

Stepper Motors

Stepper Motor and Driver Packages DC Input

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared *α*STEP Absolute AZ

0.36°/Geared *α*STEP AR

0.72°/Geared RKII

DC Input Motor & Driver

0.36°/Geared *α*STEP Absolute AZ

0.36°/Geared *α*STEP AR

1.8°/0.72°/0.36°/Geared CVK

0.72°/0.36°/Geared CRK

1.8°/Geared RBK

Motor Only /Driver Only

1.8°/0.9° PKP/PK

Geared PKP/PK

0.72°/0.36° PKP/PK

Driver

Accessories

- 0.36°/Geared *α*STEP Absolute AZ Series
- 0.36°/Geared *α*STEP AR Series
- 1.8°/0.72°/0.36°/Geared CVK Series
- 0.72°/0.36°/Geared CRK Series
- 1.8°/Geared RBK Series

	Page
0.36°/Geared <i>α</i> STEP Absolute AZ Series	A-170
0.36°/Geared <i>α</i> STEP AR Series	A-212
1.8°/0.72°/0.36°/Geared CVK Series	A-268
0.72°/0.36°/Geared CRK Series	A-304
1.8°/Geared RBK Series	A-346

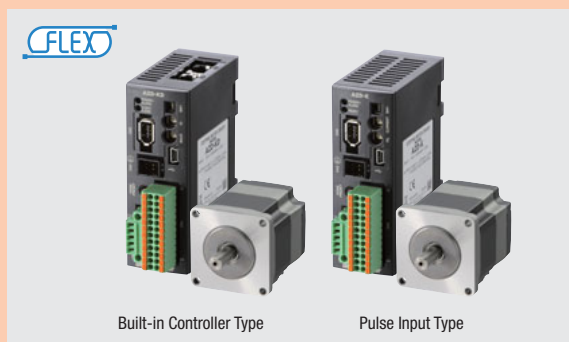
0.36°/Geared Stepper Motor and Driver Package **αSTEP****AZ Series** Battery-Free, Absolute Sensor Equipped

<Additional Information>

- Technical reference → Page H-1
- Regulations & Standards → Page I-2



● For detailed information about regulations and standards, please see the Oriental Motor website.



By incorporating the newly developed Absolute Sensor, absolute-type positioning is now possible without a battery. The driver is a highly functional, compact DC power supply input type. Advanced positioning is possible at affordable prices.

- Incorporates the Newly Developed Absolute Sensor
- No External Sensors Required
- Reduced Reset Time
- No Battery Required
- High Reliability
- Energy Savings
- 2 Driver Types Available
 - Built-in Controller Type **FLEX**/Pulse Input Type
- Easy Operation through the Use of the **MEXE02** Data Setting Software
- Starting from €540.00

FLEX What is FLEX?

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

These products enable simple connection and simple control, shortening the total lead time for system construction.

Features

Advanced Technology at Affordable Prices

Oriental Motor has developed and patented a compact, low-cost, battery-free mechanical type absolute sensors.

The **AZ** Series can contribute to improved productivity and cost reductions, and is available at affordable prices.

- List Price starting from €540.00
(The price includes motor and driver)



Newly Developed Absolute Sensor

● Mechanical-Type Sensor

A mechanical sensor composed of multiple gears is employed. Positioning information is detected by recognizing the angle of the individual gears. As a result, it does not require a battery.

● Multiple-Rotation Absolute System

Absolute position detection is possible with ± 900 rotations (1800 rotations) of the motor shaft from the home position.

* ± 450 rotations (900 rotations) for products of with 20 mm or 28 mm frame sizes.

● Home Setting Method

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** data setting software or by using an external input signal.



Home Preset Button

No External Sensors Required

With the use of the absolute system, external sensors such as the home sensor and the limit sensor are not needed.

● 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

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.

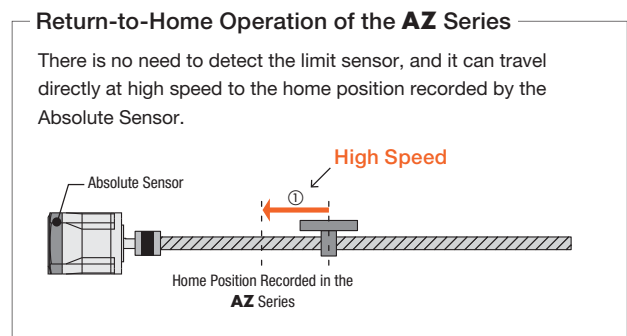
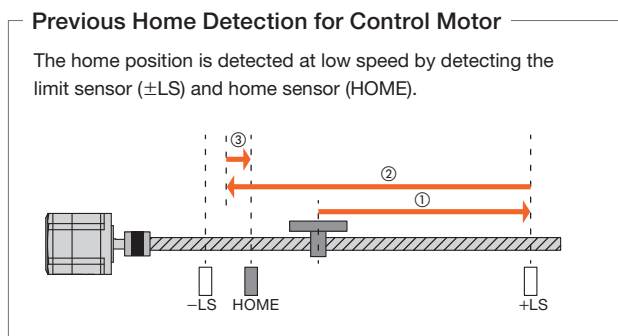
● Improved Return-to-Home Accuracy

Home position accuracy is increased because the return-to-home operation 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.

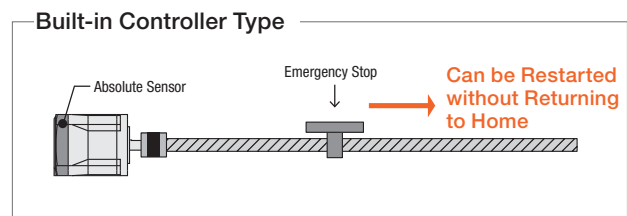
Shortened Reset Time ① High Speed Return-to-Home

Because return-to-home is possible without using an external 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.



Shortened Reset Time ② Return-to-Home is Not Necessary

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 blackout.



Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
 α STEP
Absolute
AZ

0.36°/Geared
 α STEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
 α STEP
Absolute
AZ

0.36°/Geared
 α STEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

No Battery Required

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 replacing, 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 as 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.

● Because the positioning information is stored in the Absolute Sensor, the home position must be reset if the motor is replaced.

High Reliability

High reliability is provided by using a control method unique to Oriental Motor that combines the merits of both open loop control and closed loop control.

● 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.

● 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.

● No Tuning Required

Because it is normally operated with open loop control, positioning is still possible without gain tuning even when the load fluctuates due to the use of a belt mechanism, cam or chain drive, etc.

● Holding the Stop Position

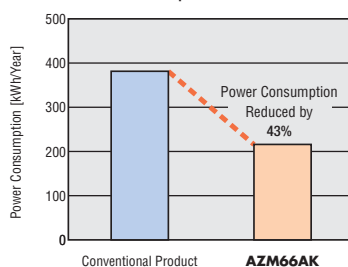
During positioning, the motor stops with its own holding force without hunting. Because of this, it is ideal for applications where the low rigidity of the mechanism requires absence of vibration upon stopping.

Energy Savings

Energy savings are realized with a high efficiency motor.

● 43% 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)
- Power Supply Voltage: 24 VDC

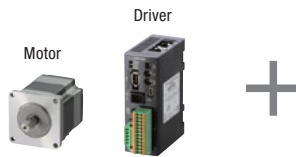
2 Driver Types Available Depending on the System Configuration

2 Types of **AZ** Series drivers are available, depending on the master control system in use.

● Built-in Controller Type **FLEX**

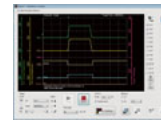
With this type, the operating data is set in the driver, which can then be selected and executed from the host system. Host system connection and control are performed with ① I/O, ② Modbus (RTU)/RS-485 or ③ FA network.

Basic Setting (Factory Setting)

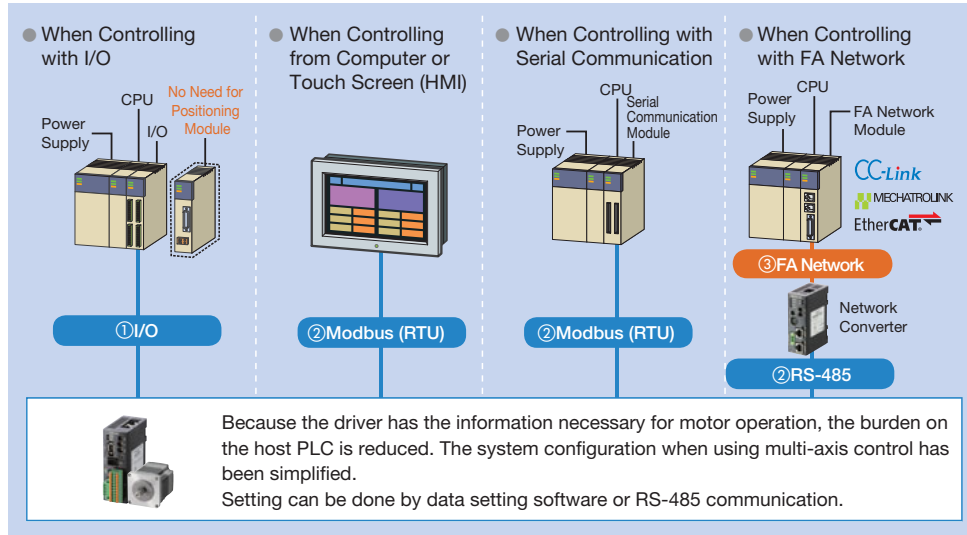


Setting Operating Data and Changing Parameters

Data Setting Software **MEXE02**



● Setting using RS-485 communication is also possible.

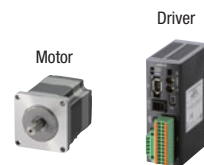


By using a network converter (sold separately), EtherCAT, CC-link or MECHATROLINK communication are possible. Operating data, parameter settings and operation commands can be input via various communication types. Its ability to accommodate the network being used results in a shortened design time.

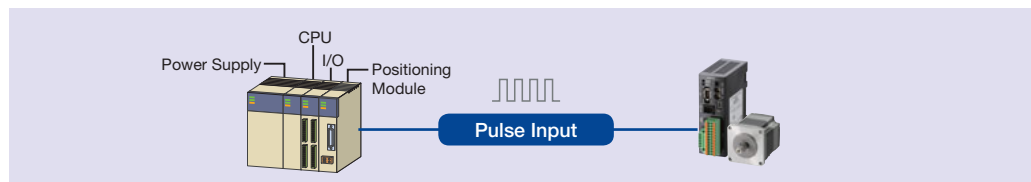
● Pulse Input Type

This type executes operations by inputting pulses into the driver. It controls the motor using a positioning module (pulse generator).

Basic Setting (Factory setting)



By using the **MEXE02** data setting software, the alarm history can be displayed and a variety of monitoring can be customized according to the customer's needs.



● The **MEXE02** data setting software can be downloaded from the Oriental Motor website.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

0.72°/Geared
ARKII

DC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Easy Operation through the Use of the MEXE02 Data Setting Software

● Easy Setting and Easy Driving

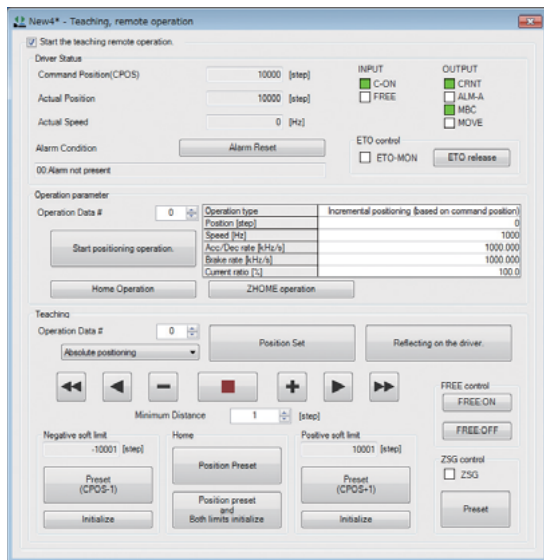
◇ Unit Setting Wizard

This is a function that allows the traveling amount, speed, etc. to be displayed and input in the designated units. It can be easily set by following the directions displayed on the screen.



◇ Teaching and Remote Operation

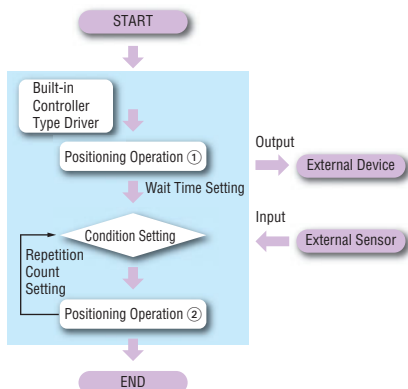
Data setting software can be used to easily perform the home setting or also drive the motor. This can be used for teaching or test drive purposes.



◇ Simplified Program with Easy Sequence Function (Available only on the built-in controller type)

For built-in controller types, you can simplify the sequence controlled program by reading output signal to control other devices or external input signal of sensors.

- Number of Positioning Operating Data Sets (Up to 256)
- General-Purpose I/O Signal Counts (Input 9, Output 6)
- Communication I/O Signal Counts (Input 16, Output 16)

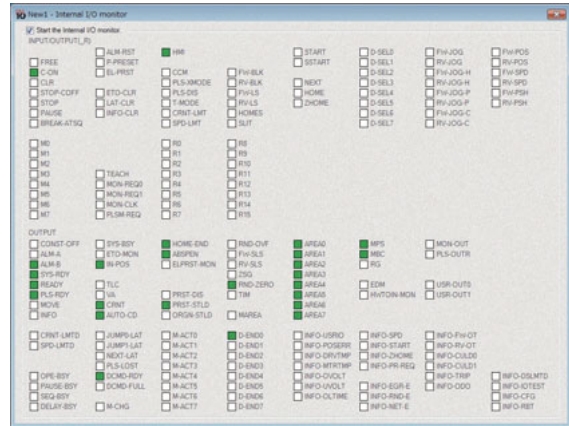


- Multi-monitoring enables remote operation and teaching while monitoring.

● Monitoring Function

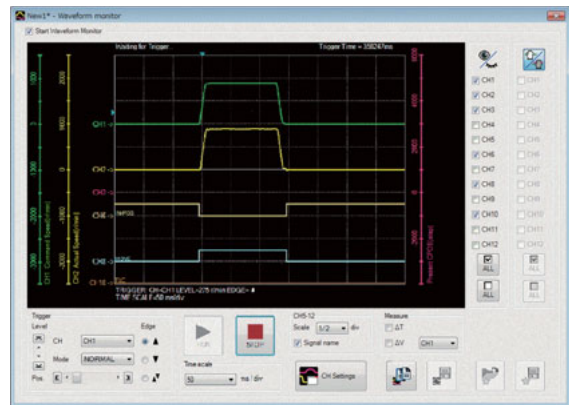
◇ I/O Monitoring

The status of the I/O wired to the driver can be checked on a computer. This can be used for post-wiring I/O checks or I/O checks during operation.



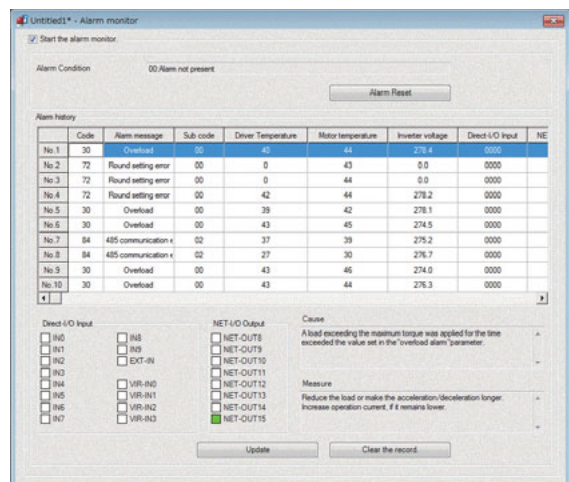
◇ Waveform Monitoring

The operating status of the motor (such as command speed and feedback speed), can be checked by an oscilloscope-like image. This can be used for equipment start-up and adjustment.








◇ Alarm Monitoring

When an abnormality occurs, the details of the abnormality and the solution can be checked. Because the solution can be checked, it is possible to respond to abnormalities quickly.




Product Line of Motors




Types and Features of Standard and Geared Motors

Type	Features	Permissible Torque and Max. Instantaneous Torque [N·m]	Backlash [arcmin (degrees)]	Basic Resolution [deg/step]	Output Shaft Speed [r/min]
Standard Type 	<ul style="list-style-type: none"> Basic motor of the AZ Series 	Maximum Holding Torque 2	—	0.36	6,000
Low backlash	TS Geared Type (Spur Gear Mechanism) 	Permissible Torque / Max. Instantaneous Torque 6 / 10	10 (0.17°)	0.012	833
	PS Geared Type (Planetary Gear Mechanism) 	<ul style="list-style-type: none"> High permissible/ max. instantaneous torque A wide variety of gear ratios for selecting the desired step angle Center shaft Gear ratio: 5, 7.2, 10, 25, 36, 50 	Permissible Torque / Max. Instantaneous Torque 8 / 20	7 (0.12°)	0.0072
Non-backlash	HPG Geared Type (Harmonic planetary) 	Permissible Torque / Max. Instantaneous Torque 9 / 15	3 (0.05°)	0.024	800
	Harmonic Geared Type (Harmonic drive) 	<ul style="list-style-type: none"> High positioning accuracy High permissible/ max. instantaneous torque High gear ratio, high resolution Center shaft Gear ratio: 50, 100 	Permissible Torque / Max. Instantaneous Torque 10 / 36	0	0.0036

Note

- Please use the above values as reference to see 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.

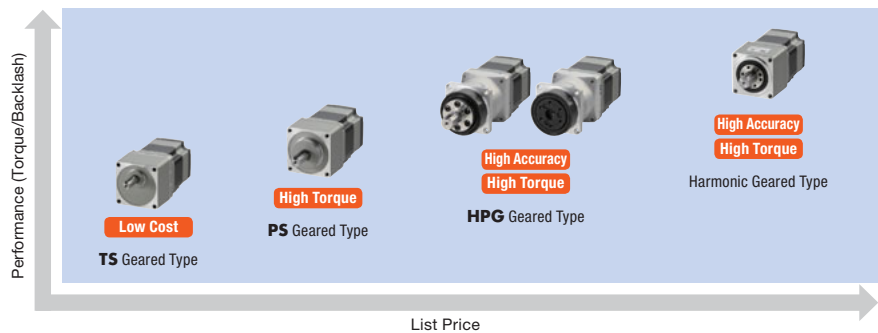
Driver and Motor Product Line

Driver Type	Motor Type	Frame Size	Electromagnetic Brake Type	Power Supply Input
Built-in Controller Type  	Standard Type	20 mm*1, 28 mm*1 42 mm, 60 mm	●	24 VDC/48 VDC
	Pulse Input Type 	TS Geared Type PS Geared Type HPG Geared Type Harmonic Geared Type	42 mm*2 60 mm	

*1 Only for 24 VDC

*2 HPG Geared Type is 40 mm

Oriental Motor offers geared motors, motor and gearhead pre-assembled. Based on torque, accuracy (backlash) and list price, the optimal type can be selected from the various geared motors.



Overview, Product Series

AC Input Motor & Driver

0.36°/Geared **Q_{STEP} Absolute AZ**

0.36°/Geared **Q_{STEP} AR**

0.72°/Geared **RKII**

DC Input Motor & Driver

0.36°/Geared **Q_{STEP} Absolute AZ**

0.36°/Geared **Q_{STEP} AR**

1.8°/0.72°/0.36° **CVK**

0.72°/0.36°/Geared **CRK**

1.8°/Geared **RBK**

Motor Only /Driver Only

1.8°/0.9° **PKP/PK**




Geared **PKP/PK**

0.72°/0.36° **PKP/PK**

Driver

Accessories

Product Line of Actuators Equipped with AZ Series

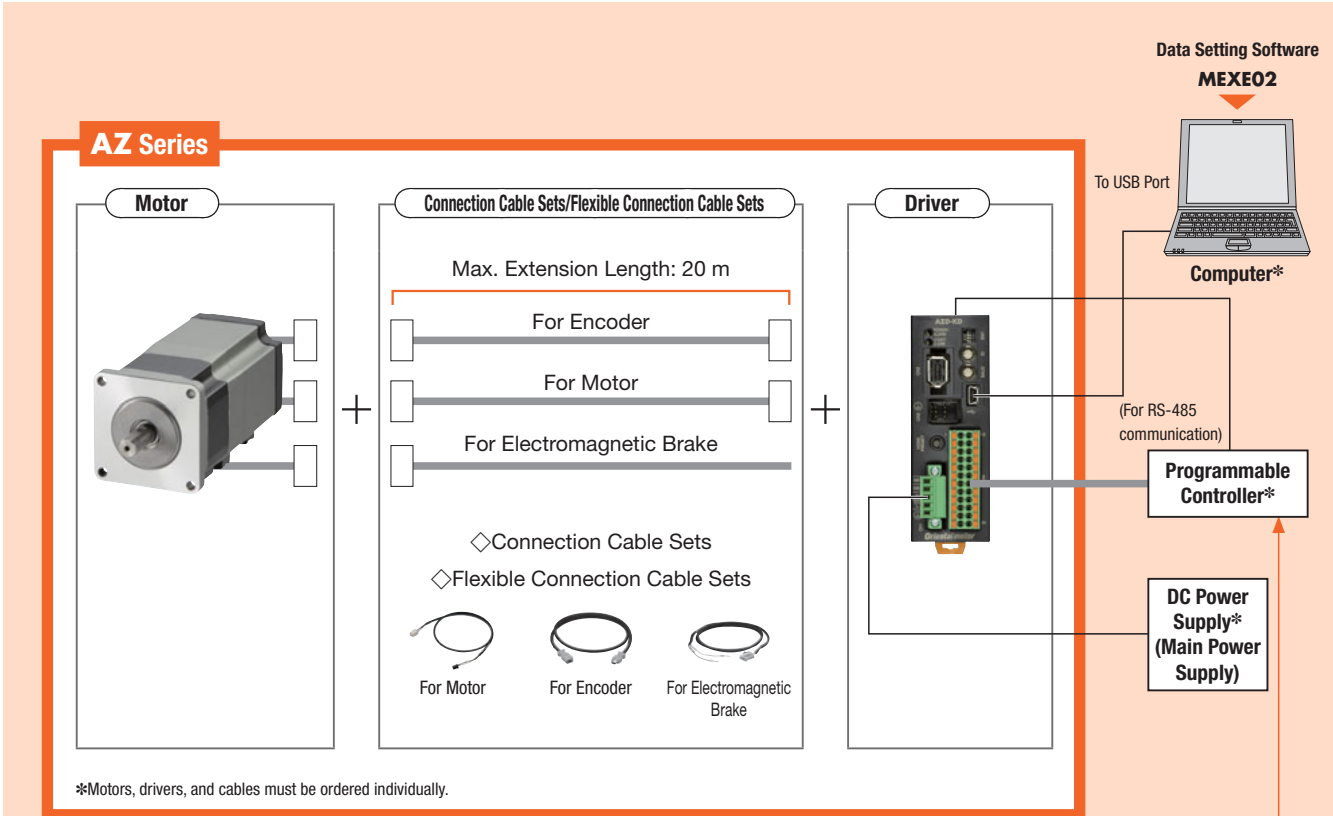
Series Name	Feature	Main Specifications	
<p>αSTEP AZ Series Equipped Electric Linear Slide EAS Series Electric Cylinder EAC Series</p> 	<ul style="list-style-type: none"> · High speed driving with light load or heavy load is possible. · Speed fluctuation is minimal even at a low speed (1.25 mm/s). · Compact size and high rigidity 	<p>EAS Series</p> <ul style="list-style-type: none"> · Stroke: 50~850 mm · Maximum Speed: 600 mm/s · Maximum Transportable Mass: 60 kg (Horizontal), 30 kg (Vertical) 	<p>EAC Series</p> <ul style="list-style-type: none"> · Stroke: 50~300 mm · Maximum Speed: 600 mm/s · Maximum Transportable Mass: 60 kg (Horizontal), 30 kg (Vertical)
<p>αSTEP AZ Series Equipped Electric Linear Slide EZS Series</p> 	<ul style="list-style-type: none"> · Compact size and high rigidity · Simple dust-resistant structure · For Cleanroom Use (ISO Standard clean degree of Class 3) 	<ul style="list-style-type: none"> · Stroke: 50~850 mm · Maximum Speed: 600 mm/s · Maximum Transportable Mass: 60 kg (Horizontal), 30 kg (Vertical) 	
<p>αSTEP AZ Series Equipped Compact linear actuators DRS2 Series</p> 	<ul style="list-style-type: none"> · The product integrates stepper motors with ball screws. · Perfect for micro movement and high positioning accuracy 	<ul style="list-style-type: none"> · Stroke: 40 mm · Maximum Speed: 200 mm/s · Maximum Transportable Mass: 10 kg (Horizontal), 10 kg (Vertical) 	

System Configuration

Combination of Standard Type Motor with Electromagnetic Brake and Built-in Controller Type Driver

An example of a configuration using I/O control or RS-485 communication is shown below.

* Not supplied.



Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
*Q*STEP Absolute
AZ

0.36°/Geared
*Q*STEP
AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
*Q*STEP Absolute
AZ

0.36°/Geared
*Q*STEP
AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Accessories (Sold separately)



Motor Mounting Brackets
 → Page A-490



RS-485 Communication Cables
 → Page A-468



General-Purpose Cables for I/O Signals
 → Page A-468



For Motor



For Encoder



For Electromagnetic Brake

**Extension Cable Sets
 Flexible Extension Cable Sets**
 → Page A-466



MCV Coupling
 → Page A-482

Peripheral Products



Network Converter
 → Page F-10

Example of System Configuration

AZ Series

Motor	Driver	Connection Cable Sets
AZM66MK	AZD-KD	CC030VZFB2
€447.00	€360.00	€63.00

Accessory

Sold Separately		
Motor Mounting Bracket	Flexible Coupling	General-Purpose Cables for I/O Signals (1 m)
PAL2P-5	MCV251010	CC16D010B-1
€13.00	€53.00	€21.00

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

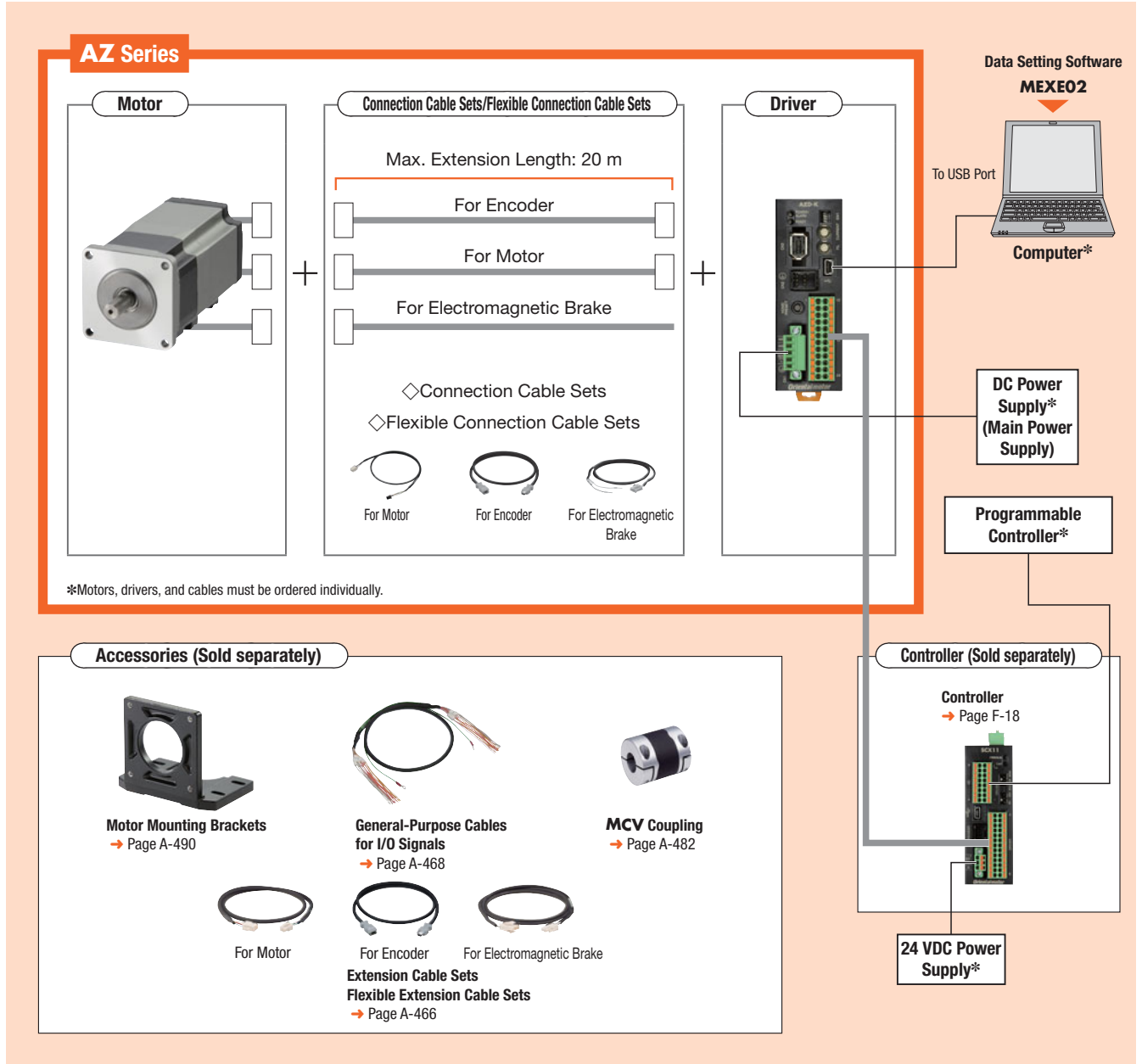
Note

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.

● Combination of Standard Type Motor with Electromagnetic Brake and Pulse Input Type Driver

An example of a single-axis system configuration with the **SCX11** controller is shown below.

* Not supplied.



● Example of System Configuration

AZ Series				
Motor	+	Driver	+	Connection Cable Sets
AZM66MK		AZD-K		CC030VZFB2
€447.00		€310.00		€63.00

Accessory			
Sold Separately			
Controller	Motor Mounting Brackets	Flexible Coupling	General-Purpose Cables for I/O Signals (1 m)
SCX11	PAL2P-5	MCV251010	CC16D010B-1
€215.00	€13.00	€53.00	€21.00

● 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.

Product Number

Motor

Standard Type

AZM 6 6 A K

① ② ③ ④ ⑤

TS, PS, HPG, Harmonic Geared Type

AZM 6 6 A K - HP 15 F

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

Driver

AZD - K D

① ② ③

Connection Cable Sets/Flexible Connection Cable Sets

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 2: 28 mm 4: 42 mm (HPG Geared Type is 40 mm) 6: 60 mm
③	Motor Case Length	
④	Configuration	A: Single Shaft M: With Electromagnetic Brake
⑤	Motor Specification	K: DC Power Supply Input
⑥	Geared Type	TS: TS Geared Type PS: PS Geared Type HP: HPG Geared Type HS: Harmonic Geared Type
⑦	Gear Ratio	
⑧	Output Shaft Type	HPG Geared Type Blank: Shaft Output F: Flange Output

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

①		CC: Cable
②	Length	005: 0.5 m 010: 1 m 015: 1.5 m 020: 2 m 025: 2.5 m 030: 3 m 040: 4 m 050: 5 m 070: 7 m 100: 10 m 150: 15 m 200: 20 m
③	Reference Number	
④	Applicable Models	Z: AZ Series
⑤	Reference Number	Blank: Frame Size 42 mm (HPG Geared Type is 40 mm), 60 mm 2: Frame Size 20 mm, 28 mm
⑥	Cable Type	F: Connection Cable Sets R: Flexible Connection Cable Sets
⑦	Electromagnetic Brake	Blank: Without Electromagnetic Brake B: With Electromagnetic Brake
⑧	Cable Specifications	2: DC Power Supply Input

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Product
Series

AC Input
Motor &
Driver

0.36°/Geared
QSTEP
Absolute
AZ

0.36°/Geared
QSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
QSTEP
Absolute
AZ

0.36°/Geared
QSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Product Line

● **Motor**

◇ **Standard Type**



Frame Size	Product Name	List Price
20 mm	AZM14AK	€230.00
	AZM15AK	€230.00
28 mm	AZM24AK	€230.00
	AZM26AK	€230.00
42 mm	AZM46AK	€246.00
60 mm	AZM66AK	€290.00
	AZM69AK	€295.00

◇ **Standard Type with Electromagnetic Brake**



Frame Size	Product Name	List Price
42 mm	AZM46MK	€368.00
60 mm	AZM66MK	€447.00
	AZM69MK	€452.00

◇ **TS Geared Type**



Frame Size	Product Name	List Price
42 mm	AZM46AK-TS3.6	€341.00
	AZM46AK-TS7.2	€341.00
	AZM46AK-TS10	€351.00
	AZM46AK-TS20	€351.00
	AZM46AK-TS30	€351.00
60 mm	AZM66AK-TS3.6	€400.00
	AZM66AK-TS7.2	€400.00
	AZM66AK-TS10	€410.00
	AZM66AK-TS20	€410.00
	AZM66AK-TS30	€410.00

◇ **TS Geared Type with Electromagnetic Brake**



Frame Size	Product Name	List Price
42 mm	AZM46MK-TS3.6	€463.00
	AZM46MK-TS7.2	€463.00
	AZM46MK-TS10	€473.00
	AZM46MK-TS20	€473.00
	AZM46MK-TS30	€473.00
60 mm	AZM66MK-TS3.6	€557.00
	AZM66MK-TS7.2	€557.00
	AZM66MK-TS10	€567.00
	AZM66MK-TS20	€567.00
	AZM66MK-TS30	€567.00

◇ **PS Geared Type**



Frame Size	Product Name	List Price
42 mm	AZM46AK-PS5	€413.00
	AZM46AK-PS7.2	€413.00
	AZM46AK-PS10	€413.00
	AZM46AK-PS25	€450.00
	AZM46AK-PS36	€450.00
	AZM46AK-PS50	€450.00
60 mm	AZM66AK-PS5	€494.00
	AZM66AK-PS7.2	€494.00
	AZM66AK-PS10	€494.00
	AZM66AK-PS25	€546.00
	AZM66AK-PS36	€546.00
	AZM66AK-PS50	€546.00

◇ **PS Geared Type with Electromagnetic Brake**

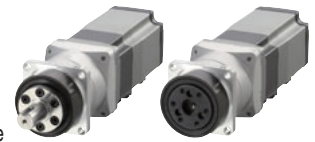


Frame Size	Product Name	List Price
42 mm	AZM46MK-PS5	€535.00
	AZM46MK-PS7.2	€535.00
	AZM46MK-PS10	€535.00
	AZM46MK-PS25	€572.00
	AZM46MK-PS36	€572.00
	AZM46MK-PS50	€572.00
60 mm	AZM66MK-PS5	€651.00
	AZM66MK-PS7.2	€651.00
	AZM66MK-PS10	€651.00
	AZM66MK-PS25	€703.00
	AZM66MK-PS36	€703.00
	AZM66MK-PS50	€703.00



◇ HPG Geared Type

Frame Size	Product Name	List Price
40 mm	AZM46AK-HP5	€526.00
	AZM46AK-HP5F	€516.00
	AZM46AK-HP9	€526.00
	AZM46AK-HP9F	€516.00
60 mm	AZM66AK-HP5	€710.00
	AZM66AK-HP5F	€695.00
	AZM66AK-HP15	€835.00
	AZM66AK-HP15F	€820.00



◇ HPG Geared Type with Electromagnetic Brake

Frame Size	Product Name	List Price
40 mm	AZM46MK-HP5	€648.00
	AZM46MK-HP5F	€638.00
	AZM46MK-HP9	€648.00
	AZM46MK-HP9F	€638.00
60 mm	AZM66MK-HP5	€867.00
	AZM66MK-HP5F	€852.00
	AZM66MK-HP15	€992.00
	AZM66MK-HP15F	€977.00

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

◇ Harmonic Geared Type



Frame Size	Product Name	List Price
42 mm	AZM46AK-HS50	€701.00
	AZM46AK-HS100	€701.00
60 mm	AZM66AK-HS50	€945.00
	AZM66AK-HS100	€945.00

◇ Harmonic Geared Type with Electromagnetic Brake



Frame Size	Product Name	List Price
42 mm	AZM46MK-HS50	€823.00
	AZM46MK-HS100	€823.00
60 mm	AZM66MK-HS50	€1,102.00
	AZM66MK-HS100	€1,102.00

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

● Driver

◇ Built-in Controller Type



Power Supply Input	Product Name	List Price
24/48 VDC	AZD-KD	€360.00

◇ Pulse Input Type



Power supply input	Product Name	List Price
24/48 VDC	AZD-K	€310.00

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

● Connection Cable Sets/Flexible Connection Cable Sets

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



◇ Without Electromagnetic Brake

Product Line	Length L (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZ2F2	€29.00
	1	CC010VZ2F2	€29.00
	1.5	CC015VZ2F2	€33.00
	2	CC020VZ2F2	€38.00
	2.5	CC025VZ2F2	€43.00
	3	CC030VZ2F2	€48.00
	4	CC040VZ2F2	€75.00
	5	CC050VZ2F2	€84.00
	7	CC070VZ2F2	€104.00
	10	CC100VZ2F2	€135.00
	15	CC150VZ2F2	€187.00
20	CC200VZ2F2	€237.00	
Flexible Connection Cable Sets	0.5	CC005VZ2R2	€65.00
	1	CC010VZ2R2	€65.00
	1.5	CC015VZ2R2	€70.00
	2	CC020VZ2R2	€76.00
	2.5	CC025VZ2R2	€76.00
	3	CC030VZ2R2	€85.00
	4	CC040VZ2R2	€85.00
	5	CC050VZ2R2	€108.00
	7	CC070VZ2R2	€138.00
	10	CC100VZ2R2	€181.00
	15	CC150VZ2R2	€254.00
20	CC200VZ2R2	€326.00	

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

◇ Without Electromagnetic Brake



For Motor For Encoder

Product Line	Length L (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZF2	€29.00
	1	CC010VZF2	€29.00
	1.5	CC015VZF2	€33.00
	2	CC020VZF2	€38.00
	2.5	CC025VZF2	€43.00
	3	CC030VZF2	€48.00
	4	CC040VZF2	€75.00
	5	CC050VZF2	€84.00
	7	CC070VZF2	€104.00
	10	CC100VZF2	€135.00
	15	CC150VZF2	€187.00
20	CC200VZF2	€237.00	
Flexible Connection Cable Sets	0.5	CC005VZR2	€65.00
	1	CC010VZR2	€65.00
	1.5	CC015VZR2	€70.00
	2	CC020VZR2	€76.00
	2.5	CC025VZR2	€80.00
	3	CC030VZR2	€85.00
	4	CC040VZR2	€97.00
	5	CC050VZR2	€108.00
	7	CC070VZR2	€137.00
	10	CC100VZR2	€181.00
	15	CC150VZR2	€262.00
20	CC200VZR2	€326.00	

◇ Type with an Electromagnetic Brake



For Motor For Encoder For Electromagnetic Brake

Product Line	Length L (m)	Product Name	List Price
Connection Cable Sets	0.5	CC005VZFB2	€40.00
	1	CC010VZFB2	€40.00
	1.5	CC015VZFB2	€46.00
	2	CC020VZFB2	€52.00
	2.5	CC025VZFB2	€57.00
	3	CC030VZFB2	€63.00
	4	CC040VZFB2	€93.00
	5	CC050VZFB2	€103.00
	7	CC070VZFB2	€127.00
	10	CC100VZFB2	€163.00
	15	CC150VZFB2	€225.00
20	CC200VZFB2	€285.00	
Flexible Connection Cable Sets	0.5	CC005VZRB2	€87.00
	1	CC010VZRB2	€87.00
	1.5	CC015VZRB2	€95.00
	2	CC020VZRB2	€103.00
	2.5	CC025VZRB2	€109.00
	3	CC030VZRB2	€115.00
	4	CC040VZRB2	€131.00
	5	CC050VZRB2	€146.00
	7	CC070VZRB2	€184.00
	10	CC100VZRB2	€237.00
	15	CC150VZRB2	€331.00
20	CC200VZRB2	€422.00	

■ Included

● Motor

Type	Included	Parallel Key	Motor Installation Screw	Operating Manual
Standard	—	—	—	1 Copy
TS Geared	Frame Size 42 mm	—	—	
	Frame Size 60 mm	1 Piece	M4×60 P0.7 (4 Screws)	
PS Geared	—	1 Piece	—	
HPG Geared	Shaft Output	1 Piece	—	
	Flange Output	—	—	
Harmonic Geared	—	1 Piece	—	

● Driver

Type	Included	Connector	Operating Manual
Built-in Controller Type Pulse Input Type	—	• Connector for CN4 (1 Piece) • Connector for CN1 (1 Piece)	1 Copy

Standard Type Frame Size 20 mm, 28 mm

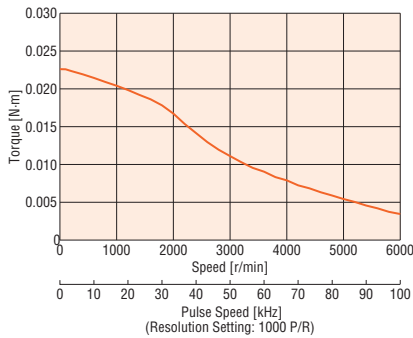
Specifications



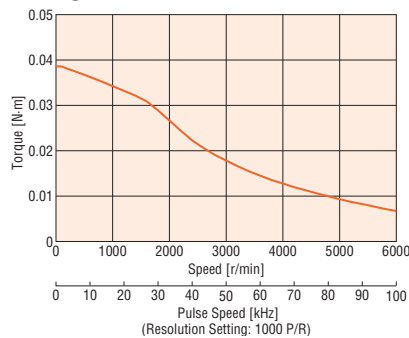
Motor Product Name	Single Shaft	AZM14AK	AZM15AK	AZM24AK	AZM26AK
Driver Product Name	Built-in Controller Type	AZD-KD			
	Pulse Input Type	AZD-K			
Maximum Holding Torque	N·m	0.02	0.036	0.095	0.19
Holding Torque at Motor Standstill	N·m	0.01	0.018	0.047	0.095
Rotor Inertia	J: kg·m ²	2.7×10^{-7}	3.9×10^{-7}	9.2×10^{-7}	17×10^{-7}
Resolution	Resolution Setting: 1000 P/R	0.36°/Pulse			
Power Supply Input	Voltage	24 VDC ± 5%			
	Input Current	A	0.5	0.6	1.6

Speed – Torque Characteristics (Reference values)

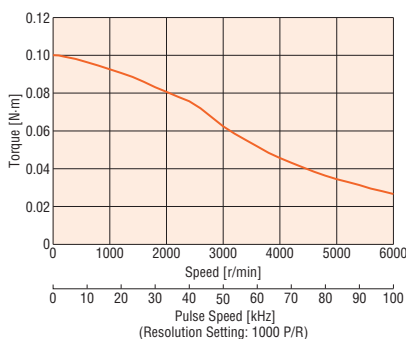
AZM14



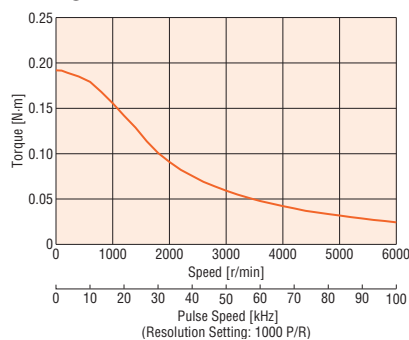
AZM15



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. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
AZSTEP
Absolute
AZ

0.36°/Geared
AZSTEP
AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
AZSTEP
Absolute
AZ

0.36°/Geared
AZSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Standard Type Frame Size 42 mm, 60 mm

Specifications



Motor Product Name	Single Shaft	AZM46AK	AZM66AK	AZM69AK
	With Electromagnetic Brake	AZM46MK	AZM66MK	AZM69MK
Driver Product Name	Built-in Controller Type	AZD-KD		
	Pulse Input Type	AZD-K		
Maximum Holding Torque	N·m	0.3	1	2
Holding Torque at Motor Standstill	Power ON	0.15	0.5	1
	Electromagnetic Brake	0.15	0.5	1
Rotor Inertia	J: kg·m ²	55×10 ⁻⁷ (71×10 ⁻⁷)*1	370×10 ⁻⁷ (530×10 ⁻⁷)*1	740×10 ⁻⁷ (900×10 ⁻⁷)*1
Resolution	Resolution Setting: 1000 P/R	0.36°/Pulse		
Power Supply Input	Voltage	24 VDC±5%*2/48 VDC±5%*3		
	Input Current	A	1.72 (1.8)*1	3.55 (3.8)*1

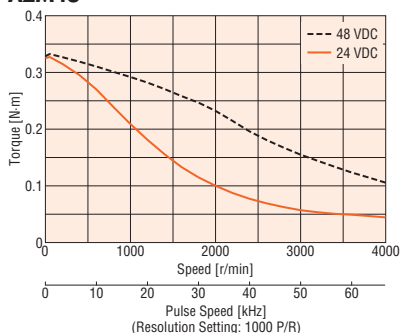
*1 The brackets () indicate the specifications for the product with an electromagnetic brake.

*2 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 using a cable.

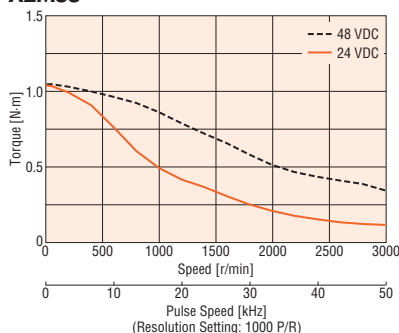
*3 When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque (excluding **AZM46**).

Speed – Torque Characteristics (Reference values)

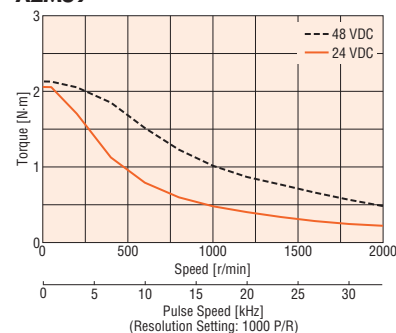
AZM46



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. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less.

TS Geared Type Frame Size 42 mm

Specifications



Motor Product Name	Single Shaft	AZM46AK-TS3.6	AZM46AK-TS7.2	AZM46AK-TS10	AZM46AK-TS20	AZM46AK-TS30	
	With Electromagnetic Brake	AZM46MK-TS3.6	AZM46MK-TS7.2	AZM46MK-TS10	AZM46MK-TS20	AZM46MK-TS30	
Driver Product Name	Built-in Controller Type	AZD-KD					
	Pulse Input Type	AZD-K					
Maximum Holding Torque	N·m	0.65	1.2	1.7	2	2.3	
Rotor Inertia	J: kg·m ²	55×10 ⁻⁷ (71×10 ⁻⁷)*1					
Gear Ratio		3.6	7.2	10	20	30	
Resolution	Resolution Setting: 1000P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	N·m	0.65	1.2	1.7	2	2.3	
Max. Instantaneous Torque*	N·m	0.85	1.6	2	*	3	
Holding Torque at	Power ON	N·m	0.54	1	1.5	1.8	2.3
Motor Standstill	Electromagnetic Brake	N·m	0.54	1	1.5	1.8	2.3
Speed Range	r/min	0~833	0~416	0~300	0~150	0~100	
Backlash	arcmin	45 (0.75)	25 (0.42°)			15 (0.25)	
Power Supply Input	Voltage	24 VDC±5%*2/48 VDC±5%					
	Input Current	1.72 (1.8)*1					

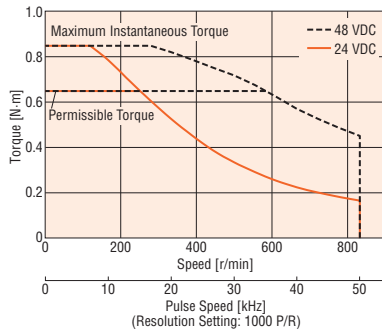
* For the geared motor output torque, refer to the speed-torque characteristics.

*1 The brackets () indicate the specifications for the product with an electromagnetic brake.

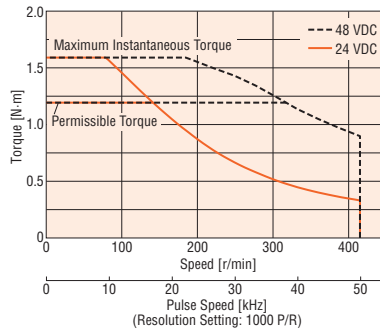
*2 For the type with an electromagnetic brake, a 24 VDC±4% specification applies if the wiring distance between the motor and driver is extended to 20 m using a cable.

Speed – Torque Characteristics (Reference values)

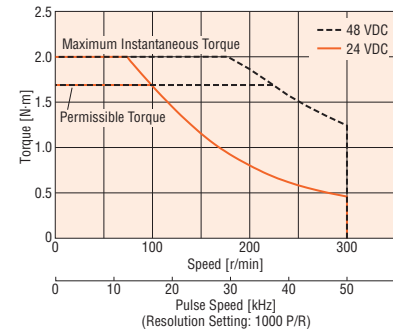
AZM46 Gear Ratio 3.6



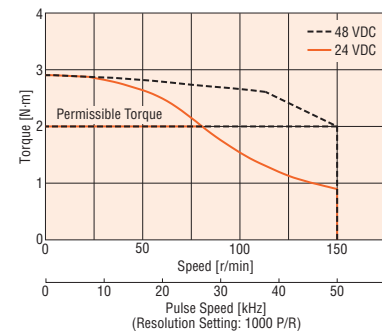
AZM46 Gear Ratio 7.2



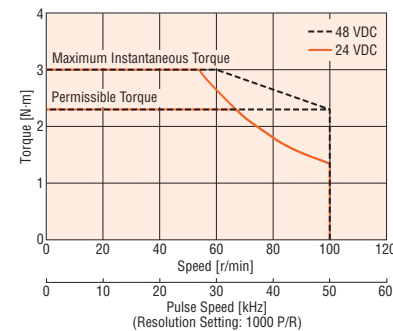
AZM46 Gear Ratio 10



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. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
AZSTEP Absolute
AZ

0.36°/Geared
AZSTEP
AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
AZSTEP Absolute
AZ

0.36°/Geared
AZSTEP
AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

TS Geared Type Frame Size 60 mm



Specifications

Motor Product Name	Single Shaft	AZM66AK-TS3.6	AZM66AK-TS7.2	AZM66AK-TS10	AZM66AK-TS20	AZM66AK-TS30
	With Electromagnetic Brake	AZM66MK-TS3.6	AZM66MK-TS7.2	AZM66MK-TS10	AZM66MK-TS20	AZM66MK-TS30
Driver Product Name	Built-in Controller Type	AZD-KD				
	Pulse Input Type	AZD-K				
Maximum Holding Torque	N·m	1.8	3	4	5	6
Rotor Inertia	J: kg·m ²	370×10 ⁻⁷ (530×10 ⁻⁷)*1				
Gear Ratio		3.6	7.2	10	20	30
Resolution	Resolution Setting: 1000P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Permissible Torque	N·m	1.8	3	4	5	6
Max. Instantaneous Torque*	N·m	*	*	*	8	10
Holding Torque at Power ON	N·m	1.1	2.2	3	5	6
Motor Standstill Electromagnetic Brake	N·m	1.1	2.2	3	5	6
Speed Range	r/min	0~833	0~416	0~300	0~150	0~100
Backlash	arcmin	35 (0.59)		15 (0.25)		10 (0.17)
Power Supply Input	Voltage	24 VDC±5%*2/48 VDC±5%*3				
	Input Current	3.55 (3.8)*1				

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

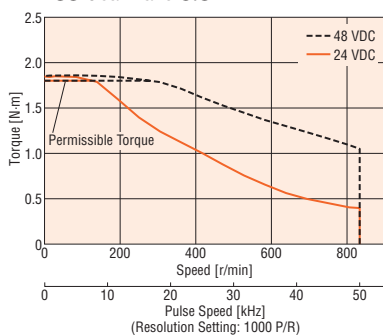
*1 The brackets () indicate the specifications for the product with an electromagnetic brake.

*2 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 using a cable.

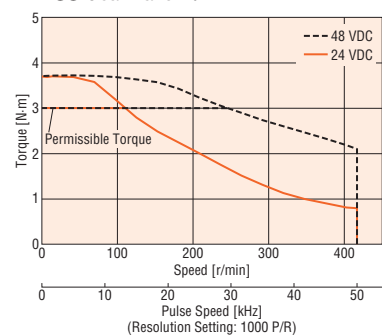
*3 When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque.

Speed – Torque Characteristics (Reference values)

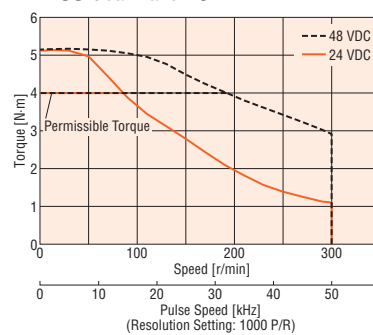
AZM66 Gear Ratio 3.6



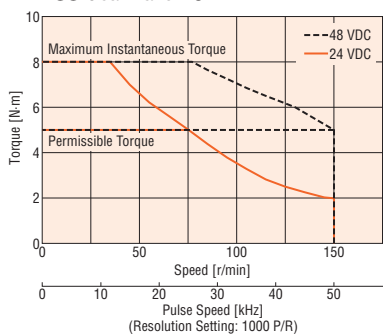
AZM66 Gear Ratio 7.2



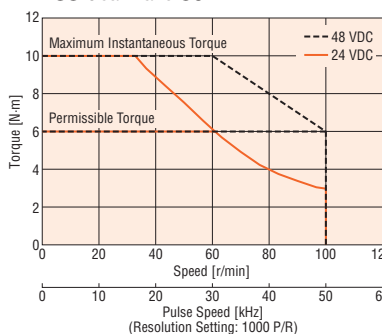
AZM66 Gear Ratio 10



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. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less.

PS Geared Type Frame Size 42 mm

Specifications



Motor Product Name	Single Shaft	AZM46AK-PS5	AZM46AK-PS7.2	AZM46AK-PS10	AZM46AK-PS25	AZM46AK-PS36	AZM46AK-PS50
With Electromagnetic Brake		AZM46MK-PS5	AZM46MK-PS7.2	AZM46MK-PS10	AZM46MK-PS25	AZM46MK-PS36	AZM46MK-PS50
Driver Product Name	Built-in Controller Type	AZD-KD					
	Pulse Input Type	AZD-K					
Maximum Holding Torque	N·m	1	1.5	1.5	2.5	3	3
Rotor Inertia	J: kg·m ²	55×10 ⁻⁷ (71×10 ⁻⁷)*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Resolution Setting: 1000P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	N·m	1	1.5	1.5	2.5	3	3
Max. Instantaneous Torque*	N·m	*	2	2	6	*	6
Holding Torque at	Power ON	N·m	0.75	1	1.5	2.5	3
Motor Standstill	Electromagnetic Brake	N·m	0.75	1	1.5	2.5	3
Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin	15 (0.25°)					
Power Supply Input	Voltage	24 VDC±5%*2/48 VDC±5%					
	Input Current	A					
		1.72 (1.8)*1					

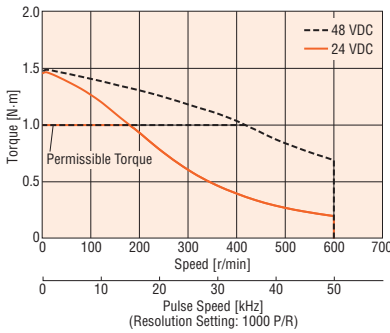
* For the geared motor output torque, refer to the speed-torque characteristics.

*1 The brackets () indicate the specifications for the product with an electromagnetic brake.

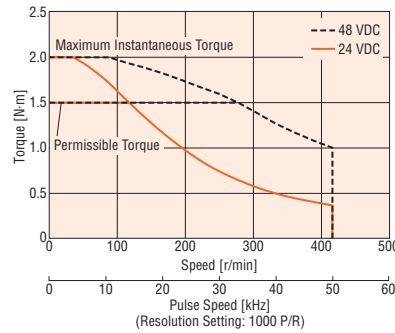
*2 For the type with an electromagnetic brake, a 24 VDC±4% specification applies if the wiring distance between the motor and driver is extended to 20 m using a cable.

Speed – Torque Characteristics (Reference values)

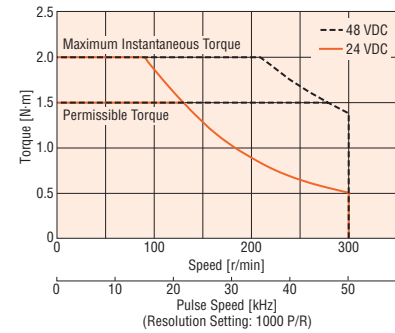
AZM46 Gear Ratio 5



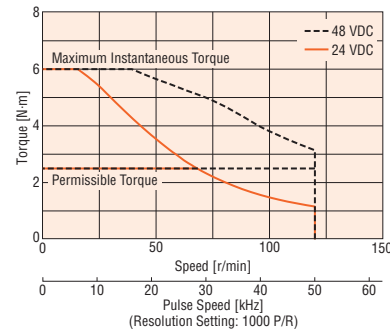
AZM46 Gear Ratio 7.2



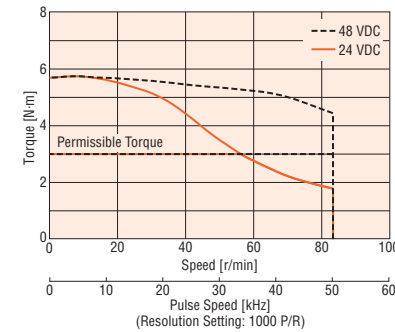
AZM46 Gear Ratio 10



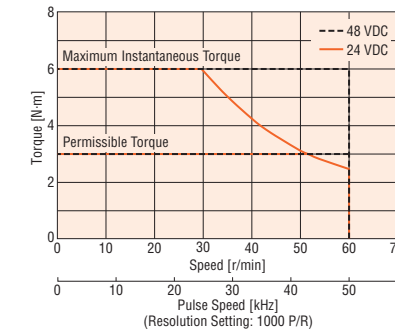
AZM46 Gear Ratio 25



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. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
AZSTEP Absolute
AZ

0.36°/Geared
AZSTEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
AZSTEP Absolute
AZ

0.36°/Geared
AZSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

PS Geared Type Frame Size 60 mm



Specifications

Motor Product Name	Single Shaft	AZM66AK-PS5	AZM66AK-PS7.2	AZM66AK-PS10	AZM66AK-PS25	AZM66AK-PS36	AZM66AK-PS50
	With Electromagnetic Brake	AZM66MK-PS5	AZM66MK-PS7.2	AZM66MK-PS10	AZM66MK-PS25	AZM66MK-PS36	AZM66MK-PS50
Driver Product Name	Built-in Controller Type	AZD-KD					
	Pulse Input Type	AZD-K					
Maximum Holding Torque	N·m	3.5	4	5	8		
Rotor Inertia	J: kg·m ²	370×10 ⁻⁷ (530×10 ⁻⁷)*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Resolution Setting: 1000P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	N·m	3.5	4	5	8		
Max. Instantaneous Torque*	N·m	*	*	*	*	*	20
Holding Torque at	Power ON	N·m	2.5	3.6	5	7.6	8
Motor Standstill	Electromagnetic Brake	N·m	2.5	3.6	5	7.6	8
Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin	7 (0.12°)			9 (0.15°)		
Power Supply Input	Voltage	24 VDC±5%*2/48 VDC±5%*3					
	Input Current	3.55 (3.8)*1					

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

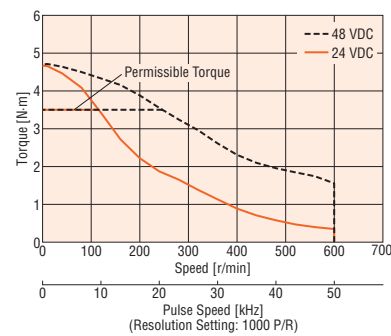
*1 The brackets () indicate the specifications for the product with an electromagnetic brake.

*2 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 using a cable.

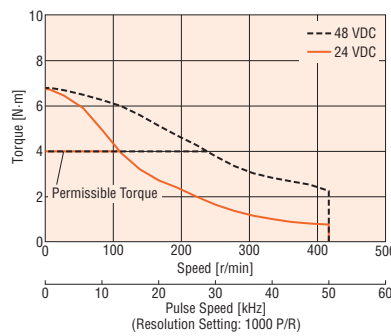
*3 When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque.

Speed – Torque Characteristics (Reference values)

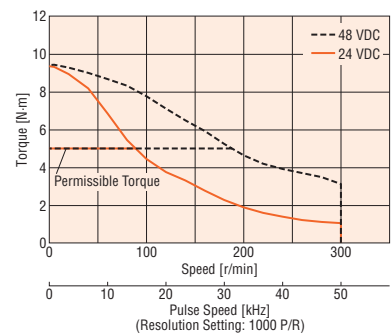
AZM66 Gear Ratio 5



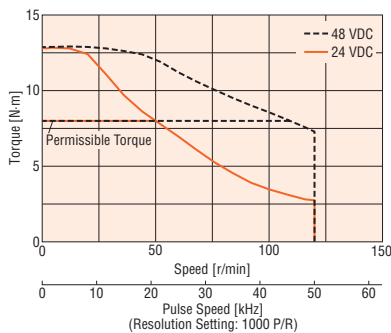
AZM66 Gear Ratio 7.2



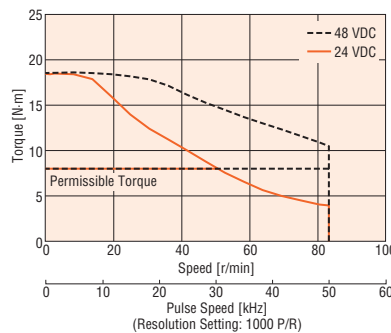
AZM66 Gear Ratio 10



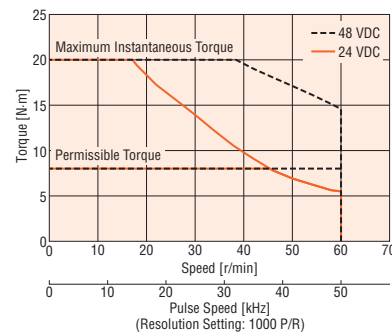
AZM66 Gear Ratio 25



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. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less.

HPG Geared Type Frame Size 40 mm, 60 mm

Specifications



Motor Product Name	Single Shaft	AZM46AK-HP5	AZM46AK-HP9	AZM66AK-HP5	AZM66AK-HP15
With Electromagnetic Brake		AZM46MK-HP5	AZM46MK-HP9	AZM66MK-HP5	AZM66MK-HP15
Driver Product Name	Built-in Controller Type	AZD-KD			
	Pulse Input Type	AZD-K			
Maximum Holding Torque	N·m	1.5	2.5	5	9
Rotor Inertia	J: kg·m ²	55×10^{-7} (71×10^{-7})* ¹		370×10^{-7} (530×10^{-7})* ¹	
Inertia* ²	J: kg·m ²	5.8×10^{-7} (4.2×10^{-7})	3.4×10^{-7} (2.9×10^{-7})	92×10^{-7} (86×10^{-7})	78×10^{-7} (77×10^{-7})
Gear Ratio		5	9	5	15
Resolution	Resolution Setting: 1000P/R	0.072°/Pulse	0.04°/Pulse	0.072°/Pulse	0.024°/Pulse
Permissible Torque*	N·m	*	2.5	*	9
Max. Instantaneous Torque*	N·m	*	*	*	*
Holding Torque at Power ON	N·m	0.75	1.35	2.5	7.5
Motor Standstill Electromagnetic Brake	N·m	0.75	1.35	2.5	7.5
Speed Range	r/min	0~800	0~444	0~600	0~200
Backlash	arcmin	3 (0.05°)			
Power Supply Input Voltage		24 VDC ± 5%* ⁴ /48 VDC ± 5%* ⁵			
Input Current	A	1.72 (1.8)* ¹		3.55 (3.8)* ¹	
Output Flange Surface Runout* ³	mm	0.02			0.04
Output Flange Inner Runout* ³	mm	0.03			0.04

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

● For the flange output type, **F** is specified where the box is located in the product name.

*¹ The brackets () indicate the specifications for the product with an electromagnetic brake.

*² The value is converted from the internal inertia of gear unit to motor shaft. () contain values for the flange output type.

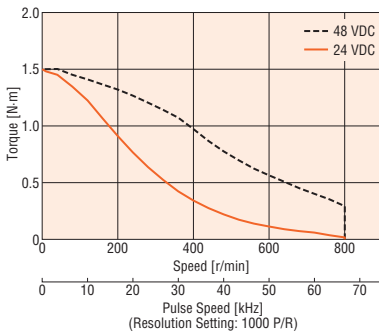
*³ Specifications for the flange output type.

*⁴ 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 using a cable.

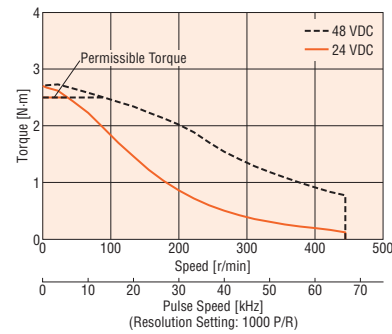
*⁵ When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque (excluding **AZM46**).

Speed – Torque Characteristics (Reference values)

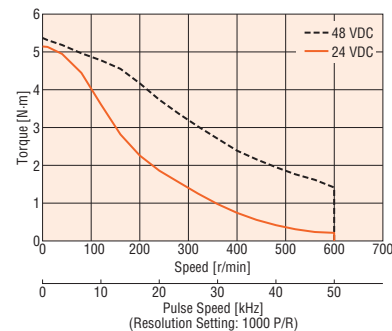
AZM46 Gear Ratio 5



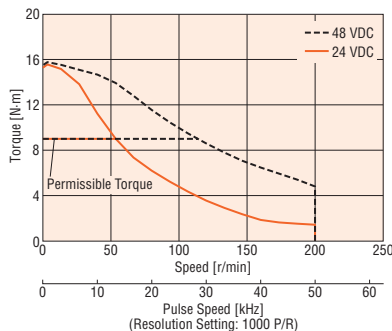
AZM46 Gear Ratio 9



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. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less.

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
Q_{STEP}
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/0.36°
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/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

Harmonic Geared Type Frame Size 42 mm, 60 mm



Specifications

Motor Product Name	Single Shaft	AZM46AK-HS50	AZM46AK-HS100	AZM66AK-HS50	AZM66AK-HS100
	With Electromagnetic Brake	AZM46MK-HS50	AZM46MK-HS100	AZM66MK-HS50	AZM66MK-HS100
Driver Product Name	Built-in Controller Type	AZD-KD			
	Pulse Input Type	AZD-K			
Maximum Holding Torque	N·m	3.5	5	7	10
Rotor Inertia	J: kg·m ²	72×10^{-7} (88×10^{-7})* ¹		405×10^{-7} (565×10^{-7})* ¹	
Gear Ratio		50	100	50	100
Resolution	Resolution Setting: 1000P/R	0.0072°/Pulse	0.0036°/Pulse	0.0072°/Pulse	0.0036°/Pulse
Permissible Torque	N·m	3.5	5	7	10
Max. Instantaneous Torque*	N·m	8.3	11	*	36
Holding Torque at Power ON	N·m	3.5	5	7	10
Motor Standstill Electromagnetic Brake	N·m	3.5	5	7	10
Speed Range	r/min	0~70	0~35	0~60	0~30
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)
Power Supply Input	Voltage	24 VDC±5%* ² /48 VDC±5%* ³			
	Input Current	A	1.72 (1.8)* ¹		3.55 (3.8)* ¹

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

*¹ The brackets () indicate the specifications for the product with an electromagnetic brake.

*² 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 using a cable.

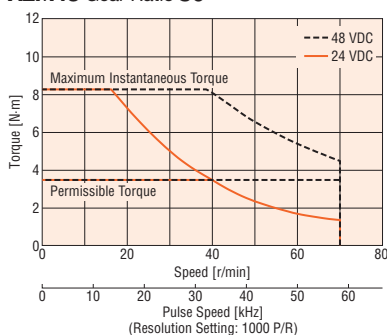
*³ When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque (excluding **AZM46**).

Note

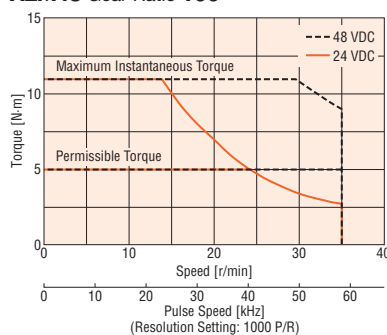
● The rotor inertia represents a sum of the inertia of the harmonic gear converted to motor shaft values.

Speed – Torque Characteristics (Reference values)

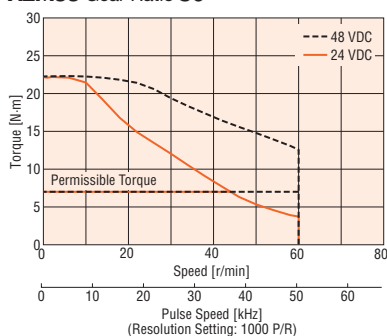
AZM46 Gear Ratio 50



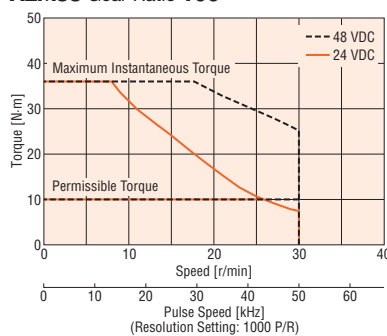
AZM46 Gear Ratio 100



AZM66 Gear Ratio 50



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. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less.

Driver Specifications

Driver Type		Built-in Controller Type	Pulse Input Type
Driver Product Name		AZD-KD	AZD-K
I/O Function	Max. Input Pulse Frequency	—	Line driver output by programmable controller: 1 MHz (When the pulse duty is 50%) Open-collector output by programmable controller: 250 kHz (When the pulse duty is 50%) Negative Logic Pulse Input (Initial value)
	Number of Positioning Data Sets	256 Points	256 Points*
	Direct Input	10 Points	6 Points
	Direct Output		6 Points
	RS-485 Communication Network Input	16 Points	—
	RS-485 Communication Network Output	16 Points	—
Setting Tool	Data Setting Software MEXE02	<input type="radio"/>	<input type="radio"/>
Coordinates Management Method		Battery-free Absolute System	
Operating Method	Positioning operation	<input type="radio"/>	<input type="radio"/> *
	Positioning Push-Motion Operation	<input type="radio"/>	<input type="radio"/> *
Positioning Operation	Connecting Method	Independent Operation	<input type="radio"/>
		Sequential Operation	<input type="radio"/> *
	Sequence Control	Multistep Speed-Change (Configuration Connection)	<input type="radio"/>
Operation	Sequence Control	Loop Operation (Repeating)	<input type="radio"/>
		Event Jump Operation	<input type="radio"/> *
Continuous Operation	Positioning Method	Position Control	<input type="radio"/>
		Speed Control	<input type="radio"/> *
		Torque Control	<input type="radio"/> *
		Pushing	<input type="radio"/> *
Return-to-Home Operation	Positioning Method	Return-to-Home Operation	<input type="radio"/>
		High Speed Return-to-Home Operation	<input type="radio"/>
JOG Operation	Positioning Method	<input type="radio"/>	<input type="radio"/>
Monitor/Information	Waveform Monitoring	<input type="radio"/>	<input type="radio"/>
	Overload Detection	<input type="radio"/>	<input type="radio"/>
	Overheat Detection (Motor · Driver)	<input type="radio"/>	<input type="radio"/>
	Position · Speed Information	<input type="radio"/>	<input type="radio"/>
	Temperature Detection (Motor · Driver)	<input type="radio"/>	<input type="radio"/>
	Motor Load Factor	<input type="radio"/>	<input type="radio"/>
Alarm	Distance Traveled · Integrating Distance Traveled	<input type="radio"/>	<input type="radio"/>

* This can be used by setting with the data setting software **MEXE02**.

Built-in Controller Type RS-485 Communication Specifications

Protocol	Modbus RTU Mode
Electrical Characteristics	EIA-485 Based, Straight Cable Use shielded twisted-pair cables (TIA/EIA-568B CAT5e or better recommended). The max. total extension length is 50 m.
Communication Mode	Half duplex and start-stop synchronization (data: 8 bits, stop bit: 1 bit or 2 bits, parity: none, even, or odd)
Baud Rate	9600 bps/19200 bps/38400 bps/57600 bps/115200 bps/230400 bps are available
Connection Type	Up to 31 units can be connected to a single programmable controller (master equipment).

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
Q_{STEP}
Absolute
AZ

0.36°/Geared
Q_{STEP}
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
Q_{STEP}
Absolute
AZ

0.36°/Geared
Q_{STEP}
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

General Specifications

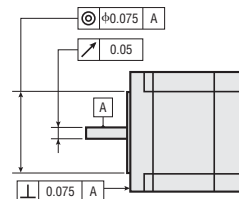
		Motor	Driver
Thermal Class		130 (B)	—
Insulation Resistance		100 MΩ or more when a 500 VDC megger is applied between the following places: • Case – Motor Windings • Case – Electromagnetic Brake Windings*1	100 MΩ or more when a 500 VDC megger is applied between the following places: • Protective Earth Terminal – Power Supply Terminal
Dielectric Voltage		Sufficient to withstand the following for 1 minute: AZM14, AZM15, AZM24, AZM26 • Case – Motor Windings 0.5 kVAC, 50 Hz or 60 Hz AZM46, 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 (Non-freezing)	0~+50°C (Non-freezing)
	Ambient Humidity	85% or less (Non-condensing)	
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.	
Degree of Protection		AZM14, AZM15, AZM24, AZM26: IP40 (excluding installation surfaces and connector locations) AZM46, AZM66, AZM69: IP66 (excluding installation surfaces and connector locations)	IP10
Stop Position Accuracy		AZM14, AZM15, AZM24, AZM26: ±5 minutes (±0.083°) AZM46: ±4 minutes (±0.067°) AZM66, AZM69: ±3 minutes (±0.05°)	
Shaft Runout		0.05 T.I.R. (mm)*2	—
Concentricity of Installation Pilot to the Shaft		0.075 T.I.R. (mm)*2	—
Perpendicularity of Installation Surface to the Shaft		0.075 T.I.R. (mm)*2	—
Multiple Rotation Detection Range Upon Power OFF		AZM14, AZM15, AZM24, AZM26: ±450 rotations (900 rotations) AZM46, AZM66, AZM69: ±900 rotations (1,800 rotations)	

*1 Only for products with an electromagnetic brake.

*2 T. I. R. (Total Indicator Reading): The total dial gauge reading when the measurement section is rotated once around the reference axis center.

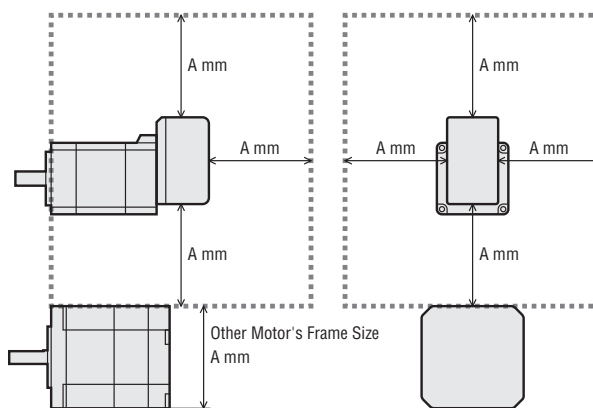
Note

- Do not measure insulation resistance or perform a dielectric strength test while the motor and driver are connected.
 Also, do not perform these tests on the motor absolute sensor part.



Motor Installation (AZM14, AZM15, AZM24, AZM26 Only)

When installing the motor, pay particular attention to the installation location since the encoder could be easily affected by magnetic force. When installing the motor parts in parallel, leave a minimum distance of the other motor's size or larger (frame size) in the horizontal and vertical directions.



● Leave a minimum distance of the other motor's frame size (A mm) or larger.

● Reference

The other motor	A
Frame Size 20 mm	20 mm
Frame Size 28 mm	28 mm
Frame Size 42 mm	42 mm
Frame Size 60 mm	60 mm

Permissible Radial Load and Permissible Axial Load

→ Page A-17

Load Torque – Driver Input Current Characteristics

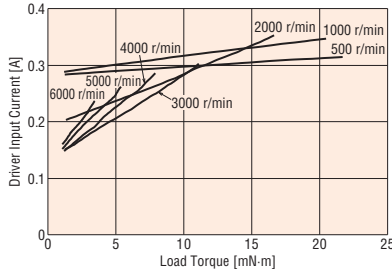
This is the relationship between the load torque and driver input current at each speed when the motor is actually operated. Due to these characteristics, it is possible to estimate the power supply capacity required to use the multi-axis. For geared types, use the speed and torque at the motor shaft.

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

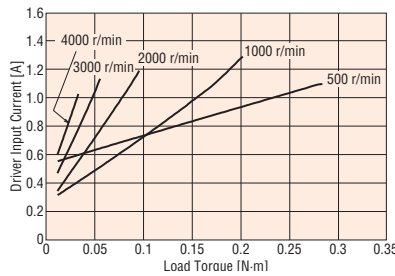
$$\text{Motor shaft torque} = \frac{\text{Gear output shaft torque}}{\text{Gear ratio}} \text{ [N}\cdot\text{m]}$$

24 VDC

AZM14

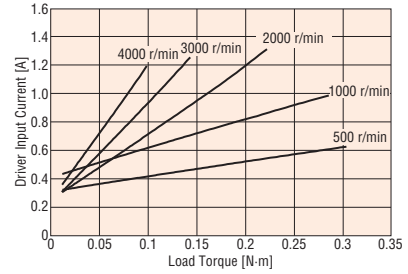


AZM46

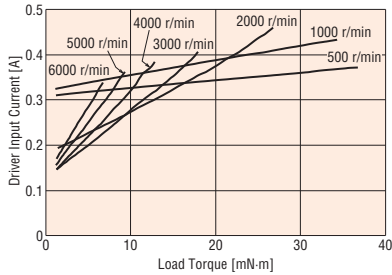


48 VDC

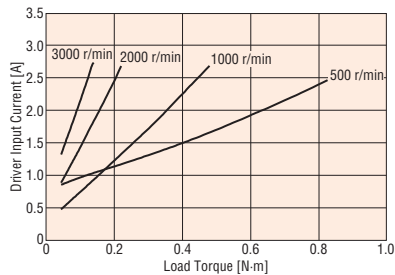
AZM46



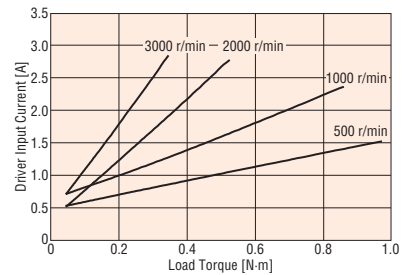
AZM15



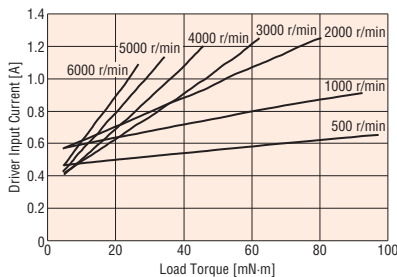
AZM66



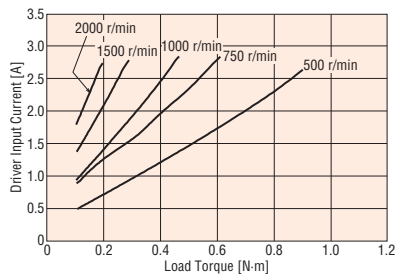
AZM66



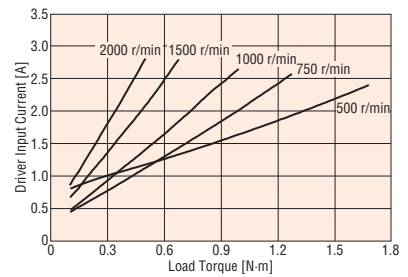
AZM24



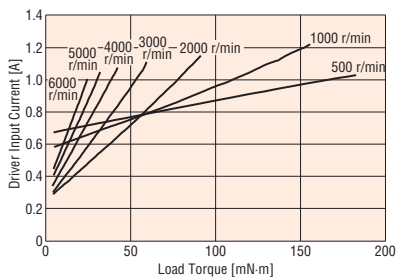
AZM69



AZM69



AZM26



Overview,
Product
Series

AC Input
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RKII

DC Input
Motor &
Driver

0.36°/Geared
Q_{STEP}
Absolute
AZ

0.36°/Geared
Q_{STEP}
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

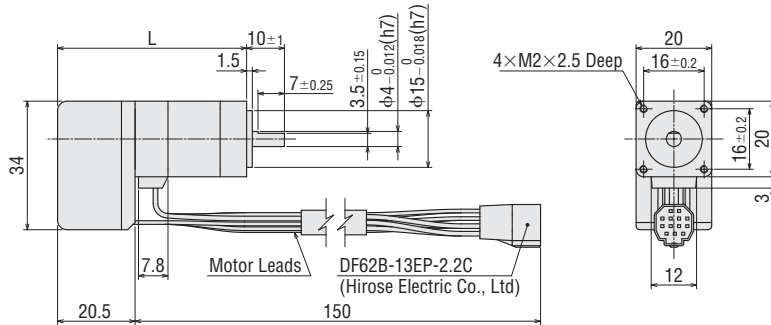
Dimensions (Unit = mm)

● **Motor**

◇ **Standard Type**

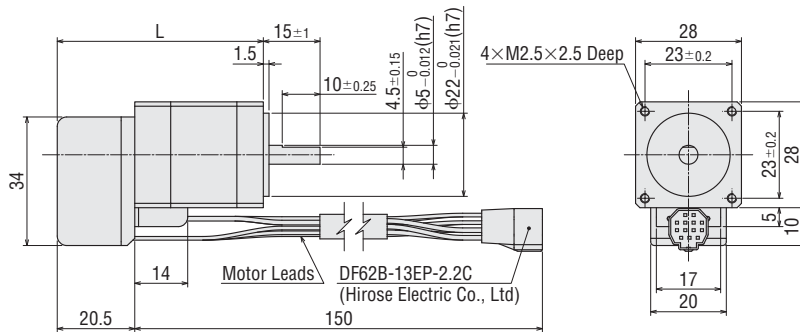
Frame Size 20 mm

Product Name	L	Mass kg
AZM14AK	50	0.08
AZM15AK	60	0.1



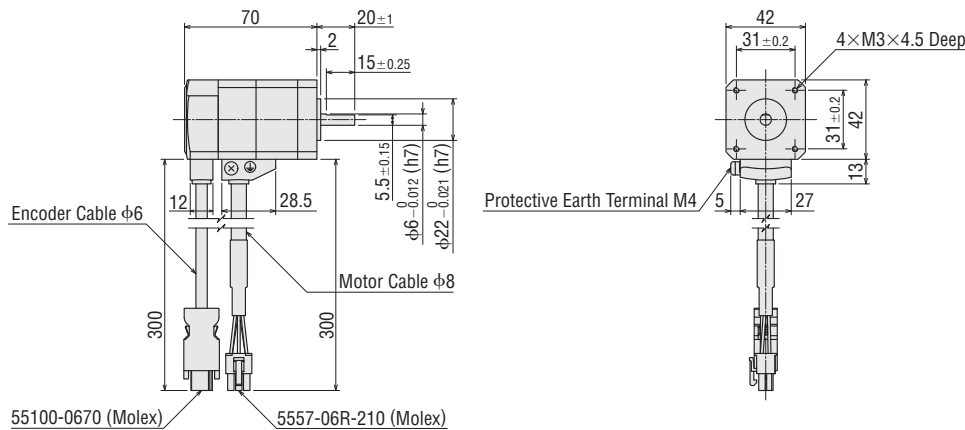
Frame Size 28 mm

Product Name	L	Mass kg
AZM24AK	54.5	0.15
AZM26AK	74	0.24



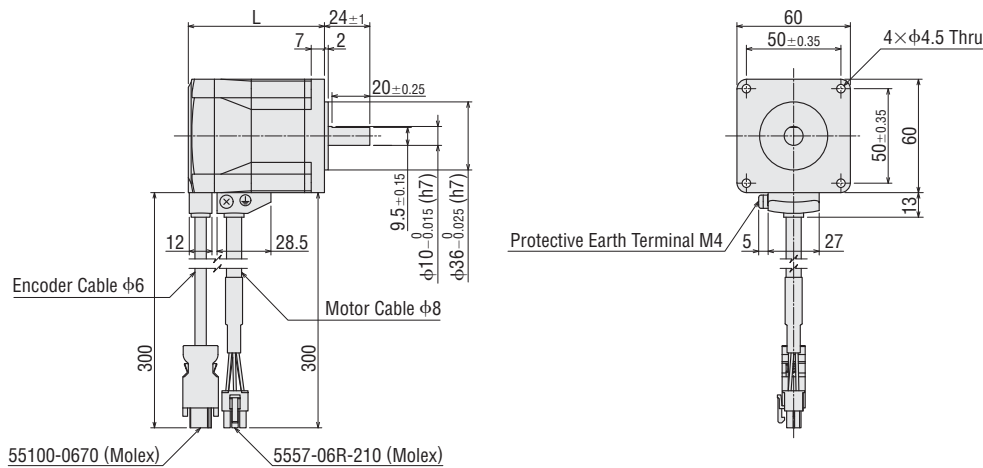
Frame Size 42 mm

Product Name	Mass kg
AZM46AK	0.44



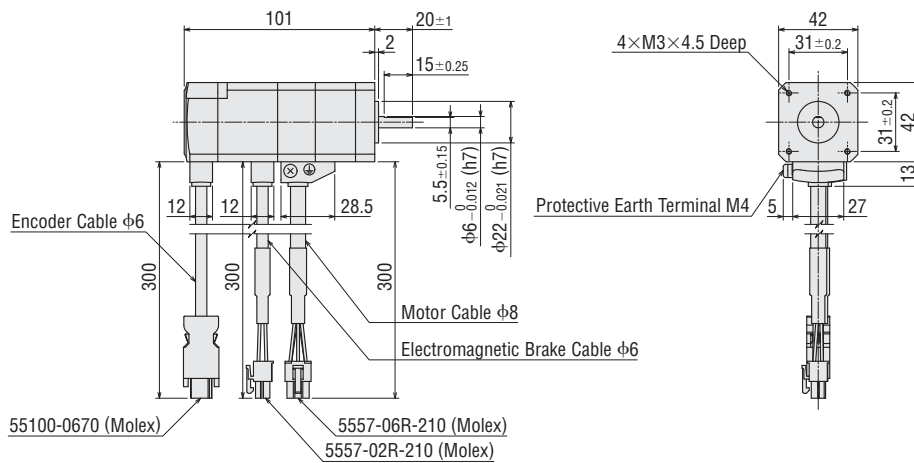
Frame Size 60 mm

Product Name	L	Mass kg
AZM66AK	72	0.91
AZM69AK	97.5	1.4



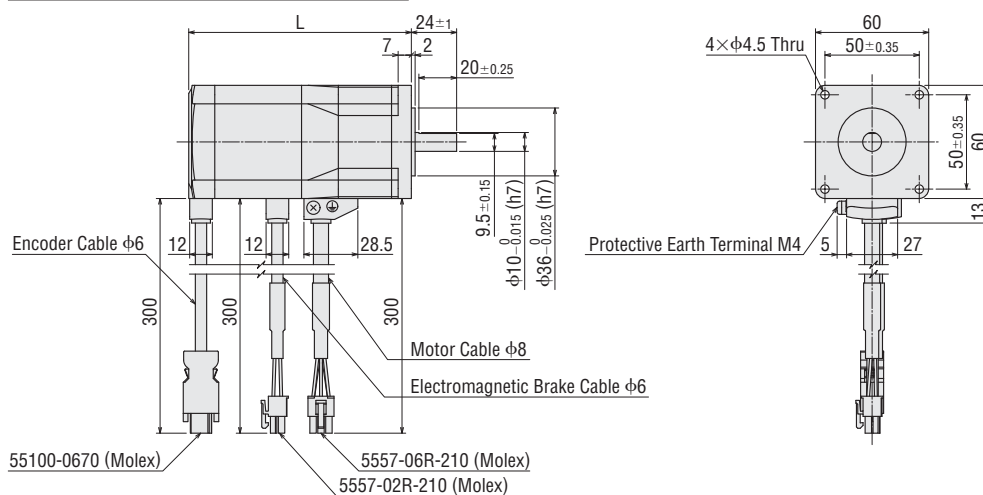
◇ Standard Type with an Electromagnetic Brake Frame Size 42 mm

Product Name	Mass kg
AZM46MK	0.61



Frame Size 60 mm

Product Name	L	Mass kg
AZM66MK	118	1.3
AZM69MK	143.5	1.8



Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared

αSTEP
Absolute
AZ

0.36°/Geared

αSTEP
AR

0.72°/Geared

RKII

DC Input
Motor &
Driver

0.36°/Geared

αSTEP
Absolute
AZ

0.36°/Geared

αSTEP
AR

1.8°/0.72°
/0.36°

CVK

0.72°/0.36°
/Geared

CRK

1.8°/Geared

RBK

Motor Only
/Driver Only

1.8°/0.9°

PKP/PK

Geared

PKP/PK

0.72°/0.36°

PKP/PK

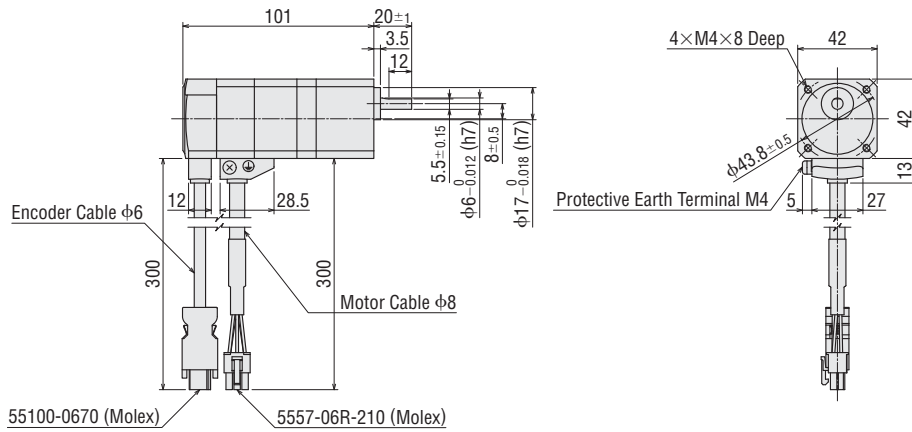
Driver

Accessories

◇ **TS Geared Type**

Frame Size 42 mm

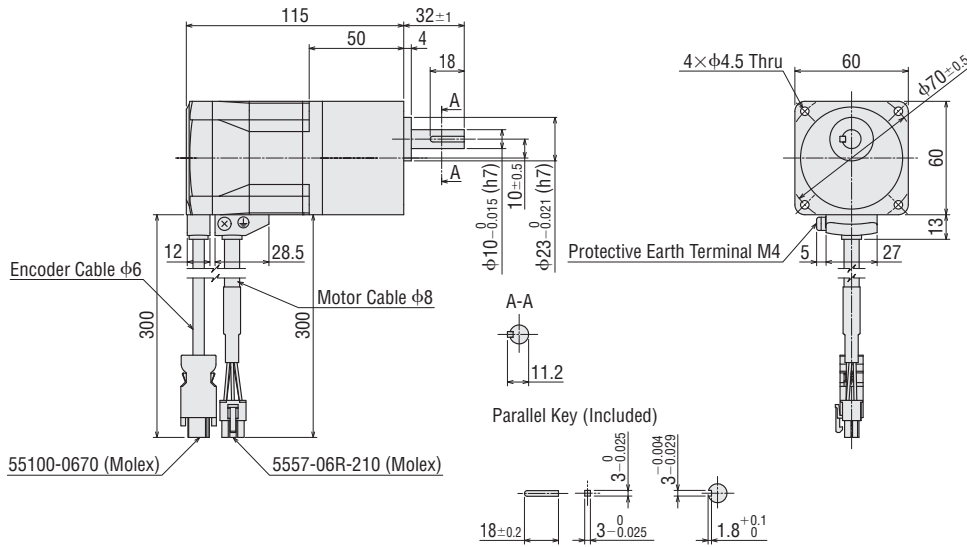
Product Name	Gear Ratio	Mass kg
AZM46AK-TS ■	3.6, 7.2, 10, 20, 30	0.59



Frame Size 60 mm

Product Name	Gear Ratio	Mass kg
AZM66AK-TS ■	3.6, 7.2, 10, 20, 30	1.3

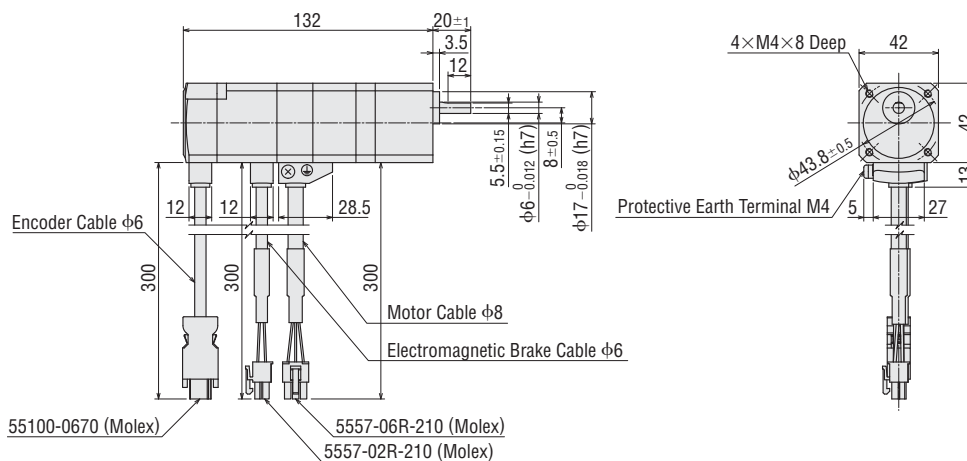
● Installation Screw: M4×60 P0.7 (4 screws included)



◇ **TS Geared Type with an Electromagnetic Brake**

Frame Size 42 mm

Product Name	Gear Ratio	Mass kg
AZM46MK-TS ■	3.6, 7.2, 10, 20, 30	0.76

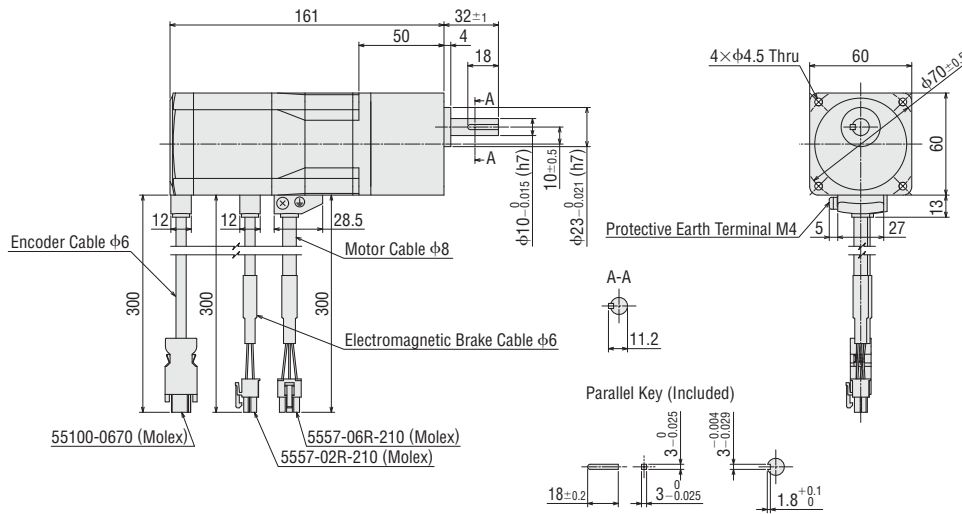


● A number indicating the gear ratio is specified where the box ■ is located in the product name.

Frame Size 60 mm

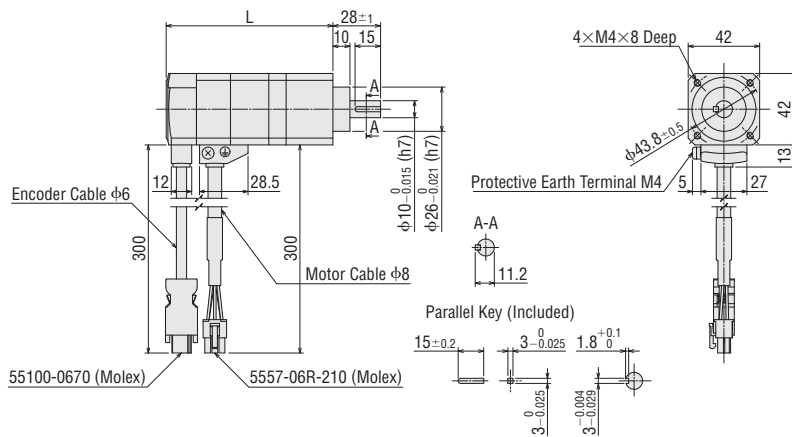
Product Name	Gear Ratio	Mass kg
AZM66MK-TS ■	3.6, 7.2, 10, 20, 30	1.7

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



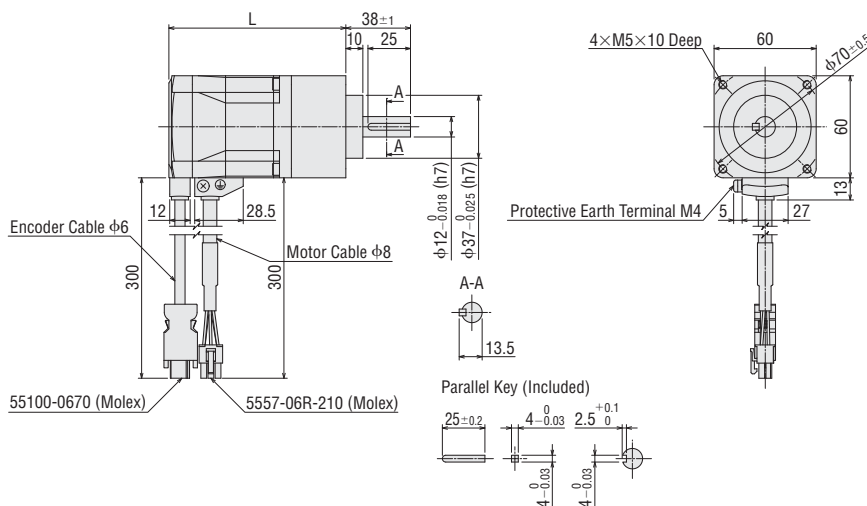
◆ PS Geared Type Frame Size 42 mm

Product Name	Gear Ratio	L	Mass kg
AZM46AK-PS ■	5, 7.2, 10	98	0.64
	25, 36, 50	121.5	0.79



Frame Size 60 mm

Product Name	Gear Ratio	L	Mass kg
AZM66AK-PS ■	5, 7.2, 10	104	1.3
	25, 36, 50	124	1.6



● A number indicating the gear ratio is specified where the box ■ is located in the product name.

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

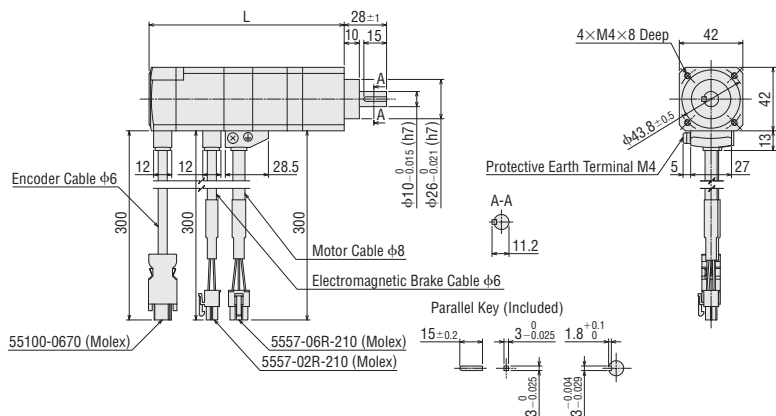
Driver

Accessories

◇ **PS** Geared Type with an Electromagnetic Brake

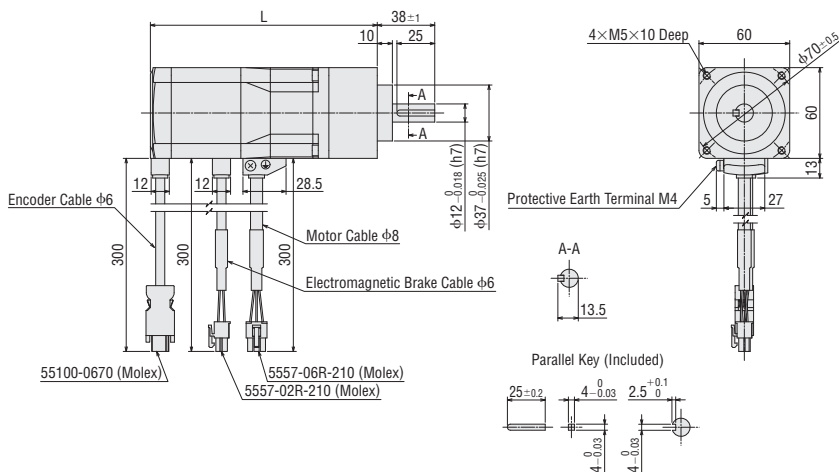
Frame Size 42 mm

Product Name	Gear Ratio	L	Mass kg
AZM46MK-PS ■	5, 7, 2, 10	129	0.81
	25, 36, 50	152	0.96



Frame Size 60 mm

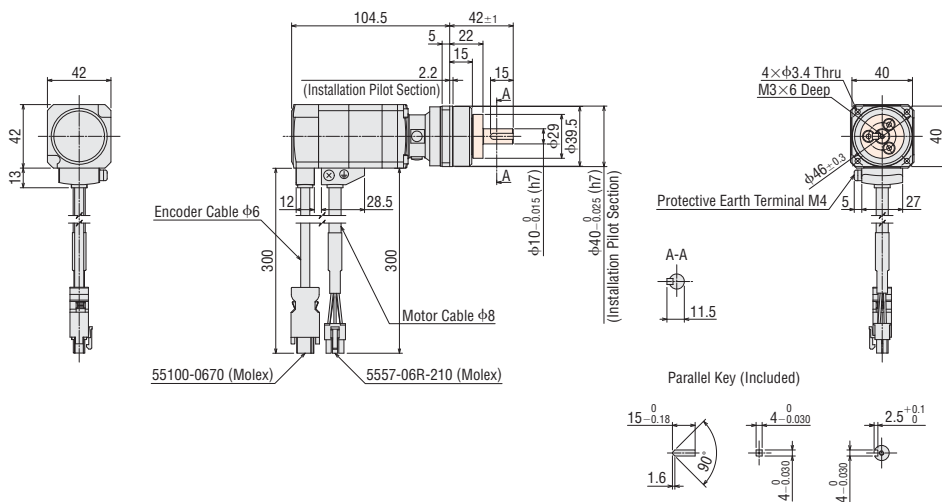
Product Name	Gear Ratio	L	Mass kg
AZM66MK-PS ■	5, 7, 2, 10	150	1.7
	25, 36, 50	170	2.0



◇ **HPG** Geared Type Shaft Output Type

Frame Size 40 mm

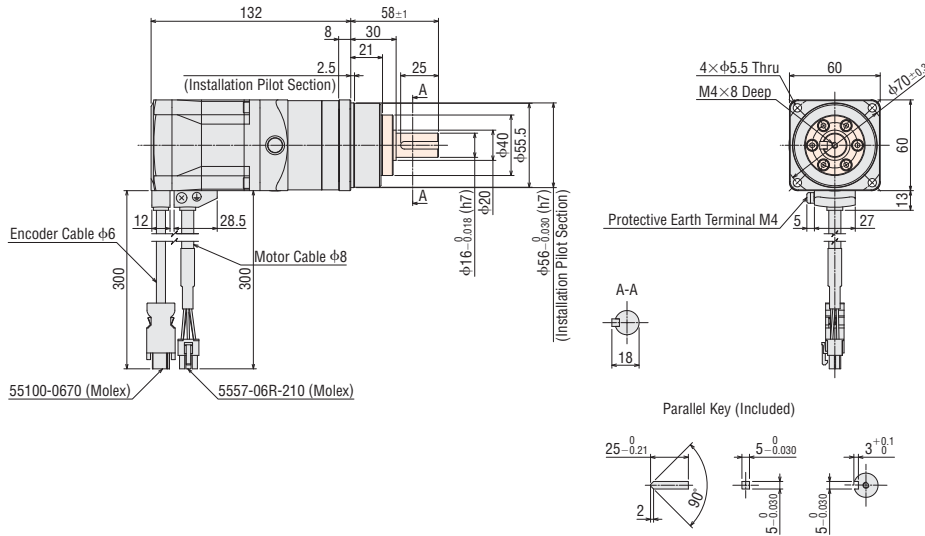
Product Name	Gear Ratio	Mass kg
AZM46AK-HP ■	5, 9	0.71



- The shaded areas in the dimensions are rotating parts.
- A number indicating the gear ratio is specified where the box ■ is located in the product name.

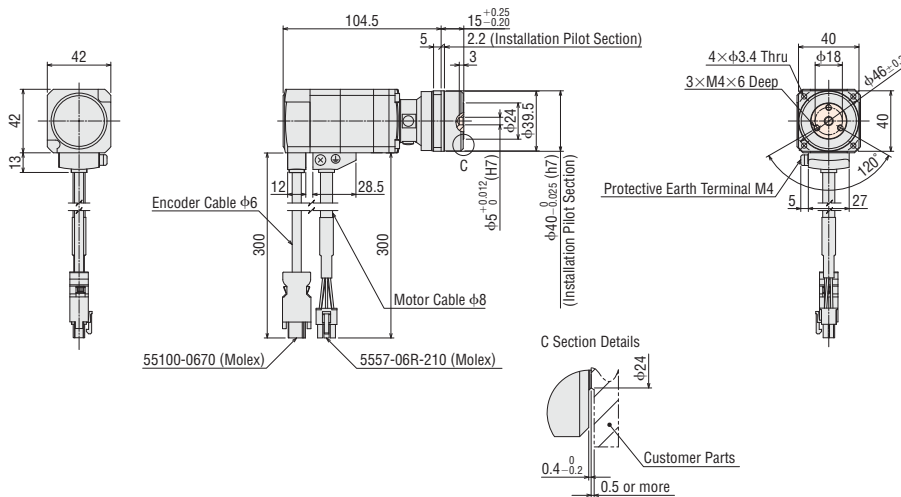
Frame Size 60 mm

Product Name	Gear Ratio	Mass kg
AZM66AK-HP 	5, 15	1.9



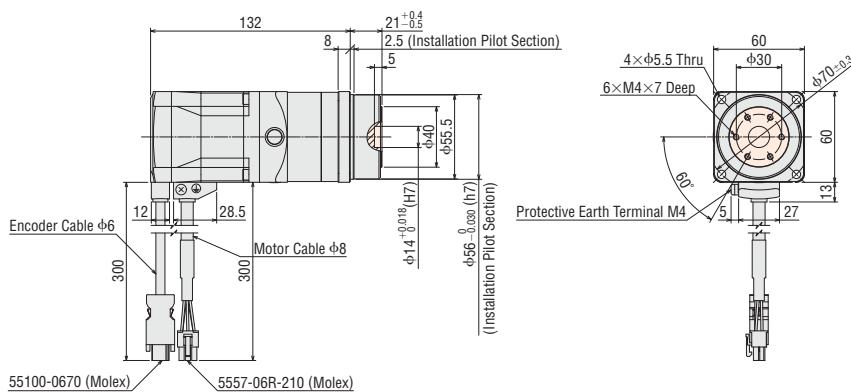
◆ HPG Geared Type Flange Output Type Frame Size 40 mm

Product Name	Gear Ratio	Mass kg
AZM46AK-HP F	5, 9	0.66



Frame Size 60 mm

Product Name	Gear Ratio	Mass kg
AZM66AK-HP F	5, 15	1.8



- The shaded areas in the dimensions are rotating parts.
- A number indicating the gear ratio is specified where the box is located in the product name.

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared

αSTEP
Absolute
AZ

0.36°/Geared

αSTEP
AR

0.72°/Geared

RKII

DC Input
Motor &
Driver

0.36°/Geared

αSTEP
Absolute
AZ

0.36°/Geared

αSTEP
AR

1.8°/0.72°

/0.36°
CVK

0.72°/0.36°

/Geared
CRK

1.8°/Geared

RBK

Motor Only
/Driver Only

1.8°/0.9°

PKP/PK

Geared

PKP/PK

0.72°/0.36°

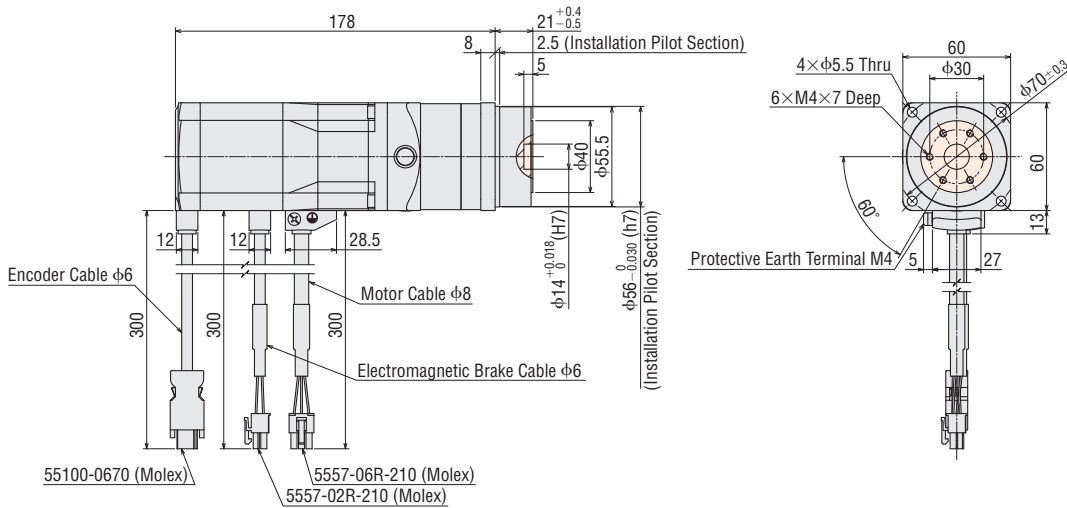
PKP/PK

Driver

Accessories

Frame Size 60 mm

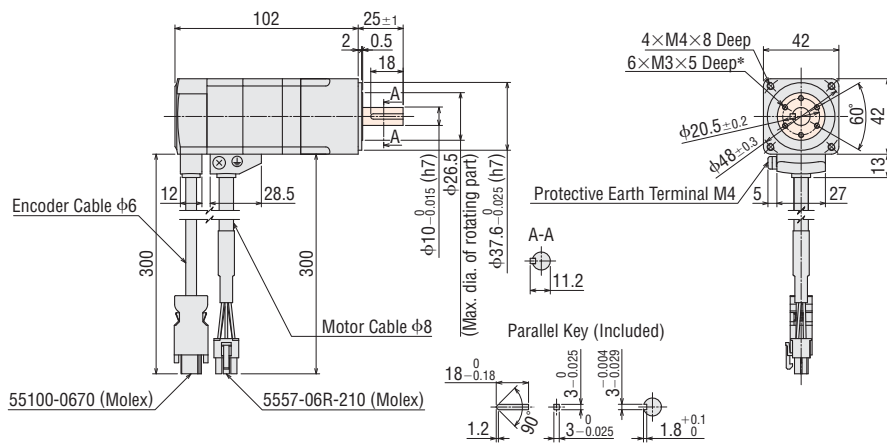
Product Name	Gear Ratio	Mass kg
AZM66MK-HP F	5, 15	2.2



◇ Harmonic Geared Type

Frame Size 42 mm

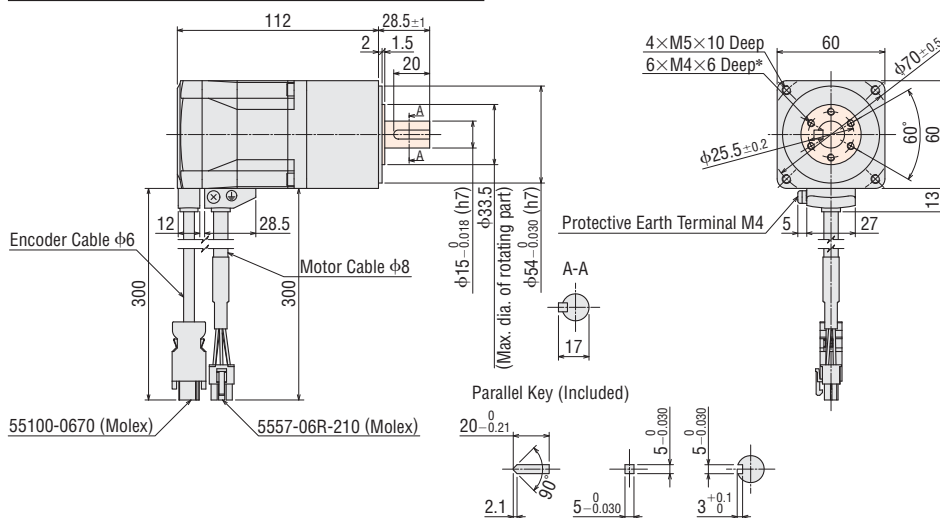
Product Name	Gear Ratio	Mass kg
AZM46AK-HS ■	50, 100	0.65



*The position of the output shaft relative to the screw holes on the rotating part cannot be specified. Adjust the position via the size of the screw holes on the load installation surface.

Frame Size 60 mm

Product Name	Gear Ratio	Mass kg
AZM66AK-HS ■	50, 100	1.4



*The position of the output shaft relative to the screw holes on the rotating part cannot be specified. Adjust the position via the size of the screw holes on the load installation surface.

- The shaded areas in the dimensions are rotating parts.
- A number indicating the gear ratio is specified where the box ■ is located in the product name.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared

αSTEP Absolute AZ

0.36°/Geared

αSTEP AR

0.72°/Geared

RKII

DC Input Motor & Driver

0.36°/Geared

αSTEP Absolute AZ

0.36°/Geared

αSTEP AR

1.8°/0.72°

/0.36°

CVK

0.72°/0.36°

/Geared

CRK

1.8°/Geared

RBK

Motor Only /Driver Only

1.8°/0.9°

PKP/PK

Geared

PKP/PK

0.72°/0.36°

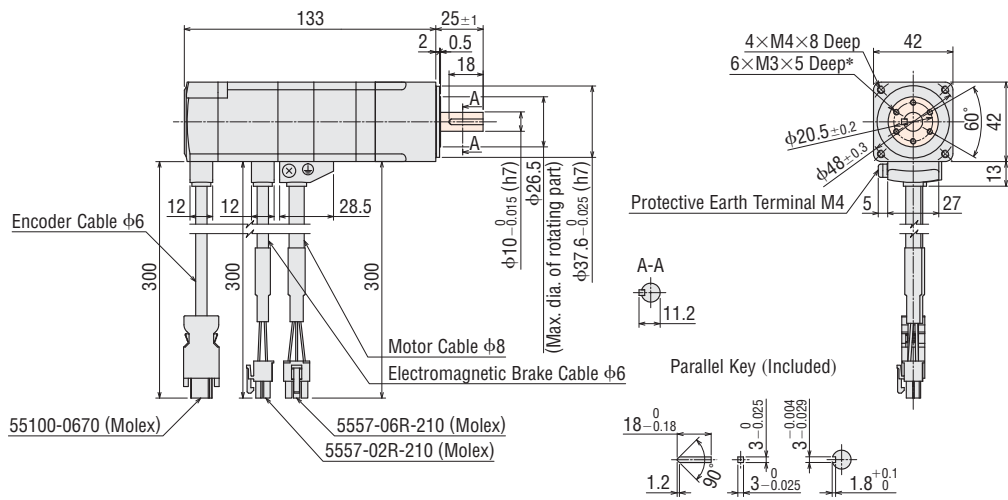
PKP/PK

Driver

Accessories

◇ Harmonic Geared Type with an Electromagnetic Brake
 Frame Size 42 mm

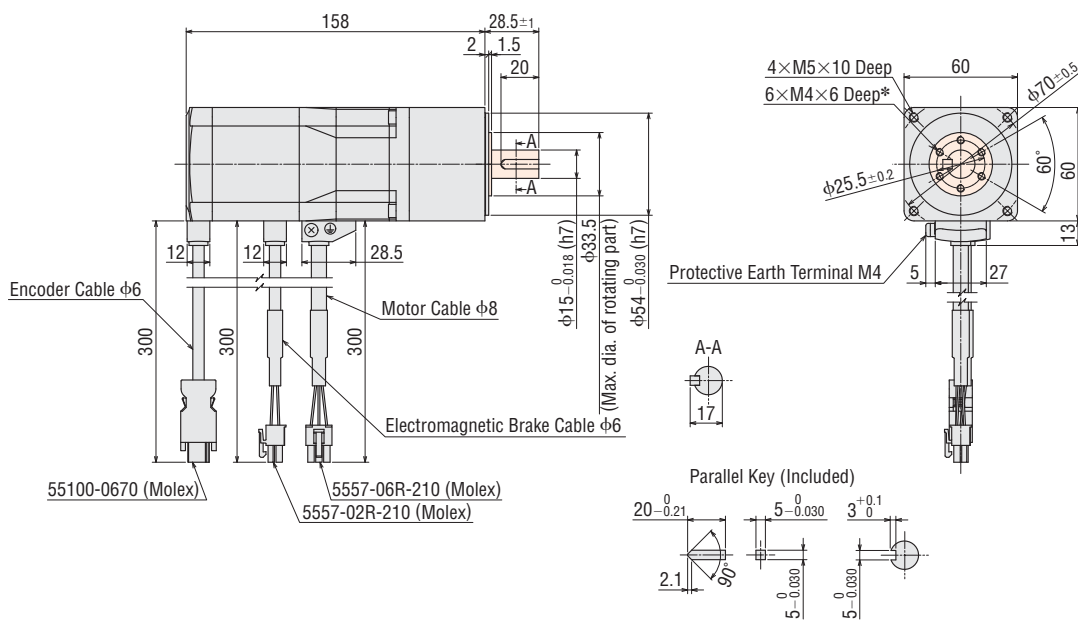
Product Name	Gear Ratio	Mass kg
AZM46MK-HS 	50, 100	0.82



*The position of the output shaft relative to the screw holes on the rotating part cannot be specified. Adjust the position via the size of the screw holes on the load installation surface.

Frame Size 60 mm

Product Name	Gear Ratio	Mass kg
AZM66MK-HS 	50, 100	1.8



*The position of the output shaft relative to the screw holes on the rotating part cannot be specified. Adjust the position via the size of the screw holes on the load installation surface.

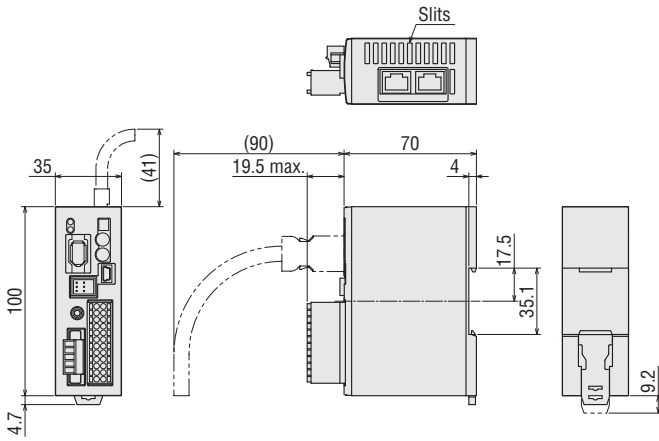
● The shaded areas in the dimensions are rotating parts.
 ● A number indicating the gear ratio is specified where the box is located in the product name.

● Driver

◇ Built-in Controller Type

Product Name: **AZD-KD**

Mass: 0.15 kg



● Included

Connector for Main Power Supply/Electromagnetic Brake Connection (CN1)

Connector: MC1,5/5-STF-3,5
(PHOENIX CONTACT)

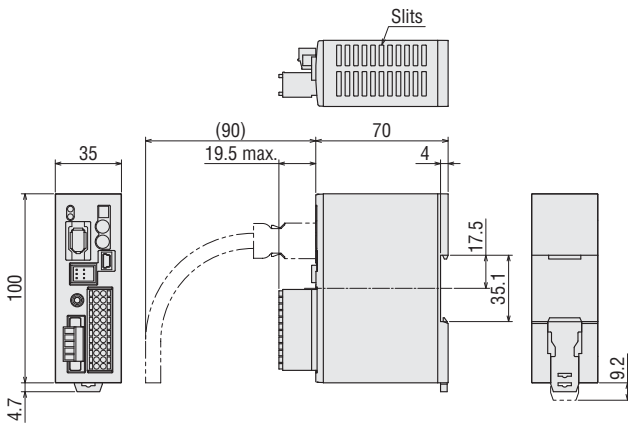
I/O Signals Connector (CN4)

Connector: DFMC1,5/12-ST-3,5
(PHOENIX CONTACT)

◇ Pulse Input Type

Product Name: **AZD-K**

Mass: 0.15 kg



● Included

Connector for Main Power Supply/Electromagnetic Brake Connection (CN1)

Connector: MC1,5/5-STF-3,5
(PHOENIX CONTACT)

I/O Signals Connector (CN4)

Connector: DFMC1,5/12-ST-3,5
(PHOENIX CONTACT)

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

0.72°/Geared
RKII

DC Input
Motor &
Driver

0.36°/Geared
αSTEP
Absolute
AZ

0.36°/Geared
αSTEP
AR

1.8°/0.72°
/0.36°
CVK

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

Motor Only
/Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

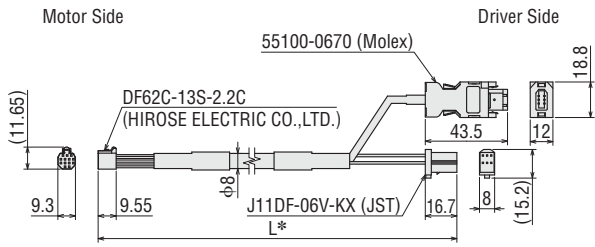
Driver

Accessories

● Connection Cable Sets/Flexible Connection Cable Sets

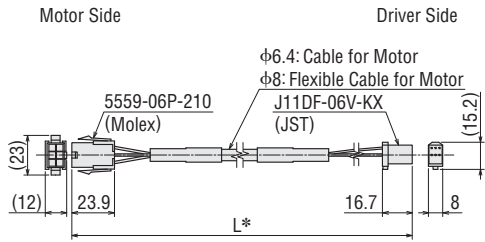
[For **AZM14, AZM15, AZM24, AZM26**]

◇ Cable for Motor

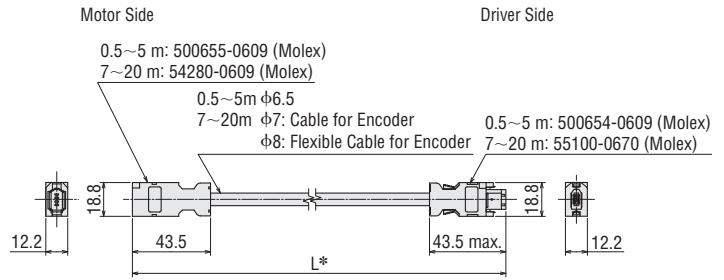


[For **AZM46, AZM66, AZM69**]

◇ Cable for Motor

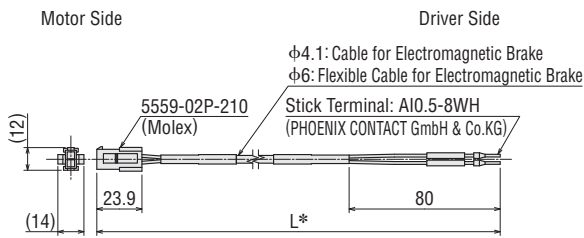


◇ Cable for Encoder



◇ Cable for Electromagnetic Brake

(Only for Types with Electromagnetic Brake)



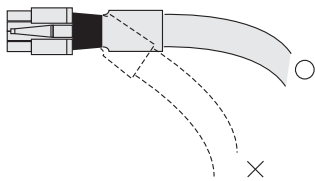
*The length L (m) is specified where L is located in "Product Line" on page A-182.

Note

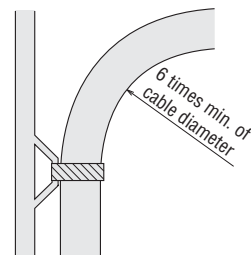
● The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use the connection cable.

Note on Use of Flexible Cables

① Do not allow the cable to bend at the cable connector.



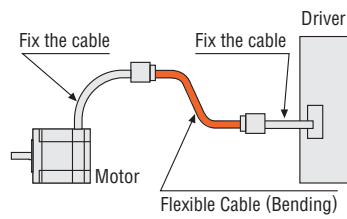
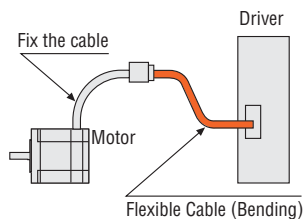
② Bending radius should be at least 6 times of the cable diameter.



③ For the motor cable and the included cable are not used to bend and flex. Use the flexible cable in applications where the cable is bent and flexed.

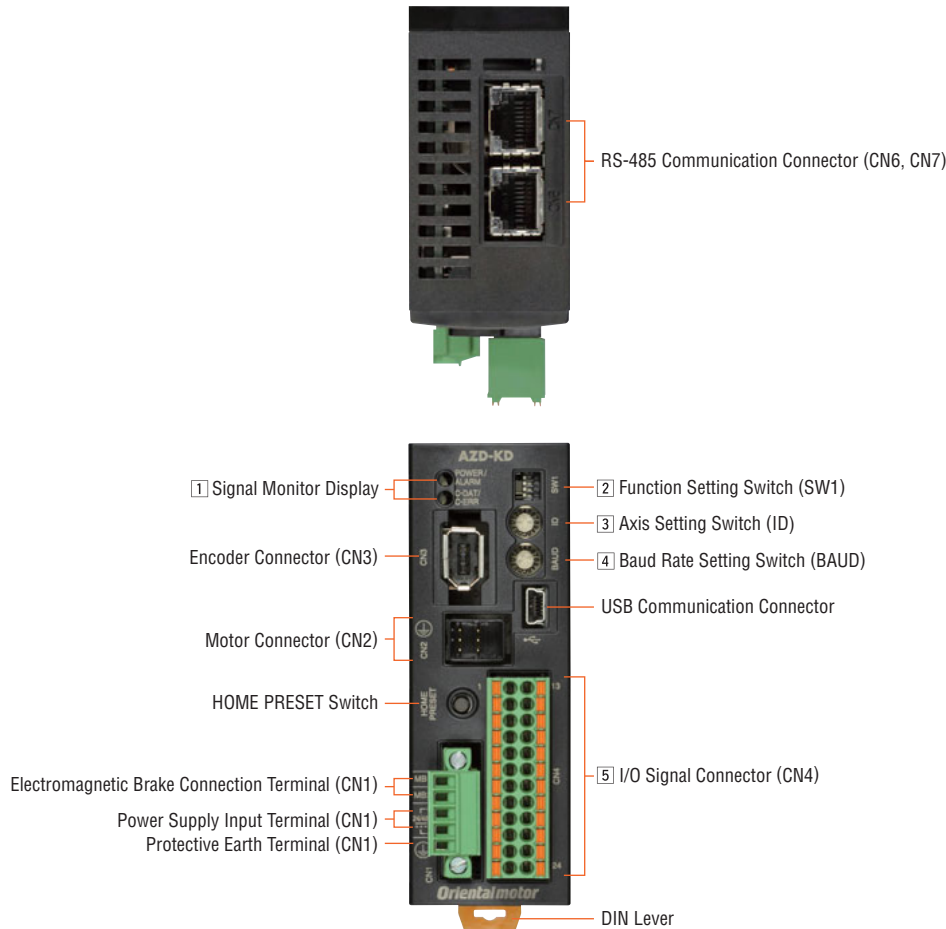
● For Flexible Connection Cables

● For Flexible Extension Cables



Connection and Operation (Built-in controller type)

Names and Functions of Driver Parts



1 Signal Monitor Display

◇ LED Indicator

Indication	Color	Function	Lighting Condition
POWER	Green	Power Supply Indication	When power is applied
ALARM	Red	Alarm Indication	When a protective function is activated (blinking)
C-DAT	Green	Communication Indication	When communication data is being sent or received
C-ERR	Red	Communication Error Indication	When communication data is in error

2 Function Setting Switch

Indication	No.	Function
SW1	1	Use in combination with the axis setting switch (ID) to set the axis number (factory setting: OFF).
	2	Set the RS-485 communication protocol (factory setting: OFF).
	3	Set the RS-485 communication termination resistor (120 Ω) (factory setting: OFF).
	4	OFF: Terminating resistor not used, ON: Terminating resistor used

*Configure both No. 3 and No. 4 to the same setting.

3 Axis Setting Switch

Indication	Function
ID	Set this when RS-485 communication is used. Set the axis number (factory setting: 0).

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

0.72°/0.36°
PKP/PK

Driver

Accessories

4 Baud Rate Setting Switch

Indication	Function
BAUD	Set this when RS-485 communication is used. Set the baud rate (factory setting: 7).

◇ RS-485 Baud Rate Setting

No.	Baud Rate (bps)
0	9600
1	19200
2	38400
3	57600
4	115200
5	230400
6	Not used
7	Network Converter
8~F	Not used

5 I/O Signal Connector (CN4)

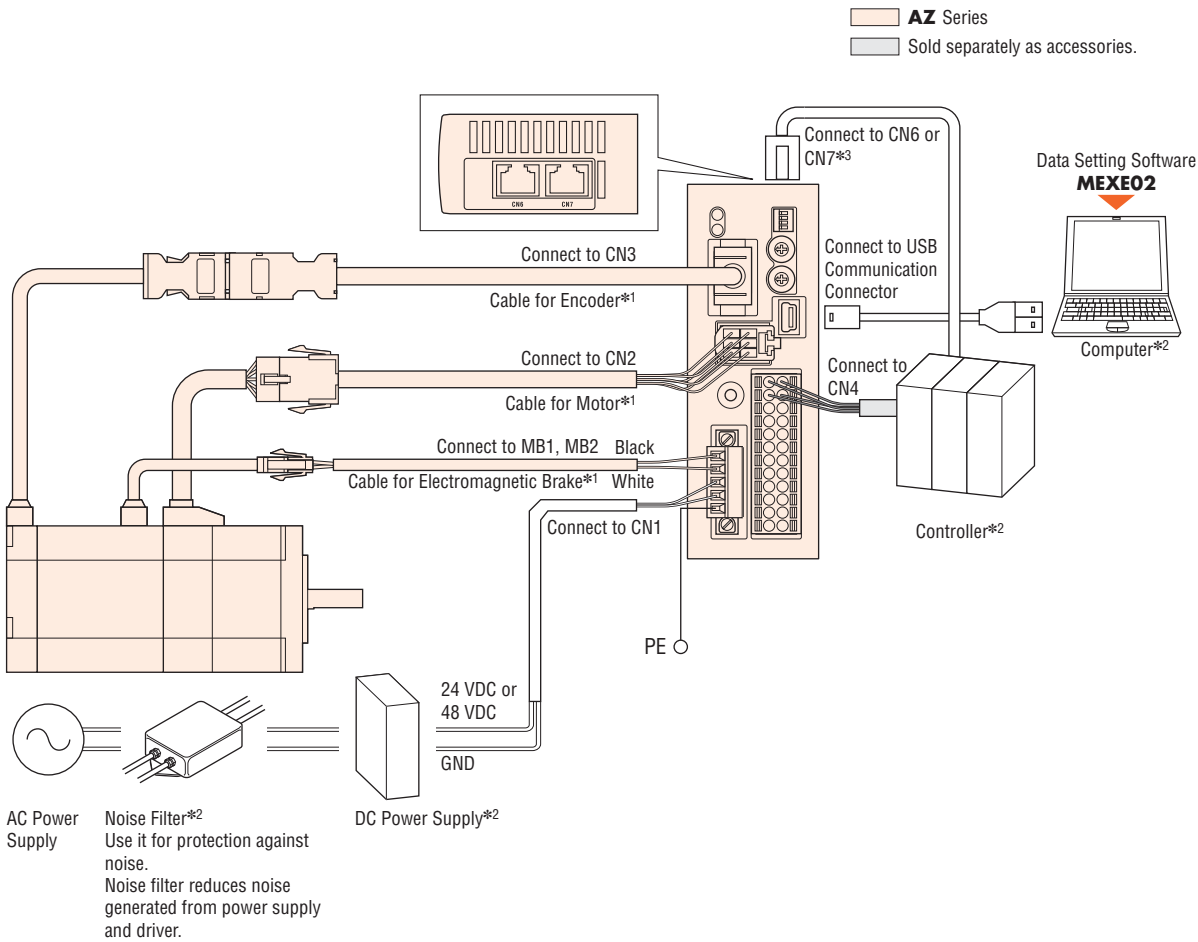
Indication	Pin No.	Signal Name	Content	
CN4	1	IN0	START	The signal to start the positioning operation.
	2	IN2	M1	Use 3 bits (M0, M1, and M2) to select the operating data number.
	3	IN4	ZHOME	Move to the home position set by the HOME PRESET switch.
	4	IN6	STOP	Stop the motor.
	5	IN-COM [0-7]*1	IN0~IN7 Input Common	
	6	IN8	FW-JOG	Start the JOG operation.
	7	OUT0	HOME-END	Output when the home position is fixed and the high speed return-to-home operation is complete.
	8	OUT2	PLS-RDY	Not used.
	9	OUT4	MOVE	Output when the motor is operating.
	10	OUT-COM*1	Output Common	
	11	ASG+	A-Phase Pulse Output+	
	12	BSG+	B-Phase Pulse Output+	
	13	IN1	M0	Use 3 bits (M0, M1, and M2) to select the operating data number.
	14	IN3	M2	Use 3 bits (M0, M1, and M2) to select the operating data number.
	15	IN5	FREE	Stop motor excitation.
	16	IN7	ALM-RST	Reset the alarm.
	17	IN-COM [8-9]*1	IN8, IN9 Input Common	
	18	IN9	RV-JOG	Start the JOG operation.
	19	OUT1	IN-POS	Output when the motor operation is complete.
	20	OUT3	READY	Output when the driver is prepared for operation.
	21	OUT5	ALM-B	Outputs the alarm status for the driver (normally closed).
	22	GND*1	Ground	
	23	ASG-	A-Phase Pulse Output-	
	24	BSG-	B-Phase Pulse Output-	

● Functions to assign can be set by specifying parameters. Initial values are shown above. Refer to the functions page.

*1 The initial value setting cannot be changed.

● Connection Diagram

◇ Connections with Peripheral Equipment



*1 When wiring the motor and the driver, keep a max. distance of 20 m.
 *2 Not supplied.
 *3 If the motor is controlled through RS-485 communication, connect the controller.

◇ Connecting the USB Cable

A USB cable is required for connecting the driver to the computer on which the data setting software **MEXE02** is installed. Use the USB cable of specifications below.

Specification	USB 2.0 (Full Speed)
Cable	Length: 3 m or less
	Configuration: A-mini-B

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
αSTEP Absolute AZ

0.36°/Geared
αSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

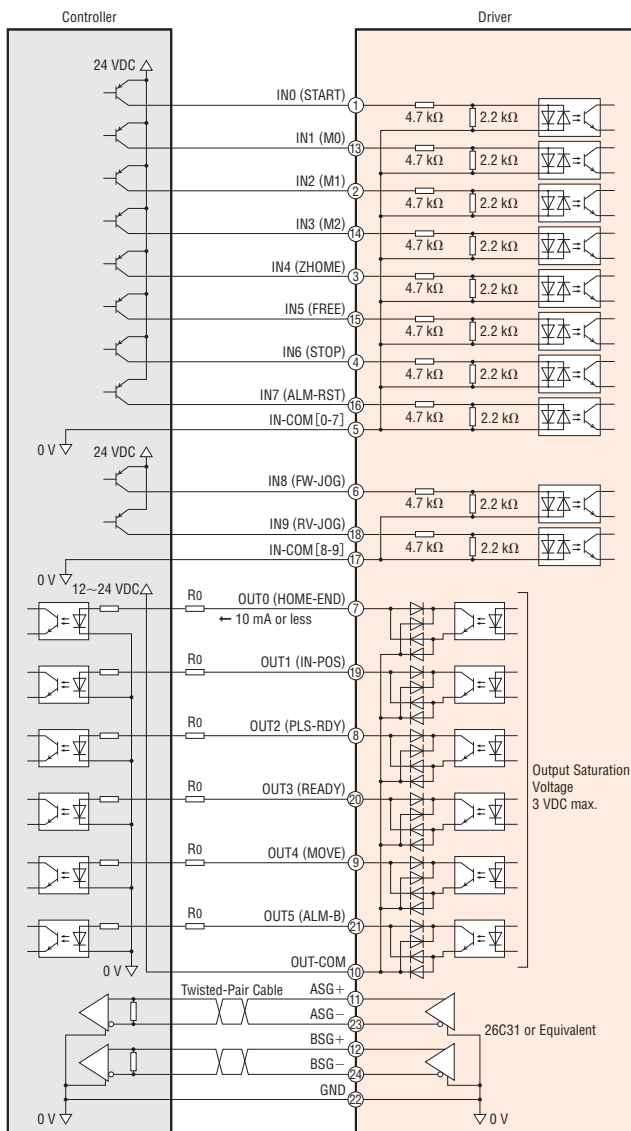
0.72°/0.36°
PKP/PK

Driver

Accessories

◇ Connecting to a Programmable Controller (Built-In Controller Type)

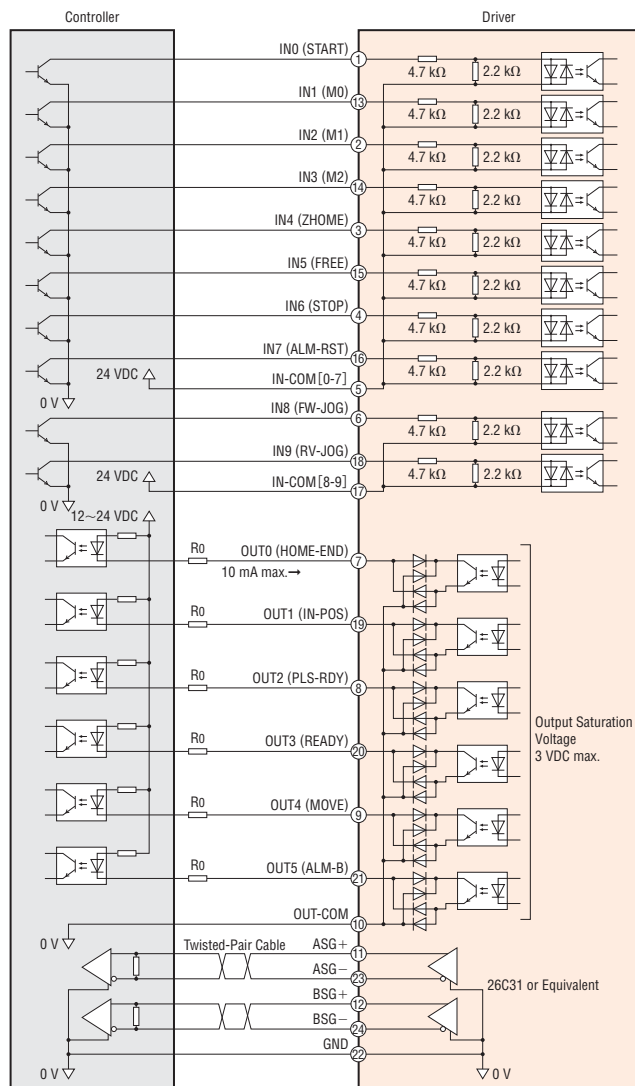
● Diagram for Connection with Current Source Output Circuit



Note

- Use 24 VDC for the input signals.
- Use output signal at 12~24 VDC 10 mA or less. When the current value exceeds 10 mA, connect an external resistor R_0 to reduce the current to 10 mA or less.
- Provide a distance of 200 mm or more between the signal lines and power lines (power supply lines, motor lines).
- Do not run the signal lines in the same piping as power lines or bundle them with power lines.
- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, shield the cable or use ferrite cores.

● Diagram for Connection with Current Sink Output Circuit

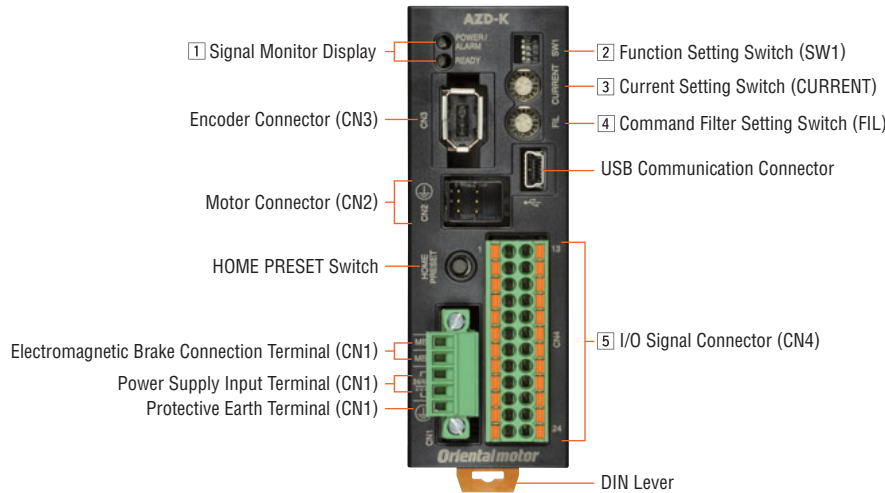


Note

- Use 24 VDC for the input signals.
- Use output signal at 12~24 VDC 10 mA or less. When the current value exceeds 10 mA, connect an external resistor R_0 to reduce the current to 10 mA or less.
- Provide a distance of 200 mm or more between the signal lines and power lines (power supply lines, motor lines).
- Do not run the signal lines in the same piping as power lines or bundle them with power lines.
- If noise generated by the motor cable or power supply cable causes a problem with the specific wiring or layout, shield the cable or use ferrite cores.

Connection and Operation (Pulse Input Type)

Names and Functions of Driver Parts



1 Signal Monitor Display

◇ LED Indicator

Indication	Color	Function	Lighting Condition
POWER	Green	Power Supply Indication	When power is applied
ALARM	Red	Alarm Indication	When a protective function is activated (blinking)
READY	Green	READY Output Power	When the READY output is ON

2 Function Setting Switch

Indication	No.	Function
SW1	1	Sets the resolution per one rotation of the motor output shaft (factory setting: OFF [1000 p/r]).
	2	Set the pulse input mode as either 1-pulse input mode or 2-pulse input mode. (factory setting: ON [1-pulse input mode])
	3, 4	Not used.

3 Current Setting Switch

Indication	Function
CURRENT	Set the basic current for the running current and the standstill current (factory setting: F).

4 Command Filter Setting Switch

Indication	Function
FIL	Adjust the responsiveness of the motor (factory setting: 1).

5 I/O Signal Connector (CN4)

Indication	Pin No.	Signal Name	Content
CN4	1	PLS+ [CW+] ^{*1}	Pulse Input+ [CW Pulse Input+]
	2	DIR+ [CCW+] ^{*1}	Rotation Direction Input+ [CCW Pulse Input+]
	3	IN4	ZHOME Move to the home position set by HOME PRESET switch.
	4	IN6	STOP Stop the motor.
	5	IN-COM [4-7] ^{*1}	IN4~IN7 Input Common
	6	IN8	FW-JOG Start the JOG operation.
	7	OUT0	HOME-END Output when the home position is fixed and the high speed return-to-home operation is complete.
	8	OUT2	PLS-RDY Output when the pulse input is ready.
	9	OUT4	MOVE Output when the motor is operating.
	10	OUT-COM ^{*1}	Output Common
	11	ASG+	A-Phase Pulse Output+
	12	BSG+	B-Phase Pulse Output+
	13	PLS- [CW-] ^{*1}	Pulse Input- [CW Pulse Input-]
	14	DIR- [CCW-] ^{*1}	Rotation Direction Input- [CCW Pulse Input-]
	15	IN5	FREE Stop motor excitation.
	16	IN7	ALM-RST Reset the alarm.
	17	IN-COM [8-9] ^{*1}	IN8, IN9 Input Common
	18	IN9	RV-JOG Start the JOG operation.
	19	OUT1	IN-POS Output when the motor operation is finished.
	20	OUT3	READY Output when the driver is prepared for operation.
	21	OUT5	ALM-B Outputs the alarm status for the driver (normally closed).
	22	GND ^{*1}	Ground
	23	ASG-	A-Phase Pulse Output-
	24	BSG-	B-Phase Pulse Output-

● Functions to assign can be set by specifying parameters. Initial values are shown above. Refer to the functions page.

*1 The initial value setting cannot be changed.

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared
αSTEP Absolute
AZ

0.36°/Geared
αSTEP AR

0.72°/Geared
RKII

DC Input Motor & Driver

0.36°/Geared
αSTEP Absolute
AZ

0.36°/Geared
αSTEP AR

1.8°/0.72°/0.36°
CVK

0.72°/0.36°/Geared
CRK

1.8°/Geared
RBK

Motor Only /Driver Only

1.8°/0.9°
PKP/PK

Geared
PKP/PK

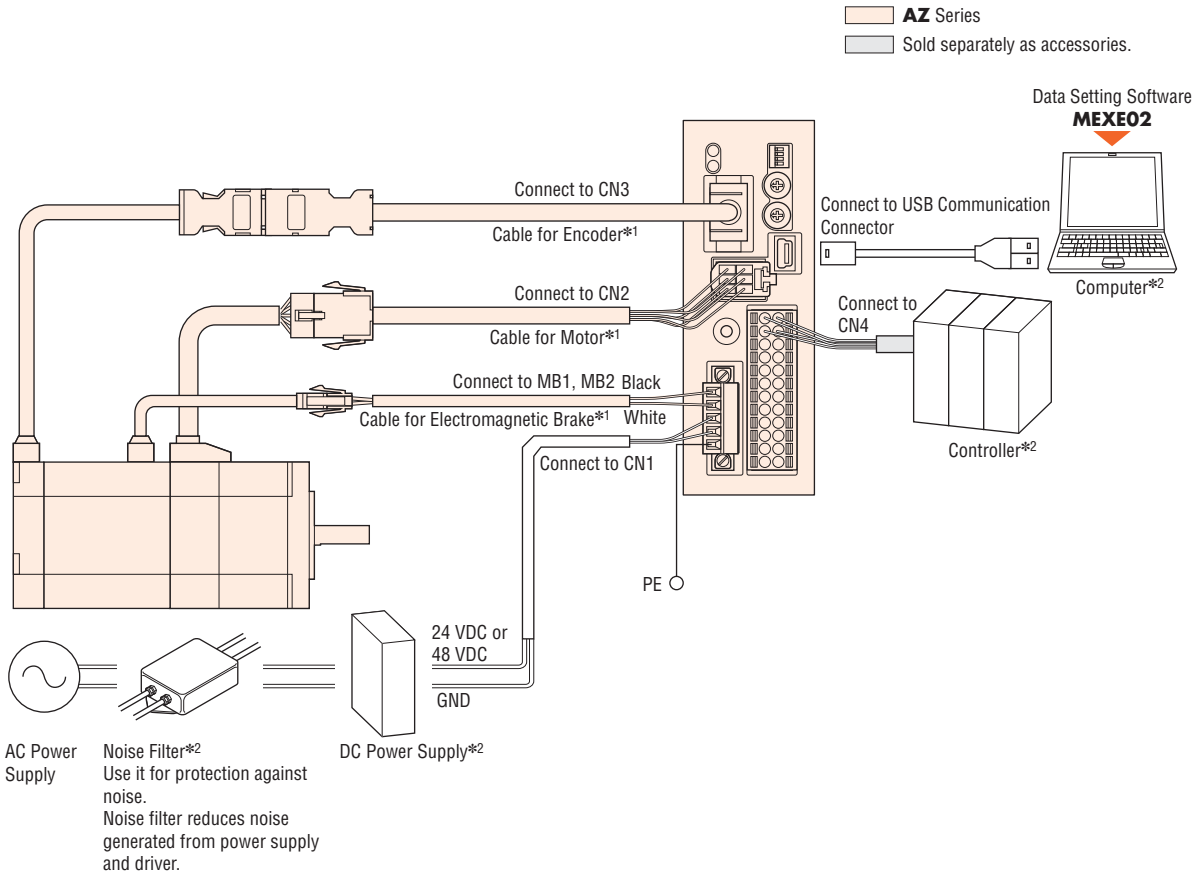
0.72°/0.36°
PKP/PK

Driver

Accessories

● Connection Diagram

◇ Connections with Peripheral Equipment



◇ Connecting the USB Cable

The USB cable is required for connecting the computer on which the data setting software **MEXE02** is installed and the driver. Use the USB cable of specifications below.

Specification	USB 2.0 (Full Speed)
Cable	Length: 3 m or less
	Configuration: A-mini-B

