

# ***Oriental motor***

## **PRODUCT GUIDE**

Hybrid Stepper Servo Motors

Stepper Motors

Servo Motors

Brushless DC Motors

Standard AC Motors

Linear & Rotary Actuators

Cooling Fans

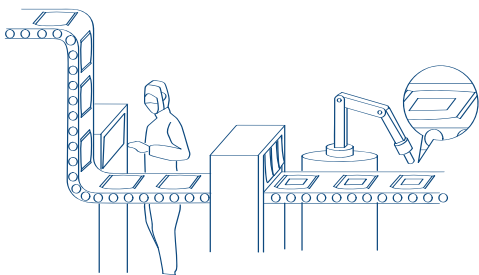
2024

A decorative graphic consisting of thick, rounded lines in blue and grey. A vertical blue line runs through the center, with a small blue square at the top and a small blue square at the bottom. A horizontal blue line runs across the middle, with a small blue square on the right side. A grey line runs horizontally across the bottom, with a small black square on the right side. The year '2024' is printed in a grey box on the bottom left.

# AVAILABLE WORLDWIDE, STARTING FROM A SINGLE UNIT



We contribute to society by broadening the horizons of life and industry.



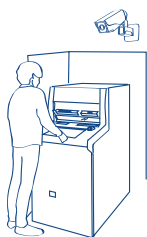
Factory automation



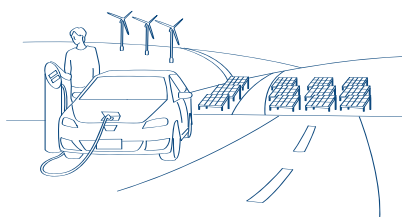
Equipment for manufacturing  
semiconductors and electronic  
components



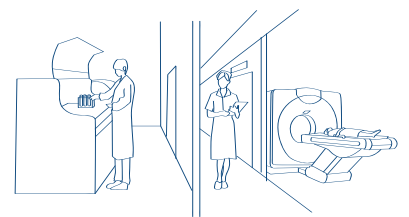
Equipment for food processing/  
measurement/packaging



Transport and financial equipment



Renewable energy



Medical equipment



# GLOBAL SALES NETWORK

40 countries

## Bringing Oriental Motor to the Global Market

**Industrial – Medical – Packaging –  
Material Handling – and so much more.**

Worldwide, our refined product development enables daily operations across all fields of business. Honoring our corporate philosophy built on over 100 years of history.

We continually evolve to meet our customers needs wherever they are.

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High torque in the high speed range

24

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High performance with compact design

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### STANDARD AC MOTORS

Simply connect a capacitor and supply power from a commercial power supply

44

### LINEAR & ROTARY ACTUATORS

Incorporating a motor and a linear-motion mechanism

64

### COOLING FANS

A wide range of cooling fans and axial flow fans, ideal for ventilation cooling

# HYBRID STEPPER SERVO MOTORS

**αSTEP**

The **AZ** Series enables absolute positioning without the need for a battery. The total cost is reduced because no additional sensors are required. As a result, the **AZ** Series offers absolute positioning at an economical price.



**AZ** Series

## FEATURES

### **Multitrotation Absolute System**

Absolute position detection is possible up to  $\pm 900$  (1800) rotations of the motor shaft from the home position. For 20/28 mm frame sizes it is  $\pm 450$  (900) rotations.

### **No External Sensors**

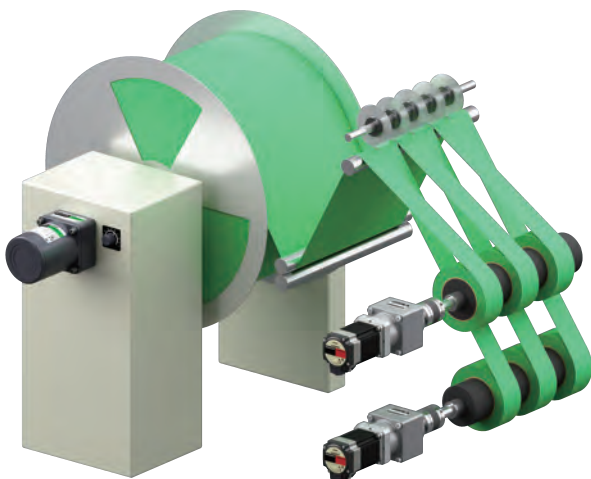
As it is an absolute system, external sensors such as a home sensor or limit sensor are not required.

### **Energy-saving**

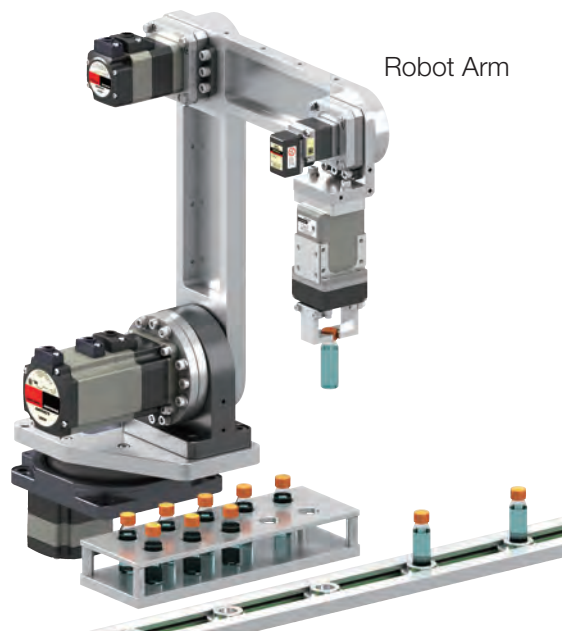
Energy saving is achieved through high efficiency, reducing motor heat generation.

## APPLICATIONS

Slitting Machine



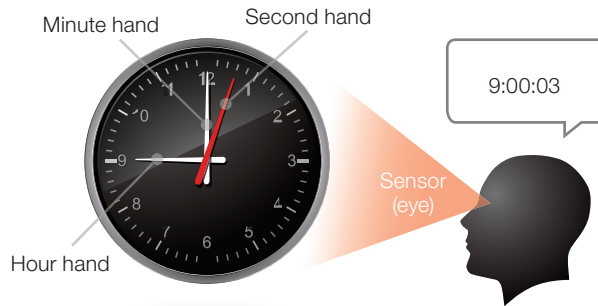
Robot Arm



# MECHANICAL SENSOR

Analogue clocks measure the current time based on the positions of the second hand, minute hand and hour hand. The **AZ Series ABZO** sensor is a mechanical sensor equipped with multiple gears equivalent to the hands of a clock. The position information is detected based on the angles of the respective gears. No electricity is required, so a backup battery is not necessary.

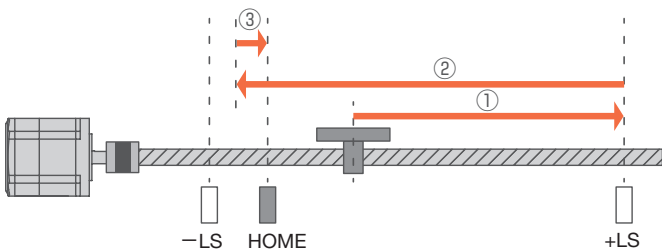
•Basic principles are like an analogue clock



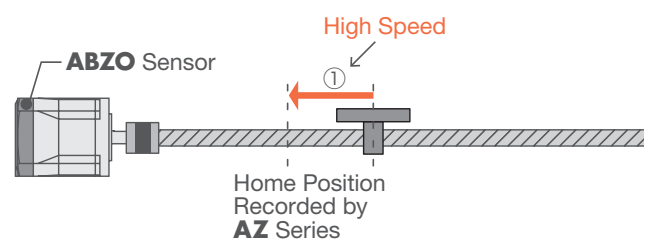
# NO EXTERNAL SENSORS

Return-to-home can be performed at high speed without the need to take sensor sensitivity and response time into account, allowing for a shortened machine cycle.

•Standard homing method with limit and home sensors



•High-speed homing method with **AZ Series**



# ENERGY SAVING

By using a high efficiency motor, heat generation can be reduced significantly. Power consumption is reduced by 47 % compared to previous levels.

•Temperature distribution using thermography

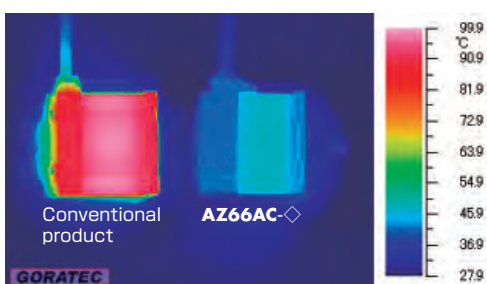
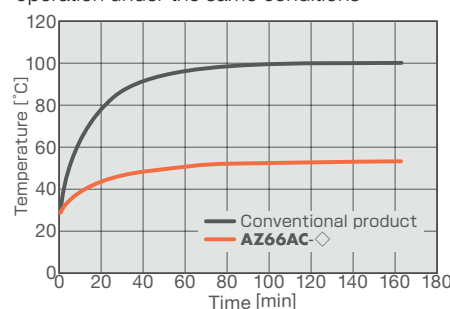


Image shows motors operating under the same conditions.

•Motor surface temperature during operation under the same conditions





Max. Holding Torque

0.036 - 52 Nm

Output Shaft  
Rotation Speed

0 - 6000 r/min

Frame Size

20 - 90 mm

- Absolute sensor, position control
- No external sensors necessary
- Low heat development



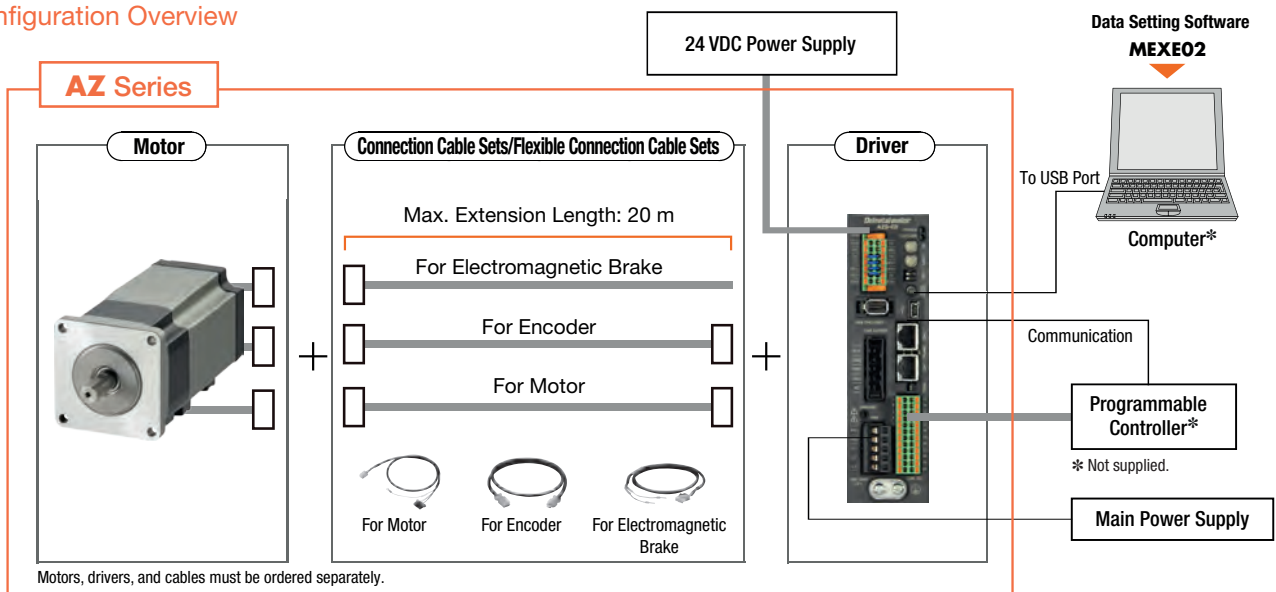
Further information

## Characteristics Table



Frame Size [mm]	Max. Holding Torque [Nm]	Resolution [°/Pulse]	Options
20	0.036	0.36	-
28	0.19	0.36	-
40	2.5	0.04 - 0.072	Electromagnetic brake, Harmonic gearhead
42	5	0.0036 - 0.36	Electromagnetic brake, Harmonic gearhead, Planetary gearhead, Tapered gearhead, Right-Angle gearhead
60	10	0.0036 - 0.36	
85	4	0.36	Electromagnetic brake
90	52	0.0036 - 0.1	Electromagnetic brake, Harmonic gearhead, Planetary gearhead

## Configuration Overview



## $\alpha$ STEP AZ Series - Neugart

Motor and Gearhead are Pre-assembled

- $\varnothing 40 \sim \varnothing 80$  mm
- Save Energy with High Reliability and High Efficiency
- High Speed Return-to-Home
- Equipped with a newly developed ABZO sensor - battery-free

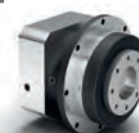


PLE planetary



PLN planetary

NEUGART gearheads



PLFE planetary



WPLE planetary

Product Number

● Motor, Standard

**AZM 6 6 A 0 C**

① ② ③ ④ ⑤ ⑥

● Motor with **PS**, **HPG** or Harmonic Gearhead

**AZM 6 6 A C - HP15 F**

① ② ③ ④ ⑥ ⑦ ⑧ ⑨

● Motor with **TS** or **FC** Gearhead

**AZM 6 6 A C - TS 10 U A**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

● 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	<b>AZM: AZ Series</b>
②	Motor Frame Size	<b>1:</b> 20 mm, <b>2:</b> 28 mm <b>4:</b> 42 mm ( <b>HPG</b> Geared Type is 40 mm) <b>6:</b> 60 mm <b>9:</b> 85 mm (Geared Type is 90 mm)
③	Motor Case Length	
④	Configuration	<b>A:</b> Single Shaft <b>M:</b> With Electromagnetic Brake
⑤	Shaft Shape	Blank: With flattened shaft (D-Cut) <b>0:</b> Straight Type <b>1:</b> With Key
⑥	Winding Type	<b>C:</b> AC Power Supply Input Specifications <b>K:</b> DC Power Supply Input Specifications
⑦	Geared Type	<b>PS:</b> <b>PS</b> Geared Type <b>HP:</b> <b>HPG</b> Geared Type <b>HS:</b> Harmonic Geared Type
⑧	Gear Ratio	Number: Reduction ratio
⑨	Output Shaft Type	Blank: <b>HPG</b> with round shaft and feather key <b>F:</b> <b>HPG</b> with Flange

①	Motor	<b>AZM: AZ Series</b>
②	Motor Frame Size	<b>4:</b> 42 mm <b>6:</b> 60 mm <b>9:</b> 90 mm ( <b>TS</b> Geared Type)
③	Motor Case Length	
④	Configuration	<b>A:</b> Single Shaft <b>M:</b> With Electromagnetic Brake
⑤	Motor Type	<b>C:</b> AC Power Supply Input Specifications <b>K:</b> DC Power Supply Input Specifications
⑥	Geared Type	<b>TS:</b> <b>TS</b> Geared Type <b>FC:</b> <b>FC</b> Geared Type
⑦	Gear Ratio	Number: Reduction ratio
⑧	Cable Direction*	<b>U:</b> Up <b>L:</b> Left <b>R:</b> Right (only <b>TS</b> Geared Type) <b>D:</b> Down (only <b>FC</b> Geared Type)
⑨	Identification	<b>A:</b> Solid shaft ( <b>FC</b> Geared Type)

\*With the output shaft pointing to the left the cable direction is defined by looking from the gearhead side.

①	Driver Type	<b>AZD: AZ Series</b>
②	Power Supply Input	<b>A:</b> Single-Phase 110~120 VAC <b>C:</b> Single-Phase, Three-Phase 200~240 VAC* <b>K:</b> 24/48 VDC
③	Type	Blank: Pulse Input <b>D:</b> Built-in Controller <b>X:</b> Pulse Input with RS-485 Communication <b>ED:</b> With EtherCAT interface <b>EP:</b> With Ethernet/IP interface <b>PN:</b> With PROFINET interface

\*WARNING: The **AZ** Series is not suitable for operation on 3 × 400 VAC.

①		<b>CC:</b> Cable
②	Length	<b>005:</b> 0.5 m <b>010:</b> 1 m <b>015:</b> 1.5 m <b>020:</b> 2 m <b>025:</b> 2.5 m <b>030:</b> 3 m <b>040:</b> 4 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m <b>150:</b> 15 m <b>200:</b> 20 m
③	Reference Number	
④	Applicable Models	<b>Z:</b> <b>AZ</b> Series motors
⑤	Reference Number	Blank: Frame Size 40 to 90 mm <b>2:</b> Frame Size 20 mm, 28 mm
⑥	Cable Type	<b>F:</b> Connection Cable Sets <b>R:</b> Flexible Connection Cable Sets
⑦	Electromagnetic Brake	Blank: For Motors without Electromagnetic Brake <b>B:</b> For Motors with Electromagnetic Brake
⑧	Cable Specifications	Blank: For drivers with AC Power Supply Input <b>2:</b> For drivers with DC Power Supply Input



For detailed information please refer to the **AZ Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)



Max. Holding Torque

0.3 - 36 Nm

Output Shaft  
Rotation Speed

4500 r/min

Frame Size

42 - 60 mm

- One cable connection
- Absolute sensor, position control
- No external sensors necessary



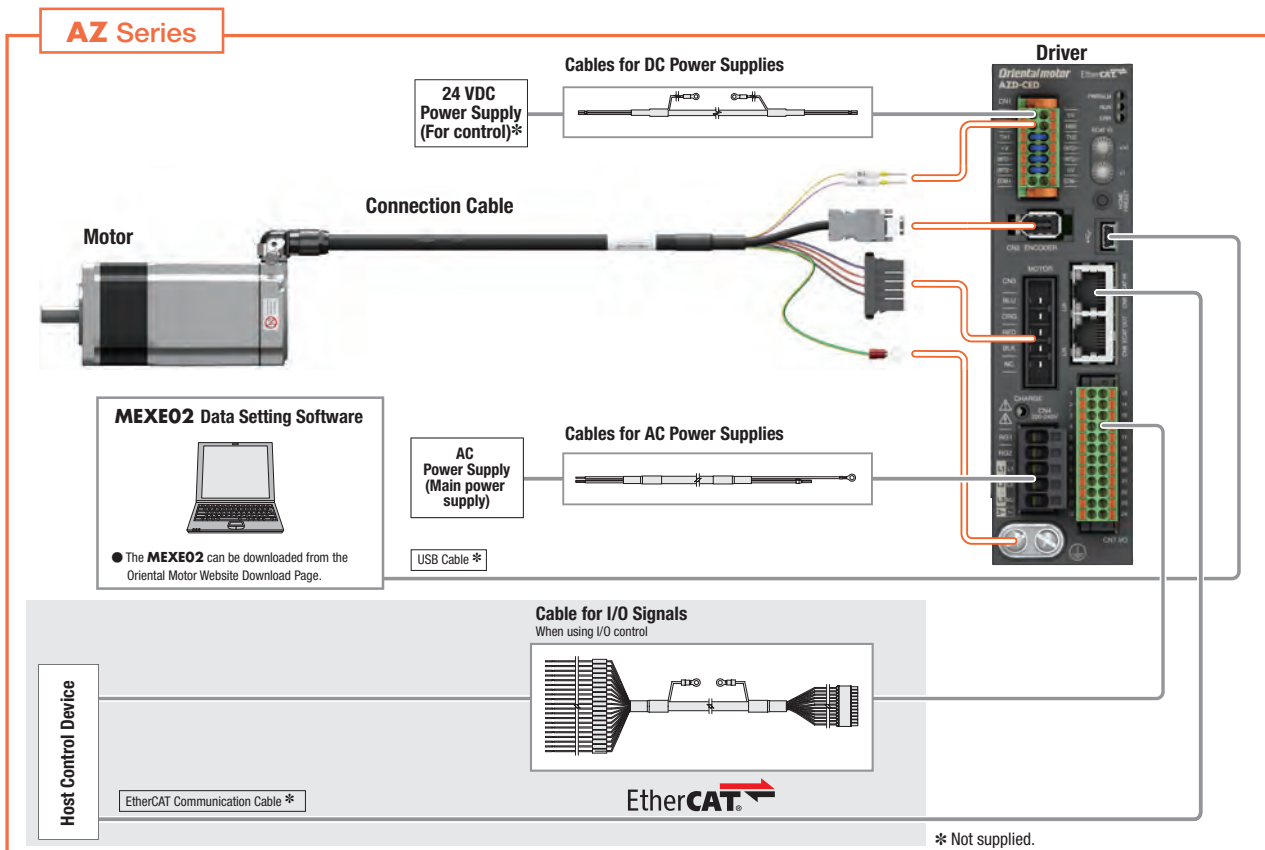
Further information

## Characteristics Table



Frame Size [mm]	Max. Holding Torque [Nm]	Resolution [°/Pulse]	Options
42	5	0.0036 - 0.36	Electromagnetic brake, Harmonic gearhead, Planetary gearhead, Tapered gearhead, Right-Angle gearhead
60	10	0.0036 - 0.36	

## Configuration Overview



## $\alpha$ STEP AZ Series - Neugart Motor and Gearhead are Pre-assembled

- $\varnothing 40 \sim \varnothing 60$  mm
- Save Energy with High Reliability and High Efficiency
- High Speed Return-to-Home
- Equipped with a newly developed ABZO sensor - battery-free

NEUGART gearheads



PLE planetary



Product Number

● Motor

**AZM 6 6 A 0 C H**

① ② ③ ④ ⑤ ⑥ ⑦

● Motor with PS or Harmonic Gearhead

**AZM 6 6 A C H-PS 7.2**

① ② ③ ④ ⑥ ⑦ ⑧ ⑨

● Motor with TS

**AZM 6 6 A C H-TS 7.2 U**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

● Motor with FC

**AZM 6 6 A C H-FC 7.2 U A**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

● Connection Cables/Flexible Connection Cables

**CCM 010 Z1 A F F**

① ② ③ ④ ⑤ ⑥

①	Motor	<b>AZM: AZ Series</b>
②	Motor Frame Size	<b>4:</b> 42 mm <b>6:</b> 60 mm
③	Motor Case Length	
④	Configuration	<b>A:</b> Single Shaft <b>M:</b> Type with Electromagnetic Brake
⑤	Additional Function*	<b>O:</b> Round Shaft <b>I:</b> Key Type
⑥	Winding Type	<b>C:</b> AC Input Specification
⑦	Motor Connection Method	<b>H:</b> Connector Type
⑧	Geared Type	<b>PS: PS</b> Geared Type <b>HS:</b> Harmonic Geared Type
⑨	Gear Ratio	

\*Standard type products without an additional function number have a round shaft with a flat section.

①	Motor	<b>AZM: AZ Series</b>
②	Motor Frame Size	<b>4:</b> 42 mm <b>6:</b> 60 mm
③	Motor Case Length	
④	Configuration	<b>A:</b> Single Shaft <b>M:</b> Type with Electromagnetic Brake
⑤	Winding Type	<b>C:</b> AC Input Specification
⑥	Motor Connection Method	<b>H:</b> Connector Type
⑦	Geared Type	<b>TS: TS</b> Geared Type
⑧	Gear Ratio	
⑨	Connector Direction	<b>U:</b> Up <b>L:</b> Left <b>R:</b> Right

①	Motor Type	<b>AZM: AZ Series</b>
②	Motor Frame Size	<b>4:</b> 42 mm <b>6:</b> 60 mm
③	Motor Case Length	
④	Configuration	<b>A:</b> Single Shaft <b>M:</b> Type with Electromagnetic Brake
⑤	Winding Type	<b>C:</b> AC Input Specification
⑥	Motor Connection Method	<b>H:</b> Connector Type
⑦	Geared Type	<b>FC: FC</b> Geared Type
⑧	Gear Ratio	
⑨	Connector Direction*	<b>D:</b> Down <b>U:</b> Up
⑩	Identification	<b>A:</b> Solid Shaft

\*The connector direction is as viewed from the gearhead side with the output shaft facing left.

①		<b>CCM: Cable</b>
②	Length	<b>010:</b> 1 m, <b>020:</b> 2 m, <b>030:</b> 3 m, <b>050:</b> 5 m, <b>070:</b> 7 m, <b>100:</b> 10 m
③	Applicable Model	<b>Z1: AZ Series Connector Type</b>
④	Description	<b>A:</b> AC Input for Motor/Encoder <b>B:</b> AC Input For Motor/Encoder/ Electromagnetic Brake Type
⑤	Cable Outlet Direction*	<b>F:</b> Output Shaft Direction <b>V:</b> Vertical <b>B:</b> Opposite to Output Shaft Direction
⑥	Cable Type	<b>F:</b> Connection Cable <b>R:</b> Flexible Connection Cable

\*Three types of the connection cables with different cable outlet directions are available. Please select the cable outlet direction needed for the installation.



For detailed information please refer to the **AZ Series Connector Type** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)



- Input Current  
0.4 - 3.7 A
- Weight  
56 - 100 gr
- Power Supply Input  
24 VDC/48 VDC

- Compact Design
- Light Weight Design
- Compatible with Battery Power
- EtherCAT, ProfiNet, EtherNet/IP, Modbus RTU, RS-485

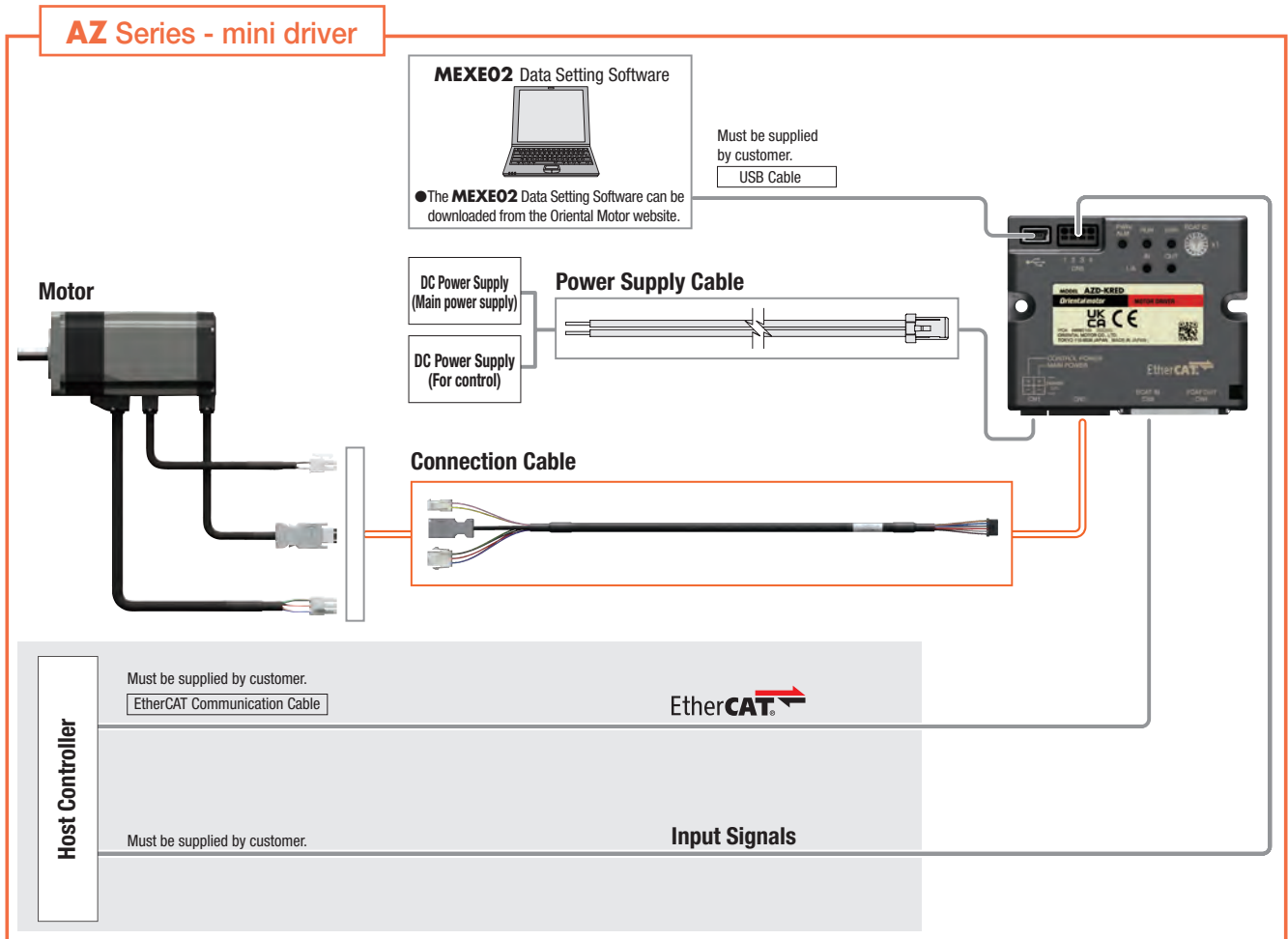


## List of Combinations



Product	Cable Type	Connector Type
Motor	Round shaft Type	Round shaft Type
	<b>TS</b> Geared Type	<b>TS</b> Geared Type
	<b>FC</b> Geared Type	<b>FC</b> Geared Type
	<b>PS</b> Geared Type	<b>PS</b> Geared Type
	<b>HPG</b> Geared Type	-
	Harmonic Geared Type	Harmonic Geared Type
	Neugart Geared Type	Neugart Geared Type

## Configuration Overview



Product Number

● Driver

**AZD - K R 2 D**

- ①      ②   ③   ④   ⑤

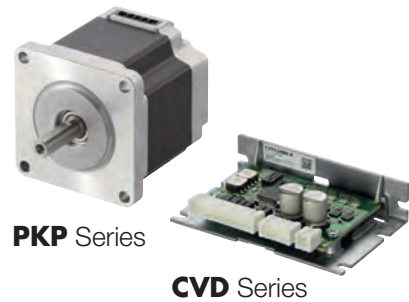
①	Driver Type	<b>AZD:</b> AZ Series Driver
②	Power Supply Input	<b>K:</b> 24 VDC/48 VDC
③	Driver Figure	<b>R:</b> Compact
④	Reference Number	
⑤	Type	<b>ED:</b> EtherCAT Drive Profile-Compatible <b>EP:</b> EtherNet/IP <b>PN:</b> PROFINET <b>D:</b> RS-485 Communication Type <b>X:</b> Pulse Input Type with RS-485 Communication



For detailed information please refer to the **AZ Series** mini driver catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)

# OPEN LOOP STEPPER MOTORS

2-phase and 5-phase high-torque stepper motors are available with a wide variety of frame sizes and motor options. The **CVD** Series drivers are optimally matched to the **PKP** Series motors.



## FEATURES

### Excellent Synchronisation, High-Response Operation

Stepper motors are ideal for applications requiring frequent starting and stopping.

### Holding the Stop Position

Stepper motors are ideal for applications where the low rigidity of the mechanism requires the absence of vibration upon stopping.

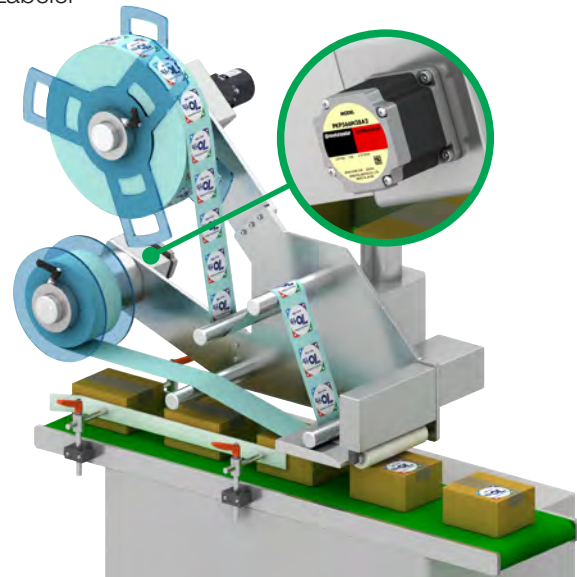
### High Resolution Types

High resolution stepper motors have a smaller basic step angle for improved stopping accuracy.

## APPLICATIONS

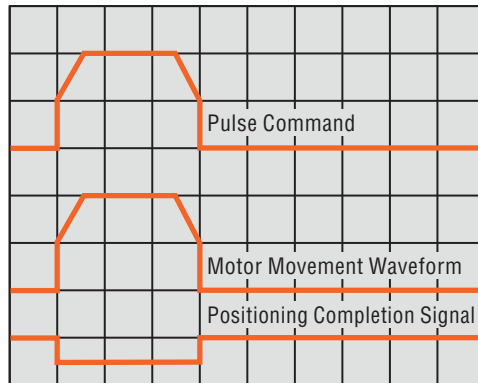


Labeler



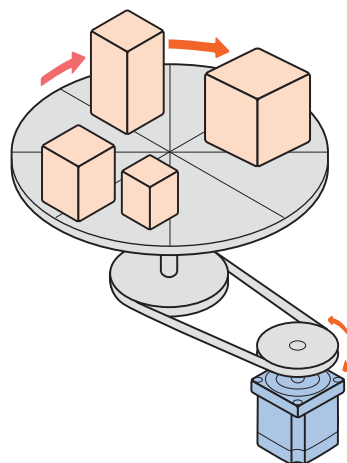
# SYNCHRONISATION, HIGH RESPONSE

Stepper motors operate synchronously with commands, generate high torque with a compact body, and offer excellent acceleration performance and response. They are ideal for applications requiring frequent starting and stopping.



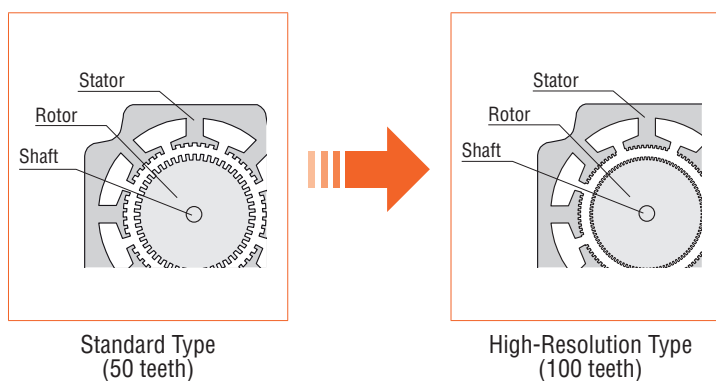
# HOLDING THE STOP POSITION

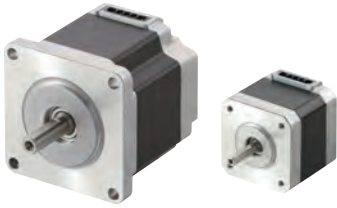
During positioning, the motor stops with its own holding force without hunting. This makes it ideal for applications where the low rigidity of the mechanism requires absence of vibration upon stopping.



# HIGH RESOLUTION STEPPER MOTORS

Increased resolution is realised with a higher number of motor teeth. For  $1.8^\circ$  stepper motors the step angle becomes  $0.9^\circ$ , for  $0.72^\circ$  stepper motors  $0.36^\circ$ .





Max. Holding Torque

0.014 - 9.5 Nm

Basic Step Angle

0.018° - 1.8°

Frame Size

13 - 85 mm

- High torque in the lower speed range
- Compact design
- Low heat development
- Energy saving



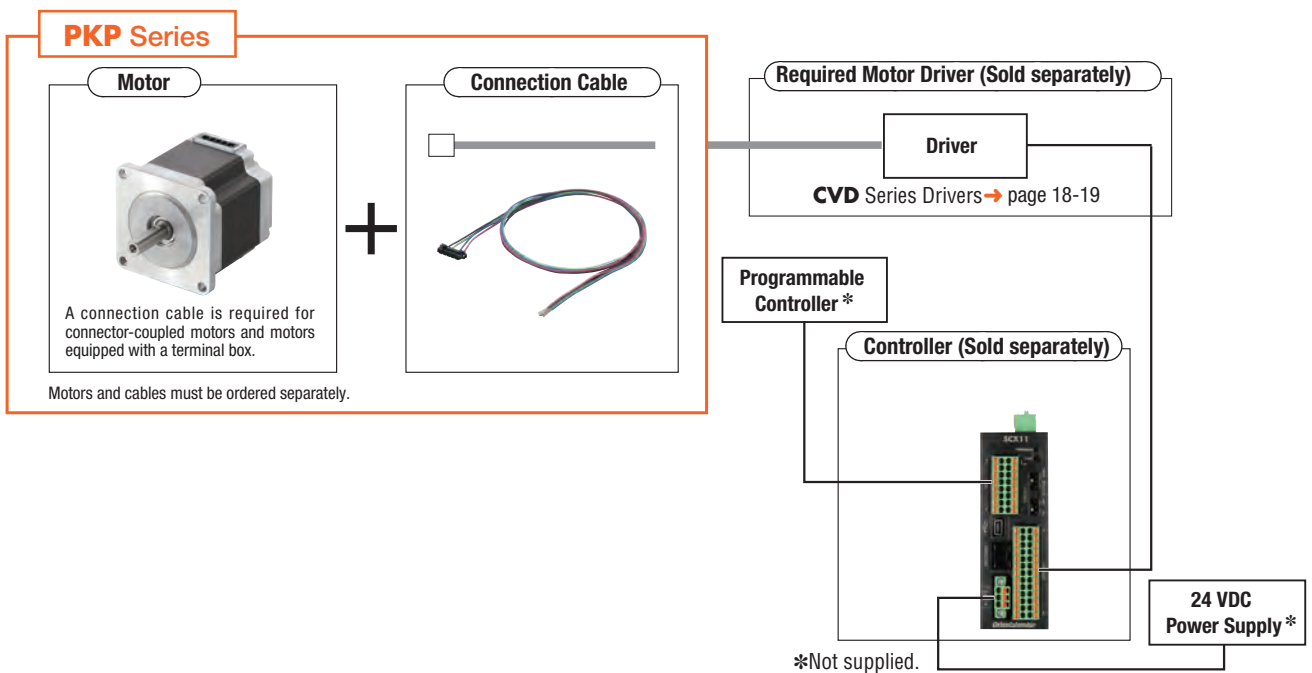
Further information

## Product Line

Motor Options	Basic Step Angle	Frame Size [mm]										Driver
		13	20	28	35	42	51	56.4	60	61	85	
Standard Type	1.8°	●*	●	●	●	●	-	●	-	-	●	CVD Series see page 18-19
Standard Type with Encoder	1.8°	-	●	●	●	●	-	●	-	-	-	
Standard Type with electromagnetic brake	1.8°	-	-	●	●	●	-	●	-	-	-	
High-Resolution Type	0.9°	-	-	●	-	●	-	●	-	-	-	
High-Resolution Type with Encoder	0.9°	-	-	-	-	●	-	●	-	-	-	
High-Resolution Type with electromagnetic brake	0.9°	-	-	-	-	●	-	●	-	-	-	
Flat Type	1.8°	-	-	-	-	●	-	-	●	-	-	
Flat Type with Harmonic Geared	0.018° - 0.036°	-	-	-	-	-	●	-	-	●	-	
Standard Type with Parallel Shaft Gears	SH 0.05° - 0.5° CS 0.09° - 0.36°	-	-	●	-	●	-	-	●	-	-	

\*Comming soon

## Configuration Overview



Product Number

- Standard 2-Phase Stepper Motor  
Standard Type with Electromagnetic Brake

**PKP 2 6 4 D 28 A 2**

① ② ③ ④ ⑥ ⑦ ⑧ ⑨

- High Resolution 2-Phase Stepper Motor/  
High-Resolution Type with Electromagnetic Brake

**PKP 2 6 4 M D 28 A 2**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Motor	<b>PKP: PKP Series</b>
②		<b>2:</b> For 2-phase stepper motors
③	Frame Size	<b>0:</b> 13 mm <b>1:</b> 20 mm <b>2:</b> 28 mm <b>3:</b> 35 mm <b>4:</b> 42 mm <b>6:</b> 56.4 mm <b>9:</b> 85 mm
④	Motor Case Length	
⑤	Basic Step Angle	Blank: 1.8° <b>M:</b> 0.9°
⑥	Number of Lead Wires	<b>D:</b> 4 Leads <b>U:</b> 5 or 6 Leads
⑦	Motor Winding Specification	
⑧	Configuration	<b>A:</b> Single Shaft <b>B:</b> Double Shaft <b>M:</b> with an Electromagnetic Brake
⑨	Reference Number	

- Standard 2-Phase Stepper Motor with Encoder

**PKP 2 6 4 D 28 A 2 - R2F L**

① ② ③ ④ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

- High Resolution 2-Phase Stepper Motor with Encoder

**PKP 2 4 3 M D 15 A 2 - R2F L**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Motor	<b>PKP: PKP Series</b>
②		<b>2:</b> For 2-phase stepper motors
③	Frame Size	<b>1:</b> 20 mm <b>2:</b> 28 mm <b>3:</b> 35 mm <b>4:</b> 42 mm <b>6:</b> 56.4 mm
④	Motor Case Length	
⑤	Basic Step Angle	Blank: 1.8° <b>M:</b> 0.9°
⑥	Number of Lead Wires	<b>D:</b> 4 Leads <b>U:</b> 5 or 6 Leads
⑦	Phase Current	× 0.1 A
⑧	Shaft	<b>A:</b> Single Shaft
⑨	Connector Classification	
⑩	Encoder Resolution	<b>R2E:</b> 200 P/R <b>R2F:</b> 400 P/R <b>R3J:</b> 1000 P/R
⑪	Encoder Output Type	<b>L:</b> Line Driver

- Flat Type

**PKP 2 4 2 D 23 A 2**

① ② ③ ④ ⑥ ⑦ ⑧ ⑩

**PKP 2 6 2 F D 15 A W**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- Flat Type with Harmonic Geared

**PKP 2 4 2 D 23 A 2 - H 100**

① ② ③ ④ ⑥ ⑦ ⑧ ⑩ ⑪ ⑫

**PKP 2 6 2 F D 15 A W - H 100 S**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑪ ⑫ ⑬

①	Motor	<b>PKP: PKP Series</b>
②		<b>2:</b> For 2-phase stepper motors
③	Frame Size	<b>4:</b> 42 mm (Harmonic Geared type is 51 mm.) <b>6:</b> 60 mm (Harmonic Geared type is 61 mm.)
④	Motor Case Length	
⑤	Motor Classification	<b>F:</b> Frame Size 60 mm
⑥	Number of Lead Wires	<b>D:</b> 4 Leads
⑦	Phase Current	× 0.1 A
⑧	Shaft	<b>A:</b> Single Shaft
⑨	Cable Type	Blank: Connector Coupled Type <b>W:</b> Lead Wire Type
⑩	Reference Number	
⑪	Geared Type	Blank: Flat Type <b>H:</b> Flat Type Harmonic Geared
⑫	Gear Ratio	
⑬	Gear Classification	

- SH Geared Type, CS Geared Type

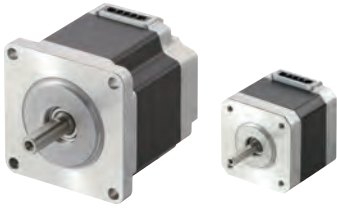
**PKP 2 4 3 D 23 B 2 - SG 18**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Motor	<b>PKP: PKP Series</b>
②		<b>2:</b> For 2-phase stepper motors
③	Frame Size	<b>2:</b> 28 mm <b>4:</b> 42 mm <b>6:</b> 60 mm
④	Motor Case Length	
⑤	Number of Lead Wires	<b>D:</b> 4 Leads <b>U:</b> 5 or 6 Leads
⑥	Motor Winding Specification	
⑦	Configuration	<b>A:</b> Single Shaft <b>B:</b> Double Shaft
⑧	Connector Classification	
⑨	Geared Type	<b>SG: SH Geared Type</b> <b>CS: CS Geared Type</b>
⑩	Gear Ratio	Number: Reduction ratio



For detailed information please refer to the **PKP Series** catalogue on our website: [www.orientalmotor.eu](http://www.orientalmotor.eu)



Max. Holding Torque

0.052 - 2.3 Nm

Basic Step Angle

0.36° - 0.72°

Frame Size

28 - 60 mm

- Compact design
- High torque in the upper speed range
- Low vibration
- Low heat generation
- Energy saving

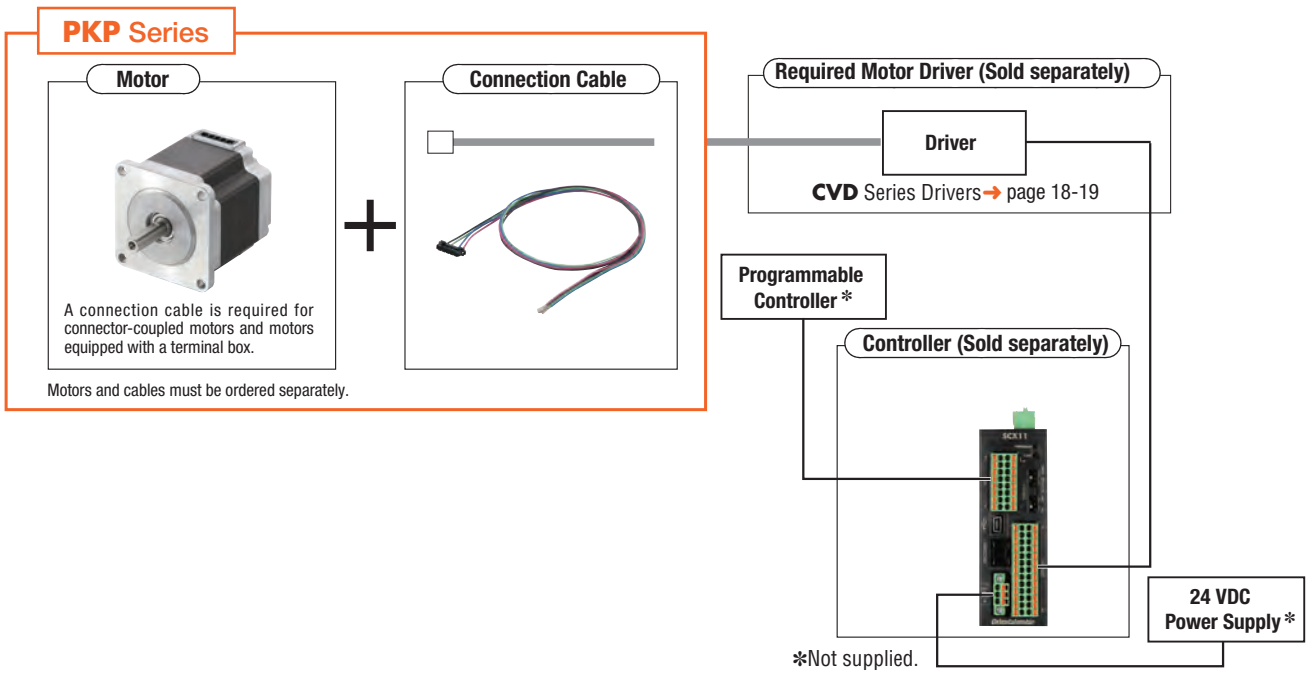


Further information

**Product Line**

Motor	Basic Step Angle	Frame Size [mm]				Driver
		28	42	56.4	60	
Standard Type	0.72°	●	●	●	●	<b>CVD Series</b> see page 18 - 19
Standard Type with Encoder	0.72°	-	●	●	●	
High-Resolution Type	0.36°	-	●	-	●	

**Configuration Overview**





Product Number

● Standard 5-Phase Stepper Motor

**PKP 5 6 6 F N 24 A 2**

① ② ③ ④ ⑤ ⑦ ⑧ ⑨ ⑩

● High Resolution 5-Phase Stepper Motor

**PKP 5 4 4 M N 18 A**

① ② ③ ④ ⑥ ⑦ ⑧ ⑨

● Standard 5-Phase Stepper Motor with Encoder

**PKP 5 6 6 F N 24 A 2 - R2G L**

① ② ③ ④ ⑤ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

● Connection Cable for Motor

**LC 5 N 06 E**

① ② ③ ④ ⑤

● Connection Cable for Encoder

**LC E 08 A - 006**

① ② ③ ④ ⑤

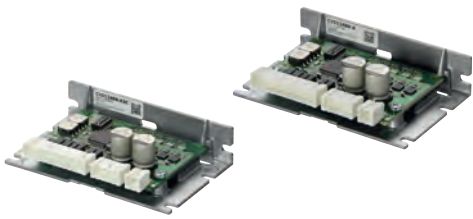
①	Motor	<b>PKP: PKP</b> Series
②		<b>5:</b> For 5-phase stepper motors
③	Frame Size	<b>2:</b> 28 mm <b>4:</b> 42 mm <b>6:</b> 56.4 mm (60 mm when the motor classification is "F")
④	Motor Case Length	
⑤	Motor Classification	<b>F:</b> Frame Size 60 mm
⑥	Basic Step Angle	Blank: 0.72° <b>M:</b> 0.36°
⑦	Number of Lead Wires	<b>N:</b> 5 Leads
⑧	Phase Current	× 0.1 A
⑨	Configuration	<b>A:</b> Single Shaft <b>B:</b> Double Shaft
⑩	Connector Classification	
⑪	Encoder Resolution	<b>R2G:</b> 500 P/R
⑫	Encoder Output Circuit Type	<b>L:</b> Line Driver

①		<b>LC:</b> Connection Cable
②		<b>5:</b> For 5-phase stepper motors
③	Cable Classification	<b>N:</b> For 5-phase stepper motors
④	Length	<b>06:</b> 0.6 m <b>10:</b> 1 m
⑤	Reference Letter	

①		<b>LC:</b> Connection Cable
②	Cable Classification	<b>E:</b> For Encoder
③	Appropriate Products	<b>08:</b> For encoders with line driver output
④	Reference Letter	
⑤	Length	<b>006:</b> 0.6 m



For detailed information please refer to the **PKP Series** catalogue on our website: [www.orientalmotor.eu](http://www.orientalmotor.eu)



Input Current

0.5 - 4.8 A

Motor Drive Current

0.35 - 4.5 A/Phase

Power Supply Input

24 VDC

- Compact and lightweight
- Low vibration
- For 2- or 5-phase Stepper motors



Further information

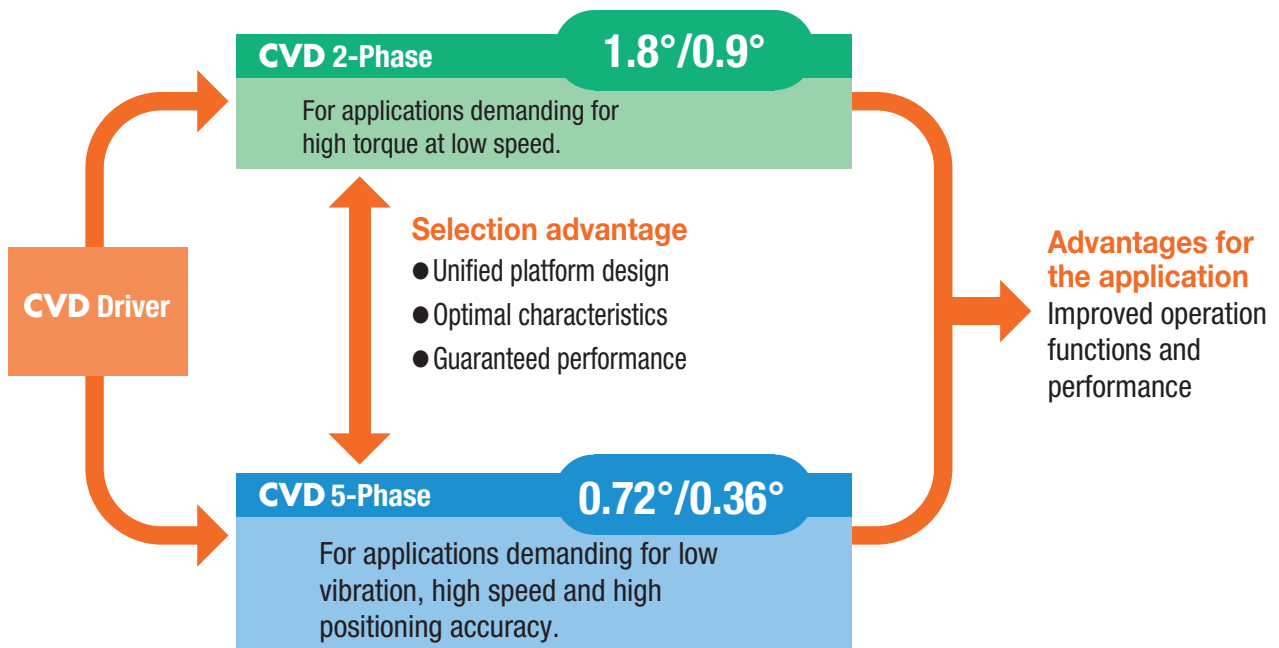
**Product Line**



Control Method	With Pulse-Input	With RS485 Interface	With Speed Control
I/O	-	Return to the reference point Positioning mode Speed specification [2-phase/5-phase]	2 speeds selectable only for 5-phase stepper motors
Pulse-Input	1-stroke/2-stroke mode Adjustable microstep resolution	-	-
Modbus (RTU)	-	Return to the reference point Positioning mode Direct Data Operation* Speed control	-

\*Operation with direct data means that the parameters for position and speed are overwritten each time.

**Problem-free change between 2-phase and 5-phase technology**



1.8°/0.9° and 0.72°/0.36° stepper motors use specific drivers that must be selected to match the motor technology used. **CVD** Series 2-phase and 5-phase stepper motor drivers are compatible in terms of function and dimensions. This allows you to select the optimal motor according to your specification, regardless of the motor technology. In addition, the motors are characterised by compactness and low weight.

## Product Number

## ● Driver with Pulse-Input

**CVD 2 23 F B R - K**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

## ● Driver with RS485 Interface

**CVD 2 B R - K R**

① ② ③ ④ ⑤ ⑥

## ● Driver with Speed Control

**CVD 5 18 B R - K SC**

① ② ③ ④ ⑤ ⑥ ⑦

①	Driver	<b>CVD: CVK</b> Series
②		<b>2:</b> For 2-phase stepper motors <b>5:</b> For 5-phase stepper motors
③	Phase Current	× 0.1 A
④	Reference Letter	
⑤	Mounting Plate	Blank: Without mounting plate <b>B:</b> With mounting plate
⑥	Connector Configuration	Blank: Straight <b>R:</b> Right Angle
⑦	Power Supply Input	<b>K:</b> 24 VDC
⑧	Driver Classification	Blank: Pulse-Input

①	Driver	<b>CVD: CVK</b> Series
②		<b>2:</b> For 2-phase stepper motors <b>5:</b> For 5-phase stepper motors
③	Mounting Plate	Blank: Without mounting plate <b>B:</b> With mounting plate
④	Connector Configuration	Blank: Straight <b>R:</b> Right Angle
⑤	Power Supply Input	<b>K:</b> 24 VDC
⑥	Driver Classification	<b>R:</b> RS-485 Communication

①	Driver	<b>CVD: CVK</b> Series
②		<b>5:</b> For 5-phase stepper motors
③	Phase Current	× 0.1 A
④	Mounting Plate	Blank: Without mounting plate <b>B:</b> With mounting plate
⑤	Connector Configuration	Blank: Straight <b>R:</b> Right Angle
⑥	Power Supply Input	<b>K:</b> 24 VDC
⑦	Driver Classification	<b>SC:</b> Speed Control



For detailed information please refer to the  
**CVD Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)

# SERVO MOTORS

The **AZX** Series is equipped with a battery-free absolute sensor. They are suitable for positioning applications with a large amount of travel, since they achieve high torque in the high speed range. The basic operations are the same as the **AZ** Series, making combined use in equipment easy.



**AZX** Series

## FEATURES

### **PS** Geared type available

Available in planetary geared type. Geared type is relatively inexpensive and features small size, light weight and compactness.

### **High Torque in the High Speed**

Achieves high speed and high torque that the **AZ** Series cannot exert. They has superior torque in the high speed range, while the **AZ** Series has superior torque in the low speed range.

### **Same usability as AZ Series**

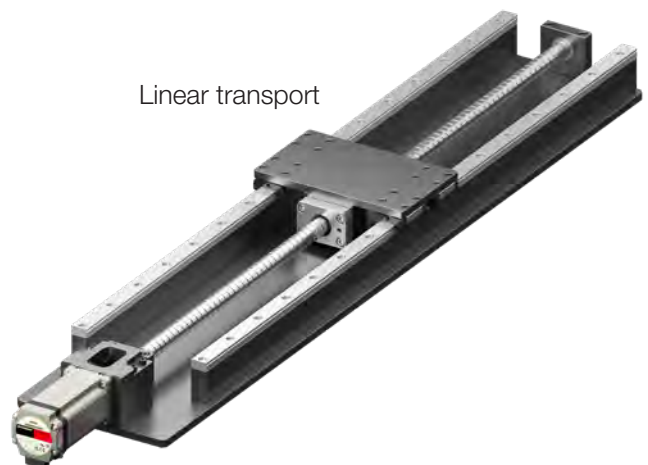
Provides the equivalent usability as the **AZ** Series.

## APPLICATIONS

Disc transport

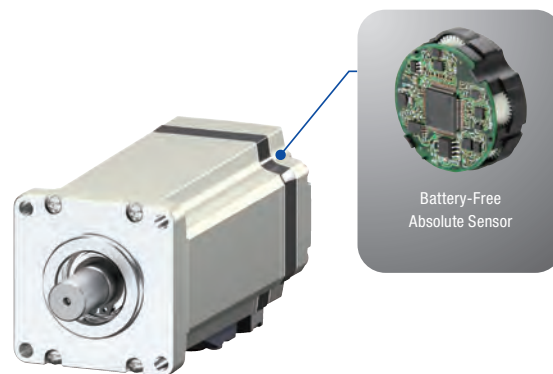


Linear transport



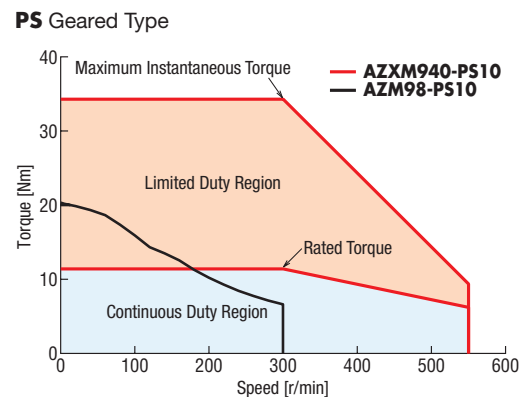
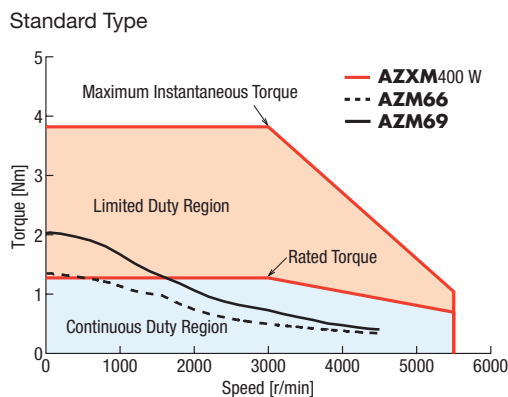
## BATTERY-FREE ABSOLUTE SENSOR EQUIPPED

The servo motor equipped with the **ABZO** Sensor. Thanks to the absolute system, a home sensor or external sensor is not required. No battery is necessary for a mechanical-type sensor. Positioning information is managed mechanically by the **ABZO** Sensor.



## HIGH OUTPUT POWER, HIGH-SPEED CHARACTERISTICS

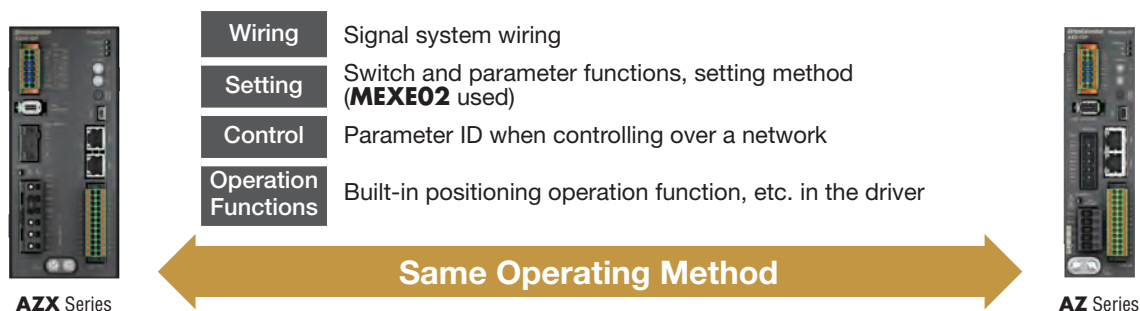
The **AZX** Series achieves high torque in the high speed range. It is suitable for positioning applications with a large amount of travel (e.g.: ball screw driving).



● This is a comparison of the speed – torque characteristics of the **AZX** Series and **AZ** Series. The **AZX** Series offers superior torque in the high speed range, the **AZ** Series is better in the low speed range.

## THE BASIC OPERATIONS ARE THE SAME AS THE **AZ** SERIES

Using the **AZX** Series and **AZ** Series together in the same equipment can eliminate the work of operational changes.





Output Power

400 - 600 W

Output Shaft  
Rotation Speed

0 - 5500 r/min

Rated Torque

1.27 - 25.7 Nm

- Absolute sensor, position control
- Same Operating Method as the **AZ** Series
- High Torque in the High Speed Range
- Ether**CAT**  **EtherNet/IP**



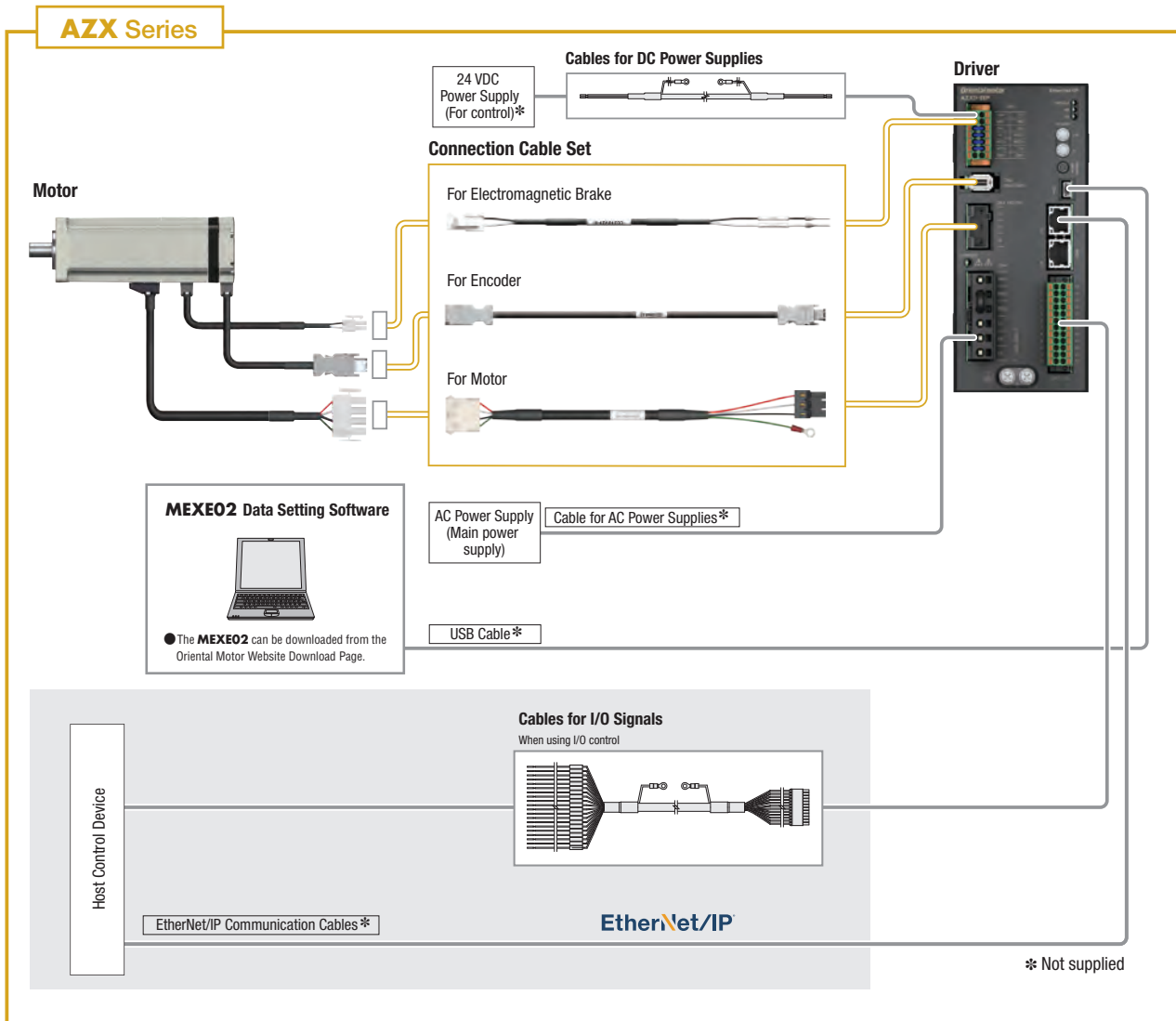
Further information

## Characteristics Table



Output Power [W]	Rated Torque [Nm]	Maximum Instantaneous Torque [Nm]	Options
400	1.27 / 25.7	3.82 / 77.2	Electromagnetic brake, Planetary gearhead
600	1.91 / 8.6	3.82 / 32.2	Electromagnetic brake, Planetary gearhead

## Configuration Overview



**Product Number**
**● Motor, Standard**
**AZXM 6 40 A C**

①      ②      ③      ④      ⑤

①	Motor Type	<b>AZXM: AZX Series Motor</b>
②	Motor Frame Size	<b>6:</b> 60 mm <b>9:</b> 85 mm
③	Output Power	<b>40:</b> 400 W <b>60:</b> 600 W
④	Output Shaft Type	<b>A:</b> Single Shaft <b>M:</b> Type with Electromagnetic Brake
⑤	Motor Type	<b>C:</b> AC Input Specification

**◇ PS Geared Type**
**AZXM 9 40 A C-PS 10**

①      ②      ③      ④      ⑤      ⑥      ⑦

①	Motor Type	<b>AZXM: AZX Series Motor</b>
②	Motor Frame Size	<b>9:</b> 90 mm
③	Output Power	<b>40:</b> 400 W <b>60:</b> 600 W
④	Output Shaft Type	<b>A:</b> Single Shaft <b>M:</b> Type with Electromagnetic Brake
⑤	Motor Type	<b>C:</b> AC Input Specification
⑥	Geared Type	<b>PS: PS</b> Geared Type
⑦	Gear Ratio	

**● Driver**
**AZXD-S ED**

①      ②      ③

①	Driver Type	<b>AZXD: AZX Series Driver</b>
②	Power Supply Input	<b>S:</b> Single-Phase/Three-Phase 200-240 VAC
③	Product Line	<b>ED:</b> EtherCAT-Compatible <b>EP:</b> EtherNet/IP-Compatible

**● Connection Cable Sets / Flexible Connection Cable Sets**
**CC 010 V X F B**

①      ②      ③      ④      ⑤      ⑥

①		<b>CC:</b> Cable
②	Length	<b>010:</b> 1 m <b>020:</b> 2 m <b>030:</b> 3 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m <b>150:</b> 15 m <b>200:</b> 20 m
③	Reference Number	
④	Applicable Model	<b>X:</b> For <b>AZX Series</b>
⑤	Cable Type	<b>F:</b> Connection Cable Set <b>R:</b> Flexible Connection Cable Set
⑥	Description	Blank: For Type without Electromagnetic Brake <b>B:</b> For Type with Electromagnetic Brake



For detailed information please refer to the **AZX Series** catalogue on our website: [www.orientalmotor.eu](http://www.orientalmotor.eu)

# BRUSHLESS DC MOTORS

High-efficiency brushless DC Motors achieve high output in a compact body while delivering high-speed operation, a wide speed control range and constant torque characteristics from low speed to high speed. AC input and DC input types are available.



## FEATURES

### Speed Stability

Speed remains stable even if the weight of the load changes. This is also known as "Speed Regulation".

### Alarm Function

Various protective functions such as overload/overvoltage protective functions are equipped. An alarm is an output when a protective function activates.

### Speed Control

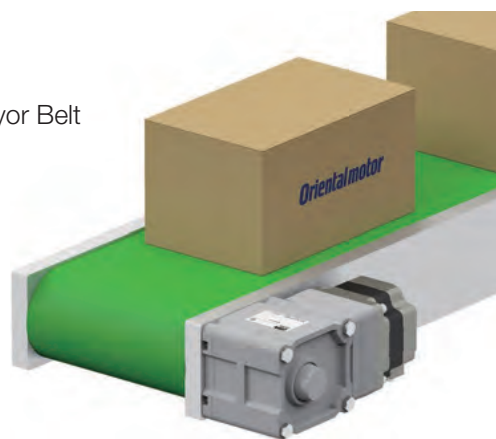
Speed control refers to the ability to manipulate the rotational speed of the motor. Typically, a speed feedback device is needed together with a speed controller.

## APPLICATIONS

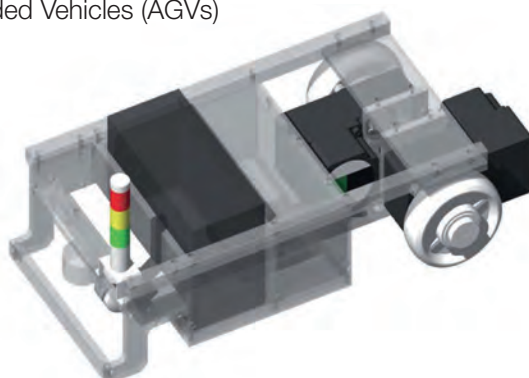
Mixing Machine



Conveyor Belt



Automated Guided Vehicles (AGVs)

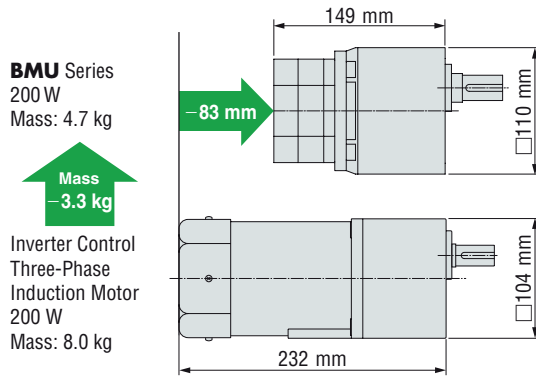




# SLIM, LIGHT, HIGH POWER

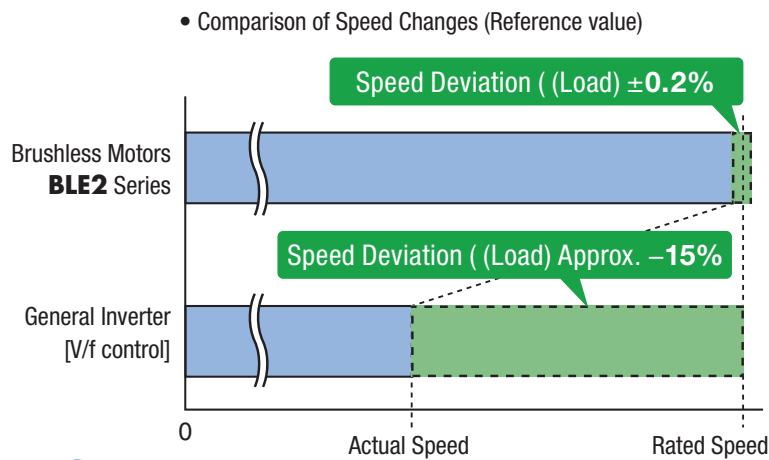
Brushless DC motors are slim, lightweight, and high power because permanent magnets are used in the rotor portion. This contributes to the downsizing of equipment.

[Comparison Example at 200 W Output Power]



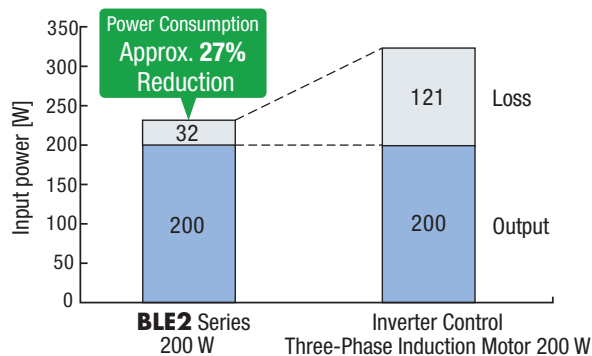
# ±0.2 % SPEED STABILITY

Brushless DC motor drivers constantly monitor feedback signals from the motor and compare the actual speed against the set speed, adjusting the applied voltage where needed to maintain the set speed. This allows the motor to rotate at a stable speed from low to high speeds even when the load fluctuates.



# ENERGY SAVING

Brushless DC motors significantly reduce power consumption as the use of permanent magnets in the rotor portion prevents secondary losses from the rotor. This helps the equipment to save energy.





Output Power

30 - 300 W

Speed Range

80 - 4000 r/min

Frame Size

60 - 110 mm

- 16 programmable speeds
- Vertical movement possible
- Torque Limit Function
- Up to IP67



Further information

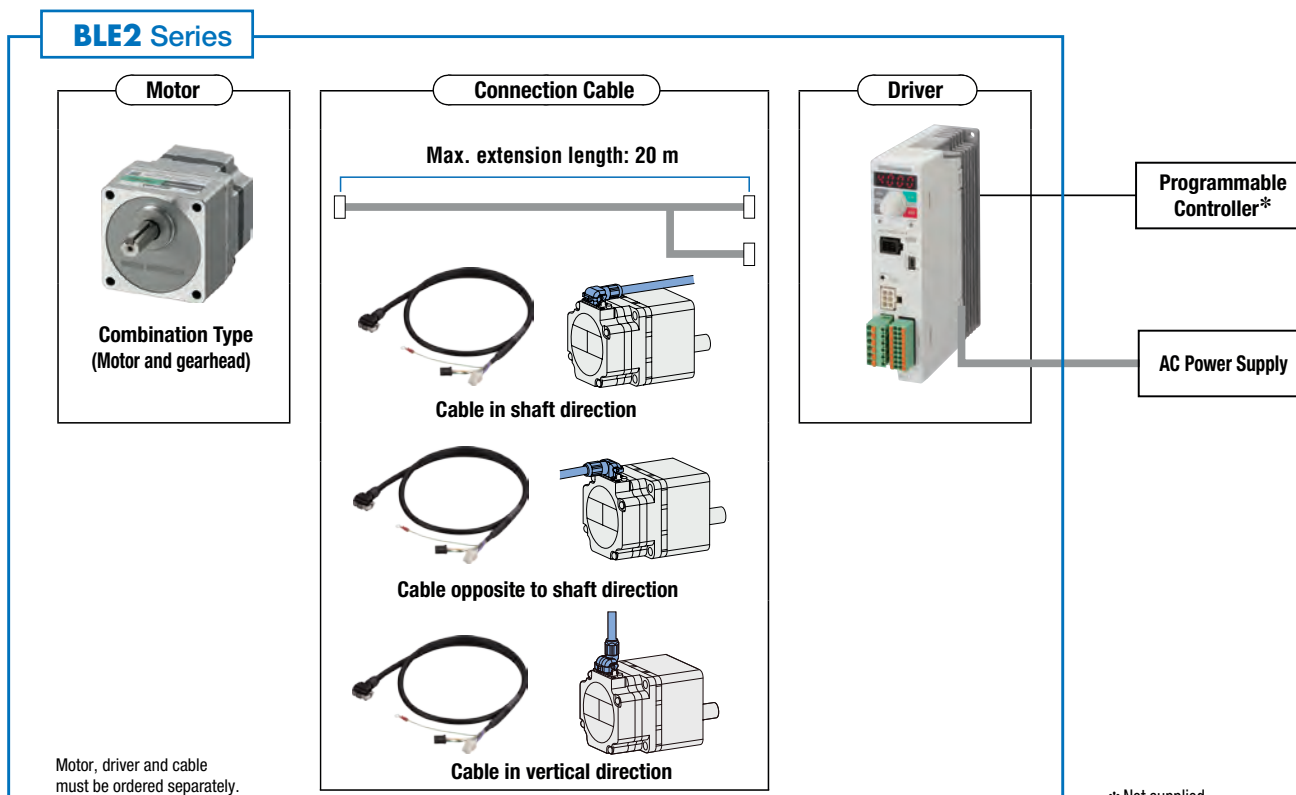
## Characteristics Table



Output Power [W]	Speed Range with Gear [r/min]	Max. Permissible Torque [Nm]	Options
30	0.4 - 800	0.2/0.54 - 6*	Parallel Shaft Gearhead, Electromagnetic Brake
60	0.4 - 800	0.4/0.9 - 16	
120	0.067 - 800	0.8/2 - 53.9	Parallel Shaft Gearhead, Hollow Shaft Flat Gearhead, Electromagnetic Brake
200	0.067 - 800	1.15/2.9 - 518*	Parallel Shaft Gearhead, Hollow Shaft Flat Gearhead, Foot Mount Gearhead, Electromagnetic Brake
300	0.133 - 800	1.72/4.3 - 583*	Parallel Shaft Gearhead, Foot Mount Gearhead

\*Depending on reduction ratio and design.

## Configuration Overview



\* Not supplied

**Product Number**

● Motor (motor with and without parallel shaft type)

**BLM 4 60 S H P M - 50 S**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

● Motor (motor with and without parallel shaft type, IP67)

**BLM 7 200 H W - 5 S**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

● Motor (with gear)

**BLM 5 200 H P K - 5 C B 50 B - L**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

● Driver

**BLE2D 60 - C M**

① ② ③ ④

● Connection Cable

**CC 010 KH BL F**

① ② ③ ④ ⑤

①	Motor	<b>BLM:</b> Brushless DC Motor
②	Frame Size	<b>2:</b> 60 mm <b>4:</b> 80 mm <b>5:</b> 90 mm <b>6:</b> 104 mm (Gear: 110 mm)
③	Output Power	<b>30:</b> 30 W <b>60:</b> 60 W <b>120:</b> 120 W <b>200:</b> 200 W <b>300:</b> 300 W
④	Reference Letter	<b>S</b>
⑤	Motor Connection Method	<b>H:</b> Connector
⑥	Motor Degree of Protection	<b>P:</b> IP66
⑦	Configuration	<b>M:</b> With electromagnetic brake
⑧	Version	Number: Gear ratio of combination type <b>A:</b> Round Shaft Type <b>AC:</b> Round Shaft Type (Shaft Flat)
⑨	Output Shaft Material	<b>S:</b> Stainless Steel

①	Motor	<b>BLM:</b> Brushless DC Motor
②	Frame Size	<b>7:</b> 110 mm
③	Output Power	<b>200:</b> 200 W
④	Motor Connection Method	<b>H:</b> Connector
⑤	Motor Degree of Protection	<b>W:</b> IP67
⑥	Version	Number: Gear ratio of combination type
⑦	Output Shaft Material	<b>S:</b> Stainless Steel
⑧	Mounting Screw Set	Blank: Included <b>N:</b> Not included

Motor	①	Motor	<b>BLM:</b> Brushless DC Motor
	②	Frame Size (Motor)	<b>4:</b> 80 mm <b>5:</b> 90 mm
	③	Output Power	<b>60:</b> 60 W <b>120:</b> 120 W <b>200:</b> 200 W <b>300:</b> 300 W
	④	Reference Letter	<b>S</b>
	⑤	Motor Connection Method	<b>H:</b> Connector
	⑥	Motor Degree of Protection	<b>P:</b> IP66
Gearhead	⑦	Version	<b>K:</b> Round Shaft Type
	⑧	Frame Size (to the Motor)	<b>4:</b> 80 mm <b>5:</b> 90 mm
	⑨	Reference Letter	
	⑩	Gear	<b>H:</b> <b>JH</b> Hypoid Hollow Shaft Gear <b>B:</b> <b>JB</b> Foot Mount Gearhead <b>V:</b> <b>JV</b> Parallel Shaft Gearhead
	⑪	Version	Number: Gear Ratio of Gearhead
	⑫	Output Shaft Material	<b>S:</b> Stainless Steel <b>B:</b> Iron
	⑬	Connector Position	<b>U:</b> Up <b>R:</b> Right <b>L:</b> Left <b>None:</b> Bottom

①	Driver	<b>BLE2D:</b> BLE2 Series
②	Output Power	<b>30:</b> 30 W <b>60:</b> 60 W <b>120:</b> 120 W <b>200:</b> 200 W <b>300:</b> 300 W
③	Power Supply Voltage	<b>A:</b> Single-Phase 100-120 VAC <b>C:</b> Single-Phase, Three-Phase 200-240 VAC*
④	Configuration	<b>M:</b> For motors with electromagnetic brake

\*WARNING: The BLE2 Series is not suitable for operation on 3 × 400 VAC.

①		<b>CC:</b> Connection Cable
②	Length	<b>005:</b> 0.5 m <b>010:</b> 1 m <b>015:</b> 1.5 m <b>020:</b> 2 m <b>025:</b> 2.5 m <b>030:</b> 3 m <b>040:</b> 4 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m <b>150:</b> 15 m <b>200:</b> 20 m
③	Motor Connection Method	<b>KH:</b> Made of metal <b>H:</b> Made of plastic
④	Appropriate Products	<b>BL:</b> Brushless Motor
⑤	Cable pull-out direction	<b>F:</b> Output shaft direction <b>B:</b> Opposite to output shaft direction <b>V:</b> Vertical direction

\*NOTE: If you are interested in flexible extension cables, please contact your nearest Oriental Motor sales office.


 For detailed information please refer to the **BLE2 Series** catalogue on our website: [www.orientalmotor.eu](http://www.orientalmotor.eu)



Output Power

30 - 300 W

Speed Range

80 - 4000 r/min

Frame Size

60 - 110 mm

- 4 programmable speeds
- Digital setting/display
- Easy handling
- Load factor display
- Up to IP67



Further information

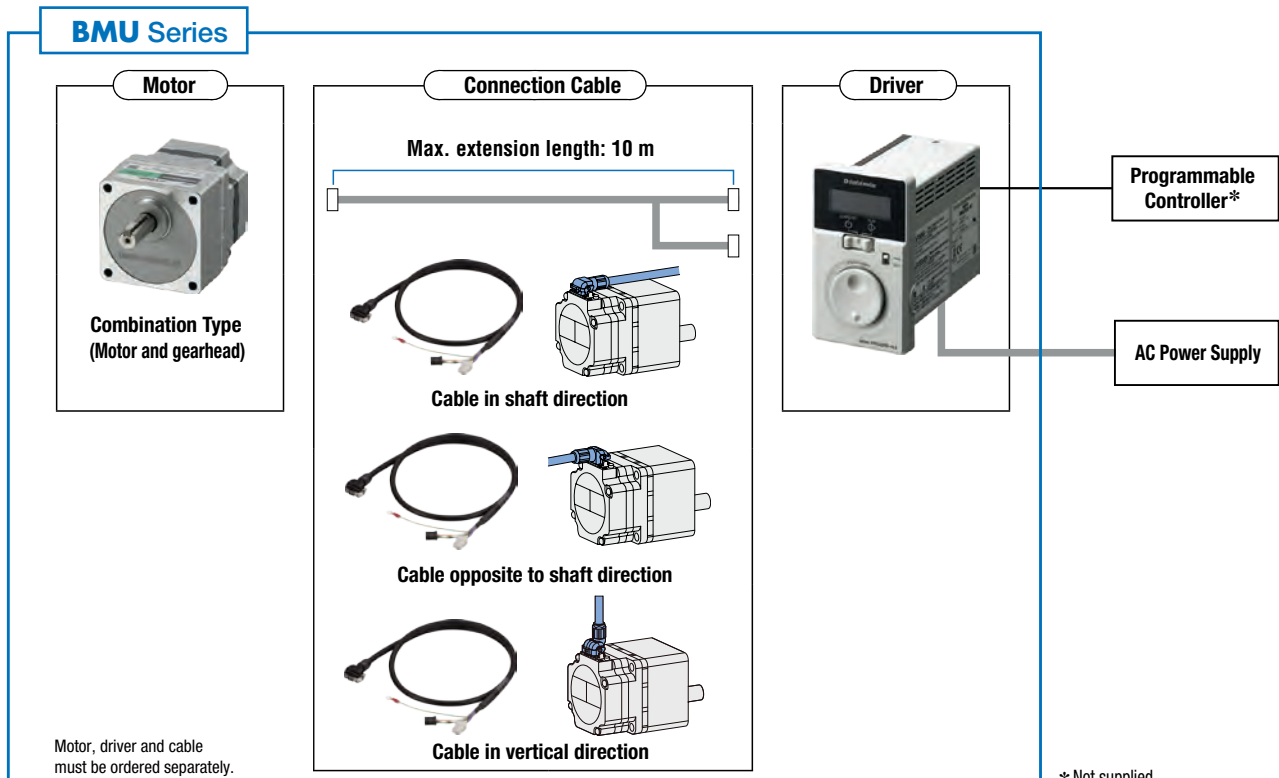
## Characteristics Table



Output Power [W]	Speed Range with Gear [r/min]	Max. Permissible Torque [Nm]	Options
30	0.4 - 800	0.2/0.54 - 6	Parallel shaft gearhead
60	0.4 - 800	0.4/0.9 - 16	Parallel Shaft Gearhead, Hollow Shaft Gear
120	0.067 - 800	0.8/2 - 53.9	Parallel Shaft Gearhead, Hollow Shaft Gear
200	0.067 - 800	1.15/2.9 - 518*	Parallel Shaft Gearhead, Hollow Shaft Gear, Foot Mount Gearhead
300	0.133 - 800	1.72/4.3 - 583*	Parallel Shaft Gearhead, Hollow Shaft Gear, Foot Mount Gearhead

\*Depending on reduction ratio and design.

## Configuration Overview



**Product Number**
**● Motor (with and without Parallel Shaft Gearhead)**
**BLM 4 60 S H P - 50 S**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

**● Motor (with Parallel Shaft Gearhead, IP67)**
**BLM 7 200 H W - 5 S**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

**● Motor (with Gearhead)**
**BLM 5 200 H P K - 5 C B 50 B - L**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

**● Driver**
**BMUD 60 - C 2**

① ② ③ ④

**● Connection Cable**
**CC 010 KH BL F**

① ② ③ ④ ⑤

①	Motor	<b>BLM:</b> Brushless DC Motor
②	Frame Size	<b>2:</b> 60 mm <b>4:</b> 80 mm <b>5:</b> 90 mm <b>6:</b> 104 mm (Gear: 110 mm)
③	Output Power	<b>30:</b> 30 W <b>60:</b> 60 W <b>120:</b> 120 W <b>200:</b> 200 W <b>300:</b> 300 W
④	Reference Letter	<b>S</b>
⑤	Motor Connection Method	<b>H:</b> Connector
⑥	Motor Degree of Protection	<b>P:</b> IP66
⑦	Version	Number: Gear ratio of combination type <b>A:</b> Round Shaft Type <b>AC:</b> Round Shaft Type (Shaft Flat)
⑧	Output Shaft Material	<b>S:</b> Stainless Steel

①	Motor	<b>BLM:</b> Brushless DC Motor
②	Frame Size	<b>7:</b> 110 mm
③	Output Power	<b>200:</b> 200 W
④	Motor Connection Method	<b>H:</b> Connector
⑤	Motor Degree of Protection	<b>W:</b> IP67
⑥	Version	Number: Gear ratio of combination type
⑦	Output Shaft Material	<b>S:</b> Stainless Steel
⑧	Mounting Screw Set	Blank: Included <b>N:</b> Not included

Motor	①	Motor	<b>BLM:</b> Brushless DC Motor
	②	Frame Size	<b>4:</b> 80 mm <b>5:</b> 90 mm
	③	Output Power	<b>60:</b> 60 W <b>120:</b> 120 W <b>200:</b> 200 W <b>300:</b> 300 W
	④	Reference Letter	<b>S</b>
	⑤	Motor Connection Method	<b>H:</b> Connector
	⑥	Motor Degree of Protection	<b>P:</b> IP66
	⑦	Version	<b>K:</b> Round Shaft Type
	⑧	Frame Size (to the Motor)	<b>4:</b> 80 mm <b>5:</b> 90 mm
	⑨	Reference Letter	
Gearhead	⑩	Gear	<b>H: JH</b> Hypoid Hollow Shaft Gear <b>B: JB</b> Foot Mount Gearhead <b>V: JV</b> Parallel Shaft Gearhead
	⑪	Version	Number: Gear Ratio of Gearhead
	⑫	Output Shaft Material	<b>S:</b> Stainless Steel <b>B:</b> Iron
	⑬	Connector Position	<b>U:</b> Up <b>R:</b> Right <b>L:</b> Left None: Bottom

①	Driver	<b>BMUD:</b> BMU Series
②	Output Power	<b>30:</b> 30 W <b>60:</b> 60 W <b>120:</b> 120 W <b>200:</b> 200 W <b>300:</b> 300 W
③	Power Supply Voltage	<b>A:</b> Single-Phase 100-120 VAC <b>C:</b> Single-Phase, Three-Phase 200-240 VAC*
④	Reference Number	

 \*WARNING: The **BMU** Series is not suitable for operation on 3 × 400 VAC.

①		<b>CC:</b> Connection Cable
②	Length	<b>005:</b> 0.5 m <b>010:</b> 1 m <b>015:</b> 1.5 m <b>020:</b> 2 m <b>025:</b> 2.5 m <b>030:</b> 3 m <b>040:</b> 4 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m
③	Motor Connection Method	<b>KH:</b> Made of metal <b>H:</b> Made of plastic
④	Appropriate Products	<b>BL:</b> Brushless Motor
⑤	Cable pull-out direction	<b>F:</b> Output shaft direction <b>B:</b> Opposite to output shaft direction <b>V:</b> Vertical direction

\*NOTE: If you are interested in flexible extension cables, please contact your nearest Oriental Motor sales office.


 For detailed information please refer to the **BMU Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)



Output Power

15 - 100 W

Speed Range

80 - 3000 r/min

Frame Size

42 - 90 mm

- 8 programmable speeds
- High torque at low speeds
- Torque limiting
- Modbus RTU



Further information

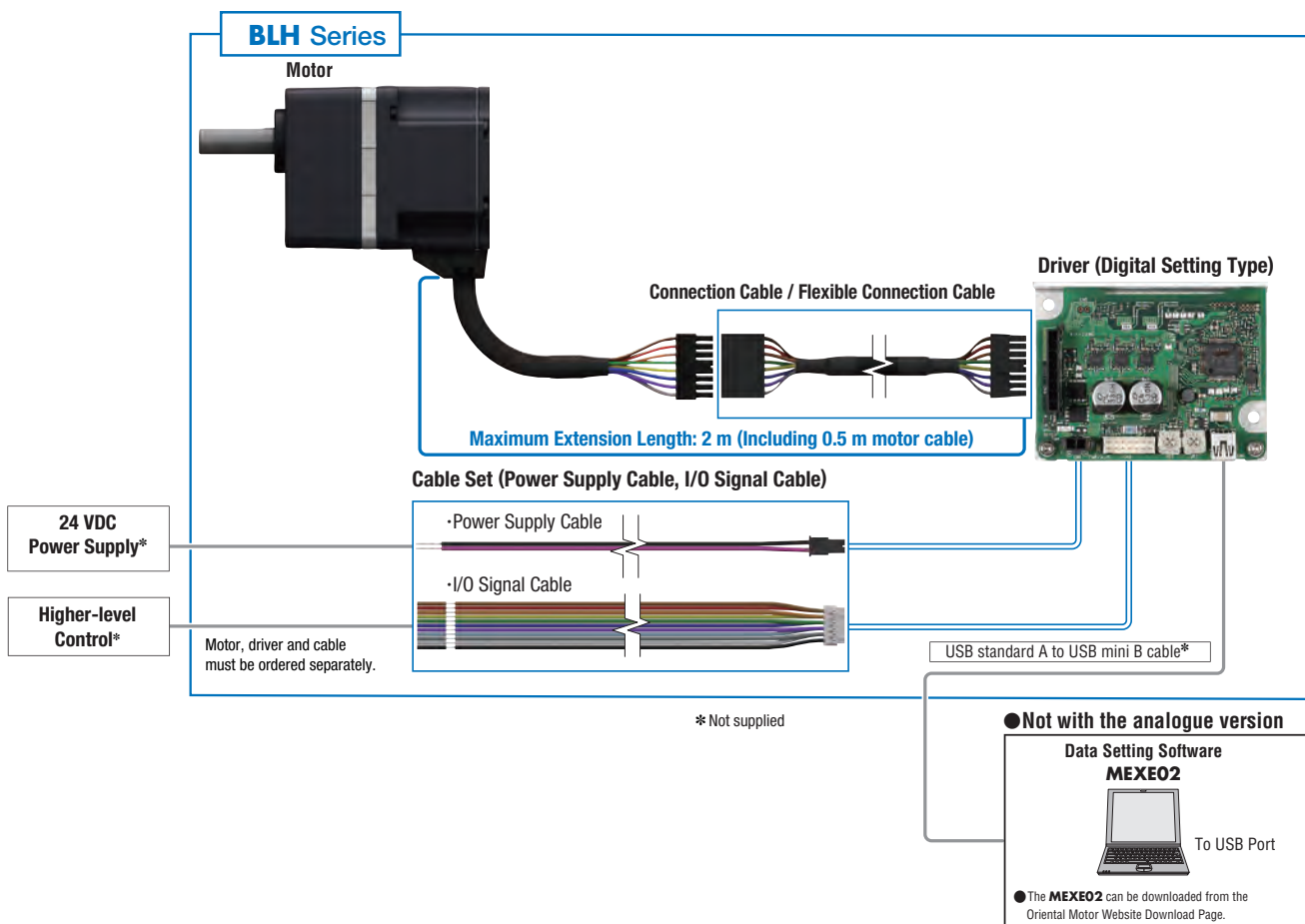
## Characteristics Table



Output Power [W]	Speed Range with Gear [r/min]	Max. Permissible Torque [Nm]	Options
15	0.4 - 600	0.07 / 2*	Parallel Shaft Gearhead
30		0.17 / 17* 0.28 / 32.5* 0.5 / 68*	Parallel Shaft Gearhead Hollow Shaft Flat Gearhead Electromagnetic Brake
50			
100			

\*Depending on reduction ratio and design.

## Configuration Overview



## Product Number

## ● Motor (with and without Gear)

**BLHM 4 50 K C M - 5 FR**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

## ● Driver

**BLH2D 50 - K D**

① ② ③ ④

## ● Connection Cable, Flexible Connection Cable

**CC 02 BLH R**

① ② ③ ④

● Power Supply Cable and I/O Signal Cable Set  
(For 15 W, 30 W, 50 W)

**LH S 003 C D**

① ② ③ ④ ⑤

①	Motor	<b>BLHM:</b> Brushless DC Motor
②	Frame Size	<b>0:</b> 42 mm <b>2:</b> 60 mm <b>4:</b> 80 mm <b>5:</b> 90 mm
③	Output Power	<b>15:</b> 15 W <b>30:</b> 30 W <b>50:</b> 50 W <b>100:</b> 100 W
④	Power Supply	<b>K:</b> 24 VDC
⑤	Connection Type of the Motor	<b>C:</b> Cable
⑥	Configuration	<b>M:</b> Electromagnetic Brake Motor
⑦	Version	Number: Gear ratio for combination types <b>A:</b> Round Shaft Type
⑧	Gear	Blank: <b>GFS</b> Parallel Shaft Gearhead <b>FR: FR</b> Hollow Shaft Flat Gearhead

①	Driver	<b>BLH2D:</b> BLH Series Driver (15 W, 30 W, 50 W) <b>BLHD:</b> BLH Series Driver (100 W)
②	Output Power	<b>15:</b> 15 W <b>30:</b> 30 W <b>50:</b> 50 W <b>100:</b> 100 W
③	Power Supply Voltage	<b>-K:</b> 24 VDC (15 W, 30 W, 50 W) <b>K:</b> 24 VDC (100 W)
④	Driver Classification	Blank: Analogue Setting <b>D:</b> Digital Setting <b>R:</b> RS-485 Communication

①		<b>CC:</b> Extension Cable
②	Length	<b>02:</b> 1.5 m
③	Applicable Motors	<b>BLH:</b> Brushless Motor (15 W, 30 W, 50 W) <b>AXH2, BLH2:</b> Brushless Motor (100 W)
④	Cable	Blank: Standard <b>R:</b> Flexible

①		<b>LH:</b> Cable
②		<b>S:</b> Set
③	Length	<b>003:</b> 0.3 m <b>010:</b> 1 m
④		<b>C:</b> Cable
⑤	Applicable Drivers	<b>C:</b> Analogue Setting Type, RS-485 Communication Type <b>D:</b> Digital Setting Type



For detailed information please refer to the **BLH Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)



Output Power

60 - 400 W

Speed Range

1 - 4000 r/min

Frame Size

60 - 110 mm

- Compact and lightweight
- Positioning operation
- 



Further information

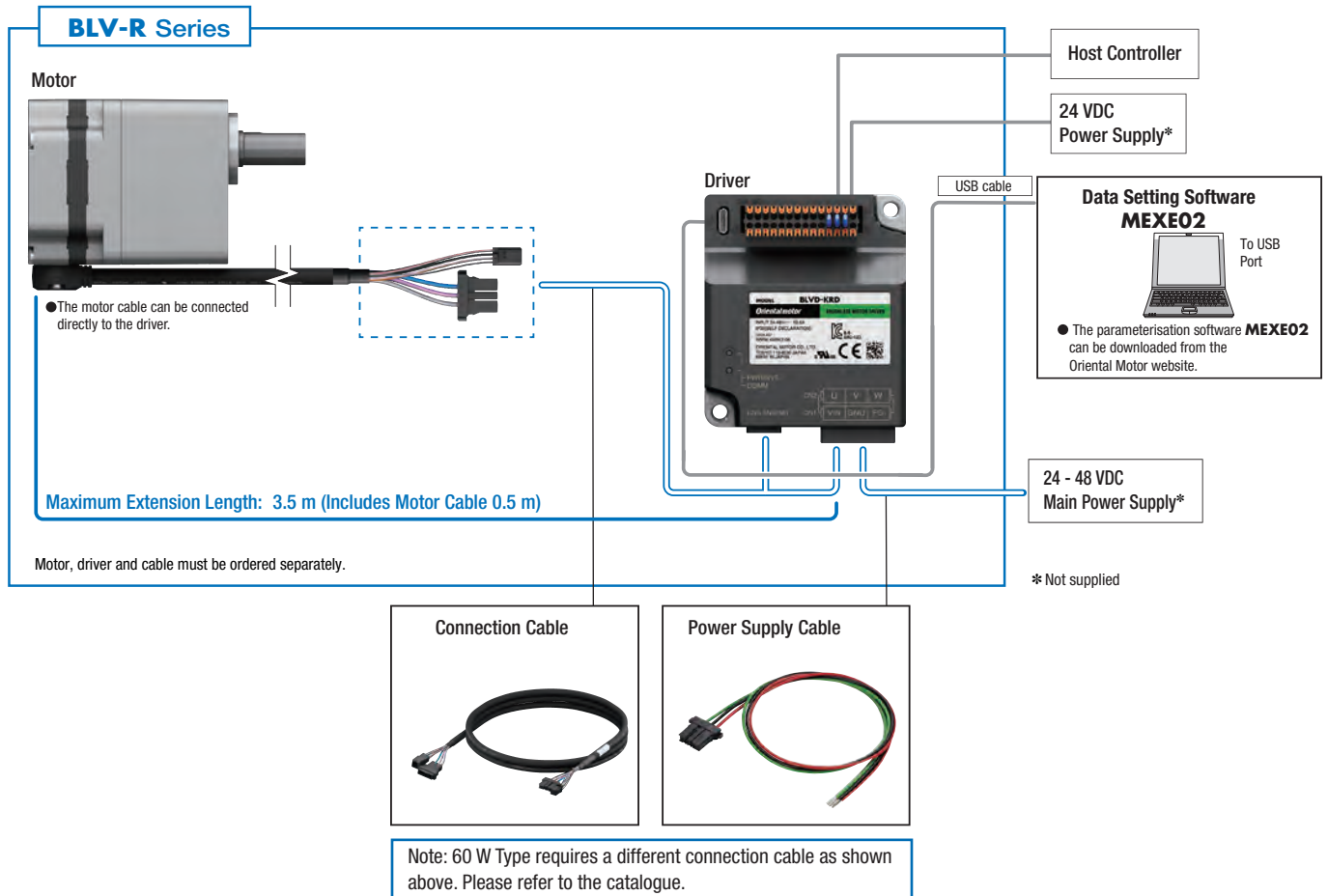
## Characteristics Table



Output Power [W]	Speed Range with Gear [r/min]	Max. Permissible Torque [Nm]	Options
60	0.005 - 800	0.382 / 1.6-51*	Parallel shaft gearhead, Hollow shaft flat gearhead, <b>CS</b> gearhead
100	0.005 - 400	0.704 / 2.7 - 85*	Parallel shaft gearhead, Hollow shaft flat gearhead, Electromagnetic brake
200	0.01 - 400	1.34 / 5.4 - 108*	
400	0.01 - 400	2.54 / 21.6-167*	

\*Depending on reduction ratio and design.

## Configuration Overview





**Product Number**
**● Motor (with and without Gear)**

**BLMR 6200S**  **K M - 10 FR - F**

①    ②    ③    ④ ⑤    ⑥ ⑦    ⑧    ⑨    ⑩

**● Driver**

**BLVD - K R D**

①    ②    ③    ④

**● Connection Cable**

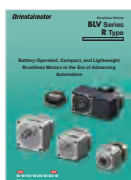
**CCM 010 B1AA F**

①    ②    ③    ④

①	Motor	<b>BLMR:</b> Brushless DC Motor
②	Frame Size	<b>2:</b> 60 mm <b>4:</b> 80 mm <b>5:</b> 90 mm <b>6:</b> 104 mm (With gearhead part is 110 mm)
③	Output Power	<b>60:</b> 60 W <b>100:</b> 100 W <b>200:</b> 200 W <b>400:</b> 400 W
④	Reference Letter	<b>S</b>
⑤	Motor Connection Method	<b>H:</b> Connector Type
⑥	Power Supply	<b>K:</b> DC Input
⑦	Configuration	<b>M:</b> Electromagnetic Brake Motor
⑧	Version	Number: Gear Ratio for Gearhead <b>A:</b> Round Shaft Type
⑨	Gear	Blank: Parallel Shaft Gearhead <b>FR:</b> Hollow Shaft Flat Gearhead <b>CS: CS</b> Geared Motor
⑩	Direction of Cable Outlet	<b>F:</b> Output shaft direction <b>B:</b> Opposite to output shaft direction

①	Driver	<b>BLVD:</b> <b>BLV-R</b> Series
②	Power Supply Voltage	<b>K:</b> 24 - 48 VDC
③	Driver Classification	<b>R:</b> Version with RS-485 and CANopen interface
④	Reference Letter	<b>D</b>

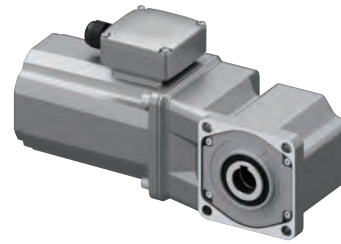
①		<b>CCM:</b> Connection Cable
②	Length	<b>003:</b> 0.3 m <b>010:</b> 1 m <b>020:</b> 2 m <b>030:</b> 3 m
③	Cable Classification	<b>B1AA, B1AB</b>
④	Cable	<b>F:</b> Connection Cable <b>R:</b> Flexible Connection Cable



For detailed information please refer to the **BLV-R Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)

# STANDARD AC MOTORS

Standard AC motors are generally utilised as a power source for automated equipment, as these motors can be easily operated by connecting the motors directly to an AC power supply. Oriental Motor offers standard AC motors incorporating various operating functions.



**KIIS** Series



**WORLD K** Series



**FPW** Series

## FEATURES

### Easy Operation

Simply connect directly to an AC power supply. Models available for all common international mains voltages.

### Speed Control Operation

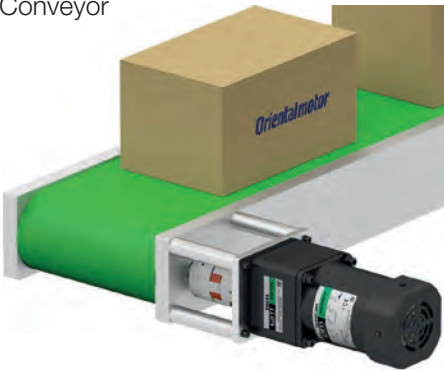
Using a three-phase motor in combination with an inverter enables speed control operation.

### Watertight, Dust-Resistant Motors

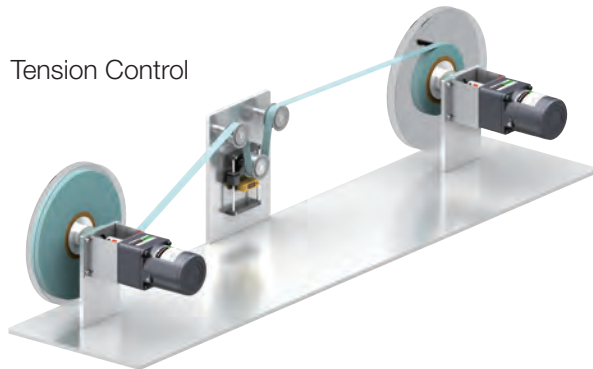
AC motors which are watertight, dust-resistant and conform to the IEC Standard IP67 are available.

## APPLICATIONS

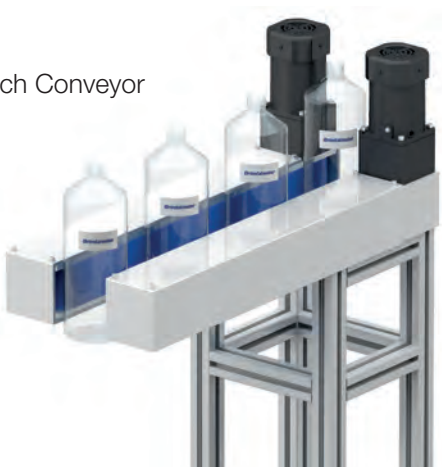
Belt Conveyor



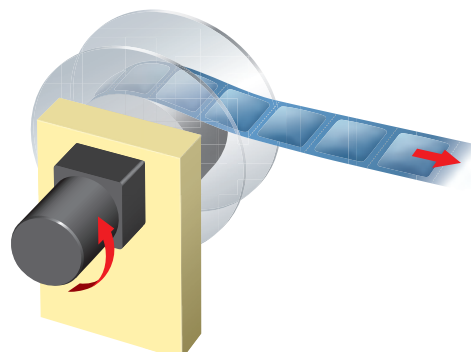
Tension Control



Pinch Conveyor

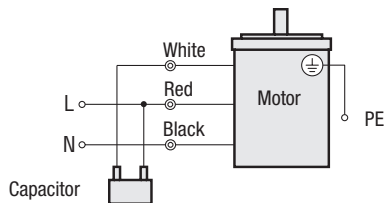


Packing System

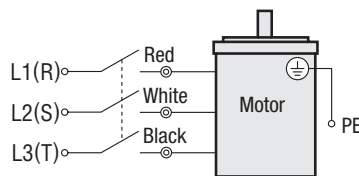


## EASY OPERATION

Standard AC motors include three-phase motors for use with a three-phase power supply and single-phase motors for use with a single-phase power supply. A single-phase motor can be operated simply by connecting it to a single-phase power supply via the supplied capacitor. A three-phase motor does not require a capacitor, simply connect the motor directly to a three-phase power supply.



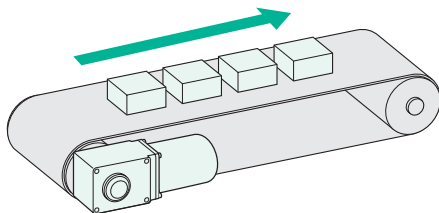
Induction Motors: Connection example for single-phase power supply input type



Induction Motors: Connection example for three-phase power supply input type

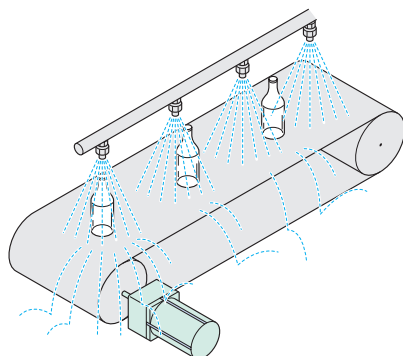
## SPEED CONTROL OPERATION

A wide speed control range is possible, with high-torque available even at low speeds. These high-performance motors see little speed reduction even under large loads, ensuring that stable speed control is possible.



## WATERTIGHT AND DUST-RESISTANT IP67 PERFORMANCE

Watertight, dust-resistant geared induction motors which conform to the IEC standard IP67 are available. Suitable for use in washdown environments.





Output Power

6 - 90 W

Speed Range

1150 - 1650 r/min

Frame Size

60 - 90 mm

- For continuous operation
- Compact construction
- Simple connection & operation



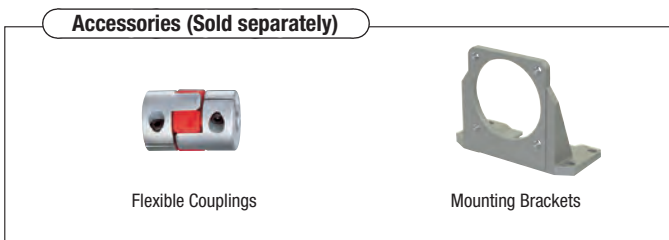
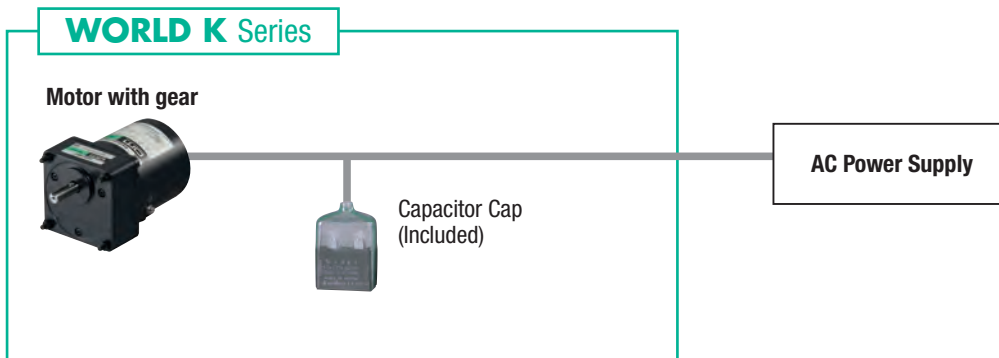
Further information

## Characteristics Table



Frame Size [mm]	Output Power [W]	Rated Speed [r/min]	Options
60	6	1150 - 1500	Terminal box (IP65), Parallel Shaft Gearhead, electromagnetic brake
70	15	1200 - 1650	Parallel Shaft Gearhead, electromagnetic brake
80	25 - 60	1200 - 1600	Terminal box (IP54), Parallel Shaft Gearhead, Right-angled gearhead, electromagnetic brake
90	40 - 90	1200 - 1600	Terminal box (IP54), Parallel Shaft Gearhead, Right-angled gearhead, electromagnetic brake

## Configuration Overview



Product Number

● Motor

**5 I K 40 GN - CW 2 T E**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

● Gear

**5 GN 50 S**

① ② ③ ④

①	Frame Size	<b>2:</b> 60 mm <b>3:</b> 70 mm <b>4:</b> 80 mm <b>5:</b> 90 mm
②	Version	<b>I:</b> Induction Motor <b>R:</b> Reversible Induction Motor
③	Motor	<b>K:</b> World K Series
④	Output Power	<b>6:</b> 6 W <b>15:</b> 15 W <b>25:</b> 25 W <b>40:</b> 40 W <b>60:</b> 60 W <b>90:</b> 90 W
⑤	Motor Shaft Type	<b>A:</b> Round <b>GE:</b> GE Pinion <b>GN:</b> GN Pinion
⑥	Power Supply	<b>AW:</b> Single-Phase 100 VAC, 110/115 VAC <b>CCW:</b> Single-Phase 200 VAC, 220/230 VAC <b>SW:</b> Three-Phase 200/220/230 VAC <b>UW:</b> Three-Phase 400 VAC*1
⑦		<b>2, 3:</b> RoHS-Compliant
⑧		<b>T, T2, B:</b> With Terminal Box <b>M:</b> With electromagnetic brake
⑨	Enclosed Capacitor*2	Blank: No capacitor is required for motors for three-phase connection <b>J:</b> For Single-Phase 100 VAC, 200 VAC <b>U:</b> For Single-Phase 110/115 VAC <b>E:</b> For Single-Phase 220/230 VAC

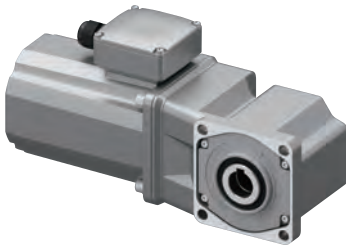
\*1 WARNING: Version **UW** is not suitable for operation with a frequency inverter.

\*2 The **J, U** and **E** at the end of the model name indicate that the unit includes a capacitor.

These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

(Example) Model: **5IK40GN-CW2E** → Motor nameplate and product approved under various safety standards: **5IK40GN-CW2**

①	Frame Size	<b>2:</b> 60 mm <b>3:</b> 70 mm <b>4:</b> 80 mm <b>5:</b> 90 mm
②	Gear	<b>GE:</b> For motors with GE Pinion <b>GN:</b> For motors with GN Pinion
③	Version	Number: Gear reduction <b>10X:</b> Intermediate Gear 10:1
④	Gear Classification	<b>S:</b> Parallel Shaft Gearhead <b>RH:</b> RH Hollow Shaft Right Angle Gear <b>RA:</b> RA Solid Shaft Angle Gear



Output Power

200 W

Speed Range

1420 - 1700 r/min

Frame Size

110 mm

- High permissible torque
- Energy-saving
- Low noise
- IP66



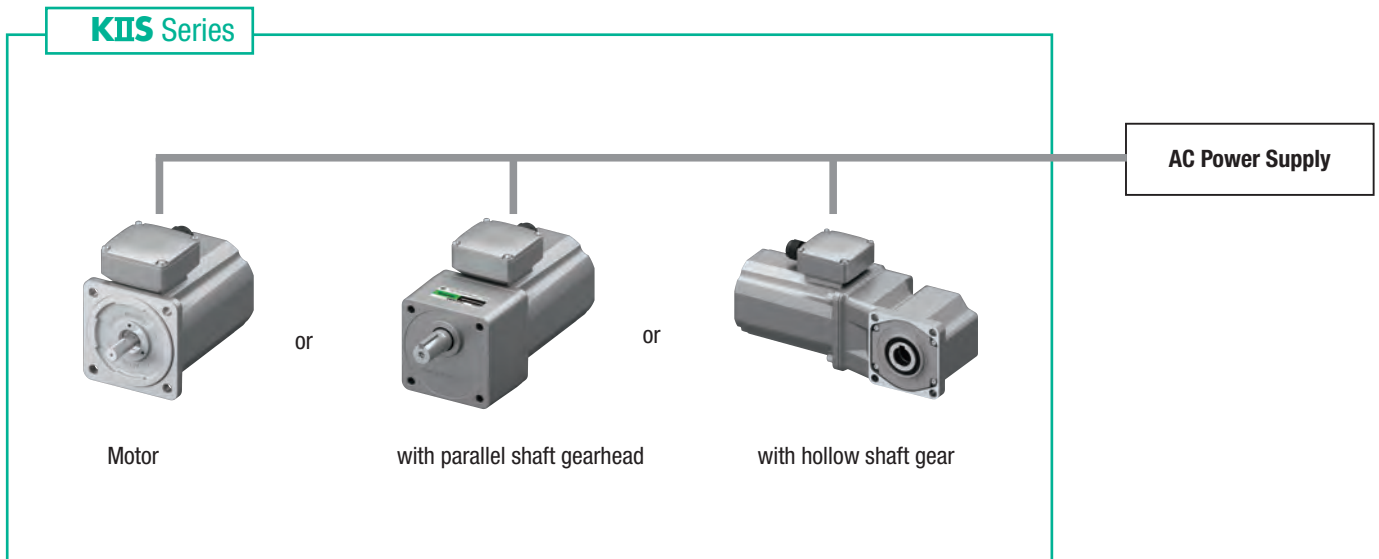
Further information

## Characteristics Table



Frame Size [mm]	Output Power [W]	Rated Speed [r/min]	Motor Options
110	200	1420 - 1700	Parallel shaft gearhead, Hollow shaft gear

## Configuration Overview



### Accessories (Sold separately)



**Torque Arms**

Right-Angle Geared Type, Hollow Shaft Type



**Mounting Brackets**

For motors without gear  
For motors with parallel shaft gearhead



**Flexible Couplings**



**CR circuit for Surge Suppression**

Product Number

● Motor

**7 I K 200 V A S - ES 3 T2**

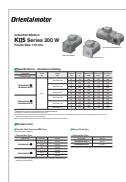
① ② ③ ④ ⑤ ⑨ ⑪ ⑥ ⑦ ⑧

● Motor with Gear

**7 I K 200 V ES 3 T2 - 15 S**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Frame Size	<b>7</b> : 110 mm
②	Version	<b>I</b> : Induction Motor
③	Motor	<b>K</b> : KIIS Series
④	Output Power	<b>200</b> : 200 W
⑤	Reference Letter	<b>V</b>
⑥	Power Supply Voltage	<b>ES</b> : Three-Phase 220/230/240 VAC <b>EU</b> : Three-Phase 380/400/415 VAC
⑦	Identification Number	
⑧		<b>T2</b> : Terminal Box Type
⑨	Version	Number: Gear Ratio <b>A</b> : Round Shaft Type
⑩	Gear Classification	Blank: Parallel Shaft Gearhead <b>RH</b> : Right-Angle Hollow Shaft Hypoid Gear
⑪	Output Shaft Material	<b>S</b> : Stainless steel



For detailed information please refer to the **KIIS Series** catalogue on our website: [www.orientalmotor.eu](http://www.orientalmotor.eu)



Output Power

25 - 90 W

Rated Speed

1200 - 1600 r/min

Frame Size

80 - 104 mm

- Watertight
- Dust-resistant
- Corrosion-resistant
- IP67



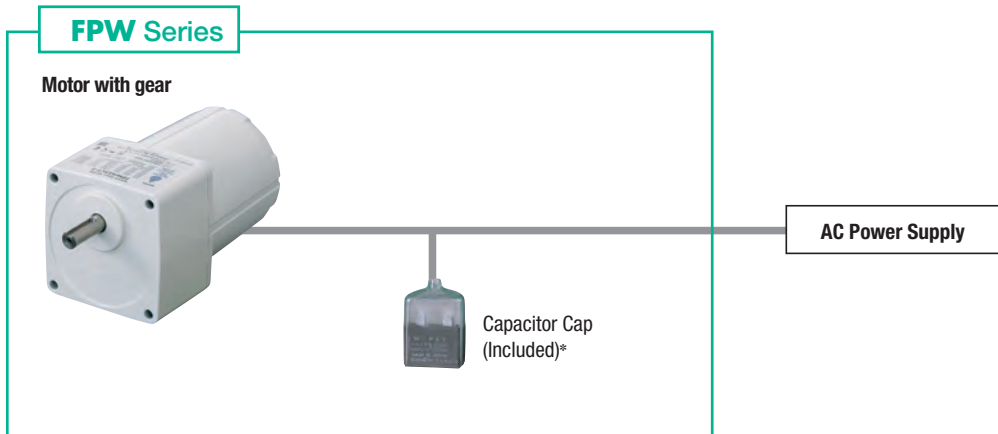
Further information

## Characteristics Table



Frame Size [mm]	Output Power [W]	Rated Speed [r/min]	Permissible Torque [Nm]
80	25	1200 - 1600	0.29 - 8
90	40 - 60	1250 - 1600	0.49 - 15
104	90	1250 - 1600	0.97 - 30

## Configuration Overview



### Accessories (Sold separately)



\* A capacitor is included single-phase motors. The capacitors for the motors are neither watertight nor dust-resistant.



Product Number

● Motor with Gear

**FPW 4 25 C 2 - 15 E**

①      ②      ③      ④      ⑤      ⑥      ⑦

①	Motor	<b>FPW: FPW Series</b>
②	Frame Size	<b>4:</b> 80 mm <b>5:</b> 90 mm <b>6:</b> 104 mm
③	Output Power	<b>25:</b> 25 W <b>40:</b> 40 W <b>60:</b> 60 W <b>90:</b> 90 W
④	Power Supply Voltage	<b>A:</b> Single-Phase 100 VAC, 110/115 VAC <b>C:</b> Single-Phase 200 VAC, 220/230 VAC <b>S:</b> Three-Phase 200/220/230 VAC
⑤		<b>2:</b> RoHS Directive-Compliant
⑥	Version	Number: Gear ratio
⑦	Included Capacitor*	<b>J:</b> For Single-Phase 100 VAC, 200 VAC <b>U:</b> For Single-Phase 110/115 VAC <b>E:</b> For Single-Phase 220/230 VAC

\*The **J**, **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various standards, the model name on the nameplate is the approved model name.

(Example) Product Name: **FPW425C2-15E**

→ Motor nameplate and product approved under various safety standards:

**FPW425C2-15**



Output Power

3 - 20 W

Speed at max. output power continuous operation

750 - 900 r/min

Frame Size

60 - 90 mm

- High starting torque
- Torque regulation
- Winding application
- Web tension regulator



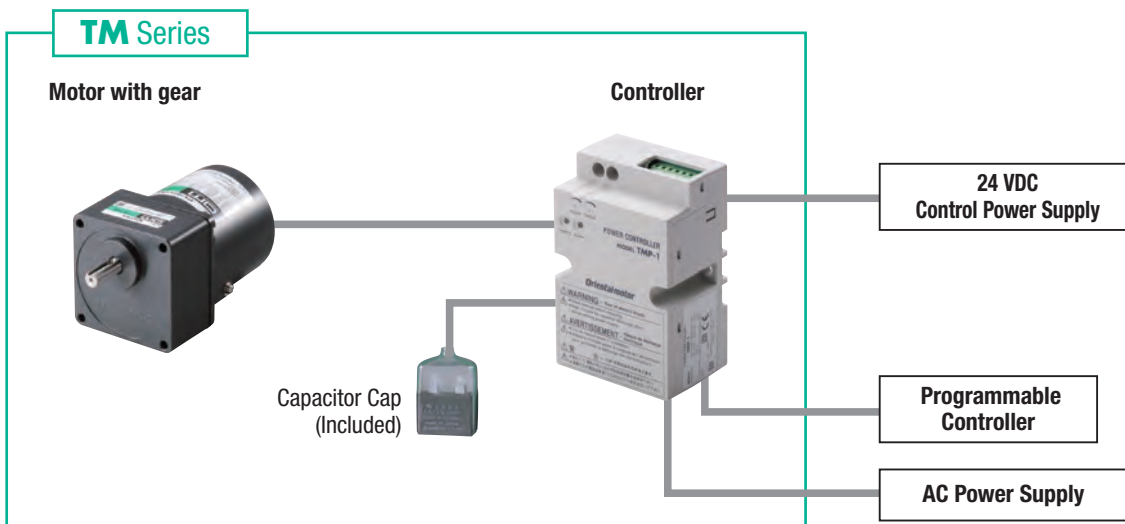
Further information

## Characteristics Table



Frame Size [mm]	Output Power [W]	Torque Setting Voltage [VDC]	Starting Torque [mNm]
60	3	0 - 5	18 - 70
70	6		45 - 140
80	10		65 - 220
90	20		85 - 350

## Configuration Overview



### Accessories (Sold separately)



Not supplied

## Product Number

**TM 2 03 C - 18 S E**

①   ②   ③   ④   ⑤   ⑥   ⑦

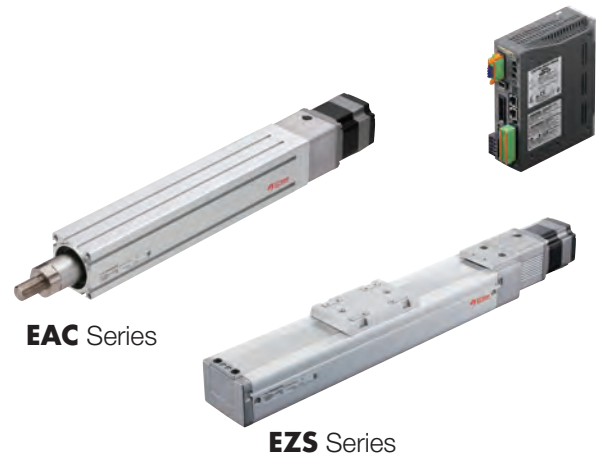
①		<b>TM: TM Series</b>
②	Frame Sizes	<b>2:</b> 60 mm <b>3:</b> 70 mm <b>4:</b> 80 mm <b>5:</b> 90 mm
③	Output Power	<b>03:</b> 3 W <b>06:</b> 6 W <b>10:</b> 10 W <b>20:</b> 20 W
④	Power Supply Voltage	<b>C:</b> Single-Phase 200/220/230 VAC <b>A:</b> Single-Phase 100/110/115 VAC
⑤	Version	Number: Gear Ratio of Combination Type <b>A:</b> Round Shaft
⑥	Gear Classification	<b>S:</b> Parallel Shaft Gearhead
⑦	Included Capacitor	<b>E:</b> Capacitor for Single-Phase 220/230 VAC <b>U:</b> Capacitor for Single-Phase 110/115 VAC <b>J:</b> Capacitor for Single-Phase 100/200 VAC



For detailed information please refer to the **TM Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)

# LINEAR SLIDES AND CYLINDERS

Able to operate from low speed to high speed, or with light loads or heavy loads, these electric linear slides and cylinders are easy to use and offer high performance regardless of demanding operating conditions.



## APPLICATIONS

### Excellent Synchronization, High-Response Operation

The high response of the closed loop motor and drive system provides superior short-distance positioning.

### Stability at Low Speeds

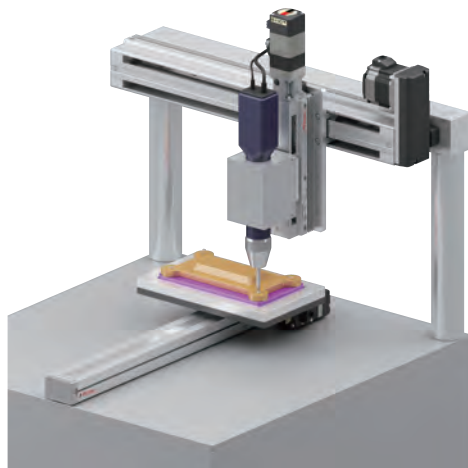
Thanks to the smooth drive function, resolution can be improved without a mechanical element. As a result, speed fluctuation is minimal even at low speeds, leading to improved stability.

### Shorter Production Time, Higher Quality

The linear slides and cylinders are guaranteed to provide the specified operating performance. Using them reduces adjustment work and ensures uniform quality.

## APPLICATIONS

Screw Tightening

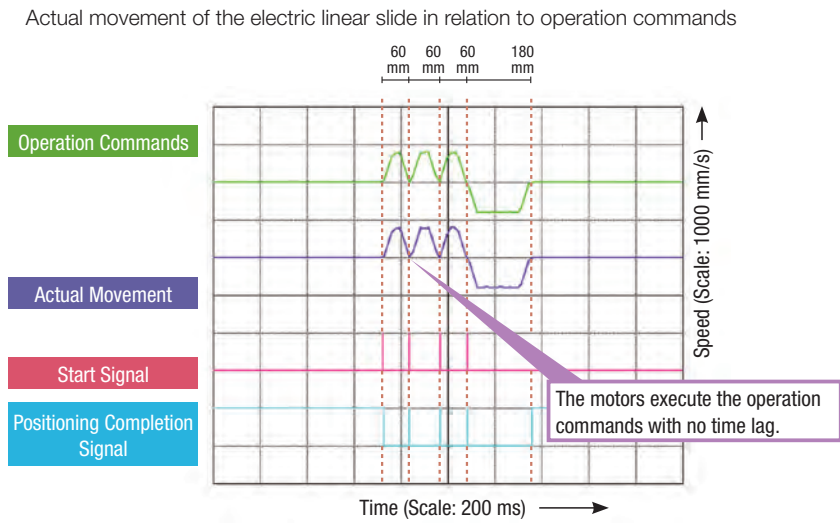


Endurance Testing



# SYNCHRONISATION, HIGH RESPONSE

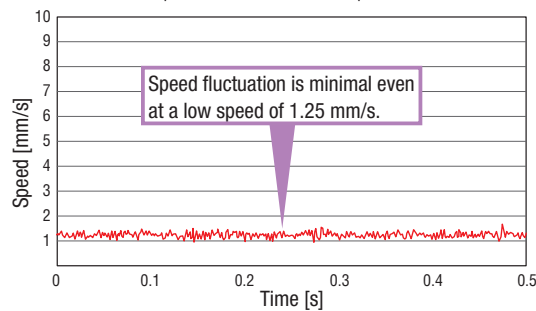
The linear slides and cylinders operate synchronously with pulse commands, generate high torque with a compact body, and offer excellent acceleration performance and response. They are ideal for applications requiring frequent starting and stopping.



# STABILITY AT LOW SPEEDS

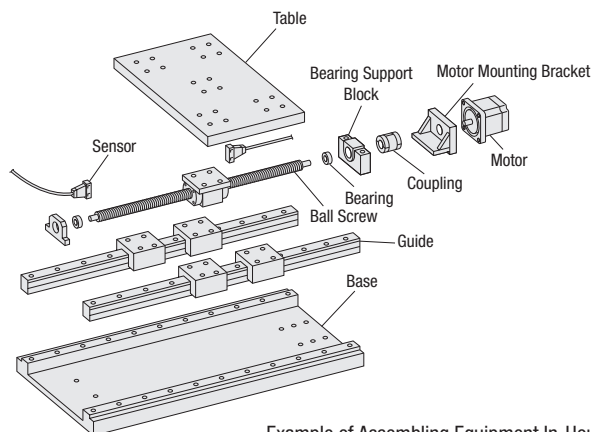
Speed fluctuations are minimal even at low speed.

Actual Slide Table Speed in Relation to Operation Commands (1.25 mm/s)



# SHORTER PRODUCTION TIME, HIGHER QUALITY

When building equipment in-house by assembling a motor and mechanical components, the quality of assembly affects the traveling resistance and position accuracy. Therefore, adjustment will be needed. In comparison, Oriental Motor actuators come in one unit shortening the production time and ensuring uniform quality.



Example of Assembling Equipment In-House



- Stroke  
50 - 300 mm
- Transportable Mass  
2.5 - 60 kg
- Product Size  
28x28 - 60x156 mm

- Battery-free absolute sensor
- No external sensors necessary
- Low heat development
- EtherCAT, EtherNet/IP, PROFINET, Modbus RTU

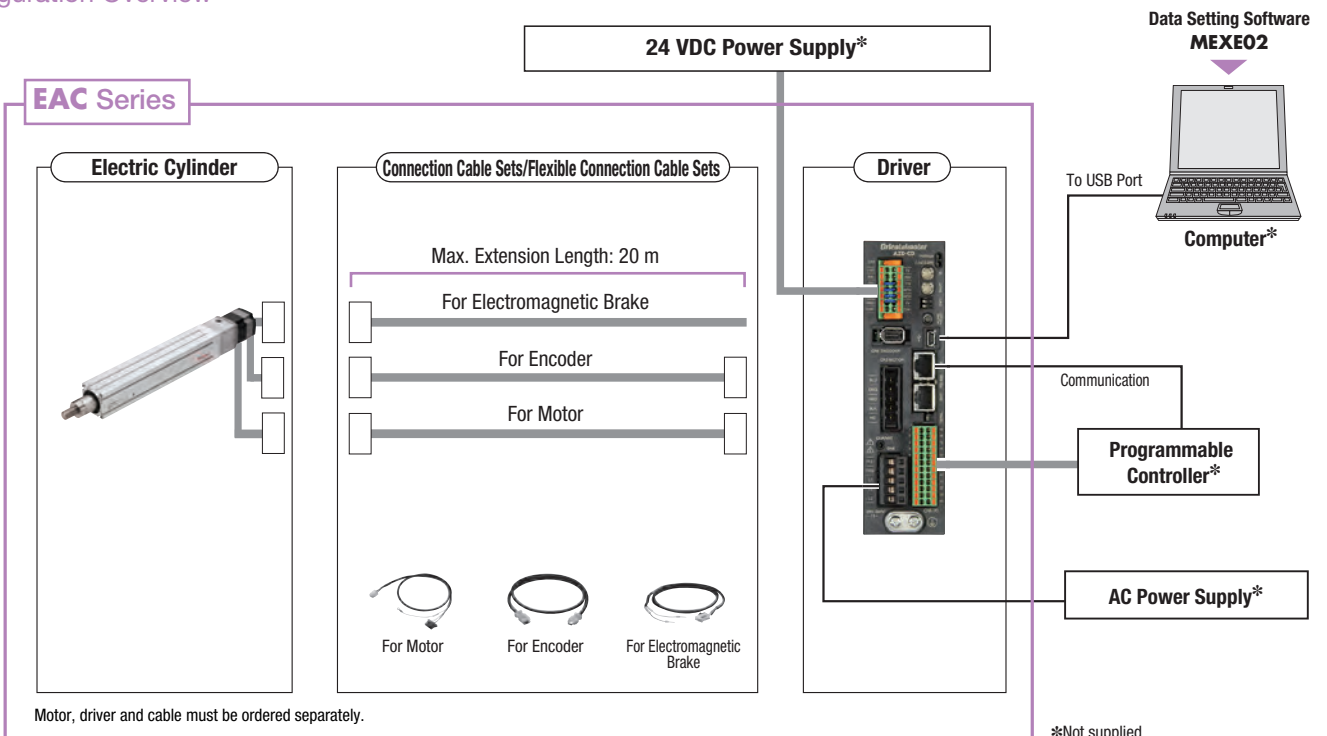


Characteristics Table



Product Size [mm]	Stroke [mm]	Max. Transportable Mass [kg]	Options
28 x 28 (without shaft guide)	50 - 150	7.5 - 15 horizontal, 2.5 - 5 vertical	-
28 x 86 (with shaft guide)		7.5 - 15 horizontal, 2.0 - 4.5 vertical	
42 x 42 (without shaft guide)	50 - 300	15 - 30 horizontal, 7 - 14 vertical	Electromagnetic brake
42 x 42 (Side mounted motor, with shaft guide)		15 - 30 horizontal, 7 - 12.5 vertical	
42 x 114 (with shaft guide)		15 - 30 horizontal, 6 - 13 vertical	Guide cover, Electromagnetic brake
42 x 114 (Side mounted motor, with shaft guide)		15 - 30 horizontal, 6 - 11.5 vertical	
60 x 60 (without shaft guide)		30 - 60 horizontal, 15 - 30 vertical	Electromagnetic brake
60 x 156 (with shaft guide)		30 - 60 horizontal, 13 - 28 vertical	Side mounted motor, Guide cover, Electromagnetic brake

Configuration Overview



## Product Number

## ● Actuator

**EACM 4 R W D 25 AZ M K**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Actuator	<b>EACM: EAC Series</b>
②	Frame Sizes	<b>2:</b> 28 mm × 28 mm (without shaft guide) 28 mm × 86 mm (with shaft guide) <b>4:</b> 42 mm × 42 mm (without shaft guide) 42 mm × 114 mm (with shaft guide) <b>6:</b> 60 mm × 60 mm (without shaft guide) 60 mm × 156 mm (with shaft guide)
③	Cable Outlet Direction	Blank: Straight Type <b>R:</b> Reversed Motor Type (Right Side)
④	Guide	Blank: Without <b>W:</b> With
⑤	Lead Screw Pitch	<b>D:</b> 12 mm <b>E:</b> 6 mm <b>F:</b> 3 mm
⑥	Stroke	<b>005:</b> 50 mm <b>010:</b> 100 mm <b>015:</b> 150 mm <b>020:</b> 200 mm <b>025:</b> 250 mm <b>030:</b> 300 mm
⑦	Motor	<b>AZ: AZ Series</b>
⑧	Configuration	<b>A:</b> Standard <b>M:</b> with Electromagnetic Brake
⑨	Winding Version	<b>C:</b> Single-Phase 200 - 240 VAC <b>K:</b> 24 VDC/48 VDC*

\*EAS2 only accepts 24 VDC.

## ● Driver

**AZD - C D**

① ② ③

①	Driver	<b>AZD: AZ Series</b>
②	Power Supply Input	<b>A:</b> Single-phase 100 - 120 VAC <b>C:</b> Single-phase, three-phase 200 - 240 VAC* <b>K:</b> 24/48 VDC
③	Driver Classification	Blank: Pulse Input <b>D:</b> Built-in Controller <b>X:</b> Pulse Input with RS-485 Communication <b>ED:</b> With EtherCAT interface <b>EP:</b> With Ethernet/IP interface <b>PN:</b> With PROFINET interface

\*WARNING: The **AZ** Series is not suitable for operation on 3 × 400 VAC.

## ● Connection Cable/Flexible Connection Cable

**CC 050 V Z □ F B 2**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①		<b>CC:</b> Cable
②	Length	<b>005:</b> 0.5 m <b>010:</b> 1 m <b>015:</b> 1.5 m <b>020:</b> 2 m <b>025:</b> 2.5 m <b>030:</b> 3 m <b>040:</b> 4 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m <b>150:</b> 15 m <b>200:</b> 20 m
③	Reference Number	
④	Suitable Products	<b>Z:</b> AZ Series Motor
⑤	Reference Number	Blank: Frame size 42 to 85 mm <b>2:</b> Frame size 20 mm, 28 mm
⑥	Cable	<b>F:</b> Standard <b>R:</b> Flexible
⑦	Electromagnetic Brake	Blank: Without Electromagnetic Brake <b>B:</b> With Electromagnetic Brake
⑧	Cable Classification	Blank: AC Power Supply Input <b>2:</b> DC Power Supply Input



For detailed information please refer to the  
**EAC Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)



- Stroke  
50 - 850 mm
- Transportable Mass  
3.5 - 60 kg
- Frame Size  
54 - 66.5 mm

- Battery-free absolute sensor
- No external sensors necessary
- Low heat development
- High rigidity
- EtherCAT, EtherNet/IP



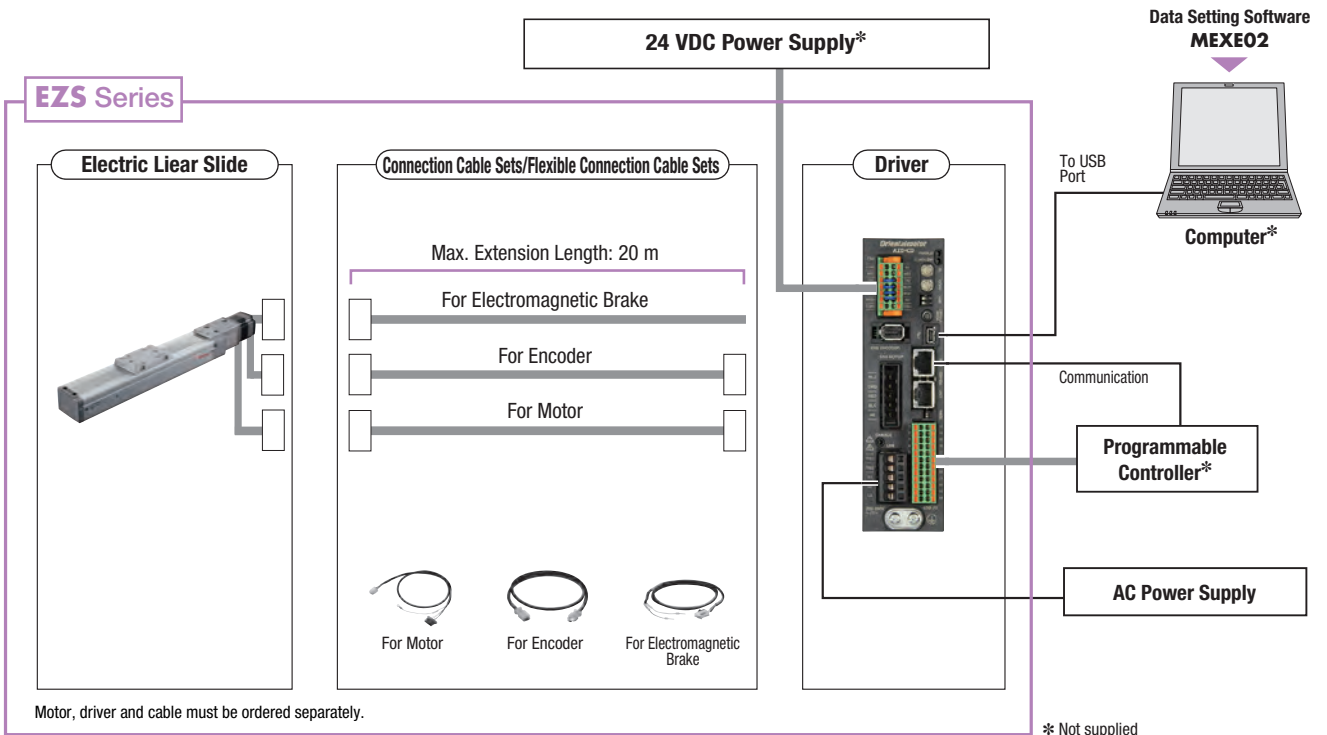
Further information

Characteristics Table



Frame Size [mm]	Stroke [mm]	Max. Transportable Mass [kg]	Options
54 x 50	50 - 700	7.5 - 15 horizontal, 3.5 - 7 vertical	Side mounted motor, Electromagnetic brake
74 x 50	50 - 700	15 - 30 horizontal, 3.5 - 7 vertical	
74 x 66.5	50 - 850	30 - 60 horizontal, 3.5 - 7 vertical	

Configuration Overview





## Product Number

## ● Actuator

**EZSM 4 R D 025 AZ M K**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

## ● Driver

**AZD - C D**

① ② ③

## ● Connection Cable/Flexible Connection Cable

**CC 050 V Z F B 2**

① ② ③ ④ ⑤ ⑥ ⑦

①	Actuator	<b>EZSM: EZS Series</b>
②	Frame Sizes	<b>3:</b> 54 mm × 50 mm <b>4:</b> 74 mm × 50 mm <b>6:</b> 74 mm × 66.5 mm
③	Cable Outlet Direction	Blank: Straight Type <b>L:</b> Reversed Motor Type (Left Side) <b>R:</b> Reversed Motor Type (Right Side)
④	Lead Screw Pitch	<b>D:</b> 12 mm <b>E:</b> 6 mm
⑤	Stroke	<b>005:</b> 50 mm <b>010:</b> 100 mm <b>015:</b> 150 mm <b>020:</b> 200 mm <b>025:</b> 250 mm <b>030:</b> 300 mm <b>035:</b> 350 mm <b>040:</b> 400 mm <b>045:</b> 450 mm <b>050:</b> 500 mm <b>055:</b> 550 mm <b>060:</b> 600 mm <b>065:</b> 650 mm <b>070:</b> 700 mm <b>075:</b> 750 mm <b>080:</b> 800 mm <b>085:</b> 850 mm
⑥	Motor	<b>AZ: AZ Series</b>
⑦	Configuration	<b>A:</b> Standard <b>M:</b> with Electromagnetic Brake
⑧	Winding Version	<b>C:</b> Single-Phase 200-240 VAC <b>A:</b> Single-Phase 100-120 VAC

①	Driver	<b>AZD: AZ Series</b>
②	Power Supply Input	<b>A:</b> Single-phase 100 - 120 VAC <b>C:</b> Single-phase, three-phase 200 - 240 VAC* <b>K:</b> 24/48 VDC
③	Driver Classification	Blank: Pulse Input <b>D:</b> Built-in Controller <b>X:</b> Pulse Input with RS-485 Communication <b>ED:</b> With EtherCAT interface <b>EP:</b> With Ethernet/IP interface <b>PN:</b> With PROFINET interface

\*WARNING: The **AZ** Series is not suitable for operation on 3 × 400 VAC.

①		<b>CC: Cable</b>
②	Length	<b>005:</b> 0.5 m <b>010:</b> 1 m <b>015:</b> 1.5 m <b>020:</b> 2 m <b>025:</b> 2.5 m <b>030:</b> 3 m <b>040:</b> 4 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m <b>150:</b> 15 m <b>200:</b> 20 m
③	Reference Number	
④	Suitable Products	<b>Z: AZ Series Motor</b>
⑤	Reference Number	Blank: Frame size 42 to 85 mm <b>2:</b> Frame size 20 mm, 28 mm
⑤	Cable	<b>F:</b> Standard <b>R:</b> Flexible
⑥	Electromagnetic Brake	Blank: Without Electromagnetic Brake <b>B:</b> With Electromagnetic Brake
⑦	Cable Classification	Blank: AC Power Supply Input <b>2:</b> DC Power Supply Input



For detailed information please refer to the **EZS Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)

# ROTARY AND LINEAR ACTUATORS

Rotary actuators and linear actuators are a combination of a stepper motor with a hollow rotary table (rotary actuators) and a ball screw (linear actuators). Both actuator types are driven by an **AZ** Series motor with absolute sensor.



## FEATURES

### Reduced Installation Time

Compared to in-house construction, both actuators are solutions which are easy and fast to install without the need for adjustment.

### Simple Home Position Setting

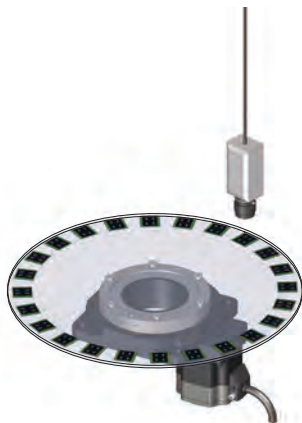
Thanks to the absolute system no home sensors are required. This simplifies the wiring and reduces costs.

### Flexible Installation Orientations

The actuators can be installed in various orientations, making them suitable for a wide range of applications.

## APPLICATIONS

Image inspection



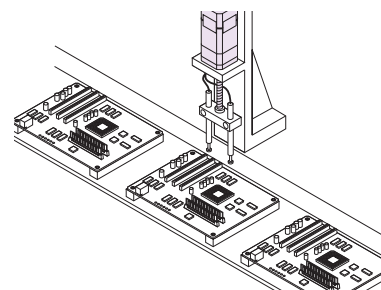
Liquid Dosing



Disc manufacturing

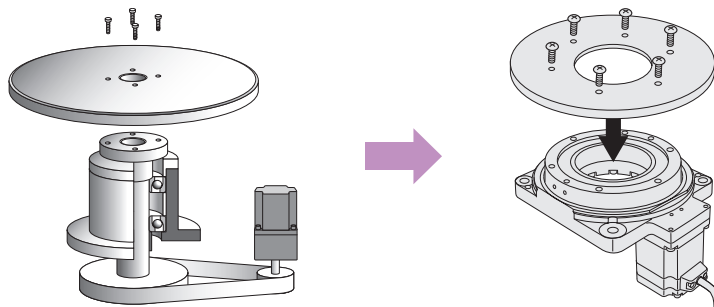


Vertical Positioning of Probes



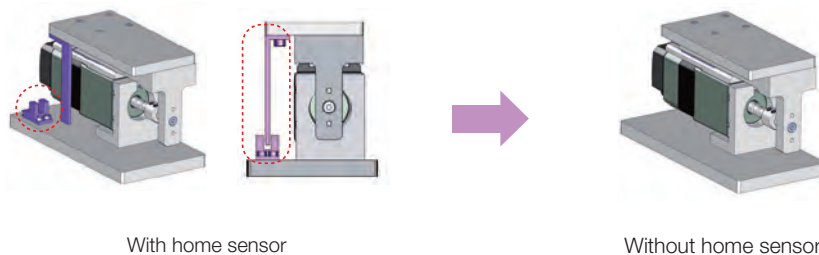
## REDUCED INSTALLATION TIME

When using these actuators no additional parts are required. The time necessary for design, component selection, and assembly can be reduced.



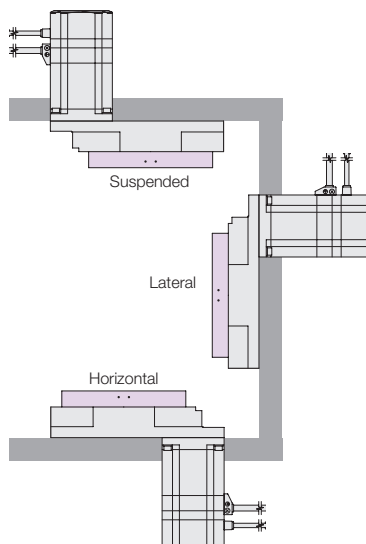
## SIMPLE HOME POSITION SETTING

Both the rotary and linear actuators are driven by absolute sensor equipped **AZ** Series motors that eliminate the need for reference sensors or limit switches. This reduces costs, simplifies wiring, and removes the need for maintenance.



## FLEXIBLE INSTALLATION ORIENTATION

The rotary actuators can be installed horizontally, ceiling-mounted, or wall-mounted. The linear actuators offer front or rear mounting, lateral mounting, and flange and base mounting.





- Maximum Speed  
600 - 1800 Grad/s
- Permissible Moment  
2 - 100 Nm
- Frame Size  
60 - 200 mm

- Battery-free absolute sensor
- No external sensors necessary
- High power, high stiffness
- Large hollow shaft diameter
- EtherCAT, EtherNet/IP, PROFINET, Modbus RTU

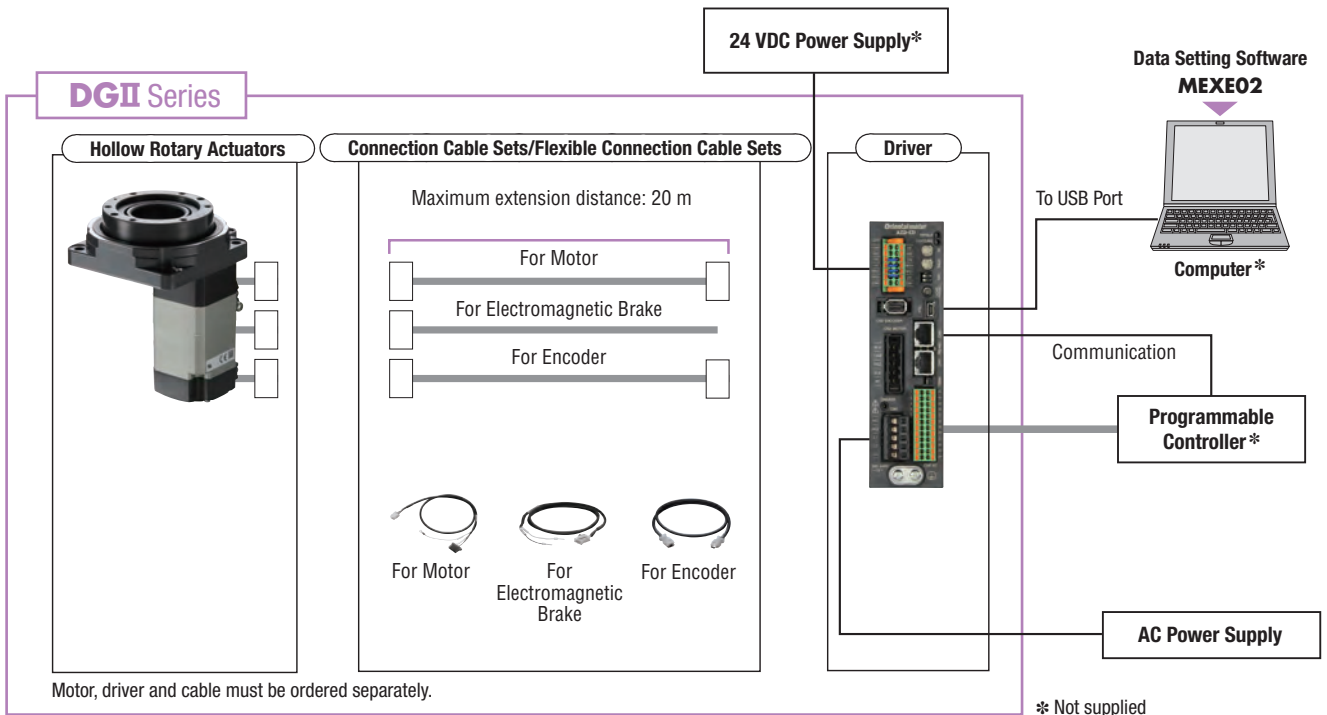


### Characteristics Table



Frame Size [mm]	Permissible Torque [Nm]	Permissible Thrust Load [N]	Options
60	0.9	100	-
85	3-9	500	Electromagnetic brake
130	12	2000	Cable outlet, Electromagnetic brake
200	50	4000	

### Configuration Overview

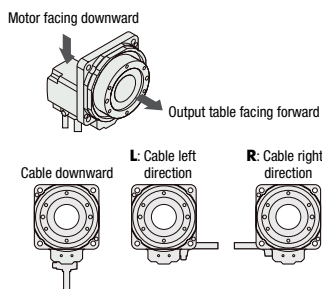


Product Number

● Vertically Mounted Motor

**DGM 130 R - AZ A C R**

- ① ② ③ ④ ⑤ ⑥ ⑦

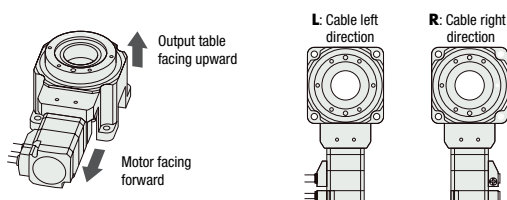


① Actuator	<b>DGM: DGII Series</b>
② Frame Size	<b>60:</b> 60 mm <b>130:</b> 130 mm <b>85:</b> 85 mm <b>200:</b> 200 mm
③ Bearing Type	Blank: Deep-Groove Ball Bearing <b>R:</b> Cross-Roller Bearing
④ Motor	<b>AZ: AZ Series</b>
⑤ Configuration	<b>A:</b> Single Shaft <b>M:</b> With Electromagnetic Brake
⑥ Winding Version	<b>C:</b> Single-Phase 200-240 VAC <b>K:</b> 24 VDC/48 VDC
⑦ Cable Withdrawing Direction	Blank: Downward Direction <b>R:</b> Right Direction <b>L:</b> Left Direction

● Horizontally Mounted Motor

**DGB 85 R 12 - AZ A C R**

- ① ② ③ ④ ⑤ ⑥ ⑦ ⑧



① Actuator	<b>DGM: DGII Series</b>
② Frame Size	<b>85:</b> 85 mm
③ Bearing	Blank: Deep groove ball bearing <b>R:</b> Cross-Roller Bearing
④ Gear Ratio	
⑤ Motor	<b>AZ: AZ Series</b>
⑥ Configuration	<b>A:</b> Single Shaft <b>M:</b> With Electromagnetic Brake
⑦ Winding Version	<b>C:</b> Single-Phase 200-240 VAC <b>K:</b> 24 VDC/48 VDC
⑧ Cable Withdrawing Direction	<b>R:</b> Right Direction <b>L:</b> Left Direction

● Driver

**AZD - C D**

- ① ② ③

① Driver	<b>AZD: AZ Series</b>
② Power Supply Input	<b>A:</b> Single-phase 100 - 120 VAC <b>C:</b> Single-phase, Three-phase 200 - 240 VAC* <b>K:</b> 24/48 VDC
③ Driver Classification	Blank: Pulse Input <b>D:</b> Built-in Controller <b>X:</b> Pulse Input with RS-485 Communication <b>ED:</b> With EtherCAT interface <b>EP:</b> With Ethernet/IP interface <b>PN:</b> With PROFINET interface

\*WARNING: The **AZ** Series is not suitable for operation on 3 × 400 VAC.

● Connection Cable Set/Flexible Connection Cable Set

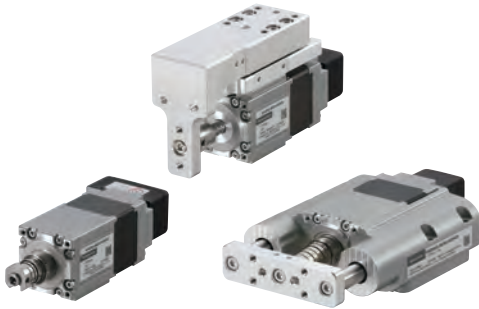
**CC 050 V Z □ F B 2**

- ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①		<b>CC:</b> Cable
② Length	<b>005:</b> 0.5 m <b>010:</b> 1 m <b>015:</b> 1.5 m <b>020:</b> 2 m <b>025:</b> 2.5 m <b>030:</b> 3 m <b>040:</b> 4 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m <b>150:</b> 15 m <b>200:</b> 20 m	
③ Reference Number		
④ Suitable Products		<b>Z: AZ Series Motor</b>
⑤ Reference Number		Blank: Frame size 42 to 85 mm <b>2:</b> Frame size 20 mm, 28 mm
⑤ Cable		<b>F:</b> Standard <b>R:</b> Flexible
⑥ Electromagnetic Brake		Blank: Without Electromagnetic Brake <b>B:</b> With Electromagnetic Brake
⑦ Cable Classification		Blank: AC Power Supply Input <b>2:</b> DC Power Supply Input



For detailed information please refer to the **DGII Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)



- Maximum Speed  
40 - 100 mm/s
- Push Force  
50 N
- Frame Size  
28x28 - 66x28.5 mm

- Battery-free absolute sensor
- No external sensors necessary
- Compact and lightweight
- EtherCAT, EtherNet/IP, PROFINET, Modbus RTU



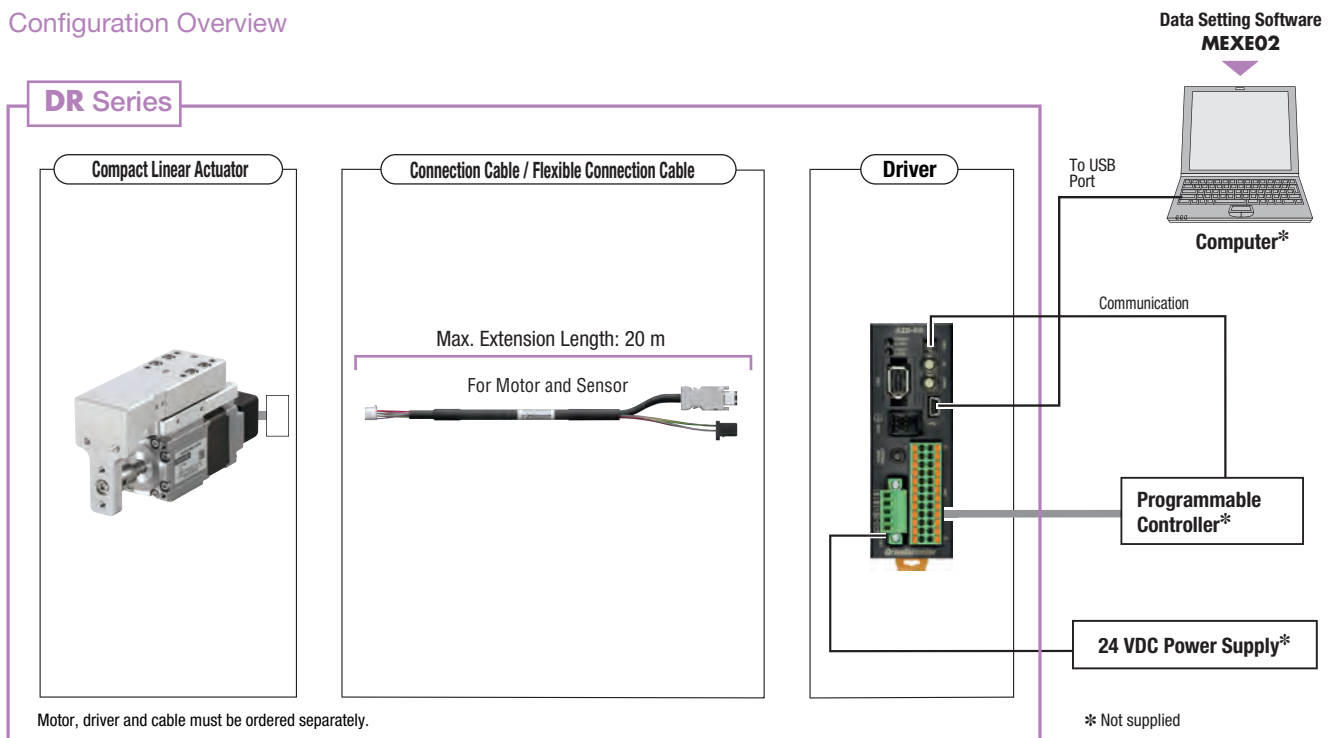
## Characteristics Table



Configuration	Frame Size [mm]	Thrust [N]	Max. Transportable Mass [kg]	Options
Standard	28 x 28	20 - 40	0 (4)* horizontal, 2 - 4 vertical	Spindle guard, mounting flange, mounting foot
With linear table	28 x 55		4 horizontal, 2 - 4 vertical	
With side guide	66 x 28.5		0.2 (4)* horizontal, 2 - 4 vertical	

\*In brackets are the specifications when using an external linear guide.

## Configuration Overview



## Product Number

## ● Actuator

**DR 28 T 2.5 BC 03 - AZ A K R - P**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Actuator	<b>DR: DR Series</b>
②	Frame Sizes	<b>28:</b> 28 mm
③	Version	<b>T:</b> Table Type <b>G:</b> Rod Type with Guide <b>R:</b> Rod Type
④	Ball Screw Lead	<b>1:</b> 1 mm <b>2.5:</b> 2.5 mm
⑤	Ball Screw Type	<b>B:</b> Precision Ball Screw <b>BC:</b> Precision Ball Screw with Cover
⑥	Hub	<b>03:</b> 30 mm
⑦	Motor	<b>AZ: AZ Series</b>
⑧	Configuration	<b>A:</b> Single shaft
⑨	Power Supply Input	<b>K:</b> DC Power Supply Input
⑩	Cable Outlet Direction	<b>U:</b> Upper Side <b>D:</b> Downward Side <b>R:</b> Right Side <b>L:</b> Left Side
⑪	Mounting Plate	Blank: without Mounting Plate <b>F:</b> with Flange <b>P:</b> with Foot

## ● Driver

**AZD - K D**

① ② ③

①	Driver	<b>AZD: AZ Series</b>
②	Power Supply Input	<b>K:</b> 24 VDC
③	Driver Classification	Blank: Pulse Input <b>D:</b> Built-in Controller <b>X:</b> Pulse Input with RS-485 Communication <b>ED:</b> With EtherCAT interface <b>EP:</b> With Ethernet/IP interface <b>PN:</b> With PROFINET interface

## ● Connection Cable/Flexible Connection Cable

**CC 050 V Z 2 F 2**

① ② ③ ④ ⑤ ⑥ ⑦

①		<b>CC:</b> Cable
②	Length	<b>005:</b> 0.5 m <b>010:</b> 1 m <b>015:</b> 1.5 m <b>020:</b> 2 m <b>025:</b> 2.5 m <b>030:</b> 3 m <b>040:</b> 4 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m <b>150:</b> 15 m <b>200:</b> 20 m
③	Reference Number	
④	Suitable Products	<b>Z:</b> AZ Series Motor
⑤	Reference Number	<b>2:</b> For motors with Frame Size 20 mm, 28 mm
⑥	Cable	<b>F:</b> Standard <b>R:</b> Flexible
⑦	Cable Classification	<b>2:</b> For drivers with DC power supply



For detailed information please refer to the  
**DR Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)

# ACTUATORS - ELECTRIC GRIPPER

The **EH** Series electric gripper is a combination of an **AZ** Series motor with a rack-and-pinion gripping mechanism. It is ideal for gripping, manipulating, and dimension measuring operations.



**EH** Series

## FEATURES

### Delicate Grip

A delicate grip is achieved by fine-tuning the grip force in 1 % operating current increments, and implementing a slow approach to the load.

### Small and Lightweight

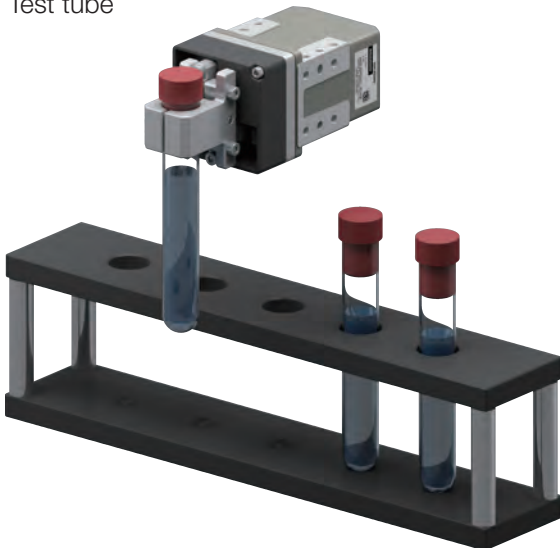
The combination of a 42 mm frame size motor and the rack-and-pinion mechanism results in a compact size. The gripper measures 91 x 46 x 48.5 mm and weighs 380 g.

### Multi-Surface Installation

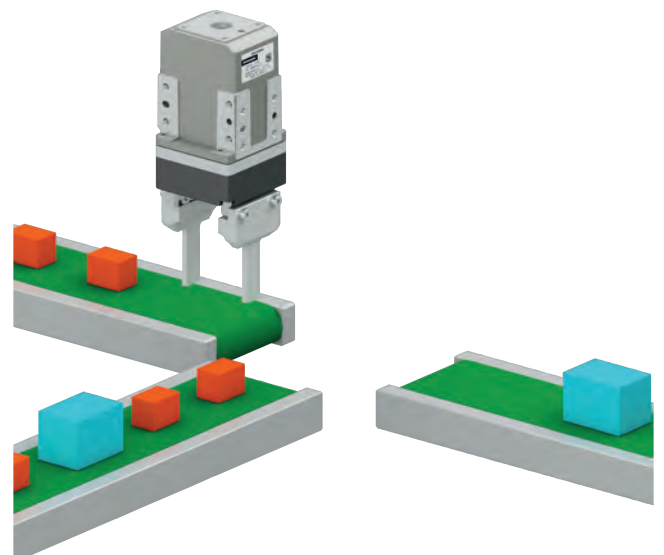
The design allows for multi-surface installation, making the gripper ideal for installation on robotic arms, etc.

## APPLICATIONS

Test tube



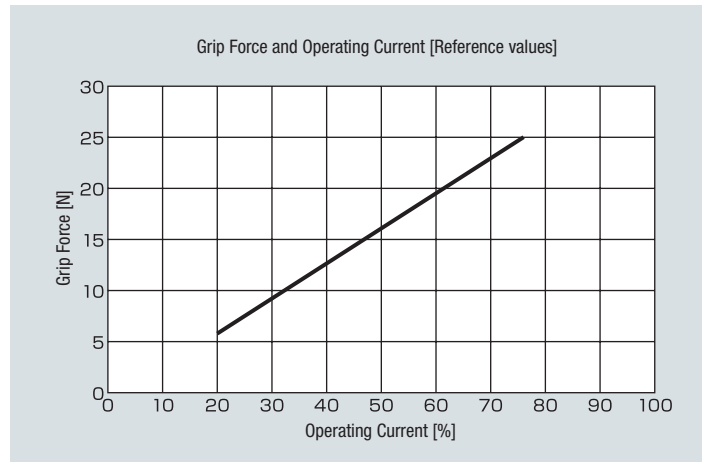
Sorter





## ADJUSTABLE GRIP FORCE

The movement of the electric gripper works by utilizing push-motion operation of the drive motor. The push force (grip force) is set by the operating current of the motor. This allows different gripping movements such as quick approach/slow grip, or low grip force first and gradually increasing grip force thereafter.



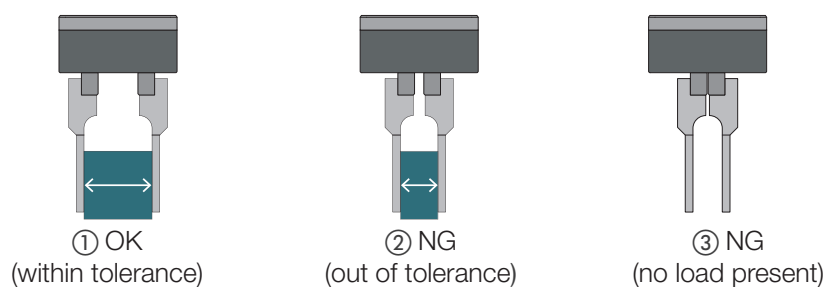
## COORDINATION OF LOAD POSITION AND DIRECTION

The minimum travel distance between the pincers attached to the base jaws is 0.02 mm. The direction and position of components can be coordinated by gripping them according to their size.



## MEASUREMENT WITHOUT EXTERNAL SENSORS

The operational range of the pincer is confirmed by the output signal (TLC output, AREA output) from the driver, allowing the size and presence of a load to be determined.



# RACK-AND-PINION SYSTEMS

The **L Series** is a linear actuator in which a rack-and-pinion mechanism and a motor have been combined. The series facilitates high positioning accuracy and the transport of high loads up to 100 kg.



## FEATURES

### Reduced Design and Assembly Time

The rack-and-pinion system can reduce the number of parts used, and it can also significantly reduce the time spent on design and assembly.

### No Home Sensor Required

Return-to-home operation is possible without a home sensor thanks to the absolute system.

### Loop Function-Assisted Operation

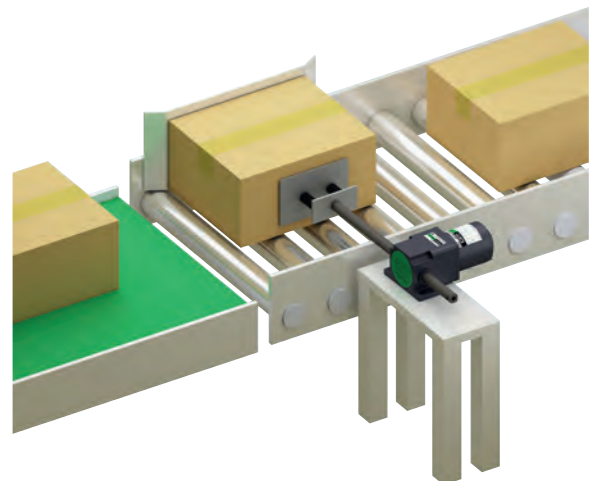
Loop function operations can be realised even without using a PLC.

## APPLICATIONS

Magazing Printed Circuit Boards

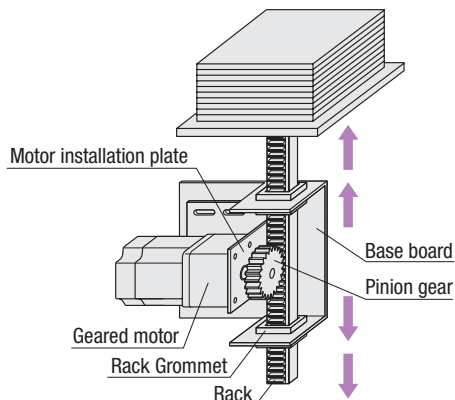


Roller Conveyor

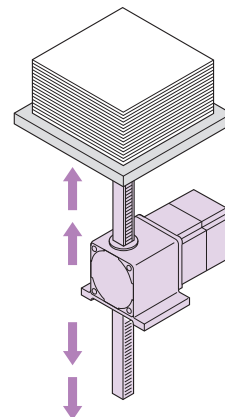


## REDUCED DESIGN AND ASSEMBLY TIME

If all the components of a rack-and-pinion drive are purchased separately, design and assembly can take an excessive amount of time. With the **L** Series no complicated assembly is necessary.



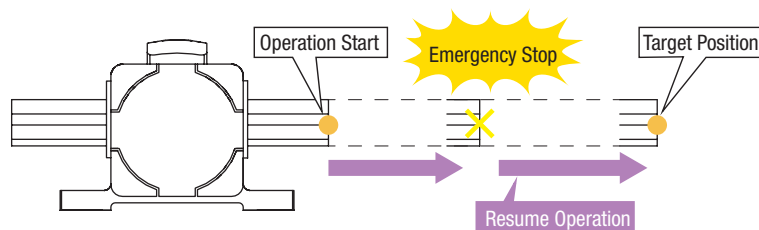
If Parts are Purchased Separately



With Rack and Pinion Systems

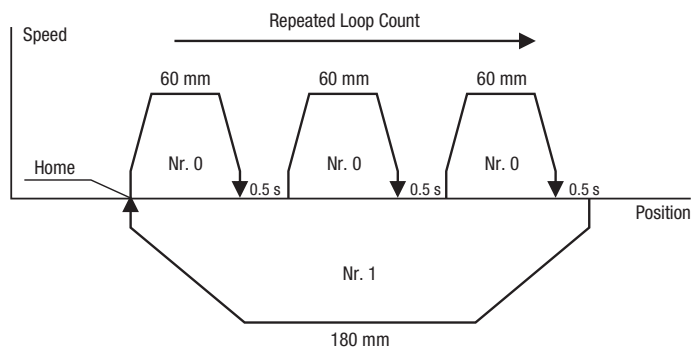
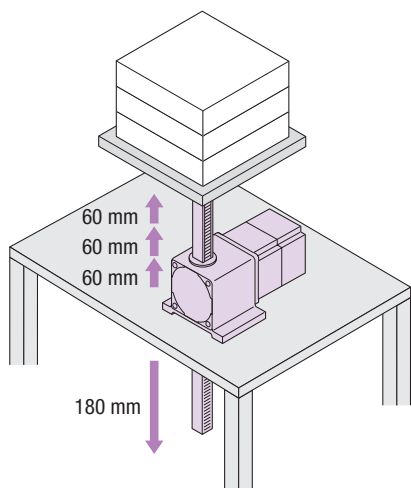
## NO HOME SENSOR REQUIRED

The **L** Series offers an absolute system which eliminates the need for a home sensor. Return-to-home can be performed at high speed without the need to take sensor sensitivity and response time into account, allowing for a shortened machine cycle.



## LOOP-FUNCTION

A loop function is where the linked operation data number is repeated to a set number of times. With the **L** Series this is possible even without the use of a PLC.





- Max. Grip Force  
**50 N**
- Stroke  
**15 mm/Ø23.9 mm**
- Frame Size  
**36 x 36, 46 x 46 mm**

- Battery-free absolute sensor
- No external sensors necessary
- Gripping, arranging, distance measuring
- Low heat development
- **EtherNet/IP** **PROFINET** **Modbus RTU**



Further information

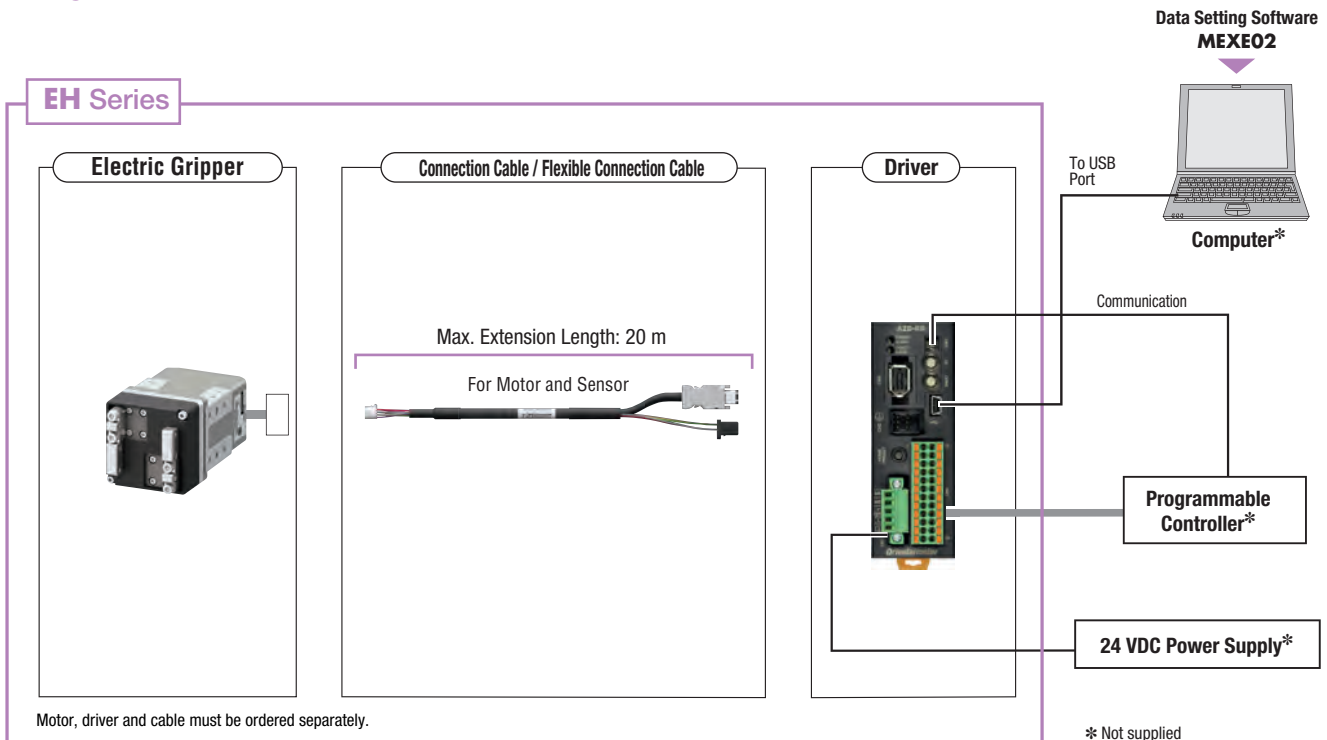


Characteristics Table



Type	Product	Stroke [mm]	Maximum Speed [mm/s]	Maximum Grip Force [N]	Options
2-Finger	EH3	15	156	7	Installation Flange for Robots
		each side 7.5	each side 78		
	EH4	25	156	25	
		each side 12.5	each side 78		
3-Finger	EH4	Ø23.9	1200 [r/min]	50	

Configuration Overview



## Product Number

## ● Electric Gripper

**EH 4 T - AZ A K H**

① ② ③ ④ ⑤ ⑥ ⑦

## ● Driver

**AZD - K D**

① ② ③

## ● Connection Cable/Flexible Connection Cable

**CC 050 V Z 2 F 2**

① ② ③ ④ ⑤ ⑥ ⑦

①	Electric Gripper	<b>EH:</b> EH Series
②	Frame Size	<b>3:</b> 36 mm (W)×36 mm (H) (Finger side) <b>4:</b> 46 mm (W)×46 mm (H) (Finger side)
③	Finger Type	None: 2-Finger Type <b>T:</b> 3-Finger Type
④	Motor	<b>AZ:</b> AZ Series
⑤	Configuration	<b>A:</b> Without Additional Function
⑥	Winding Version	<b>K:</b> DC Power Supply Input
⑦	Configuration	<b>H:</b> With installation cover None: No installation cover

①	Driver	<b>AZD:</b> AZ Series Driver
②	Power Supply Input	<b>K:</b> 24 VDC
③	Driver Classification	Blank: Pulse Input <b>D:</b> Built-in Controller <b>X:</b> Pulse Input with RS-485 Communication <b>ED:</b> EtherCAT <b>EP:</b> EtherNET/IP <b>PN:</b> PROFINET

①		<b>CC:</b> Cable
②	Length	<b>005:</b> 0.5 m <b>010:</b> 1 m <b>015:</b> 1.5 m <b>020:</b> 2 m <b>025:</b> 2.5 m <b>030:</b> 3 m <b>040:</b> 4 m <b>050:</b> 5 m <b>070:</b> 7 m <b>100:</b> 10 m <b>150:</b> 15 m <b>200:</b> 20 m
③	Reference Number	
④	Suitable Products	<b>Z:</b> AZ Series Motor
⑤	Reference Number	<b>2:</b> For motors with Frame Size 20 mm, 28 mm
⑥	Cable	<b>F:</b> Standard <b>R:</b> Flexible
⑦	Cable Classification	<b>2:</b> For drivers with DC power supply



For detailed information please refer to the  
**EH Series** catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)



Stroke

100 - 1000 mm

Max. Air Flow

0 - 500 mm/s

Frame Size

60 - 80 mm

- Battery-free absolute sensor
- No external sensors necessary
- Compact with high strength
- EtherCAT<sup>®</sup> → EtherNet/IP



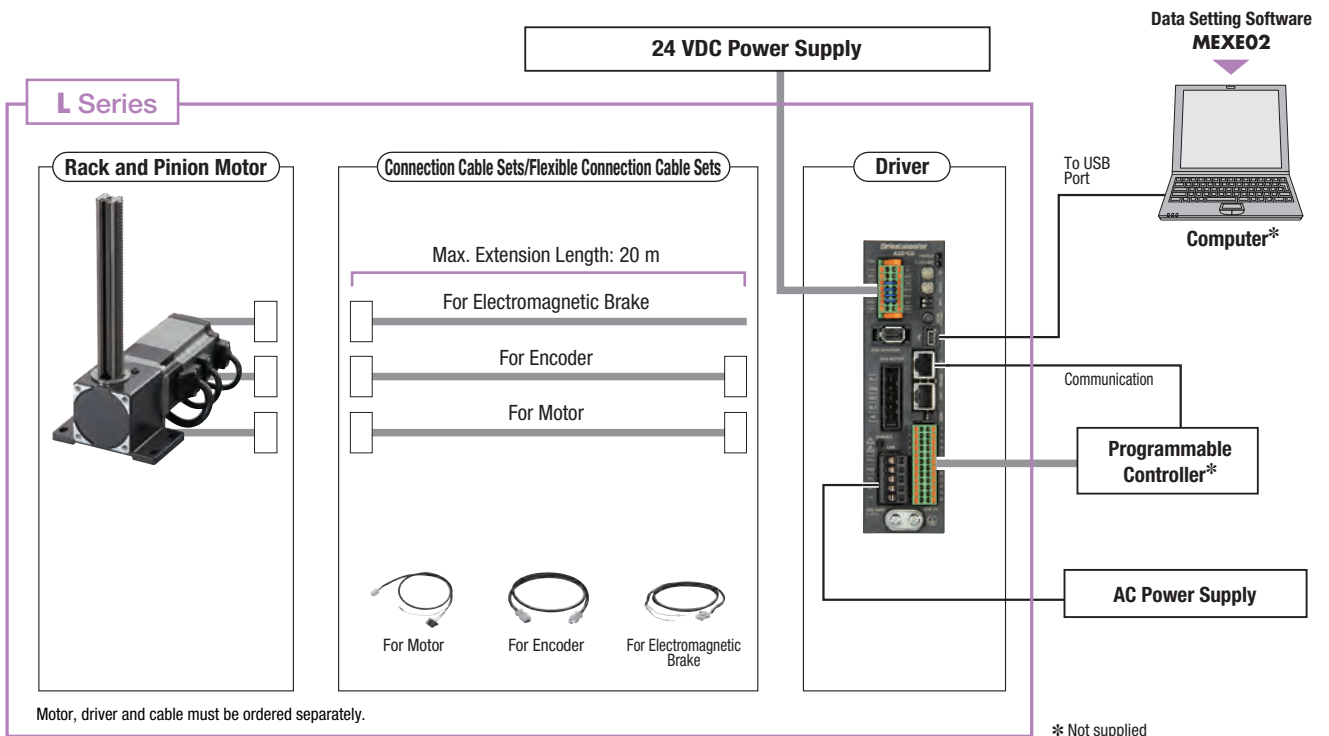
Further information

Characteristics Table



Frame Size [mm]	Stroke [mm]	Max. Transportable Mass [kg]	Options
60	100 - 800	7 - 30	Vertical/Horizontal rack direction, Electromagnetic brake
80	100 - 1000	7 - 100	

Configuration Overview



## Product Number

## ● Actuator

**LM 4 F 500 AZ M C - 1**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

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

## ● Driver

**AZD - C D**

① ② ③

①	Driver	<b>AZD:</b> AZ Series Driver
②	Power Supply Input	<b>A:</b> Single-Phase 100-120 VAC <b>C:</b> Single-Phase 200-240 VAC
③	Driver Classification	Blank: Pulse Input <b>D:</b> Built-in Controller <b>X:</b> Pulse Input with RS-485 Communication <b>ED:</b> With EtherCAT interface <b>EP:</b> With Ethernet/IP interface <b>PN:</b> With PROFINET interface

\*WARNING: The **AZ** Series is not suitable for operation on 3 × 400 VAC.

## ● Connection Cable Set/Flexible Connection Cable Set

**CC 050 V Z F B**

① ② ③ ④ ⑤ ⑥

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



For detailed information please refer to the  
L Series catalogue on our website:  
[www.orientalmotor.eu](http://www.orientalmotor.eu)

# COOLING FANS

Axial flow fans use a propeller to generate air flow in the direction of the axis of rotation. Capable of generating a large air flow, axial flow fans are suited for applications requiring ventilation cooling.



**MU Series**



**MD Series**

## FEATURES

### Low noise and power saving

By adjusting the air volume according to the conditions, noise reduction and power saving are possible.

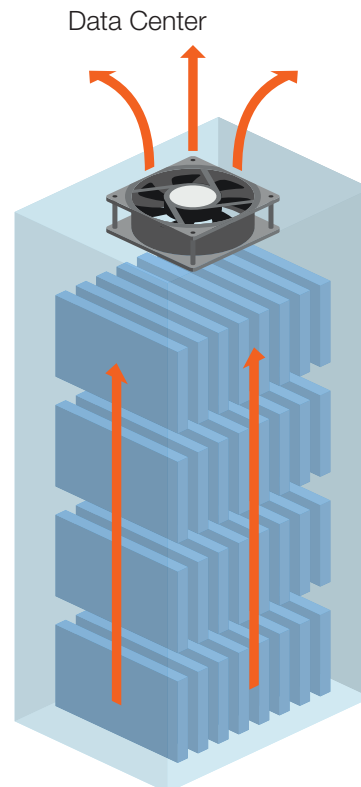
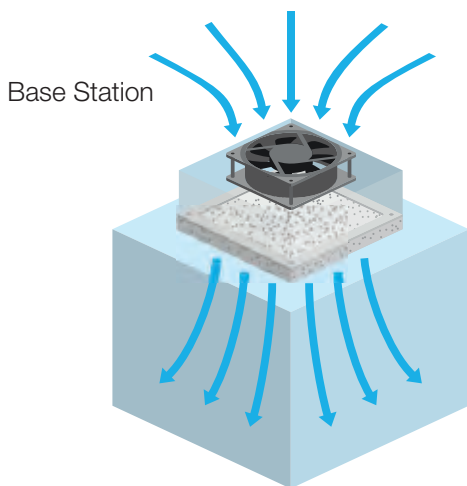
### Ideal for Hard to Service Environments

Equipment that is continuously operational and cannot be stopped.

### Long life

These axial fans have an expected life of 100,000 hours (approximately 11 years).

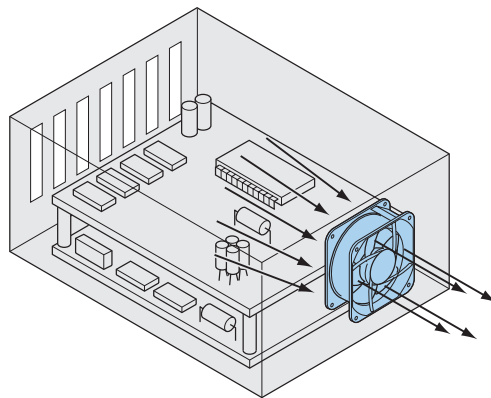
## APPLICATIONS





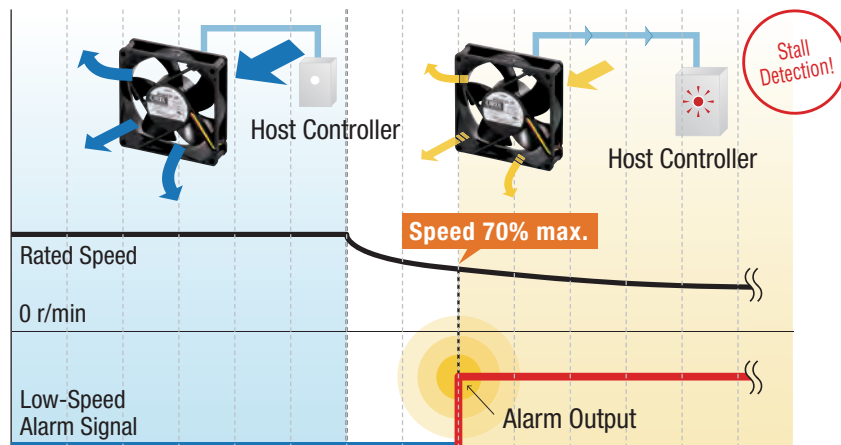
# DEVICE VENTILATION AND COOLING

The large air flow of axial flow fans is suitable for ventilation and cooling inside electronic devices.



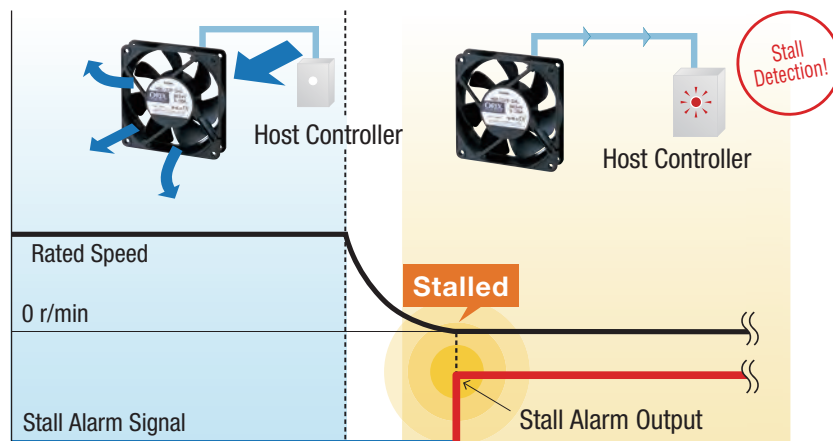
## LOW SPEED ALARM TYPES

An alarm is output when the fan speed drops due to the service life of the fan or the ingress of foreign objects.



## STALL ALARM TYPE

Outputs an alarm when the cooling fan stops. Quickly stalling tops to allow the cooling fan to be replaced.





Frame Size

42 - 172 mm

Max. Air Flow

0.13 - 6 m<sup>3</sup>/min

Noise Level

18 - 46 dB(A)

- High airflow
- Stall/Low speed alarm types
- Long-life types



Further information

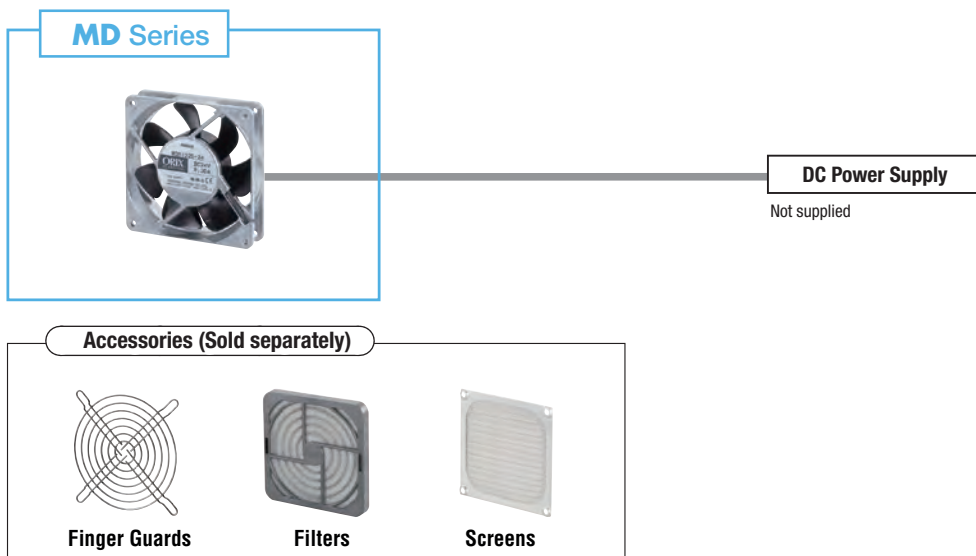
Characteristics Table



Frame Size [mm]	Max. Air Flow [m <sup>3</sup> /min]	Max. Static Pressure [Pa]	Noise Level [dB(A)]
42x42x10	0.13-0.18	47-86	25-34
52x52x10	0.2-0.27	32-54	30-36
62x62x25	0.37-0.5	27-49	20-30
80x80x25	0.55-1.0	16-49	18-35
92x92x25	0.9-1.3	22-49	25-36
119x119x25	2.5-2.7	43-70	45-46
140x140x51	5.8	130	49
Ø 172	6	137	47

\*NOTE: Please contact your nearest Oriental Motor sales office.

Configuration Overview



## Product Number

● Fan

**MD**   **9** **25** **A** - **12** **L**

①   ②   ③   ④   ⑤   ⑥   ⑦

①	Series Name	<b>MD: MD</b> Series
②	Type	<b>S: S</b> No Alarm <b>A: A</b> With Alarm <b>E: E</b> Long-life
③	Frame Size	<b>4:</b> 42 mm, <b>5:</b> 52 mm, <b>6:</b> 62 mm, <b>8:</b> 80 mm, <b>9:</b> 92 mm, <b>12:</b> 119 mm, <b>14:</b> 140 mm, <b>17:</b> $\phi$ 172 mm
④	Frame Thickness	<b>10:</b> 10 mm <b>25:</b> 25 mm <b>51:</b> 51 mm
⑤	Speed Type	Blank, <b>A, B:</b> Standard Speed <b>M, AM, BM:</b> Middle Speed <b>AL, BL:</b> Low Speed
⑥	Power Supply Voltage	<b>5:</b> 5 VDC, <b>12:</b> 12 VDC, <b>24:</b> 24 VDC, <b>48:</b> 48 VDC
⑦	Additional Function	<b>L:</b> Stall Alarm, Electronic Alarm Type Blank: No additional functions



Frame Size

80 - 140 mm

Max. Air Flow

0.45 - 3.0 m<sup>3</sup>/min

Noise Level

28 - 46 dB(A)

- AC axial flow fan
- Large air flow
- High static pressure



Further information

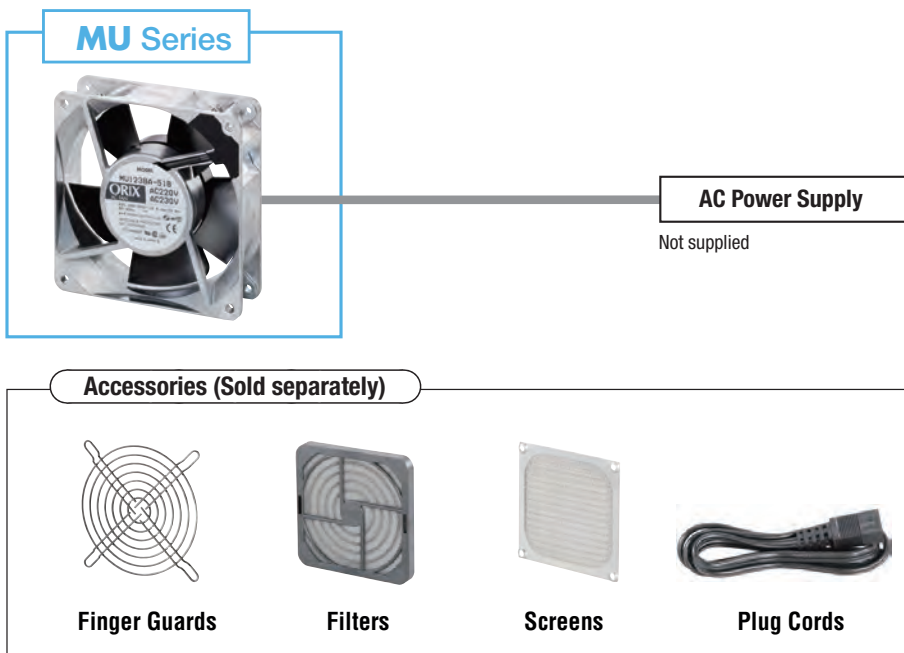
## Characteristics Table



Frame Size [mm]	Max. Air Flow [m <sup>3</sup> /min]	Max. Static Pressure [Pa]	Noise Level [dB(A)]
80x80x25	0.45 - 0.55	34 - 49	28 - 35
92x92x25	0.85 - 1.1	34 - 59	31 - 39
104x104x25	1.2 - 1.4	39 - 44	35 - 39
119x119x25	1.4 - 1.9	31 - 49	33 - 40
119x119x38	1.85 - 3.0	29 - 81	33 - 46
140x140x28	2.4 - 2.7	34 - 45	44 - 46

\*NOTE: Please contact your nearest Oriental Motor sales office.

## Configuration Overview



Product Number

● Fan

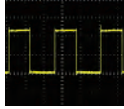




**MU 12 38 A - 5 1 B**

①      ②      ③      ④      ⑤      ⑥      ⑦





①	Series	<b>MU: MU Series</b>
②	Frame Size	<b>8:</b> 80 mm <b>9:</b> 92 mm <b>10:</b> 104 mm <b>12:</b> 119 mm <b>14:</b> 140 mm
③	Frame Thickness	<b>25:</b> 25 mm <b>28:</b> 28 mm <b>38:</b> 38 mm
④	Speed Type	<b>A, S:</b> Standard Speed <b>M, B:</b> Middle Speed <b>L:</b> Low Speed
⑤	Power Supply Voltage	<b>5:</b> Single-Phase 220/230 VAC
⑥	Power Connection	<b>1:</b> 2-Terminal <b>3:</b> Lead Wire Type
⑦	Reference Number	

# Striving to Find Solutions to the Needs of Society Through Our Technologies and Products

**Product Technology**

<b>Fundamentals</b>	<ul style="list-style-type: none"> <li>Electrical / Electronic Engineering</li> <li>Control Engineering</li> <li>Mechanical Engineering</li> </ul>	
<b>Design</b>	<ul style="list-style-type: none"> <li>Magnetic Fields</li> <li>Circuits</li> <li>Construction</li> <li>Software</li> <li>Heat Transfer</li> </ul>	
<b>Analysis/ Assembly</b>	<ul style="list-style-type: none"> <li>Materials</li> <li>Vibration</li> <li>Sound</li> <li>Fluid</li> <li>Heat</li> <li>Insulation</li> </ul>	
<b>Analysis/ Measurement</b>	<ul style="list-style-type: none"> <li>SEM</li> <li>Spectrum Analysis</li> <li>3D Measurement</li> <li>Radioscopic X-Ray</li> <li>EMC</li> </ul>	
<b>Related Technologies</b>	<ul style="list-style-type: none"> <li>Networking</li> <li>Sensors</li> <li>Tribology</li> <li>3DCAD</li> </ul>	

**Production Technology**

<b>Assembly</b>	<ul style="list-style-type: none"> <li>Windings</li> <li>Adhesives</li> <li>Connections</li> </ul>	
<b>Processing</b>	<ul style="list-style-type: none"> <li>Cutting</li> <li>Heat Treatment</li> <li>High-Precision Gear Cutting</li> <li>Painting</li> </ul>	
<b>Moulds</b>	<ul style="list-style-type: none"> <li>Press</li> <li>Die-Casting</li> <li>Resin Moulding</li> </ul>	
<b>Mounting</b>	<ul style="list-style-type: none"> <li>Surface Mounting</li> <li>Image Testing</li> <li>Lead-Free Soldering</li> </ul>	

High Power - High Efficiency - High Accuracy - Space Saving - Safety - Reliability - Long Life Design - Low vibration - Easy Operation - Low Noise - Standardisation - Low Heat Generation

## Motors



## Electric Actuators / Gears



## Drivers



## Fans

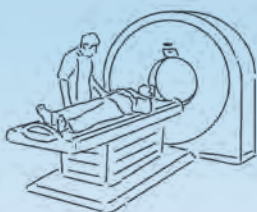


The requirements of motion technologies continue to change and evolve with the times. Oriental Motor has built a high-tech system with the ability to focus on everything from elemental technology to advanced production engineering. All of our engineers are equipped with detailed knowledge and understanding of product technologies in a wide range of fields, allowing us to precisely meet the needs of modern automation. Providing solutions to challenging problems, while creating value in people's lives, manufacturing sites, and various areas of society.



## Medical Equipment / Analytical Instruments

- CT Scanner
- MRI Scanner
- Denture Manufacturing Equipment
- Blood Analyzer
- Electron Microscope
- Pharmaceutical Packaging Machine
- X-Ray Equipment



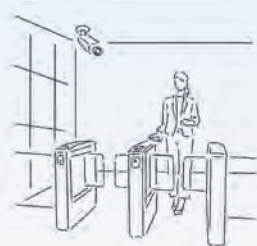
## Bank and Ticket Machines

- ATM
- ETC Gate
- Counting Machine
- Automatic Ticket Gate
- Automatic Ticket Machine
- Train Seat Rotation Device
- Automatic Doors



## In Our Daily Lives

- Interactive Exhibition Machines for Amusement Parks, Recreational Facilities, and Museums
- High Speed Sushi Restaurant Conveyor Belt
- CCTV Camera
- Service Robot
- Security Gate
- Solar Power Generation (Power Conditioner)
- Charging Station for Electric Cars
- Wind Turbine
- Planetarium



## Food Machinery

- Checkweigher
- Food Processing Equipment
- Sorting Machine
- Seeding Machine
- Packaging Machine
- Foreign Object Inspection Equipment
- Plant Factory
- Kitchen Instrument



## Factory Automation

- Testing Equipment
- Industrial Robot
- Molding Machine
- Washing Machine
- Electronic Component Manufacturing Equipment
- Conveyor Equipment
- Semiconductor Manufacturing Equipment
- Automatic Guided Vehicle (AGV, AMR)
- Cooling Equipment



Solutions for Society

Automation



Improved Productivity



Scientific Development



Safety / Security



Energy Saving / Resource Saving





# Making “Motion” Scenes More Eco-Friendly

We strive to reduce environmental burdens through products with low environmental impact, while making improvements on energy efficiency as well as conducting appropriate waste management. In this brochure, we introduce some of our environmental activities that we have been conducting while challenging ourselves to explore new technologies and applications.



# Products Contributing to the Global Environment

In order to contribute to the reduction of environmental impact, we utilise the latest technology in our motors and other products to support environmental factors, such as reducing CO<sub>2</sub> through high energy efficiency, and saving resources through compact designs.

## Contributing to Reducing CO<sub>2</sub> Emissions Compatible with EU's Ecodesign Directive

The ecodesign directive, which was established by the EU in efforts to achieve the Kyoto Protocol early, is a protocol that imposes a framework of environmental friendliness for all energy-relevant products. Motor-related products are also required to be highly energy efficient. Oriental Motor's induction motors with an output of 120 W and above, along with the cooling fan **MRE Series** (frame size 250 mm), are compatible with the ecodesign directive.

## Contributing to Resource-Saving by Achieving Compact Body and High Torque

Reducing the size and weight of products improves resource efficiency (resource-saving), resulting in reduced environmental impact. By reducing the size of the motor, which is the power source, and making it high torque, Oriental Motor contributes greatly to resource-saving by offering resource efficient products.

Furthermore, we support many customers to achieve their resource saving goals by promoting simplified wiring compatible with FA networks.

### Standard AC Motor Three-Phase High-Efficiency Induction Motor **KIIS Series**

- Motor achieves energy-saving and high-efficiency through optimal magnetic design and exclusive components.
- Accomplishing an efficiency level of IE4 (200 V type).  
\*International standards IEC 60034-30-1
- Fan-less structure
- Degree of protection IP66



**KIIS Series**

### **αSTEP AZ Series** Multi-Axis Driver 2-Axis Type DC Input

- Achieves downsizing\* and reducing material usage with dedicated design.
- Contributing to simplified wiring with a driver equipped with consolidated connections to programmable networks and power supply.

\* Achieved reducing motor length by approx. 45 % and mass by approx. 38 % compared with a conventional multi-axis driver 2-axis type.



EtherCAT® MECHATROLINK SSCNETIII/H

\* EtherCAT® is a patented technology and is a registered trademark of and licensed by Beckhoff Automation GmbH (Germany).  
\* MECHATROLINK is a registered trademark of MECHATROLINK Members Association.  
\* SSCNETIII/H is a registered trademark of Mitsubishi Electric.

### AC Long Life Axial Flow Fans **MRE Series** Frame Size 250 mm

- Achieves higher efficiency with a winding design compatible with power supply specifications in each country, and enabling temperature rise suppression in of the cooling fan motor. Realising the longest product life in the motor industry.
- Expected life of 100,000 hours
- Large air flow

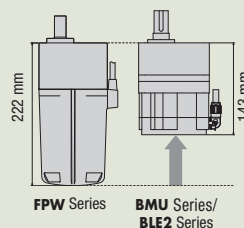


**MRE Series**

### Brushless DC Motor **BMU Series / BLE2 Series** Dust-Resistant / Watertight

- High-efficiency motor incorporating high-energy density permanent magnets. Achieving compact body yet higher output power compared with a conventional watertight, dustresistant induction motor **FPW Series**.
- Contributing to equipment design with high watertight, dust resistant performance while conforming to the IP67 degree of protection.

90 W 7.5 kg 400 W 4.2 kg



**BMU Series / BLE2 Series**



# ORIENTAL MOTOR WE ARE YOUR SPECIALIST



## WE ARE THERE FOR YOU! FULL-SERVICE

### Webinar & Seminar

Technical webinars & seminars are also part of Oriental Motor's customer service.



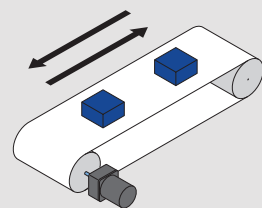
### New Motion

This is where we keep you up to date about matters of the moment.



### Motor Selection

We support you selecting the drive.



### YouTube - The Highlights

This is where we keep you up to date about our products.



## HEADQUARTERS DUSSELDORF



## SALES NETWORK

Our european headquarters.

DUSSELDORF - GERMANY  
MILAN - ITALY  
PARIS - FRANCE  
LONDON - U.K.  
ZURICH - SWITZERLAND

## TAKAMATSU-KOKUBUNJI FACTORY



## PRODUCTION NETWORK

Our factories in Japan.



KASHIWA Factory  
KOFU Factory  
SOMA Factory  
TAKAMATSU-KOZAI Factory  
TSUCHIURA Factory  
TSUKUBA Factory  
TSURUOKA MIDDLE Factory  
TSURUOKA WEST Factory

Company ORIENTAL MOTOR CO., LTD  
Head office Taito-ku, Tokio  
Founded 1885  
Established 1950  
10 R&D Center and Factories in Japan

ISO 9001 • ISO 14001

# CORPORATE OVERVIEW



# Note

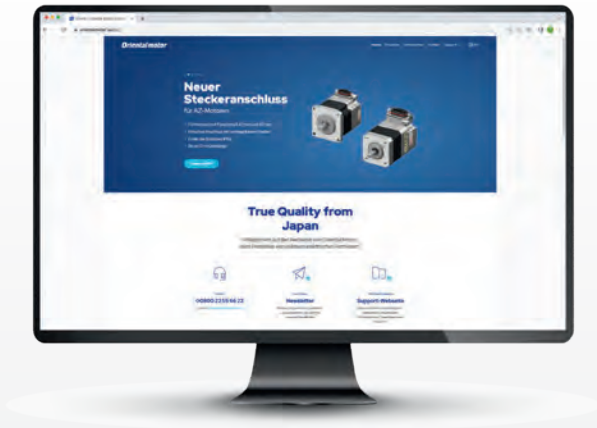
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Made in Japan

Development, manufacture and sale of small precision  
motors and electronic circuits for motion control.

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German



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