

αSTEP

AZ Series Multi-Axis Driver

DC Input

EtherCAT Drive Profile-Compatible

EtherCAT



4-Axis Type



3-Axis Type

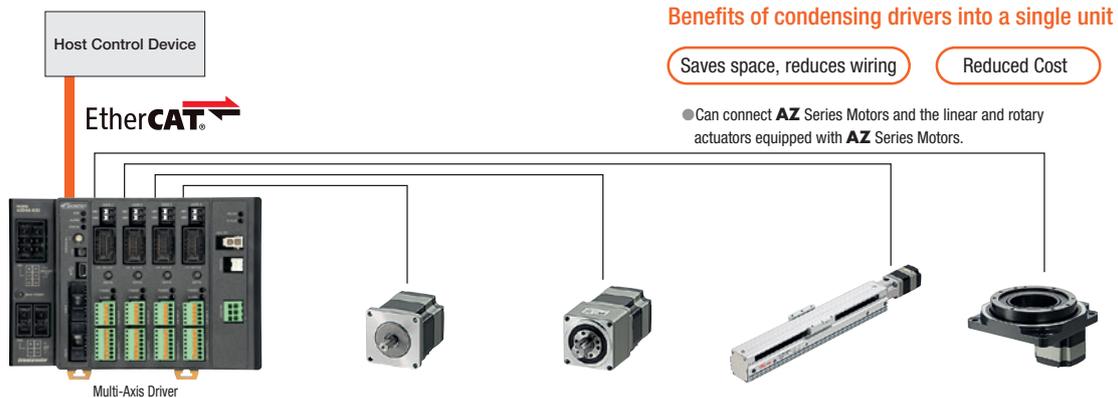


NEW 2-Axis Type

Multi-Axis Drivers can connect **AZ** Series DC input motors and the linear and rotary actuators equipped with them. Available for all products compatible with the EtherCAT drive profiles.

Multi-Axis Drivers connect directly to the host network and can control up to 4 axes simultaneously

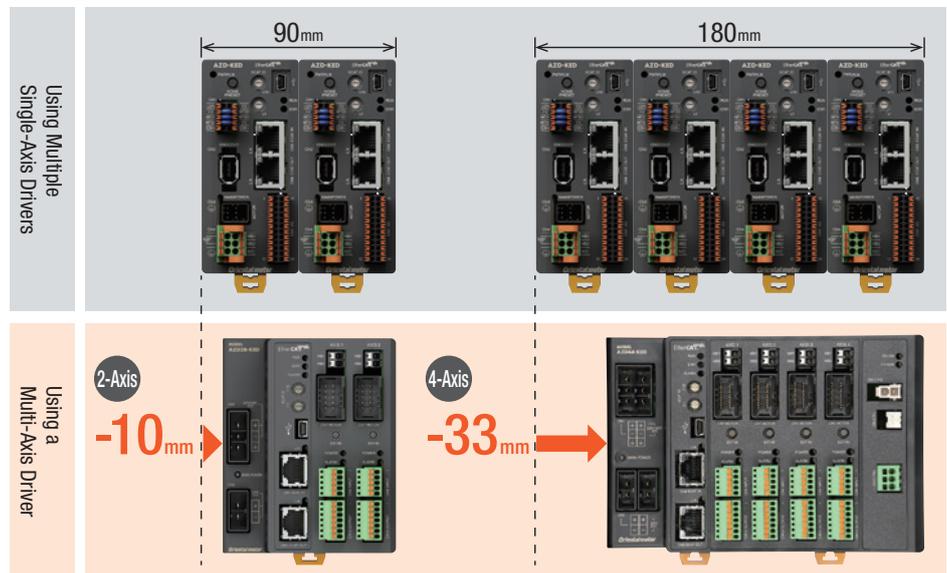
One driver can control multiple axes. Connections with the host network and the power supply are combined in a single driver, resulting in less wiring and lower costs.



● ESI files are available for EtherCAT-Compatible products. The files can be downloaded from the Oriental Motor website.

Multi-Axis Drivers (2-Axis Type, 4-Axis Type) are compact and save space by aligning Single-Axis Drivers

Multi-Axis Drivers can reduce installation space by aligning network-compatible Single-Axis Drivers.



● The above drivers compare the size of the **AZ** Series Single-Axis Drivers and Multi-Axis Drivers compatible with the EtherCAT Drive Profile.

Applicable Series

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

Motors

- **αSTEP AZ** Series DC Input

Linear & Rotary Actuators

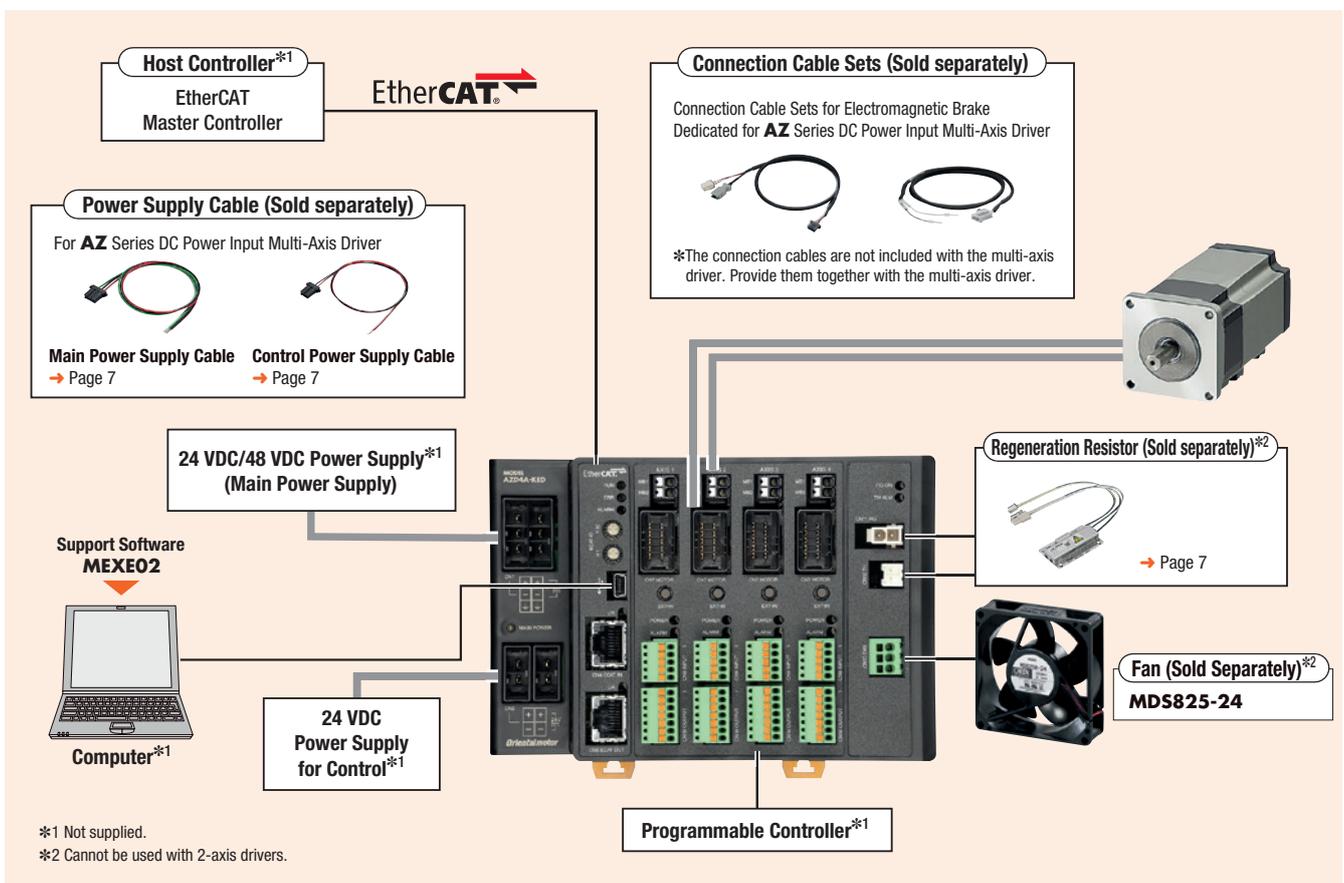
- **AZ** Series Equipped Electric Linear Slides **EAS** Series DC Input
- **AZ** Series Equipped Electric Linear Slides **EZS** Series DC Input
- **AZ** Series Equipped Electric Cylinders **EAC** Series DC Input
- **AZ** Series Equipped Compact Electric Cylinders **DR** Series / **DRS2** Series
- **AZ** Series Equipped Hollow Rotary Actuators **DGII** Series DC Input
- **AZ** Series Equipped Rack and Pinion Systems **L** Series DC Input

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

System Configuration

For EtherCAT Drive Profile Compatible

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



Product Number

Multi-Axis Drivers

AZD 4A - K ED

① ② ③ ④

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

◇ Connection Cable Sets for Motor

CC 050 V Z □ F A

① ② ③ ④ ⑤ ⑥ ⑧

◇ Connection Cable Sets 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	2B : 2 Axes 3A : 3 Axes 4A : 4 Axes
③	Power Supply Input	K : 24 VDC/48 VDC
④	Network Type	ED : EtherCAT Drive Profile

①	CC : Cable	
②	Length	005 : 0.5 m 010 : 1 m 015 : 1.5 m
		020 : 2 m 025 : 2.5 m 030 : 3 m
		040 : 4 m 050 : 5 m 070 : 7 m
		100 : 10 m 150 : 15 m 200 : 20 m
③	Reference Number	
④	Applicable Model	Z : For AZ Series
⑤	Reference Number	Blank: Frame Size 42 mm [H PG Geared Type is 40 mm, 60 mm]
		2 : Frame Size 20 mm, 28 mm [Harmonic Geared Type is 30 mm]
⑥	Cable Type	F : Connection Cable Set R : Flexible Connection Cable Set
⑦	Description	B : For Electromagnetic Brake Motor
⑧	Driver Type	A : For Multi-Axis Driver

Product Line

Multi-Axis Driver

◇ EtherCAT Drive Profile Compatible



Product Name	Number of Axes
AZD2B-KED	2 Axes
AZD3A-KED	3 Axes
AZD4A-KED	4 Axes

● AZ Series Catalog

- DC Input Motor Specifications
- DC Input Motor Characteristics
- DC Input Motor Dimensions
- Cables
 - Cables for I/O Signals
- Peripheral Equipment
 - Motor Mounting Brackets



● For details on the combinable motors and linear and rotary actuators, refer to the Oriental Motor website or the catalogs for each series.

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

◇ For Motor / Encoder

Applicable Products: **AZM14, AZM15, AZM24, AZM26, DGM60, DR20, DR28**

Length L [m]	Connection Cable Set	Flexible Connection Cable Set
0.5	CC005VZ2FA	CC005VZ2RA
1	CC010VZ2FA	CC010VZ2RA
1.5	CC015VZ2FA	CC015VZ2RA
2	CC020VZ2FA	CC020VZ2RA
2.5	CC025VZ2FA	CC025VZ2RA
3	CC030VZ2FA	CC030VZ2RA
4	CC040VZ2FA	CC040VZ2RA
5	CC050VZ2FA	CC050VZ2RA
7	CC070VZ2FA	CC070VZ2RA
10	CC100VZ2FA	CC100VZ2RA
15	CC150VZ2FA	CC150VZ2RA
20	CC200VZ2FA	CC200VZ2RA



Applicable Products: **AZM46, AZM48, AZM66, AZM69, DGB85, DGM85, DGB130, DGM130, DRSM40, DRSM60, LM2, LM4**

Length L [m]	Connection Cable Set	Flexible Connection Cable Set
0.5	CC005VZFZA	CC005VZRZA
1	CC010VZFZA	CC010VZRZA
1.5	CC015VZFZA	CC015VZRZA
2	CC020VZFZA	CC020VZRZA
2.5	CC025VZFZA	CC025VZRZA
3	CC030VZFZA	CC030VZRZA
4	CC040VZFZA	CC040VZRZA
5	CC050VZFZA	CC050VZRZA
7	CC070VZFZA	CC070VZRZA
10	CC100VZFZA	CC100VZRZA
15	CC150VZFZA	CC150VZRZA
20	CC200VZFZA	CC200VZRZA



◇ For Motor / Encoder / Electromagnetic Brake

Applicable Products: **AZM46, AZM48, AZM66, AZM69, DGB85, DGM85, DGB130, DGM130, DRSM40, DRSM60, LM2, LM4**

Length L [m]	Connection Cable Set	Flexible Connection Cable Set
0.5	CC005VZFBA	CC005VZRBA
1	CC010VZFBA	CC010VZRBA
1.5	CC015VZFBA	CC015VZRBA
2	CC020VZFBA	CC020VZRBA
2.5	CC025VZFBA	CC025VZRBA
3	CC030VZFBA	CC030VZRBA
4	CC040VZFBA	CC040VZRBA
5	CC050VZFBA	CC050VZRBA
7	CC070VZFBA	CC070VZRBA
10	CC100VZFBA	CC100VZRBA
15	CC150VZFBA	CC150VZRBA
20	CC200VZFBA	CC200VZRBA



Cable for Motor

Cable for Electromagnetic Brake

Note

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

■ **Included**

● **Multi-Axis Driver**

Network Type, Number of Axes	Included	CN1 Connector	CN2 Connector	CN1, CN2 Contact	CN9 Connector	CN10 Connector
	EtherCAT Compatible	2 Axes	1 pc.	1 pc.	5 pcs.	2 pcs.
3 Axes		2 pcs.	2 pcs.	10 pcs.	3 pcs.	3 pcs.
4 Axes		2 pcs.	2 pcs.	10 pcs.	4 pcs.	4 pcs.

● Power Supply Input

Main Power Supply: 24 VDC/48 VDC ±10% 7.0 A (7.0 A max. Use with an average of 4.0 A max.)

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 connection cable], use a 24 VDC ±4% power supply>

● Communication Specifications

◇ EtherCAT Specification

Transmission Rate	100 Mbps
Communication Cycle	<ul style="list-style-type: none"> · Free Run Mode: 1 ms min. · SM2 Event Synchronization Mode: 1 ms min. · DC Mode: 0.5 ms, 1 ms, 2 ms, 3 ms, 4 ms, 5 ms, 6 ms, 7 ms, 8 ms
Node Address	0 to 255 (00h to FFh, Initial Value: 00h)
Communication Protocol	Dedicated Protocol for EtherCAT (CoE) CiA402 Drive Profile

● General Specifications

Degree of Protection	IP10
Operating Environment	Ambient Temperature: 0 to +50°C (non-freezing) Humidity: 85% or less (non-condensing) Altitude: Up to 1000 m above sea level Atmosphere: No corrosive gas or dust. The product should not be exposed to water or oil.
Storage Conditions Transportation Conditions	Ambient Temperature: -25 to +70°C (non-freezing) Humidity: 85% or less (non-condensing) Altitude: Up to 3000 m above sea level Atmosphere: No corrosive gas or dust. The product should not be exposed to water or oil.
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the following places: · FG terminal – Power supply terminal
Dielectric Strength	Sufficient to withstand the following for 1 minute: · FG terminal - Power supply terminal 1 kVAC 50/60 Hz Leak current 10 mA or less

Note

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

Dimensions Unit: mm

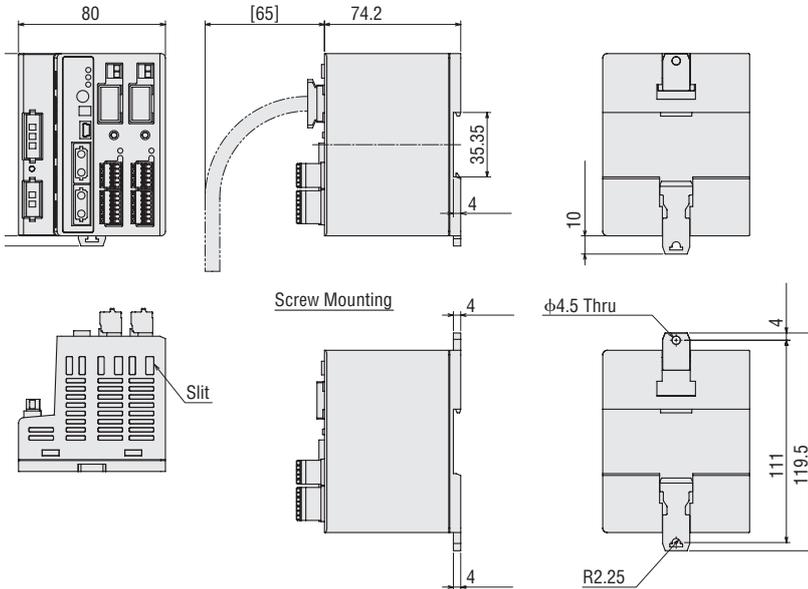
Multi-Axis Drivers

2 Axes

Network Type Number of Axes	EtherCAT Compatible	Mass [kg]
	Product Name	
2 Axes	AZD2B-KED	0.24

● Dimensions and included items are common to all drivers in the table.

DIN Rail Mounting



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)

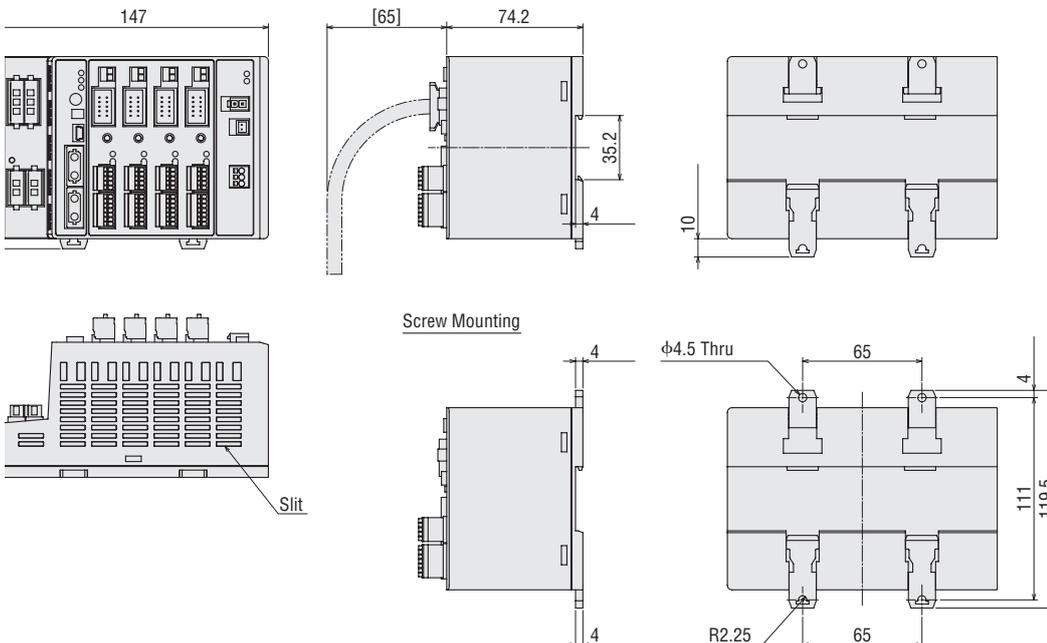
3 Axes, 4 Axes

Network Type Number of Axes	EtherCAT Compatible	Mass [kg]
	Product Name	
3 Axes	AZD3A-KED	0.42
4 Axes	AZD4A-KED	0.45

● Dimensions shows **AZD4A-KED**

● Dimensions and included items are common to all drivers in the table.

DIN Rail Mounting



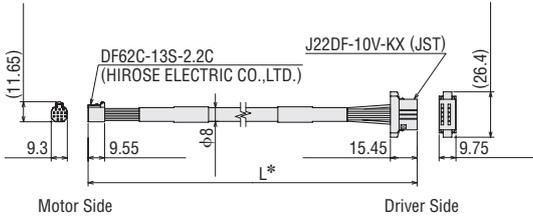
Included Items

- Common to 2-Axis driver.

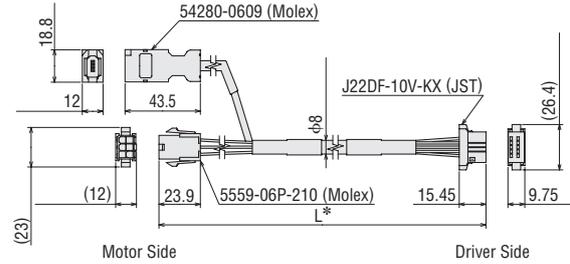
● Connection Cable Sets, Flexible Connection Cable Sets

◇ Cable for Motor

Model Name: **CC□□□VZ2FA, CC□□□VZ2RA**

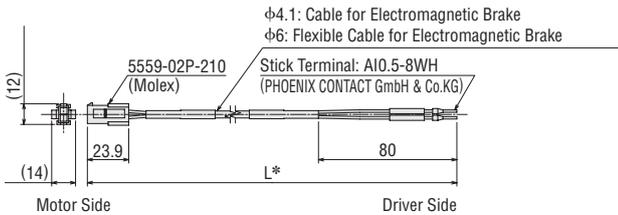


Model Name: **CC□□□VZFA, CC□□□VZRA**



◇ Cable for Electromagnetic Brake

Model Name: **CC□□□VZFBA, CC□□□VZRBA**



*The length L [m] is specified where L is located in the dimensions in "Product Line" on page 4.
 ● A number indicating the cable length is entered where the box □ is located within the product name.

■ Cables and Accessories

● Power Supply Cables

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

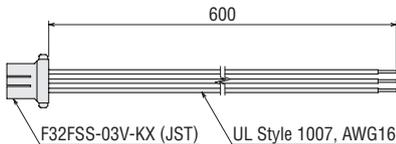
◇ Product Line

Product Name	Type
LC03D06A	For Main Power Supply
LC02D06A	For Control Power Supply

◇ Dimensions Unit: mm

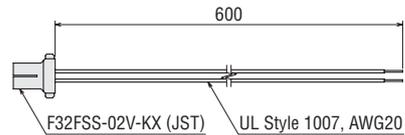
Main Power Supply Cable

LC03D06A



◇ Control Power Supply Cable

LC02D06A



● Regeneration Resistor

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, connect the regeneration resistor to the driver to convert regenerative power into thermal energy for dissipation. Alarms can occur easily when a 48 VDC power supply is used with a multi-axis driver, so use of a regeneration resistor is recommended.

Note

● Cannot be used with a 2-axis driver.

◇ Product Line

Product Name
RGC40

◇ Specifications

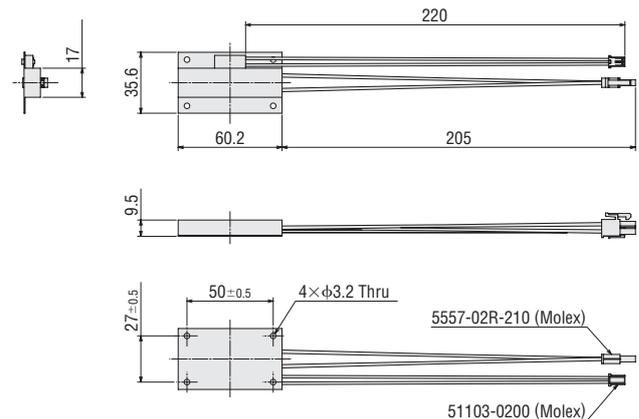
Permissible Power Consumption	Continuous Regenerative Power: 40 W* Instantaneous Regenerative Power: 400 W
Resistance Value	15 Ω
Thermostat Operating Temperature	Operation: Opens at 95±5°C Reset: Closes at 65±15°C (Normally Closed)
Thermostat Electrical Rating	250 VAC, 0.5 A (Min. Current 1.5 VDC, 1 mA)

*Install the regeneration resistor in a location that has the same heat radiation capability as the heat sink [Material: Aluminum 180×150 mm, 2 mm thick].

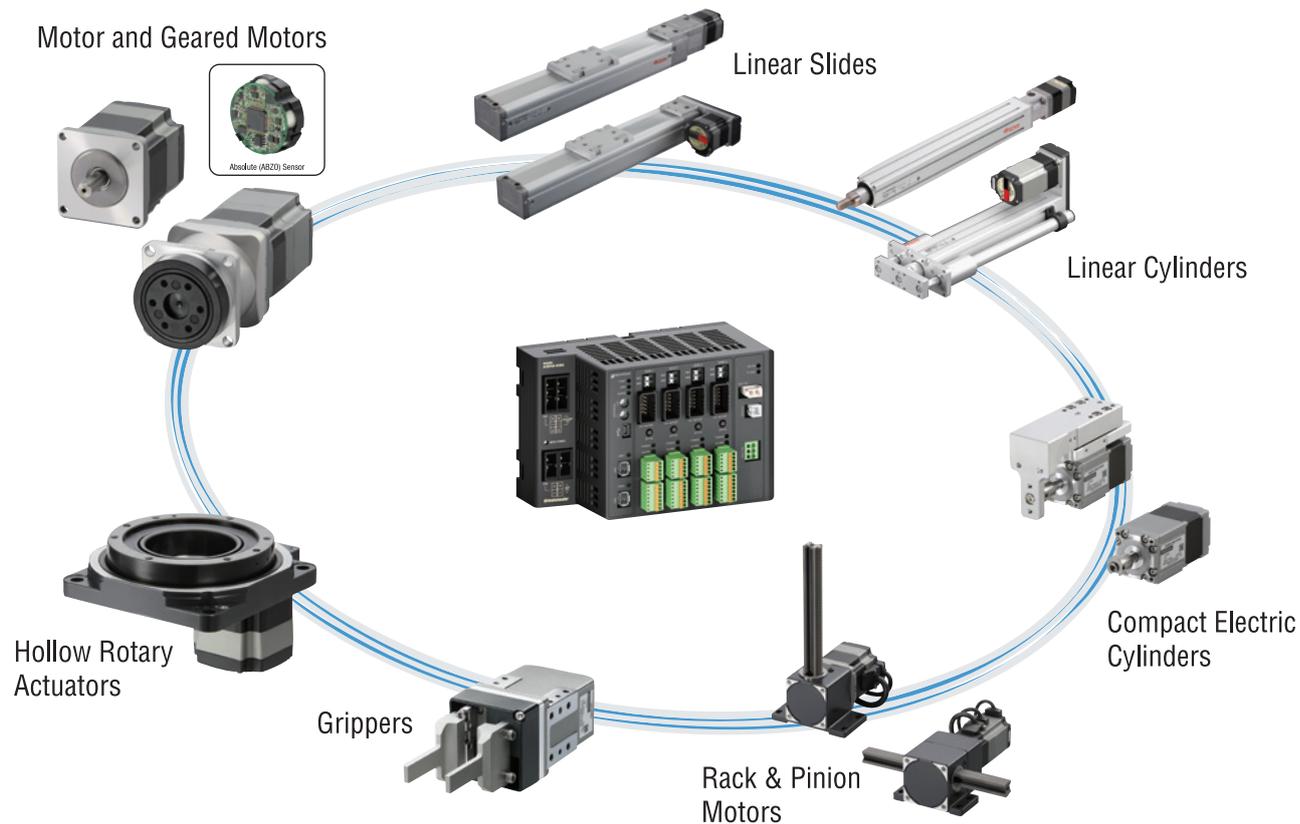


◇ Dimensions Unit: mm

Mass: 0.03 kg



αSTEP Family of Products



Orientalmotor

These products are manufactured at plants certified with the international standards **ISO 9001** (for quality assurance) and **ISO 14001** for systems of environmental management).

Specifications are subject to change without notice. This catalogue was published in March 2025.

ORIENTAL MOTOR (EUROPA) GmbH

European Headquarters
Schießstraße 44
40549 Düsseldorf, Germany
Tel: 0211 5206700 Fax: 0211 52067099

Spanish Office
Ronda de Poniente 2, Ed. 12, 2ª planta
28109 Tres Cantos (Madrid), Spain
Tel: +34 919 61 06 76

ORIENTAL MOTOR (UK) LTD.

UK Headquarters
Unit 5, Faraday Office Park,
Rankine Road, Basingstoke,
Hampshire RG24 8AH, U.K.
Tel: +44 1256 347090 Fax: +44 1256 347099

ORIENTAL MOTOR ITALIA s.r.l.

Italy Headquarters
Via XXV Aprile 5
20016 Pero (MI), Italy
Tel: +39 2 93906346 Fax: +39 2 93906348

Customer Service Center
(Support in German & English)

00800 22 55 66 22*

Mon - Thu: 08:00 - 16:30 CET
Friday: 08:00 - 15:00 CET

*Free Call Europe

info@orientalmotor.de

WWW.ORIENTALMOTOR.EU

EN | DE | UK | IT | ES