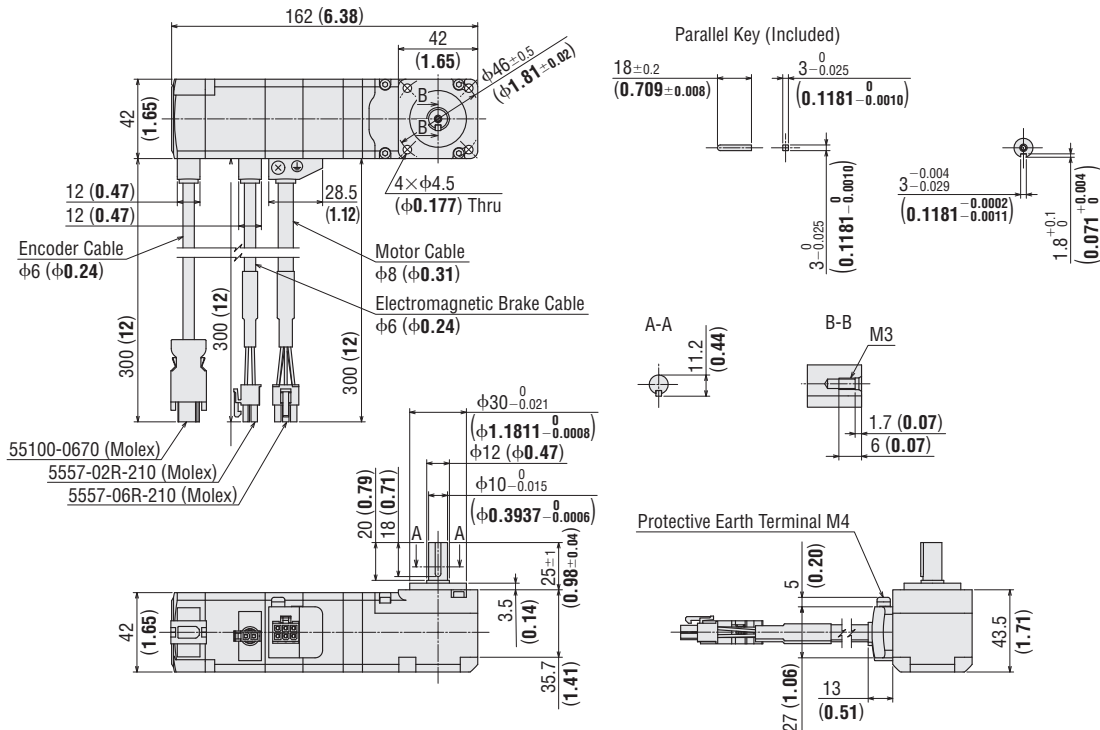
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MK-FC ■UA	7.2, 10, 20, 30	0.96 (2.1)	B1316



Frame Size 42 mm (1.65 in.) Cable Outlet Direction Down Side Direction

2D & 3D CAD

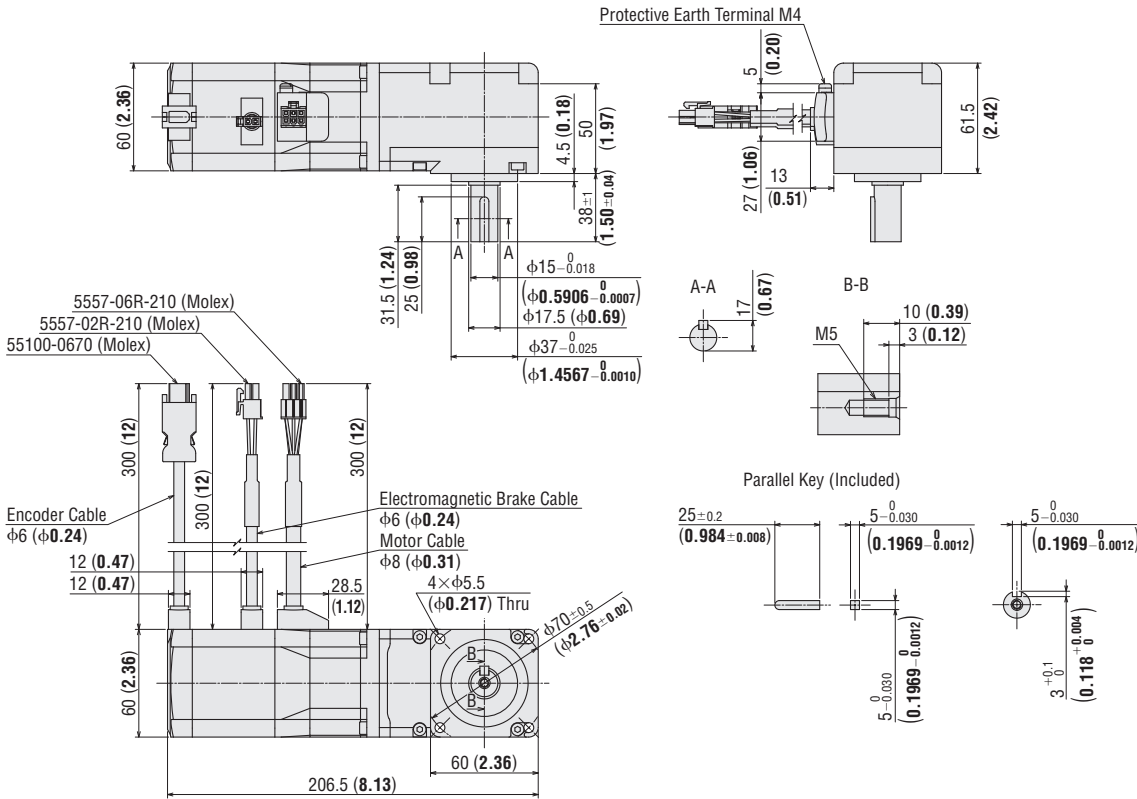
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MK-FC ■DA	7.2, 10, 20, 30	0.96 (2.1)	B1315



● Enter the gear ratio in the box (■) within the product name.

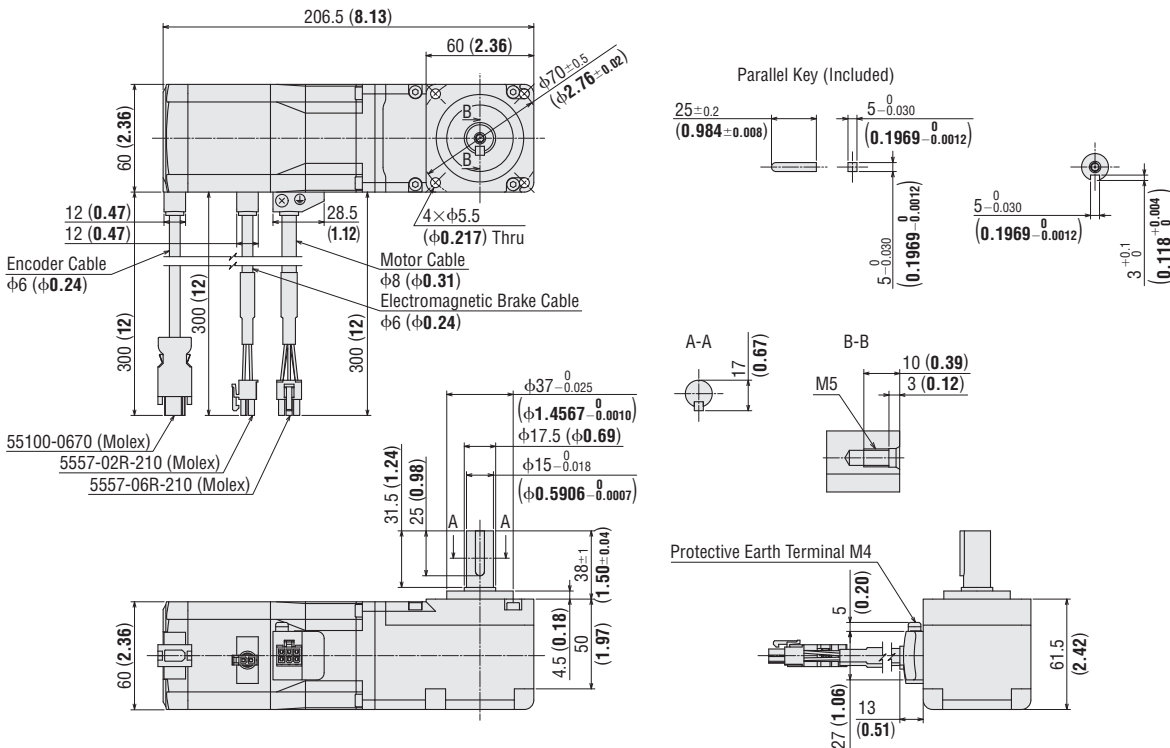
Frame Size 60 mm (2.36 in.) Cable Outlet Direction Upper Side Direction **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MK-FC <input type="checkbox"/> UA	7.2, 10, 20, 30	2.2 (4.8)	B1320



Frame Size 60 mm (2.36 in.) Cable Outlet Direction Down Side Direction **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MK-FC <input type="checkbox"/> DA	7.2, 10, 20, 30	2.2 (4.8)	B1319



● Enter the gear ratio in the box () within the product name.

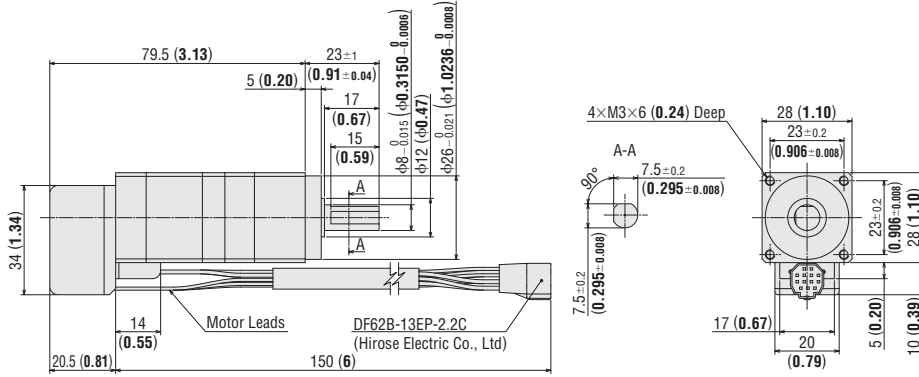
- Features
- Motors AC Input
- Motors DC Input
- Ethernet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

◇ PS Geared Type

Frame Size 28 mm (1.10 in.)

2D & 3D CAD

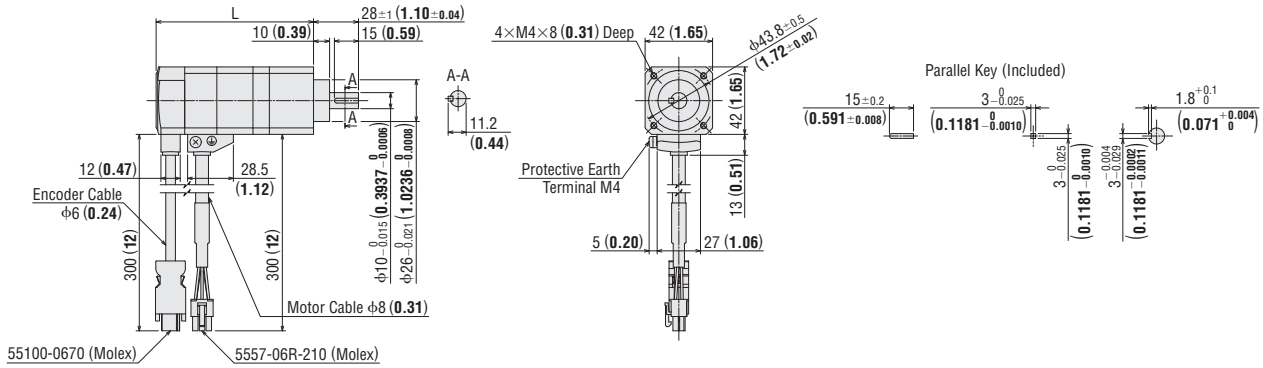
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM24AK-PS <input type="checkbox"/>	7.2, 10	0.25 (0.55)	B1366



Frame Size 42 mm (1.65 in.)

2D & 3D CAD

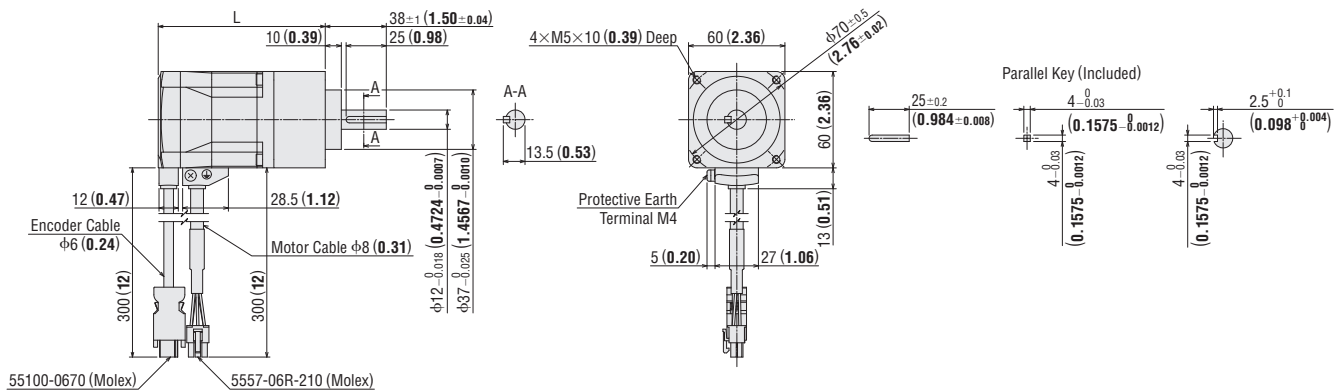
Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM46AK-PS <input type="checkbox"/>	5, 7.2, 10	98 (3.86)	0.64 (1.41)	B1159
	25, 36, 50	121.5 (4.78)	0.79 (1.74)	B1160



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM66AK-PS <input type="checkbox"/>	5, 7.2, 10	104 (4.09)	1.3 (2.9)	B1161
	25, 36, 50	124 (4.88)	1.6 (3.5)	B1162



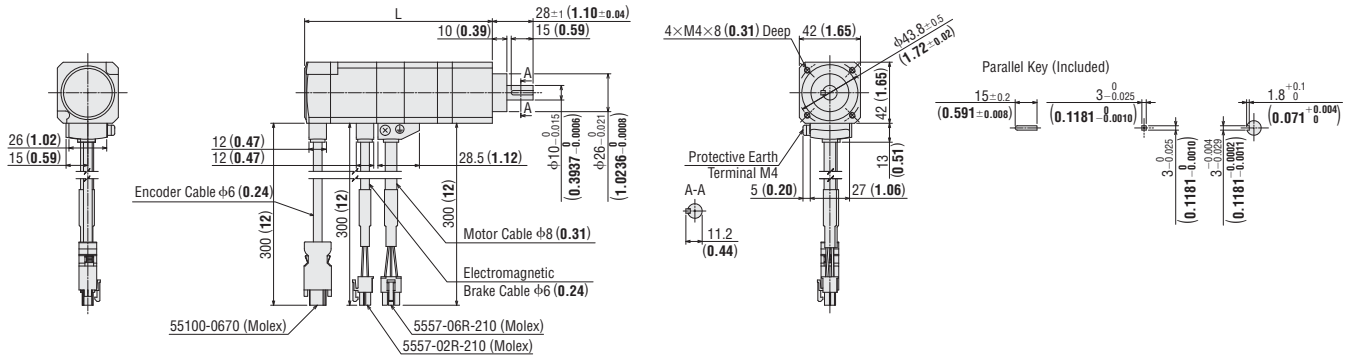
● Enter the gear ratio in the box within the product name.

◆ **PS Geared Type with Electromagnetic Brake**

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

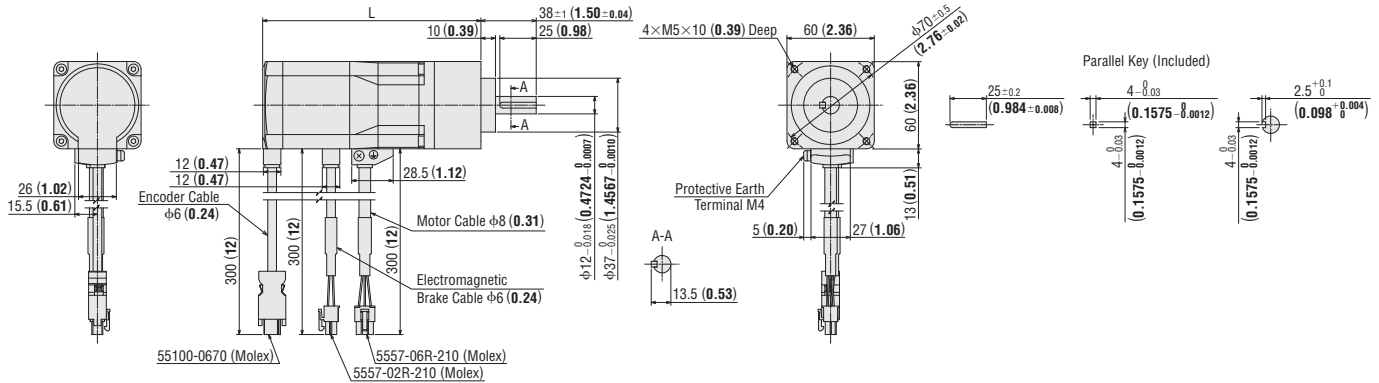
Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM46MK-PS 	5, 7.2, 10	129 (5.08)	0.81 (1.78)	B1218
	25, 36, 50	152 (5.98)	0.96 (2.1)	B1219



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

Product Name	Gear Ratio	L	Mass kg (lb.)	2D CAD
AZM66MK-PS 	5, 7.2, 10	150 (5.91)	1.7 (3.7)	B1220
	25, 36, 50	170 (6.69)	2.0 (4.4)	B1221

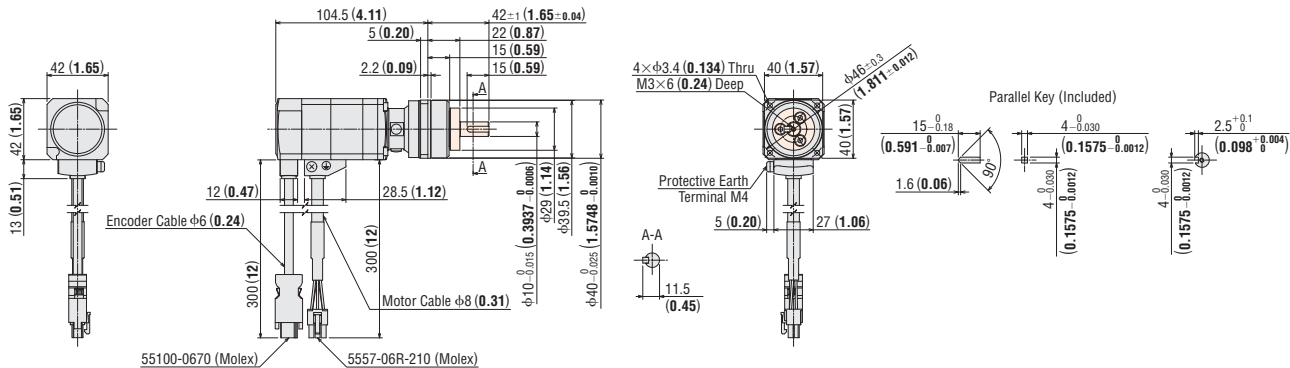


◆ **HPG Geared Type Shaft Output Type**

Frame Size 40 mm (1.57 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AK-HP 	5, 9	0.71 (1.56)	B1163



- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

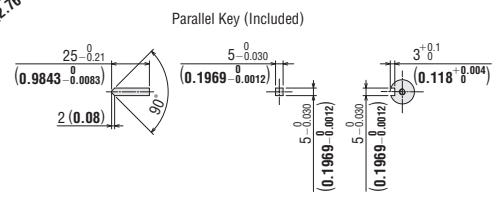
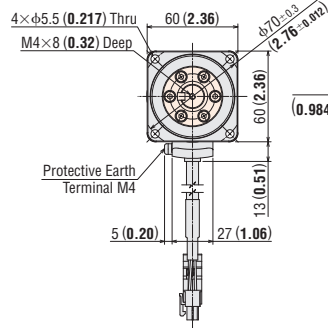
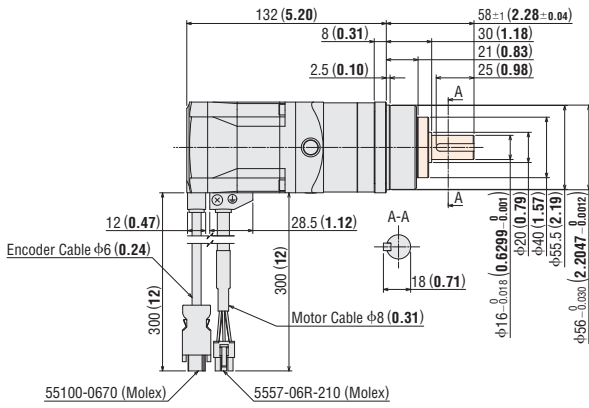
Actuators
AZ Series
Equipped

- Stepper Motors
AZ
- Linear Slides
EZS
- Cylinders
EAC
- Compact Cylinders
DR
- Rack & Pinion
L
- Gripper
EH
- Rotary Actuators
DGI

Frame Size 60 mm (2.36 in.)

2D & 3D CAD

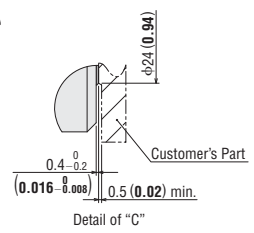
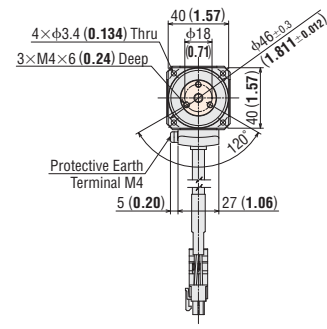
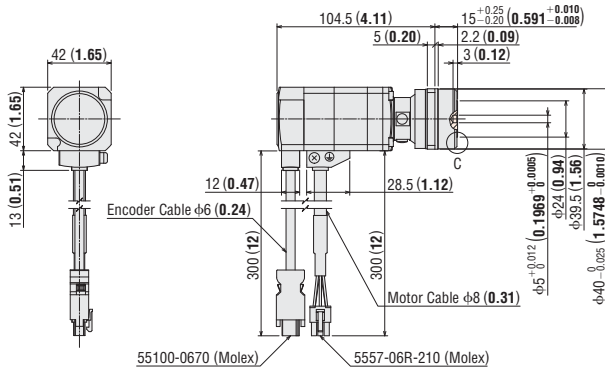
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AK-HP	5, 15	1.9 (4.2)	B1165



HPG Geared Type Flange Output Type
Frame Size 40 mm (1.57 in.)

2D & 3D CAD

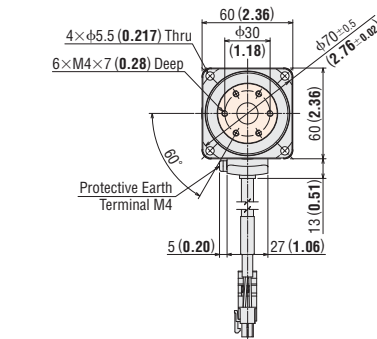
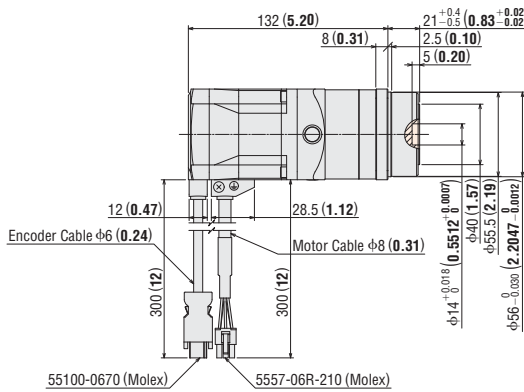
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AK-HP F	5, 9	0.66 (1.45)	B1164



Frame Size 60 mm (2.36 in.)

2D & 3D CAD

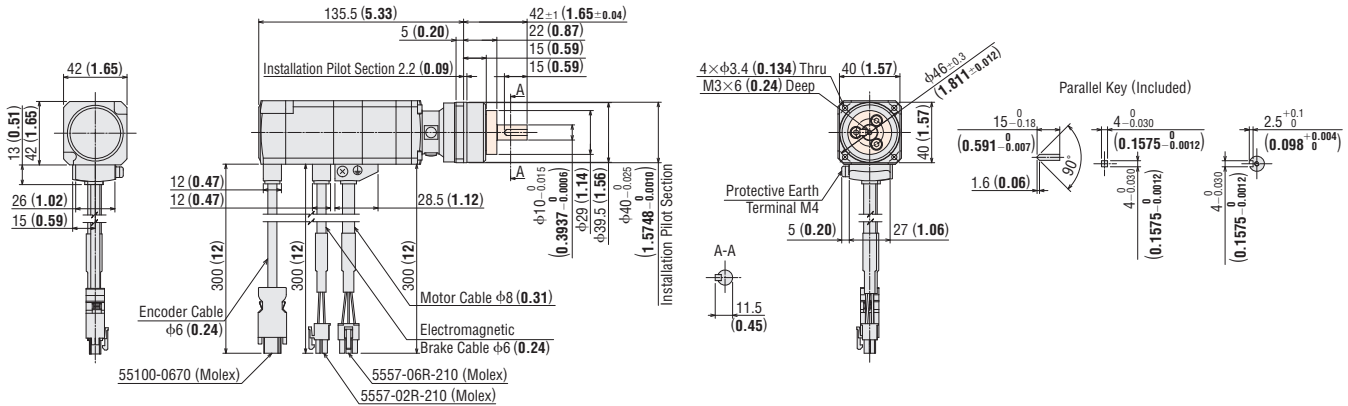
Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AK-HP F	5, 15	1.8 (4.0)	B1166



- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

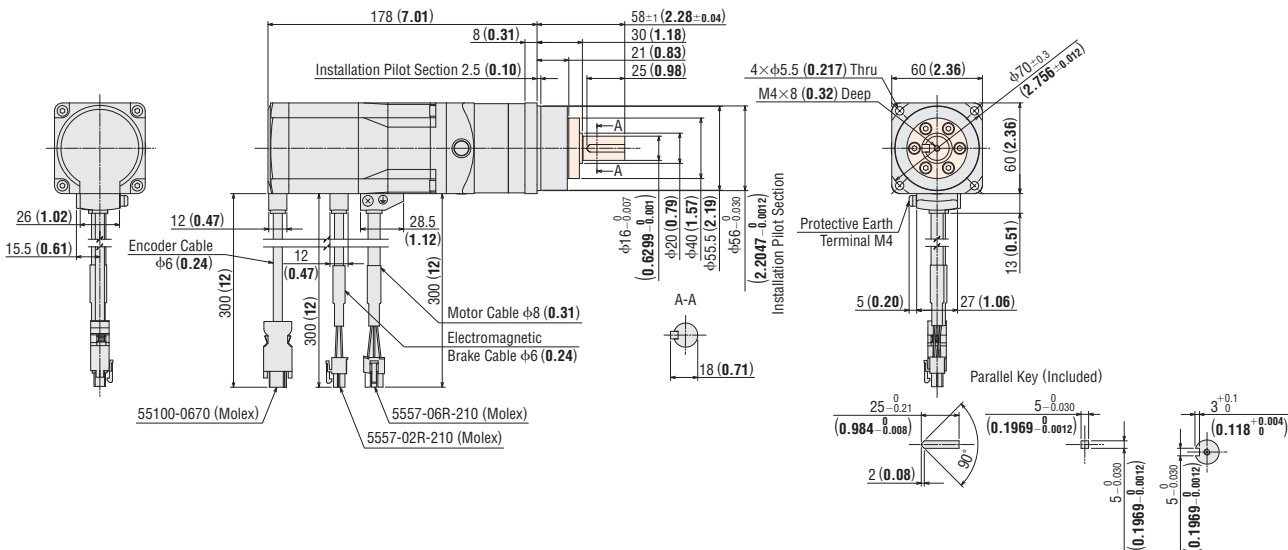
◆ **HPG Geared Type with Electromagnetic Brake Shaft Output Type**
Frame Size 40 mm (1.57 in.) **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MK-HP	5, 9	0.88 (1.94)	B1222



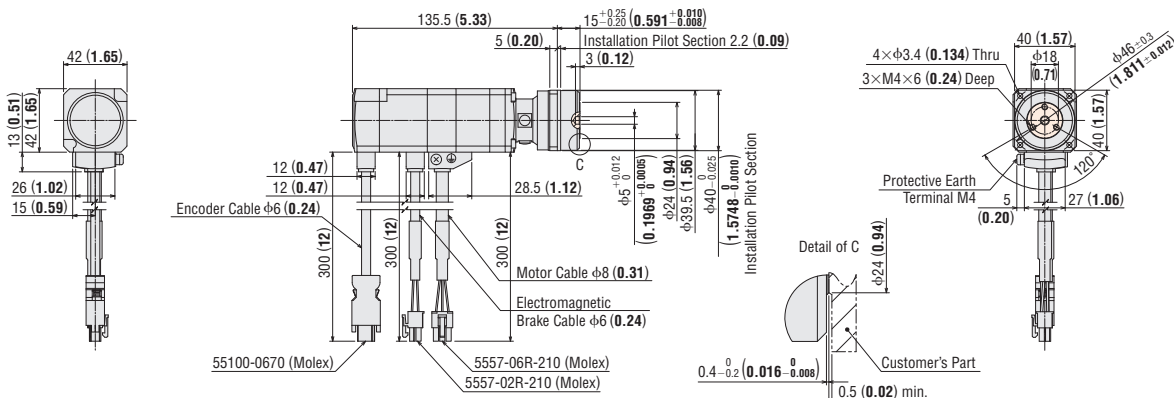
Frame Size 60 mm (2.36 in.) **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MK-HP	5, 15	2.3 (5.1)	B1224



◆ **HPG Geared Type with Electromagnetic Brake Flange Output Type**
Frame Size 40 mm (1.57 in.) **2D & 3D CAD**

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MK-HPF	5, 9	0.83 (1.83)	B1223



- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

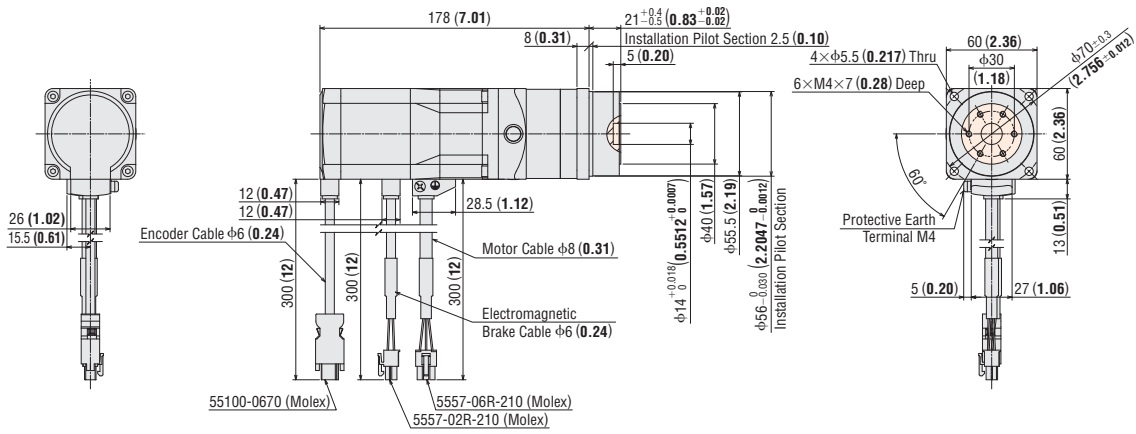
- Features
- Motors
AC Input
- Motors
DC Input
- Ethernet/IP
Compatible
Drivers
- EtherCAT
Compatible
Drivers
- Built-in
Controller
Drivers
- Pulse Input
Drivers with
RS-485
- Pulse Input
Drivers
- Network
Multi-Axis
Drivers
- Compact
Drivers
- Cables /
Accessories
- Actuators
AZ Series
Equipped

- Stepper Motors **AZ**
- Linear Slides **EZS**
- Cylinders **EAC**
- Compact Cylinders **DR**
- Rack & Pinion **L**
- Gripper **EH**
- Rotary Actuators **DGI**

Frame Size 60 mm (2.36 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MK-HP F	5.15	2.2 (4.8)	B1225

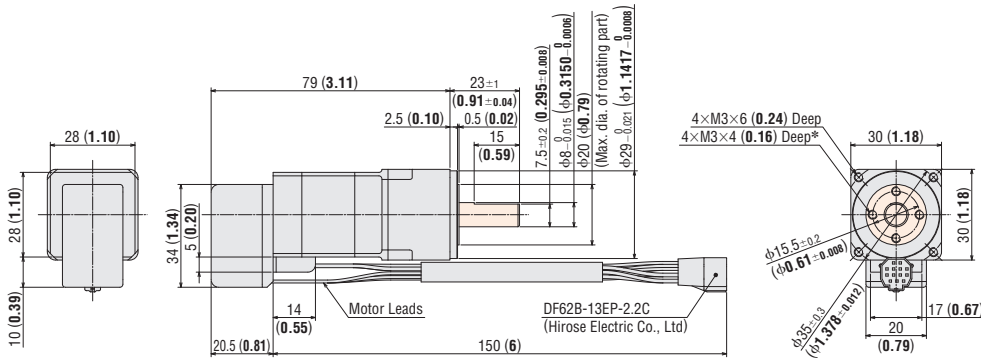


◇ **Harmonic Geared Type**

Frame Size 30 mm (1.18 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM24AK-HS ■	50.100	0.24 (0.53)	B1367

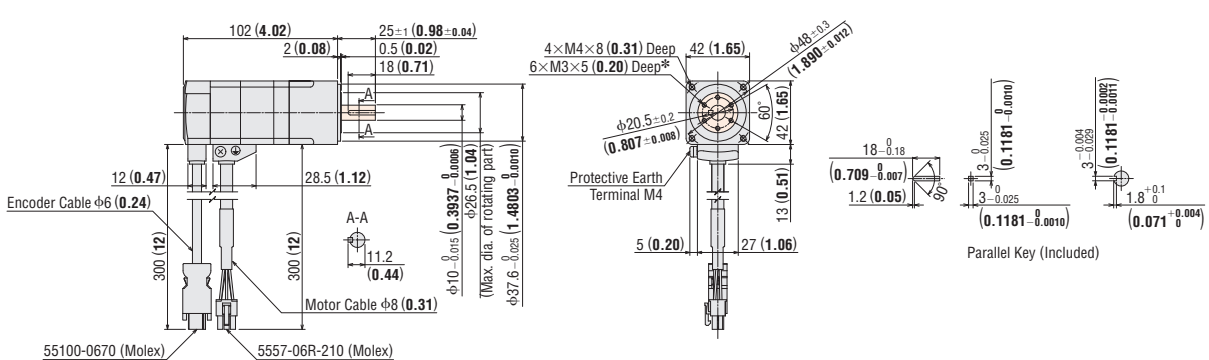


*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46AK-HS ■	50.100	0.65 (1.43)	B1167



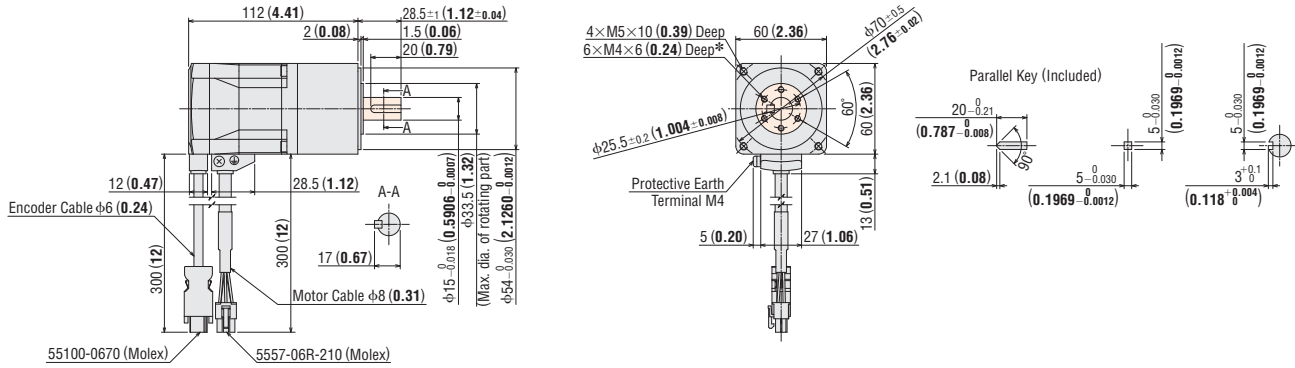
*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

- The color ■ in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box ■ within the product name.

Frame Size 60 mm (2.36 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66AK-HS 	50, 100	1.4 (3.1)	B1168



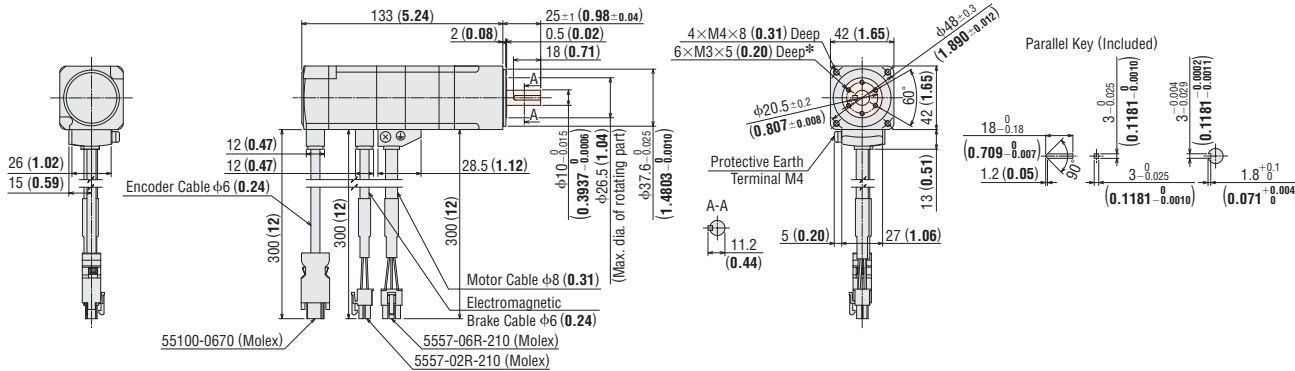
*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

◇ Harmonic Geared Type with Electromagnetic Brake

Frame Size 42 mm (1.65 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM46MK-HS 	50, 100	0.82 (1.8)	B1226

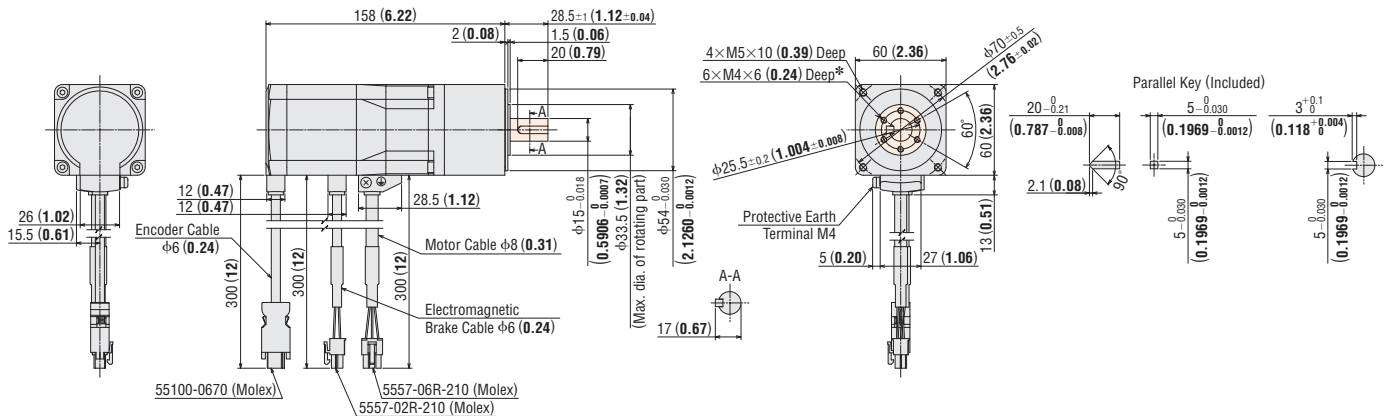


*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

Frame Size 60 mm (2.36 in.)

2D & 3D CAD

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
AZM66MK-HS 	50, 100	1.8 (4)	B1227



*The position of the output shaft and the positions of the screw holes cannot be specified in a dimensions drawing, so please do not design using the screw hole dimensions of the load installation surface.

- The color in the dimensions drawing indicates the rotating part.
- Enter the gear ratio in the box within the product name.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

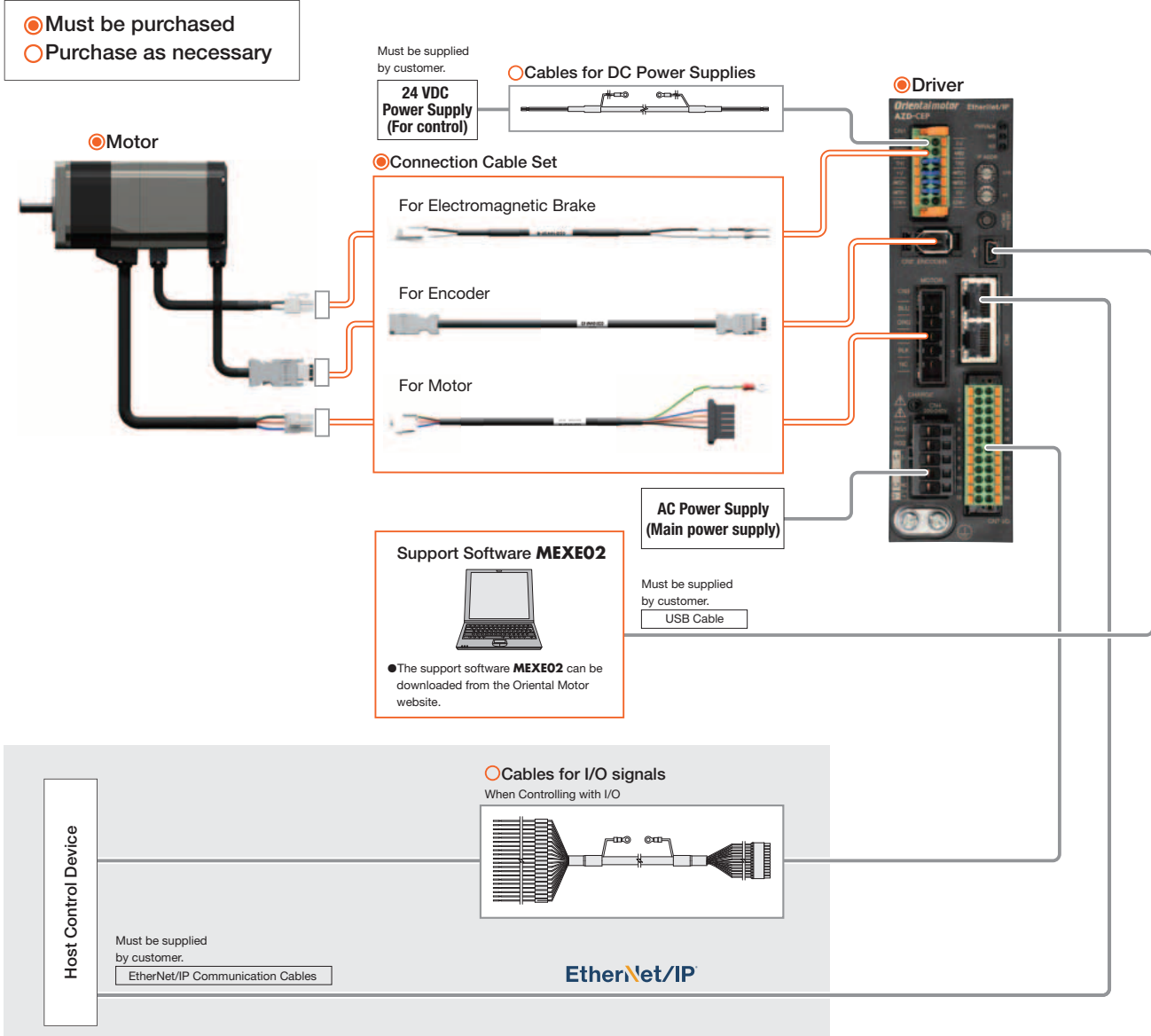
Actuators
AZ Series
Equipped

αSTEP AZ Series EtherNet/IP™ Compatible Drivers AC Input

System Configuration

● When combined with an AC input EtherNet/IP-compatible driver

An example of a configuration using I/O control via EtherNet/IP-compatible driver or using EtherNet/IP is shown below. The motor, driver and connection cable set/flexible connection cable set must be ordered individually.



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.

Product Number Code

AZD - C EP

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	Network Type	EP: EtherNet/IP

Product Line and List Price

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AEP	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CEP	\$656.00

Included Items

Connector	Operating Manual
<ul style="list-style-type: none"> For CN4 (1 Piece) For CN1 (1 Piece) For CN7 (1 Piece) Connector Wiring Lever (1 Piece) 	1 Set

Specifications

Communication Specifications

Communication Protocol	EtherNet/IP (CT16 compliant)	
Vendor ID	187: Oriental Motor Company	
Device Type	43: Generic Device	
Baud Rate	10/100Mbps (Auto-negotiation)	
Communication Mode	Full-Duplex/Half-Duplex (Auto-negotiation)	
Cable Specifications	Shielded Twisted-Pair (STP) Cable Straight/Cross Category 5e or higher	
Number of Occupied Bytes	Output (Scanner→Driver)	40 bytes
	Input (Driver→Scanner)	56 bytes
Implicit Communication	Number of Compatible Connections	2
	Connection Type	Exclusive Owner, Input Only
	Communication Cycle (RPI)	1~3200ms
	Connection Type (Scanner→Driver)	Point-to-Point
	Connection Type (Driver→Scanner)	Point-to-Point, Multicast
Explicit Communication	Data Reflection Trigger	Cyclic
	Number of Compatible Connections	6
Connection Type	UCMM, Connection	
IP Address Setting Method	IP Address Setting Switch, Parameters, DHCP	
Compatible Topologies	Star, Linear, Ring (Device Level Ring)	

Driver Specifications



Driver Product Name	AZD-AEP	AZD-CEP
Main Power Supply	Input Voltage	Single-Phase 100–120 VAC –15 to +6% 50/60 Hz · Single-Phase 200–240 VAC –15 to +6% 50/60 Hz · Three-Phase 200–240 VAC –15 to +6% 50/60 Hz
	Input Current*1	Single-Phase AZM46 : 2.7A, AZM48 : 2.7A, AZM66 : 3.8A AZM69 : 5.4A, AZM98 : 5.5A, AZM911 : 6.4A DGM85 : 2.7A, DGM130 : 3.8A, DGM200 : 6.4A LM2 : 3.8A, LM4 : 3.8A
		Three-Phase –
Control Power Supply	Input Voltage	24 VDC±5%*2
	Input Current	0.25 A (0.5 A) *3
Interface	Pulse Input	· 2 points, Photocoupler · Max. Input Pulse Frequency Line Driver: 1 MHz (For 50% duty) Open Collector: 250 kHz (For 50% duty)
	Control Input	6 points, Photocoupler
	Pulse Output	2 points, Line Driver
	Control Output	6 points, Photocoupler and Open Collector Output
	Power Shut Down Signal Input	2 points, Photocoupler
	Power Shut Down Monitor Output	1 point, Photocoupler and Open Collector Output
	Field Network	EtherNet/IP

*1 Varies depending on the combined motor.

*2 When using a motor with electromagnetic brake, 24 VDC±4% when using Oriental Motor cables extended to 20 m (65.6 ft.) between the motor and driver.

*3 The value inside the () represents the value when connected to a motor with an electromagnetic brake. 0.33 A for **AZM46**.

General Specifications

Degree of Protection	IP10
Operating Environment	Ambient temperature: 0 to +55°C (+32 to +131°F) (Non-freezing)* Humidity: 85% or less (Non-condensing) Altitude: Max. of 1000 m (3300 ft.) above sea level Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Storage Conditions Transportation Conditions	Ambient temperature: –25 to +70°C (–13 to +158°F) (Non-freezing) Humidity: 85% or less (Non-condensing) Altitude: Max. of 3000 m (10000 ft.) above sea level Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the following locations: · Protective Earth Terminal—Main Power Supply Terminal · Encoder Connector—Main Power Supply Terminal · Input/Output Signal Terminal—Main Power Supply Terminal
Dielectric Strength	No abnormalities when the specified voltage is applied to the following locations for 1 minute: · Protective Earth Terminal—Main Power Supply Terminal 1500 VAC 50/60 Hz · Encoder Connector—Main Power Supply Terminal 1800 VAC 50/60 Hz · Input/Output Signal Terminal—Main Power Supply Terminal 1800 VAC 50/60 Hz

*When a heat sink of a capacity at least equivalent to an aluminum plate with a size of 200×200 mm (7.87×7.87 in.) and 2 mm (0.08 in.) thickness is installed.

Note

- When measuring insulation resistance or performing dielectric voltage withstanding test, disconnect the motor and driver.
Also, do not perform these tests on the ABZ0 sensor part of the motor.

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

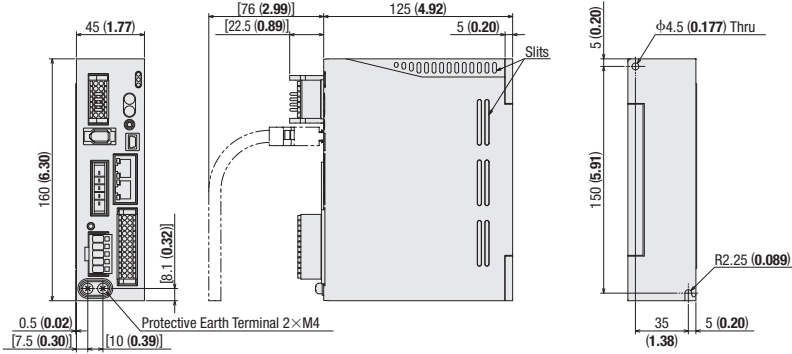
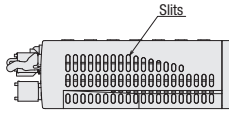
Cables /
Accessories

Actuators
AZ Series
Equipped

Dimensions Unit: mm (in.)

2D & 3D CAD

Product Name	Mass kg (lb.)	2D CAD
AZD-AEP, AZD-CEP	0.68 (1.50)	B1504



● Included Items

Connector for Main Power/Regeneration Unit (CN4)

Connector: 05JFAT-SAXGDK-H5.0 (Japan Solderless Terminal)

Connector Wiring Lever

24 VDC Power Supply Input/Electromagnetic Brake Connection /Regeneration Unit Thermal Input/Power Shut Down Monitor Input/Output Connector (CN1)

Connector: DFMC1,5/7-ST-3,5-LR (Phoenix Contact)

I/O Signals Connector (CN7)

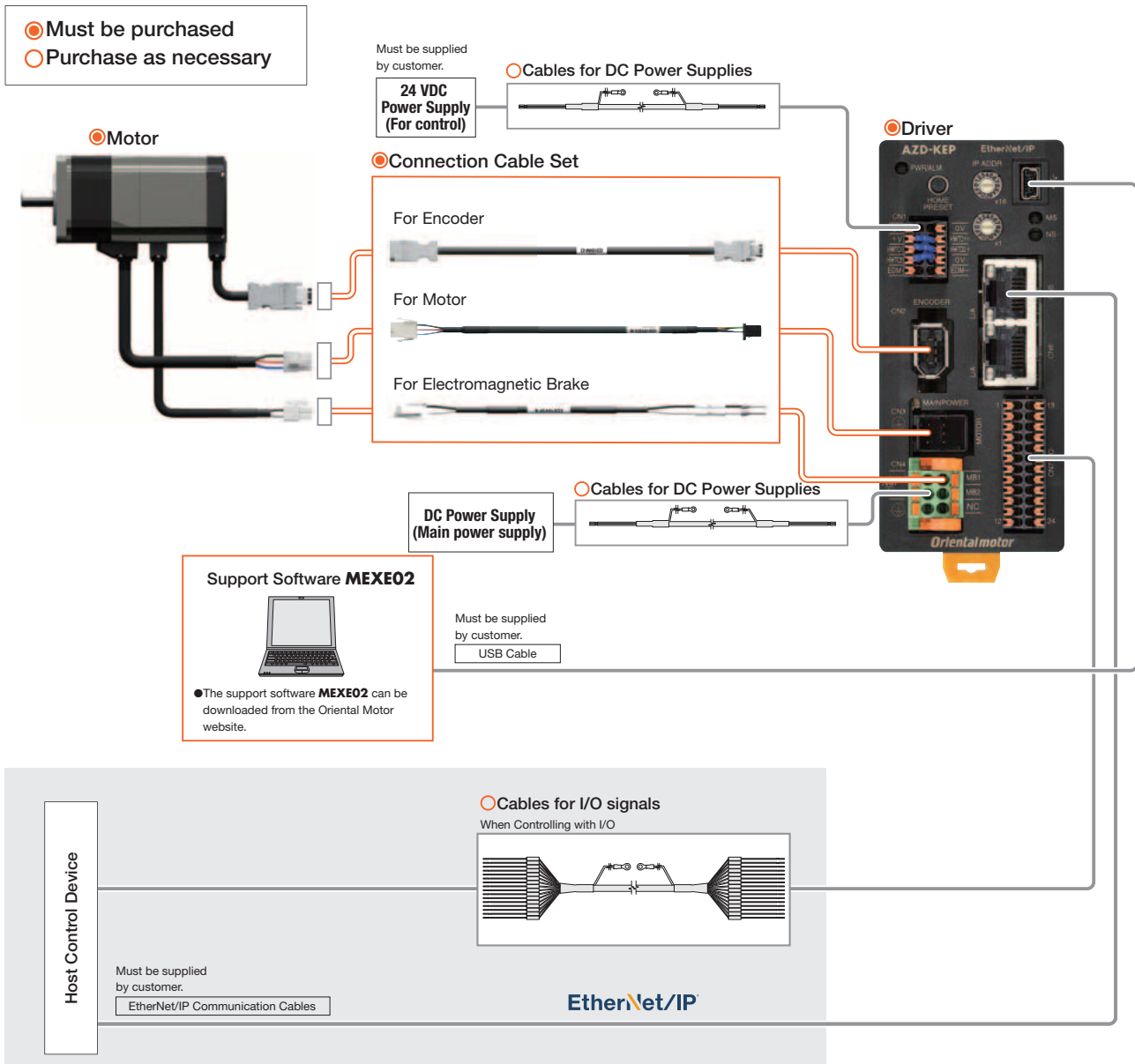
Connector: DFMC1,5/12-ST-3,5 (Phoenix Contact)

DC Input

System Configuration

When combined with a DC input EtherNet/IP-compatible driver

An example of a configuration using I/O control via EtherNet/IP-compatible driver or using EtherNet/IP is shown below. The motor, driver and connection cable set/flexible connection cable set must be ordered individually.



Product Number Code

AZD - K EP

① ② ③

①	Driver Type	AZD: AZ Series Driver
②	Power Supply Input	K: 24/48 VDC
③	Network Type	EP: EtherNet/IP

Product Line and List Price

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KEP	\$506.00

Included Items

Connector	Operating Manual
<ul style="list-style-type: none"> For CN4 (1 Piece) For CN1 (1 Piece) For CN7 (1 Piece) 	1 Set

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Power Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Specifications

● Communication Specification

Linear Slides EzS	Communication Protocol	EtherNet/IP (CT16 compliant)	
	Vendor ID	187: Oriental Motor Company	
	Device Type	43: Generic Device	
Cylinders EAC	Baud Rate	10/100 Mbps (Auto-negotiation)	
	Communication Mode	Full-Duplex/Half-Duplex (Auto-negotiation)	
Compact Cylinders DR	Cable Specifications		
	Shielded Twisted-Pair (STP) Cable Straight/Cross Category 5e or higher		
	Number of Occupied Bytes	Output (Scanner→Driver)	40 bytes
Input (Driver→Scanner)		56 bytes	
Rack & Pinion L	Number of Compatible Connections		2
	Connection Type		Exclusive Owner, Input Only
	Communication Cycle (RPI)		1~3200 ms
	Implicit Communication	Connection Type (Scanner→Driver)	
Connection Type (Driver→Scanner)		Point-to-Point, Multicast	
Data Reflection Trigger		Cyclic	
Gripper EH	Number of Compatible Connections		6
	Connection Type		UCMM, Connection
	IP Address Setting Method		IP Address Setting Switch, Parameters, DHCP
	Compatible Topologies		Star, Linear, Ring (Device Level Ring)

● Driver Specifications



Driver Product Name	AZD-KEP	
Input Voltage	· 24 VDC±5%	
	· 48 DCV±5%	
Main Power Supply	AZM14: 0.4 A, AZM15: 0.5 A, AZM24: 1.6 A, AZM26: 1.5 A AZM46: 1.5 A, AZM48: 2.1 A, AZM66: 3.3 A, AZM69: 3.1 A DGM60: 1.6 A, DGB85: 1.5 A, DGM85: 1.5 A, DGB130: 3.3 A DGM130: 3.3 A, DR20: 0.4 A, DR28: 1.3 A, DRSM42: 1.5 A DRSM60: 2.2 A, EH4: 1.6 A, LM2: 3.3 A, LM4: 3.3 A	
	Input Current*1	
Control Power Supply	Input Voltage	24 VDC±5%*2
	Input Current	0.15 A (0.4 A) *3
Interface	Pulse Input	· 2 points, Photocoupler · Max. Input Pulse Frequency Line Driver: 1 MHz (For 50% duty) Open Collector: 250 kHz (For 50% duty)
	Control Input	6 points, Photocoupler
	Pulse Output	2 points, Line Driver
	Control Output	6 points, Photocoupler and Open Collector Output
	Power Shut Down Signal Input	2 points, Photocoupler
	Power Shut Down Monitor Output	1 point, Photocoupler and Open Collector Output
	Field Network	EtherNet/IP

*1 Varies depending on the combined motor.

*2 When using a motor with electromagnetic brake, 24 VDC±4% when using Oriental Motor cables extended to 20 m (65.6 ft.) between the motor and driver.

*3 The value inside the () represents the value when connected to a motor with an electromagnetic brake. **AZM46** is 0.23 A.

● General Specifications

Degree of Protection	IP10
Operating Environment	Ambient temperature: 0 to +50°C (+32 to +122°F) (Non-freezing)
	Humidity: 85% or less (Non-condensing)
	Altitude: Max. of 1000 m (3300 ft.) above sea level
	Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Storage Conditions Transportation Conditions	Ambient temperature: -25 to +70°C (-13 to +158°F) (Non-freezing)
	Humidity: 85% or less (Non-condensing)
	Altitude: Max. of 3000 m (10000 ft.) above sea level
	Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the following locations: · Protective Earth Terminal—Power Supply Terminal

Note

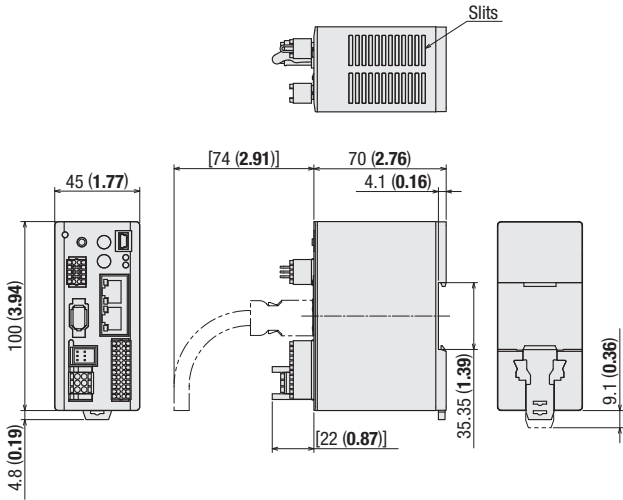
● When measuring insulation resistance, disconnect the motor and driver.

Also, do not perform this test on the ABZO sensor part of the motor.

Dimensions Unit: mm (in.)

2D & 3D CAD

Product Name	Mass kg (lb.)	2D CAD
AZD-KEP	0.18 (0.40)	B1505



● Included Items

- Main Power Connector (CN4)
Connector: DFMC1,5/3-ST-3,5-LR (Phoenix Contact)
- Control Power Connector (CN1)
Connector: DFMC0,5/5-ST-2,54 (Phoenix Contact)
- I/O Signals Connector (CN7)
Connector: DFMC0,5/12-ST-2,54 (Phoenix Contact)

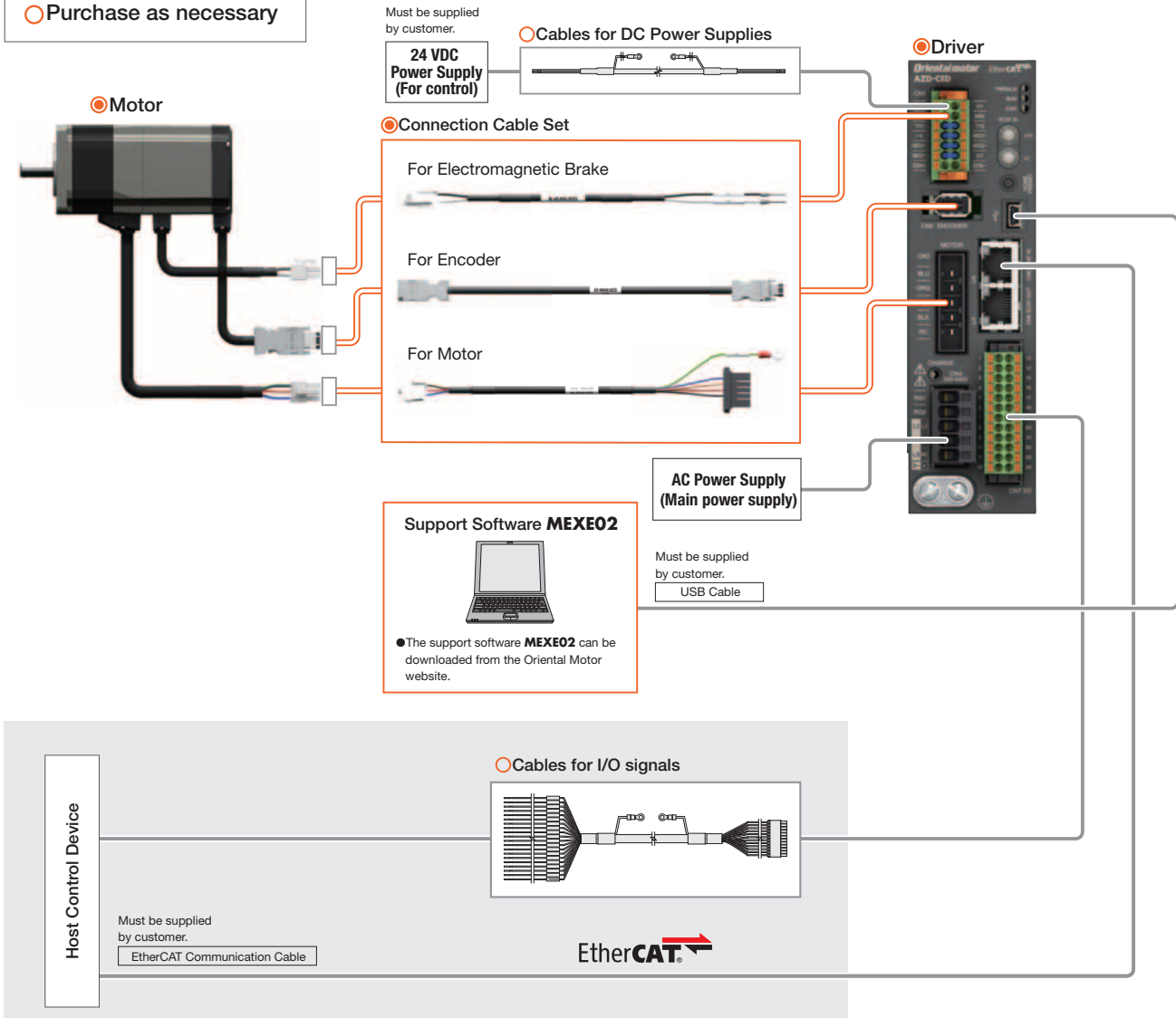
Features
Motors AC Input
Motors DC Input
Ethernet/IP Compatible Drivers
EtherCAT Compatible Drivers
Built-in Controller Drivers
Pulse Input Drivers with RS-485
Pulse Input Drivers
Network Multi-Axis Drivers
Compact Drivers
Cables / Accessories
Actuators AZ Series Equipped

αSTEP AZ Series EtherCAT Drive Profile Compatible Drivers AC Input

System Configuration

- When combined with AC input EtherCAT drive profile-compatible driver
The motor, driver and connection cable set/flexible connection cable set must be ordered individually.

- Must be purchased
- Purchase as necessary



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.

Product Number Code

AZD - C ED

- 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	Network Type	ED: EtherCAT Driver Profile

Product Line and List Price

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AED	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CED	\$656.00

Included Items

Connector	Operating Manual
<ul style="list-style-type: none"> For CN4 (1 Piece) For CN1 (1 Piece) For CN7 (1 Piece) Connector Wiring Lever (1 Piece) 	1 Set

Specifications

Communication Specifications

Item	Description
Communication Protocol	IEC 61158 Type12
Physical Layer/Protocol	100 BASE-TX (IEEE 802.3)
Baud Rate	100 Mbps
Communication Cycle	<ul style="list-style-type: none"> Free Run mode: 1 ms or more SM2 Event Synchronous Mode: 1 ms or more DC mode: 0.25 ms, 0.5 ms, 1 ms, 2 ms, 3 ms, 4 ms, 5 ms, 6 ms, 7 ms, 8 ms
Communication Port/ Connector	RJ45×2 (Shield-compatible) ECAT IN: EtherCAT input ECAT OUT: EtherCAT output
Topology	Daisy chain (Max. 65,535 nodes)
Process Data	Variable PDO Mapping
Sync Manager	<ul style="list-style-type: none"> SMD: Mail box output SM1: Mail box input SM2: Process data output SM3: Process data input
Mailbox (CoE)	<ul style="list-style-type: none"> Emergency Message SDO Request SDO Response SDO Information
Synchronous Mode	<ul style="list-style-type: none"> Free Run Mode (Asynchronous) SM2 Event Synchronous Mode DC Mode (SYNCO Event Synchronous)
Device Profile	IEC 61800-7 CiA402 Drive Profile

Driver Specifications



Driver Product Name		AZD-AED	AZD-CED
Main Power Supply	Input Voltage	Single-Phase 100-120 VAC -15 to +6% 50/60 Hz	<ul style="list-style-type: none"> Single-Phase 200-240 VAC -15 to +6% 50/60 Hz Three-Phase 200-240 VAC -15 to +6% 50/60 Hz
	Input Current*1	Single-Phase	AZM46: 2.7 A, AZM48: 2.7 A, AZM66: 3.8 A AZM69: 5.4 A, AZM98: 5.5 A, AZM911: 6.4 A DGB85: 2.7 A, DGM85: 2.7 A, DGB130: 3.8 A DGM130: 3.8 A, DGM200: 6.4 A LM2: 3.8 A, LM4: 3.8 A
		Three-Phase	AZM46: 1.0 A, AZM48: 1.0 A, AZM66: 1.4 A AZM69: 2.0 A, AZM98: 2.0 A, AZM911: 2.3 A DGB85: 1.0 A, DGM85: 1.0 A, DGB130: 1.4 A DGM130: 1.4 A, DGM200: 2.3 A LM2: 1.4 A, LM4: 1.4 A
Control Power Supply	Input Voltage	24 VDC±5%*2	
	Input Current	0.25 A (0.5 A) *3	
Interface	Pulse Input	<ul style="list-style-type: none"> 2 points, Photocoupler Max. Input Pulse Frequency Line Driver: 1 MHz (For 50% duty) Open Collector: 250 kHz (For 50% duty) 	
	Control Input	6 points, Photocoupler	
	Pulse Output	2 points, Line Driver	
	Control Output	6 points, Photocoupler and Open Collector Output	
	Power Shut Down Signal Input	2 points, Photocoupler	
	Power Shut Down Monitor Output	1 point, Photocoupler and Open Collector Output	
	Field Network	EtherCAT	

*1 Varies depending on the combined motor.

*2 When using a motor with electromagnetic brake, 24 VDC±4% when using Oriental Motor cables extended to 20 m (65.6 ft.) between the motor and driver.

*3 The value inside the () represents the value when connected to a motor with an electromagnetic brake. **AZM46** is 0.33 A.

Features
Motors
AC Input
Motors
DC Input
Ethernet/IP
Compatible
Drivers
EtherCAT
Compatible
Drivers
Built-in
Controller
Drivers
Pulse Input
Drivers with
RS-485
Pulse Input
Drivers
Network
Multi-Axis
Drivers
Compact
Drivers
Cables /
Accessories
Actuators
AZ Series
Equipped

Stepper Motors
AZ

Linear Slides
EZS

Cylinders
EAC

Compact Cylinders
DR

Rack & Pinion
L

Gripper
EH

Rotary Actuators
DGI

● General Specifications

Degree of Protection	IP10
Operating Environment	Ambient temperature: 0 to +55°C (+32 to +131°F) (Non-freezing)* Humidity: 85% or less (Non-condensing) Altitude: Max. of 1000 m (3300 ft.) above sea level Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Storage Conditions Transportation Conditions	Ambient temperature: -25 to +70°C (-13 to +158°F) (Non-freezing) Humidity: 85% or less (Non-condensing) Altitude: Max. of 3000 m (10000 ft.) above sea level Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the following places: · Protective Earth Terminal—Main Power Supply Terminal · Encoder Connector—Main Power Supply Terminal · Input/Output Signal Terminal—Main Power Supply Terminal
Dielectric Strength	No abnormalities when the specified voltage is applied to the following locations for 1 minute: · Protective Earth Terminal—Main Power Supply Terminal 1500 VAC 50/60 Hz · Encoder Connector—Main Power Supply Terminal 1800 VAC 50/60 Hz · Input/Output Signal Terminal—Main Power Supply Terminal 1800 VAC 50/60 Hz

*When a heat sink of a capacity at least equivalent to an aluminum plate with a size of 200×200 mm (7.87×7.87 in.) and 2 mm (0.08 in.) thickness is installed.

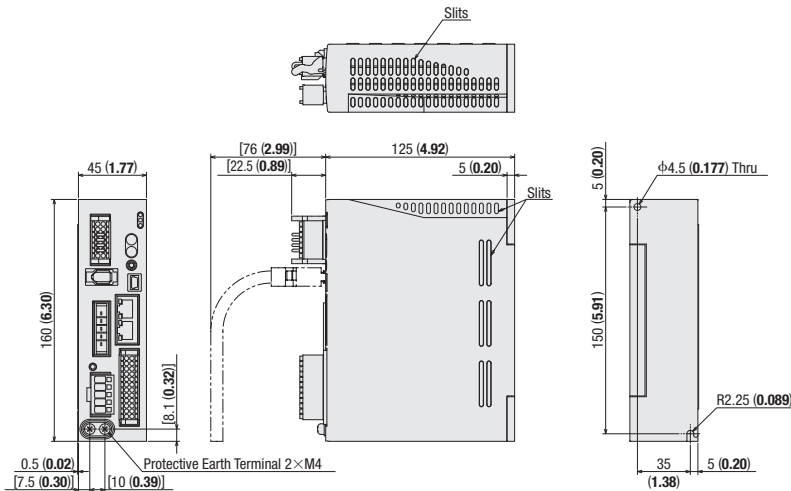
Note

- When measuring insulation resistance or performing dielectric voltage withstanding test, disconnect the motor and driver.
Also, do not perform these tests on the ABZO sensor part of the motor.

Dimensions Unit: mm (in.)

2D & 3D CAD

Product Name	Mass kg (lb.)	2D CAD
AZD-AED, AZD-CED	0.68 (1.50)	B1504



● Included Items

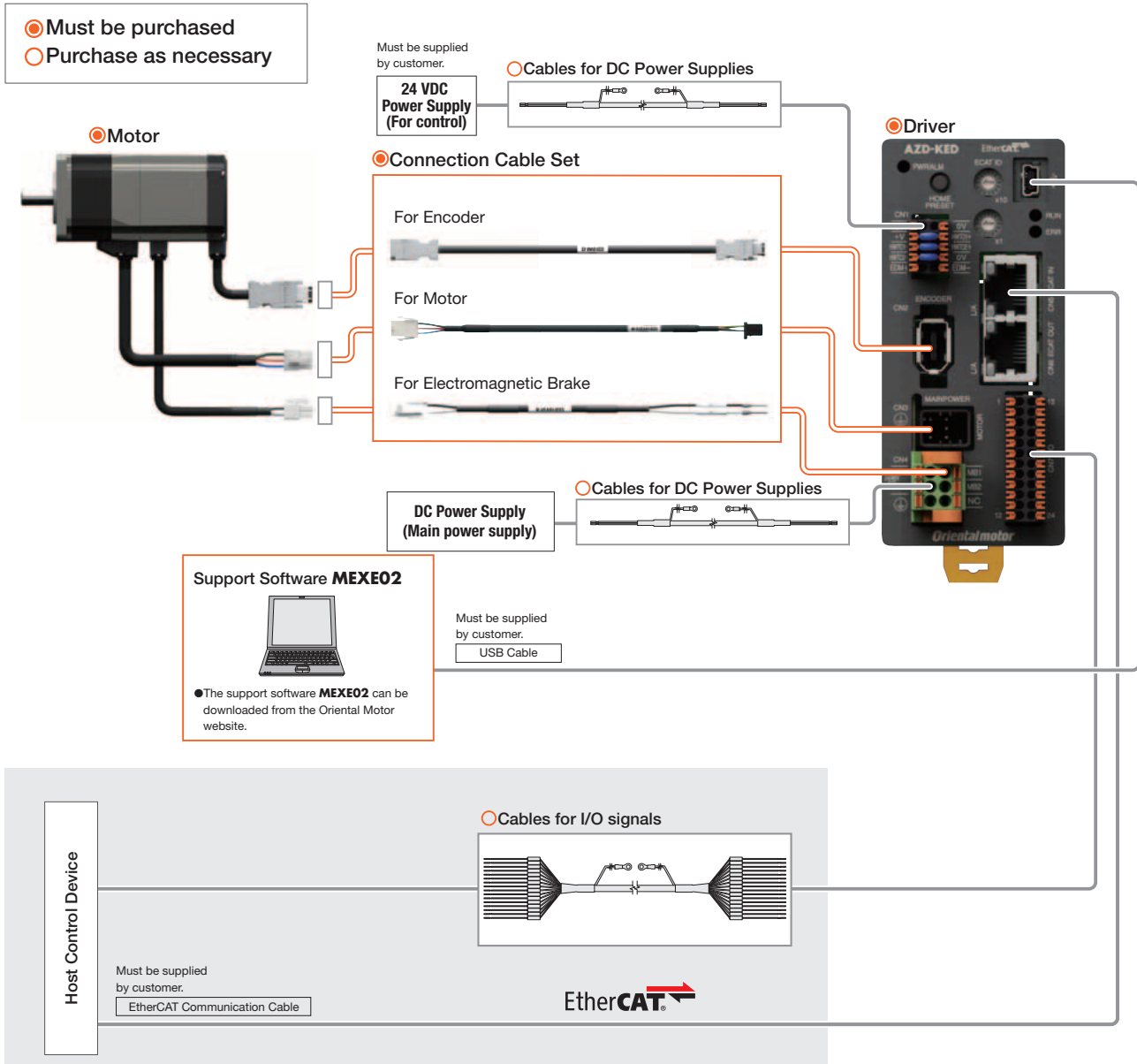
- Connector for Main Power/Regeneration Unit (CN4)
Connector: 05JFAT-SAXGDK-H5.0 (Japan Solderless Terminal)
Connector Wiring Lever
- 24 VDC Power Supply Input/Electromagnetic Brake Connection /Regeneration Unit Thermal Input/Power Shut Down Monitor Output Connector (CN1)
Connector: DFMC1,5/7-ST-3,5-LR (Phoenix Contact)
- I/O Signals Connector (CN7)
Connector: DFMC1,5/12-ST-3,5 (Phoenix Contact)

DC Input

System Configuration

When combined with DC input EtherCAT drive profile-compatible driver

The motor, driver and connection cable set/flexible connection cable set must be ordered individually.



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.

Product Number Code

AZD - K ED

- ① ② ③

①	Driver Type	AZD: AZ Series Driver
②	Power Supply Input	K: 24/48 VDC
③	Network Type	ED: EtherCAT driver profile

Product Line and Price List

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KED	\$506.00

Included Items

Connector	Operating Manual
<ul style="list-style-type: none"> For CN4 (1 Piece) For CN1 (1 Piece) For CN7 (1 Piece) 	1 Set

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Specifications

● Communication Specification

Item	Description
Communication Protocol	IEC 61158 Type12
Physical Layer/Protocol	100 BASE-TX (IEEE 802.3)
Baud Rate	100 Mbps
Communication Cycle	<ul style="list-style-type: none"> Free Run mode: 1 ms or more SM2 Event Synchronous Mode: 1 ms or more DC mode: 0.25 ms, 0.5 ms, 1 ms, 2 ms, 3 ms, 4 ms, 5 ms, 6 ms, 7 ms, 8 ms
Communication Port/ Connector	RJ45×2 (Shield-compatible) ECAT IN: EtherCAT input ECAT OUT: EtherCAT output
Topology	Daisy chain (Max. 65,535 nodes)
Process Data	Variable PDO Mapping
Sync Manager	<ul style="list-style-type: none"> SM0: Mail box output SM1: Mail box input SM2: Process data output SM3: Process data input
Mailbox (CoE)	<ul style="list-style-type: none"> Emergency Message SDO Request SDO Response SDO Information
Synchronous Mode	<ul style="list-style-type: none"> Free Run Mode (Asynchronous) SM2 Event Synchronous Mode DC Mode (SYNCO Event Synchronous)
Device Profile	IEC 61800-7 CiA402 Drive Profile

● Driver Specifications



Driver Product Name	AZD-KED
Input Voltage	<ul style="list-style-type: none"> 24 VDC±5% 48 VDC±5%
Main Power Supply	<p>AZM14: 0.4 A, AZM15: 0.5 A, AZM24: 1.6 A, AZM26: 1.5 A AZM46: 1.5 A, AZM48: 2.1 A, AZM66: 3.3 A, AZM69: 3.1 A DGM60: 1.6 A, DGB85: 1.5 A, DGM85: 1.5 A, DGB130: 3.3 A DGM130: 3.3 A, DR20: 0.4 A, DR28: 1.3 A, DRSM42: 1.5 A DRSM60: 2.2 A, EH4: 1.6 A, LM2: 3.3 A, LM4: 3.3 A</p>
Control Power Supply	<p>Input Voltage: 24 VDC±5%*2 Input Current: 0.15 A (0.4 A)*3</p>
Interface	<p>Pulse Input: <ul style="list-style-type: none"> 2 points, Photocoupler Max. Input Pulse Frequency Line Driver: 1 MHz (For 50% duty) Open Collector: 250 kHz (For 50% duty) </p> <p>Control Input: 6 points, Photocoupler Pulse Output: 2 points, Line Driver Control Output: 6 points, Photocoupler and Open Collector Output Power Shut Down Signal Input: 2 points, Photocoupler Power Shut Down Monitor Output: 1 point, Photocoupler and Open Collector Output Field Network: EtherCAT</p>

*1 Varies depending on the combined motor.

*2 When using a motor with electromagnetic brake, 24 VDC±4% when using Oriental Motor cables extended to 20 m (65.6 ft.) between the motor and driver.

*3 The value inside the () represents the value when connected to a motor with an electromagnetic brake. **AZM46** is 0.23 A.

● General Specifications

Degree of Protection	IP10
Operating Environment	Ambient temperature: 0 to +50°C (+32 to +122°F) (Non-freezing) Humidity: 85% or less (Non-condensing) Altitude: Max. of 1000 m (3300 ft.) above sea level Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Storage Conditions Transportation Conditions	Ambient temperature: -25 to +70°C (-13 to +158°F) (Non-freezing) Humidity: 85% or less (Non-condensing) Altitude: Max. of 3000 m (10000 ft.) above sea level Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the following locations: - Protective Earth Terminal - Power Supply Terminal

Note

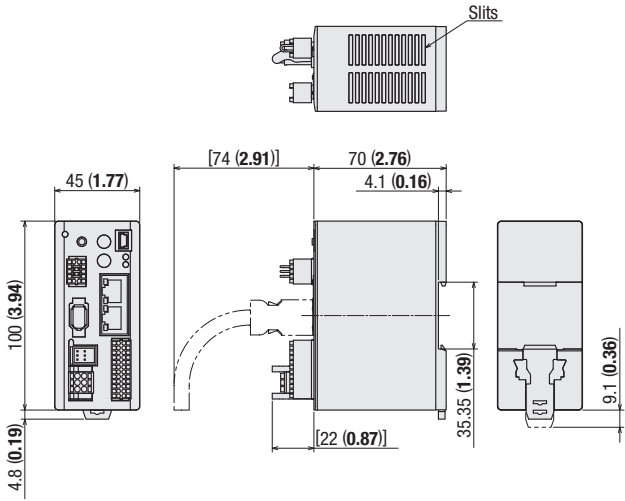
● When measuring insulation resistance, disconnect the motor and driver.

Also, do not perform this test on the ABZO sensor part of the motor.

Dimensions Unit: mm (in.)

2D & 3D CAD

Product Name	Mass kg (lb.)	2D CAD
AZD-KED	0.18 (0.40)	B1505



Included Items

- Main Power Connector (CN4)
Connector: DFMC1,5/3-ST-3, 5-LR (Phoenix Contact)
- Control Power connector (CN1)
Connector: DFMC0,5/5-ST-2,54 (Phoenix Contact)
- I/O Signals Connector (CN7)
Connector: DFMC0,5/12-ST-2,54 (Phoenix Contact)

Features
Motors AC Input
Motors DC Input
Ethernet/IP Compatible Drivers
EtherCAT Compatible Drivers
Built-in Controller Drivers
Pulse Input Drivers with RS-485
Pulse Input Drivers
Network Multi-Axis Drivers
Compact Drivers
Cables / Accessories
Actuators AZ Series Equipped

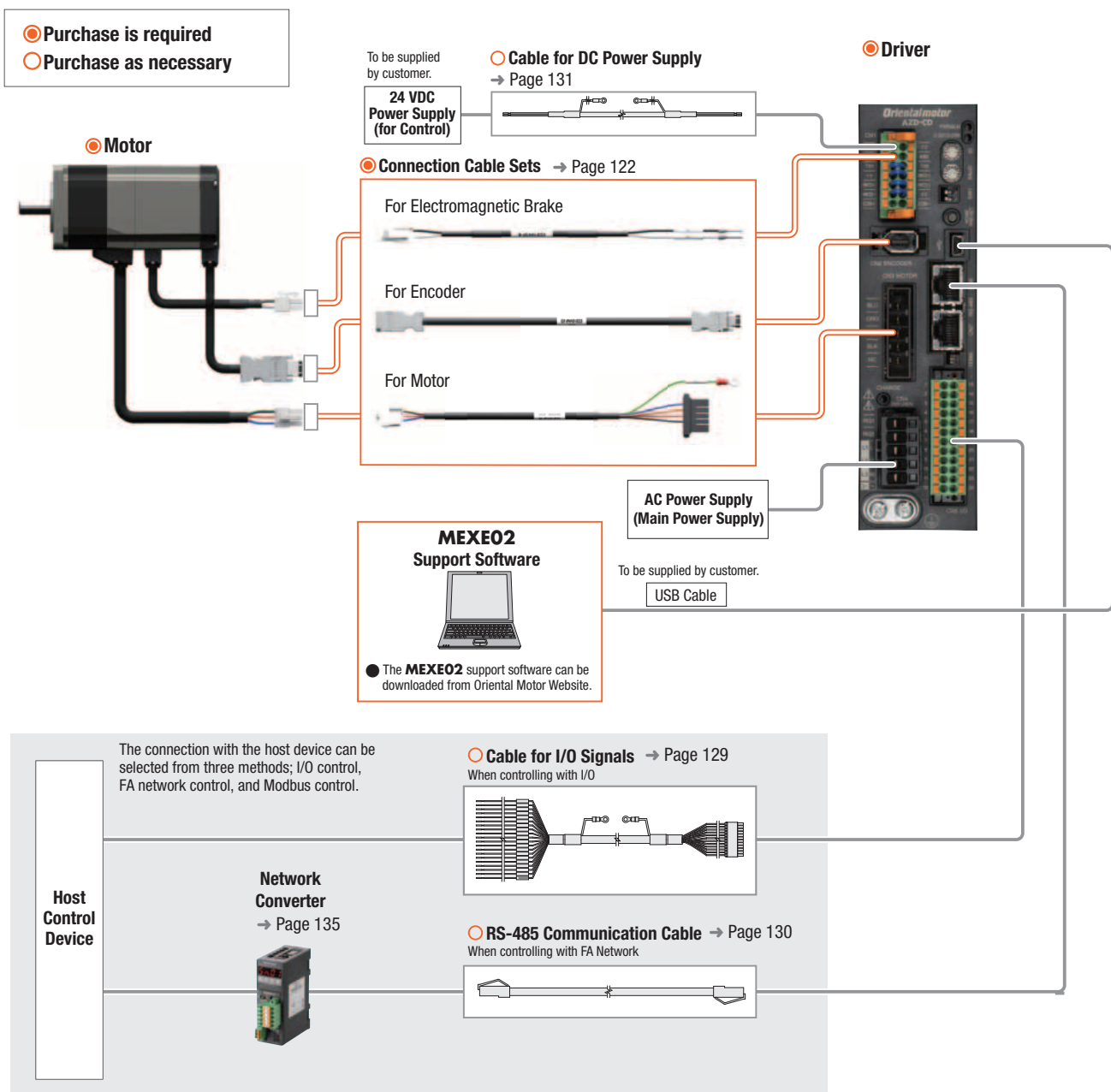
αSTEP AZ Series Built-in Controller Type Drivers Pulse Input Type Drivers with RS-485 Communications Pulse Input Type Drivers

AC Input

System Configuration

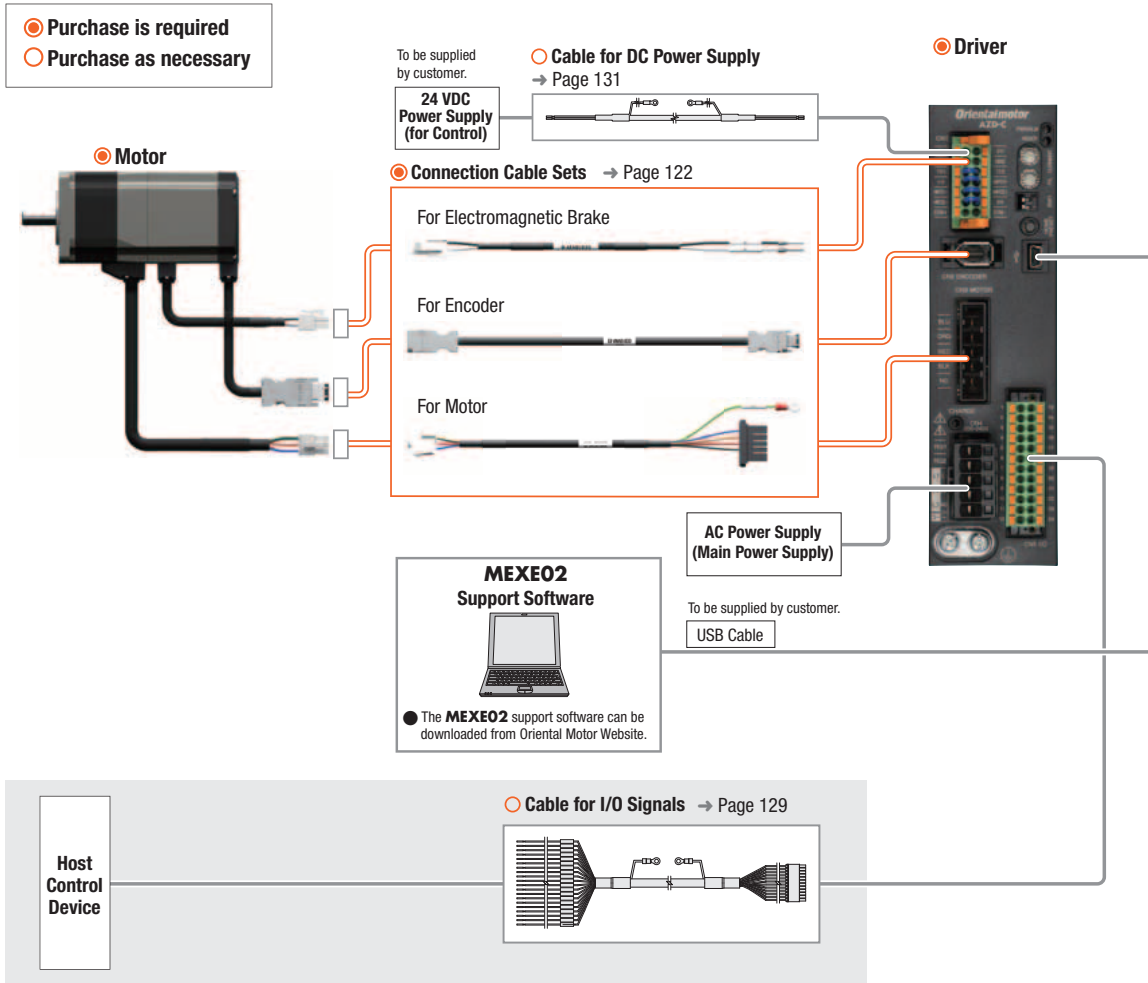
● When a Standard Type Motor with Electromagnetic Brake is Combined with a Driver with Built-in Positioning Function or with an RS-485 Communication Pulse Input Type Driver

An example of a configuration using I/O control or RS-485 communication on a driver with a built-in positioning function is shown below. The motor, drivers, and a set of connection cables/flexible connection cables are ordered separately.



● When a Standard Type Motor with Electromagnetic Brake is Combined with a Pulse Input Type Driver

An example of a single-axis system configuration with the programmable controller (built-in pulse generator function) is shown below. The motor, drivers, and a set of connection cables/flexible connection cables are ordered separately.



Features
Motors AC Input
Motors DC Input
Ethernet/IP Compatible Drivers
EtherCAT Compatible Drivers
Built-in Controller Drivers
Pulse Input Drivers with RS-485
Pulse Input Drivers
Network Multi-Axis Drivers
Compact Drivers
Cables / Accessories
Actuators AZ Series Equipped

Product Number Code

AZD - C D

① ② ③

Product Line and List Price

● Built-in Controller Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AD	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CD	\$588.00

● Pulse Input Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-A	\$531.00
Single-Phase/Three-Phase 200-240 VAC	AZD-C	\$531.00

Included

Connector	Operating Manual
<ul style="list-style-type: none"> · For CN4 (1 Piece) · For CN1 (1 Piece) · For CN5 (1 Piece) · Connector Wiring Lever (1 Piece) 	1 Set

Driver Specifications

Driver Type	Built-in Controller Type	Pulse Input Type with RS-485 Communication	Pulse Input Type
Driver Part Number	AZD-AD AZD-CD	AZD-AX AZD-CX	AZD-A AZD-C
Input Current*1	AZM46: 2.7 A, AZM48: 2.7 A AZM66: 3.8 A, AZM69: 5.4 A AZM98: 5.5 A, AZM911: 6.4 A DGB85: 2.7 A, DGM85: 2.7 A DGB130: 3.8 A, DGM130: 3.8 A DGM200: 6.4 A LM2: 3.8 A, LM4: 3.8 A	AZM46: 1.7 A, AZM48: 1.6 A AZM66: 2.3 A, AZM69: 3.3 A AZM98: 3.3 A, AZM911: 3.9 A DGB85: 1.7 A, DGM85: 1.7 A DGB130: 2.3 A, DGM130: 2.3 A DGM200: 3.9 A LM2: 2.3 A, LM4: 2.3 A	AZM46: 1.0 A, AZM48: 1.0 A AZM66: 1.4 A, AZM69: 2.0 A AZM98: 3.9 A, AZM911: 2.3 A DGB85: 1.0 A, DGM85: 1.0 A DGB130: 1.4 A, DGM130: 1.4 A DGM200: 2.3 A LM2: 1.4 A, LM4: 1.4 A
Maximum Input Pulse Frequency	—	The programmable controller is the line driver output: 1 MHz (When 50% duty) The programmable controller is the open-collector output: 250 kHz (When 50% duty) Negative Logic Pulse Input (Initial value)	
Input/Output Function	Number of Positioning Data Points	256	256*2
	Direct Input	10	6
	Direct Output	6	
	RS-485 Communication Network Input	16	—
	RS-485 Communication Network Output	16	—
Settings Tool	Support Software MEXE02	○	
Coordinate Management Method	Battery-Free Absolute System		
Positioning Operation	Type	Positioning Operation ○	○*2
	Method	Positioning Push-Motion Operation*3 ○	○*2
		Isolated Operation ○	○*2
		Sequential Operation ○	○*2
		Multistep Speed-Change (Configuration linking) ○	○*2
Run Control	Sequence	Looped Operation (Repeating) ○	○*2
	Event Jump Operation ○	Position Control ○	○*2
		Speed Control ○	○*2
Continuous Operation	Torque Control ○	○*2	
	Push-Motion*3 ○	○*2	
	Return-to-Home Operation	Return-to-Home Operation ○	○
High-Speed Return-to-Home Operation ○		○	
Monitoring/Information	JOG Operation ○	○	○
	Waveform Monitoring ○	Overload Detection ○	○
		Overheat Detection (Motor/driver) ○	○
		Position/Speed Information ○	○
		Temperature Detection (Motor/driver) ○	○
		Motor Load Factor ○	○
		Travel Distance/Cumulative Travel Distance ○	○
Alarm ○		○	

*1 Varies depending on the combined motor.

*2 Can be used by setting in the support software **MEXE02**.

*3 **DGI** Series geared motors and linear & rotary actuators should not be used for push-motion operation.

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

● Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AX	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CX	\$588.00

RS-485 Communication Specifications

Protocol	Modbus RTU Mode
Electrical Characteristics	EIA-485 compliance, straight cable Shielded twisted-pair wire (TIA/EIA-568B CAT5e or greater recommended) is used up to a total extension length of 50 m (164 ft).*
Communication Mode	Half-duplex communication, synchronous mode (data: 8-bit, stop bit: 1-bit/2-bit, parity: none/odd/even)
Baud Rate	Selected from 9600 bps / 19200 bps / 38400 bps / 57600 bps / 115200 bps / 230400 bps
Connection Type	Up to 31 units can be connected to one programmable controller (master equipment).

*If noise generated by the motor cable or power supply cable causes a problem, try shielding the cables or insert ferrite cores.

General Specifications

	Built-In Controller Type Pulse Input Type with RS-485 Communication	Pulse Input Type
Insulation Resistance	100 M Ω or more when 500 VDC megger is applied between the following places: <ul style="list-style-type: none"> Protective earth terminal – Power supply terminal Encoder connector – Power supply terminal I/O signal terminal – Power supply terminal 	
Dielectric Strength	Sufficient to withstand the following for 1 minute: <ul style="list-style-type: none"> Protective earth terminal – Power supply terminal 1.5 kVAC 50 Hz or 60 Hz Encoder connector – Power supply terminal 1.8 kVAC 50 Hz or 60 Hz I/O signal terminal – Power supply terminal 1.8 kVAC 50 Hz or 60 Hz 	
Operating Environment (In operation)	Ambient Temperature	0 to +55°C (+32 to +131°F) (non-freezing)*
	Ambient Humidity	85% max. (non-condensing)
	Atmosphere	Use in an area without corrosive gases and dust. The product should not be exposed to water, oil or other liquids.
Degree of Protection	IP10	IP20

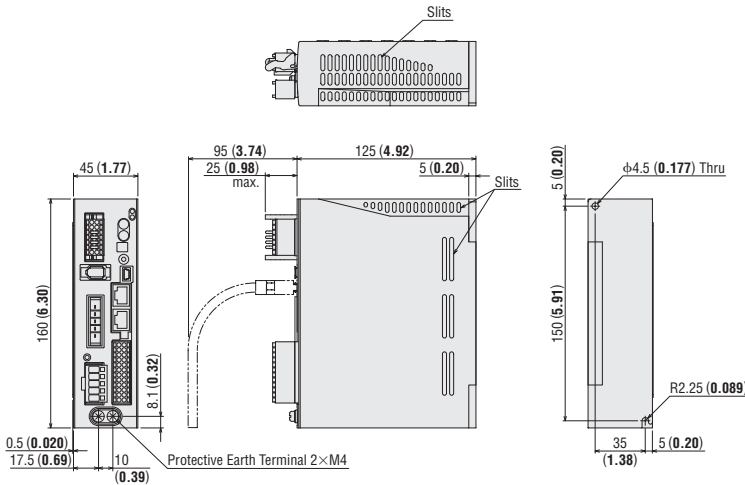
*When a heat sink is installed that is equivalent to an aluminum plate with a size of 200×200 mm (7.87×7.87 in.), 2 mm (0.08 in.) thick is installed.

Dimensions Unit: mm (in.)

2D & 3D CAD

Type	Product Name	Mass kg (lb.)	2D CAD
Built-in Controller	AZD-AD, AZD-CD	0.65 (1.43)	B1095
Pulse Input with RS-485 Communication	AZD-AX, AZD-CX		
Pulse Input	AZD-A, AZD-C		B1097

● Dimensions are for the built-in controller type. Dimensions and accessories are common for all driver types.



● Included

Main Power Supply/Regeneration Unit Connector (CN4)

Connector: 05JFAT-SAXGDK-H5.0
(J.S.T. Mfg. Co., Ltd.)

I/O Signal Connector (CN5)

Connector: DFMC1,5/12-ST-3,5
(Phoenix Contact)

24 VDC Power Supply Input/Electromagnetic Brake Connection/
Regeneration Unit Thermal Input/Power Interruption Signal I/O
Connector (CN1)

Connector: DFMC1,5/7-ST-3,5-LR
(Phoenix Contact)

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

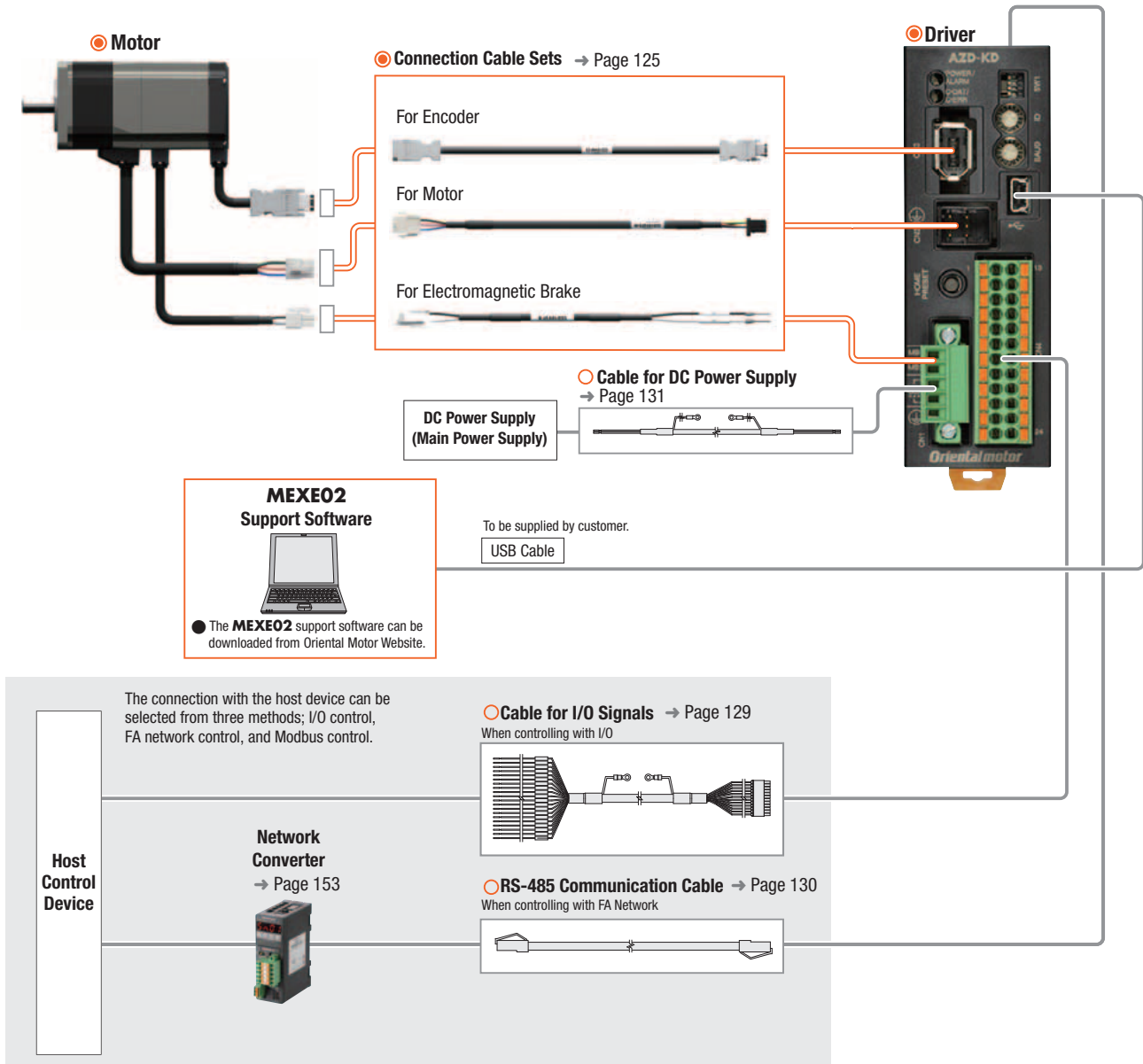
DC Input

System Configuration

● When a Standard Type Motor with Electromagnetic Brake is Combined with a Driver with Built-in Positioning Function or with an RS-485 Communication Pulse Input Type Driver

An example of a configuration using I/O control or RS-485 communication on a driver with a built-in positioning function is shown below. The motor, drivers, and a set of connection cables/flexible connection cables are ordered separately.

- Purchase is required
- Purchase as necessary

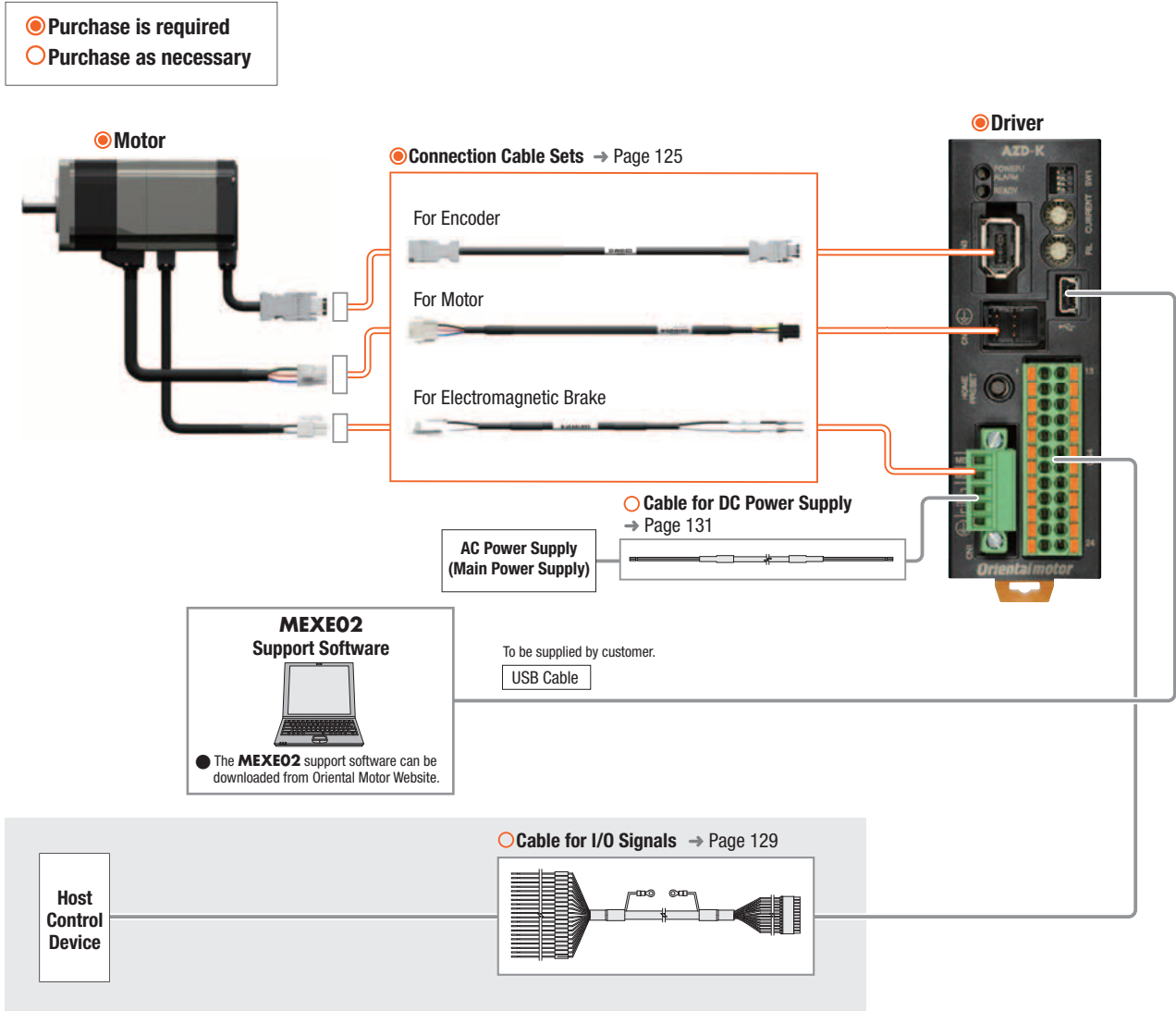


Note

● The motor cable coming out of the motor and the electromagnetic brake cable cannot be directly connected to the driver. If connecting to the driver, please use a connection cable.

● When a Standard Type Motor with Electromagnetic Brake is Combined with a Pulse Input Type Driver

An example of a single-axis system configuration with the programmable controller (built-in pulse generator function) is shown below. The motor, drivers, and a set of connection cables/flexible connection cables are ordered separately.



Note

● The motor cable coming out of the motor and the electromagnetic brake cable cannot be directly connected to the driver. If connecting to the driver, please use a connection cable.

Features
Motors AC Input
Motors DC Input
Ethernet/IP Compatible Drivers
EtherCAT Compatible Drivers
Built-in Controller Drivers
Pulse Input Drivers with RS-485
Pulse Input Drivers
Network Multi-Axis Drivers
Compact Drivers
Cables / Accessories
Actuators AZ Series Equipped

Stepper Motors
AZ

Linear Slides
EZS

Cylinders
EAC

Compact Cylinders
DR

Rack & Pinion
L

Gripper
EH

Rotary Actuators
DGII

Product Number Code

AZD - K D

① ② ③

Product Line and List Price

◇ Built-in Controller Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KD	\$441.00

◇ Pulse Input Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-K	\$384.00

Included

Connector	Operating Manual
<ul style="list-style-type: none"> For CN4 (1 Piece) For CN1 (1 Piece) 	1 Set

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

◇ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KX	\$441.00

Driver Specifications

Driver Type	Built-in Controller Type	Pulse Input Type with RS-485 Communication	Pulse Input Type	
Driver	AZD-KD	AZD-KX	AZD-K	
Input Current*1	AZM14: 0.5 A, AZM15: 0.6 A, AZM24: 1.6 A, AZM26: 1.6 A AZM46: 1.72 A, AZM48: 2.2 A, AZM66: 3.55 A, AZM69: 3.45 A DGM60: 1.6 A, DGM85: 1.72 A, DGM130: 3.55 A DGB85: 1.72 A, DGB130: 3.55 A DR20: 0.4 A, DR28: 1.4 A, DRSM42: 1.72 A, DRSM60: 2.45 A EH4: 1.6 A, LM2: 3.55 A, LM4: 3.55 A			
Input/Output Function	Maximum Input Pulse Frequency	—	The programmable controller is the line driver output: 1 MHz (when 50% duty) The programmable controller is the open collector output: 250 kHz (when 50% duty) Negative Logic Pulse Input (Initial value)	
	Number of Positioning Data Points	256	256*2	
	Direct Input	10	6	
	Direct Output		6	
	RS-485 Communication Network Input		16	—
	RS-485 Communication Network Output		16	—
Settings Tool	Support Software MEXE02		○	
Coordinate Management Method		Battery-Free Absolute System		
Positioning Operation	Type	Positioning Operation	○	○*2
		Positioning Push-Motion Operation*3	○	○*2
		Isolated Operation	○	○*2
	Linking Method	Sequential Operation	○	○*2
		Multistep Speed-Change (Configuration linking)	○	○*2
	Run	Sequence Control	Looped Operation (Repeating)	○
		Event Jump Operation	○	○*2
Position Control			○	○*2
Continuous Operation	Speed Control		○	○*2
	Torque Control		○	○*2
	Push-Motion*3		○	○*2
Return-to-Home Operation	Return-to-Home Operation		○	○
	High-Speed Return-to-Home Operation		○	○
JOG Operation			○	○
Monitoring/Information		Waveform Monitoring	○	○
		Overload Detection	○	○
		Overheat Detection (Motor/driver)	○	○
		Position/Speed Information	○	○
		Temperature Detection (Motor/driver)	○	○
		Motor Load Factor	○	○
		Travel Distance/Cumulative Travel Distance	○	○
Alarm			○	○

*1 Varies depending on the combined motor.

*2 Can be used by setting in the support software **MEXE02**.

*3 The push-motion operation cannot be performed with geared motors or rotary actuators **DGII** Series.

RS-485 Communication Specifications

Protocol	Modbus RTU Mode
Electrical Characteristics	EIA-485 compliance, straight cable Shielded twisted-pair wire (TIA/EIA-568B CAT5e or greater recommended) is used up to a total extension length of 50 m (164 ft).*
Communication Mode	Half-duplex communication, synchronous mode (data: 8-bit, stop bit: 1-bit/2-bit, parity: none/odd/even)
Baud Rate	Selected from 9600 bps / 19200 bps / 38400 bps / 57600 bps / 115200 bps / 230400 bps
Connection Type	Up to 31 units can be connected to one programmable controller (master equipment).

*If noise generated by the motor cable or power supply cable causes a problem, try shielding the cables or insert ferrite cores.

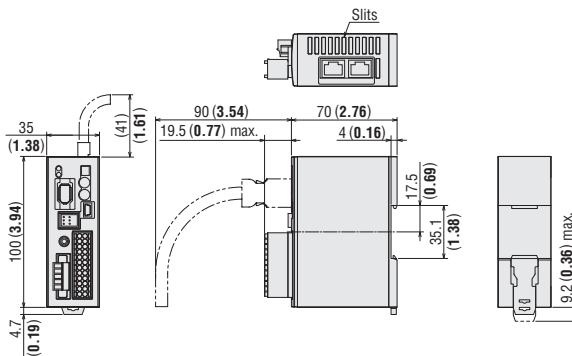
General Specifications

Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the following places: · Protective earth terminal – Power supply terminal	
Dielectric Strength	—	
Operating Environment (In operation)	Ambient Temperature	0 to +50°C (+32 to +122°F) (non-freezing)
	Ambient Humidity	85% max. (non-condensing)
	Atmosphere	Use in an area without corrosive gases and dust. The product should not be exposed to water, oil or other liquids.
Degree of Protection	IP10	

Dimensions Unit: mm (in.)

Product Name	Gear Ratio	Mass kg (lb.)	2D CAD
Built-in Controller Type	AZD-KD	0.15 (0.33)	B1094
Pulse Input Type with RS-485 Communication	AZD-KX		B1096
Pulse Input Type	AZD-K		

● Dimensions are for the built-in positioning function type. Frame size, and accessories are common for all driver types.



● Included

Main Power Supply/Connector for Electromagnetic Brake Connection (CN1)
Connector: MC1,5/5-STF-3,5
(Phoenix Contact)

I/O Signal Connector (CN4)
Connector: DFMC1,5/12-ST-3,5
(Phoenix Contact)

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

αSTEP AZ Series Multi-Axis Drivers

DC Input

SSCNET III/H-Compatible

MECHATROLINK-III-Compatible

EtherCAT Driver Profile-Compatible

These are multi-axis drivers that can connect to Oriental Motor **AZ** Series DC Input motors and the linear & rotary actuators with **AZ** Series motors. SSCNET III/H, MECHATROLINK-III, and EtherCAT drive profile-compatible products are available.

Number of axes: 2-axis 3-axis 4-axis

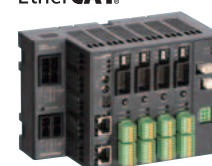
SSCNET III/H
SERVO SYSTEM CONTROLLER NETWORK



MECHATROLINK

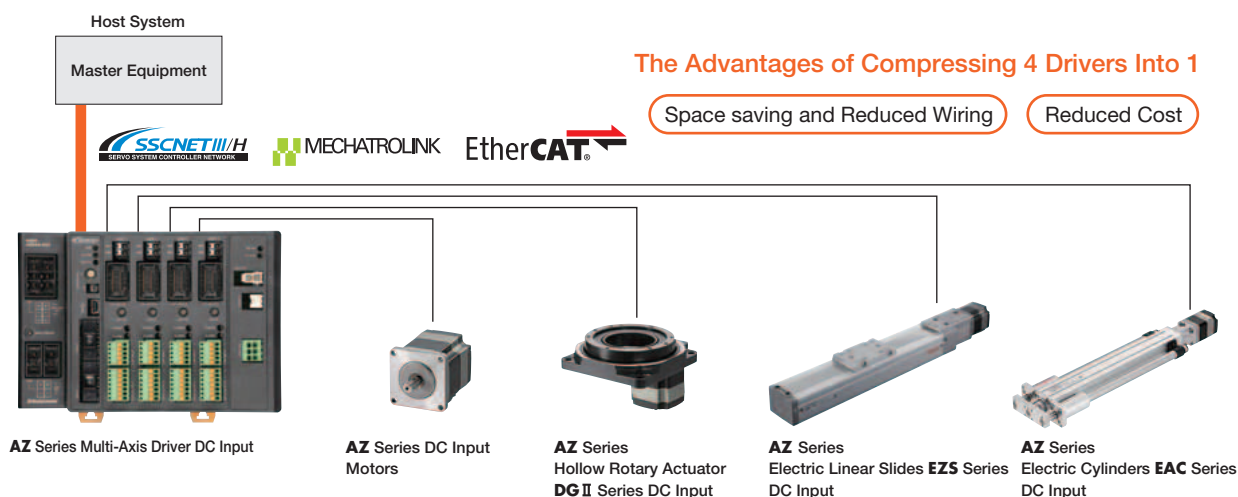


EtherCAT



Features

A multi-axis driver (max. 4 axes) that saves space and reduces costs



● The connected motors and linear & rotary actuators are representative examples.

● ESI File

An ESI file is available to make use of EtherCAT-compatible products easier.

The ESI file can be downloaded from the Oriental Motor website.

For connection to Omron PLCs, please enquire with Omron.

An EtherCAT connection guide is available.

Applicable Series

AZ Series Multi-Axis Driver DC Input can be used in combination with the following linear & rotary actuators.

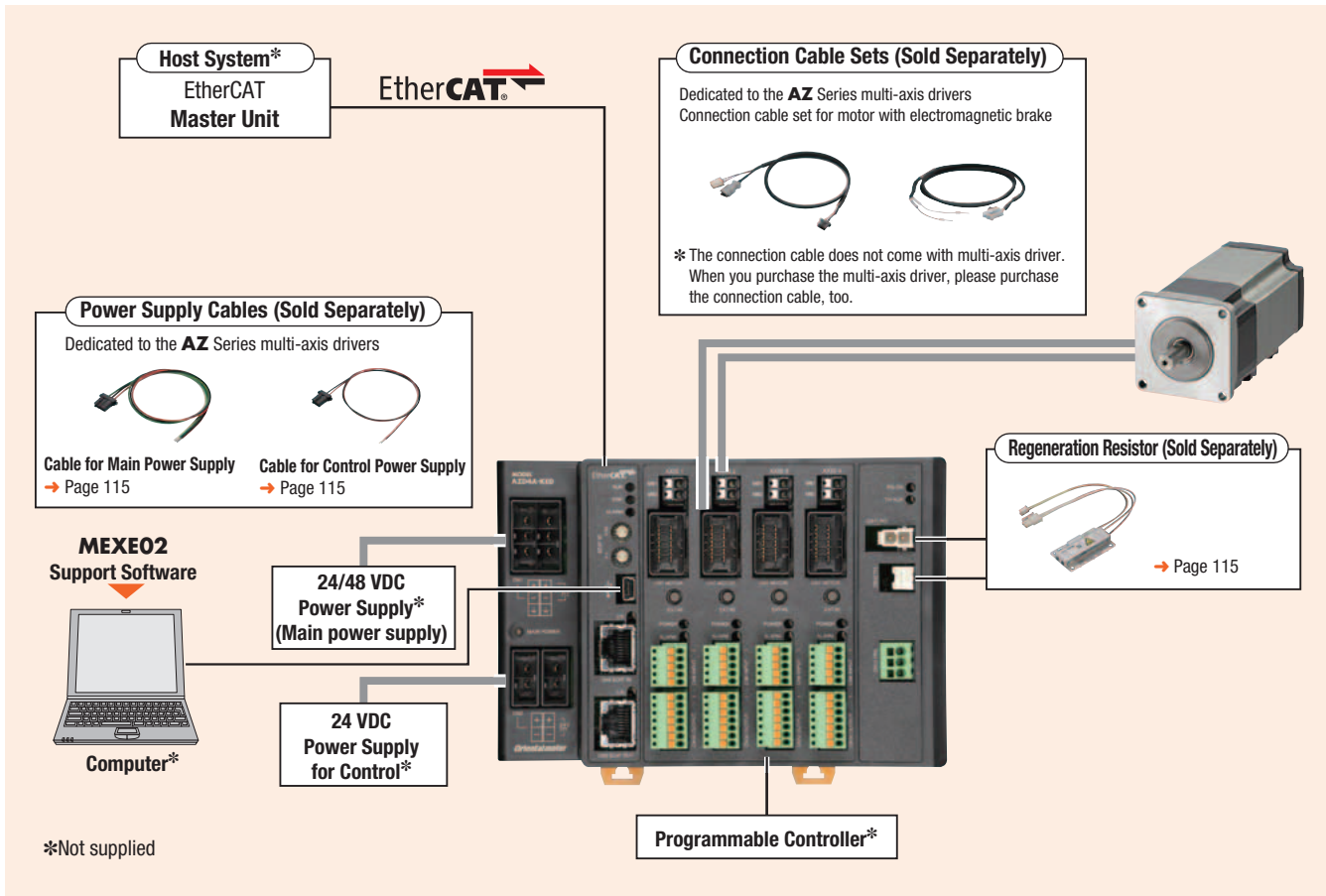
- AZ Series Compact Electric Cylinder **DRS2** Series
- AZ Series Compact Electric Cylinder **DR** Series
- AZ Series Electric Gripper **EH** Series
- AZ Series Hollow Rotary Actuator **DGII** Series DC Input
- AZ Series Electric Linear Slide **EZS** Series DC Input
- AZ Series Electric Linear Slide **EAC** Series DC Input

● Refer to the Oriental Motor website or the catalog for each series for details about the combinable motors and linear & rotary actuators.

System Configuration

For EtherCAT Driver Profile-Compatible

Sample system configuration when combined with **AZ** Series DC Input Standard Type with Electromagnetic Brake.



Example of System Configuration

AZ Series			Cables and Peripheral Equipment		
Motor	Driver	Connection Cable Set	Main Power Supply Cables	Control Power Supply Cable	Regeneration Unit
AZM66MK	AZD4A-KED	CC030VZFBA	LC03D06A	LC02D06A	RGC40
\$565.00	\$1,320.00	\$123.00	\$29.00	\$25.00	\$62.00

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.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

- Stepper Motors
AZ
- Linear Slides
EZS
- Cylinders
EAC
- Compact Cylinders
DR
- Rack & Pinion
L
- Gripper
EH
- Rotary Actuators
DGI

Product Number Code

Multi-Axis Driver

AZD 4A - K S3

- ① ② ③ ④

Connection Cable Sets/Flexible Connection Cable Sets for AZ Series Multi-Axis Drivers

◇ Connection Cable for Motor

CC 050 V Z □ F A

- ① ② ③ ④ ⑤ ⑥ ⑧

◇ Connection Cable Set for Electromagnetic Brake Motor

CC 050 V Z F B A

- ① ② ③ ④ ⑥ ⑦ ⑧

①	Driver Type	AZD: AZ Series Driver
②	Number of Axes	2A: 2-axis 3A: 3-axis 4A: 4-axis
③	Power Supply Input	K: 24 VDC/48 VDC
④	Network Type	S3: SSCNETⅢ/H M3: MECHATROLINK-Ⅲ ED: EtherCAT driver profile

①		CC: Cable
②	Length	005: 0.5 m (1.64 ft.) 010: 1 m (3.3 ft.) 015: 1.5 m (4.9 ft.) 020: 2 m (6.6 ft.) 025: 2.5 m (8.2 ft.) 030: 3 m (9.8 ft.) 040: 4 m (13.1 ft.) 050: 5 m (16.4 ft.) 070: 7 m (23 ft.) 100: 10 m (32.8 ft.) 150: 15 m (49.2 ft.) 200: 20 m (65.6 ft.)
③	Reference Number	
④	Applicable Models	Z: For AZ Series
⑤	Reference Number	Blank: Frame size 42 mm (1.65 in.) [HPG Geared Type is 40 mm (1.57 in.), 60 mm (2.36 in.)] 2: Frame size 20 mm (0.79 in.), 28 mm (1.10 in.) [Harmonic Geared Type is 30 mm (1.18 in.)]
⑥	Cable Type	F: Connection Cable Sets R: Flexible Connection Cable Sets
⑦	Description	B: For Electromagnetic Brake Motor
⑧	Driver Type	A: For Multi-Axis Driver

Product Line and List Price

Multi-Axis Driver

◇ SSCNETⅢ/H-Compatible

Product Name	Number of Axes	List Price
AZD2A-KS3	2-Axis	\$825.00
AZD3A-KS3	3-Axis	\$1,093.00
AZD4A-KS3	4-Axis	\$1,320.00



◇ MECHATROLINK-Ⅲ-Compatible

Product Name	Number of Axes	List Price
AZD2A-KM3	2-Axis	\$825.00
AZD3A-KM3	3-Axis	\$1,093.00
AZD4A-KM3	4-Axis	\$1,320.00



◇ EtherCAT Driver Profile-Compatible

Product Name	Number of Axes	List Price
AZD2A-KED	2-Axis	\$825.00
AZD3A-KED	3-Axis	\$1,093.00
AZD4A-KED	4-Axis	\$1,320.00



● Connection Cable Sets/Flexible Connection Cable Sets for **AZ** Series Multi-Axis Drivers

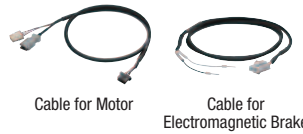


◇ For Motor/Encoder

Length L [m (ft.)]	For Frame Size 20 mm (0.79 in.), 28 mm (1.10 in.)				For Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.)			
	Connection Cable	List Price	Flexible Connection Cable	List Price	Connection Cable	List Price	Flexible Connection Cable	List Price
0.5 (1.64)	CC005VZ2FA	\$79.00	CC005VZ2RA	\$93.00	CC005VZFA	\$79.00	CC005VZRA	\$93.00
1 (3.3)	CC010VZ2FA	\$79.00	CC010VZ2RA	\$93.00	CC010VZFA	\$79.00	CC010VZRA	\$93.00
1.5 (4.9)	CC015VZ2FA	\$84.00	CC015VZ2RA	\$102.00	CC015VZFA	\$84.00	CC015VZRA	\$102.00
2 (6.6)	CC020VZ2FA	\$89.00	CC020VZ2RA	\$110.00	CC020VZFA	\$89.00	CC020VZRA	\$110.00
2.5 (8.2)	CC025VZ2FA	\$95.00	CC025VZ2RA	\$117.00	CC025VZFA	\$95.00	CC025VZRA	\$117.00
3 (9.8)	CC030VZ2FA	\$101.00	CC030VZ2RA	\$123.00	CC030VZFA	\$101.00	CC030VZRA	\$123.00
4 (13.1)	CC040VZ2FA	\$108.00	CC040VZ2RA	\$139.00	CC040VZFA	\$108.00	CC040VZRA	\$139.00
5 (16.4)	CC050VZ2FA	\$122.00	CC050VZ2RA	\$156.00	CC050VZFA	\$122.00	CC050VZRA	\$156.00
7 (23)	CC070VZ2FA	\$150.00	CC070VZ2RA	\$199.00	CC070VZFA	\$150.00	CC070VZRA	\$199.00
10 (32.8)	CC100VZ2FA	\$194.00	CC100VZ2RA	\$260.00	CC100VZFA	\$194.00	CC100VZRA	\$260.00
15 (49.2)	CC150VZ2FA	\$269.00	CC150VZ2RA	\$366.00	CC150VZFA	\$269.00	CC150VZRA	\$366.00
20 (65.6)	CC200VZ2FA	\$342.00	CC200VZ2RA	\$470.00	CC200VZFA	\$342.00	CC200VZRA	\$470.00

◇ For Motor/Encoder/Electromagnetic Brake

Length L [m (ft.)]	For Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.)			
	Connection Cable Set	List Price	Flexible Connection Cable Set	List Price
0.5 (1.64)	CC005VZFBA	\$95.00	CC005VZRBA	\$126.00
1 (3.3)	CC010VZFBA	\$95.00	CC010VZRBA	\$126.00
1.5 (4.9)	CC015VZFBA	\$102.00	CC015VZRBA	\$137.00
2 (6.6)	CC020VZFBA	\$108.00	CC020VZRBA	\$148.00
2.5 (8.2)	CC025VZFBA	\$116.00	CC025VZRBA	\$158.00
3 (9.8)	CC030VZFBA	\$123.00	CC030VZRBA	\$167.00
4 (13.1)	CC040VZFBA	\$134.00	CC040VZRBA	\$189.00
5 (16.4)	CC050VZFBA	\$149.00	CC050VZRBA	\$211.00
7 (23)	CC070VZFBA	\$183.00	CC070VZRBA	\$265.00
10 (32.8)	CC100VZFBA	\$236.00	CC100VZRBA	\$343.00
15 (49.2)	CC150VZFBA	\$324.00	CC150VZRBA	\$467.00
20 (65.6)	CC200VZFBA	\$410.00	CC200VZRBA	\$607.00



Note

● Only connection cables are available for the multi-axis driver cables. **AZ** Series extension cables cannot be used.

Included

● Multi-Axis Driver

Type, Number of Axes	Included Items	Connector for CN1	Connector for CN2	Contact for CN1 and CN2	Connector cap for CN4A and CN4B*	Connector for CN9	Connector for CN10	Operating Manual
SSCNETIII/H-Compatible	2-Axis	2 Piece	2 Piece	10 Piece	2 Piece	2 Piece	2 Piece	1 Set
MECHATROLINK-III -Compatible	3-Axis	2 Piece	2 Piece	10 Piece	2 Piece	3 Piece	3 Piece	1 Set
EtherCAT-Compatible	4-Axis	2 Piece	2 Piece	10 Piece	2 Piece	4 Piece	4 Piece	1 Set

*SSCNETIII/H-Compatible only

Specifications    

● Power Supply Input

Main Power Supply: 24/48 VDC±10% 7.0 A (Please use max. 7.0 A and average 4.0 A or less)

Control Power Supply: 24 VDC±10% 1.5 A (For electromagnetic brake type, use a 24 VDC±5% power supply)

(For electromagnetic brake type (when using 20 m (65.6 ft.) connection cable), use a 24 VDC±4% power supply)

● Communication Specification

◇ SSCNETIII/H Specification

Item	Description
Baud Rate	150 Mbps
Communication Period	0.44 ms/0.88 ms
Calculation Period	0.44 ms/0.88 ms/1.77 ms/3.5 ms
Compatible Controller	Simple Motion Unit Motion Controller

◇ MECHATROLINK-III Specification

Item	Description
Baud Rate	100 Mbps
Transmission Period	0.5 ms/1 ms/2 ms/4 ms
Station Address	03 h~EF h (Initial value: 03 h)
Transmission Bytes	32/48 bytes (Initial value: 48 bytes)
Profile	Standard Stepper Motor Drive Profile Standard Servo Profile

◇ EtherCAT Specifications

Item	Description
Baud Rate	100 Mbps
Communication Period	0.5 ms/1 ms/2 ms/3 ms/4 ms/5 ms/6 ms/7 ms/8 ms
Node Address	0~255 (00 h~FF h, Initial value: 00 h)
Communication Protocol	EtherCAT Dedicated Protocol (CoE) CiA402 Driver Profile

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

● General Specifications

Item	Description
Degree of Protection	IP10
Operating Environment	Ambient Temperature: 0 to +50°C (0 to +122°F) (Non-freezing) Humidity: 85% or less (Non-condensing) Altitude: Max. of 1000 m (3300 ft.) above sea level Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Storage Conditions Transportation Conditions	Ambient Temperature: -25 to +70°C (-13 to +158°F) (Non-freezing) Humidity: 85% or less (Non-condensing) Altitude: Max. of 3000m (10000 ft.) above sea level Atmosphere: No corrosive gases or dust. The product should not be exposed to water or oil.
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the following locations: · FG Terminal – Power Supply Terminal
Dielectric Strength	Sufficient to withstand the following for 1 minute: · SSCNET III/H-Compatible, MECHATROLINK-III-Compatible: FG Terminal – Power Supply Terminal 500 VAC 50/60 Hz Leakage Current 15 mA or less · EtherCAT-Compatible: FG Terminal – Power Supply Terminal 1000 VAC 50/60 Hz Leakage Current 10mA or less

Note

● When measuring insulation resistance or performing dielectric voltage withstanding test, disconnect the motor and driver. Also, do not perform these tests on the ABZ0 sensor part of the motor.

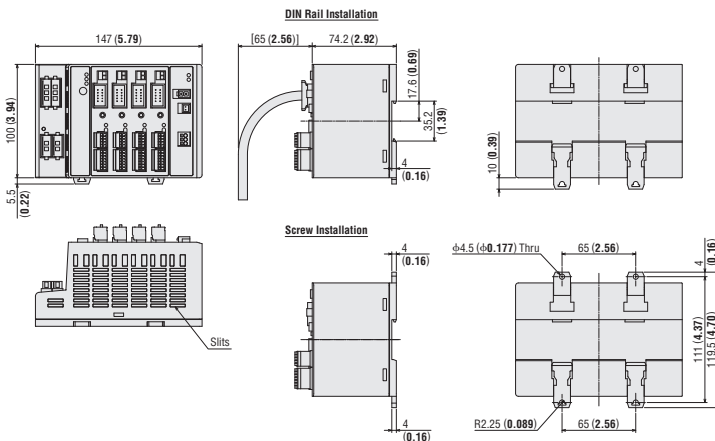
■ Dimensions Unit: mm (in.)

● Multi-Axis Driver

2D & 3D CAD

Product Line Number of Axes	SSCNET III-H-Compatible		MECHATROLINK-III - Compatible		EtherCAT-Compatible		Mass kg (lb.)
	Product Name	2D CAD	Product Name	2D CAD	Product Name	2D CAD	
2-Axis	AZD2A-KS3	B1203	AZD2A-KM3	B1200	AZD2A-KED	B1206	0.39 (0.86)
3-Axis	AZD3A-KS3	B1204	AZD3A-KM3	B1201	AZD3A-KED	B1207	0.42 (0.92)
4-Axis	AZD4A-KS3	B1205	AZD4A-KM3	B1202	AZD4A-KED	B1208	0.45 (0.99)

● Dimensional values are common for 2-axis, 3-axis and 4-axis units.



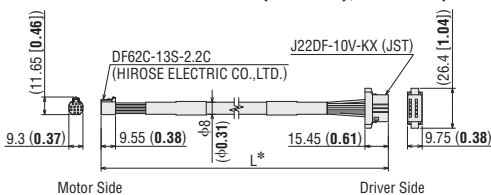
● Included Items

- Main Power Connector: F32FSS-03V-KX (JST)
- Control Power Connector: F32FSS-02V-KX (JST)
- Contact for Main Power Connector & Control Power Connector: LF3F-41GF-P2.0 (JST)
- Input Signal Connector: FK-MC 0,5/ 5-ST-2,5 (Phoenix Contact)
- Output signal Connector: FK-MC 0,5/ 7-ST-2,5 (Phoenix Contact)
- Connector Cap (SSCNET III/H-Compatible only)

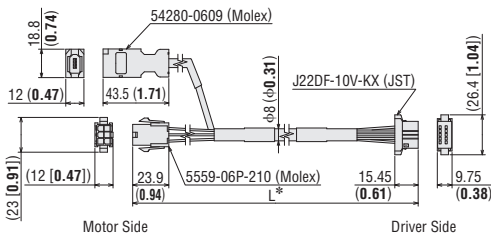
● Connection Cable Sets/Flexible Connection Cable Sets

◇ Cable for Motor

● For Frame Size 20 mm (0.78 in.), 28 mm (1.10 in.)

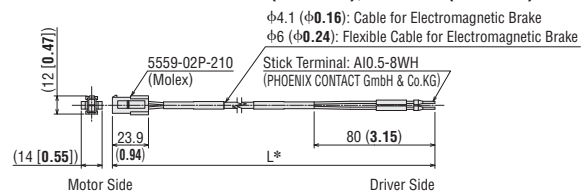


● For Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.)



◇ Cable for Electromagnetic Brake

● For Frame Size 42 mm (1.65 in.), 60 mm (2.36 in.)



*The length L (m) is specified where L is located in the dimensions in "Product Line" on page 114.

Cables and Peripheral Equipment for Multi-Axis Drivers

Power Supply Cable (Sold separately)

These are lead wires with a connector for **AZ** Series Multi-Axis Drivers. Connecting the main power supply and control power supply is easy.

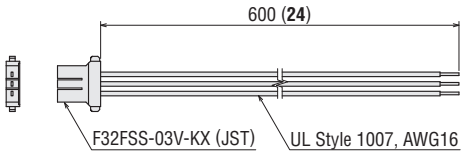
Product Line and List Price

Product Name	Product Line	List Price
LC03D06A	Main Power Supply	\$29.00
LC02D06A	Control Power Supply	\$25.00

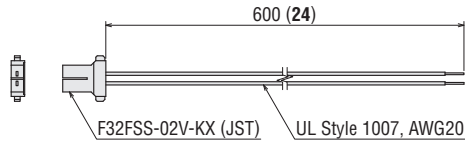


Dimensions Unit: mm (in.)

Main Power Supply Cable LC03D06A



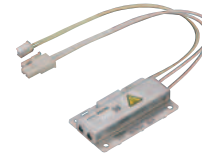
Control Power Supply Cable LC02D06A



Regeneration Unit

During vertical drive (gravitational operation) or sudden start/stop in large inertia, an external force causes the motor to rotate and function as a power generator. When the regenerative power exceeds the driver's regenerative power absorption capacity, it may cause damage to the motor. In such a case, the regeneration unit is connected to the driver to convert regenerative power into thermal energy for dissipation.

Alarms can occur easily when a 24 VDC power supply is used with a multi-axis driver, so use of a regeneration unit is recommended.



Product Line and List Price

Product Name	List Price
RGC40	\$62.00

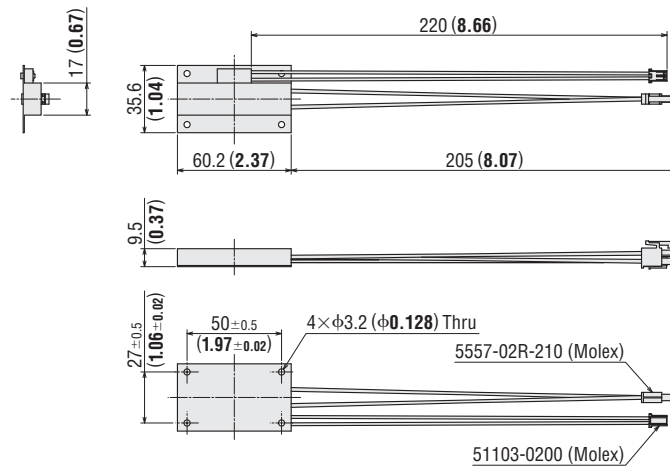
Specifications

Item	Description
Permissible Power Consumption	Continuous Regenerative Power: 40 W* Instantaneous Regenerative Power: 400 W
Resistance Value	15 Ω
Thermal Protector Operating Temperature	Operation: Closes at 95±5°C (203±9°F) Return: Closes at 65±15°C (120±27°F) (Normal close)
Thermal Protector Electrical Rating	250 VAC, 0.5 A (Min. Current 1.5 VDC, 1 mA)

*Install the regeneration unit in a place that has the same heat radiation capability as the heat [sink material: aluminum 180×150 mm (7.09×5.91 in.), 2 mm (0.078 in.) thick]

Dimensions Unit: mm (in.)

Mass: 0.03 kg **2D CAD** B1209 **3D CAD**



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

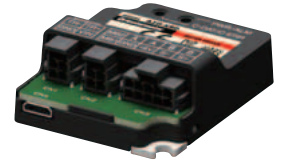
Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

αSTEP AZ Series Compact Driver

DC Input



This driver can be controlled using RS-485 communication. The elimination of switches and I/O connectors allows for a compact and lightweight design.

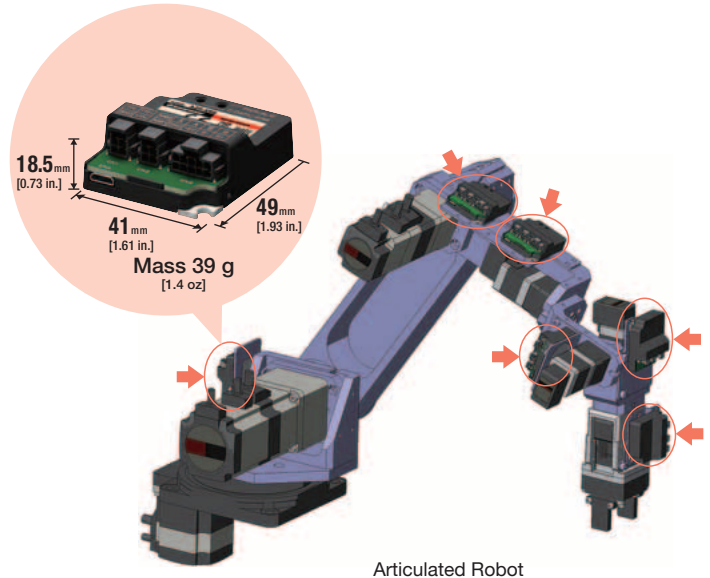
Features

Compact and Lightweight Design

● Increased Design Freedom

Compact design allows for installation in tight spaces. With a weight of just 39 g (1.4 oz), even when installed on moving components, the load torque and inertial moment can be reduced, resulting in more freedom in mechanical and control cabinet design.

In addition, by installing the driver close to the motor, the connection cables can be shortened, resulting in reduced equipment weight, decreased costs and a reduction in complicated wiring work.

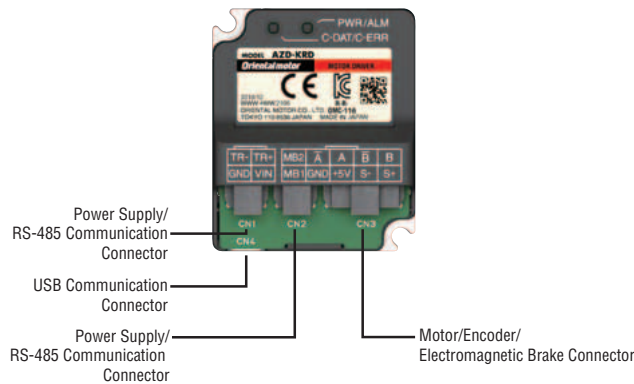


Articulated Robot

Reduced Wiring and Reduced Costs

● Control Via RS-485 Communication

RS-485 communication can be used to set operating data and parameters, as well as input operation commands. The protocol is supported by Modbus (RTU) and can be used to connect to touch screens and computers.

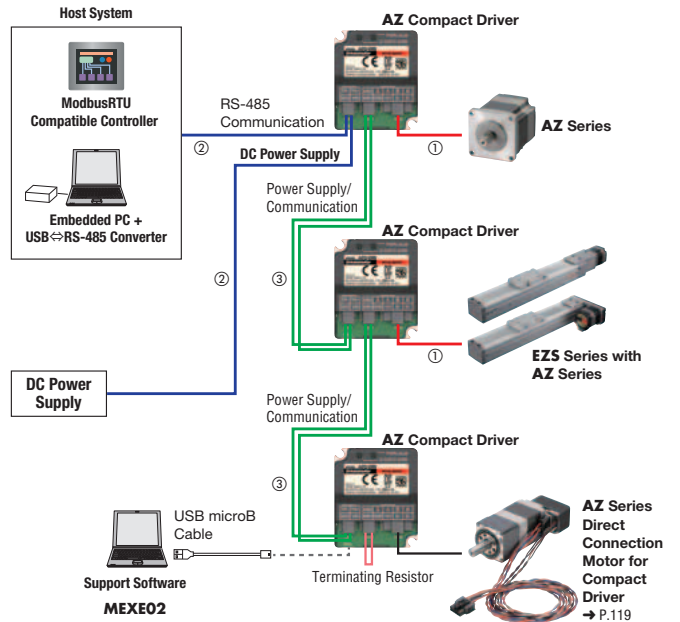


- Easy Control
- Simple Wiring
- Serial Communication Module Compatible
- Motor Control Using a Computer
- Simplified System

● Daisy-Chaining*

A daisy-chain connection of multiple drivers to the host and power supply is supported. This provides the advantage of reduced wiring and easier connection management and maintenance.

*When daisy-chaining to a power supply, make sure that the total input current for the drivers is 6.5 A or less.



Cables for Compact Driver (①, ②, ③) → P.118

Product Line and List Price

Product Name	List Price
AZD-KRD	\$391.00

Specifications

Power Supply Input		24 VDC±5% / 48 VDC±5%
I/O Functions	Number of Positioning Data Sets	256 Points
	RS-485 Communication Remote Input	16 Points
	RS-485 Communication Remote Output	16 Points
Maximum Cable Extension Length		Power Supply/ Communication Cable: 5 m [16.4 ft.] Motor/Encoder/Electromagnetic Brake Cable: 0.5 m [1.64 ft.] including motor's own cable
Operating Environment	Ambient Temperature	0 to 50°C [32~122°F] (Non-freezing)
	Ambient Humidity	85% or less (Non-condensing)
	Altitude	Up to 1000 m [3300 ft.] above sea level
	Atmosphere	Use in an area without corrosive gases and dust. The product should not be exposed to water, oil or other liquids.
Storage Conditions	Ambient Temperature	-25 to +70°C [-13~158°F] (Non-freezing)
	Ambient Humidity	85% or less (Non-condensing)
Shipping Conditions	Altitude	Up to 3000 m [10000 ft.] above sea level
	Atmosphere	Use in an area without corrosive gases and dust. The product should not be exposed to water, oil or other liquids.

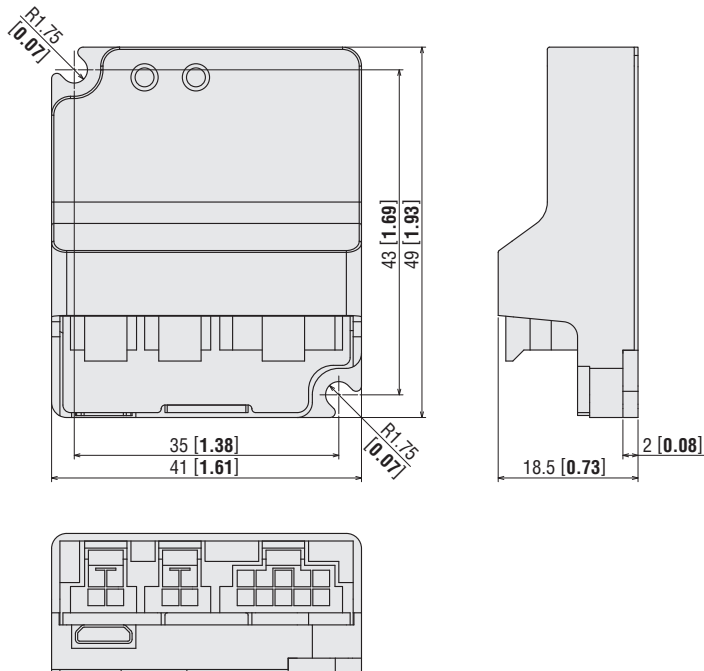
● Driver setting is performed through Modbus communication or **MEXE02** support software. Please contact Oriental Motor for details.

RS-485 Communication Specifications

Electrical Characteristics	Complies with EIA-485. Use twisted-pair cables, max. total extension length is 5 m [16.4 ft.].
Communication Mode	Half duplex Start-stop synchronization (data: 8 bits, stop bit: 1 bit or 2 bits, parity: none, even, or odd)
Protocol	Modbus RTU protocol
Baud Rate	Select from 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps and 230400 bps
Connection Type	Up to 31 units can be connected to a single host system.

Dimensions Unit: mm (in.)

Mass: 39g (1.4 oz)



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

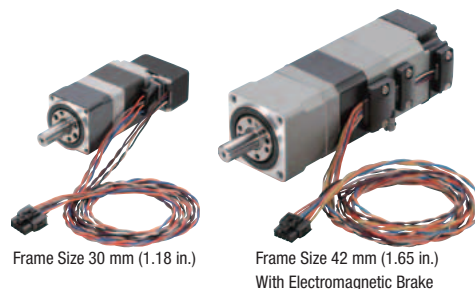
Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Direct Coupling Motors for Compact Driver

These are lead wire type motors that can connect directly to the compact driver.



Features

Can Connect Directly to **AZ** Compact Drivers

Improved Cable Routing

Space Saving

Reduced Size and Weight

Product Number

◇ Motor

•Harmonic Geared Type

AZM 2 4 A K W - HS 100

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	2: 30 mm (1.18 in.) 4: 42 mm (1.65 in.)
③	Motor Case Length	
④	Output Shaft Type	A: Single Shaft M: Type with an Electromagnetic Brake
⑤	Motor Type	K: DC Input Specifications
⑥	Motor Cable Type	W: Separated Lead Wires
⑦	Geared Type	H: Harmonic Geared Type
⑧	Gear Ratio	

Product Line

◇ Motor

•Harmonic Geared Type

Frame Size	Product Name	List Price
30 mm (1.18 in.)	AZM24AKW-HS50	\$877.00
	AZM24AKW-HS100	

•Harmonic Geared Type with Electromagnetic Brake

Frame Size	Product Name	List Price
42 mm (1.65 in.)	AZM46MKW-HS50	\$1,078.00
	AZM46MKW-HS100	

See Oriental Motor website for more information.

Cables for Compact Driver

① Connection Cables

For connection between motor and driver
See below for motor frame size details.



② Power Supply/Communication Cables

For connection to host system and DC power supply
Length: 1 m [3.3 ft.], 2 m [6.6 ft.]

These are leads with a connector connection on the driver side and bare wires on the other side.



③ Power Supply/Communication Cables

For driver connection

Length: 0.5 m [1.6 ft.]

Daisy-chain connection of multiple drivers is possible.
These are leads with connectors at both ends.



● Product Line and List Price

	Cable Type	Product Name	Length m (ft.)	List Price
① Connection Cables	For □42 mm [1.65 in.] / □60 mm [2.36 in.]	LC002Z	0.2 (0.7)	\$23.00
	For □42 mm [1.65 in.] / □60 mm [2.36 in.] Type with Electromagnetic Brake	LC002ZB	0.2 (0.7)	\$29.00
	For □20 mm [0.79 in.] / □28 mm [1.10 in.]	LC003Z2	0.35 (1.2)	\$23.00
② Power Supply/Communication Cables	For Host System, DC Power Supply Connection	LC010-RS	1 (3.3)	\$14.00
		LC020-RS	2 (6.6)	\$17.00
③ Power Supply/Communication Cables	For Driver Connection	LC005-RW	0.5 (1.6)	\$14.00

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

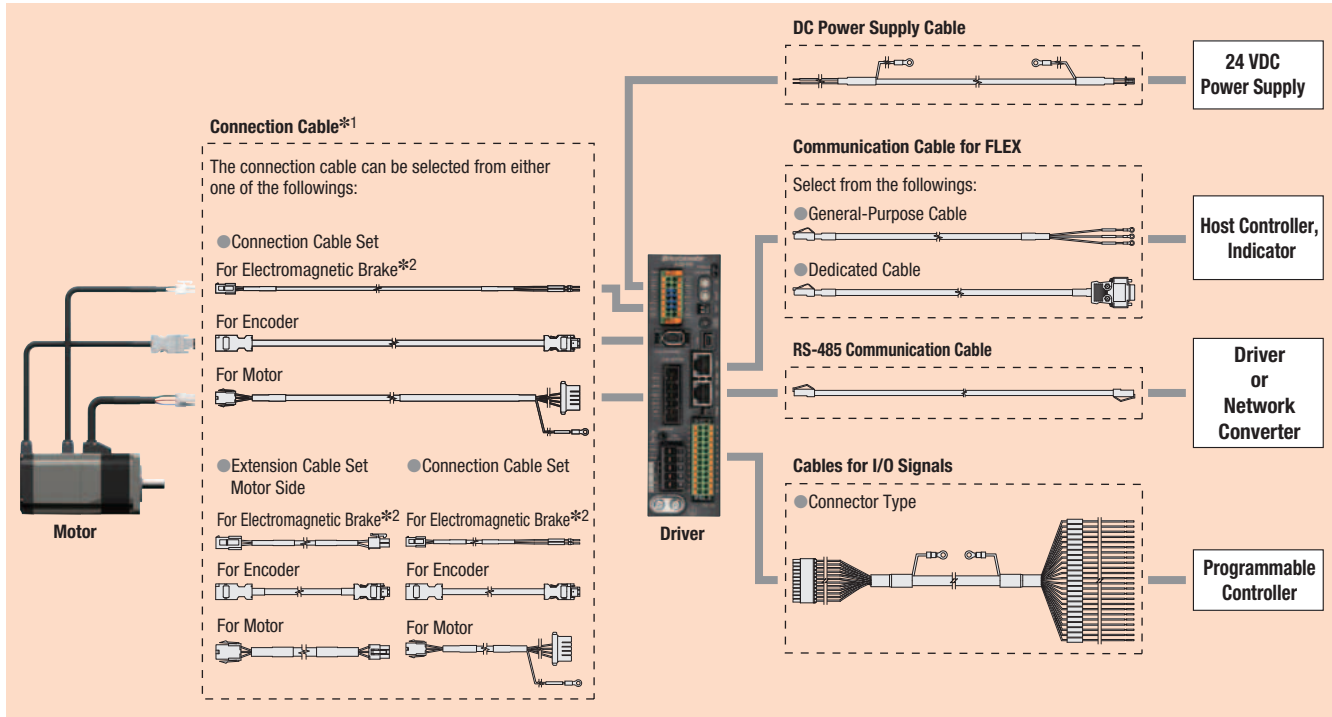
Actuators
AZ Series
Equipped

Cables

- Stepper Motors AZ
- Linear Slides EZS
- Cylinders EAC
- Compact Cylinders DR
- Rack & Pinion L
- Gripper EH
- Rotary Actuators DGI

System Configuration Example for Cables (AC Input)

Built-in Controller Type Driver, Pulse Input Type Driver with RS-485 Communication



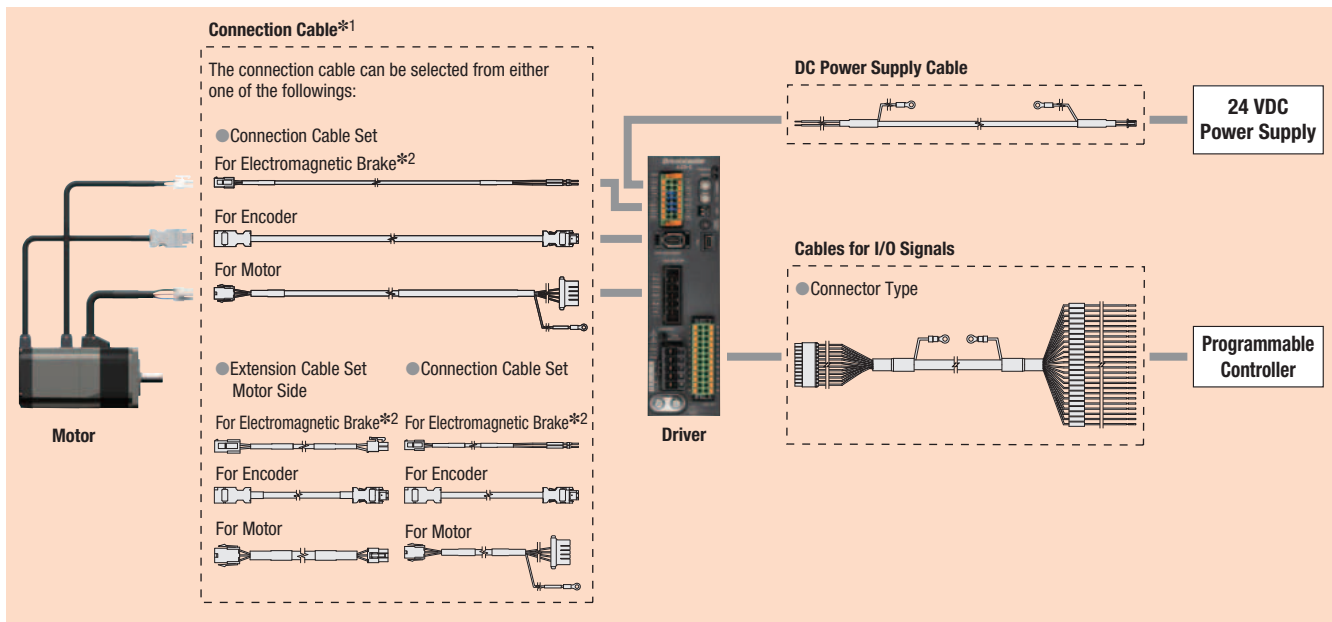
*1 Flexible connection cable sets and flexible extension cable sets with excellent flexibility are available.

*2 Required for motor with electromagnetic brake.

Note

- Up to 2 cables can be used to connect the motor and driver.
- The maximum distance between the motor and driver is 20 m (65.6 ft.).
- 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.

Pulse Input Type Driver



*1 Flexible connection cable sets and flexible extension cable sets with excellent flexibility are available.

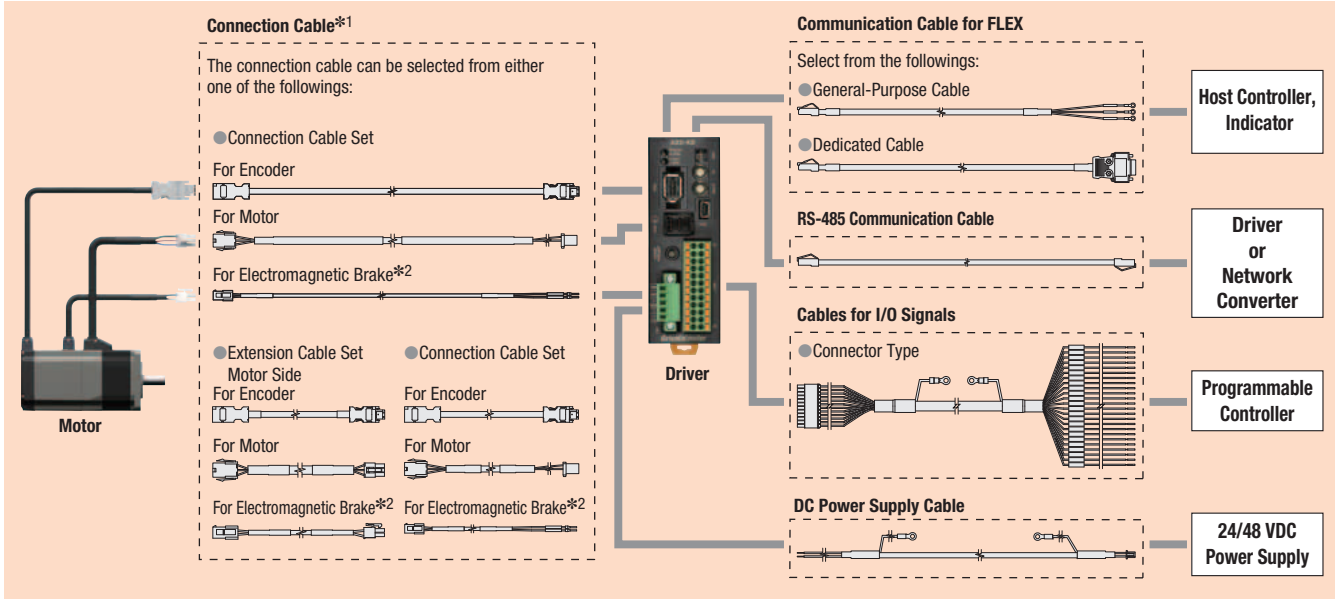
*2 Required for motor with electromagnetic brake.

Note

- Up to 2 cables can be used to connect the motor and driver.
- The maximum distance between the motor and driver is 20 m (65.6 ft.).
- 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.

System Configuration Example for Cables (DC Input)

Built-in Controller Type Driver, Pulse Input Type Driver with RS-485 Communication



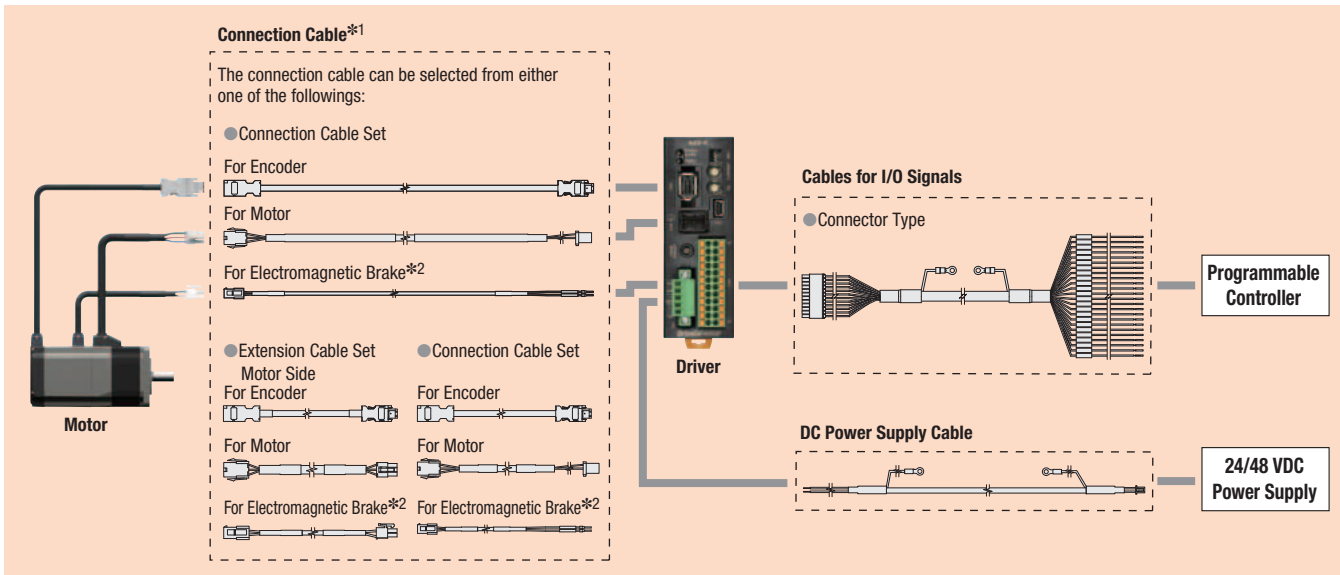
*1 Flexible connection cable sets and flexible extension cable sets with excellent flexibility are available.

*2 Required for motor with electromagnetic brake.

Note

- Up to 2 cables can be used to connect the motor and driver.
- The maximum distance between the motor and driver is 20 m (65.6 ft.).
- 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.

Pulse Input Type Driver



*1 Flexible connection cable sets and flexible extension cable sets with excellent flexibility are available.

*2 Required for motor with electromagnetic brake.

Note

- Up to 2 cables can be used to connect the motor and driver.
- The maximum distance between the motor and driver is 20 m (65.6 ft.).
- 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.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

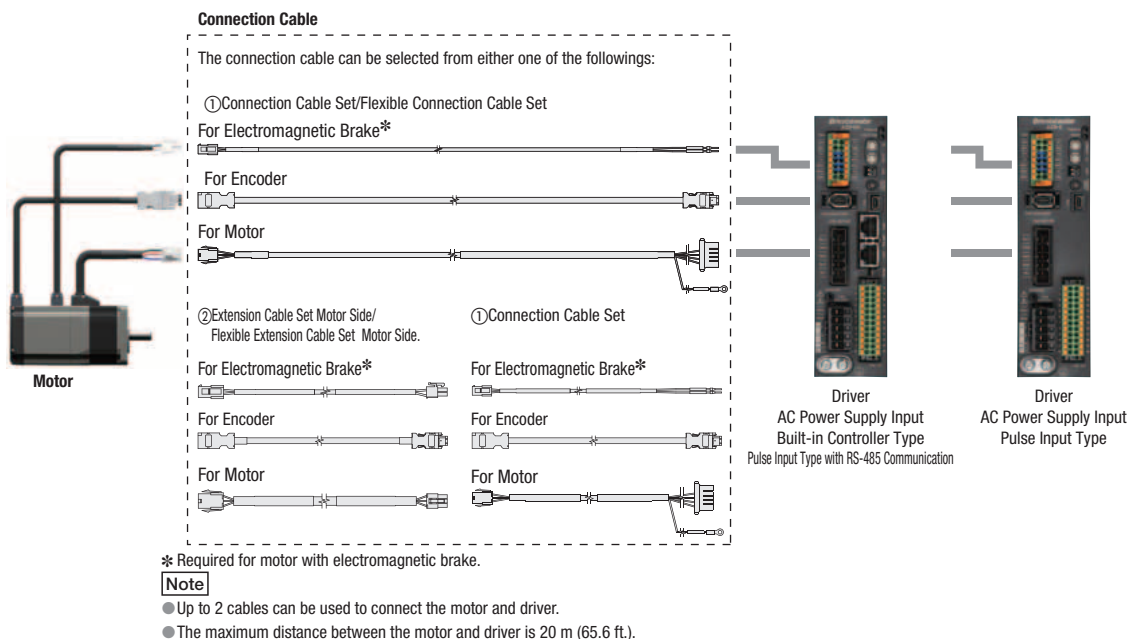
Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Connection Cables (AC Input)



① Connection Cable Sets/Flexible Connection Cable Sets

These cable sets are used to connect the motor and the driver. Use the flexible connection cable in applications where the cable is bent and flexed repeatedly.

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.

● Product Line and List Price

◇ Connection Cable Set

For Motor/Encoder



For Motor/Encoder/Electromagnetic Brake



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZF	\$35.00
1 (3.3)	CC010VZF	\$35.00
1.5 (4.9)	CC015VZF	\$43.00
2 (6.6)	CC020VZF	\$50.00
2.5 (8.2)	CC025VZF	\$56.00
3 (9.8)	CC030VZF	\$62.00
4 (13.1)	CC040VZF	\$97.00
5 (16.4)	CC050VZF	\$110.00
7 (23)	CC070VZF	\$136.00
10 (32.8)	CC100VZF	\$176.00
15 (49.2)	CC150VZF	\$243.00
20 (65.6)	CC200VZF	\$310.00

● For Motor/Encoder/ Electromagnetic Brake

Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZFB	\$52.00
1 (3.3)	CC010VZFB	\$52.00
1.5 (4.9)	CC015VZFB	\$60.00
2 (6.6)	CC020VZFB	\$67.00
2.5 (8.2)	CC025VZFB	\$74.00
3 (9.8)	CC030VZFB	\$82.00
4 (13.1)	CC040VZFB	\$120.00
5 (16.4)	CC050VZFB	\$135.00
7 (23)	CC070VZFB	\$166.00
10 (32.8)	CC100VZFB	\$213.00
15 (49.2)	CC150VZFB	\$293.00
20 (65.6)	CC200VZFB	\$372.00

◇ Flexible Connection Cable Sets For Motor/Encoder



For Motor/Encoder/Electromagnetic Brake



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZR	\$84.00
1 (3.3)	CC010VZR	\$84.00
1.5 (4.9)	CC015VZR	\$91.00
2 (6.6)	CC020VZR	\$99.00
2.5 (8.2)	CC025VZR	\$105.00
3 (9.8)	CC030VZR	\$111.00
4 (13.1)	CC040VZR	\$125.00
5 (16.4)	CC050VZR	\$141.00
7 (23)	CC070VZR	\$180.00
10 (32.8)	CC100VZR	\$236.00
15 (49.2)	CC150VZR	\$332.00
20 (65.6)	CC200VZR	\$426.00

● For Motor/Encoder/ Electromagnetic Brake

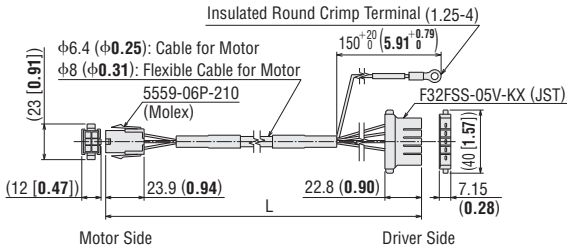
Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZRB	\$114.00
1 (3.3)	CC010VZRB	\$114.00
1.5 (4.9)	CC015VZRB	\$123.00
2 (6.6)	CC020VZRB	\$134.00
2.5 (8.2)	CC025VZRB	\$142.00
3 (9.8)	CC030VZRB	\$151.00
4 (13.1)	CC040VZRB	\$170.00
5 (16.4)	CC050VZRB	\$191.00
7 (23)	CC070VZRB	\$240.00
10 (32.8)	CC100VZRB	\$311.00
15 (49.2)	CC150VZRB	\$432.00
20 (65.6)	CC200VZRB	\$551.00

● Note on wiring of flexible cables → Page 131

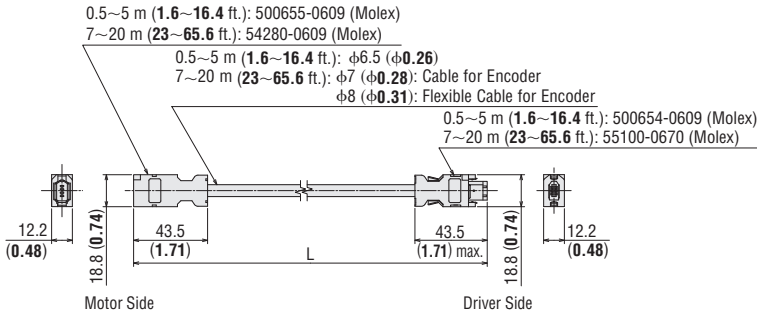
● Note on wiring of flexible cables → Page 131

● Dimensions Unit: mm (in.)

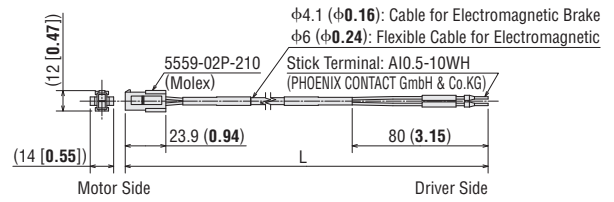
◇ Cable for Motor



◇ Encoder Cable



◇ Cable for Electromagnetic Brake



Features
Motors AC Input
Motors DC Input
Ethernet/IP Compatible Drivers
EtherCAT Compatible Drivers
Built-in Controller Drivers
Pulse Input Drivers with RS-485
Pulse Input Drivers
Network Multi-Axis Drivers
Compact Drivers
Cables / Accessories
Actuators AZ Series Equipped

② Extension Cable Sets Motor Side / Flexible Extension Cable Sets Motor Side

This is a cable to provide an extension between the connection cable and the motor. When extending the connection, keep the overall cable length at 20 m (65.6 ft.) or less.

Use the flexible extension cable in applications where the cable is bent and flexed repeatedly.

● Product Line and List Price

◇ Extension Cable Set

• For Motor/Encoder



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZFT	\$71.00
2 (6.6)	CC020VZFT	\$80.00
3 (9.8)	CC030VZFT	\$91.00
5 (16.4)	CC050VZFT	\$110.00
7 (23)	CC070VZFT	\$136.00
10 (32.8)	CC100VZFT	\$176.00
15 (49.2)	CC150VZFT	\$243.00

• For Motor/Encoder/Electromagnetic Brake



● For Motor/Encoder/ Electromagnetic Brake

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZFBT	\$86.00
2 (6.6)	CC020VZFBT	\$98.00
3 (9.8)	CC030VZFBT	\$111.00
5 (16.4)	CC050VZFBT	\$135.00
7 (23)	CC070VZFBT	\$166.00
10 (32.8)	CC100VZFBT	\$213.00
15 (49.2)	CC150VZFBT	\$293.00

◇ Flexible Extension Cable Set

• For Motor/Encoder



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZRZT	\$84.00
2 (6.6)	CC020VZRZT	\$99.00
3 (9.8)	CC030VZRZT	\$111.00
5 (16.4)	CC050VZRZT	\$141.00
7 (23)	CC070VZRZT	\$180.00
10 (32.8)	CC100VZRZT	\$236.00
15 (49.2)	CC150VZRZT	\$332.00

• For Motor/Encoder/Electromagnetic Brake



● For Motor/Encoder/ Electromagnetic Brake

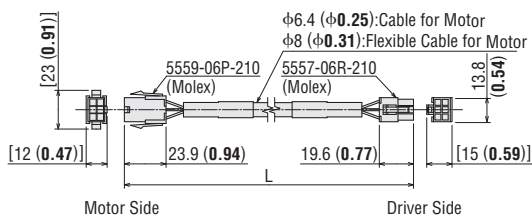
Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZRBT	\$114.00
2 (6.6)	CC020VZRBT	\$134.00
3 (9.8)	CC030VZRBT	\$151.00
5 (16.4)	CC050VZRBT	\$191.00
7 (23)	CC070VZRBT	\$240.00
10 (32.8)	CC100VZRBT	\$311.00
15 (49.2)	CC150VZRBT	\$432.00

● Note on wiring of flexible cables → Page 131

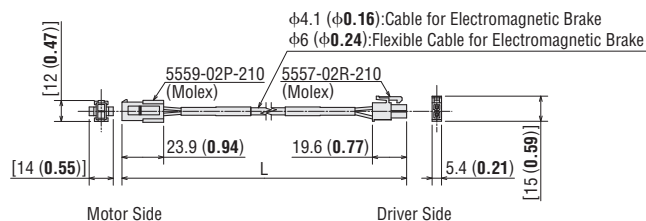
● Note on wiring of flexible cables → Page 131

● Dimensions Unit: mm (in.)

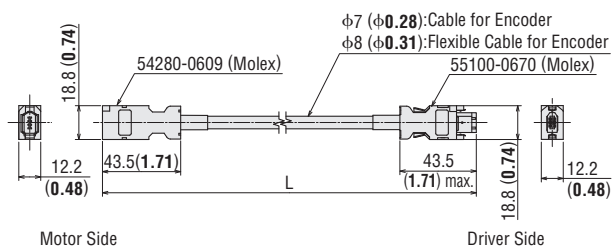
◇ Cable for Motor



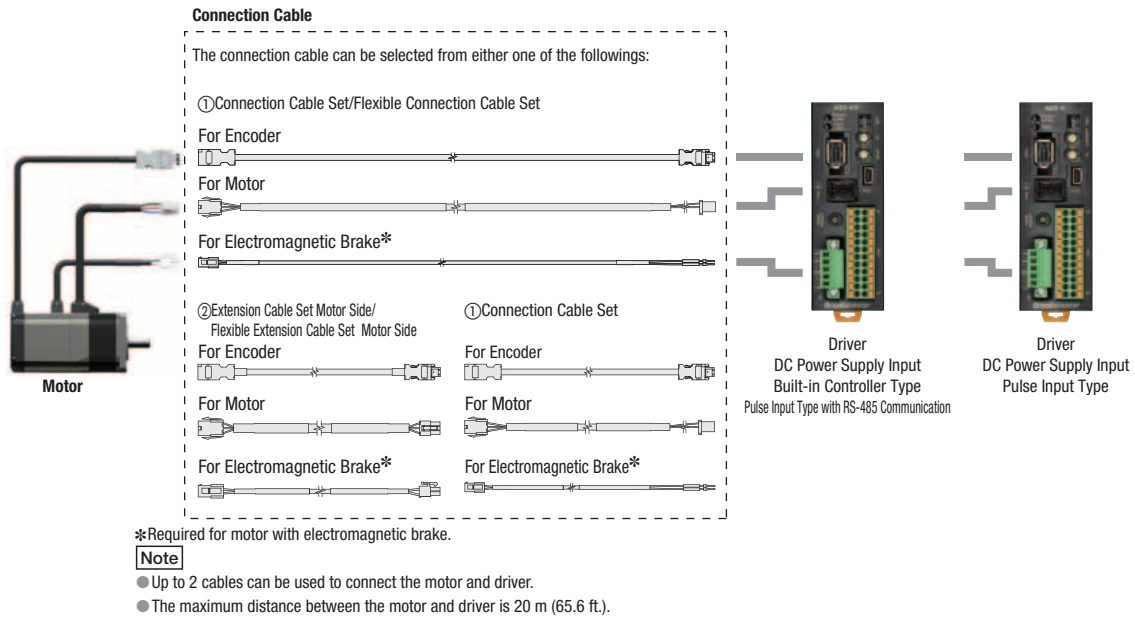
◇ Cable for Electromagnetic Brake



◇ Encoder Cable



Connection Cables (DC Input)



① Connection Cable Sets/Flexible Connection Cable Sets

These cable sets are used to connect the motor and the driver. Use the flexible connection cable in applications where the cable is bent and flexed repeatedly.

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.

● Product Line and List Price

[For **AZM14, AZM15, AZM24, AZM26**]

◇ Connection Cable Set



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZ2F2	\$35.00
1 (3.3)	CC010VZ2F2	\$35.00
1.5 (4.9)	CC015VZ2F2	\$43.00
2 (6.6)	CC020VZ2F2	\$50.00
2.5 (8.2)	CC025VZ2F2	\$56.00
3 (9.8)	CC030VZ2F2	\$62.00
4 (13.1)	CC040VZ2F2	\$97.00
5 (16.4)	CC050VZ2F2	\$110.00
7 (23)	CC070VZ2F2	\$136.00
10 (32.8)	CC100VZ2F2	\$176.00
15 (49.2)	CC150VZ2F2	\$243.00
20 (65.6)	CC200VZ2F2	\$310.00

◇ Flexible Connection Cable Sets



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZ2R2	\$84.00
1 (3.3)	CC010VZ2R2	\$84.00
1.5 (4.9)	CC015VZ2R2	\$91.00
2 (6.6)	CC020VZ2R2	\$99.00
2.5 (8.2)	CC025VZ2R2	\$105.00
3 (9.8)	CC030VZ2R2	\$111.00
4 (13.1)	CC040VZ2R2	\$125.00
5 (16.4)	CC050VZ2R2	\$141.00
7 (23)	CC070VZ2R2	\$180.00
10 (32.8)	CC100VZ2R2	\$236.00
15 (49.2)	CC150VZ2R2	\$332.00
20 (65.6)	CC200VZ2R2	\$426.00

● Note on wiring of flexible cables → Page 131

[For AZM46, AZM48, AZM66, AZM69]

◇ Connection Cable Sets · For Motor/Encoder



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZF2	\$35.00
1 (3.3)	CC010VZF2	\$35.00
1.5 (4.9)	CC015VZF2	\$43.00
2 (6.6)	CC020VZF2	\$50.00
2.5 (8.2)	CC025VZF2	\$56.00
3 (9.8)	CC030VZF2	\$62.00
4 (13.1)	CC040VZF2	\$97.00
5 (16.4)	CC050VZF2	\$110.00
7 (23)	CC070VZF2	\$136.00
10 (32.8)	CC100VZF2	\$176.00
15 (49.2)	CC150VZF2	\$243.00
20 (65.6)	CC200VZF2	\$310.00

◇ Flexible Connection Cable Sets



● For Motor/Encoder

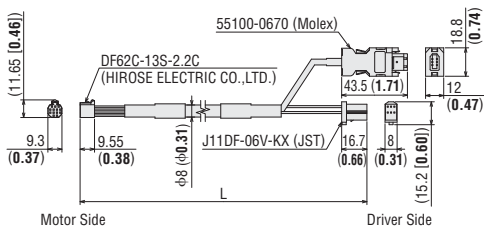
Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZR2	\$84.00
1 (3.3)	CC010VZR2	\$84.00
1.5 (4.9)	CC015VZR2	\$91.00
2 (6.6)	CC020VZR2	\$99.00
2.5 (8.2)	CC025VZR2	\$105.00
3 (9.8)	CC030VZR2	\$111.00
4 (13.1)	CC040VZR2	\$125.00
5 (16.4)	CC050VZR2	\$141.00
7 (23)	CC070VZR2	\$180.00
10 (32.8)	CC100VZR2	\$236.00
15 (49.2)	CC150VZR2	\$332.00
20 (65.6)	CC200VZR2	\$426.00

● Note on wiring of flexible cables → Page 131

● Dimensions Unit: mm (in.)

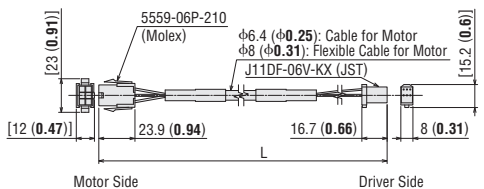
[AZM14, AZM15, AZM24, AZM26]

◇ Cable for Motor

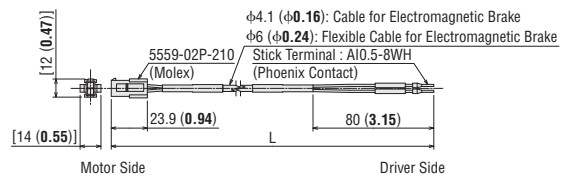


[For AZM46, AZM48, AZM66, AZM69]

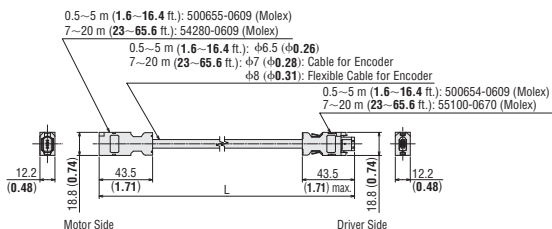
◇ Cable for Motor



◇ Cable for Electromagnetic Brake



◇ Encoder Cable



● For Motor/Encoder/Electromagnetic Brake



● For Motor/Encoder/
Electromagnetic Brake

Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZFB2	\$52.00
1 (3.3)	CC010VZFB2	\$52.00
1.5 (4.9)	CC015VZFB2	\$60.00
2 (6.6)	CC020VZFB2	\$67.00
2.5 (8.2)	CC025VZFB2	\$74.00
3 (9.8)	CC030VZFB2	\$82.00
4 (13.1)	CC040VZFB2	\$120.00
5 (16.4)	CC050VZFB2	\$135.00
7 (23)	CC070VZFB2	\$166.00
10 (32.8)	CC100VZFB2	\$213.00
15 (49.2)	CC150VZFB2	\$293.00
20 (65.6)	CC200VZFB2	\$372.00

● For Motor/Encoder/Electromagnetic Brake



● For Motor/Encoder/
Electromagnetic Brake

Length L [m (ft.)]	Product Name	List Price
0.5 (1.64)	CC005VZRB2	\$114.00
1 (3.3)	CC010VZRB2	\$114.00
1.5 (4.9)	CC015VZRB2	\$123.00
2 (6.6)	CC020VZRB2	\$134.00
2.5 (8.2)	CC025VZRB2	\$142.00
3 (9.8)	CC030VZRB2	\$151.00
4 (13.1)	CC040VZRB2	\$170.00
5 (16.4)	CC050VZRB2	\$191.00
7 (23)	CC070VZRB2	\$240.00
10 (32.8)	CC100VZRB2	\$311.00
15 (49.2)	CC150VZRB2	\$432.00
20 (65.6)	CC200VZRB2	\$551.00

● Note on wiring of flexible cables → Page 131

② Extension Cable Sets Motor Side / Flexible Extension Cable Sets Motor Side

This is a cable to provide an extension between the connection cable and the motor. When extending the connection, keep the overall cable length at 20m (65.6 ft.) or less.

Use the flexible extension cable in applications where the cable is bent and flexed repeatedly.

● Product Line and List Price

[For **AZM14, AZM15, AZM24, AZM26**]

◇ Extension Cable



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZ2FT	\$71.00
2 (6.6)	CC020VZ2FT	\$80.00
3 (9.8)	CC030VZ2FT	\$91.00
5 (16.4)	CC050VZ2FT	\$110.00
7 (23)	CC070VZ2FT	\$136.00
10 (32.8)	CC100VZ2FT	\$176.00
15 (49.2)	CC150VZ2FT	\$243.00

◇ Flexible Extension



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZ2RT	\$84.00
2 (6.6)	CC020VZ2RT	\$99.00
3 (9.8)	CC030VZ2RT	\$111.00
5 (16.4)	CC050VZ2RT	\$141.00
7 (23)	CC070VZ2RT	\$180.00
10 (32.8)	CC100VZ2RT	\$236.00
15 (49.2)	CC150VZ2RT	\$332.00

● Note on wiring of flexible cables → Page 131

[For **AZM46, AZM48, AZM66, AZM69**]

◇ Extension Cable Set

· For Motor/Encoder



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZFT	\$71.00
2 (6.6)	CC020VZFT	\$80.00
3 (9.8)	CC030VZFT	\$91.00
5 (16.4)	CC050VZFT	\$110.00
7 (23)	CC070VZFT	\$136.00
10 (32.8)	CC100VZFT	\$176.00
15 (49.2)	CC150VZFT	\$243.00

· For Motor/Encoder/Electromagnetic Brake



● For Motor/Encoder/ Electromagnetic Brake

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZFBT	\$86.00
2 (6.6)	CC020VZFBT	\$98.00
3 (9.8)	CC030VZFBT	\$111.00
5 (16.4)	CC050VZFBT	\$135.00
7 (23)	CC070VZFBT	\$166.00
10 (32.8)	CC100VZFBT	\$213.00
15 (49.2)	CC150VZFBT	\$293.00

◇ Flexible Extension Cable Set

· For Motor/Encoder



● For Motor/Encoder

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZRBT	\$84.00
2 (6.6)	CC020VZRBT	\$99.00
3 (9.8)	CC030VZRBT	\$111.00
5 (16.4)	CC050VZRBT	\$141.00
7 (23)	CC070VZRBT	\$180.00
10 (32.8)	CC100VZRBT	\$236.00
15 (49.2)	CC150VZRBT	\$332.00

· For Motor/Encoder/Electromagnetic Brake



● For Motor/Encoder/ Electromagnetic Brake

Length L [m (ft.)]	Product Name	List Price
1 (3.3)	CC010VZRBT	\$114.00
2 (6.6)	CC020VZRBT	\$134.00
3 (9.8)	CC030VZRBT	\$151.00
5 (16.4)	CC050VZRBT	\$191.00
7 (23)	CC070VZRBT	\$240.00
10 (32.8)	CC100VZRBT	\$311.00
15 (49.2)	CC150VZRBT	\$432.00

● Note on wiring of flexible cables → Page 131

● Note on wiring of flexible cables → Page 131

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

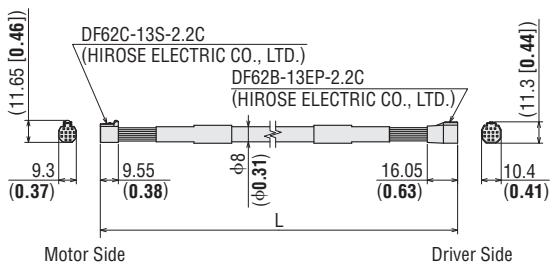
Cables /
Accessories

Actuators
AZ Series
Equipped

● Dimensions Unit: mm (in.)

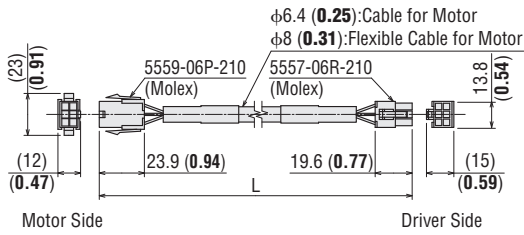
[For AZM14, AZM15, AZM24, AZM26]

◇ Cable for Motor

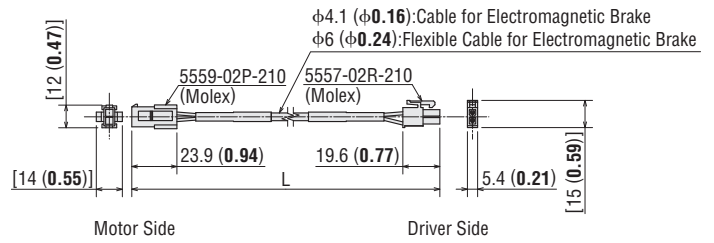


[For AZM46, AZM48, AZM66, AZM69]

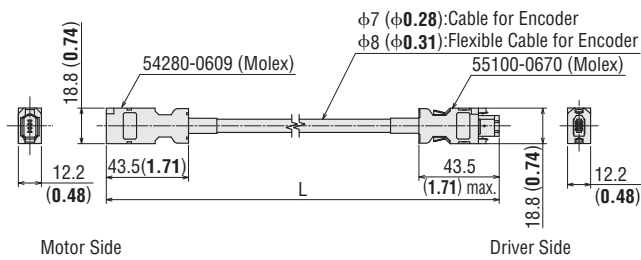
◇ Cable for Motor



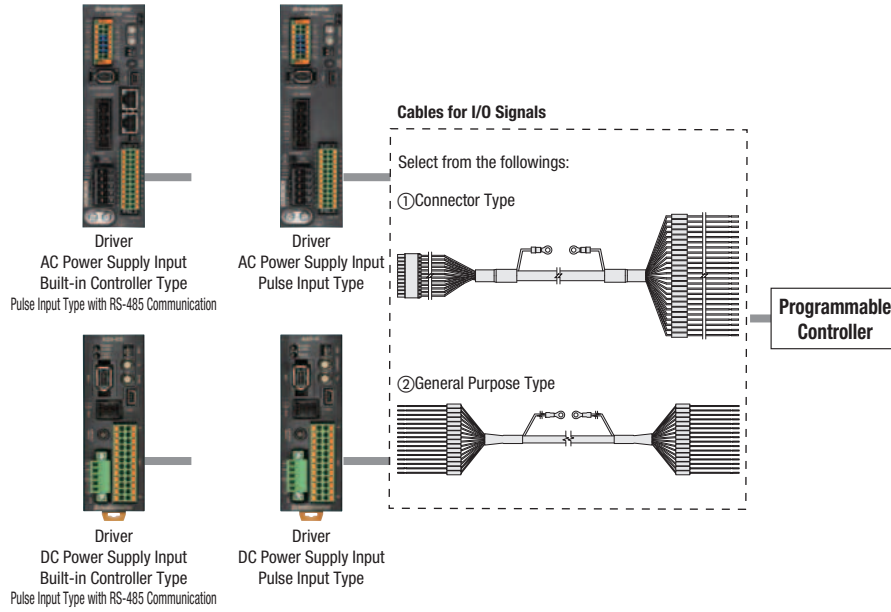
◇ Cable for Electromagnetic Brake



◇ Encoder Cable



Cables for I/O signals



① Connector Type

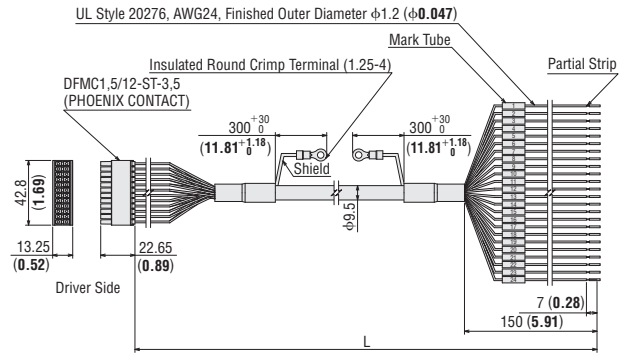
- Multi-core shielded cables
- Loose wires at one end
- Easy to shield with round ground wire terminal



● Product Line and List Price

Product Name	Length L [m (ft.)]	Number of Lead Wire Cores	AWG	List Price
CC24D005C-1	0.5 (1.64)	24	24	\$153.00
CC24D010C-1	1 (3.3)			\$164.00
CC24D020C-1	2 (6.6)			\$186.00

● Dimensions Unit: mm (in.)



② General-Purpose Type

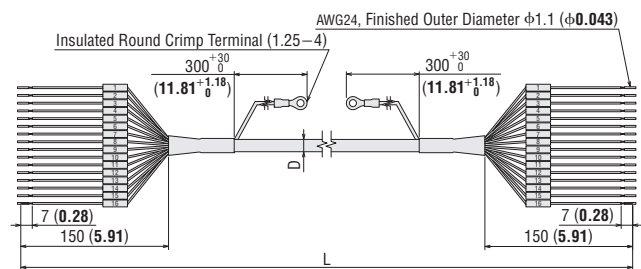
- Shielded cables
- Loose wires at both ends
- Easy shield grounding with round ground wire terminals
- The number of lead wire cores can be selected to match the functions being used



● Product Line and List Price

Product Name	Length L [m (ft.)]	Number of Lead Wire Cores	Outer Diameter D [mm (in.)]	AWG	List Price
CC06D005B-1	0.5 (1.64)	6	$\phi 5.4 (\phi 0.21)$	24	\$17.00
CC06D010B-1	1 (3.3)				\$19.00
CC06D015B-1	1.5 (4.9)				\$21.00
CC06D020B-1	2 (6.6)	10	$\phi 6.7 (\phi 0.26)$	24	\$23.00
CC10D005B-1	0.5 (1.64)				\$19.00
CC10D010B-1	1 (3.3)				\$21.00
CC10D015B-1	1.5 (4.9)	12	$\phi 7.5 (\phi 0.30)$	24	\$24.00
CC10D020B-1	2 (6.6)				\$26.00
CC12D005B-1	0.5 (1.64)				\$21.00
CC12D010B-1	1 (3.3)	16	$\phi 7.5 (\phi 0.30)$	24	\$24.00
CC12D015B-1	1.5 (4.9)				\$27.00
CC12D020B-1	2 (6.6)				\$30.00
CC16D005B-1	0.5 (1.64)	16	$\phi 7.5 (\phi 0.30)$	24	\$22.00
CC16D010B-1	1 (3.3)				\$25.00
CC16D015B-1	1.5 (4.9)				\$28.00
CC16D020B-1	2 (6.6)				\$31.00

● Dimensions Unit: mm (in.)



● The figure depicts 16 core wires.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

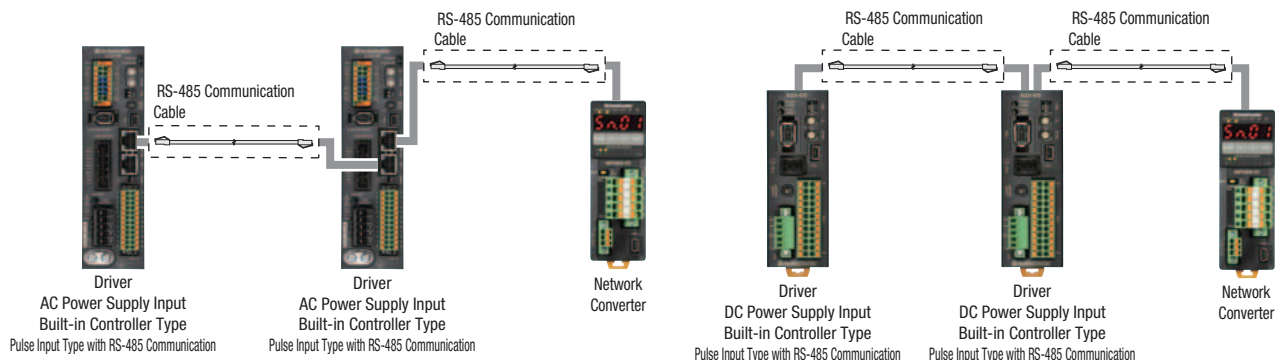
Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

RS-485 Communication Cable

This cable is used to connect two drivers together or a driver to a network converter.

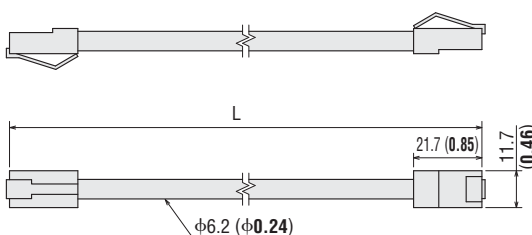


Product Line and List Price

Product Name	Length L [m (ft.)]	Applicable Drivers	List Price
CC001-RS4	0.1 (0.33)	DC Power Supply Input Driver	\$29.00
CC002-RS4	0.25 (0.83)	AC Power Supply Input Driver DC Power Supply Input Driver	\$35.00

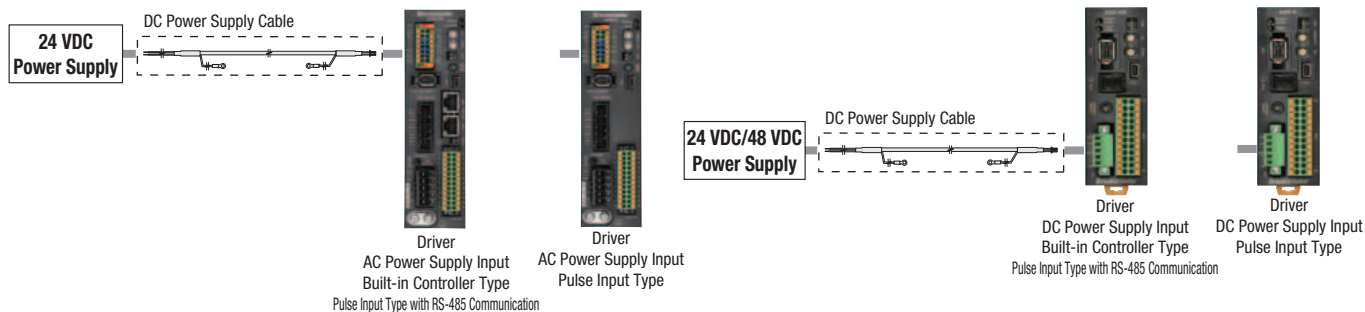


Dimensions Unit: mm (in.)



Cables for DC Power Supplies

These cables are used to connect the driver and the DC power supply.

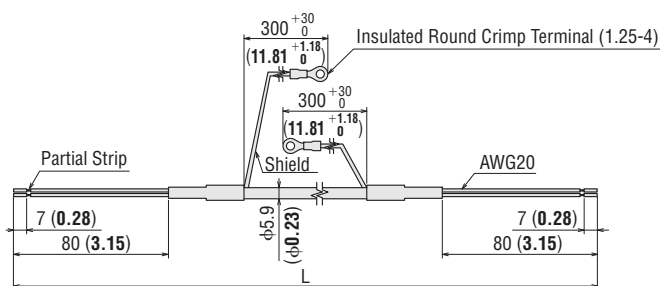


Product Line and List Price

Product Name	Length L [m (ft.)]	List Price
CC02D005-3	0.5 (1.64)	\$14.00
CC02D010-3	1 (3.3)	\$16.00
CC02D015-3	1.5 (4.9)	\$18.00
CC02D020-3	2 (6.6)	\$20.00
CC02D050-3	5 (16.4)	\$23.00



Dimensions Unit: mm (in.)

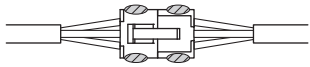


Note on Use of Cables

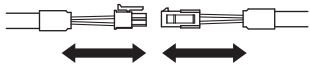
Notes when Connecting Connectors

When seating or unseating a connector, make sure to hold by the connector.

Holding by the cable instead may lead to connection faults.



Connector Holding Positions



When Inserting the Connector

Hold the body of the connector, and ensure insertion is straight. If the connector is inserted while at an angle, it may cause damage to the terminal or a connection fault.

When Removing the Connector

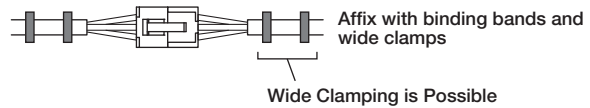
Release the connector's lock and pull straight out. Removing while pulling on the cable may cause damage to the connector.

Note on Wiring of Flexible Cables

Do not allow the cable to bend at the cable connector. This places stress on the connector and the terminal, and may cause a connection fault or break in the wires.

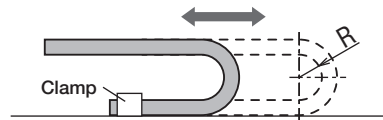
Cable Fixing Method

Fix the connector in 2 locations so that it will not move.



Cable Length and Bending Radius

Select an appropriate cable length so that the cable is not under tension even when it is moved. Bending radius (R) should be at least 6 times of the cable diameter.



Cable Interference



If wiring within a cable holder, ensure that the cables do not interfere with each other. This places stress on the cables and may cause premature breakage. Carefully read the notes for the cable holders before using.

Cables Twisting

Lay out the wiring to ensure that the cables do not twist. Bending the cables while they are twisted may cause premature breakage. After wiring, use the text printed on the surface of the cables to check that they are not twisted.

Accessories (Sold separately)

Flexible Couplings

Coupling Types		MCV	MCS
Appearance of the Products			
Coupling Type		High Damping Rubber	Jaw
Features		There is no backlash due to the one-piece structure in which high damping rubber is molded between aluminum alloy hubs. It has excellent vibration absorption and is ideal for high-precision positioning operation in a short time by the control system motor.	
Characteristics*	No backlash.	◎	○
	Torque	◎	◎
	Torsional Rigidity	△	△
	Permissible Misalignment	○	○
	Vibration Absorption	○	○
Connection Method		Clamp Type	Clamp Type
Materials	Hub	Aluminum Alloy	Aluminum Alloy
	Sleeve/Vibration Absorption	Hydrogenated Nitrile Rubber	Polyurethane

* Evaluation of the characteristics are as follows;

◎ : Excellent ○ : Good △ : Slightly inferior

MCV Coupling (For the Standard Type Motor)

This one-piece coupling is made with anti-vibration rubber molded between aluminum alloy hubs.



Product Line and List Price

Product Name	List Price
MCV15 □	\$75.00
MCV19 □	\$72.00
MCV25 □	\$79.00
MCV30 □	\$83.00

● A number indicating the coupling inner diameter is entered where the box □ is located within the product name.

MCS Coupling (For the Geared Type Motor)

This three-piece coupling adopts an aluminum alloy hub and a resin spider.



Product Line and List Price

Product Name	List Price
MCS20 □	\$50.00
MCS30 □	\$71.00
MCS40 □	\$104.00
MCS55 □	\$134.00
MCS65 □	\$204.00

● A number indicating the coupling inner diameter is entered where the box □ is located within the product name.

Motor Mounting Brackets

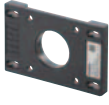
Mounting brackets for convenient installation of motors are available.

These installation brackets can be perfectly fitted to the pilot of the motors. (Except for **PFB** and **SOL**)

The motor installation screws are included. (Except for **SOL**)



PFB
(Material: SPCC)



PAF
(Material: Aluminum alloy)



**PALW2/
PALW4P-5/SOL**
(Material: Aluminum alloy)



PLA
(Material: SS400)



PLBS
(Material: FC250)



PLBW
(Material: FC250)

Product Line and List Price

Standard Type

Product Name	List Price	Motor Frame Size	Applicable Product
PFB28A	\$26.00	28 mm (1.10 in.)	AZM24, AZM26
PAFOPA	\$13.00	42 mm (1.65 in.)	AZM46, AZM48
PALW0P			
PALW2P-5	\$17.00	60 mm (2.36 in.)	AZM66, AZM69
PALW4P-5	\$19.00	85 mm (3.35 in.)	AZM98, AZM911

TS Geared Type

Product Name	List Price	Motor Frame Size	Applicable Product
SOLOB	\$23.00	42 mm (1.65 in.)	AZM46
SOL2M4	\$27.00	60 mm (2.36 in.)	AZM66
SOL5M8	\$34.00	90 mm (3.54 in.)	AZM98

PS Geared Type

Product Name	List Price	Motor Frame Size	Applicable Product
PLBS02PS	\$35.00	28 mm (1.10 in.)	AZM24
PLBW02PS			
PLBS0PS	\$78.00	42 mm (1.65 in.)	AZM46
PLBW0PS			
PLA60G	\$190.00	60 mm (2.36 in.)	AZM66
PLA90G	\$226.00	90 mm (3.54 in.)	AZM98

HPG Geared Type

Product Name	List Price	Motor Frame Size	Applicable Product
PLBS0HPG	\$90.00	42 mm (1.65 in.)	AZM46
PLBW0HPG			
PLBS2HPG	\$91.00	60 mm (2.36 in.)	AZM66
PLBW2HPG	\$104.00		
PLBS5HPG	\$99.00	90 mm (3.54 in.)	AZM98
PLBW5HPG	\$126.00		

Harmonic Geared Type

Product Name	List Price	Motor Frame Size	Applicable Product
PLBS02HG	\$35.00	30 mm (1.18 in.)	AZM24
PLBS0HG	\$78.00	42 mm (1.65 in.)	AZM46
PLA60H	\$190.00	60 mm (2.36 in.)	AZM66
PLA90H	\$226.00	90 mm (3.54 in.)	AZM98

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Mounting Brackets for Circuit Products



MADP06



<Application Example>



MAFP02



<Application Example>

Material: SPCC

Surface Treatment: Trivalent chromate

Product Name	List Price	Applicable Product	Overview and Features
MADP06	\$25.00	AC Power Supply Input Driver*	This is a mounting bracket to install the driver to a DIN rail.
MAFP02	\$8.00	DC Power Supply Input Driver	This is a mounting bracket to screw DIN rail mount drivers to a wall.

*An ambient temperature of 40°C (104°F) or less.

Connector Cover



<Application Example>

This is a resin cover for protecting and securing the connected connector part of the cable.

- Protection level equivalent to IP20
- A protection cover that can be installed after connecting the motors and drivers.
- Secures cables and protects lead wires
- Can be attached to the equipment using two mounting holes [φ4.5 mm (φ0.18 in.)]

● Product Line and List Price

Material: Nylon

Product Name	List Price
MAC-D *1	\$9.00
MAC-D02 *2	\$19.00

*1 Excluding encoder cables, **AZM14**, **AZM15**, **AZM24** and **AZM26**

*2 For encoder cables

Network Converters

Network converters convert host communication protocol to Modbus (RTU) communication protocol. Use a network converter to control Oriental Motor's RS-485 communication-compatible products within the host communication environment.

Product Line and List Price

Network Type	Product Name	List Price
CC Link Ver. 1.1 Compatible	NETC01-CC	\$282.00
CC-Link Ver.2 Compatible	NETC02-CC	\$332.00
MECHATROLINK-II Compatible	NETC01-M2	\$358.00
MECHATROLINK-III Compatible	NETC01-M3	\$398.00
EtherCAT Compatible	NETC01-ECT	\$245.00



SCX11 Universal Controller

The **SCX11** is a highly-functional and sophisticated controller equipped with program editing and execution functions. Use the **SCX11** as a stored program controller to connect to any of Oriental Motor's standard pulse input drivers. The **SCX11** is also able to control the motor via serial communications such as USB, RS-232C and **CANopen**.

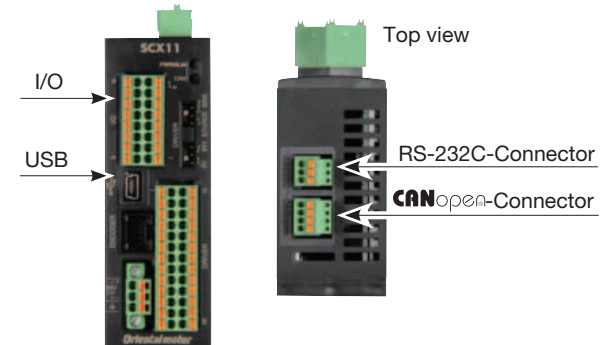
Feature

- 100 Sequence Programs can be Stored
- Stored Program with GUI
- USB Connection to PC
- Various Interfaces for Operation

Product Line and List Price

Product Name	List Price
SCX11	\$349.00

Various Interfaces for Operation



- Direct Command Operation via **CANopen**
- Operations Using a PC or PLC

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
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Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Stepper
Motors
AZ

Linear
Slides
EZS

Cylinders
EAC

Compact
Cylinders
DR

Rack &
Pinion
L

Gripper
EH

Rotary
Actuators
DGI

Compact, High Rigidity Electric Linear Slides with Simple Dust-Resistant Structure

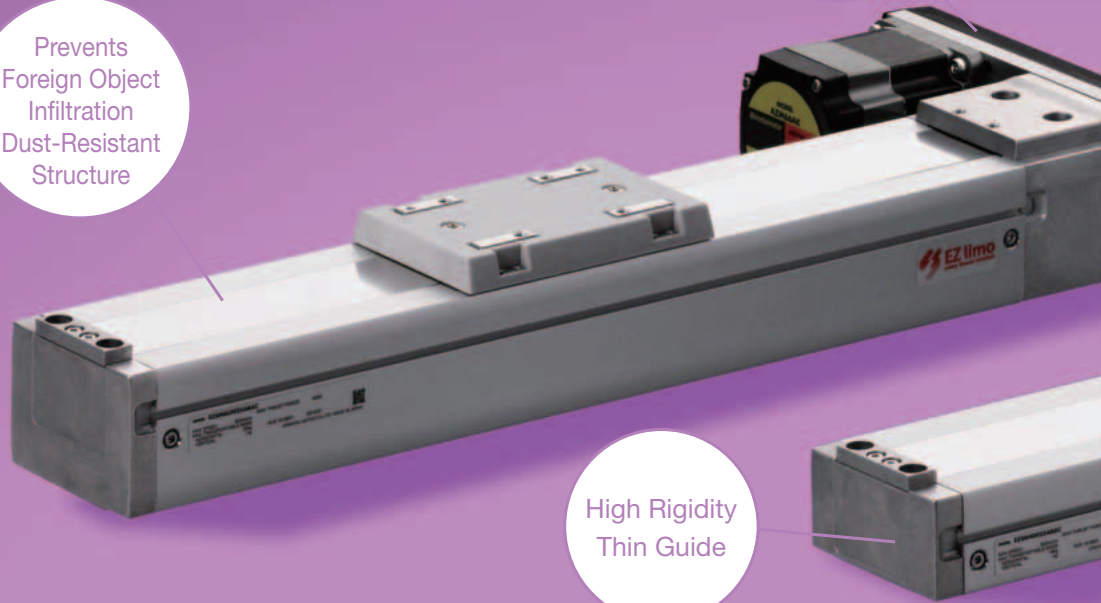
Providing the high response, low vibration and hunting-free operation of a stepper motor in an electric linear slide.

A wide variety of options to suit the equipment space and environment, including straight type and reversed motor type.

Prevents Foreign Object Infiltration Dust-Resistant Structure

Space-Saving Reversed Motor Type

High Rigidity Thin Guide



A wide variety of linear slides and drivers are available.

With Battery-Free Absolute Sensor

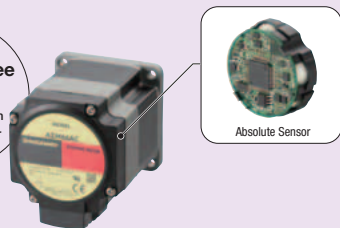


Stepper Motor and Driver α STEP

AZ Series

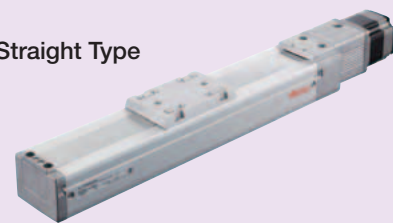
- Equipped with battery-free absolute sensor
- Positioning information can be known without a sensor
- High reliability using closed loop control
- Reduced motor heat and reduced energy consumption through high efficiency design

Battery-Free
Equipped with Multiple-Rotation Absolute Sensor

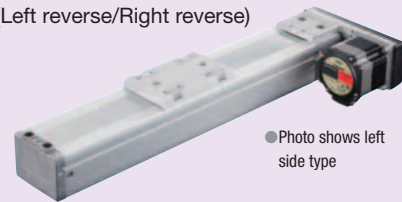


Linear Slide

Straight Type



Reversed Motor Type (Left reverse/Right reverse)



● Photo shows left side type



Can Be Shipped in as Few as 9 Business Days

EtherNet/IP®

EtherCAT®



Electric Linear Slides EZS Series

Can be purchased as a package with an electric linear slide and driver.

Driver

Built-in Controller Type



AC Input

DC Input

Pulse Input Type



AC Input

DC Input

● Single-Phase 100-120 VAC, Single-Phase 200-240 VAC, Three-Phase 200-230 VAC and 24/48 VDC types are available.

Common Specifications

- Stroke: 50 to 850 mm
- Max. Speed: 800 mm/s
- Maximum Transportable Mass: Horizontal 60 kg/Vertical 30 kg
- Repetitive Positioning Accuracy: ±0.02 mm

(Values shown above are representative values. The specific values vary by type.)

Packages Start at \$1,249.00

A combination of high efficiency and high performance at affordable prices. Packages comprised of an electric linear slide and driver. Connection cables sold separately.



List Price

- Straight Type or Reversed Motor Type
 - AC Input: \$1,396.00~
 - DC Input: \$1,249.00~

- Features
- Motors AC Input
- Motors DC Input
- EtherNet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

A Compact Linear Slide that is Thin, Highly Rigid and Features a High Accuracy Guide. Reversed Motor Types Save Space.

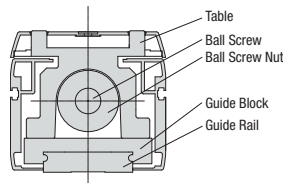
High Rigidity/High Accuracy

Despite the small size, high permissible moment loads have been achieved by using a highly rigid guide.

High Rigidity and High Accuracy Guide

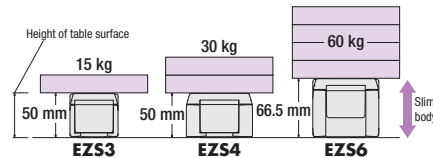
The LM Guide*¹ from THK is used as the guide hardware. It is a thin, stainless steel guide that can withstand high moment loads. The guide also has excellent traveling parallelism, which has been reduced to 0.03 mm or less.

*¹ Registered trademark of THK, Co. Ltd.



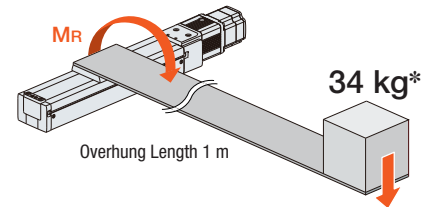
Traveling Parallelism of 0.03 mm or less

Providing Large Transportable Mass in a Slim Form Factor



High Permissible Moment

This series is compact yet effective in handling high moment loads.



*The load is calculated using the static permissible moment 340 N-m of the **EZS6**.

● Permissible Moment in Rolling Direction [N-m]

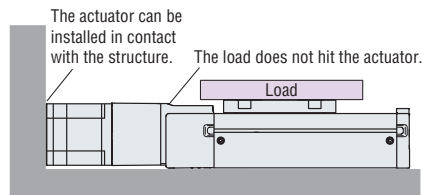
Product	Static Permissible Moment* ¹	Dynamic Permissible Moment* ²
EZS3	52.0	10.5
EZS4	176	27.8
EZS6	340	55.6

*¹ Permissible moment load for linear guide while stopped.
*² Permissible moment load for linear guide while operating.

Space-Saving

Maximum use of the space is possible because the equipment doesn't interfere with the load.

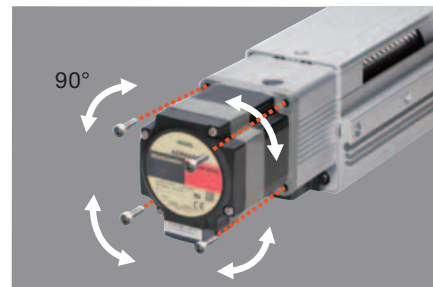
Equipment can be installed in contact with surrounding structures.



Variable Cable Outlet Direction

The motor attachment direction can be changed to any of 4 directions*, allowing the cable outlet to be changed to best suit the installation location.

*³ directions for reversed motor types.

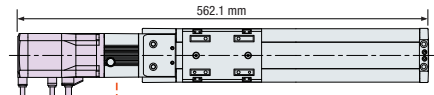


Reversed Motor Type

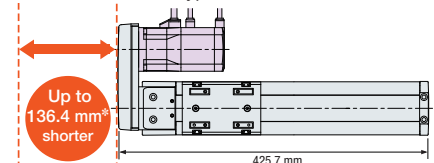
With overall lengths up to 136.4 mm shorter compared to the straight type, reversed motor types can contribute to equipment space-saving.

AZ Series
EZS6 with Electromagnetic Brake Stroke 200 mm

● Straight Type



● Reversed Motor Type

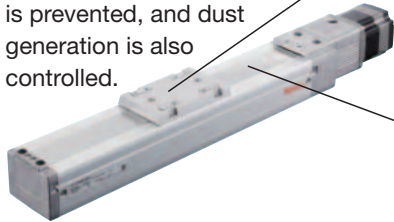


*For electromagnetic brake type

All Products Use a Simple Dust-Resistant Structure.

Simple Dust-Resistant Structure

Through the use of a stainless steel, simple dust-resistant structure, simple dust-resistant infiltration of foreign objects is prevented, and dust generation is also controlled.



Dust Generation Control

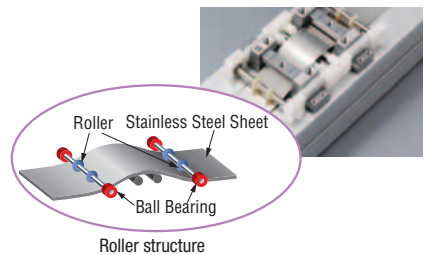
By using a low dust-generative roller structure, the generation of abrasive particles that could abrade and wear the stainless steel sheet is prevented.

Prevention of Foreign Object Infiltration

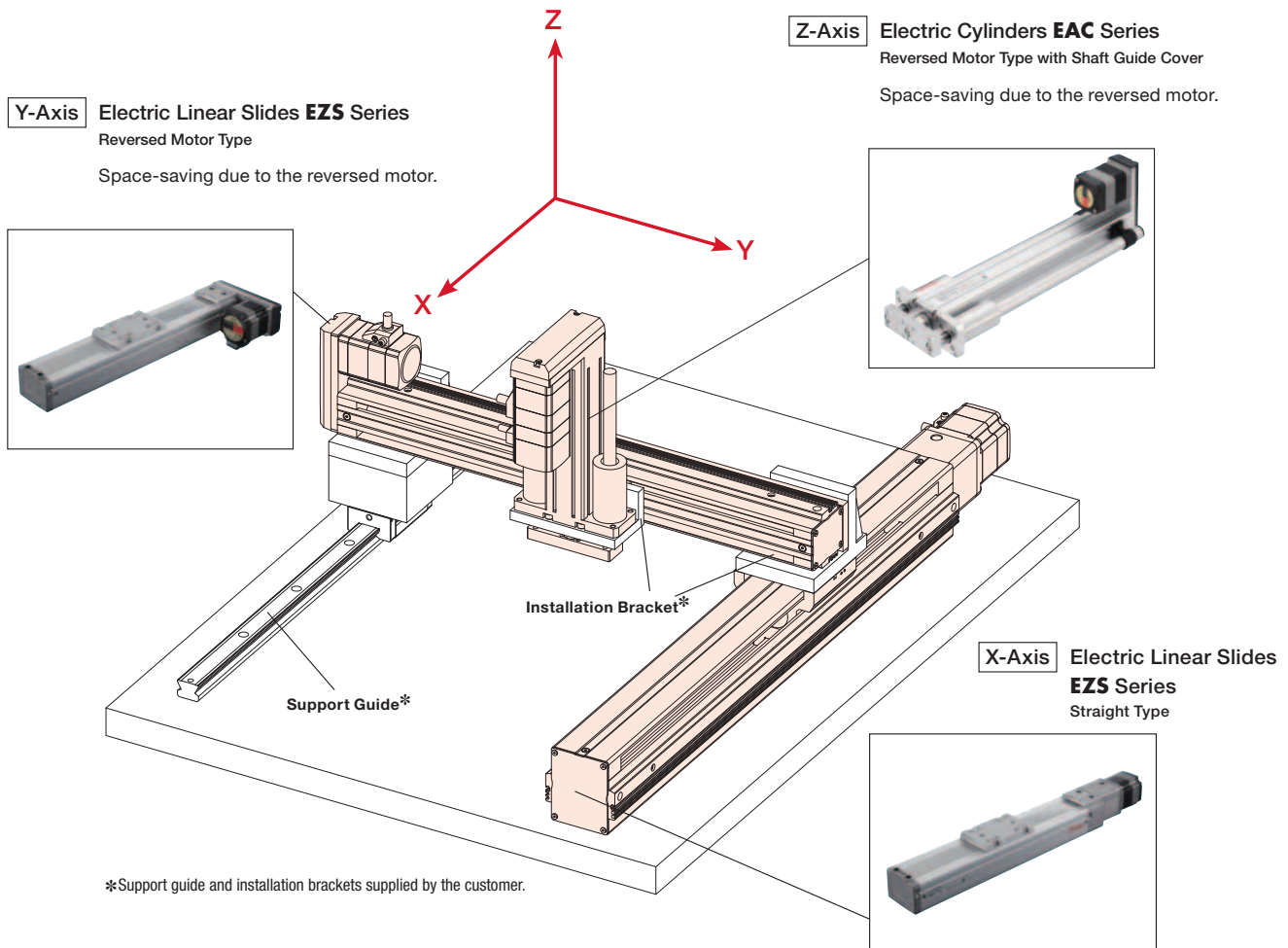
Infiltration of external foreign objects is prevented with a simple dust resistant structure made of a stainless steel sheet.

Low Dust-Generative Roller Structure (Patented)

A low dust-generative roller structure has been built into the table, which provides rolling contact with the stainless steel sheet, thus preventing the generation of abrasive particles. This not only controls the generation of dust, but also improves the durability of the stainless steel sheet.



The image below shows a three axes system using the electric linear slide **EZS** Series on the X-Y axis and the electric cylinder **EAC** Series on the Z axis.



*Support guide and installation brackets supplied by the customer.

- Features
- Motors AC Input
- Motors DC Input
- Ethernet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

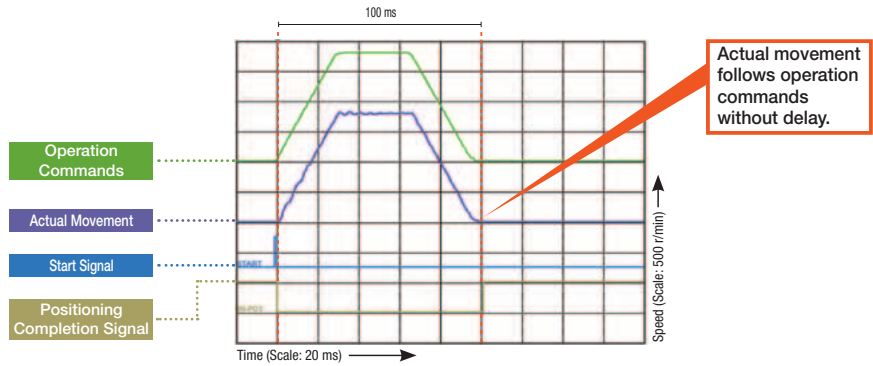
Enhanced Performance with α STEP AZ Series Technology.

High Speed Driving

High Response

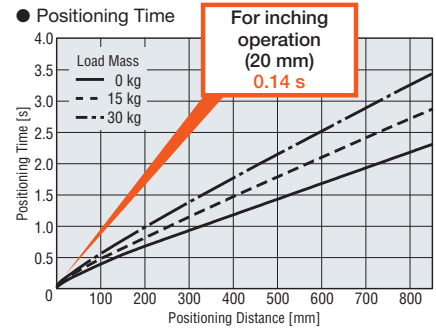
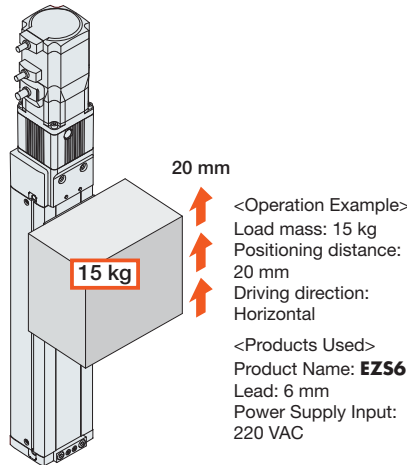
By utilizing the high response of the stepper motor, short distances can be covered quickly. Movement follows commands without delay.

● Actual Stepper Motor Movement in Response to Operation Commands



Short-Distance High-Speed Driving Even with Heavy Loads

By combining the high response characteristic of stepper motors with a highly rigid guide, high-speed operation even under heavy loads becomes possible.



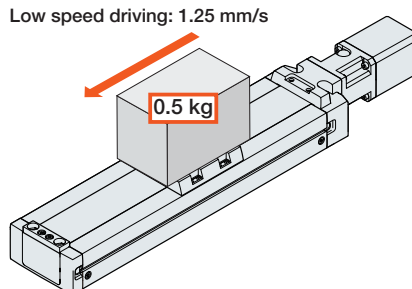
Smooth Movement Even at Low Speeds

Reduced vibration and smooth movement is possible thanks to the standard microstep drive system and smooth drive functions*.

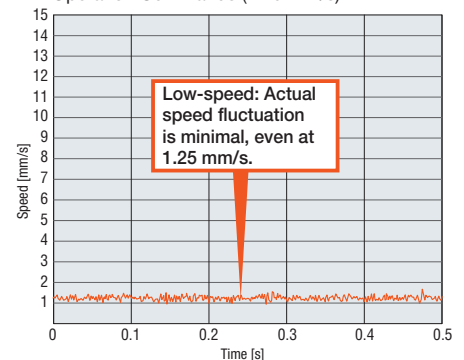
*The smooth drive function automatically microsteps based on the same traveling amount and speed used in the full step mode, without changing the pulse input settings.

<Operation Example>
Load mass: 0.5 kg
Running current: 100%
Resolution: 0.01 mm/step
Operating speed: 1.25 mm/s

<Products Used>
Product Name: **EZS4**
Lead: 12 mm
Power Supply Input: 220 VAC

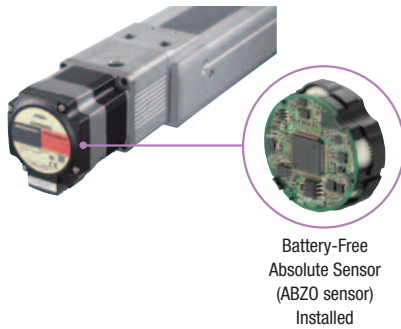


● Actual Linear Slide Table Speed in Relation to Operation Commands (1.25 mm/s)



Useful Functions of the Battery-Free Absolute Sensor

No External Sensors Required



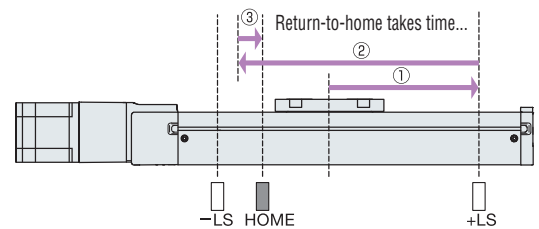
Because the absolute motor sensor (ABZO) is built in, there's no need for a battery to store the positioning information, or for a home sensor, or external sensors or any other external sensors. Absolute position detection is possible with ± 900 rotations (1800 rotations) of the motor shaft from the home position.

- Cost Reduction
 - Simplified Wiring
 - Not Affected by Sensor Malfunctions
 - Improved Return-to-Home Accuracy
- Because variations of the sensitivity of the sensors do not have any effect, return-to-home accuracy is improved.

High-Speed Return-to-Home

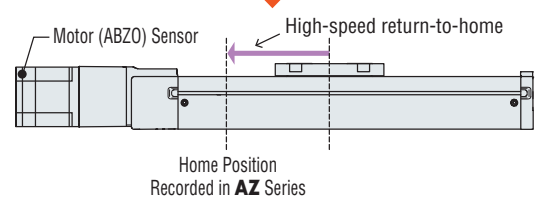
Regular Return-to-Home

With the use of limit sensors and home sensors to detect the home point at low speeds, return-to-home is time consuming.



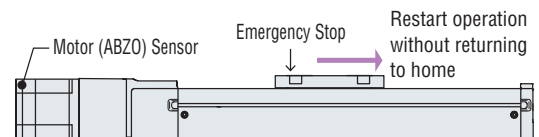
Return-to-Home Operation of the AZ Series

Without the need to detect using limit sensors or the home sensor, the equipment can travel directly at high speed to the home position recorded by the motor sensor.



Return-to-Home Not Required (For built-in controller type)

Since the position information is known even when the power supply is turned off, operation can resume without return-to-home after an emergency stop or power outage.



No Battery Required

Because a mechanical sensor is used, even if the power supply shuts off, the positioning information can be retained. There are no concerns about shipping regulations when exporting overseas because there's no battery.



Pre-Set Parameter Settings for Reduced Equipment Setup Time

For example, the items shown to the right do not need to be set.



- Calculation/setting of electronic gear for differences in ball screw lead (Min. movement amount already set to 0.01 mm).
- Re-setting of travel direction coordinates based on motor installation direction (straight/reversed) - regardless of the motor installation direction, the same command causes travel in the same direction.

- Features
- Motors AC Input
- Motors DC Input
- Ethernet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

Product Line

EZS Series α STEP AZ Equipped

Built-in Controller Type
Pulse Input Type

Type	Product Width×Height Mass	Power Supply Input [VAC]	Lead [mm]	Stroke [mm]						Max. Speed [mm/s]							
				100	200	300	400	500	600	700	800	900	100	200	300	400	500
Straight Type 	EZS3 54×50 mm 1.6~3.7 kg	Single-Phase 100-120	12	50~700						800							
		Single-Phase/Three-Phase 200-240	6	50~700						400							
		24/48 VDC	12	50~700						600							
			6	50~700						300							
		Reversed Motor Type 	EZS4 74×50 mm 2.0~5.2 kg	Single-Phase 100-120	12	50~700						800					
				Single-Phase/Three-Phase 200-240	6	50~700						400					
24/48 VDC	12			50~700						600							
	6			50~700						300							
EZS6 74×66.5 mm 3.8~8.3 kg	Single-Phase 100-120			12	50~850						800						
	Single-Phase/Three-Phase 200-240			6	50~850						400						
	24/48 VDC	12	50~850						600								
		6	50~850						300								

Product Number Code

Linear Slides

EZSM 3 L D 005 AZ A C

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series Name	EZSM: EZS Series
② Electric Linear Slide Products	3: Width 54 mm× Height 50 mm 4: Width 74 mm× Height 50 mm 6: Width 74 mm× Height 66.5 mm
③ Motor Mounting Direction	L: Reversed Motor (Left side) R: Reversed Motor (Right side) Blank: Straight
④ Lead	D: 12 mm E: 6 mm
⑤ Stroke	005~085: 50~850 mm (50 mm increments)
⑥ Built-in Motor	AZ: AZ Series
⑦ Motor Shaft	A: Single shaft M: Electromagnetic brake type
⑧ Motor Power Supply Input	C: AC power supply input K: DC power supply input

Driver

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 K: 24/48 VDC
③ Type	EP: EtherNet/IP Compatible Type ED: EtherCAT Drive Profile Compatible Type D: Built-in Controller Type X: Pulse Input Type with RS-485 Communication Blank: Pulse Input Type RD: Compact Type

	Upper Level: Dynamic Permissible Moment [N·m] Lower Level: Static Permissible Moment [N·m]			Maximum Transportable Mass in Horizontal Direction [kg]											Maximum Transportable Mass in Vertical Direction [kg]						Repetitive Positioning Accuracy [mm]	Starting Price*
	M _P	M _V	M _R	10	20	30	40	50	60	70	80	90	10	20	30	40	50	60				
	4.2 26.4	4.2 26.4	10.5 52.0	~7.5														~3.5	±0.02	\$1,396~		
				~15																		~7
	8.0 51.2	8.0 42.5	27.8 176.0	~7.5														~3.5		\$1,249~		
				~15																		~7
	45.7 290.0	37.5 187.0	55.6 340.0	~15														~7		\$1,442~		
				~30																		~14
	45.7 290.0	37.5 187.0	55.6 340.0	~15														~7	\$1,295~			
				~30																	~14	
	45.7 290.0	37.5 187.0	55.6 340.0	~30														~15	\$1,757~			
				~60																	~30	
	45.7 290.0	37.5 187.0	55.6 340.0	~30														~15	\$1,610~			
				~60																	~30	

*Starting price includes pulse input driver.

Connection cables are sold separately. See page 120 to 128.

Product Line and List Price

Electric Linear Slides AC Input

EZS3 Straight Type/Reversed Motor Type (Frame size 54 mm × 50 mm)

Stroke (mm)	Straight Type				Reversed Motor Type			
	Single Shaft		Electromagnetic Brake Type		Single Shaft		Electromagnetic Brake Type	
	Product Name	List Price	Product Name	List Price	Product Name	List Price	Product Name	List Price
50	EZSM3□005AZAC	\$865.00	EZSM3□005AZMC	\$1,082.00	EZSM3■005AZAC	\$865.00	EZSM3■005AZMC	\$1,082.00
100	EZSM3□010AZAC	\$865.00	EZSM3□010AZMC	\$1,082.00	EZSM3■010AZAC	\$865.00	EZSM3■010AZMC	\$1,082.00
150	EZSM3□015AZAC	\$896.00	EZSM3□015AZMC	\$1,113.00	EZSM3■015AZAC	\$896.00	EZSM3■015AZMC	\$1,113.00
200	EZSM3□020AZAC	\$896.00	EZSM3□020AZMC	\$1,113.00	EZSM3■020AZAC	\$896.00	EZSM3■020AZMC	\$1,113.00
250	EZSM3□025AZAC	\$927.00	EZSM3□025AZMC	\$1,144.00	EZSM3■025AZAC	\$927.00	EZSM3■025AZMC	\$1,144.00
300	EZSM3□030AZAC	\$927.00	EZSM3□030AZMC	\$1,144.00	EZSM3■030AZAC	\$927.00	EZSM3■030AZMC	\$1,144.00
350	EZSM3□035AZAC	\$958.00	EZSM3□035AZMC	\$1,175.00	EZSM3■035AZAC	\$958.00	EZSM3■035AZMC	\$1,175.00
400	EZSM3□040AZAC	\$958.00	EZSM3□040AZMC	\$1,175.00	EZSM3■040AZAC	\$958.00	EZSM3■040AZMC	\$1,175.00
450	EZSM3□045AZAC	\$989.00	EZSM3□045AZMC	\$1,206.00	EZSM3■045AZAC	\$989.00	EZSM3■045AZMC	\$1,206.00
500	EZSM3□050AZAC	\$989.00	EZSM3□050AZMC	\$1,206.00	EZSM3■050AZAC	\$989.00	EZSM3■050AZMC	\$1,206.00
550	EZSM3□055AZAC	\$1,020.00	EZSM3□055AZMC	\$1,237.00	EZSM3■055AZAC	\$1,020.00	EZSM3■055AZMC	\$1,237.00
600	EZSM3□060AZAC	\$1,020.00	EZSM3□060AZMC	\$1,237.00	EZSM3■060AZAC	\$1,020.00	EZSM3■060AZMC	\$1,237.00
650	EZSM3□065AZAC	\$1,051.00	EZSM3□065AZMC	\$1,268.00	EZSM3■065AZAC	\$1,051.00	EZSM3■065AZMC	\$1,268.00
700	EZSM3□070AZAC	\$1,051.00	EZSM3□070AZMC	\$1,268.00	EZSM3■070AZAC	\$1,051.00	EZSM3■070AZMC	\$1,268.00

● Either **D** (12 mm lead) or **E** (6 mm lead) indicating the lead type is entered where the box □ is located within the product name.
For reversed motor types, either an **L** (left reverse) or **R** (right reverse) is entered where the box ■ is located within the product name. No entry is made for the straight type.

Stepper Motors **AZ** ◇ **EZS4** Straight Type/Reversed Motor Type with Built-in **AZ** Series (Frame size 74 mm × 50 mm)

Stroke (mm)	Straight Type				Reversed Motor Type			
	Single Shaft		Electromagnetic Brake Type		Single Shaft		Electromagnetic Brake Type	
	Product Name	List Price	Product Name	List Price	Product Name	List Price	Product Name	List Price
50	EZSM4 □ 005AZAC	\$911.00	EZSM4 □ 005AZMC	\$1,128.00	EZSM4 ■□ 005AZAC	\$911.00	EZSM4 ■□ 005AZMC	\$1,128.00
100	EZSM4 □ 010AZAC	\$911.00	EZSM4 □ 010AZMC	\$1,128.00	EZSM4 ■□ 010AZAC	\$911.00	EZSM4 ■□ 010AZMC	\$1,128.00
150	EZSM4 □ 015AZAC	\$942.00	EZSM4 □ 015AZMC	\$1,159.00	EZSM4 ■□ 015AZAC	\$942.00	EZSM4 ■□ 015AZMC	\$1,159.00
200	EZSM4 □ 020AZAC	\$942.00	EZSM4 □ 020AZMC	\$1,159.00	EZSM4 ■□ 020AZAC	\$942.00	EZSM4 ■□ 020AZMC	\$1,159.00
250	EZSM4 □ 025AZAC	\$973.00	EZSM4 □ 025AZMC	\$1,190.00	EZSM4 ■□ 025AZAC	\$973.00	EZSM4 ■□ 025AZMC	\$1,190.00
300	EZSM4 □ 030AZAC	\$973.00	EZSM4 □ 030AZMC	\$1,190.00	EZSM4 ■□ 030AZAC	\$973.00	EZSM4 ■□ 030AZMC	\$1,190.00
350	EZSM4 □ 035AZAC	\$1,004.00	EZSM4 □ 035AZMC	\$1,221.00	EZSM4 ■□ 035AZAC	\$1,004.00	EZSM4 ■□ 035AZMC	\$1,221.00
400	EZSM4 □ 040AZAC	\$1,004.00	EZSM4 □ 040AZMC	\$1,221.00	EZSM4 ■□ 040AZAC	\$1,004.00	EZSM4 ■□ 040AZMC	\$1,221.00
450	EZSM4 □ 045AZAC	\$1,035.00	EZSM4 □ 045AZMC	\$1,252.00	EZSM4 ■□ 045AZAC	\$1,035.00	EZSM4 ■□ 045AZMC	\$1,252.00
500	EZSM4 □ 050AZAC	\$1,035.00	EZSM4 □ 050AZMC	\$1,252.00	EZSM4 ■□ 050AZAC	\$1,035.00	EZSM4 ■□ 050AZMC	\$1,252.00
550	EZSM4 □ 055AZAC	\$1,066.00	EZSM4 □ 055AZMC	\$1,283.00	EZSM4 ■□ 055AZAC	\$1,066.00	EZSM4 ■□ 055AZMC	\$1,283.00
600	EZSM4 □ 060AZAC	\$1,066.00	EZSM4 □ 060AZMC	\$1,283.00	EZSM4 ■□ 060AZAC	\$1,066.00	EZSM4 ■□ 060AZMC	\$1,283.00
650	EZSM4 □ 065AZAC	\$1,097.00	EZSM4 □ 065AZMC	\$1,314.00	EZSM4 ■□ 065AZAC	\$1,097.00	EZSM4 ■□ 065AZMC	\$1,314.00
700	EZSM4 □ 070AZAC	\$1,097.00	EZSM4 □ 070AZMC	\$1,314.00	EZSM4 ■□ 070AZAC	\$1,097.00	EZSM4 ■□ 070AZMC	\$1,314.00

Rotary Actuators **DGII** ◇ **EZS6** Straight Type/Reversed Motor Type with Built-in **AZ** Series (Frame size 74 mm × 66.5 mm)

Stroke (mm)	Straight Type				Reversed Motor Type			
	Single Shaft		Electromagnetic Brake Type		Single Shaft		Electromagnetic Brake Type	
	Product Name	List Price	Product Name	List Price	Product Name	List Price	Product Name	List Price
50	EZSM6 □ 005AZAC	\$1,226.00	EZSM6 □ 005AZMC	\$1,505.00	EZSM6 ■□ 005AZAC	\$1,226.00	EZSM6 ■□ 005AZMC	\$1,505.00
100	EZSM6 □ 010AZAC	\$1,226.00	EZSM6 □ 010AZMC	\$1,505.00	EZSM6 ■□ 010AZAC	\$1,226.00	EZSM6 ■□ 010AZMC	\$1,505.00
150	EZSM6 □ 015AZAC	\$1,257.00	EZSM6 □ 015AZMC	\$1,536.00	EZSM6 ■□ 015AZAC	\$1,257.00	EZSM6 ■□ 015AZMC	\$1,536.00
200	EZSM6 □ 020AZAC	\$1,257.00	EZSM6 □ 020AZMC	\$1,536.00	EZSM6 ■□ 020AZAC	\$1,257.00	EZSM6 ■□ 020AZMC	\$1,536.00
250	EZSM6 □ 025AZAC	\$1,288.00	EZSM6 □ 025AZMC	\$1,567.00	EZSM6 ■□ 025AZAC	\$1,288.00	EZSM6 ■□ 025AZMC	\$1,567.00
300	EZSM6 □ 030AZAC	\$1,288.00	EZSM6 □ 030AZMC	\$1,567.00	EZSM6 ■□ 030AZAC	\$1,288.00	EZSM6 ■□ 030AZMC	\$1,567.00
350	EZSM6 □ 035AZAC	\$1,319.00	EZSM6 □ 035AZMC	\$1,598.00	EZSM6 ■□ 035AZAC	\$1,319.00	EZSM6 ■□ 035AZMC	\$1,598.00
400	EZSM6 □ 040AZAC	\$1,319.00	EZSM6 □ 040AZMC	\$1,598.00	EZSM6 ■□ 040AZAC	\$1,319.00	EZSM6 ■□ 040AZMC	\$1,598.00
450	EZSM6 □ 045AZAC	\$1,350.00	EZSM6 □ 045AZMC	\$1,629.00	EZSM6 ■□ 045AZAC	\$1,350.00	EZSM6 ■□ 045AZMC	\$1,629.00
500	EZSM6 □ 050AZAC	\$1,350.00	EZSM6 □ 050AZMC	\$1,629.00	EZSM6 ■□ 050AZAC	\$1,350.00	EZSM6 ■□ 050AZMC	\$1,629.00
550	EZSM6 □ 055AZAC	\$1,381.00	EZSM6 □ 055AZMC	\$1,660.00	EZSM6 ■□ 055AZAC	\$1,381.00	EZSM6 ■□ 055AZMC	\$1,660.00
600	EZSM6 □ 060AZAC	\$1,381.00	EZSM6 □ 060AZMC	\$1,660.00	EZSM6 ■□ 060AZAC	\$1,381.00	EZSM6 ■□ 060AZMC	\$1,660.00
650	EZSM6 □ 065AZAC	\$1,412.00	EZSM6 □ 065AZMC	\$1,691.00	EZSM6 ■□ 065AZAC	\$1,412.00	EZSM6 ■□ 065AZMC	\$1,691.00
700	EZSM6 □ 070AZAC	\$1,412.00	EZSM6 □ 070AZMC	\$1,691.00	EZSM6 ■□ 070AZAC	\$1,412.00	EZSM6 ■□ 070AZMC	\$1,691.00
750	EZSM6 □ 075AZAC	\$1,443.00	EZSM6 □ 075AZMC	\$1,722.00	EZSM6 ■□ 075AZAC	\$1,443.00	EZSM6 ■□ 075AZMC	\$1,722.00
800	EZSM6 □ 080AZAC	\$1,443.00	EZSM6 □ 080AZMC	\$1,722.00	EZSM6 ■□ 080AZAC	\$1,443.00	EZSM6 ■□ 080AZMC	\$1,722.00
850	EZSM6 □ 085AZAC	\$1,474.00	EZSM6 □ 085AZMC	\$1,753.00	EZSM6 ■□ 085AZAC	\$1,474.00	EZSM6 ■□ 085AZMC	\$1,753.00

● Either **D** (12 mm lead) or **E** (6 mm lead) indicating the lead type is entered where the box □ is located within the product name.
 For reversed motor types, either an **L** (left reverse) or **R** (right reverse) is entered where the box ■ is located within the product name. No entry is made for the straight type.

● Electric Linear Slides DC Input

◇ **EZS3** Straight Type/Reversed Motor Type with Built-in **AZ** Series (Frame size 54 mm × 50 mm)

Stroke (mm)	Straight Type				Reversed Motor Type			
	Single Shaft		Electromagnetic Brake Type		Single Shaft		Electromagnetic Brake Type	
	Product Name	List Price	Product Name	List Price	Product Name	List Price	Product Name	List Price
50	EZSM3 □ 005AZAK	\$865.00	EZSM3 □ 005AZMK	\$1,082.00	EZSM3 ■□ 005AZAK	\$865.00	EZSM3 ■□ 005AZMK	\$1,082.00
100	EZSM3 □ 010AZAK	\$865.00	EZSM3 □ 010AZMK	\$1,082.00	EZSM3 ■□ 010AZAK	\$865.00	EZSM3 ■□ 010AZMK	\$1,082.00
150	EZSM3 □ 015AZAK	\$896.00	EZSM3 □ 015AZMK	\$1,113.00	EZSM3 ■□ 015AZAK	\$896.00	EZSM3 ■□ 015AZMK	\$1,113.00
200	EZSM3 □ 020AZAK	\$896.00	EZSM3 □ 020AZMK	\$1,113.00	EZSM3 ■□ 020AZAK	\$896.00	EZSM3 ■□ 020AZMK	\$1,113.00
250	EZSM3 □ 025AZAK	\$927.00	EZSM3 □ 025AZMK	\$1,144.00	EZSM3 ■□ 025AZAK	\$927.00	EZSM3 ■□ 025AZMK	\$1,144.00
300	EZSM3 □ 030AZAK	\$927.00	EZSM3 □ 030AZMK	\$1,144.00	EZSM3 ■□ 030AZAK	\$927.00	EZSM3 ■□ 030AZMK	\$1,144.00
350	EZSM3 □ 035AZAK	\$958.00	EZSM3 □ 035AZMK	\$1,175.00	EZSM3 ■□ 035AZAK	\$958.00	EZSM3 ■□ 035AZMK	\$1,175.00
400	EZSM3 □ 040AZAK	\$958.00	EZSM3 □ 040AZMK	\$1,175.00	EZSM3 ■□ 040AZAK	\$958.00	EZSM3 ■□ 040AZMK	\$1,175.00
450	EZSM3 □ 045AZAK	\$989.00	EZSM3 □ 045AZMK	\$1,206.00	EZSM3 ■□ 045AZAK	\$989.00	EZSM3 ■□ 045AZMK	\$1,206.00
500	EZSM3 □ 050AZAK	\$989.00	EZSM3 □ 050AZMK	\$1,206.00	EZSM3 ■□ 050AZAK	\$989.00	EZSM3 ■□ 050AZMK	\$1,206.00
550	EZSM3 □ 055AZAK	\$1,020.00	EZSM3 □ 055AZMK	\$1,237.00	EZSM3 ■□ 055AZAK	\$1,020.00	EZSM3 ■□ 055AZMK	\$1,237.00
600	EZSM3 □ 060AZAK	\$1,020.00	EZSM3 □ 060AZMK	\$1,237.00	EZSM3 ■□ 060AZAK	\$1,020.00	EZSM3 ■□ 060AZMK	\$1,237.00
650	EZSM3 □ 065AZAK	\$1,051.00	EZSM3 □ 065AZMK	\$1,268.00	EZSM3 ■□ 065AZAK	\$1,051.00	EZSM3 ■□ 065AZMK	\$1,268.00
700	EZSM3 □ 070AZAK	\$1,051.00	EZSM3 □ 070AZMK	\$1,268.00	EZSM3 ■□ 070AZAK	\$1,051.00	EZSM3 ■□ 070AZMK	\$1,268.00

● Either **D** (12 mm lead) or **E** (6 mm lead) indicating the lead type is entered where the box □ is located within the product name.
 For reversed motor types, either an **L** (left reverse) or **R** (right reverse) is entered where the box ■ is located within the product name. No entry is made for the straight type.

◆ **EZS4** Straight Type/Reversed Motor Type with Built-in **AZ** Series (Frame size 74 mm × 50 mm)

Stroke (mm)	Straight Type				Reversed Motor Type			
	Single Shaft		Electromagnetic Brake Type		Single Shaft		Electromagnetic Brake Type	
	Product Name	List Price	Product Name	List Price	Product Name	List Price	Product Name	List Price
50	EZSM4□005AZAK	\$911.00	EZSM4□005AZMK	\$1,128.00	EZSM4■□005AZAK	\$911.00	EZSM4■□005AZMK	\$1,128.00
100	EZSM4□010AZAK	\$911.00	EZSM4□010AZMK	\$1,128.00	EZSM4■□010AZAK	\$911.00	EZSM4■□010AZMK	\$1,128.00
150	EZSM4□015AZAK	\$942.00	EZSM4□015AZMK	\$1,159.00	EZSM4■□015AZAK	\$942.00	EZSM4■□015AZMK	\$1,159.00
200	EZSM4□020AZAK	\$942.00	EZSM4□020AZMK	\$1,159.00	EZSM4■□020AZAK	\$942.00	EZSM4■□020AZMK	\$1,159.00
250	EZSM4□025AZAK	\$973.00	EZSM4□025AZMK	\$1,190.00	EZSM4■□025AZAK	\$973.00	EZSM4■□025AZMK	\$1,190.00
300	EZSM4□030AZAK	\$973.00	EZSM4□030AZMK	\$1,190.00	EZSM4■□030AZAK	\$973.00	EZSM4■□030AZMK	\$1,190.00
350	EZSM4□035AZAK	\$1,004.00	EZSM4□035AZMK	\$1,221.00	EZSM4■□035AZAK	\$1,004.00	EZSM4■□035AZMK	\$1,221.00
400	EZSM4□040AZAK	\$1,004.00	EZSM4□040AZMK	\$1,221.00	EZSM4■□040AZAK	\$1,004.00	EZSM4■□040AZMK	\$1,221.00
450	EZSM4□045AZAK	\$1,035.00	EZSM4□045AZMK	\$1,252.00	EZSM4■□045AZAK	\$1,035.00	EZSM4■□045AZMK	\$1,252.00
500	EZSM4□050AZAK	\$1,035.00	EZSM4□050AZMK	\$1,252.00	EZSM4■□050AZAK	\$1,035.00	EZSM4■□050AZMK	\$1,252.00
550	EZSM4□055AZAK	\$1,066.00	EZSM4□055AZMK	\$1,283.00	EZSM4■□055AZAK	\$1,066.00	EZSM4■□055AZMK	\$1,283.00
600	EZSM4□060AZAK	\$1,066.00	EZSM4□060AZMK	\$1,283.00	EZSM4■□060AZAK	\$1,066.00	EZSM4■□060AZMK	\$1,283.00
650	EZSM4□065AZAK	\$1,097.00	EZSM4□065AZMK	\$1,314.00	EZSM4■□065AZAK	\$1,097.00	EZSM4■□065AZMK	\$1,314.00
700	EZSM4□070AZAK	\$1,097.00	EZSM4□070AZMK	\$1,314.00	EZSM4■□070AZAK	\$1,097.00	EZSM4■□070AZMK	\$1,314.00

◆ **EZS6** Straight Type/Reversed Motor Type with Built-in **AZ** Series (Frame size 74 mm × 66.5 mm)

Stroke (mm)	Straight Type				Reversed Motor Type			
	Single Shaft		Electromagnetic Brake Type		Single Shaft		Electromagnetic Brake Type	
	Product Name	List Price	Product Name	List Price	Product Name	List Price	Product Name	List Price
50	EZSM6□005AZAK	\$1,226.00	EZSM6□005AZMK	\$1,505.00	EZSM6■□005AZAK	\$1,226.00	EZSM6■□005AZMK	\$1,505.00
100	EZSM6□010AZAK	\$1,226.00	EZSM6□010AZMK	\$1,505.00	EZSM6■□010AZAK	\$1,226.00	EZSM6■□010AZMK	\$1,505.00
150	EZSM6□015AZAK	\$1,257.00	EZSM6□015AZMK	\$1,536.00	EZSM6■□015AZAK	\$1,257.00	EZSM6■□015AZMK	\$1,536.00
200	EZSM6□020AZAK	\$1,257.00	EZSM6□020AZMK	\$1,536.00	EZSM6■□020AZAK	\$1,257.00	EZSM6■□020AZMK	\$1,536.00
250	EZSM6□025AZAK	\$1,288.00	EZSM6□025AZMK	\$1,567.00	EZSM6■□025AZAK	\$1,288.00	EZSM6■□025AZMK	\$1,567.00
300	EZSM6□030AZAK	\$1,288.00	EZSM6□030AZMK	\$1,567.00	EZSM6■□030AZAK	\$1,288.00	EZSM6■□030AZMK	\$1,567.00
350	EZSM6□035AZAK	\$1,319.00	EZSM6□035AZMK	\$1,598.00	EZSM6■□035AZAK	\$1,319.00	EZSM6■□035AZMK	\$1,598.00
400	EZSM6□040AZAK	\$1,319.00	EZSM6□040AZMK	\$1,598.00	EZSM6■□040AZAK	\$1,319.00	EZSM6■□040AZMK	\$1,598.00
450	EZSM6□045AZAK	\$1,350.00	EZSM6□045AZMK	\$1,629.00	EZSM6■□045AZAK	\$1,350.00	EZSM6■□045AZMK	\$1,629.00
500	EZSM6□050AZAK	\$1,350.00	EZSM6□050AZMK	\$1,629.00	EZSM6■□050AZAK	\$1,350.00	EZSM6■□050AZMK	\$1,629.00
550	EZSM6□055AZAK	\$1,381.00	EZSM6□055AZMK	\$1,660.00	EZSM6■□055AZAK	\$1,381.00	EZSM6■□055AZMK	\$1,660.00
600	EZSM6□060AZAK	\$1,381.00	EZSM6□060AZMK	\$1,660.00	EZSM6■□060AZAK	\$1,381.00	EZSM6■□060AZMK	\$1,660.00
650	EZSM6□065AZAK	\$1,412.00	EZSM6□065AZMK	\$1,691.00	EZSM6■□065AZAK	\$1,412.00	EZSM6■□065AZMK	\$1,691.00
700	EZSM6□070AZAK	\$1,412.00	EZSM6□070AZMK	\$1,691.00	EZSM6■□070AZAK	\$1,412.00	EZSM6■□070AZMK	\$1,691.00
750	EZSM6□075AZAK	\$1,443.00	EZSM6□075AZMK	\$1,722.00	EZSM6■□075AZAK	\$1,443.00	EZSM6■□075AZMK	\$1,722.00
800	EZSM6□080AZAK	\$1,443.00	EZSM6□080AZMK	\$1,722.00	EZSM6■□080AZAK	\$1,443.00	EZSM6■□080AZMK	\$1,722.00
850	EZSM6□085AZAK	\$1,474.00	EZSM6□085AZMK	\$1,753.00	EZSM6■□085AZAK	\$1,474.00	EZSM6■□085AZMK	\$1,753.00

● Either **D** (12 mm lead) or **E** (6 mm lead) indicating the lead type is entered where the box □ is located within the product name.

For reversed motor types, either an **L** (left reverse) or **R** (right reverse) is entered where the box ■ is located within the product name. No entry is made for the straight type.

● Drivers AC Input/DC Input

◆ EtherNet/IP Compatible Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AEP	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CEP	\$656.00
24/48 VDC	AZD-KEP	\$506.00

◆ Built-in Controller Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AD	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CD	\$588.00
24/48 VDC	AZD-KD	\$441.00

◆ Pulse Input Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-A	\$531.00
Single-Phase/Three-Phase 200-240 VAC	AZD-C	\$531.00
24/48 VDC	AZD-K	\$384.00

◆ Compact Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KRD	\$391.00

◆ EtherCAT Drive Profile Compatible Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AED	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CED	\$656.00
24/48 VDC	AZD-KED	\$506.00

◆ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AX	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CX	\$588.00
24/48 VDC	AZD-KX	\$441.00

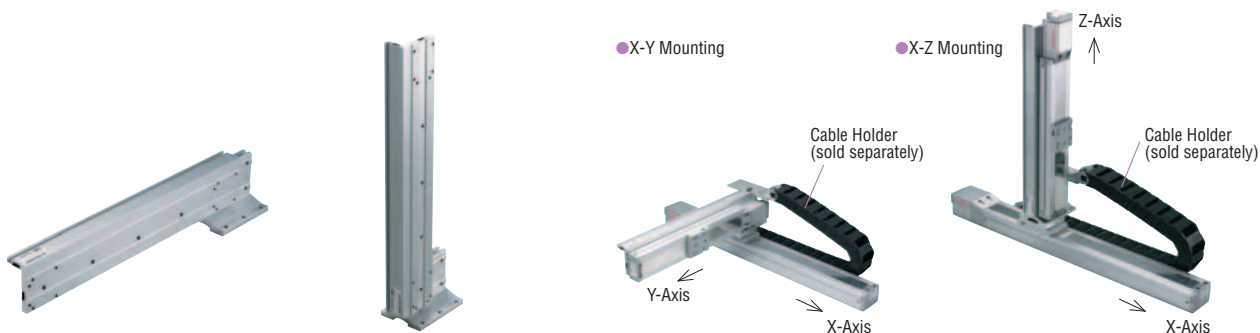
◆ Network Compatible Multi-Axes Drivers

Power Supply Input	Network Type	Product Name	No. of Axes	List Price
24/48 VDC	SSCNET III/H	AZD2A-KS3	2	\$825.00
		AZD3A-KS3	3	\$1,093.00
		AZD4A-KS3	4	\$1,320.00
	MECHATROLINK-III	AZD2A-KM3	2	\$825.00
		AZD3A-KM3	3	\$1,093.00
		AZD4A-KM3	4	\$1,320.00
	EtherCAT Drive Profile	AZD2A-KED	2	\$825.00
		AZD3A-KED	3	\$1,093.00
		AZD4A-KED	4	\$1,320.00

Features
Motors
AC Input
Motors
DC Input
Ethernet/IP
Compatible
Drivers
EtherCAT
Compatible
Drivers
Built-in
Controller
Drivers
Pulse Input
Drivers
with
RS-485
Pulse Input
Drivers
Network
Multi-Axis
Drivers
Compact
Drivers
Cables /
Accessories
Actuators
AZ Series
Equipped

Dual Axis Mounting Brackets (Straight Type Only)

Mounting brackets for using two axes of the **EZS** Series electric linear slides.



Features

◇ Dual Axis Configuration Can be Easily Implemented with the **EZS** Series.

Using the dedicated mounting brackets allows you to use two electric linear slides in a dual axis configuration. Various combinations are available such as X-Y or X-Z.

Available Combinations of Products

X-Y Mounting

X-Axis	Y-Axis	Transportable Mass (kg)
EZS4-D	EZS3-D	2.3 or less
EZS6-D	EZS3-D	5.7 or less
EZS6-D	EZS4-D	12.7 or less

X-Z Mounting

X-Axis	Z-Axis	Transportable Mass (kg)
EZS4-D	EZS3-D	3.5 or less
EZS6-D	EZS3-D	3.5 or less
EZS6-D	EZS4-D	6.7 or less

● The maximum length of a linear slide for the second axis (Y or Z) is 300 mm.

● Specification values are based on those when the X-axis is mounted horizontally.

Product Number Code of Products

PAB - S4 S3 R 005

① ② ③ ④ ⑤

①	Dual Axis Mounting Bracket	
②	First Axis Linear Slide	S4: EZS4-D S6: EZS6-D
③	Second Axis Linear Slide	S3: EZS3-D S4: EZS4-D
④	Combination Patterns	R: R-Type L: L-Type
⑤	Stroke of Second Axis	

● First axis refers to X-axis, while second axis refers to Y- or Z-axis.

Product Line and List Price

Combination of EZS4 and EZS3		Combination of EZS6 and EZS3		Combination of EZS6 and EZS4		List Price
R-Type	L-Type	R-Type	L-Type	R-Type	L-Type	
PAB-S4S3R005	PAB-S4S3L005	PAB-S6S3R005	PAB-S6S3L005	PAB-S6S4R005	PAB-S6S4L005	\$289.00
PAB-S4S3R010	PAB-S4S3L010	PAB-S6S3R010	PAB-S6S3L010	PAB-S6S4R010	PAB-S6S4L010	\$296.00
PAB-S4S3R015	PAB-S4S3L015	PAB-S6S3R015	PAB-S6S3L015	PAB-S6S4R015	PAB-S6S4L015	\$304.00
PAB-S4S3R020	PAB-S4S3L020	PAB-S6S3R020	PAB-S6S3L020	PAB-S6S4R020	PAB-S6S4L020	\$311.00
PAB-S4S3R025	PAB-S4S3L025	PAB-S6S3R025	PAB-S6S3L025	PAB-S6S4R025	PAB-S6S4L025	\$318.00
PAB-S4S3R030	PAB-S4S3L030	PAB-S6S3R030	PAB-S6S3L030	PAB-S6S4R030	PAB-S6S4L030	\$326.00

Cable Holders (Straight Type Only)

This cable holder protects and guides cables in dual or triple axis combinations. It can be combined with the mounting bracket of the **EZS** Series.

Product Line and List Price

Linear Slide Stroke [mm]	Applicable Cable Holder		List Price
	Length (L) [mm]	Product	
50 to 70	396	PACH65-11	\$120.00
80 to 120	468	PACH65-13	\$131.00
130 to 170	504	PACH65-14	\$137.00
180 to 220	540	PACH65-15	\$143.00
230 to 270	612	PACH65-17	\$155.00
280 to 320	648	PACH65-18	\$161.00
330 to 370	720	PACH65-20	\$172.00
380 to 420	756	PACH65-21	\$178.00
430 to 470	792	PACH65-22	\$184.00
480 to 520	864	PACH65-24	\$196.00
530 to 570	900	PACH65-25	\$201.00
580 to 620	972	PACH65-27	\$213.00
630 to 670	1008	PACH65-28	\$219.00
680 to 720	1044	PACH65-29	\$225.00
730 to 770	1116	PACH65-31	\$237.00
780 to 820	1152	PACH65-32	\$242.00
830 to 850	1224	PACH65-34	\$254.00



Combination Patterns

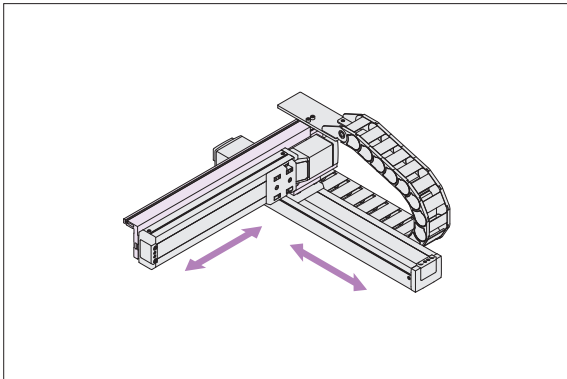
◇ R-Type

PAB-S4S3R

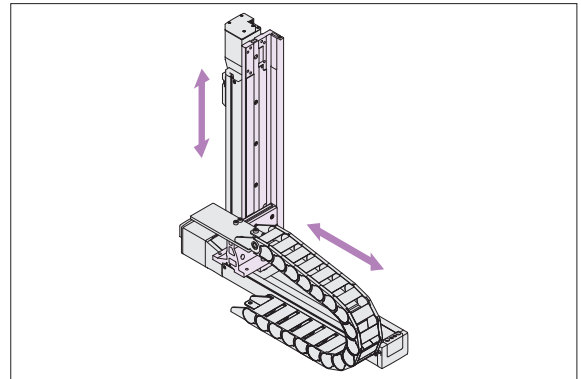
PAB-S6S3R

PAB-S6S4R

• X-Y



• X-Z



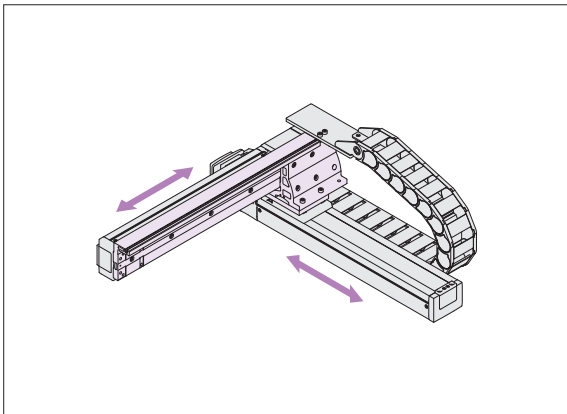
◇ L-Type

PAB-S4S3L

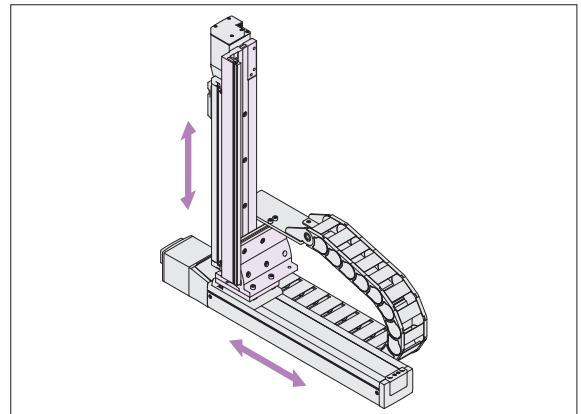
PAB-S6S3L

PAB-S6S4L

• X-Y



• X-Z



Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Compact, High Strength Electric Cylinders.

Electric Cylinders EAC Series

AZ Series Type with Battery-Free Absolute Sensor

Built-in Controller Type

AC Input
DC Input

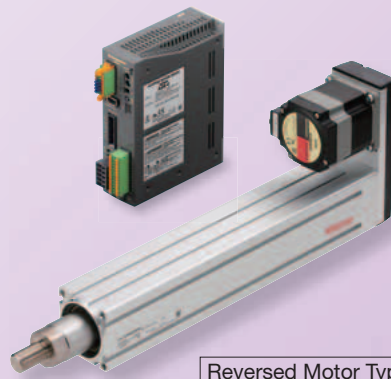
Pulse Input Type

AC Input
DC Input

Straight Type
Reversed Motor
Type
**Same
Price**



Straight Type



Reversed Motor Type

Straight Type

Standard
Shaft Guide Cover Type

Reversed Motor Type

Standard
Shaft Guide Cover Type

- Stroke: 50~300 mm
- Max. speed: 600 mm/s
- Max. transportable mass: 60 kg (horizontal), 30 kg (vertical)
- Repetitive positioning accuracy: ± 0.02 mm
- Package List Price: From \$1,023.00

■ Standard type

Depending on the equipment, an external guide may be necessary.



■ With shaft guide cover

The moving part on the cylinder side is protected, increasing equipment safety. This also helps prevent grease on the shaft guide from scattering, and prevents foreign objects from infiltrating the linear bush section.



Same Performance Advantages as our Linear Sliders.

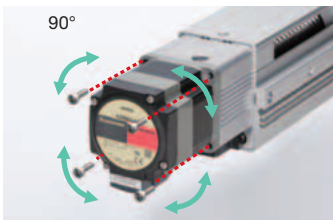


- Features
- Motors
AC Input
- Motors
DC Input
- Ethernet/IP
Compatible
Drivers
- EtherCAT
Compatible
Drivers
- Built-in
Controller
Drivers
- Pulse Input
Drivers with
RS-485
- Pulse Input
Drivers
- Network
Multi-Axis
Drivers
- Compact
Drivers
- Cables /
Accessories
- Actuators
AZ Series
Equipped

Cable Outlet Directions

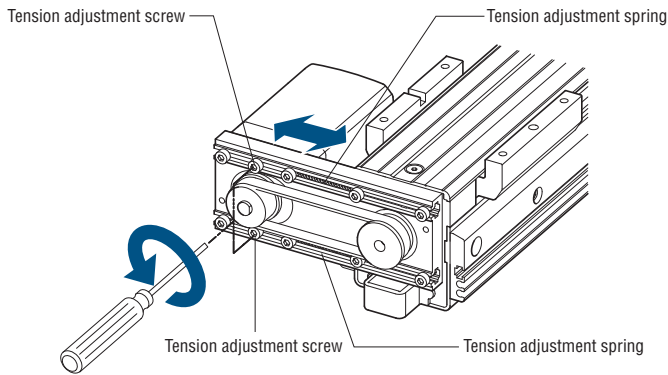
Rotatable in four different directions (3 directions for reversed motor type)

There is no need to leave space behind the motor since the cable outlet is on one side of the motor, allowing for easy connection and saving space.



Easy Belt Replacement (Reversed motor type)

Thanks to Oriental Motor's unique belt tension adjustment mechanism, belt replacement is easy.

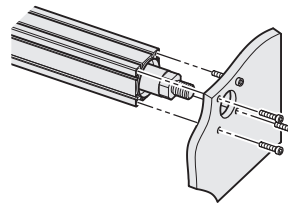


If the screw is loosened, the belt tension is adjusted to an appropriate value by the force of the spring.

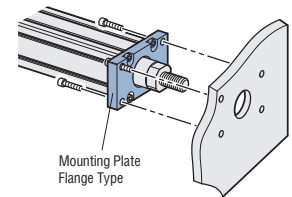
Flexible Installation

The **EAC** Series cylinders can be installed as follows.

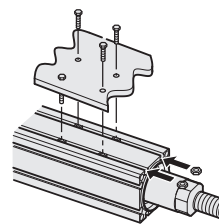
■ Front installation (Direct installation)



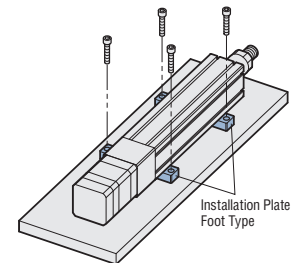
■ Front installation (Installation plate flange type: Sold separately)



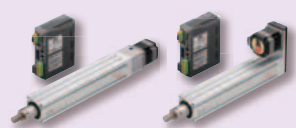
■ Side installation (Direct installation)



■ Side installation (Installation plate foot type: Sold separately)



Electric Cylinders **EAC** Series

Series Name	Type				Starting Price*
	Straight Type		Reversed Motor Type		
	Standard	Shaft Guide Cover Type	Standard	Shaft Guide Cover Type	
Stepper Motor and Driver Packages αSTEP Battery-Free Absolute Sensor AZ Series Type 	●	●	●	●	DC Input: \$1,023~ AC Input: \$1,170~

*Starting price includes pulse input driver.

Stepper
Motors
AZ

Linear
Slides
EZS

Cylinders
EAC

Compact
Cylinders
DR

Rack &
Pinion
L


Gripper
EH

Rotary
Actuators
DGII

Product Line

EAC Series α STEP AZ Equipped

Built-in Controller Type
Pulse Input Type

Type	Product Width×Height Mass	Power Supply Input [VAC]	Lead [mm]	Stroke [mm]										Max. Speed [mm/s]							
				100	200	300	400	500	600	700	800	900	100	200	300	400	500	600	700	800	
Straight Type Standard 	EAC4 42×42 mm 1.0~2.1 kg	Single-Phase 100-120 Single-Phase / Three-Phase 200 - 240	12	50~300										600							
			6	50~300										300							
		24/48 VDC	12	50~300										600							
			6	50~300										300							
	EAC6 60×60 mm 2.6~4.9 kg	Single-Phase 100-120 Single-Phase / Three-Phase 200 - 240	12	50~300										600							
			6	50~300										300							
24/48 VDC	12	50~300										600									
	6	50~300										300									
Straight Type Shaft Guide Cover Type 	EAC4W 42×114 mm 1.7~3.5 kg	Single-Phase 100-120 Single-Phase / Three-Phase 200 - 240	12	50~300										600							
			6	50~300										300							
		24/48 VDC	12	50~300										600							
			6	50~300										300							
	EAC6W 60×156 mm 4.1~7.6 kg	Single-Phase 100-120 Single-Phase / Three-Phase 200 - 240	12	50~300										600							
			6	50~300										300							
24/48 VDC	12	50~300										600									
	6	50~300										300									
Reversed Motor Type Standard 	EAC4R 42×42 mm 1.0~2.1 kg	Single-Phase 100-120 Single-Phase / Three-Phase 200 - 240	12	50~300										600							
			6	50~300										300							
		24/48 VDC	12	50~300										600							
			6	50~300										300							
	EAC6R 60×60 mm 2.6~4.9 kg	Single-Phase 100-120 Single-Phase / Three-Phase 200 - 240	12	50~300										600							
			6	50~300										300							
24/48 VDC	12	50~300										600									
	6	50~300										300									
Reversed Motor Type Shaft Guide Cover Type 	EAC4RW 42×114 mm 1.7~3.5 kg	Single-Phase 100-120 Single-Phase / Three-Phase 200 - 240	12	50~300										600							
			6	50~300										300							
		24/48 VDC	12	50~300										600							
			6	50~300										300							
	EAC6RW 60×156 mm 4.1~7.6 kg	Single-Phase 100-120 Single-Phase / Three-Phase 200 - 240	12	50~300										600							
			6	50~300										300							
24/48 VDC	12	50~300										600									
	6	50~300										300									

Thrust [N]	Push Force [N]	Maximum Transportable Mass in Horizontal Direction [kg]									Maximum Transportable Mass in Vertical Direction [kg]						Repetitive Positioning Accuracy [mm]	Starting Price*
		10	20	30	40	50	60	70	80	90	10	20	30	40	50	60		
~70	100	~15									~7						±0.02	\$1,170.00~
~140	200	~30									~14							\$1,023.00~
~70	100	~15									~7						±0.02	\$1,263.00~
~140	200	~30									~14							\$1,116.00~
~200	400	~30									~15						±0.02	\$1,263.00~
~400	500	~60									~30							\$1,116.00~
~200	400	~30									~15						±0.02	\$1,464.00~
~400	500	~60									~30							\$1,317.00~
~70	100	~15									~6						±0.02	\$1,604.00~
~140	200	~30									~13							\$1,457.00~
~70	100	~15									~6						±0.02	\$1,604.00~
~140	200	~30									~13							\$1,457.00~
~200	400	~30									~13						±0.02	\$1,604.00~
~400	500	~60									~28							\$1,457.00~
~200	400	~30									~13						±0.02	\$1,170.00~
~400	500	~60									~28							\$1,023.00~
~70	100	~15									~7						±0.02	\$1,170.00~
~125	200	~30									~12.5							\$1,023.00~
~70	100	~15									~7						±0.02	\$1,263.00~
~125	200	~30									~12.5							\$1,116.00~
~200	400	~30									~15						±0.02	\$1,263.00~
~360	500	~60									~30							\$1,116.00~
~200	400	~30									~15						±0.02	\$1,464.00~
~360	500	~60									~30							\$1,317.00~
~70	100	~15									~6						±0.02	\$1,317.00~
~125	200	~30									~11.5							\$1,604.00~
~70	100	~15									~6						±0.02	\$1,604.00~
~125	200	~30									~11.5							\$1,457.00~
~200	400	~30									~13						±0.02	\$1,604.00~
~360	500	~60									~28							\$1,457.00~
~200	400	~30									~13						±0.02	\$1,457.00~
~360	500	~60									~28							\$1,457.00~

*Starting price includes pulse input driver.

Connection cables are sold separately. See page 120 to 128.

Product Line and List Price



Straight Type



Reversed Motor Type
Shaft Guide Type

Electric Cylinders AC Input

Product Number Code

① Series	② Motor Installation Direction	③ Shaft Guide	④ Lead Screw Pitch	⑤ Stroke	⑥ Motor	⑦ Motor Type	⑧ Power Supply Input	⑨ Shaft Guide Cover
EACM4	R	W	D	05	AZ	A	A	-G
EACM4 EACM6	R: Reversed Motor Type Blank: Straight	W: With Shaft Guide Blank: No Shaft Guide	D: 12 mm E: 6 mm	05: 50 mm 10: 100 mm 15: 150 mm ~ 30: 300 mm (50 mm increments)	AZ Series	A: Single Shaft M: Electromagnetic Brake Type	C: AC Power Supply Input	-G: With Shaft Guide Cover Blank: No Shaft Guide Cover

*Connection cables sold separately. Connection Cable Set → Page 120

◇ **EAC4** Straight Type / Reversed Motor Type (Motor frame size 42 mm×42 mm)

The prices are the same even if ② Motor Orientation (**R**, Blank), ④ Lead Screw Pitch (**D**, **E**) are different.

③ Shaft Guide ⑨ Shaft Guide Cover	No Shaft Guide (Blank) No Shaft Guide Cover (Blank)		With Shaft Guide (W) With Shaft Guide Cover (-G)		
	Single Shaft (A)	With Electromagnetic Brake (M)	Single Shaft (A)	With Electromagnetic Brake (M)	
⑦ Motor Type					
⑤ Stroke	50 mm (05)	\$639.00	\$856.00	\$933.00	\$1,150.00
	100 mm (10)	\$639.00	\$856.00	\$933.00	\$1,150.00
	150 mm (15)	\$654.00	\$871.00	\$949.00	\$1,166.00
	200 mm (20)	\$654.00	\$871.00	\$949.00	\$1,166.00
	250 mm (25)	\$670.00	\$887.00	\$964.00	\$1,181.00
	300 mm (30)	\$670.00	\$887.00	\$964.00	\$1,181.00

◇ **EAC6** Straight Type / Reversed Motor Type (Motor frame size 60 mm×60 mm)

The prices are the same even if ② Motor Orientation (**R**, Blank), ④ Lead Screw Pitch (**D**, **E**) are different.

③ Shaft Guide ⑨ Shaft Guide Cover	No Shaft Guide (Blank) No Shaft Guide Cover (Blank)		With Shaft Guide (W) With Shaft Guide Cover (-G)		
	Single Shaft (A)	With Electromagnetic Brake (M)	Single Shaft (A)	With Electromagnetic Brake (M)	
⑦ Motor Type					
⑤ Stroke	50 mm (05)	\$732.00	\$1,011.00	\$1,073.00	\$1,352.00
	100 mm (10)	\$732.00	\$1,011.00	\$1,073.00	\$1,352.00
	150 mm (15)	\$747.00	\$1,026.00	\$1,088.00	\$1,367.00
	200 mm (20)	\$747.00	\$1,026.00	\$1,088.00	\$1,367.00
	250 mm (25)	\$763.00	\$1,042.00	\$1,104.00	\$1,383.00
	300 mm (30)	\$763.00	\$1,042.00	\$1,104.00	\$1,383.00

Electric Cylinders DC Input

Product Number Code

① Series	② Motor Installation Direction	③ Shaft Guide	④ Lead Screw Pitch	⑤ Stroke	⑥ Motor	⑦ Motor Type	⑧ Power Supply Input	⑨ Shaft Guide Cover
EACM4	R	W	D	05	AZ	A	A	-G
EACM4 EACM6	R: Reversed Motor Type Blank: Straight	W: With Shaft Guide Blank: No Shaft Guide	D: 12 mm E: 6 mm	05: 50 mm 10: 100 mm 15: 150 mm ~ 30: 300 mm (50 mm increments)	AZ Series	A: Single Shaft M: Electromagnetic Brake Type	K: DC Power Supply Input	-G: With Shaft Guide Cover Blank: No Shaft Guide Cover

*Connection cables sold separately. Connection Cable Set → Page 120

◇ EAC4 Straight Type / Reversed Motor Type (Motor frame size 42 mm×42 mm)

The prices are the same even if ② Motor Orientation (R, Blank), ④ Lead Screw Pitch (D, E) are different.

③ Shaft Guide ⑨ Shaft Guide Cover	No Shaft Guide (Blank) No Shaft Guide Cover (Blank)		With Shaft Guide (W) With Shaft Guide Cover (-G)		
	⑦ Motor Type	Single Shaft (A)	Electromagnetic Brake Type (M)	Single Shaft (A)	Electromagnetic Brake Type (M)
⑤ Stroke	50 mm (05)	\$639.00	\$856.00	\$933.00	\$1,150.00
	100 mm (10)	\$639.00	\$856.00	\$933.00	\$1,150.00
	150 mm (15)	\$654.00	\$871.00	\$949.00	\$1,166.00
	200 mm (20)	\$654.00	\$871.00	\$949.00	\$1,166.00
	250 mm (25)	\$670.00	\$887.00	\$964.00	\$1,181.00
	300 mm (30)	\$670.00	\$887.00	\$964.00	\$1,181.00

◇ EAC6 Straight Type / Reversed Motor Type (Motor frame size 60 mm×60 mm)

The prices are the same even if ② Motor Orientation (R, Blank), ④ Lead Screw Pitch (D, E) are different.

③ Shaft Guide ⑨ Shaft Guide Cover	No Shaft Guide (Blank) No Shaft Guide Cover (Blank)		With Shaft Guide (W) With Shaft Guide Cover (-G)		
	⑦ Motor Type	Single Shaft (A)	With Electromagnetic Brake (M)	Single Shaft (A)	With Electromagnetic Brake (M)
⑤ Stroke	50 mm (05)	\$732.00	\$1,011.00	\$1,073.00	\$1,352.00
	100 mm (10)	\$732.00	\$1,011.00	\$1,073.00	\$1,352.00
	150 mm (15)	\$747.00	\$1,026.00	\$1,088.00	\$1,367.00
	200 mm (20)	\$747.00	\$1,026.00	\$1,088.00	\$1,367.00
	250 mm (25)	\$763.00	\$1,042.00	\$1,104.00	\$1,383.00
	300 mm (30)	\$763.00	\$1,042.00	\$1,104.00	\$1,383.00

Drivers AC Input/DC input

◇ EtherNet/IP Compatible Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AEP	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CEP	\$656.00
24/48 VDC	AZD-KEP	\$506.00

◇ Built-in Controller Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AD	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CD	\$588.00
24/48 VDC	AZD-KD	\$441.00

◇ Pulse Input Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-A	\$531.00
Single-Phase/Three-Phase 200-240 VAC	AZD-C	\$531.00
24/48 VDC	AZD-K	\$384.00

◇ Compact Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KRD	\$391.00

◇ EtherCAT Drive Profile Compatible Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AED	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CED	\$656.00
24/48 VDC	AZD-KED	\$506.00

◇ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AX	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CX	\$588.00
24/48 VDC	AZD-KX	\$441.00

◇ Network Compatible Multi-Axes Drivers

Power Supply Input	Network Type	Product Name	No. of Axes	List Price	
24/48 VDC	SSCNET III/H	AZD2A-KS3	2	\$825.00	
		AZD3A-KS3	3	\$1,093.00	
		AZD4A-KS3	4	\$1,320.00	
		MECHATROLINK-III	AZD2A-KM3	2	\$825.00
			AZD3A-KM3	3	\$1,093.00
			AZD4A-KM3	4	\$1,320.00
	EtherCAT Drive Profile	AZD2A-KED	2	\$825.00	
		AZD3A-KED	3	\$1,093.00	
		AZD4A-KED	4	\$1,320.00	

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

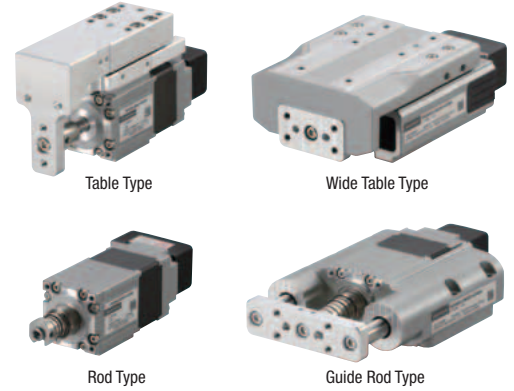
Compact Electric Cylinders

DR Series

α STEP AZ Series Equipped

This linear motion actuator incorporates a ball screw into a stepper motor and offers the ability to reduce the size and weight of the overall machine.

α STEP AZ Series features a hybrid control system for the drive motor. Because the α STEP AZ Series uses battery-free absolute sensors (ABZO sensors), other external sensors such as a home sensor or limit sensor are not necessary.



Reduces Startup Time

● Compact Body Houses Entire Linear Motion Mechanism

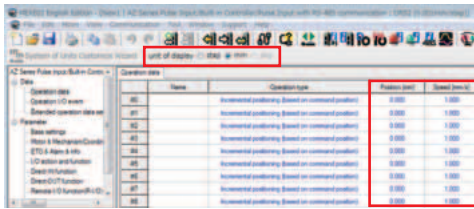
- Since design engineers do not need to provide parts, the time needed for equipment design and parts selection can be reduced.
- The number of man-hours required for assembly and adjusting the installation accuracy can be reduced, contributing to higher productivity.

● Parameters Set at Operation

[Minimum Travel Amount] 0.001 mm

● Setting in mm Units is Possible

The travel amount can be set in mm units.

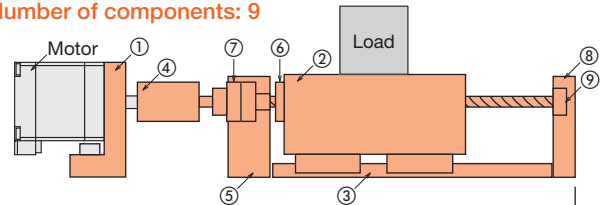


● Comparison of the Number of Components

Configuration examples of cases where the load is driven by the same stroke

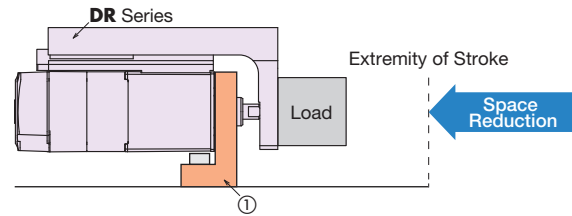
◇ If Designed with Components

Number of components: 9



◇ When Using a DR Series Table Type

Number of components: 1

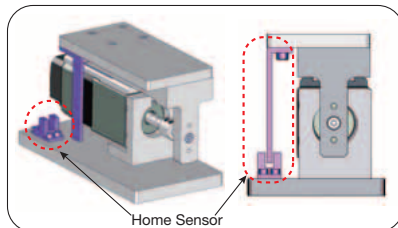


- [Parts Used] ① Installation plate ② Transportation table ③ Linear guide ④ Coupling
⑤ Fixed-side block ⑥ Ball screw ⑦ Fixed-side bearing ⑧ Support-side block ⑨ Support-side bearing

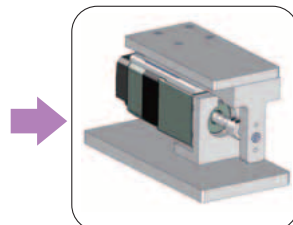
Space Saving and Less Wiring with the Absolute Sensor

In addition to the compact and lightweight body, the motors with absolute sensors do not require a home sensor. This saves space and wiring, and lets you avoid routine maintenance or trouble caused by using a home sensor.

Application Example



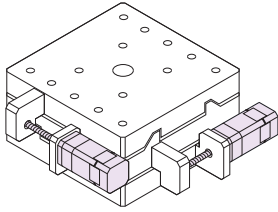
When the Home Sensor is Attached



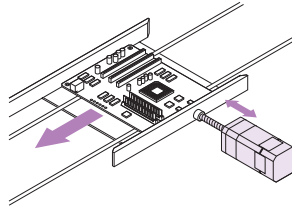
When the Home Sensor is Not Attached

Typical Applications

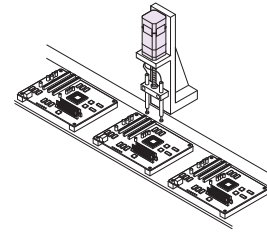
Driving an X-Y Stage
(Automated micrometer head)



Centering of a Board



Vertical Movement of Probes



Selectable Installation Methods

- Table Type & Rod Type

There are 2 installation methods: front installation and side installation.

Products with an installation plate (flange*, foot*) can be mounted on the back side using a flange, or mounted on the upper side using a foot.

*Material: Aluminum Surface treatment: None

- Guide Rod Type

There are 3 installation methods: front installation, rear installation and side installation.

For side installations, the installation screws can be affixed from the top or from the bottom.

- Wide Table Type

Installation screws are affixed from the bottom.

Configuration	Installation Method			
	• Front installation	• Side installation	• Installation using flange (Table type only)	• Installation using foot
Table Type Rod Type				
Guide Rod Type				
Wide Table Type	-	-	-	

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers










Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

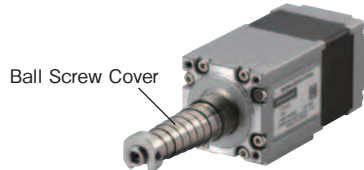
Product Line

	Compact Electric Cylinders						Driver* (24 VDC)	Connection cable	
	Configuration	Frame Size	Stroke	Ball Screw		Cable Outlet Direction			Installation Plate
				Product Line	Lead Screw Pitch				
<p>Cylinders EAC</p>  <p>This product is equipped with a rigid guide which can affix the load to the cylinder. Directly installing the load is easy. Compared to the table type, larger load moments can be applied.</p>	28 mm	30 mm	Precision / Precision with cover	1 mm / 2.5 mm	Left	Blank	<ul style="list-style-type: none"> ● EtherNet/IP™ Compatible Type 		
<p>Compact Cylinders DR</p> <p>Rack & Pinion L</p> <p>Gripper EH</p>					Down / Right / Left	None With flange With foot	<ul style="list-style-type: none"> ● EtherCAT Drive Profile Compatible Type 		
<p>Rotary Actuators DGI</p> <p>Table Type</p>  <p>This product is equipped with a rigid guide which can affix the load to the cylinder. Directly installing the load is easy.</p>					Up / Down	Blank	<ul style="list-style-type: none"> ● Built-in Controller Type 		
<p>Guide Rod Type</p>  <p>This product is equipped with a rigid guide which can affix the load to the cylinder. Directly installing the load is easy.</p>					Up / Down / Right / Left	None With foot	<ul style="list-style-type: none"> ● RS-485 Communication Pulse Input Type ● Pulse Input Type ● Compact Driver 		
<p>Rod Type</p>  <p>Because of its compact, guide-free format, these can be incorporated directly into equipment. This product can be used as a compact thrust force axis in the equipment's load transportation guide.</p>									

*Multi-axis drivers which can control multiple axes are available. For details, please see the separate **OKSTEP AZ** Series catalog.

● With Ball Screw Cover

Compact electric cylinders with a simple ball screw cover are available.



Product Line and List Price

● Compact Electric Cylinders

◇ Wide Table Type



● Frame Size 28 mm Precision Ball Screw

Ball Screw Lead [mm]	Product Name	List Price
1	DR28W1B03-AZAKL	\$1,497.00
2.5	DR28W2.5B03-AZAKL	

◇ Table Type



● Frame Size 20 mm Precision Ball Screw

Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	Without Mounting Plate	DR20T1B02-AZAKD DR20T1B02-AZAKR DR20T1B02-AZAKL	\$1,484.00

● Frame Size 28 mm Precision Ball Screw



Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	without Mounting Plate	DR28T1B03-AZAKD DR28T1B03-AZAKR DR28T1B03-AZAKL	\$1,382.00
	with Flange	DR28T1B03-AZAKD-F DR28T1B03-AZAKR-F DR28T1B03-AZAKL-F	
	with Foot	DR28T1B03-AZAKD-P DR28T1B03-AZAKR-P DR28T1B03-AZAKL-P	
2.5	without Mounting Plate	DR28T2.5B03-AZAKD DR28T2.5B03-AZAKR DR28T2.5B03-AZAKL	\$1,382.00
	with Flange	DR28T2.5B03-AZAKD-F DR28T2.5B03-AZAKR-F DR28T2.5B03-AZAKL-F	
	with Foot	DR28T2.5B03-AZAKD-P DR28T2.5B03-AZAKR-P DR28T2.5B03-AZAKL-P	

◇ Rod Type with Guide



● Frame Size 28 mm Precision Ball Screw

Ball Screw Lead [mm]	Product Name	List Price
1	DR28G1B03-AZAKU DR28G1B03-AZAKD	\$1,233.00
2.5	DR28G2.5B03-AZAKU DR28G2.5B03-AZAKD	

● Frame Size 28 mm

Precision Ball Screw with Cover



Ball Screw Lead [mm]	Product Name	List Price
1	DR28W1BC03-AZAKL	\$1,520.00
2.5	DR28W2.5BC03-AZAKL	

● Frame Size 28 mm

Precision Ball Screw with Cover



Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	without Mounting Plate	DR28T1BC03-AZAKD DR28T1BC03-AZAKR DR28T1BC03-AZAKL	\$1,405.00
	with Flange	DR28T1BC03-AZAKD-F DR28T1BC03-AZAKR-F DR28T1BC03-AZAKL-F	
	with Foot	DR28T1BC03-AZAKD-P DR28T1BC03-AZAKR-P DR28T1BC03-AZAKL-P	
2.5	without Mounting Plate	DR28T2.5BC03-AZAKD DR28T2.5BC03-AZAKR DR28T2.5BC03-AZAKL	\$1,405.00
	with Flange	DR28T2.5BC03-AZAKD-F DR28T2.5BC03-AZAKR-F DR28T2.5BC03-AZAKL-F	
	with Foot	DR28T2.5BC03-AZAKD-P DR28T2.5BC03-AZAKR-P DR28T2.5BC03-AZAKL-P	

● Frame Size 28 mm Precision Ball Screw with Cover



Ball Screw Lead [mm]	Product Name	List Price
1	DR28G1BC03-AZAKU DR28G1BC03-AZAKD	\$1,256.00
2.5	DR28G2.5BC03-AZAKU DR28G2.5BC03-AZAKD	

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Stepper Motors
AZ

◇ Rod Type



Linear Slides
EZS

● Frame Size 20 mm Precision Ball Screw

Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	Without Mounting Plate	DR20R1B02-AZAKU DR20R1B02-AZAKD DR20R1B02-AZAKR DR20R1B02-AZAKL	*

*Contact our sales office for price.

Compact Cylinders
DR

Rack & Pinion
L

● Frame Size 28 mm Precision Ball Screw



Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	without Mounting Plate	DR28R1B03-AZAKU DR28R1B03-AZAKD DR28R1B03-AZAKR DR28R1B03-AZAKL	\$1,141.00
	with Foot	DR28R1B03-AZAKU-P DR28R1B03-AZAKD-P DR28R1B03-AZAKR-P DR28R1B03-AZAKL-P	\$1,187.00
2.5	without Mounting Plate	DR28R2.5B03-AZAKU DR28R2.5B03-AZAKD DR28R2.5B03-AZAKR DR28R2.5B03-AZAKL	\$1,141.00
	with Foot	DR28R2.5B03-AZAKU-P DR28R2.5B03-AZAKD-P DR28R2.5B03-AZAKR-P DR28R2.5B03-AZAKL-P	\$1,187.00



● Frame Size 28 mm Precision Ball Screw with Cover

Ball Screw Lead [mm]	Mounting Plate	Product Name	List Price
1	without Mounting Plate	DR28R1BC03-AZAKU DR28R1BC03-AZAKD DR28R1BC03-AZAKR DR28R1BC03-AZAKL	\$1,164.00
	with Foot	DR28R1BC03-AZAKU-P DR28R1BC03-AZAKD-P DR28R1BC03-AZAKR-P DR28R1BC03-AZAKL-P	\$1,210.00
2.5	without Mounting Plate	DR28R2.5BC03-AZAKU DR28R2.5BC03-AZAKD DR28R2.5BC03-AZAKR DR28R2.5BC03-AZAKL	\$1,164.00
	with Foot	DR28R2.5BC03-AZAKU-P DR28R2.5BC03-AZAKD-P DR28R2.5BC03-AZAKR-P DR28R2.5BC03-AZAKL-P	\$1,210.00

Gripper
EH

Rotary Actuators
DGII

● Driver

◇ EtherNet/IP™ Compatible Type



Product Name	List Price
AZD-KEP	\$506.00

◇ EtherCAT Drive Profile Compatible Type



Product Name	List Price
AZD-KED	\$506.00

◇ Built-in Controller Type



Product Name	List Price
AZD-KD	\$441.00

◇ Pulse Input Type with RS-485 Communication



Product Name	List Price
AZD-KX	\$441.00

◇ Pulse Input Type



Product Name	List Price
AZD-K	\$384.00

◇ Compact Driver



Product Name	List Price
AZD-KRD	\$391.00

Connection Cables/Flexible Connection Cables

Use a flexible connection cable if the cable will be bent.



◇ Cable for Motor/Cable for Encoder

Product Line	Length [m]	Product Name	List Price
Connection Cable	0.5	CC005VZ2F2	\$35.00
	1	CC010VZ2F2	\$35.00
	1.5	CC015VZ2F2	\$43.00
	2	CC020VZ2F2	\$50.00
	2.5	CC025VZ2F2	\$56.00
	3	CC030VZ2F2	\$62.00
	4	CC040VZ2F2	\$97.00
	5	CC050VZ2F2	\$110.00
	7	CC070VZ2F2	\$136.00
	10	CC100VZ2F2	\$176.00
	15	CC150VZ2F2	\$243.00
	20	CC200VZ2F2	\$310.00

Product Line	Length [m]	Product Name	List Price
Flexible Connection Cable	0.5	CC005VZ2R2	\$84.00
	1	CC010VZ2R2	\$84.00
	1.5	CC015VZ2R2	\$91.00
	2	CC020VZ2R2	\$99.00
	2.5	CC025VZ2R2	\$105.00
	3	CC030VZ2R2	\$111.00
	4	CC040VZ2R2	\$125.00
	5	CC050VZ2R2	\$141.00
	7	CC070VZ2R2	\$180.00
	10	CC100VZ2R2	\$236.00
	15	CC150VZ2R2	\$332.00
	20	CC200VZ2R2	\$426.00

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Stepper Motors
AZ

Linear Slides
EZS

Cylinders
EAC

Compact Cylinders
DR

Rack & Pinion
L

Gripper
EH

Rotary Actuators
DGI

Rack and Pinion System

L Series

α STEP AZ Series Equipped

The rack and pinion system L Series simplifies compact and high-power linear transportation possible.

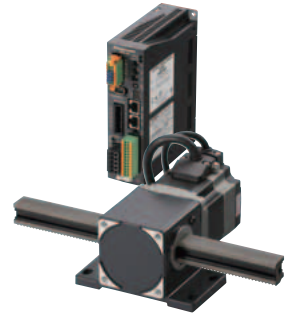
A Rack and Pinion System is a linear & rotary actuator (rack and pinion motor) in which a rack and pinion mechanism and a motor that have been combined.

The motor is equipped with the α STEP AZ Series that utilizes a battery-free absolute sensor, which allows for a high positioning accuracy and high-load transportation up to 100 kg.

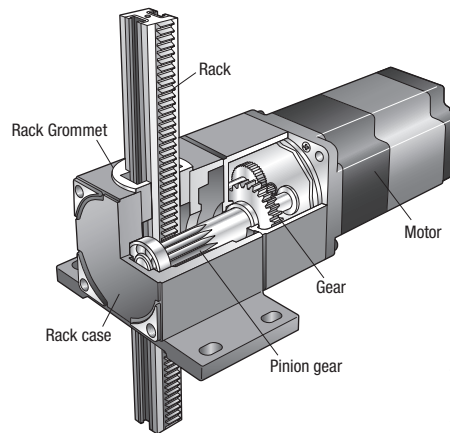
Linear Motion Mechanism that is "Compact" and "High Strength" is Easy to Build

The Rack and Pinion System can easily convert the motor's rotation to linear motion.

The linear motion mechanism has a compact design but it can transport large loads due to its high-strength fabrication.



Structure of Rack Vertical Travel



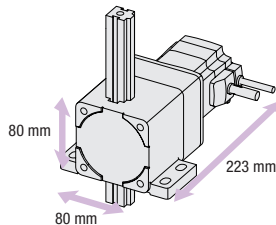
Motion of Rack and Pinion Systems

The pinion shaft motor engages the gear (decelerator), which transmits the movement of the pinion gear to the rack, converting it to linear motion.

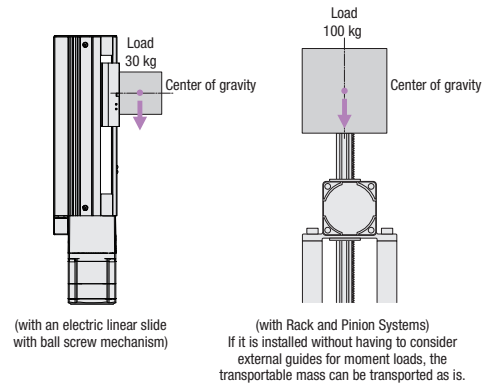
Vertical Operation Can Handle a Max. Transportable Load of 100 kg and a Max. Stroke of 1000 mm

A variety of transportable mass and stroke are available to match your equipment.

Frame Size	Transportable Mass	Stroke [mm]									
		100	200	300	400	500	600	700	800	900	1000
60 mm	Maximum 30 kg	●	●	●	●	●	●	●	●	●	●
80 mm	Maximum 100 kg	●	●	●	●	●	●	●	●	●	●

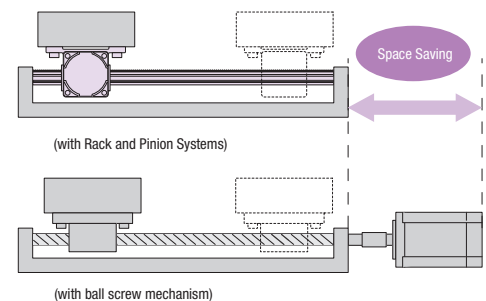


Its compact size can transport up to 100 kg (with electromagnetic brake)



Space Saving

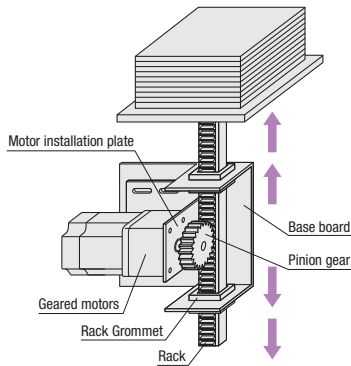
The body is able to move automatically by fixing the screw holes on both ends of the rack. It is effective in large equipment in which motor space cannot be secured.



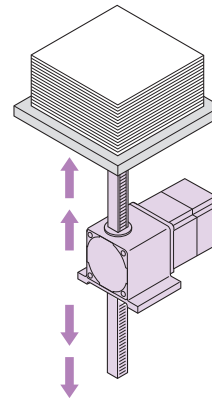
Shorter Time Between Designing and Start-up

The Rack and Pinion System can reduce the number of parts used, and it can also significantly reduce the time spent on design and assembly.

If Parts are Purchased Separately

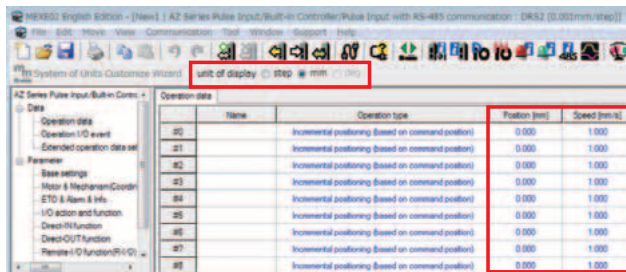


With Rack and Pinion Systems



Setting in Millimeter Increments

The drive motor is equipped with the **αSTEP AZ** Series hybrid control system. By combining with the **MEXE02*** support software, the linear motion can be easily set in millimeter increments, which allows for various linear motion applications.



[Minimum Travel Amount]
High-speed type 0.01 mm
High transportable mass type 0.001 mm

[Permissible Speed Range]
0~500 mm/s (High-speed type)
0~90 mm/s (High transportable mass type, frame size 60 mm)
0~40 mm/s (High transportable mass type, frame size 80 mm)

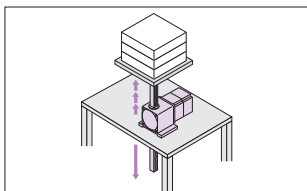
*The **MEXE02** support software can be downloaded from the Oriental Motor website.

What is a Drive Motor Hybrid Control System **αSTEP**?

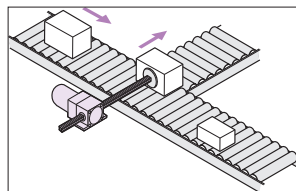
αSTEP is a stepper motor-based motor that can perform independent control in which the advantages of "closed loop control" and "open loop control" are combined. It can constantly monitor the motor's position, and it automatically switches between the two control system in response to the situation. It is usually driven in synchronization with the command using open loop control, which enhances its high-response capability. In an overload situation, it corrects the motor's position using closed loop control to continue operation. It is a motor that is easy to use and is also reliable.

Applications

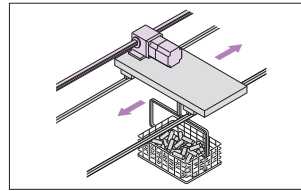
The Rack and Pinion Systems have many applications. They can be selected like parts, and they are easy to use.



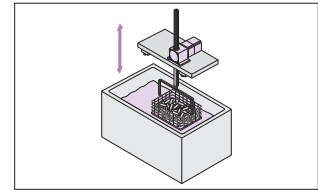
They also make vertical operation easy. Types with an electromagnetic brake are also available as measures against dropping.



The high thrust force also makes push-and-pull operations easy.



A wide variety of strokes and speeds are available.



Using the screw holes on both ends of the rack can simplify bolting loads and securing the rack.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Stepper
Motors
AZ

Product Line and List Price (AC Input)

Linear
Slides
EZS

● Rack and Pinion Motors

◇ High-Speed Type



Frame Size	Product Name	List Price
60 mm	LM2□500AZAC-1	\$788.00
	LM2□500AZAC-2	\$794.00
	LM2□500AZAC-3	\$794.00
	LM2□500AZAC-4	\$799.00
	LM2□500AZAC-5	\$805.00
	LM2□500AZAC-6	\$817.00
	LM2□500AZAC-7	\$840.00
	LM2□500AZAC-8	\$866.00
80 mm	LM4□500AZAC-1	\$838.00
	LM4□500AZAC-2	\$844.00
	LM4□500AZAC-3	\$844.00
	LM4□500AZAC-4	\$850.00
	LM4□500AZAC-5	\$850.00
	LM4□500AZAC-6	\$861.00
	LM4□500AZAC-7	\$873.00
	LM4□500AZAC-8	\$930.00
	LM4□500AZAC-9	\$953.00
	LM4□500AZAC-10	\$976.00

Cylinders
EAC

Compact
Cylinders
DR

Rack &
Pinion
L

Gripper
EH

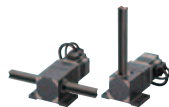
Rotary
Actuators
DGII



◇ High-Speed Type with Electromagnetic Brake

Frame Size	Product Name	List Price
60 mm	LM2□500AZMC-1	\$1,018.00
	LM2□500AZMC-2	\$1,024.00
	LM2□500AZMC-3	\$1,024.00
	LM2□500AZMC-4	\$1,029.00
	LM2□500AZMC-5	\$1,035.00
	LM2□500AZMC-6	\$1,047.00
	LM2□500AZMC-7	\$1,070.00
	LM2□500AZMC-8	\$1,116.00
80 mm	LM4□500AZMC-1	\$1,068.00
	LM4□500AZMC-2	\$1,074.00
	LM4□500AZMC-3	\$1,074.00
	LM4□500AZMC-4	\$1,080.00
	LM4□500AZMC-5	\$1,080.00
	LM4□500AZMC-6	\$1,091.00
	LM4□500AZMC-7	\$1,103.00
	LM4□500AZMC-8	\$1,160.00
	LM4□500AZMC-9	\$1,183.00
	LM4□500AZMC-10	\$1,206.00

◇ High Transportable Mass Type



Frame Size	Product Name	List Price
60 mm	LM2□90AZAC-1	\$805.00
	LM2□90AZAC-2	\$811.00
	LM2□90AZAC-3	\$811.00
	LM2□90AZAC-4	\$817.00
	LM2□90AZAC-5	\$822.00
	LM2□90AZAC-6	\$834.00
	LM2□90AZAC-7	\$857.00
	LM2□90AZAC-8	\$903.00
80 mm	LM4□40AZAC-1	\$861.00
	LM4□40AZAC-2	\$867.00
	LM4□40AZAC-3	\$867.00
	LM4□40AZAC-4	\$873.00
	LM4□40AZAC-5	\$873.00
	LM4□40AZAC-6	\$884.00
	LM4□40AZAC-7	\$896.00
	LM4□40AZAC-8	\$953.00
	LM4□40AZAC-9	\$976.00
	LM4□40AZAC-10	\$999.00

◇ High Transportable Mass Type with Electromagnetic Brake



Frame Size	Product Name	List Price
60 mm	LM2□90AZMC-1	\$1,035.00
	LM2□90AZMC-2	\$1,041.00
	LM2□90AZMC-3	\$1,041.00
	LM2□90AZMC-4	\$1,047.00
	LM2□90AZMC-5	\$1,052.00
	LM2□90AZMC-6	\$1,064.00
	LM2□90AZMC-7	\$1,087.00
	LM2□90AZMC-8	\$1,133.00
80 mm	LM4□40AZMC-1	\$1,091.00
	LM4□40AZMC-2	\$1,097.00
	LM4□40AZMC-3	\$1,097.00
	LM4□40AZMC-4	\$1,103.00
	LM4□40AZMC-5	\$1,103.00
	LM4□40AZMC-6	\$1,114.00
	LM4□40AZMC-7	\$1,126.00
	LM4□40AZMC-8	\$1,183.00
	LM4□40AZMC-9	\$1,206.00
	LM4□40AZMC-10	\$1,229.00

● 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

◇ EtherNet/IP™ Compatible Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AEP	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CEP	\$656.00



◇ EtherCAT Drive Profile Compatible Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AED	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CED	\$656.00



◇ Built-in Controller Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AD	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CD	\$588.00



◇ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AX	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CX	\$588.00



◇ Pulse Input Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-A	\$531.00
Single-Phase/Three-Phase 200-240 VAC	AZD-C	\$531.00



● Connection Cable Sets/Flexible Connection Cable Sets

Use a flexible connection cable set if the cable will be bent.

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 Motor/Encoder (AC Input)



Product Line	Length L (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZF	\$35.00
	1	CC010VZF	\$35.00
	1.5	CC015VZF	\$43.00
	2	CC020VZF	\$50.00
	2.5	CC025VZF	\$56.00
	3	CC030VZF	\$62.00
	4	CC040VZF	\$97.00
	5	CC050VZF	\$110.00
	7	CC070VZF	\$136.00
	10	CC100VZF	\$176.00
Flexible Connection Cable Sets	0.5	CC005VZR	\$84.00
	1	CC010VZR	\$84.00
	1.5	CC015VZR	\$91.00
	2	CC020VZR	\$99.00
	2.5	CC025VZR	\$105.00
	3	CC030VZR	\$111.00
	4	CC040VZR	\$125.00
	5	CC050VZR	\$141.00
	7	CC070VZR	\$180.00
	10	CC100VZR	\$236.00
15	CC150VZR	\$332.00	
20	CC200VZR	\$426.00	

◇ For Motor/Encoder/ Electromagnetic Brake (AC Input)



Product Line	Length L (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZFB	\$52.00
	1	CC010VZFB	\$52.00
	1.5	CC015VZFB	\$60.00
	2	CC020VZFB	\$67.00
	2.5	CC025VZFB	\$74.00
	3	CC030VZFB	\$82.00
	4	CC040VZFB	\$120.00
	5	CC050VZFB	\$135.00
	7	CC070VZFB	\$166.00
	10	CC100VZFB	\$213.00
Flexible Connection Cable Sets	0.5	CC005VZRB	\$114.00
	1	CC010VZRB	\$114.00
	1.5	CC015VZRB	\$123.00
	2	CC020VZRB	\$134.00
	2.5	CC025VZRB	\$142.00
	3	CC030VZRB	\$151.00
	4	CC040VZRB	\$170.00
	5	CC050VZRB	\$191.00
	7	CC070VZRB	\$240.00
	10	CC100VZRB	\$311.00
15	CC150VZRB	\$432.00	
20	CC200VZRB	\$551.00	

Features
 Motors AC Input
 Motors DC Input
 Ethernet/IP Compatible Drivers
 EtherCAT Compatible Drivers
 Built-in Controller Drivers
 Pulse Input Drivers with RS-485
 Pulse Input Drivers
 Network Multi-Axis Drivers
 Compact Drivers
 Cables / Accessories
 Actuators AZ Series Equipped

Stepper Motors AZ
Linear Slides EZS
Cylinders EAC
Compact Cylinders DR
Rack & Pinion L
Gripper EH
Rotary Actuators DGI

Electric Gripper EH Series

α STEP AZ Series Equipped

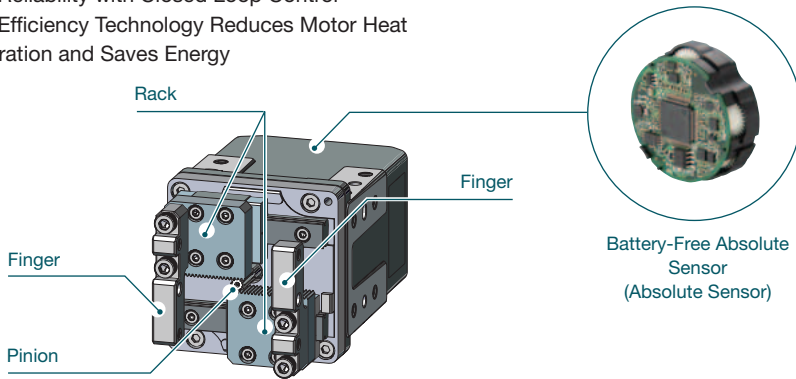
The **EH** Series electric gripper is a rack-and-pinion mechanism equipped with an **AZ** Series motor.

The delicate grip aids in automation and labor-saving.



The Motor Uses the α STEP AZ Series

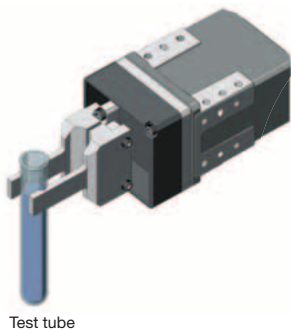
- Built-In Battery-Free Absolute Sensor, for Constant Monitoring of Motor Position Information without an External Sensor
- High Reliability with Closed Loop Control
- High Efficiency Technology Reduces Motor Heat Generation and Saves Energy



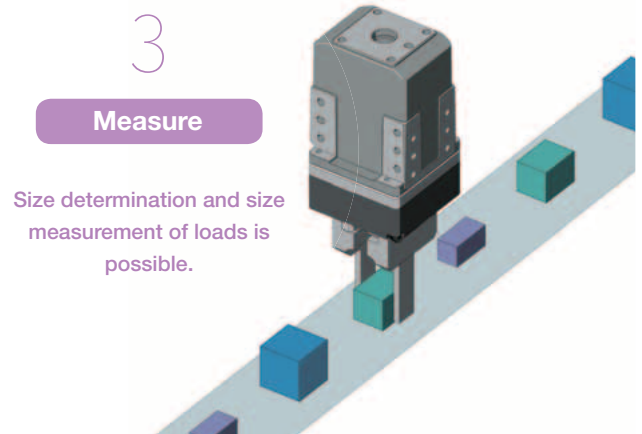
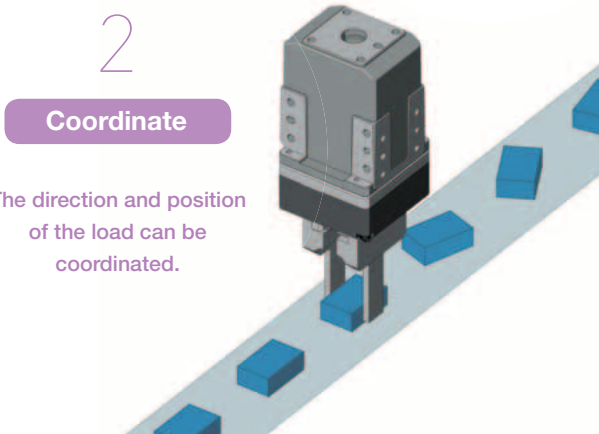
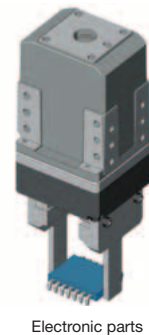
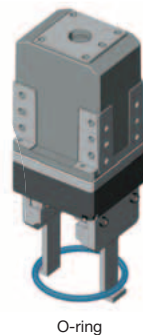
The On-board AZ Series Provides Delicate Grip.

Delicate grip is achieved by fine-tuning the gripping force in 1% running current increments and implementing a slow approach to the load.

● Please prepare attachments (tabs or arms) separately.



1
Grip
Can grip loads that break and deform easily.

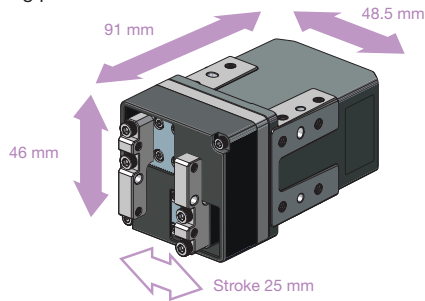


Contributes to a Reduction in the Size of the Equipment.

Small and Lightweight

91 mm × 46 mm × 48.5 mm in size, and weighs 380 g.

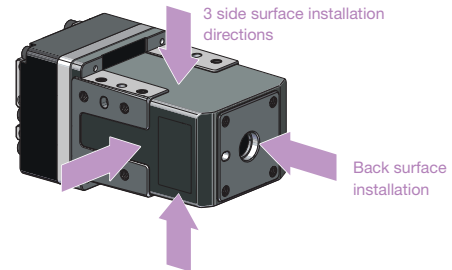
The combination of a motor with a frame size of 28 mm and the rack-and-pinion mechanism results in smaller equipment. 25 mm is secured for the stroke of moving parts.



Multi-Surface Installation OK

Installation in various directions is possible.

The design is compatible with multi-surface installation, making it optimal for installation on robotic arms, etc.



1 Grip

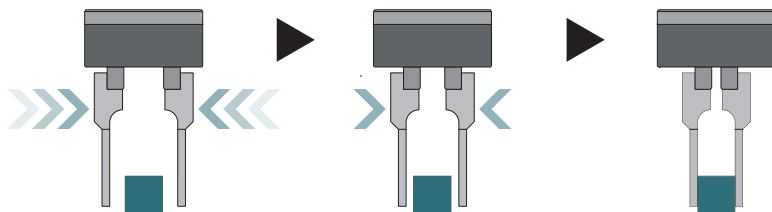
Reliably Grip Loads that Easy Deform or Break.

Freely set the gripping force, gripping time, and speed according to the object being gripped.

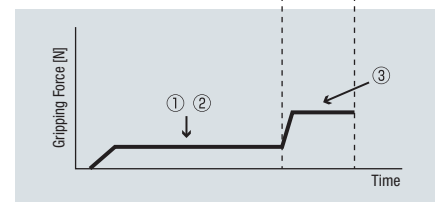
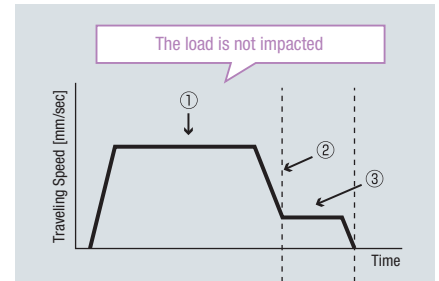
Safely and reliably grip objects that easily break, like glass, and objects that easily deform, like plastic and springs.

Quick Approach, Slow Grip

The motor approaches the load at high speed. The motor decelerates just before hitting the surface at low speed.

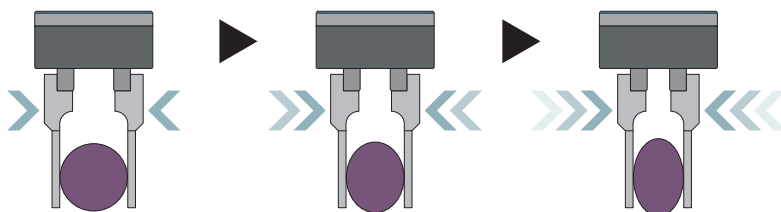


- ① The motor approaches the load at high speed and low gripping force
- ② The motor decelerates right before gripping the load, and grips the load slowly
- ③ After the load is gripped, push-motion operation starts. Torque is held at the set gripping force

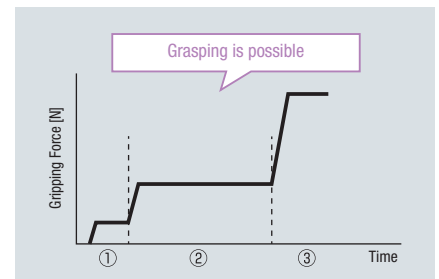


Grips at Low Gripping Force, then Gradually Increases the Force

Push force and timing can be easily changed.



- ① Starts with reduced grip
- ② The gripping force is gradually increased
- ③ Gripped with even stronger force



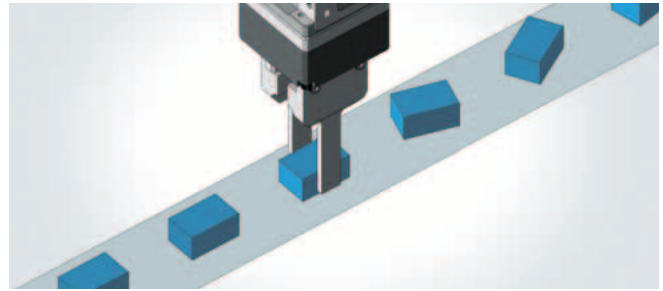
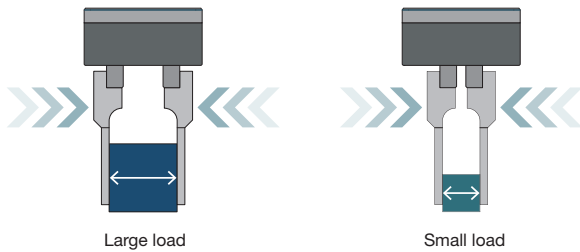
● Please prepare attachments (tabs) separately.

- Features
- Motors AC Input
- Motors DC Input
- Ethernet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuator's AZ Series Equipped

2 Coordinate

The Direction and Position of the Load can be Coordinated.

The minimum travel amount of the finger is 0.02 mm, so the direction and position of the loads can be coordinated by gripping them according to their size.

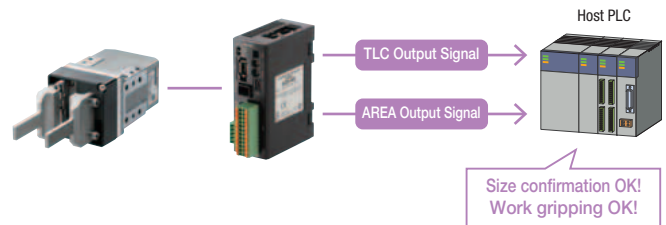
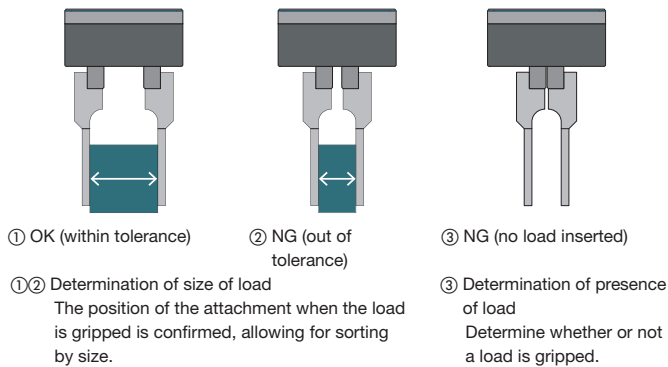


3 Measure

The Size of the Load can be Confirmed without an External Sensor.

The Size and Presence of a Load are Determined within the Operational Range of the Finger

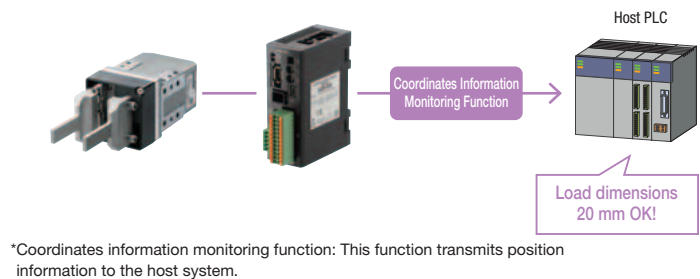
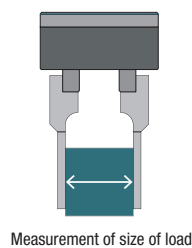
The operational range of the finger is confirmed by the output signal (TLC output, AREA output) from the driver, allowing the size and presence of a load to be determined.



* AREA output: This signal is output when the motor is in a set area.
TLC output: This signal is output during push-motion operation when the output torque reaches a set torque limiting value.

Monitor the Position Information from the Gripper to Measure Size

The driver coordinates information, monitoring function loads, coordinates information from the electric gripper into the host PLC, allowing the size of the load to be measured.



*Coordinates information monitoring function: This function transmits position information to the host system.

● Please prepare attachments (tabs) separately.

Product Line and List Price

● Electric Gripper



Product Name	List Price
EH4-AZAKH	\$759.00

● Drivers

◇ EtherNet/IP™ Compatible Type



Product Name	List Price
AZD-KEP	\$506.00

◇ EtherCAT Drive Profile Compatible



Product Name	List Price
AZD-KED	\$506.00

◇ Built-in Controller Type



Product Name	List Price
AZD-KD	\$441.00

◇ Pulse Input Type with RS-485 Communication



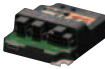
Product Name	List Price
AZD-KX	\$441.00

◇ Pulse Input Type



Product Name	List Price
AZD-K	\$384.00

◇ Compact Driver



Product Name	List Price
AZD-KRD	\$391.00

● Connection Cable Sets/Flexible Connection Cable Sets

Use a flexible connection cable set if the cable will be bent.

◇ For Motor/Encoder



Product Line	Length (m)	Product Name	List Price	Product Line	Length (m)	Product Name	List Price
Connection Cable	0.5	CC005VZ2F2	\$35.00	Flexible Connection Cable	0.5	CC005VZ2R2	\$84.00
	1	CC010VZ2F2	\$35.00		1	CC010VZ2R2	\$84.00
	1.5	CC015VZ2F2	\$43.00		1.5	CC015VZ2R2	\$91.00
	2	CC020VZ2F2	\$50.00		2	CC020VZ2R2	\$99.00
	2.5	CC025VZ2F2	\$56.00		2.5	CC025VZ2R2	\$105.00
	3	CC030VZ2F2	\$62.00		3	CC030VZ2R2	\$111.00
	4	CC040VZ2F2	\$97.00		4	CC040VZ2R2	\$125.00
	5	CC050VZ2F2	\$110.00		5	CC050VZ2R2	\$141.00
	7	CC070VZ2F2	\$136.00		7	CC070VZ2R2	\$180.00
	10	CC100VZ2F2	\$176.00		10	CC100VZ2R2	\$236.00
15	CC150VZ2F2	\$243.00	15	CC150VZ2R2	\$332.00		
20	CC200VZ2F2	\$310.00	20	CC200VZ2R2	\$426.00		

Features

Motors
AC Input

Motors
DC Input

EtherNet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

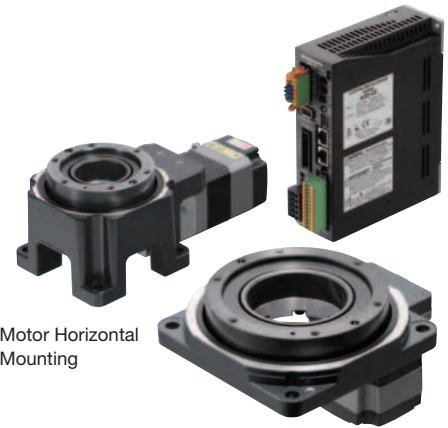
Actuators
AZ Series
Equipped

Hollow Rotary Actuators

DGII Series

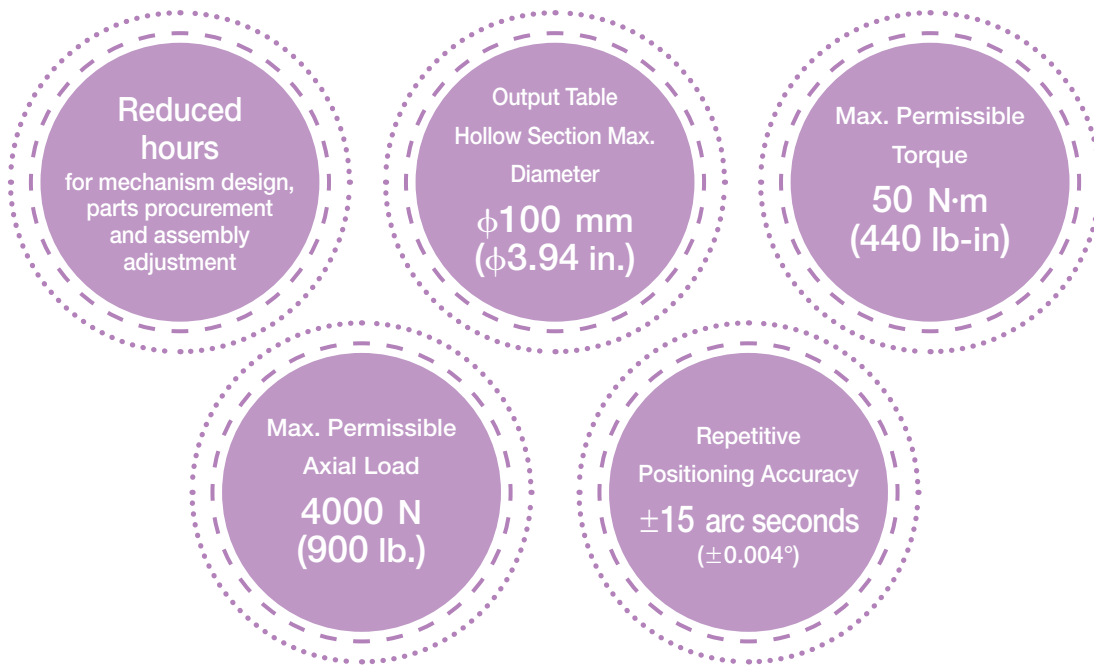
The **DGII** Series combines a hollow rotary table with an *αSTEP* controller to create an integrated product that can be directly mounted to large inertia tables or arms.

Time and cost associated with mechanism design, parts selection and assembly adjustment can be reduced.



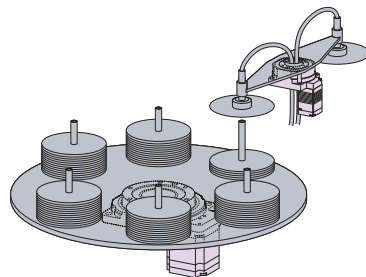
Motor Horizontal
Mounting

Motor Vertical
Mounting

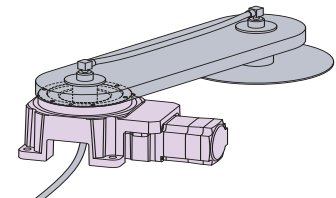


● Wide Variety of Applications

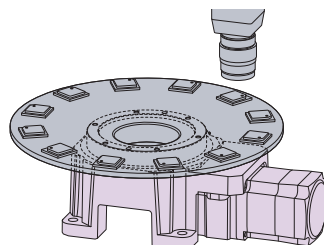
Applications with Changing Load Inertia



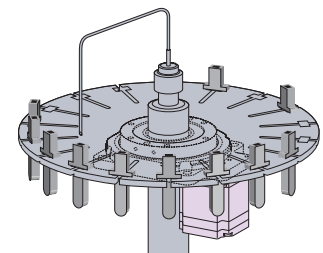
Applications with Moment Load



Using Hollow Holes



High Positioning Accuracy Applications Using Hollow Holes



Product Line

Motor Vertical Mounting



Frame Size
60 mm (2.36 in.)



Frame Size
85 mm (3.35 in.)



Frame Size
130 mm (5.12 in.)



Frame Size
200 mm (7.87 in.)

Motor (List Price*1)	Power Supply	Hollow Rotor Actuator				Driver Type
		Frame Size				
		Frame Size 60 mm (2.36 in.)	Frame Size 85 mm (3.35 in.)	Frame Size 130 mm (5.12 in.)	Frame Size 200 mm (7.87 in.)	
αSTEP AZ Series Equipped (Starting from \$1,396.00*1)	AC Input	—	●	●	●	EtherNET/IP Compatible Driver EtherCAT Drive Profile Compatible Driver Built-in Controller RS-485 Communication Pulse Input Pulse Input Network Compatible Multi-Axis Driver*2 Compact Driver*2
	DC Input	●	●	●	—	

Motor Horizontal Mounting



Frame Size
85 mm (3.35 in.)



Frame Size
130 mm (5.12 in.)

Motor (List Price*1)	Power Supply	Gear Ratio	Hollow Rotor Actuator		Driver Type
			Frame Size		
			Frame Size 85 mm (3.35 in.)	Frame Size 130 mm (5.12 in.)	
αSTEP AZ Series Equipped (Starting from \$2,374.00*1)	AC Input	12	●	—	EtherNET/IP Compatible Driver EtherCAT Drive Profile Compatible Driver Built-in Controller RS-485 Communication Pulse Input Pulse Input Network Compatible Multi-Axis Driver*2 Compact Driver*2
		18	●	●	
		36	●	●	
	DC Input	12	●	—	
		18	●	●	
		36	●	●	

*1 The list price includes the actuator, driver and cable [1 m (3.3 ft.).

*2 DC input only

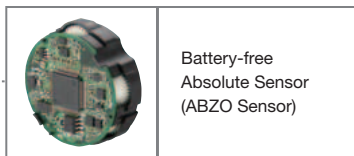
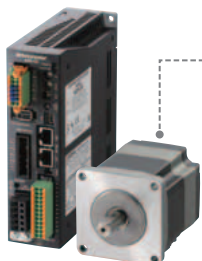
● Types with an electromagnetic brake are available for some models.

αSTEP Equipped Drive Motor

The **DGII** Series uses **αSTEP** drive motors. Two series are available.

- High reliability closed loop control
- High efficiency technology reduces motor heat generation and saves energy

Battery-Free Absolute Sensor Equipped **AZ** Series



Battery-free
Absolute Sensor
(ABZO Sensor)

- The **AZ** Series uses a multiple-rotation mechanical sensor to constantly monitor the motor position even during a sudden power off situation. No External Sensors required.

The drivers and cables for the **αSTEP AZ** Series-equipped **DGII** Series are the same as the **AZ** Series motors. For details, please consult the **AZ** Series product catalog or the Oriental Motor website.

Features

Motors
AC Input

Motors
DC Input

EtherNET/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

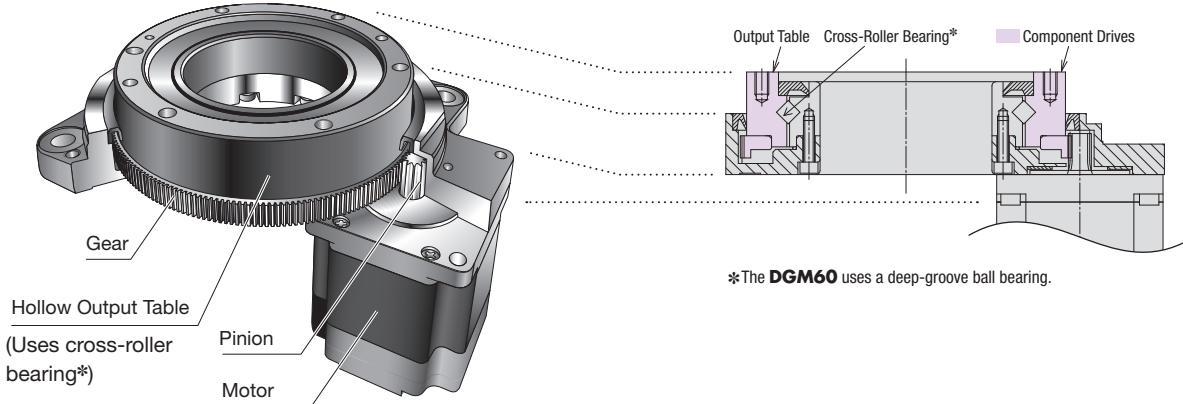
Hollow Rotary Actuator Features

The **DGII** Series is an integrated product that combines a hollow rotary table with an **αSTEP** hybrid control system. The actuator has an internal speed reduction mechanism which makes high power driving possible.

Features

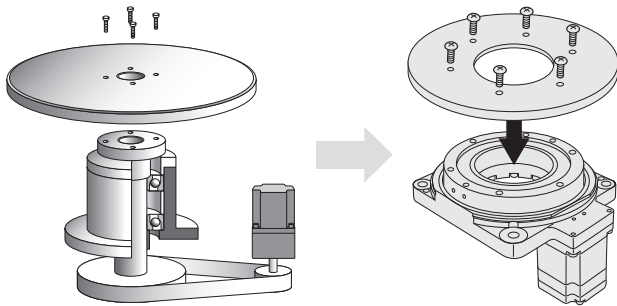
The hollow output table uses cross-roller bearings*, which allows for both hollow output and high rigidity.

● The figure below shows a configuration with vertical motor orientation. The structure of the hollow output table is identical for lateral motor orientation as well.



Simplified Design

Tables and arms can be installed directly onto the output table. This saves cost of designing an installation mechanism, arranging necessary mechanism parts, adjusting the belt tension, etc., when mechanical components such as a belt and pulley are used for installation.



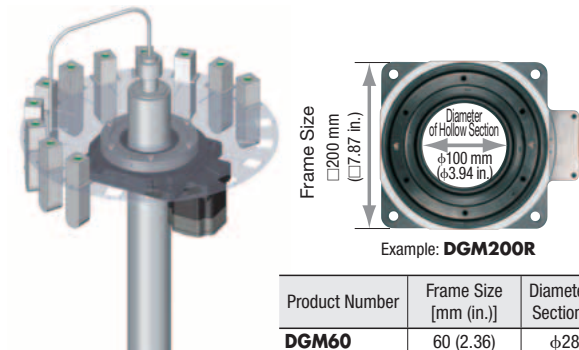
Motor + Mechanical Component
(Designed and arranged separately)

DGII Series
(Integrated product)

Large-Diameter, Hollow Output Table Makes Simple Wiring and Piping Possible

The large diameter hollow hole (through-hole) helps reduce the complexity of wiring and piping, thus simplifying equipment design.

● Filling equipment with piped-in liquid



Product Number	Frame Size [mm (in.)]	Diameter of Hollow Section [mm (in.)]
DGM60	60 (2.36)	φ28 (φ1.10)
DG□85R	85 (3.35)	φ33 (φ1.30)
DG□130R	130 (5.12)	φ62 (φ2.44)
DGM200R	200 (7.87)	φ100 (φ3.94)

High Positioning Accuracy

The combination of the motor and the rotating table mechanism makes high positioning accuracy possible.

	Motor Vertical Mounting	Motor Horizontal Mounting
Backlash	Non-Backlash	6 arc minutes (0.1°)
Repetitive Positioning Accuracy	±15 arc seconds (±0.004°)	±30 arc seconds (±0.008°)

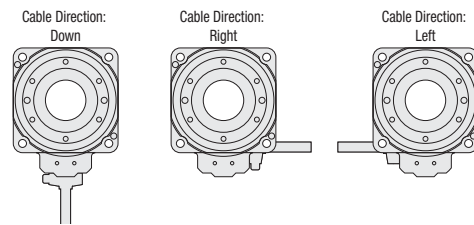
Note The repetitive positioning accuracy is measured at a constant temperature (normal temperature) under a constant load.

The Cable Output Direction can be Selected to Suit the Application (AZ Series Only)

The motor cable output direction can be selected based on the application.*

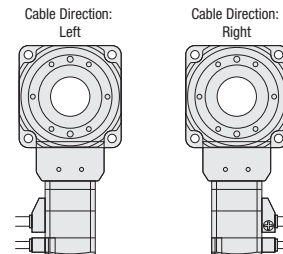
Motor Vertical Mounting

● There are 3 possible directions for cable output.



Motor Horizontal Mounting

● There are 2 possible directions for cable output.

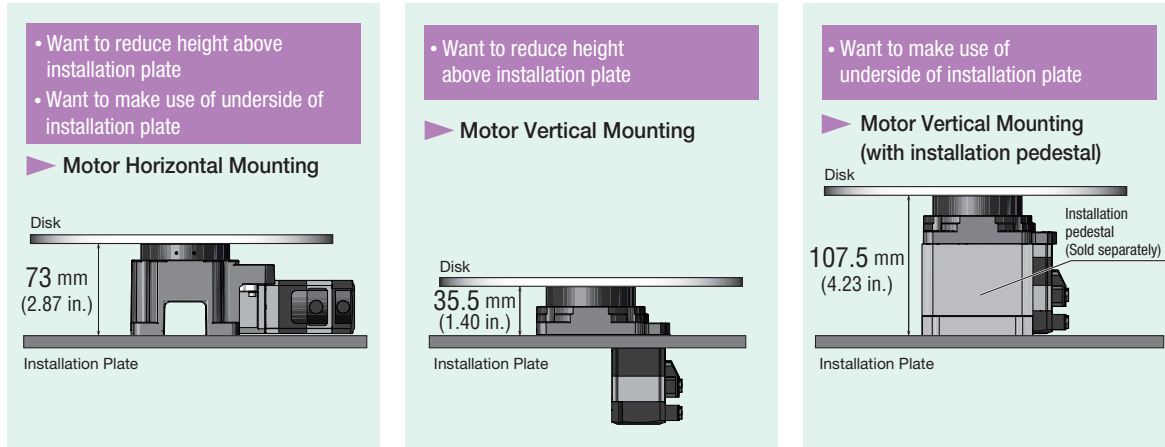


*May not be available for some frame sizes. Contact your Oriental Motor sales office for more details.

Select to Match Space

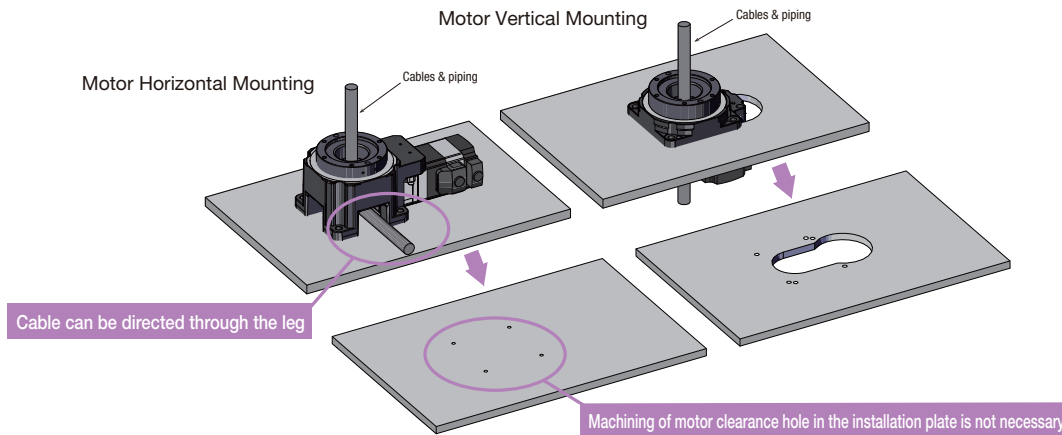
In addition to the conventional type in which the rotary table shaft and the motor shaft were arranged in parallel (motor vertical mounting), the product lineup also includes types in which the rotary table shaft and the motor shaft are perpendicular (motor horizontal mounting). Select the type that best suits the installation space for the equipment.

[Example: For standard type with frame size of 85 mm (3.35 in.)]



Advantages of Motor Horizontal Mounting

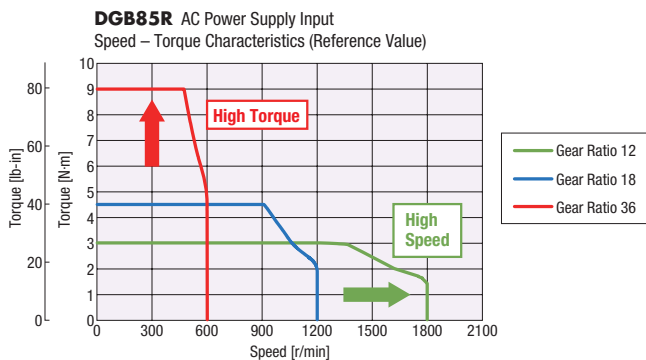
- Machining of motor clearance hole is not necessary, thereby simplifying the installation plate.
- Improved installability due to elimination of installation pedestal.
- Cabling and piping can be routed between legs underneath the table.



Expansion of rated torque and speed through addition of gear ratio (Motor horizontal mounting only)

Three types of actuators with motor horizontal mounting are available with gear ratios of 12, 18 and 36.

Select the gear ratio best suited to the required speed and torque.



High Load and High Rigidity

The standard type uses a cross-roller bearing on the output table bearing, which allows for both high load and high rigidity. (Excluding **DGM60**)

- Maximum Permissible Axial Load 4000 N (900 lb.)
- Maximum Permissible Moment 100 N·m (880 lb-in)

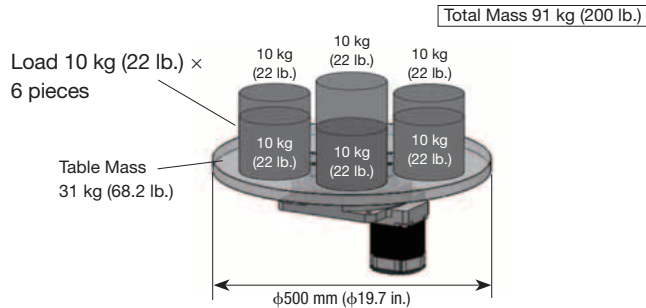
● High Load

e.g. When operating the actuator in a state where 6 loads are placed on the table.

Load Mass : 91 kg (200 lb.)

Table 31 kg (68.2 lb.) (Diameter 500 mm (19.7 in.), thickness 20 mm (0.79 in.), iron)

Load 10 kg (22 lb.)/piece × 6 pieces



[Axial Load]

$[31 \text{ kg (68.2 lb.)} + 10 \text{ kg (22 lb.)} \times 6 \text{ pieces}] \times \text{gm/s}^2 \doteq 893 \text{ N (201 lb.)}$

The axial load for a total mass of 91 kg (200 lb.) is 893 N (201 lb.)

The permissible axial load of the **DGM200R** is 4000 N (900 lb.), so this is within the permissible value.

High Load Driving is Possible

<Example Operation>

Actuators Name : **DGM200R-AZAC**

Driver : **AZD-CD**

Power-Supply Input : 200 VAC

Overhang Distance : 160 mm (6.3 in.)

Installation Direction : Horizontal

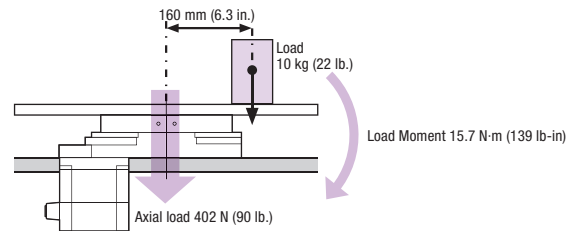
● High Rigidity

e.g. When operating the actuator in a state where a load is placed at a distance of 160 mm (6.3 in.) from the center of the table.

Load Mass : 41 kg (90.2 lb.)

Table 31 kg (68.2 lb.) [Diameter 500 mm (19.7 in.), thickness 20 mm (0.79 in.), iron]

Load 10 kg (22 lb.)/piece × 1 piece



[Load Moment]

$10 \text{ kg (22 lb.)} \times \text{gm/s}^2 \times 0.16 \text{ m (6.3 in.)} \doteq 15.7 \text{ N·m (139 lb-in)}$

When a 10 kg (22 lb.) load is placed 160 mm (6.3 in.) from the center of the table, the moment is 15.7 N·m (139 lb-in)

The permissible moment of the **DGM200R** is 100 N·m (880 lb-in), so this is within the permissible value.

[Axial Load]

$[31 \text{ kg (68.2 lb.)} + 10 \text{ kg (22 lb.)}] \times \text{gm/s}^2 \doteq 402 \text{ N (90 lb.)}$

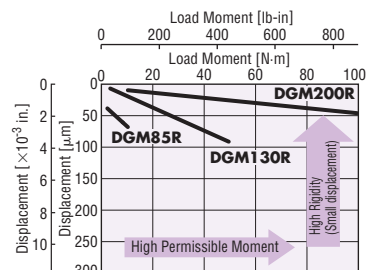
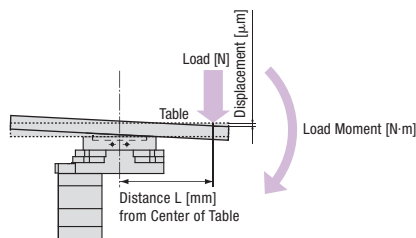
The axial load of total mass 41 kg (90.2 lb.) is 402 N (90 lb.)

The permissible axial load of the **DGM200R** is 4000 N (900 lb.), so this is within the permissible value.

A high-rigidity rotary actuator allows a large load that is far away from the table center to be driven

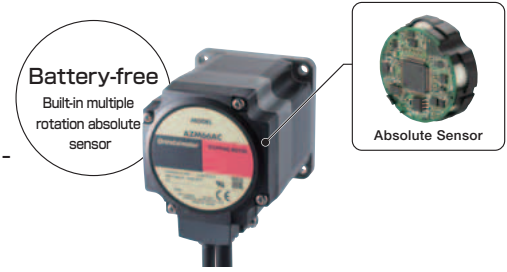
■ Relationship Between Load Moment and Displacement when Distance L=200 mm (7.87 in.) from Center of Table

The larger the frame size, the received permissible moment increases, but the displacement caused by the load moment decreases.



α STEP AZ Equipped Simple Home Position Setting and Return-to-Home: Absolute System

The patented Absolute Sensor, a newly developed small mechanical multi-turn sensor. Contributes to improved productivity and cost reduction.



No Home Sensor Required

Because it is an absolute system, no home sensor is required.

Reduced Cost

Sensor costs and wiring costs can be reduced, allowing for lower system costs.

Simple Wiring

Wiring is simplified, and the degree of freedom for equipment design is increased.

Not Affected by Sensor Malfunctions

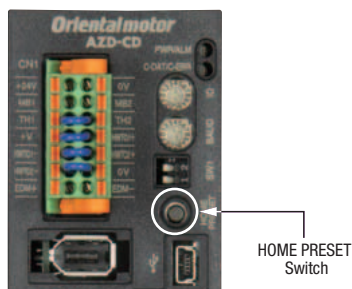
No need to worry about sensor malfunctions, sensor damage or sensor disconnection.

Improved Return-to-Home Accuracy

Home position accuracy is increased because the return-to-home action is performed regardless of any variations in home sensor sensitivity. If no limit sensor is installed, movements that exceed the limit values can be avoided through the use of the limits in the driver software.

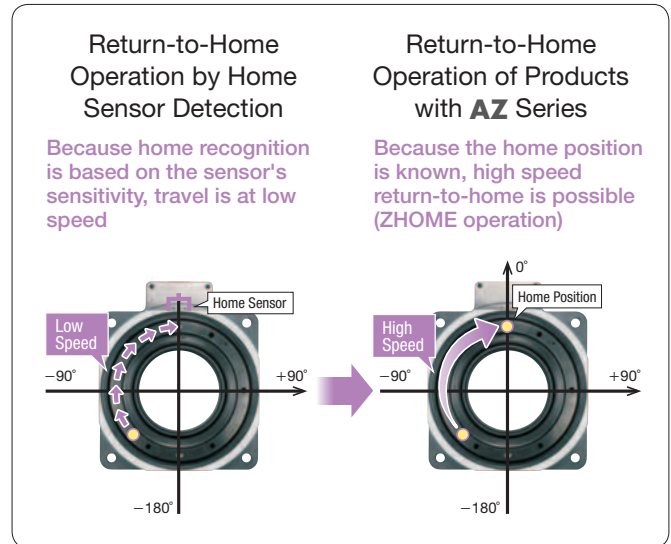
Easy Home Position Setting

The home position can be easily set by pressing a switch on the driver's surface, which is saved by the absolute sensor. In addition, home setting is possible with the **MEXE02** Support software or by using an external input signal.



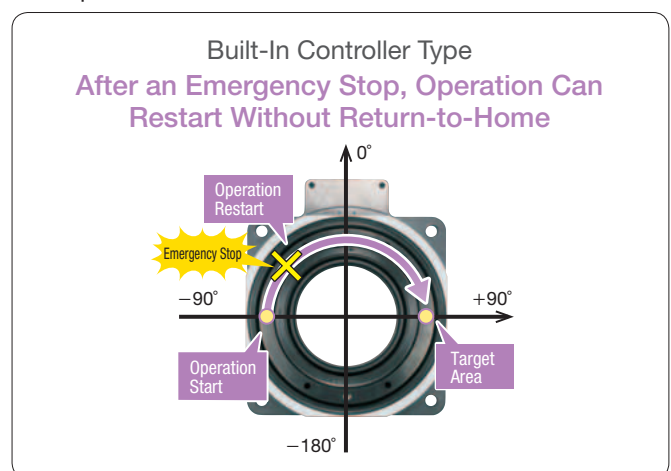
High-Speed Return-to-Home Operation

Because return-to-home is possible without using a home sensor, return-to-home can be performed at high speed without taking the specifications for sensor sensitivity into account, allowing for a shortened machine cycle.



Return-to-Home Not Required

Even if the power shuts down during a positioning operation, the positioning information is retained. Furthermore, for built-in controller types, positioning operations can restart without a return-to-home when recovering from an emergency stop of the production line or a blackout.



- Features
- Motors AC Input
- Motors DC Input
- Ethernet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

No Battery Required: Mechanical-Type Sensor

Stepper Motors
AZ

Linear Slides
EZS

Cylinders
EAC

Compact Cylinders
DR

Rack & Pinion
L

Gripper
EH

Rotary Actuators
DGI

Battery-Free

No battery is required thanks to a mechanical-type sensor. Because positioning information is managed mechanically by the Absolute Sensor, the positioning information can be preserved, even if the power turns off, or if the cable between the motor and the driver is disconnected.

Reduced Maintenance

Because there is no battery that needs replacement, maintenance time and costs can be reduced.

Unlimited Driver Installation Possibilities

Because there is no need to secure space for battery replacement, there are no restrictions on the installation location of the driver, improving the flexibility and freedom of the layout design of the control box.



Safe for Overseas Shipping

Normal batteries will self-discharge, so care must be taken when the equipment requires a long shipping time, such as when being sent overseas. The Absolute Sensor does not require a battery, so there is no limit to how long the positioning information is maintained. In addition, there is no need to worry about various safety regulations, which must be taken into consideration when shipping a battery overseas.

Position Holding Even when the Cable between the Motor and Driver is Detached

Positioning information is stored within the Absolute Sensor.

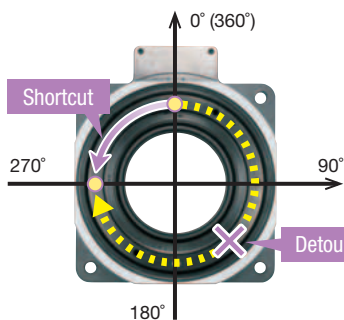
Convenient Functions Thanks to the Use of the AZ Series

Convenient Operation & Setting

By using models with **AZ** Series functions, coordinate management on the hollow rotary actuator output table can be carried out, and the follow operations are possible.

Reduce Takt Time with Short-Cut Operations

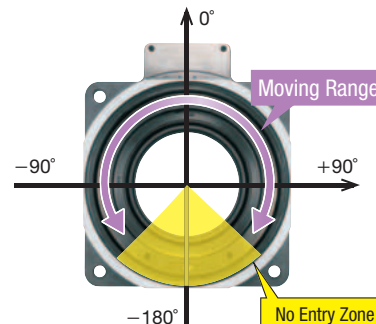
This is an operation method in which the actuator rotates in the direction that is the shortest distance to the target position. This can reduce the takt time of the equipment.



Example)
When moving from the 0° position to 270° position, counterclockwise movement is automatically selected as the shortest rotation direction.

Simple Control by Setting No-Entry Zones

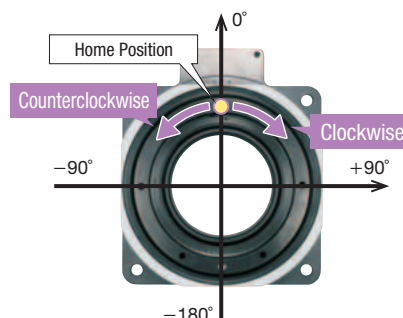
If there are obstructions on the equipment, it is possible to set a region on the output table that will be avoided.



Reduced Equipment Setup Time

The necessary operation parameters for the hollow rotary actuator are set at the time of shipment, which contributes to reduced equipment setup time.

- Home Position
 - Resolution Setting (0.01°/step)
 - Output Table Rotation Direction Setting
 - Round Setting ±180°
- All initial setting values can be changed.

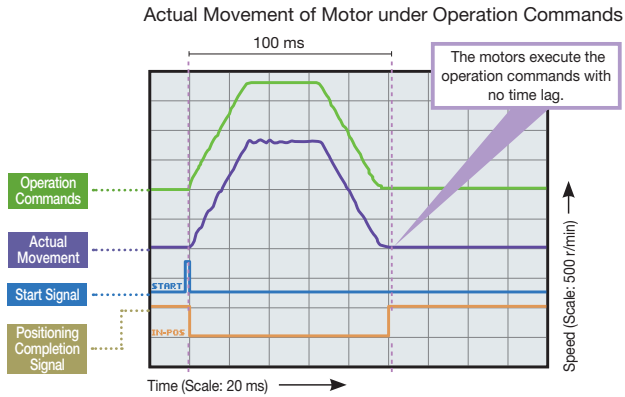


αSTEP Provides High Performance and High Reliability

αSTEP is a stepper motor-based motor that provides a unique hybrid control system that combines the advantages of both open loop control and closed loop control. The motor position is constantly monitored, and it switches automatically between the 2 types of control depending on the situation.

Short Time Positioning with Agile Responsiveness

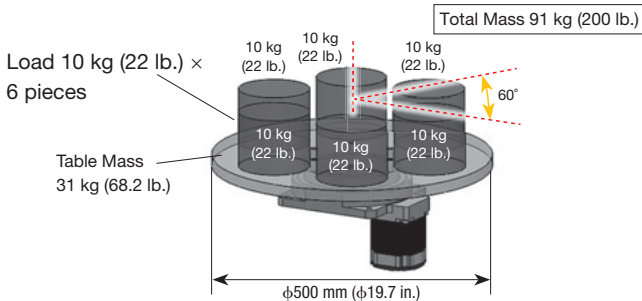
The αSTEP enables short distance positioning quickly. The αSTEP operates in synchronization with the pulse commands, and it also has superior performances in acceleration and responsiveness because of its compact size and high torque characteristics.



<Example Operation>

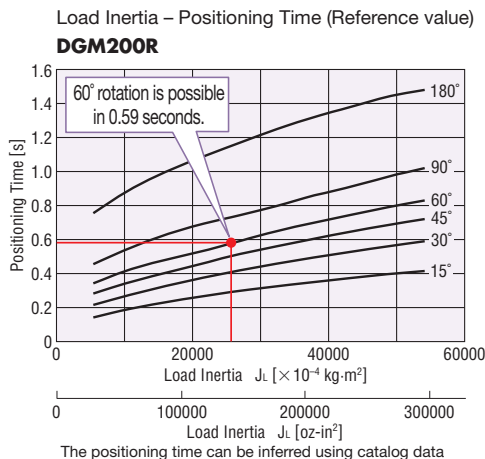
Actuators Name : **DGM200R-AZAC**
 Driver : **AZD-CD**
 Power-Supply Input : 200 VAC
 Load Mass : 91 kg (200 lb.)
 : Table 31 kg (68.2 lb.) [Diameter 500 mm (19.7 in.),
 : thickness 20 mm (0.79 in.), iron]
 : Load 10 kg (22 lb.)/piece × 6 pieces
 Installation Direction : Horizontal
 Traveling Amount : 60°

Total inertia of table and load = $26330 \times 10^{-4} \text{ kg}\cdot\text{m}^2$ (144000 oz-in²)



● Quick Positioning

With the **DGM200R**, 60° rotation of a total mass of 91 kg (200 lb.) is possible in 0.59 seconds.



Quick positioning is possible even with large loads



Hybrid Control System αSTEP

AZ Series

Built-in Battery-free Absolute Sensor

Continues Operation Even with Sudden Load Fluctuation and Sudden Acceleration

In normal conditions, it operates synchronously with pulse commands under open loop control, and because of its compact size and high torque generation, it has excellent acceleration performance and responsiveness. In an overload condition, it switches immediately to closed loop control to correct the position.

Low Vibration Even at Low Speed

Thanks to the standard microstep drive system and smooth drive function*, resolution can be improved without mechanical elements such as a speed reduction mechanism. As a result, speed fluctuation is minimal even at low speeds, leading to improved stability.

*About the Smooth Drive Function

The smooth drive function automatically microsteps based on the same traveling amount and traveling speed used in the full step mode, without changing the pulse input settings.

Alarm Signal Output in Case of Abnormality

If a continuous overload is applied, an alarm signal is output. Also, when the positioning is completed, a signal is output. This provides high reliability.

Tuning-Free

Because it normally operates using open loop control, even when the load fluctuates, the movement exactly as set is obtained without any tuning.

Holding the Stop Position without Hunting

Because open loop control is normally used, there is no "hunting", the minute shaft movements that occur during stopping. Because the stop position is held accurately, this is ideal for applications in which vibration during the stop can cause problems.

Energy Savings, Low Heat Generation

High-efficiency motors reduce heat generation and save energy.

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

Application & Use Examples

Stepper
Motors
AZ

Linear
Slides
EZS

Cylinders
EAC

Compact
Cylinders
DR

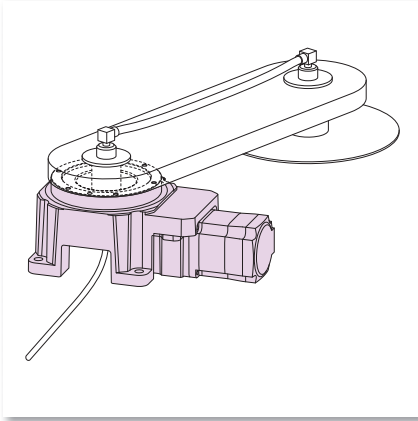
Rack &
Pinion
L

Gripper
EH

Rotary
Actuators
DGII

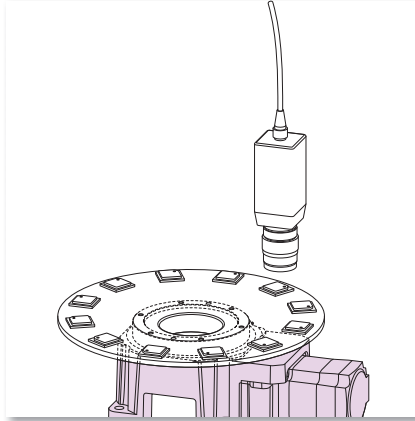
Applications that Require High Rigidity

- Applications with Load Moment

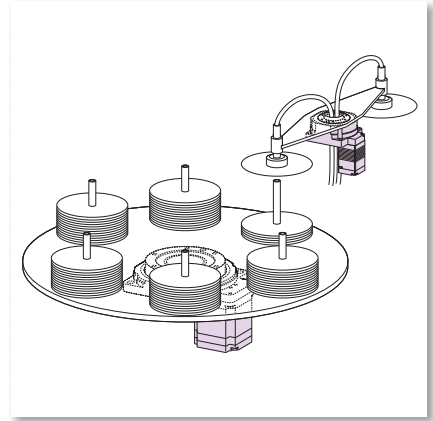


Applications that Require High Performance Motors

- High Positioning Accuracy (Image inspection equipment)



- Applications with Load Inertia Fluctuations (Disc manufacturing equipment)



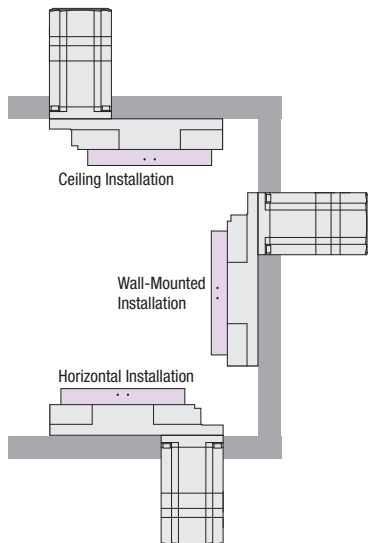
Installation Direction Example

The **DGII** Series can be installed horizontally, ceiling mounted or wall mounted, allowing for increased equipment design options.

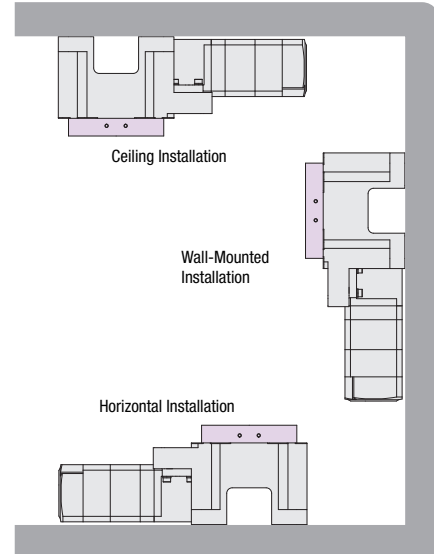
Note

A small amount of grease will occasionally seep out of the hollow rotary actuator. If a grease leak would cause a contamination issue near the machine, either perform routine inspections, or install protective equipment such as an oil sump.

Motor Vertical Mounting



Motor Horizontal Mounting







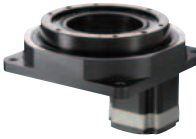







Product Lineup

αSTEP AZ Series Equipped Hollow Rotary Actuators DGM Series

AC Single-Phase 100-120 VAC, Single-Phase/
Three-Phase 200-240 VAC

DC 24/48 VDC

Actuators										Driver						
Product Name, Frame Size, Power Supply Input	Electromagnetic Brake	Diameter of Hollow Section [mm (in.)]	Gear Ratio	Permissible Torque [N·m (lb-in)]			Permissible Axial Load [N (lb.)]				Lost Motion [arcmin] (degrees)	Backlash [arcmin] (degrees)	Angular Transmission Accuracy [arcmin] (degrees)	Repetitive Positioning Accuracy [arcsec] (degrees)	Type	
				20	40	60	80	500	1000	2000						3000
DGM60 60 mm (2.36 in.) 	Not equipped	φ28 (φ1.10)	18	0.9 (7.9)	2 (17.7)			100 (23)				4 (0.067°)	Non-Backlash	±15 (±0.004°)	EtherNet/IP™ Compatible Type EtherNet/IP 	
	Equipped			4.5 (39)	10 (88)			500 (112)								
DGM85R 85 mm (3.35 in.) 	Not equipped	φ33 (φ1.3)	18	4.5 (39)	10 (88)			500 (112)				2 (0.033°)	Non-Backlash	±15 (±0.004°)	EtherCAT Drive Profile Compatible Type EtherCAT 	
	Equipped			12 (106)	50 (440)			2000 (450)								
DGM130R 130 mm (5.12 in.) 	Not equipped	φ62 (φ2.44)	18	12 (106)	50 (440)			2000 (450)				3 (0.05°)	Non-Backlash	±15 (±0.004°)	Built-in Controller Type FLEX 	
	Equipped			50 (440)	100 (880)			4000 (900)								
DGM200R 200 mm (7.87 in.) 	Not equipped	φ100 (φ3.94)	18	50 (440)	100 (880)			4000 (900)				2 (0.033°)	Non-Backlash	±15 (±0.004°)	Pulse Input Type with RS-485 Communication 	
	Equipped			3 (26)	10 (88)			500 (112)								
DGB85 85 mm (3.35 in.)  ● No electromagnetic brake types for DC input	Not equipped	φ33 (φ1.3)	18	3 (26)	10 (88)			500 (112)				6 (0.1)	6 (0.1)	±30 (±0.008°)	Network Compatible multi Axis Driver SSCNET III H MECHATROLINK EtherCAT 	
				Equipped	4.5 (39)	10 (88)			500 (112)							
				Equipped	9 (79)	10 (88)			500 (112)							
	Equipped			3 (26)	10 (88)			500 (112)								
				4.5 (39)	10 (88)			500 (112)								
				9 (79)	10 (88)			500 (112)								
DGB130 130 mm (5.12 in.)  ● No electromagnetic brake types for DC input	Not equipped	φ62 (φ2.44)	18	12 (106)	50 (440)			2000 (450)				6 (0.1)	6 (0.1)	±30 (±0.008°)	Compact Type (Built-in Controller Type) Modbus (RTU) 	
				Equipped	24 (212)	50 (440)			2000 (450)							
					12 (106)	50 (440)			2000 (450)							
	24 (212)				50 (440)			2000 (450)								

*For product details, please refer to the Oriental Motor website.

Features

Motors AC Input

Motors DC Input

EtherNet/IP Compatible Drivers

EtherCAT Compatible Drivers

Built-in Controller Drivers

Pulse Input Drivers with RS-485

Pulse Input Drivers

Network Multi-Axis Drivers

Compact Drivers

Cables / Accessories

Actuators AZ Series Equipped

Stepper
Motors
AZ

Product Number Code (AC Input)

● Hollow Rotary Actuators

◇ Motor Vertical Mounting

DGM 130 R-AZ A C R

① ② ③ ④ ⑤ ⑥ ⑦

Cylinders
EAC

Compact
Cylinders
DR

Rack &
Pinion
L

Gripper
EH

Rotary
Actuators
DGII

◇ Motor Horizontal Mounting

DGB 85 R 12-AZ A C R

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

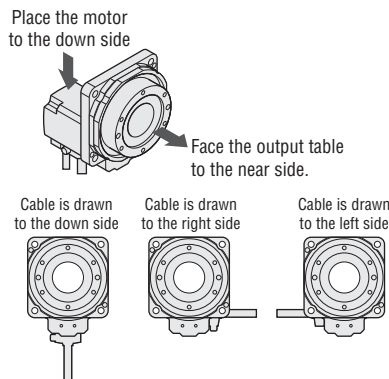
● Drivers

AZD-C D

① ② ③

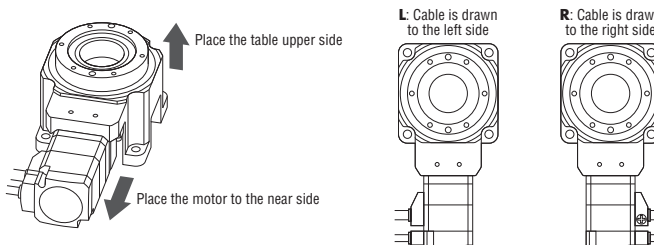
①	Series Name	DGM: DGII Series Actuator
②	Frame Size	85 : 85 mm (3.35 in.) 130 : 130 mm (5.12 in.) 200 : 200 mm (7.87 in.)
③	Type of Output Table Supporting Bearing	R : Cross-Roller Bearing
④	Equipped Motor	AZ: AZ Series
⑤	Motor Type	A : Standard M : Electromagnetic Brake Type
⑥	Power Supply Input	C : AC Power Supply Input
⑦	Cable Outlet Direction*	Blank: Down Side R : Right Side L : Left Side

*The cable outlet direction represents the cable direction for when the output table is faced to the near side and the motor is placed to the down side.



①	Series Name	DGB: DGII Series
②	Frame Size	85 : 85 mm (3.35 in.) 130 : 130 mm (5.12 in.)
③	Output Table Supporting Bearing Type	R : Cross-Roller Bearing
④	Gear Ratio	
⑤	Equipped Motor	AZ: AZ Series
⑥	Motor Type	A : Standard M : Electromagnetic Brake Type
⑦	Power Supply Input	C : AC Power Supply Input
⑧	Cable Outlet Direction*	R : Right Side L : Left Side

*The cable outlet direction represents the cable direction for when the output table is placed to the up side and the motor is faced to the near side.



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	EP : EtherNet/IP Compatible Driver ED : EtherCAT Drive Profile Compatible Driver D : Built-in Controller Type X : Pulse Input Type with RS-485 Communication Blank: Pulse Input Type

● Connection Cable Set/Flexible Connection Cable Set

CC 050 V Z F B

- ① ② ③ ④ ⑤ ⑥

①		CC: Cable
②	Length	005: 0.5 m (1.64 ft.) 010: 1 m (3.3 ft.) 015: 1.5 m (4.9 ft.) 020: 2 m (6.6 ft.) 025: 2.5 m (8.2 ft.) 030: 3 m (9.8 ft.) 040: 4 m (13.1 ft.) 050: 5 m (16.4 ft.) 070: 7 m (23.0 ft.) 100: 10 m (32.8 ft.) 150: 15 m (49.2 ft.) 200: 20 m (65.6 ft.)
③	Reference Number	
④	Applicable Model	Z: AZ Series
⑤	Cable Type	F: Connection Cable Set R: Flexible Connection Cable Set
⑥	Description	Blank: Without Electromagnetic Brake B: Electromagnetic Brake Type

Product Line and List Price (AC Input)

● Hollow Rotary Actuators

◇ Motor Vertical Mounting

● Standard

Frame Size	Product Name	List Price
85 mm (3.35 in.)	DGM85R-AZAC	\$1,752.00
	DGM130R-AZAC	\$1,978.00
130 mm (5.12 in.)	DGM130R-AZACR	*
	DGM130R-AZACL	
200 mm (7.87 in.)	DGM200R-AZAC	\$2,362.00
	DGM200R-AZACR DGM200R-AZACL	*



*Contact our sales office for price.

◇ Motor Horizontal Mounting

● Standard

Frame Size	Product Name	List Price
85 mm (3.35 in.)	DGB85R12-AZACR	\$1,955.00
	DGB85R12-AZACL	
	DGB85R18-AZACR	
	DGB85R18-AZACL	
	DGB85R36-AZACR DGB85R36-AZACL	
130 mm (5.12 in.)	DGB130R18-AZACR	\$2,185.00
	DGB130R18-AZACL	
	DGB130R36-AZACR DGB130R36-AZACL	



● Drivers

◇ EtherNet/IP™ Compatible Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AEP	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CEP	\$656.00



◇ Built-in Controller Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AD	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CD	\$588.00



◇ Pulse Input Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-A	\$531.00
Single-Phase/Three-Phase 200-240 VAC	AZD-C	\$531.00



● With Electromagnetic Brake

Frame Size	Product Name	List Price
85 mm (3.35 in.)	DGM85R-AZMC	\$1,910.00
130 mm (5.12 in.)	DGM130R-AZMC	\$2,181.00
200 mm (7.87 in.)	DGM200R-AZMC	\$2,588.00



● With Electromagnetic Brake

Frame Size	Product Name	List Price
85 mm (3.35 in.)	DGB85R12-AZACR	\$1,955.00
	DGB85R12-AZACL	
	DGB85R18-AZACR	
	DGB85R18-AZACL	
	DGB85R36-AZACR DGB85R36-AZACL	
130 mm (5.12 in.)	DGB130R18-AZACR	\$2,185.00
	DGB130R18-AZACL	
	DGB130R36-AZACR DGB130R36-AZACL	



◇ EtherCAT Drive Profile Compatible Type

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AED	\$656.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CED	\$656.00



◇ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
Single-Phase 100-120 VAC	AZD-AX	\$588.00
Single-Phase/Three-Phase 200-240 VAC	AZD-CX	\$588.00



- Features
- Motors AC Input
- Motors DC Input
- EtherNet/IP Compatible Drivers
- EtherCAT Compatible Drivers
- Built-in Controller Drivers
- Pulse Input Drivers with RS-485
- Pulse Input Drivers
- Network Multi-Axis Drivers
- Compact Drivers
- Cables / Accessories
- Actuators AZ Series Equipped

● Connection Cable Sets/Flexible Connection Cable Sets

Use a flexible connection cable set if the cable will be bent repeatedly.

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 Motor/Encoder



Product Line	Length L [m (ft.)]	Product Name	List Price
Connection Cable Sets	0.5 (1.64)	CC005VZF	\$35.00
	1 (3.3)	CC010VZF	\$35.00
	1.5 (4.9)	CC015VZF	\$43.00
	2 (6.6)	CC020VZF	\$50.00
	2.5 (8.2)	CC025VZF	\$56.00
	3 (9.8)	CC030VZF	\$62.00
	4 (13.1)	CC040VZF	\$97.00
	5 (16.4)	CC050VZF	\$110.00
	7 (23.0)	CC070VZF	\$136.00
	10 (32.8)	CC100VZF	\$176.00
	15 (49.2)	CC150VZF	\$243.00
20 (65.6)	CC200VZF	\$310.00	

Product Line	Length L [m (ft.)]	Product Name	List Price
Flexible Connection Cable Sets	0.5 (1.64)	CC005VZR	\$84.00
	1 (3.3)	CC010VZR	\$84.00
	1.5 (4.9)	CC015VZR	\$91.00
	2 (6.6)	CC020VZR	\$99.00
	2.5 (8.2)	CC025VZR	\$105.00
	3 (9.8)	CC030VZR	\$111.00
	4 (13.1)	CC040VZR	\$125.00
	5 (16.4)	CC050VZR	\$141.00
	7 (23.0)	CC070VZR	\$180.00
	10 (32.8)	CC100VZR	\$236.00
	15 (49.2)	CC150VZR	\$332.00
20 (65.6)	CC200VZR	\$426.00	

◇ For Motor/Encoder/Electromagnetic Brake



Product Line	Length L [m (ft.)]	Product Name	List Price
Connection Cable Sets	0.5 (1.64)	CC005VZFB	\$52.00
	1 (3.3)	CC010VZFB	\$52.00
	1.5 (4.9)	CC015VZFB	\$60.00
	2 (6.6)	CC020VZFB	\$67.00
	2.5 (8.2)	CC025VZFB	\$74.00
	3 (9.8)	CC030VZFB	\$82.00
	4 (13.1)	CC040VZFB	\$120.00
	5 (16.4)	CC050VZFB	\$135.00
	7 (23.0)	CC070VZFB	\$166.00
	10 (32.8)	CC100VZFB	\$213.00
	15 (49.2)	CC150VZFB	\$293.00
20 (65.6)	CC200VZFB	\$372.00	

Product Line	Length L [m (ft.)]	Product Name	List Price
Flexible Connection Cable Sets	0.5 (1.64)	CC005VZRB	\$114.00
	1 (3.3)	CC010VZRB	\$114.00
	1.5 (4.9)	CC015VZRB	\$123.00
	2 (6.6)	CC020VZRB	\$134.00
	2.5 (8.2)	CC025VZRB	\$142.00
	3 (9.8)	CC030VZRB	\$151.00
	4 (13.1)	CC040VZRB	\$170.00
	5 (16.4)	CC050VZRB	\$191.00
	7 (23.0)	CC070VZRB	\$240.00
	10 (32.8)	CC100VZRB	\$311.00
	15 (49.2)	CC150VZRB	\$432.00
20 (65.6)	CC200VZRB	\$551.00	

Product Number Code (DC Input)

● Hollow Rotary Actuators

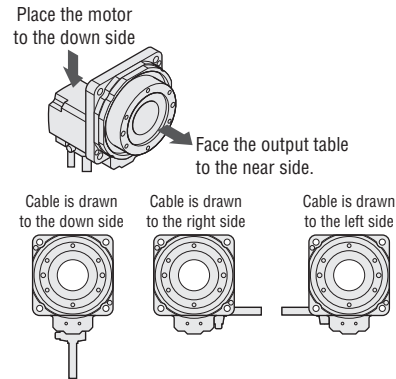
◇ Motor Vertical Mounting

DGM 130 R-AZ A K R

① ② ③ ④ ⑤ ⑥ ⑦

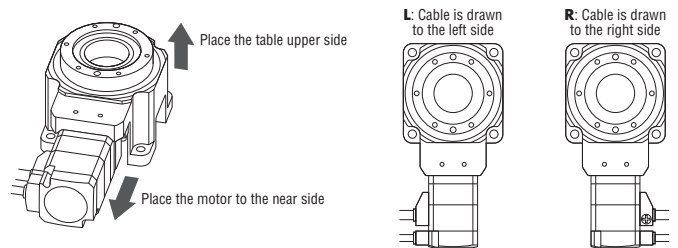
①	Series Name	DGM: DGII Series
②	Frame Size	60: 60 mm (2.36 in.) 85: 85 mm (3.35 in.) 130: 130 mm (5.12 in.)
③	Output Table Supporting Bearing Type	R: Cross-Roller Bearing Blank: Deep-Groove Ball Bearing
④	Equipped Motor	AZ: AZ Series
⑤	Motor Type	A: Standard M: Electromagnetic Brake Type
⑥	Power Supply Input	K: DC Power Supply Input Blank: Down Side
⑦	Cable Outlet Direction*	R: Right Side L: Left Side

*The cable outlet direction represents the cable direction for when the output table is faced to the near side and the motor is placed to the down side.



①	Series Name	DGB: DGII Series
②	Frame size	85: 85 mm (3.35 in.) 130: 130 mm (5.12 in.)
③	Output Table Supporting Bearing Type	R: Cross-Roller Bearing
④	Gear Ratio	
⑤	Equipped Motor	AZ: AZ Series
⑥	Motor Type	A: Standard
⑦	Power Supply Input	K: DC Power Supply Input
⑧	Cable Outlet Direction*	R: Right Side L: Left Side

*The cable outlet direction represents the cable direction for when the output table is placed to the up side and the motor is faced to the near side.



①	Driver Type	AZD: AZ Series Driver
②	Power Supply Input	K: 24 VDC/48 VDC
③	Type	EP: EtherNet/IP Compatible Driver ED: EtherCAT Drive Profile Compatible Driver D: Built-in Controller Type X: Pulse Input Type with RS-485 Communication Blank: Pulse Input Type RD: Compact Driver

◇ Motor Horizontal Mounting

DGB 85 R 12-AZ A K R

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

● Drivers

AZD - K D

① ② ③

Features

Motors
AC Input

Motors
DC Input

Ethernet/IP
Compatible
Drivers

EtherCAT
Compatible
Drivers

Built-in
Controller
Drivers

Pulse Input
Drivers with
RS-485

Pulse Input
Drivers

Network
Multi-Axis
Drivers

Compact
Drivers

Cables /
Accessories

Actuators
AZ Series
Equipped

- Stepper Motors
AZ
- Linear Slides
EzS
- Cylinders
EAC
- Compact Cylinders
DR
- Rack & Pinion
L
- Gripper
EH
- Rotary Actuators
DGI

● Connection Cable Set / Flexible Connection Cable Set

CC 050 V Z □ F B 2

- ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①		CC: Cable
②	Length	005: 0.5 m (1.64 ft.) 010: 1 m (3.3 ft.) 015: 1.5 m (4.9 ft.) 020: 2 m (6.6 ft.) 025: 2.5 m (8.2 ft.) 030: 3 m (9.8 ft.) 040: 4 m (13.1 ft.) 050: 5 m (16.4 ft.) 070: 7 m (23.0 ft.) 100: 10 m (32.8 ft.) 150: 15 m (49.2 ft.) 200: 20 m (65.6 ft.)
③	Reference Number	
④	Applicable Model	Z: AZ Series
⑤	Reference Number	Blank: DGM85, DGM130 2: DGM60
⑥	Cable Type	F: Connection Cable Set R: Flexible Connection Cable Set
⑦	Description	Blank: Without Electromagnetic Brake B: Electromagnetic Brake Type
⑧	Power Supply Cable	2: DC Power Supply Input

■ Product Line and List Price (DC Input)

● Hollow Rotary Actuators

◇ Motor Vertical Mounting

● Standard

Frame Size	Product Name	List Price
60mm (2.36 in.)	DGM60-AZAK	\$977.00
85mm (3.35 in.)	DGM85R-AZAK	\$1,752.00
130mm (5.12 in.)	DGM130R-AZAK	\$1,978.00
	DGM130R-AZAKR	
	DGM130R-AZAKL	



● With Electromagnetic Brake

Frame Size	Product Name	List Price
85 mm (3.35 in.)	DGM85R-AZMK	\$1,910.00
130 mm (5.12 in.)	DGM130R-AZMK	\$2,181.00
	DGM130R-AZMKR	
	DGM130R-AZMKL	



◇ Motor Horizontal Mounting

● Standard

Frame Size	Product Name	List Price
85 mm (3.35 in.)	DGB85R12-AZAKR	\$1,955.00
	DGB85R12-AZAKL	
	DGB85R18-AZAKR	
	DGB85R18-AZAKL	
	DGB85R36-AZAKR	
130 mm (5.12 in.)	DGB130R18-AZAKR	\$2,185.00
	DGB130R18-AZAKL	
	DGB130R36-AZAKR	
	DGB130R36-AZAKL	



● Driver

◇ EtherNet/IP™ Compatible Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KEP	\$506.00



◇ EtherCAT Drive Profile Compatible Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KED	\$506.00



◇ Built-in Controller Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KD	\$441.00



◇ Pulse Input Type with RS-485 Communication

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KX	\$441.00



◇ Pulse Input Type

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-K	\$384.00



◇ Compact Driver

Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KRD	\$391.00



◇ Network Compatible Multi-Axis Drivers

Network Type	Power Supply Input	Product Name	No. of Axes	List Price
SSCNET III/H	24/48 VDC	AZD2A-KS3	2	\$825.00
		AZD3A-KS3	3	\$1,093.00
		AZD4A-KS3	4	\$1,320.00
MECHATROLINK-III	24/48 VDC	AZD2A-KM3	2	\$825.00
		AZD3A-KM3	3	\$1,093.00
		AZD4A-KM3	4	\$1,320.00
EtherCAT Drive Profile	24/48 VDC	AZD2A-KED	2	\$825.00
		AZD3A-KED	3	\$1,093.00
		AZD4A-KED	4	\$1,320.00



● **Connection Cable Sets/Flexible Connection Cable Sets**

Use a flexible connection cable set if the cable will be bent repeatedly.

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 Frame Size 60 mm (2.36 in.)]



◇ **For Motor / Encoder**

Product Line	Length L m (ft.)	Product Name	List Price
Connection Cable Sets	0.5 (1.64)	CC005VZ2F2	\$35.00
	1 (3.3)	CC010VZ2F2	\$35.00
	1.5 (4.9)	CC015VZ2F2	\$43.00
	2 (6.6)	CC020VZ2F2	\$50.00
	2.5 (8.2)	CC025VZ2F2	\$56.00
	3 (9.8)	CC030VZ2F2	\$62.00
	4 (13.1)	CC040VZ2F2	\$97.00
	5 (16.4)	CC050VZ2F2	\$110.00
	7 (23.0)	CC070VZ2F2	\$136.00
	10 (32.8)	CC100VZ2F2	\$176.00
	15 (49.2)	CC150VZ2F2	\$243.00
	20 (65.6)	CC200VZ2F2	\$310.00

Product Line	Length L m (ft.)	Product Name	List Price
Flexible Connection Cable Sets	0.5 (1.64)	CC005VZ2R2	\$84.00
	1 (3.3)	CC010VZ2R2	\$84.00
	1.5 (4.9)	CC015VZ2R2	\$91.00
	2 (6.6)	CC020VZ2R2	\$99.00
	2.5 (8.2)	CC025VZ2R2	\$105.00
	3 (9.8)	CC030VZ2R2	\$111.00
	4 (13.1)	CC040VZ2R2	\$125.00
	5 (16.4)	CC050VZ2R2	\$141.00
	7 (23.0)	CC070VZ2R2	\$180.00
	10 (32.8)	CC100VZ2R2	\$236.00
	15 (49.2)	CC150VZ2R2	\$332.00
	20 (65.6)	CC200VZ2R2	\$426.00

[For Frame Size 85 mm (3.35 in.) and 130 mm (5.12 in.)]



◇ **For Motor / Encoder**

Product Line	Length L m (ft.)	Product Name	List Price
Connection Cable Sets	0.5 (1.64)	CC005VZF2	\$35.00
	1 (3.3)	CC010VZF2	\$35.00
	1.5 (4.9)	CC015VZF2	\$43.00
	2 (6.6)	CC020VZF2	\$50.00
	2.5 (8.2)	CC025VZF2	\$56.00
	3 (9.8)	CC030VZF2	\$62.00
	4 (13.1)	CC040VZF2	\$97.00
	5 (16.4)	CC050VZF2	\$110.00
	7 (23.0)	CC070VZF2	\$136.00
	10 (32.8)	CC100VZF2	\$176.00
	15 (49.2)	CC150VZF2	\$243.00
	20 (65.6)	CC200VZF2	\$310.00

Product Line	Length L m (ft.)	Product Name	List Price
Flexible Connection Cable Sets	0.5 (1.64)	CC005VZR2	\$84.00
	1 (3.3)	CC010VZR2	\$84.00
	1.5 (4.9)	CC015VZR2	\$91.00
	2 (6.6)	CC020VZR2	\$99.00
	2.5 (8.2)	CC025VZR2	\$105.00
	3 (9.8)	CC030VZR2	\$111.00
	4 (13.1)	CC040VZR2	\$125.00
	5 (16.4)	CC050VZR2	\$141.00
	7 (23.0)	CC070VZR2	\$180.00
	10 (32.8)	CC100VZR2	\$236.00
	15 (49.2)	CC150VZR2	\$332.00
	20 (65.6)	CC200VZR2	\$426.00

◇ **For Motor / Encoder / Electromagnetic Brake**



Product Line	Length L m (ft.)	Product Name	List Price
Connection Cable Sets	0.5 (1.64)	CC005VZFB2	\$52.00
	1 (3.3)	CC010VZFB2	\$52.00
	1.5 (4.9)	CC015VZFB2	\$60.00
	2 (6.6)	CC020VZFB2	\$67.00
	2.5 (8.2)	CC025VZFB2	\$74.00
	3 (9.8)	CC030VZFB2	\$82.00
	4 (13.1)	CC040VZFB2	\$120.00
	5 (16.4)	CC050VZFB2	\$135.00
	7 (23.0)	CC070VZFB2	\$166.00
	10 (32.8)	CC100VZFB2	\$213.00
	15 (49.2)	CC150VZFB2	\$293.00
	20 (65.6)	CC200VZFB2	\$372.00

Product Line	Length L m (ft.)	Product Name	List Price
Flexible Connection Cable Sets	0.5 (1.64)	CC005VZRB2	\$114.00
	1 (3.3)	CC010VZRB2	\$114.00
	1.5 (4.9)	CC015VZRB2	\$123.00
	2 (6.6)	CC020VZRB2	\$134.00
	2.5 (8.2)	CC025VZRB2	\$142.00
	3 (9.8)	CC030VZRB2	\$151.00
	4 (13.1)	CC040VZRB2	\$170.00
	5 (16.4)	CC050VZRB2	\$191.00
	7 (23.0)	CC070VZRB2	\$240.00
	10 (32.8)	CC100VZRB2	\$311.00
	15 (49.2)	CC150VZRB2	\$432.00
	20 (65.6)	CC200VZRB2	\$551.00

Features
 Motors AC Input
 Motors DC Input
 Ethernet/IP Compatible Drivers
 EtherCAT Compatible Drivers
 Built-in Controller Drivers
 Pulse Input Drivers with RS-485
 Pulse Input Drivers
 Network Multi-Axis Drivers
 Compact Drivers
 Cables / Accessories
 Actuators AZ Series Equipped

Stepper
Motors
AZ

Installation Pedestal for DGII Series

Linear
Slides
EZS

This is a convenient installation pedestal that allows the **DGII** Series to use direct drive motors. Whether it is an application that requires height, or the equipment must be installed away from a surface, the base expands the possibilities for use and installation.

Cylinders
EAC



Compact
Cylinders
DR

Product Line and List Price

Product Name	Applicable DGII Series Products		List Price
	Type	Product Name	
MDG60B	Standard	DGM60-AZA	\$192.00
MDG85A2	Standard	DGM85R-AZA	\$234.00
MDG85B2	Standard	DGM85R-AZA	\$261.00
	Electromagnetic Brake	DGM85R-AZM	
MDG130A2	Standard	DGM130R-AZA	\$316.00
MDG130B2	Standard	DGM130R-AZA	\$371.00
	Electromagnetic Brake	DGM130R-AZM	
MDG200A	Standard	DGM200R-AZA	\$536.00
MDG200B	Standard	DGM200R-AZA	\$618.00
	Electromagnetic Brake	DGM200R-AZM	

● The applicable product name contains characters that can be used to identify the product.

Rack &
Pinion
L

Gripper
EH

Rotary
Actuators
DGII

Home Sensor Set

A home sensor set, which consists of a photomicro sensor, cable type connector, sensor installation bracket, shield plate and mounting screws, is provided to facilitate easy return-to-home operation.



PADG-SB

Product Line and List Price

Product Name	Sensor Output	Applicable Products	List Price
PADG-SB	NPN	DGM85R-AZ DGM130R-AZ	\$107.00
PADG-SBY	PNP	DGM200R-AZ	\$115.00

Features	Motors AC Input	Motors DC Input	Ethernet/IP Compatible Drivers	EtherCAT Compatible Drivers	Built-in Controller Drivers	Pulse Input Drivers with RS-485	Pulse Input Drivers	Network Multi-Axis Drivers	Compact Drivers	Cables / Accessories	Actuators AZ Series Equipped
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MEXE02: A Tool to Make All Data Setting Easy

● Support Software **MEXE02** (Free Download)

Fundamental settings, such as editing operation data and parameter settings, can be performed easily from a computer.

Sequence control is possible, which allows for easy system configuration without a host sequence.

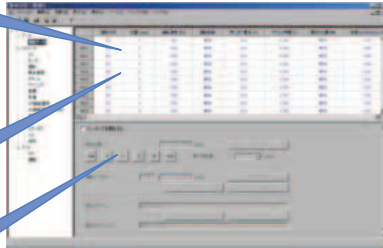
Easy to use, even for people with no electrical design experience



This is a function that allows the traveling amount, speed, etc. to be displayed and input in the designated units

Simplified program with simple sequence function

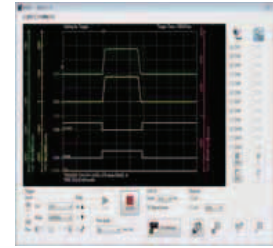
Settings can be copied and backed up



Easy to understand and easy to use
Intuitive usability



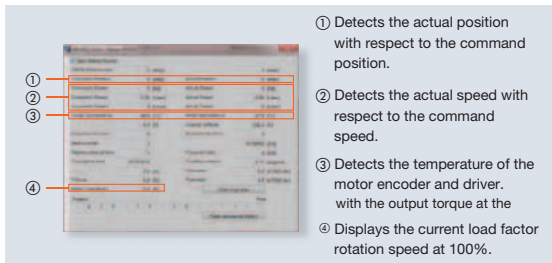
Teaching can be performed from a PC



Built-in waveform monitor that can check signal input status

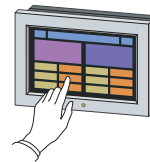
● Status Monitoring/ Preventative Maintenance


Besides operating speed, motor and driver temperature, load factor, and cumulative rotations, etc., status can also be monitored from the start of use. The desired signals can be output for these items, allowing for efficient maintenance.



● Touch Screen (Commercially Available)

Used with stored data drivers, operating data can be directly overwritten from the touch screen, normally used for monitoring. This is useful for monitoring operation status and when settings must be changed due to set-up changes.



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