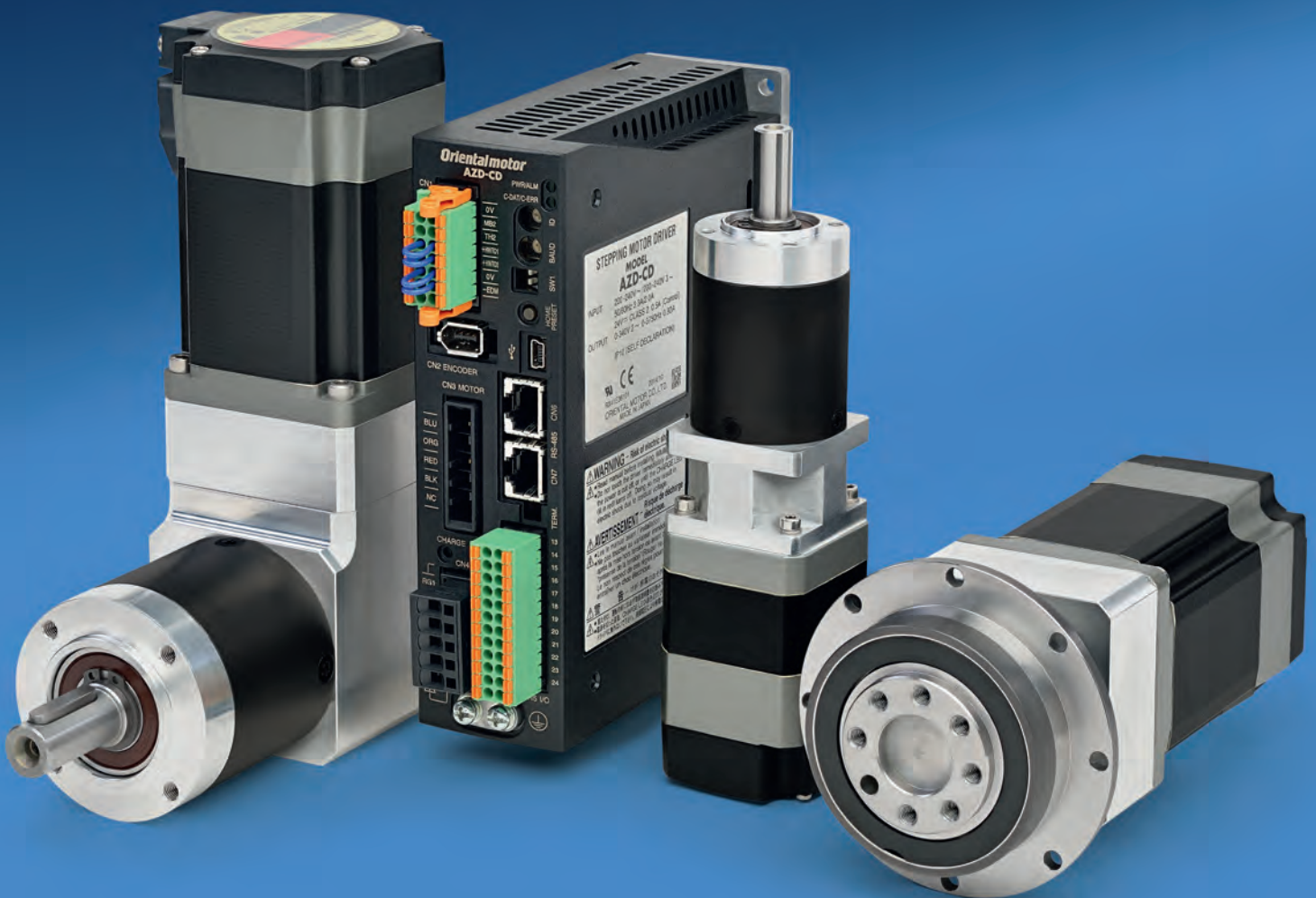


## Hybrid Stepper Servo $\alpha$ STEP **AZ Series** with Neugart Gearheads

- High-Efficiency Closed Loop Combination with Neugart Planetary Gearheads
- Motor and Gearhead are Pre-assembled
- $\phi 40 - \phi 80$  mm up to 150 Nm



Planetary  
Gearheads  
Pre-assembled

# Motor Features

## Save Energy with High Reliability and High Efficiency

### High Reliability

We have adopted a proprietary control system.

We have achieved high reliability by linking the benefits of open loop control and closed loop control.

- **Keeps driving even in the case of sudden load changes or sudden acceleration**

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

- **Outputs an alarm signal in case an abnormality occurs**

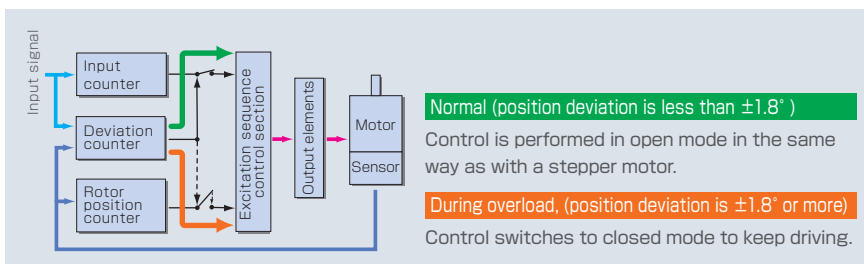
When overload continuously occurs, an alarm signal is output and when positioning determination is complete, a signal is output. This supports high reliability.

- **Tuning not required**

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

- **Storing of stop position**

When determining positioning, it stops using the motor's own holding torque without hunting. Therefore it is suitable for use in a situation where vibration could cause a problem when stopping due to a low-rigidity mechanism.



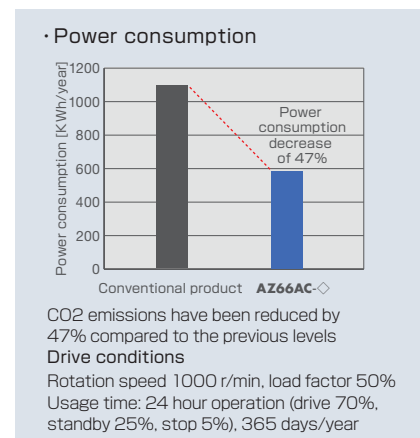
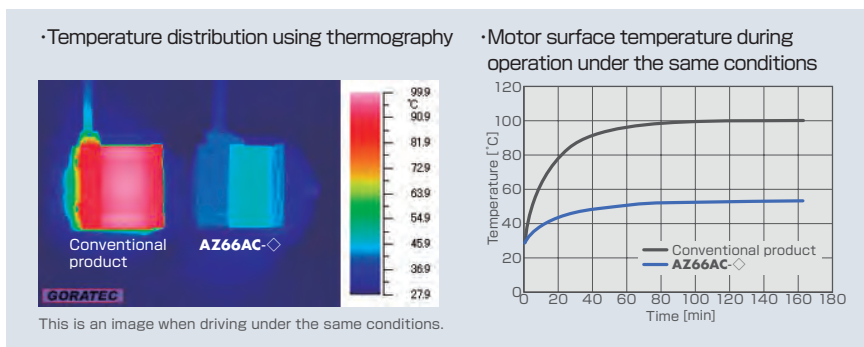
### Energy Saving

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

- **Reduced heat generation**

We have achieved a significant decrease in heat generation through high efficiency.

- **The power consumption has been reduced to 47% of its previous levels through energy saving**



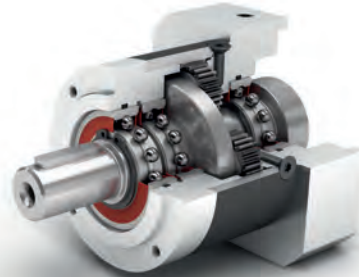
# Gearhead Features

## Pre-assembled Motor and Gearhead



### PLE & PLN Features

#### PLE Planetary



**PLE** Series employs optimized planetary gear mechanism and is composed of fully hardened gears. Sun gear and planetary gears are honed (precision final machining after heat treatment). This technology guarantees extremely high torque density, long life, low backlash, and so on.

- Low Backlash
- High Output Torque  
Max. 150 Nm

#### PLN Planetary



**PLN** Series is high precision planetary gearhead for applications with very high precision requirements. Whether high torque density, minimal transmission error, low operating noise, lowest backlash or exceptional reliability... – the **PLN** series satisfies all these requirements in every application.

- Minimal Backlash  
3 – 5 min
- High Output Torque  
Max. 150 Nm

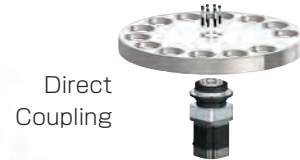
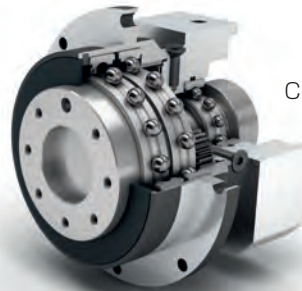
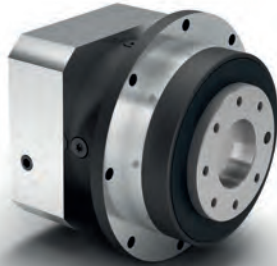
# Gearhead Features

## Pre-assembled Motor and Gearhead



### PLFE & WPLE Features

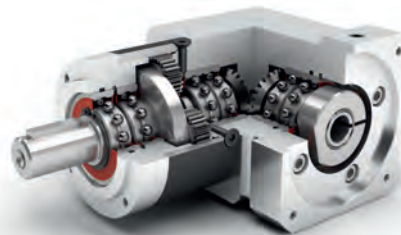
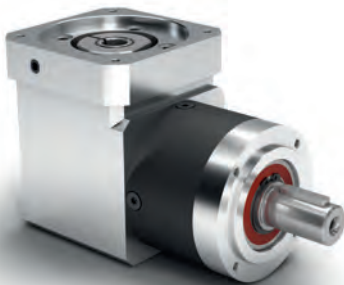
#### PLFE Planetary



**PLFE** Series employs optimized planetary gear mechanism and is composed of fully hardened gears. Equipment tables and arms can be installed directly on the output flange. This saves you the hassle and cost of designing an installation mechanism, arranging necessary mechanism parts, adjusting the belt tension, etc., when mechanical components such as a belt and pulley are used for installation.

- Flange Gearhead
- Low Backlash
- High Output Torque  
Max. 150 Nm

#### WPLE Right Angle Planetary



**WPLE** Series is the right angle gearhead of PLE series. This bevel gear was designed especially for space-saving installation in a right-angle position of the motor/gearbox combination. This provides solutions for a compact machine mechanism.

- Right Angle Planetary Gear
- Low Backlash
- High Output Torque  
Max. 140 Nm

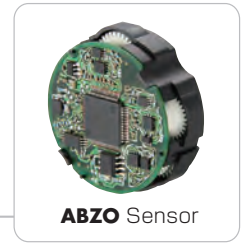


# $\alpha$ STEP AZ Series

Equipped with a ABZO sensor, this is advanced technology at an affordable price.

## ABZO sensor

We have developed a compact, low cost, battery-free mechanical absolute sensor (patented). This affordable motor series allows for productivity improvements and cost reductions.

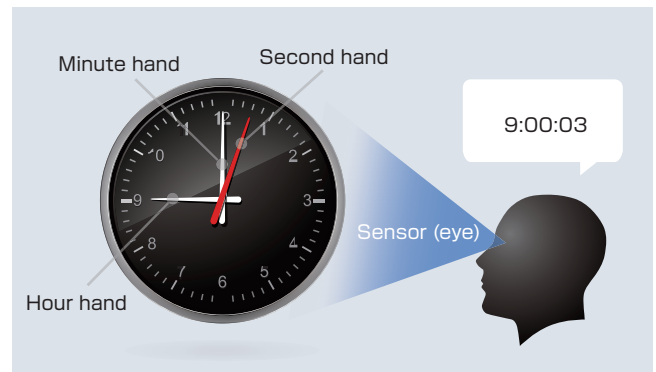


ABZO Sensor

### Mechanical Sensor

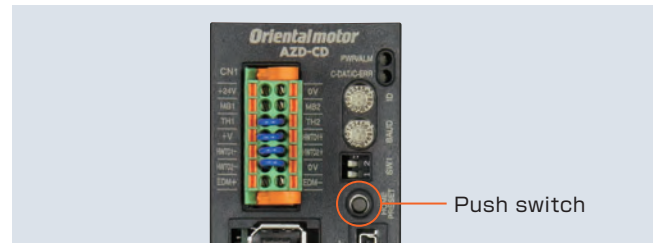
Analog clocks measure the current time based on the positions of the second hand, minute hand and hour hand. ABZO sensor is a mechanical sensor equipped with multiple gears equivalent to the hands on a clock. As it detects positioning information by detecting the angles of the respective gears, a battery is not required. Absolute position detection is possible with  $\pm 900$  rotations (1800 rotations)\* of the motor shaft from the home position.

\* The frame sizes 20 and 28 mm are  $\pm 450$  rotations (900 rotations).



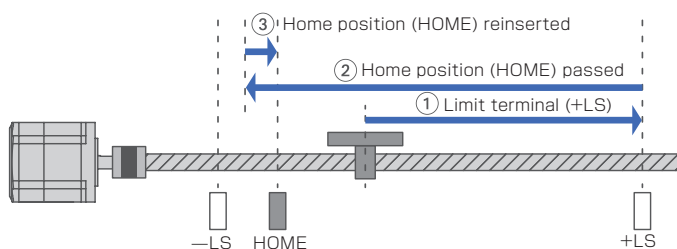
### Home Position Setting

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



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

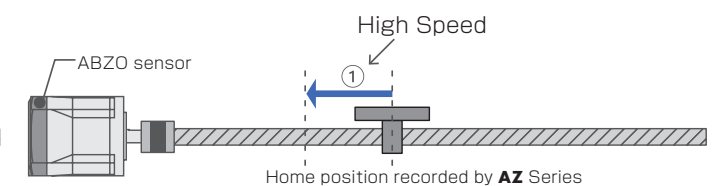
Because return-to-home is possible without using an external sensor, return-to-home can be performed at high speed without taking the sensor sensitivity into account, allowing for a shortened machine cycle.



### Pre-ABZO homing method example

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

Furthermore, as return-to-home can be performed without concern for differences in the home sensor, it is possible to improve home position accuracy.



### AZ Series utilising ABZO sensor homing method

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

# Battery-Free ABZO Sensor

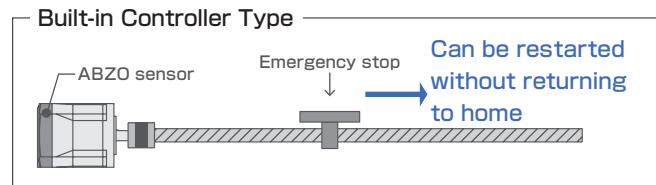
The positioning information is managed mechanically by the ABZO sensor.



## Maintaining Positioning Information

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

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



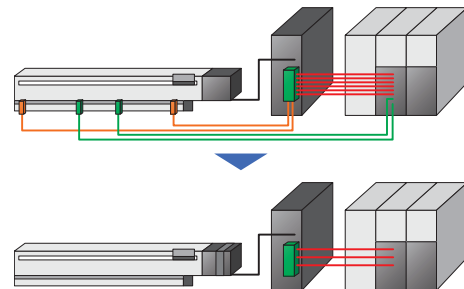
## Cost and Space reduction

### ● Cost reductions

Sensor costs and cable costs can be reduced, leading to lower system costs.

### ● Cable savings

This reduces cabling, increasing device design degree of freedom.



## Four Types of Driver

- Built-in Controller Type FLEX
- Pulse-Input Type
- Pulse-Input type with RS485 Communication
- Network Compliant Driver  
⇒ Profinet, EtherCAT, Ethernet/IP

## Product Number

● Motor

◇ Standard

# AZM 6 9 A C

① ② ③ ④ ⑤

◇ Motor with **PLE**, **PLN** or **PLFE**, Neugart Gearhead

# AZM 6 9 A C - PLN 70 - 10

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

◇ Motor with **WPLE** Neugart Gearhead

# AZM 6 9 A C - WPLE 60 - 10 - D

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

● Driver

# AZD - C D

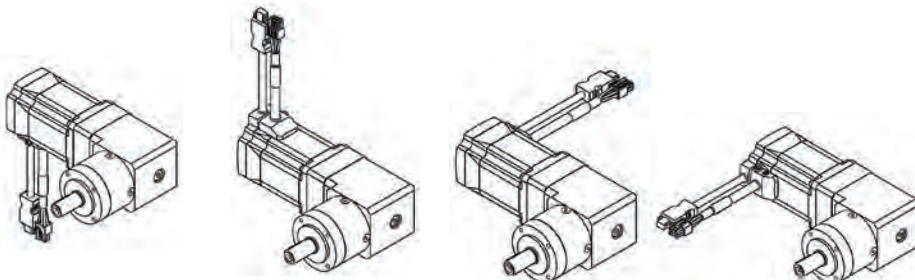
① ② ③

● Connection Cable Sets/Flexible Connection Cable Sets

# CC 050 V Z F B 2

① ② ③ ④ ⑤ ⑥ ⑦

● Cable Direction – Only for **WPLE** Neugart geared type.



D: Down

U: Up

R: Right

L: Left

①	Motor	<b>AZM: AZ Series Motor</b>		
②	Motor Frame Size	<b>4:</b> 42 mm	<b>6:</b> 60 mm	<b>9:</b> 85 mm
③	Motor Case Length			
④	Configuration	<b>A:</b> Single Shaft <b>M:</b> With Electromagnetic Brake* <sup>1</sup>		
⑤	Winding Type	<b>C:</b> AC Power Supply Input Specifications <b>K:</b> DC Power Supply Input Specifications* <sup>2</sup>		
⑥	Geared Type	<b>PLE: PLE Series</b> <b>PLN: PLN Series</b> <b>PLFE: PLFE Series</b>		
⑦	Gear Size	<b>40:</b> PLE40 <b>70:</b> PLN70 <b>64:</b> PLFE64	<b>60:</b> PLE60 <b>90:</b> PLN90* <sup>3</sup> <b>90:</b> PLFE90	<b>80:</b> PLE80
⑧	Gear Ratio	5, 10, 20, 40		

\*<sup>1</sup> Only for the motor size of 46/69. See product line.

\*<sup>2</sup> Only for the motor size 46/69 with PLE gearhead. See product line.

\*<sup>3</sup> Only for gear ratio 40. See product line.

①	Motor	<b>AZM: AZ Series Motor</b>		
②	Motor Frame Size	<b>6:</b> 60 mm	<b>9:</b> 85 mm	
③	Motor Case Length			
④	Configuration	<b>A:</b> Single Shaft <b>M:</b> With Electromagnetic Brake* <sup>1</sup>		
⑤	Winding Type	<b>C:</b> Single-Phase 200-240 VAC <b>K:</b> 24/48 VDC Input* <sup>1</sup>		
⑥	Geared Type	<b>WPLE: WPLE Series</b>		
⑦	Gear Size	<b>60:</b> WPLE60	<b>80:</b> WPLE80	
⑧	Gear Ratio	5, 10, 20, 40		
⑨	Cable Direction* <sup>2</sup>	<b>D:</b> Down, <b>U:</b> Up, <b>R:</b> Right, <b>L:</b> Left		

\*<sup>1</sup> Only for the motor size of 69. See product line.

\*<sup>2</sup> See diagram (Cable direction) on the bottom.

①	Driver Type	<b>AZD: AZ Series</b>
②	Power Supply Input	<b>K:</b> 24/48 VDC <b>C:</b> Single-Phase, Three-Phase 200-240 VAC*
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

\*<sup>1</sup> 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	Applicable Models	<b>Z: AZ Series</b>											
⑤	Cable Type	<b>F:</b> Connection Cable Sets <b>R:</b> Flexible Connection Cable Sets											
⑥	Electromagnetic Brake	Blank: For Motors without Electromagnetic Brake <b>B:</b> For Motors with Electromagnetic Brake											
⑦	Cable Specifications	Blank: For Drivers with AC Power Supply Input <b>2:</b> For Drivers with DC Power Supply Input											

## Product Line

### ◇ PLE Geared (AC Power Supply Input)

Product Name	Gear Ratio
<b>AZM46AC-PLE40-</b> □	5, 10 20, 40
<b>AZM48AC-PLE40-</b> □	5, 10 20, 40
<b>AZM69AC-PLE60-</b> □	5, 10 20, 40
<b>AZM911AC-PLE80-</b> □	5, 10 20, 40

### ◇ PLE Geared (DC Power Supply Input)

Product Name	Gear Ratio
<b>AZM46AK-PLE40-</b> □	5, 10 20, 40
<b>AZM48AK-PLE40-</b> □	5, 10 20, 40
<b>AZM69AK-PLE60-</b> □	5, 10 20, 40

### ◇ PLN Geared (AC Power Supply Input)

Product Name	Gear Ratio
<b>AZM69AC-PLN70-</b> □	5, 10 20, 40
<b>AZM911AC-PLN70-</b> □	5, 10 20
<b>AZM911AC-PLN90-</b> □	40

### ◇ PLFE Geared (AC Power Supply Input)

Product Name	Gear Ratio
<b>AZM69AC-PLFE64-</b> □	5, 10 20, 40
<b>AZM911AC-PLFE90-</b> □	5, 10 20, 40

### ◇ WPLE Geared (AC Power Supply Input)

Product Name	Gear Ratio
<b>AZM69AC-WPLE60-</b> □-◇	5, 10 20, 40
<b>AZM911AC-WPLE80-</b> □-◇	5, 10 20, 40

### ◇ WPLE Geared (DC Power Supply Input)

Product Name	Gear Ratio
<b>AZM69AK-WPLE60-</b> □-◇	5, 10 20, 40

### ◇ PLE Geared (AC Power Supply Input) with Electromagnetic Brake

Product Name	Gear Ratio
<b>AZM46MC-PLE40-</b> □	5, 10 20, 40
<b>AZM69MC-PLE60-</b> □	5, 10 20, 40

### ◇ PLE Geared (DC Power Supply Input) with Electromagnetic Brake

Product Name	Gear Ratio
<b>AZM46MK-PLE40-</b> □	5, 10 20, 40
<b>AZM69MK-PLE60-</b> □	5, 10 20, 40

### ◇ PLN Geared (AC Power Supply Input) with Electromagnetic Brake

Product Name	Gear Ratio
<b>AZM69MC-PLN70-</b> □	5, 10 20, 40

### ◇ PLFE Geared (AC Power Supply Input) with Electromagnetic Brake

Product Name	Gear Ratio
<b>AZM69MC-PLFE64-</b> □	5, 10 20, 40

### ◇ WPLE Geared (AC Power Supply Input) with Electromagnetic Brake

Product Name	Gear Ratio
<b>AZM69MC-WPLE60-</b> □-◇	5, 10 20, 40

### ◇ WPLE Geared (DC Power Supply Input) with Electromagnetic Brake

Product Name	Gear Ratio
<b>AZM69MK-WPLE60-</b> □-◇	5, 10 20, 40

● A number indicating the gear ratio is entered where the box □ is located in the product name.

● Cable direction is entered where the box ◇ is located in the product name.



## Product Line (200-240 VAC)

### Stepper Motor

#### Standard



Frame Size	Product Name
42 mm	<b>AZM46AC</b>
	<b>AZM48AC</b>
60 mm	<b>AZM66AC</b>
	<b>AZM69AC</b>
85 mm	<b>AZM98AC</b>
	<b>AZM911AC</b>

#### Standard with Electromagnetic Brake



Frame Size	Product Name
42 mm	<b>AZM46MC</b>
60 mm	<b>AZM66MC</b>
	<b>AZM69MC</b>
85 mm	<b>AZM98MC</b>

### Driver



Type	Power Supply Input	Product Name
Pulse-Input	Single-Phase 200-240 VAC	<b>AZD-C</b>
Built-in Controller		<b>AZD-CD</b>
Pulse Input with RS-485 Communication		<b>AZD-CX</b>

Type	Power Supply Input	Product Name
EtherCAT	Single-Phase 200-240 VAC	<b>AZD-CED</b>
Ethernet/IP		<b>AZD-CEP</b>
PROFINET		<b>AZD-CPN</b>

### Cable

#### For motors without Electromagnetic Brake



For Motor

For Encoder

Product Line	Length L [m]	Product Name
Connection Cable Sets	0.5	<b>CC005VZF</b>
	1	<b>CC010VZF</b>
	1.5	<b>CC015VZF</b>
	2	<b>CC020VZF</b>
	2.5	<b>CC025VZF</b>
	3	<b>CC030VZF</b>
	4	<b>CC040VZF</b>
	5	<b>CC050VZF</b>
	7	<b>CC070VZF</b>
	10	<b>CC100VZF</b>
	15	<b>CC150VZF</b>
20	<b>CC200VZF</b>	

Product Line	Length L [m]	Product Name
Flexible Connection Cable Sets	0.5	<b>CC005VZR</b>
	1	<b>CC010VZR</b>
	1.5	<b>CC015VZR</b>
	2	<b>CC020VZR</b>
	2.5	<b>CC025VZR</b>
	3	<b>CC030VZR</b>
	4	<b>CC040VZR</b>
	5	<b>CC050VZR</b>
	7	<b>CC070VZR</b>
	10	<b>CC100VZR</b>
	15	<b>CC150VZR</b>
20	<b>CC200VZR</b>	

#### For motors with an Electromagnetic Brake



For Motor

For Encoder

For Electromagnetic Brake

Product Line	Length L [m]	Product Name
Connection Cable Sets	0.5	<b>CC005VZFB</b>
	1	<b>CC010VZFB</b>
	1.5	<b>CC015VZFB</b>
	2	<b>CC020VZFB</b>
	2.5	<b>CC025VZFB</b>
	3	<b>CC030VZFB</b>
	4	<b>CC040VZFB</b>
	5	<b>CC050VZFB</b>
	7	<b>CC070VZFB</b>
	10	<b>CC100VZFB</b>
	15	<b>CC150VZFB</b>
20	<b>CC200VZFB</b>	

Product Line	Length L [m]	Product Name
Flexible Connection Cable Sets	0.5	<b>CC005VZRB</b>
	1	<b>CC010VZRB</b>
	1.5	<b>CC015VZRB</b>
	2	<b>CC020VZRB</b>
	2.5	<b>CC025VZRB</b>
	3	<b>CC030VZRB</b>
	4	<b>CC040VZRB</b>
	5	<b>CC050VZRB</b>
	7	<b>CC070VZRB</b>
	10	<b>CC100VZRB</b>
	15	<b>CC150VZRB</b>
20	<b>CC200VZRB</b>	

## Product Line (24 VDC / 48 VDC)

### Stepper Motor

#### Standard



Frame Size	Product Name
42 mm	<b>AZM46AK</b> <b>AZM48AK</b>
60 mm	<b>AZM69AK</b>

#### Standard with Electromagnetic Brake



Frame Size	Product Name
42 mm	<b>AZM46MK</b>
60 mm	<b>AZM69MK</b>

### Driver



Type	Power Supply Input	Product Name
Pulse-Input	24 VDC / 48 VDC	<b>AZD-K</b>
Built-in Controller		<b>AZD-KD</b>
Pulse Input with RS-485 Communication		<b>AZD-KX</b>

Type	Power Supply Input	Product Name
EtherCAT	24 VDC / 48 VDC	<b>AZD-KED</b>
Ethernet/IP		<b>AZD-KEP</b>
PROFINET		<b>AZD-KPN</b>

### Cable

#### For motors without Electromagnetic Brake



Product Line	Length L [m]	Product Name
Connection Cable Sets	0.5	<b>CC005VZF2</b>
	1	<b>CC010VZF2</b>
	1.5	<b>CC015VZF2</b>
	2	<b>CC020VZF2</b>
	2.5	<b>CC025VZF2</b>
	3	<b>CC030VZF2</b>
	4	<b>CC040VZF2</b>
	5	<b>CC050VZF2</b>
	7	<b>CC070VZF2</b>
	10	<b>CC100VZF2</b>
15	<b>CC150VZF2</b>	
20	<b>CC200VZF2</b>	

Product Line	Length L [m]	Product Name
Flexible Connection Cable Sets	0.5	<b>CC005VZR2</b>
	1	<b>CC010VZR2</b>
	1.5	<b>CC015VZR2</b>
	2	<b>CC020VZR2</b>
	2.5	<b>CC025VZR2</b>
	3	<b>CC030VZR2</b>
	4	<b>CC040VZR2</b>
	5	<b>CC050VZR2</b>
	7	<b>CC070VZR2</b>
	10	<b>CC100VZR2</b>
15	<b>CC150VZR2</b>	
20	<b>CC200VZR2</b>	

#### For motors with an Electromagnetic Brake



Product Line	Length L [m]	Product Name
Connection Cable Sets	0.5	<b>CC005VZFB</b>
	1	<b>CC010VZFB</b>
	1.5	<b>CC015VZFB</b>
	2	<b>CC020VZFB</b>
	2.5	<b>CC025VZFB</b>
	3	<b>CC030VZFB</b>
	4	<b>CC040VZFB</b>
	5	<b>CC050VZFB</b>
	7	<b>CC070VZFB</b>
	10	<b>CC100VZFB</b>
15	<b>CC150VZFB</b>	
20	<b>CC200VZFB</b>	

Product Line	Length L [m]	Product Name
Flexible Connection Cable Sets	0.5	<b>CC005VZRB</b>
	1	<b>CC010VZRB</b>
	1.5	<b>CC015VZRB</b>
	2	<b>CC020VZRB</b>
	2.5	<b>CC025VZRB</b>
	3	<b>CC030VZRB</b>
	4	<b>CC040VZRB</b>
	5	<b>CC050VZRB</b>
	7	<b>CC070VZRB</b>
	10	<b>CC100VZRB</b>
15	<b>CC150VZRB</b>	
20	<b>CC200VZRB</b>	

## Holding Torque

Motor Size	Gear Series	Gear Ratio	Holding Torque at Motor Standstill [Nm]	
			Power ON	Electromagnetic Brake
<b>AZM46/48</b>	<b>PLE</b>	5	0.75 / 1.8	0.75 / —
		10	1.5 / 3.6	1.5 / —
		20	3 / 7.2	3 / —
		40	6 / 14	6 / —
<b>AZM69</b>	<b>PLE/PLN/PLFE/WPLE</b>	5	5	5
		10	10	10
		20	20	20
		40	40	40
<b>AZM911</b>	<b>PLE/PLN/PLFE/WPLE</b>	5	10	—
		10	20	—
		20	40	—
		40	80	—

## AZ Series Specifications and Connections

# PLE Geared Type

## Specifications

Type	PLE40 <sup>(1)</sup>				PLE60 <sup>(1)</sup>				PLE80 <sup>(1)</sup>			
	1		2		1		2		1		2	
Reduction ratio	5	10	20	40	5	10	20	40	5	10	20	40
Backlash [arcmin]	15		19		10		12		7		9	
Nominal output torque [Nm] <sup>(2)(3)</sup>	14	5	20	18	40	15	44	40	110	38	120	110
Max. output torque [Nm] <sup>(2)(3)(4)</sup>	22	8	32	29	64	24	70	64	176	61	192	176
Emergency stop torque [Nm] <sup>(5)</sup>	36	27	40	36	80	80	88	80	220	200	240	220
Max. input speed [r/min] <sup>(6)</sup>	18000				13000				7000			
Running noise [dB (A)] <sup>(7)</sup>	58				58				60			
Permitted radial load for 30000h (Fa=0) [N] <sup>(2)(8)</sup>	160				340				650			
Permitted axial load for 30000h (Fr=0) [N] <sup>(2)(9)</sup>	160				450				900			
Permitted radial load for 20000h (Fa=0) [N] <sup>(2)(8)</sup>	200				400				750			
Permitted axial load for 20000h (Fr=0) [N] <sup>(2)(9)</sup>	200				500				1000			
Degree of protection					IP54							
Lifetime [h]					30000							

(1) These values refer only to the Gearhead. The actual value depends on the motor combination.

(2) These values refer to a speed of the output shaft of  $n_2=100$  r/min on duty cycle KA=1 and S1-mode for electrical machines and  $T=30^\circ\text{C}$ .

(3) With key, at tumescent load.

(4) Allowable for 30000 revolutions at the output shaft.

(5) Allowed 1000 times.

(6) Allowed operating temperature must be kept; other input speeds on inquiry.

(7) Sound pressure level; distance 1 m; measured on idle running with an input speed of  $n_1=3000$  r/min, ratio=5.

(8) Half way along the output shaft.

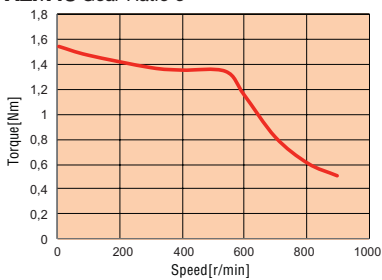
(9) With respect to center of output shaft.

## Speed – Torque Characteristics

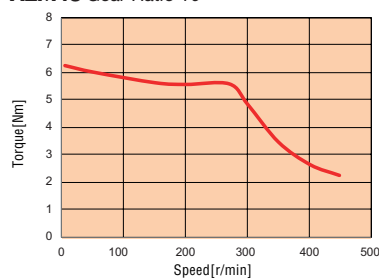
### Single-Phase 200-240VAC

#### ◇ AZM46AC-PLE40 / AZM46MC-PLE40 (Reference value)\*

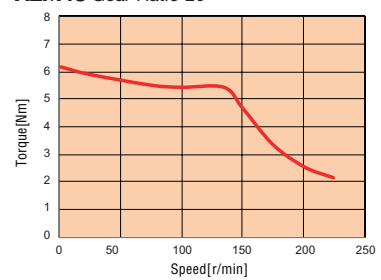
**AZM46 Gear Ratio 5**



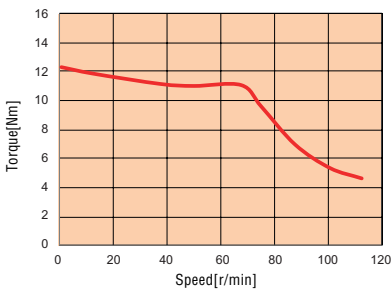
**AZM46 Gear Ratio 10**



**AZM46 Gear Ratio 20**

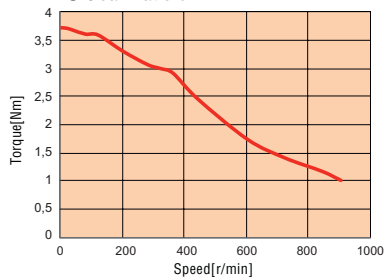


**AZM46 Gear Ratio 40**

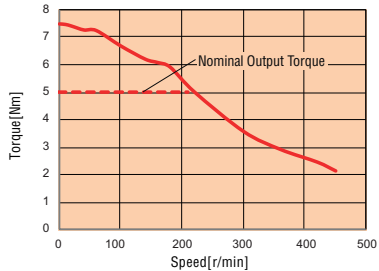


◇ **AZM48AC-PLE40** (Reference value)\*

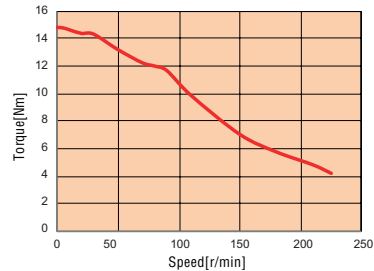
**AZM48 Gear Ratio 5**



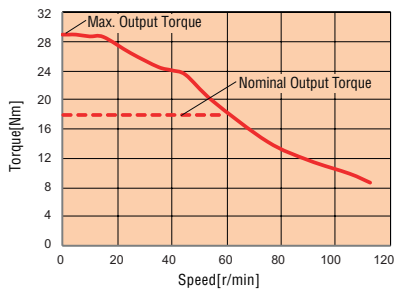
**AZM48 Gear Ratio 10**



**AZM48 Gear Ratio 20**

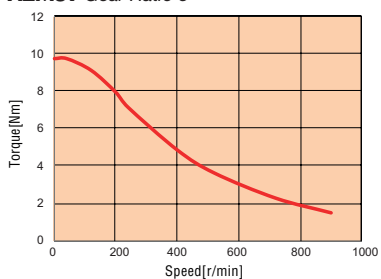


**AZM48 Gear Ratio 40**

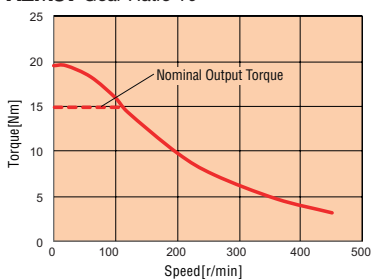


◇ **AZM69AC-PLE60 / AZM69MC-PLE60** (Reference value)\*

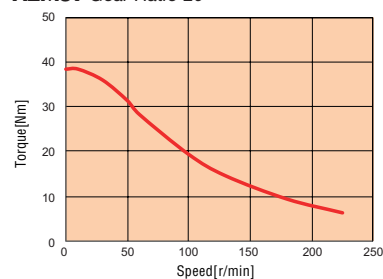
**AZM69 Gear Ratio 5**



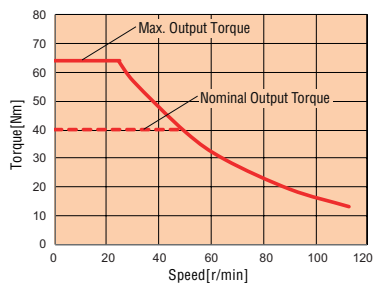
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**

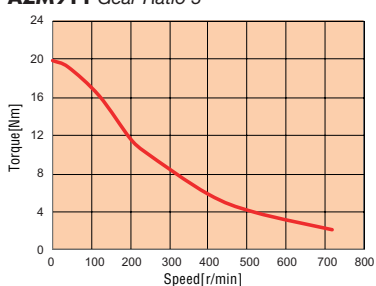


**AZM69 Gear Ratio 40**

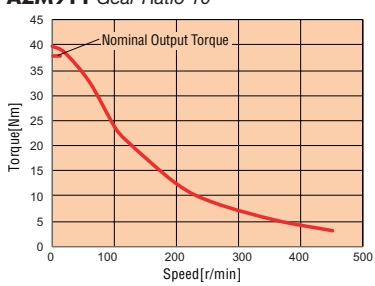


◇ **AZM911AC-PLE80** (Reference value)\*

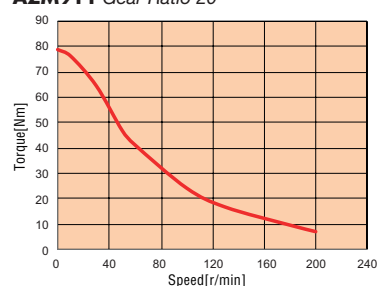
**AZM911 Gear Ratio 5**



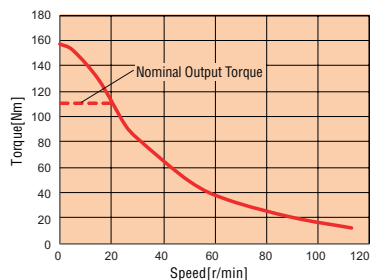
**AZM911 Gear Ratio 10**



**AZM911 Gear Ratio 20**



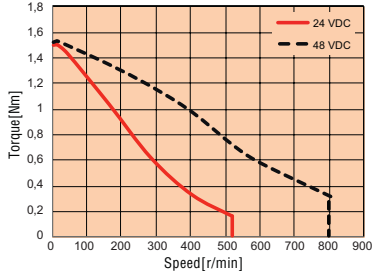
**AZM911 Gear Ratio 40**



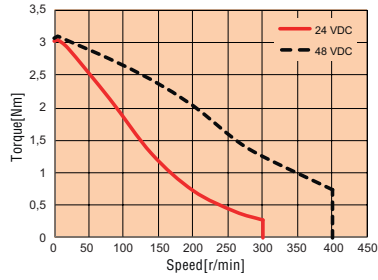
● 24/48 VDC

◇ AZM46AK-PLE40 / AZM46MK-PLE40 (Reference value)\*

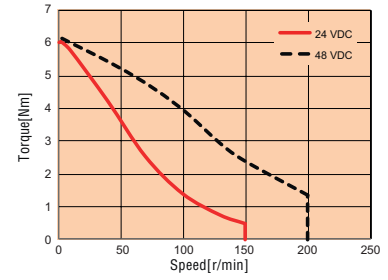
**AZM46 Gear Ratio 5**



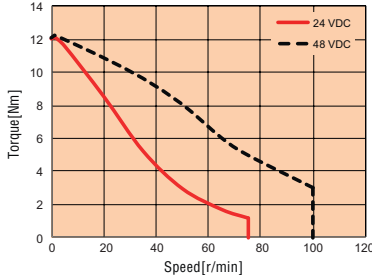
**AZM46 Gear Ratio 10**



**AZM46 Gear Ratio 20**

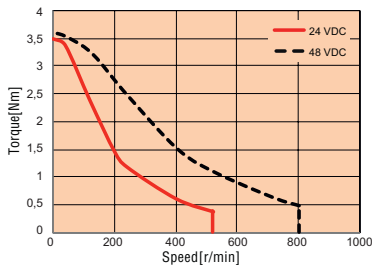


**AZ46 Gear Ratio 40**

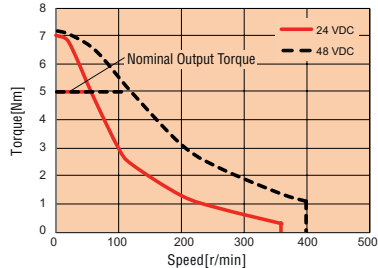


◇ AZM48AK-PLE40 (Reference value)\*

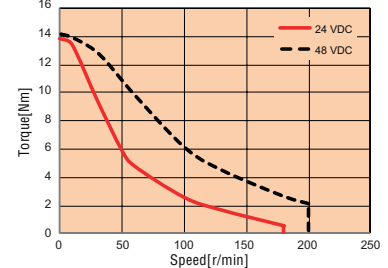
**AZM48 Gear Ratio 5**



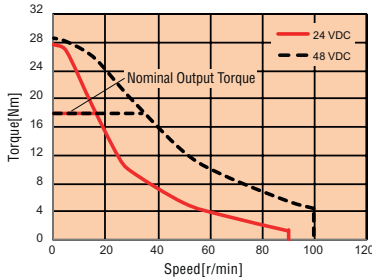
**AZM48 Gear Ratio 10**



**AZM48 Gear Ratio 20**

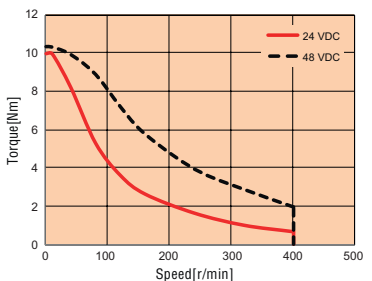


**AZ48 Gear Ratio 40**

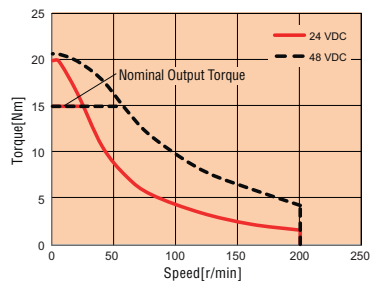


◇ AZM69AK-PLE60 / AZM69MK-PLE60 (Reference value)\*

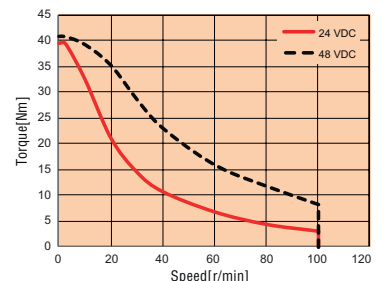
**AZM69 Gear Ratio 5**



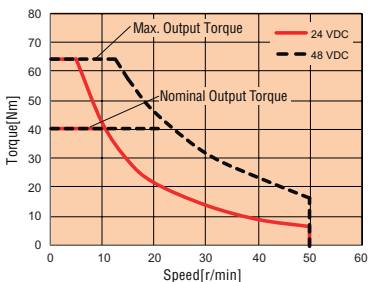
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**



**AZM69 Gear Ratio 40**



\*There is condition for using nominal output torque or max. output torque(see specification of gearhead)

\*Speed-Torque Characteristics vary depending on conditions.



# PLN Geared Type

## Specifications

Type	PLN70 <sup>(1)</sup>				PLN90 <sup>(1)</sup>
Stage	1		2		2
Reduction ratio	5	10	20	40	40
Backlash [arcmin]	3		5		5
Nominal output torque [Nm] <sup>(2)</sup>	65	27	77	65	140
Max. output torque [Nm] <sup>(2)(3)</sup>	104	43	123	104	224
Emergency stop torque [Nm] <sup>(4)</sup>	130	90	150	150	300
Max. input speed [r/min] <sup>(5)</sup>	14000				10000
Running noise [dB (A)] <sup>(6)</sup>	68				70
Permitted radial load for 30000h (Fa=0) [N] <sup>(2)(7)</sup>	3200				4800
Permitted axial load for 30000h (Fr=0) [N] <sup>(2)(8)</sup>	3900				5700
Permitted radial load for 20000h (Fa=0) [N] <sup>(2)(7)</sup>	3200				5500
Permitted axial load for 20000h (Fr=0) [N] <sup>(2)(8)</sup>	4400				6400
Degree of protection	—				
Lifetime [h]					20000
Lifetime [h] (at Nominal output torque x 0.88)					30000

(1) These values refer only to the Gearhead. The actual value depends on the motor combination.

(2) These values refer to a speed of the output shaft of  $n_2=100$  r/min on duty cycle KA=1 and S1-mode for electrical machines and  $T=30^\circ\text{C}$ .

(3) Allowable for 30000 revolutions at the output shaft.

(4) Allowed 1000 times.

(5) Allowed operating temperature must be kept; other input speeds on inquiry.

(6) Sound pressure level; distance 1 m; measured on idle running with an input speed of  $n_1=3000$  r/min, ratio=5.

(7) Half way along the output shaft.

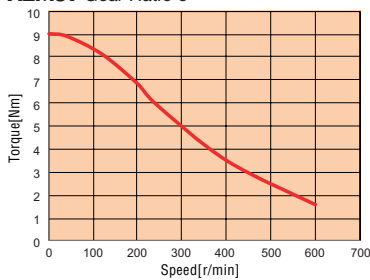
(8) With respect to center of output shaft.

## Speed – Torque Characteristics

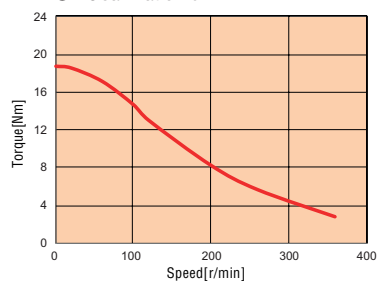
### Single-Phase 200-240VAC

#### ◇ AZM69AC-PLN70 / AZM69MC-PLN70 (Reference value)\*

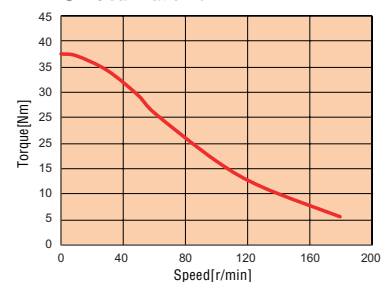
**AZM69 Gear Ratio 5**



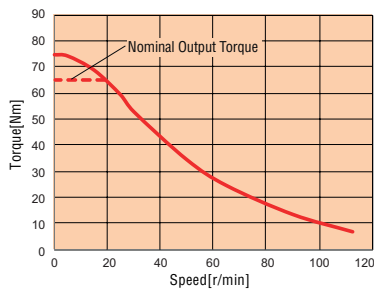
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**

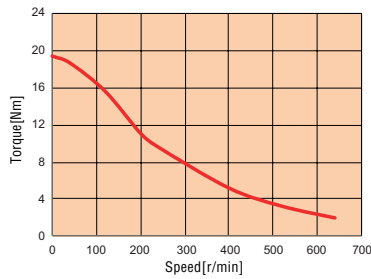


**AZM69 Gear Ratio 40**

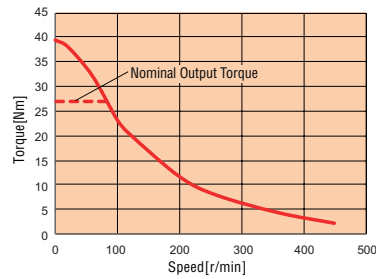


◇ **AZM911 AC-PLN70 / AZM911 AC-PLN90** (Reference value)\*

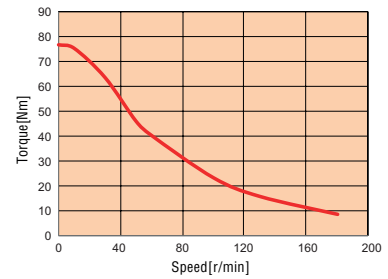
**AZM911 Gear Ratio 5 (PLN70-5)**



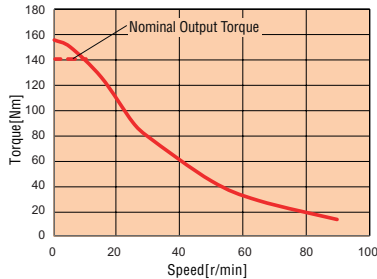
**AZM911 Gear Ratio 10 (PLN70-10)**



**AZM911 Gear Ratio 20 (PLN70-20)**



**AZM911 Gear Ratio 40 (PLN90-40)**



- \*There is condition for using nominal output torque or max. output torque (see specification of gearhead)
- \*Speed-Torque Characteristics vary depending on conditions.

## PLFE Geared Type

### PLFE Gearhead Specifications

Type	PLFE64 <sup>(1)</sup>				PLFE90 <sup>(1)</sup>			
	1		2		1		2	
Stage	5		10		5		10	
Reduction ratio	5	10	20	40	5	10	20	40
Backlash [arcmin]	10		12		7		9	
Nominal output torque [Nm] <sup>(2)</sup>	40	15	44	40	110	38	120	110
Max. output torque [Nm] <sup>(2)(3)</sup>	64	24	70	64	176	61	192	176
Emergency stop torque [Nm] <sup>(4)</sup>	80	80	88	80	220	200	240	220
Max. input speed [r/min] <sup>(5)</sup>	13000				7000			
Running noise [dB (A)] <sup>(6)</sup>	58				60			
Permitted radial load for 30000h (Fa=0) [N] <sup>(2)(7)</sup>	500				1200			
Permitted axial load for 30000h (Fr=0) [N] <sup>(2)(8)</sup>	1200				3000			
Permitted radial load for 20000h (Fa=0) [N] <sup>(2)(7)</sup>	550				1400			
Permitted axial load for 20000h (Fr=0) [N] <sup>(2)(8)</sup>	1200				3000			
Degree of protection	IP54							
Lifetime [h]	30000							

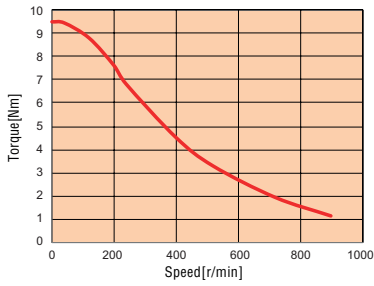
- (1) These values refer only to the Gearhead. The actual value depends on the motor combination.
- (2) These values refer to a speed of the output shaft of n<sub>2</sub>=100 r/min on duty cycle KA=1 and S1-mode for electrical machines and T=30°C.
- (3) Allowable for 30000 revolutions at the output shaft.
- (4) Allowed 1000 times.
- (5) Allowed operating temperature must be kept; other input speeds on inquiry.
- (6) Sound pressure level; distance 1 m; measured on idle running with an input speed of n<sub>1</sub>=3000 r/min, ratio=5.
- (7) Half way along the output shaft.
- (8) With respect to center of output shaft.

## Speed – Torque Characteristics

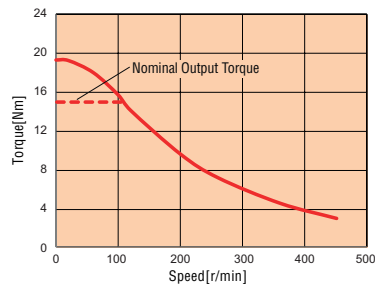
● Single-Phase 200-240VAC

◇ **AZM69AC-PLFE64 / AZM69MC-PLFE64** (Reference value)\*

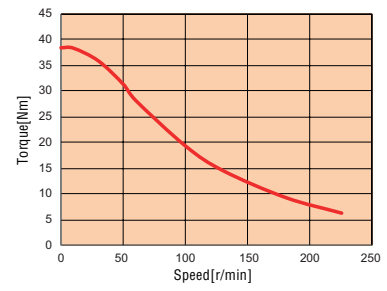
**AZM69** Gear Ratio 5



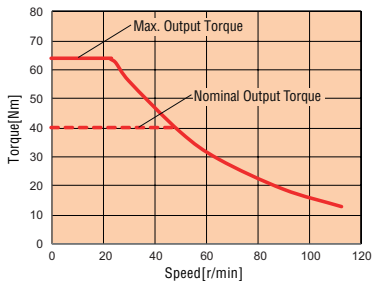
**AZM69** Gear Ratio 10



**AZM69** Gear Ratio 20

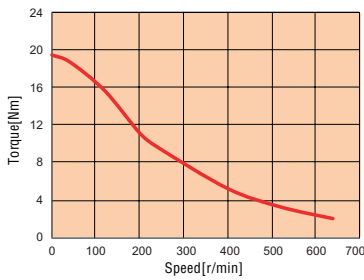


**AZM69** Gear Ratio 40

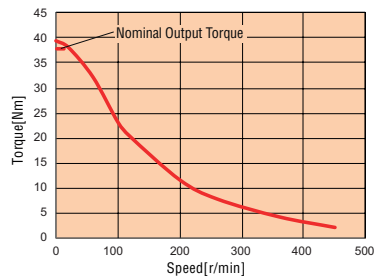


◇ **AZM911AC-PLFE90** (Reference value)\*

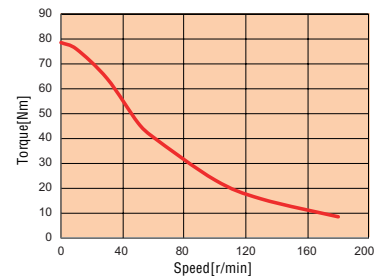
**AZM911** Gear Ratio 5



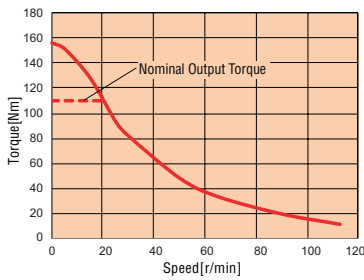
**AZM911** Gear Ratio 10



**AZM911** Gear Ratio 20



**AZM911** Gear Ratio 40



\*There is condition for using nominal output torque or max. output torque (see specification of gearhead)

\*Speed-Torque Characteristics vary depending on conditions.

# WPLE Geared Type

## WPLE Gearhead Specifications

Type	WPLE60 <sup>(1)</sup>				WPLE80 <sup>(1)</sup>			
	1		2		1		2	
Stage								
Reduction ratio	5	10	20	40	5	10	20	40
Backlash [arcmin]	16		18		13		15	
Nominal output torque [Nm] <sup>(2)(3)</sup>	24	15	44	40	67	38	120	110
Max. output torque [Nm] <sup>(2)(3)(4)</sup>	38	24	70	64	107	61	192	176
Emergency stop torque [Nm] <sup>(5)</sup>	80	70	88	80	220	170	240	220
Max. input speed [r/min] <sup>(6)</sup>	13000				7000			
Running noise [dB (A)] <sup>(7)</sup>	70				73			
Permitted radial load for 30000h (Fa=0) [N] <sup>(2)(8)</sup>	340				650			
Permitted axial load for 30000h (Fr=0) [N] <sup>(2)(9)</sup>	450				900			
Permitted radial load for 20000h (Fa=0) [N] <sup>(2)(8)</sup>	400				750			
Permitted axial load for 20000h (Fr=0) [N] <sup>(2)(9)</sup>	500				1000			
Degree of protection	IP40							
Lifetime [h]	20000							
Lifetime at Nominal output torque x 0.88 [h]	30000							

(1) These values refer only to the Gearhead. The actual value depends on the motor combination of motor.

(2) These values refer to a speed of the output shaft of  $n_2=100$  r/min on duty cycle KA=1 and S1-mode for electrical machines and  $T=30^\circ\text{C}$ .

(3) With key, at tumescent load

(4) Allowable for 30000 revolutions at the output shaft.

(5) Allowed 1000 times.

(6) Allowed operating temperature must be kept; other input speeds on inquiry.

(7) Sound pressure level; distance 1 m; measured on idle running with an input speed of  $n_1=3000$  r/min, ratio=5.

(8) Half way along the output shaft.

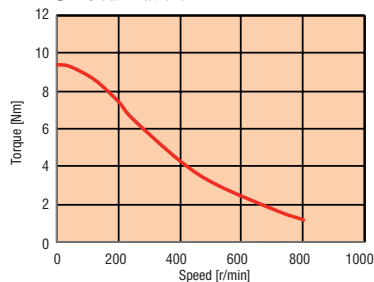
(9) With respect to center of output shaft.

## Speed – Torque Characteristics

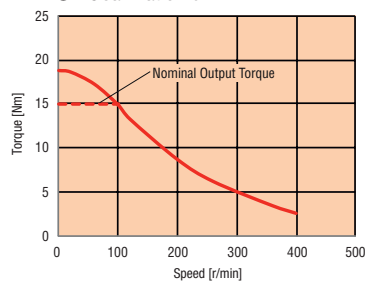
### Single-Phase 200-240VAC

#### ◇ AZM69AC-WPLE60 /AZM69MC-WPLE60 (Reference value)\*

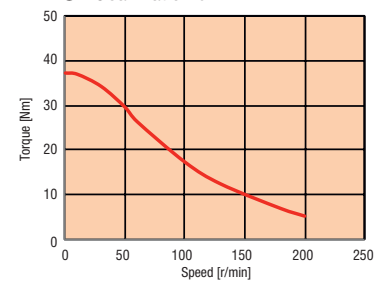
**AZM69 Gear Ratio 5**



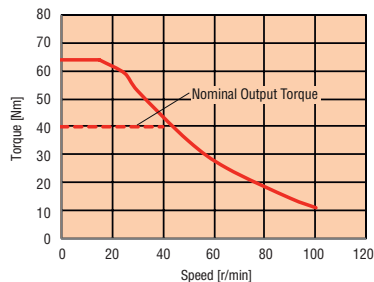
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**

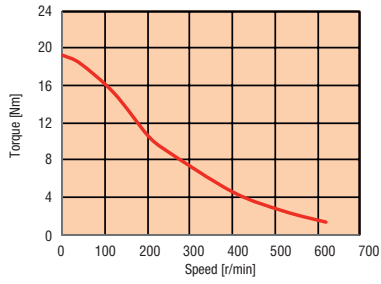


**AZM69 Gear Ratio 40**

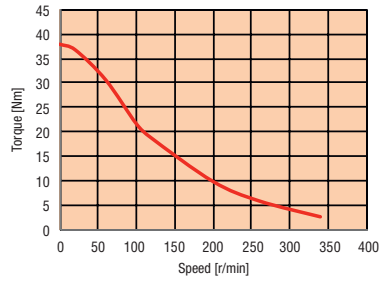


◇ **AZM911AC-WPLE80 (Reference value)\***

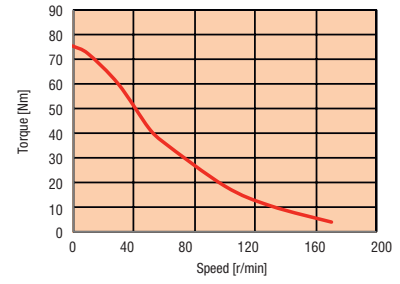
**AZM911 Gear Ratio 5**



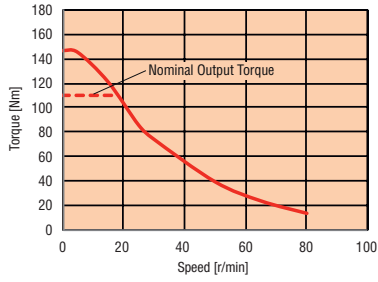
**AZM911 Gear Ratio 10**



**AZM911 Gear Ratio 20**



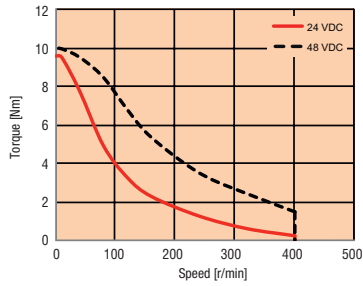
**AZM911 Gear Ratio 40**



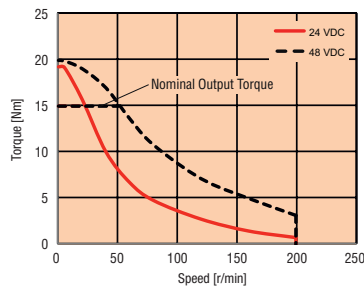
● **24/48 VDC**

◇ **AZM69AK-WPLE60 /AZM69MK-WPLE60 (Reference value)\***

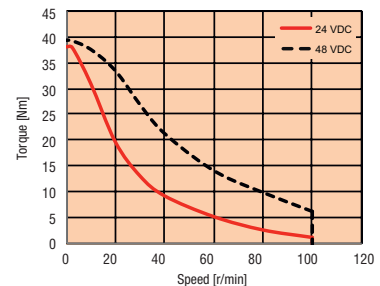
**AZM69 Gear Ratio 5**



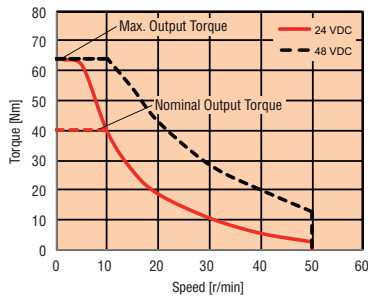
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**



**AZM69 Gear Ratio 40**



\*There is condition for using nominal output torque or max. output torque (see specification of gearhead)

\*Speed-Torque Characteristics vary depending on conditions. Dimensions



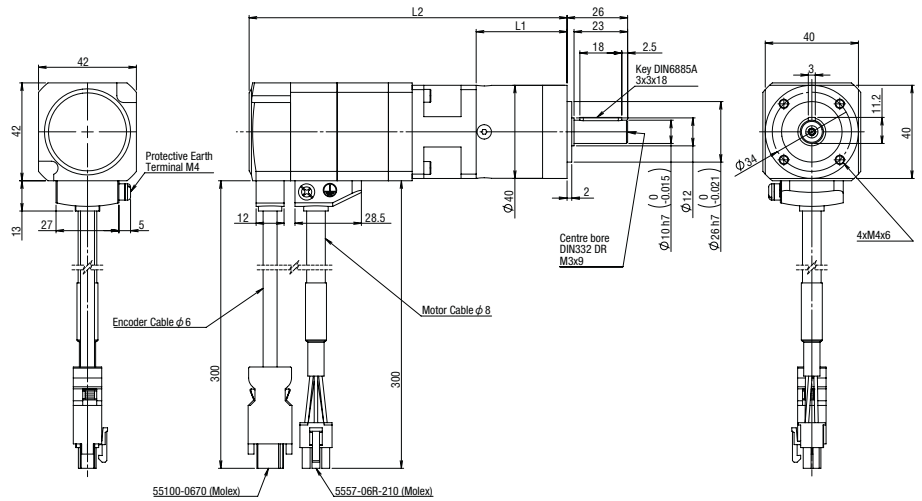
## Dimensions

### PLE Geared Type

#### ◇ AZM46AC-PLE40

#### ◇ AZM46AK-PLE40

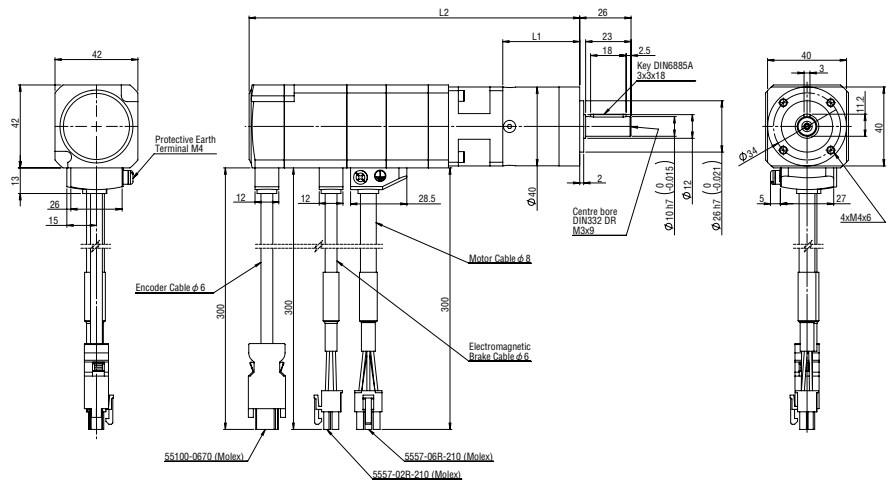
Ratio	L1	L2	Mass [kg]
5, 10	39	138.5	0.79
20, 40	52	151.5	0.89



#### ◇ AZM46MC-PLE40

#### ◇ AZM46MK-PLE40

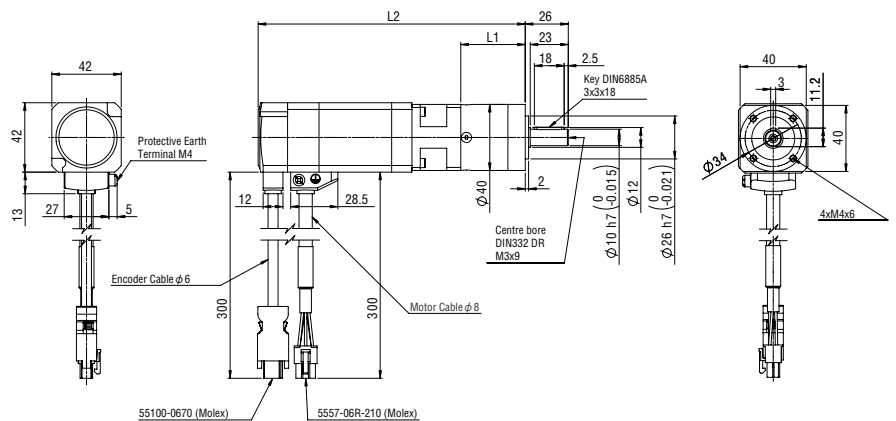
Ratio	L1	L2	Mass [kg]
5, 10	39	169.5	0.96
20, 40	52	182.5	1.06



#### ◇ AZM48AC-PLE40

#### ◇ AZM48AK-PLE40

Ratio	L1	L2	Mass [kg]
5, 10	39	161.5	1.03
20, 40	52	174.5	1.13

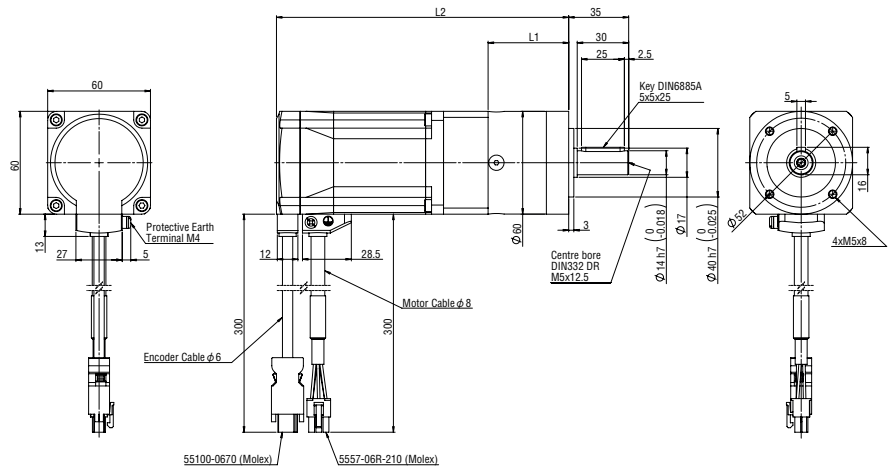


3D data available on the website: <http://www.orientalmotor.eu>  
Or please ask the OM Customer Center: [info@orientalmotor.eu](mailto:info@orientalmotor.eu)

◇ **AZM69AC-PLE60**

◇ **AZM69AK-PLE60**

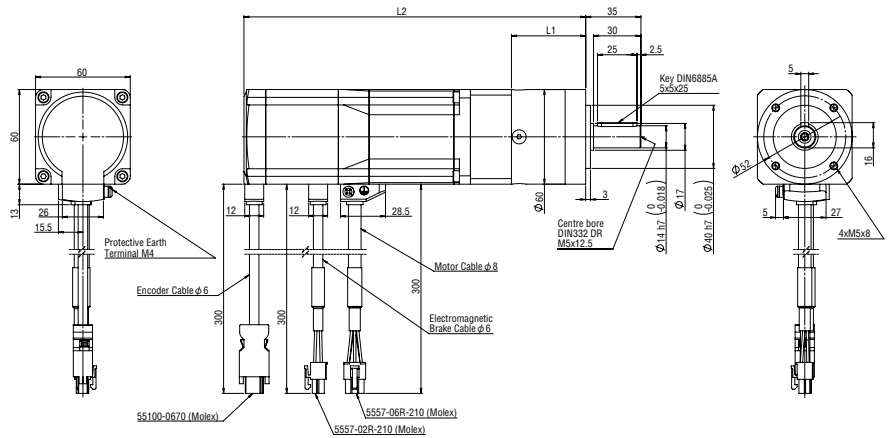
Ratio	L1	L2	Mass [kg]
5, 10	47	170.5	2.3
20, 40	59.5	183	2.5



◇ **AZM69MC-PLE60**

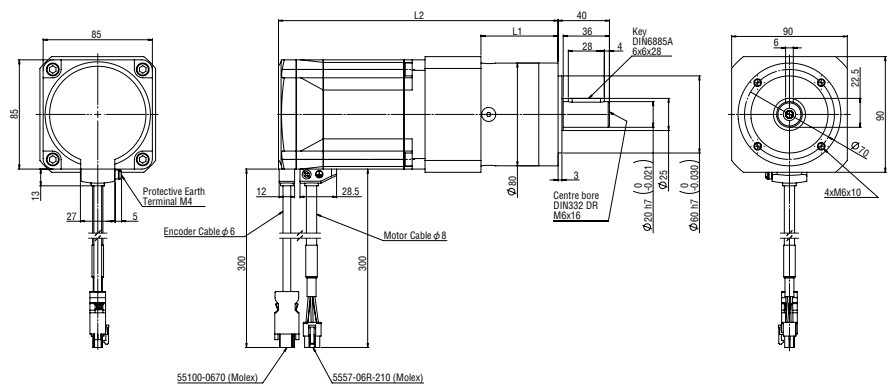
◇ **AZM69MK-PLE60**

Ratio	L1	L2	Mass [kg]
5, 10	47	216.5	2.7
20, 40	59.5	229	2.9



◇ **AZM911AC-PLE80**

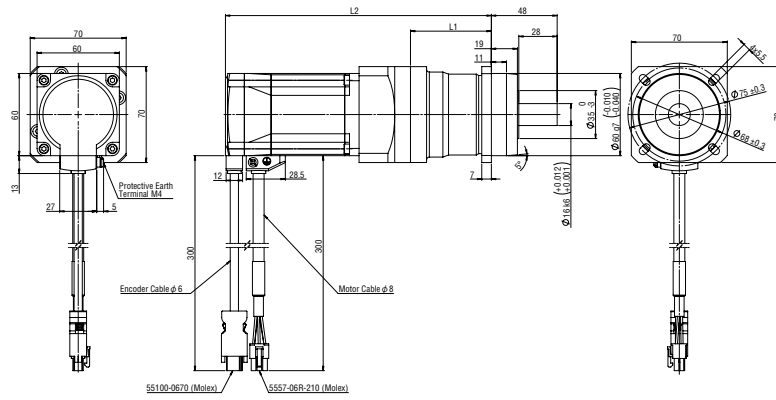
Ratio	L1	L2	Mass [kg]
5, 10	60	217.5	5.1
20, 40	77.5	235	5.6



● PLN Geared Type

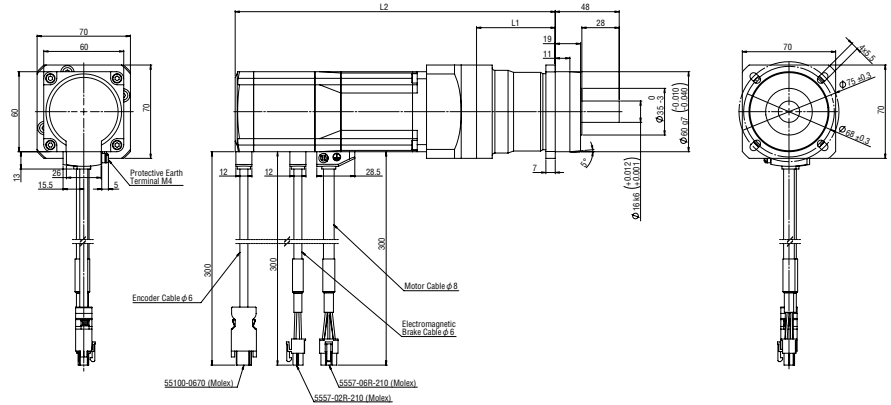
◇ AZM69AC-PLN70

Ratio	L1	L2	Mass [kg]
5, 10	59	194	3.4
20, 40	88	223	3.9



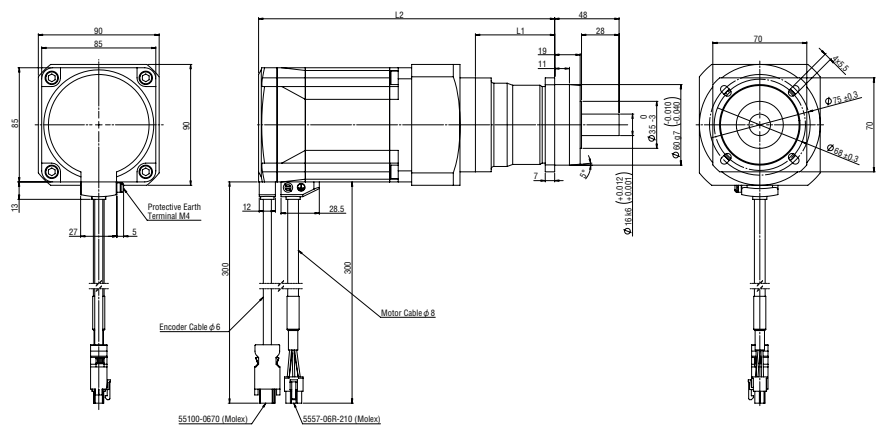
◇ AZM69MC-PLN70

Ratio	L1	L2	Mass [kg]
5, 10	59	240	3.8
20, 40	88	269	4.3



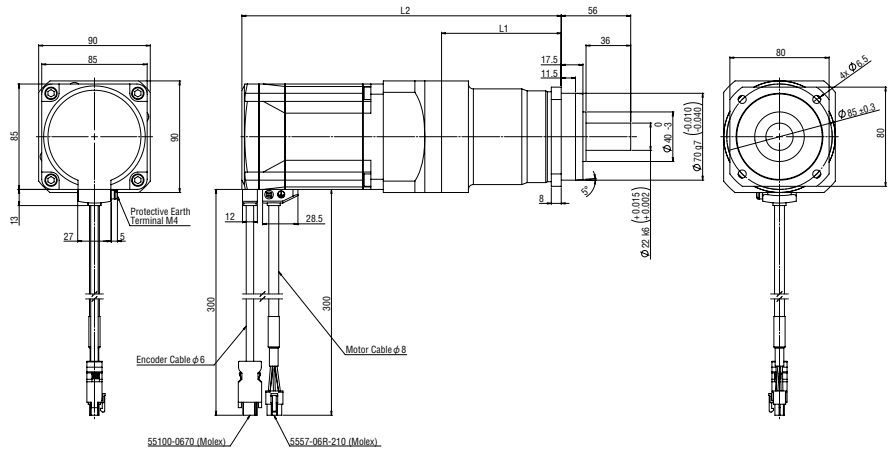
◇ AZM911AC-PLN70

Ratio	L1	L2	Mass [kg]
5, 10	59	220.5	5.1
20	88	249.5	5.6



◇ **AZM911AC-PLN90-40**

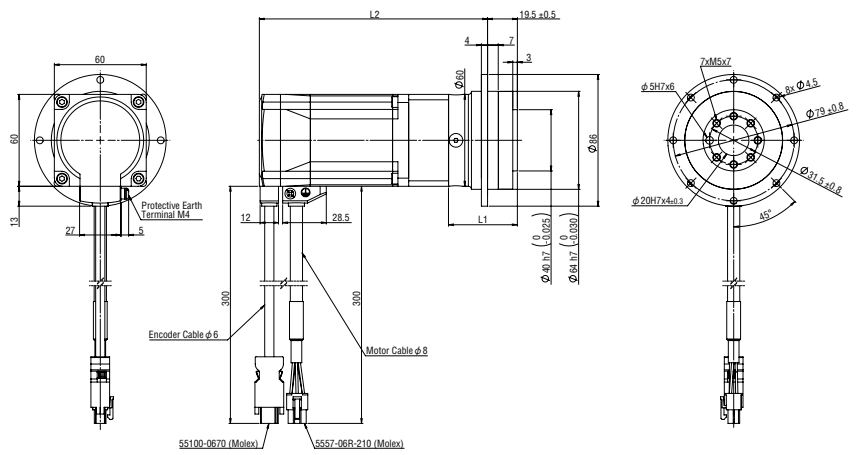
Ratio	L1	L2	Mass [kg]
40	96.5	257.5	7.3



● **PLFE Geared Type**

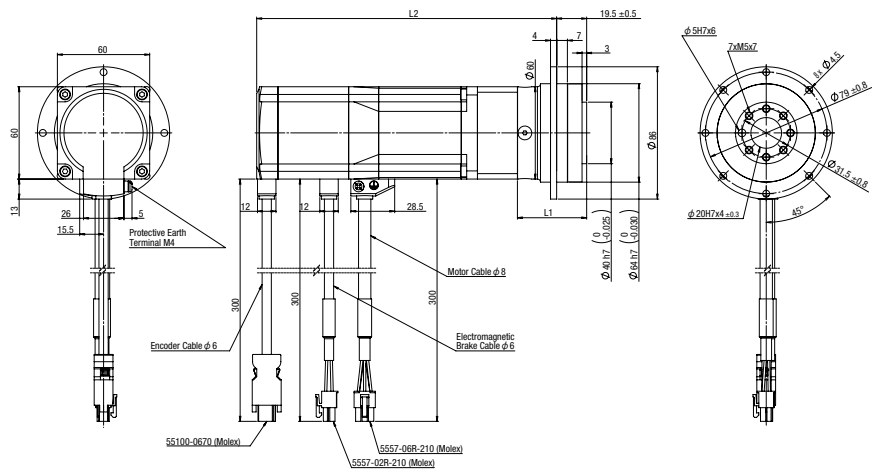
◇ **AZM69AC-PLFE64**

Ratio	L1	L2	Mass [kg]
5, 10	45	149	2.5
20, 40	57.5	161.5	2.9



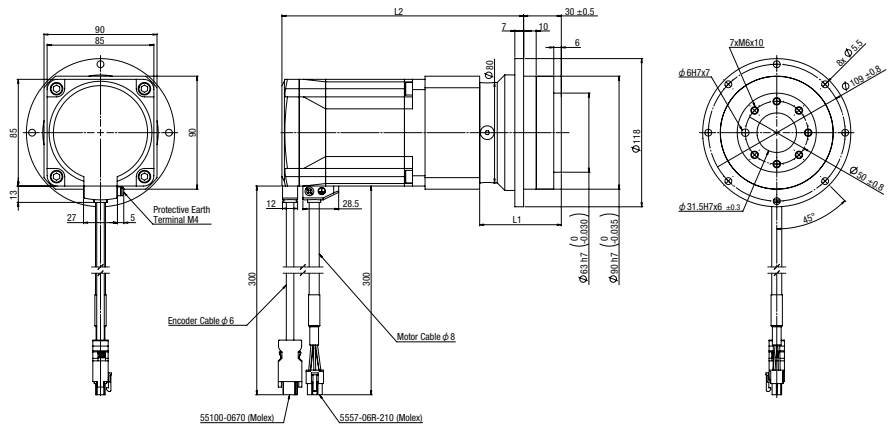
◇ **AZM69MC-PLFE64**

Ratio	L1	L2	Mass [kg]
5, 10	45	195	2.9
20, 40	57.5	207.5	3.3



◇ **AZM911AC-PLFE90**

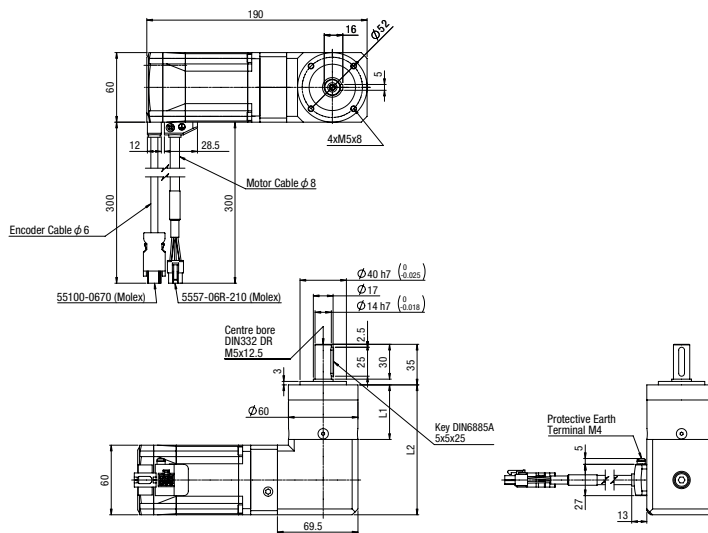
Ratio	L1	L2	Mass [kg]
5, 10	65	192.5	5.9
20, 40	82.5	210	6.3



● **WPLE Geared Type**

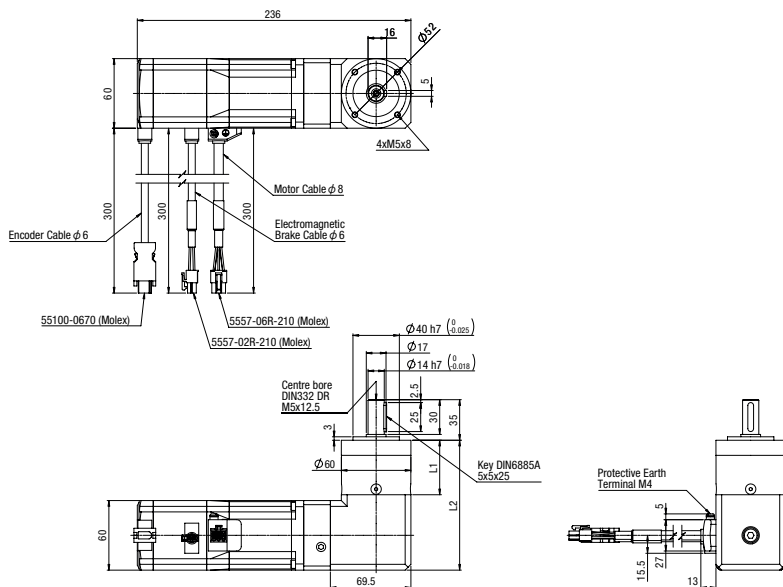
◇ **AZM69AC-WPLE60**  
**AZM69AK-WPLE60**

Ratio	L1	L2	Mass [kg]
5, 10	47	112	3,1
20, 40	59,5	124,5	3,3



◇ **AZM69MC-WPLE60**  
**AZM69MK-WPLE60**

Ratio	L1	L2	Mass [kg]
5, 10	47	112	3,5
20, 40	59,5	124,5	3,7



**Note**

This Dimension shows cable direction "D (Down)"

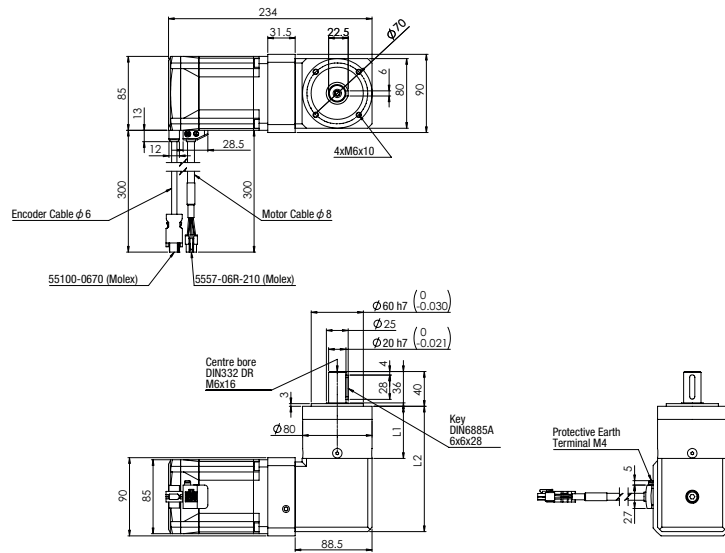


3D data available on the website: <http://www.orientalmotor.eu>  
Or please ask the OM Customer Center: [info@orientalmotor.de](mailto:info@orientalmotor.de)



◇ **AZM911AC-WPLE80**

Ratio	L1	L2	Mass [kg]
5, 10	60	144	7
20, 40	77,5	161,5	7,5



**Note**

This Dimension shows cable direction "-D (Down)"



3D data available on the website: <http://www.orientalmotor.eu>  
Or please ask the OM Customer Center: [info@orientalmotor.de](mailto:info@orientalmotor.de)

# AZ Series mini Driver

DC Input



EtherCAT

The αSTEP AZ Series now includes a mini driver option.  
Compatible with battery power operation for use in a wider range of applications.

## Product Name

**AZD - K R 2 D**

- ①      ② ③ ④ ⑤

①	Driver Type	<b>AZD: AZ Series</b>
②	Power Supply Input	<b>K: 24/48 VDC</b>
③	Driver Figure	<b>R: Compact</b>
④	Reference Number	
⑤	Type	<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

## Product Line

### With EtherCAT interface

Product Name
<b>AZD-KRED</b>



### With PROFINET interface

Product Name
<b>AZD-KRPN</b>



### Pulse Input with RS-485 Communication

Product Name
<b>AZD-KRX</b>



### With Ethernet/IP interface

Product Name
<b>AZD-KREP</b>



### Built-in Controller

Product Name
<b>AZD-KR2D</b>



## List of Combinations

Product	Type	Product Name
Motor	Standard Type	<b>AZM14AK, AZM15AK</b> <b>AZM24AK, AZM26AK</b> <b>AZM46</b> <input type="checkbox"/> <b>K</b> <input type="checkbox"/> <b>AZM48A</b> <input type="checkbox"/> <b>K</b> <input type="checkbox"/> <b>AZM66</b> <input type="checkbox"/> <b>K</b> <input type="checkbox"/> <b>AZM69</b> <input type="checkbox"/> <b>K</b> <input type="checkbox"/>
	<b>TS</b> Geared Type	<b>AZM46</b> <input type="checkbox"/> <b>K-TS</b> <input type="checkbox"/> <input type="checkbox"/> <b>AZM66</b> <input type="checkbox"/> <b>K-TS</b> <input type="checkbox"/> <input type="checkbox"/>
	<b>FC</b> Geared Type	<b>AZM46</b> <input type="checkbox"/> <b>K-FC</b> <input type="checkbox"/> <input type="checkbox"/> <b>A</b> <b>AZM66</b> <input type="checkbox"/> <b>K-FC</b> <input type="checkbox"/> <input type="checkbox"/> <b>A</b>
	<b>PS</b> Geared Type	<b>AZM24AK-PS</b> <input type="checkbox"/> <b>AZM46</b> <input type="checkbox"/> <b>K-PS</b> <input type="checkbox"/> <b>AZM66</b> <input type="checkbox"/> <b>K-PS</b> <input type="checkbox"/>
	<b>HPG</b> Geared Type	<b>AZM46</b> <input type="checkbox"/> <b>K-HP</b> <input type="checkbox"/> <input type="checkbox"/> <b>AZM66</b> <input type="checkbox"/> <b>K-HP</b> <input type="checkbox"/> <input type="checkbox"/>
	Harmonic Geared Type	<b>AZM24AK-HS</b> <input type="checkbox"/> <b>AZM46</b> <input type="checkbox"/> <b>K-HS</b> <input type="checkbox"/> <b>AZM66</b> <input type="checkbox"/> <b>K-HS</b> <input type="checkbox"/>

+

Product	Type	Product Name
Driver	EtherCAT Drive Profile-Compatible	<b>AZD-KRED</b>
	EtherNet/IP	<b>AZD-KREP</b>
	PROFINET	<b>AZD-KRPN</b>
	RS-485 Communication Type	<b>AZD-KR2D</b>
	Pulse Input Type with RS-485 Communication	<b>AZD-KRX</b>

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Product	Type	Product Name
Connection Cable / Flexible Connection Cable	For <b>AZM14, AZM15, AZM24, AZM26</b>	Connection Cable <b>CCM</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <b>Z2AAF</b> Flexible Connection Cable <b>CCM</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <b>Z2AAR</b>
	For <b>AZM46, AZM48, AZM66, AZM69</b>	Connection Cable For Motor / Encoder: <b>CCM</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <b>Z2ABF</b> For Motor / Encoder / Electromagnetic Brake: <b>CCM</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <b>Z2ACF</b>
		Flexible Connection Cable For Motor / Encoder: <b>CCM</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <b>Z2ABR</b> For Motor / Encoder / Electromagnetic Brake: <b>CCM</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <b>Z2ACR</b>

● A code or a number indicating either one of the followings is entered where the box is located within the product name.

: Output Shaft Shape   : Additional Function   : Motor Cable Type   : Gear Ratio   : Cable Outlet Direction   : Output Shaft Type   : Cable Length

# Accessories (Sold separately)

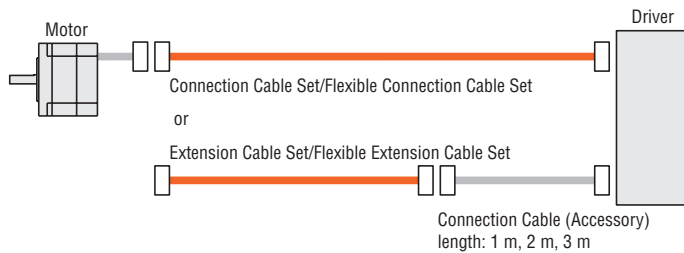
## Connection Cable Sets, Flexible Connection Cable Sets Extension Cable Sets, Flexible Extension Cable Sets

In the **AZ** series, there are products with cable for connecting between motor and driver (1 m, 2 m, 3 m) as well as those to which such cable is not attached. When using the motor and driver more than 3 m apart, choose the connection cable set or extension cable set.

The extension cable maximum extension length is 20 m (including attached cable).

For the standard motor, the cable for motor cable and the cable for encoder make up the set. Whereas for the magnetic brake-attached motor, the cable for motor, the cable for encoder and the cable for magnetic brake make up the set.

If the cable becomes bent, use the flexible connection cable set or flexible extension cable set.



### Notes

- Cables for motor and magnetic brake from the motor cannot be connected directly to the driver. When connecting to the driver, use the optional (sold separately) connection cable or the connection cable attached to the product (only for types with a connection cable attached).

## RS-485 Communication Cable

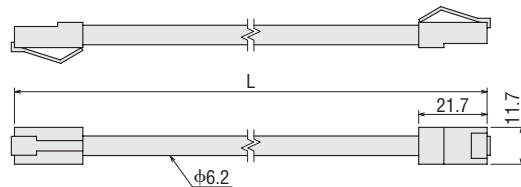
The cable is to link drivers when the driver is being operated under multi-axis mode, it also connects the network converter and driver.



### Product Line

Product Name	Applicable Product	Length L [m]
<b>CC001-RS4</b>	DC Power Supply Input Driver	0.1
<b>CC002-RS4</b>	AC Power Supply Input Driver DC Power Supply Input Driver	0.25

### Dimensions (Unit = mm)



## Generic Cable for Input/Output Signals

This is a convenient multi-core cable for connecting the driver and upper level controller.

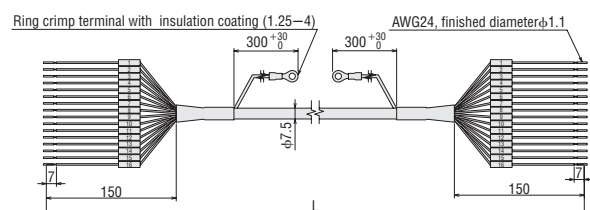
Choose the necessary cable in accordance with the number of connecting I/O signals.



### Product Line

Lead wire No. of cores	Cable Length			
	0.5 m	1 m	1.5 m	2 m
<b>6</b>	<b>CC06D005B-1</b>	<b>CC06D010B-1</b>	<b>CC06D015B-1</b>	<b>CC06D020B-1</b>
<b>10</b>	<b>CC10D005B-1</b>	<b>CC10D010B-1</b>	<b>CC10D015B-1</b>	<b>CC10D020B-1</b>
<b>12</b>	<b>CC12D005B-1</b>	<b>CC12D010B-1</b>	<b>CC12D015B-1</b>	<b>CC12D020B-1</b>
<b>16</b>	<b>CC16D005B-1</b>	<b>CC16D010B-1</b>	<b>CC16D015B-1</b>	<b>CC16D020B-1</b>

### Dimensions (Unit = mm)



- The outline drawing is of 16 cores.

# Data Setting Software MEXE02

From the computer, it is not only possible to set and edit driving data and the various parameters, but also to monitor the waveforms of teaching, I/O and driving speed.

The data setting software is available for download from our website.

Furthermore, the data setting software is distributed on a CD-ROM.

For details, ask from our website or inquire at your nearest branch or sales office.

## Operating Environment

### Computer

Recommended CPU*1	Intel Core Processor 2 GHz or more (The OS must be supported.)
Display	high resolution video adapter and monitor, XGA (1024x768) or more.
Recommended Memory*1	32 bit (x86) version: 1 GB or more 64 bit (x64) version: 2 GB or more
Hard Disk*2	Available disk space of 60 MB or more
USB Port	USB 2.0 1 port

\*1 The OS operating conditions need to be satisfied.

\*2 Microsoft .NET Framework 4 Client Profile is required to use MEXE02. If it is not already installed, it will be installed automatically, in which case up to 1.5 GB of additional space is required.

● Windows and Windows Vista are registered trademarks of Microsoft Corporation in the United States and other countries. Pentium is a trademark of Intel Corporation.

● Please refer to our website for the latest update of operating environment.

#### Notes

● The required volume of memory or hard disk may vary depending on the system environment.

### Operating Systems (OS)

Both the 32-bit (x86) and 64 bit (x64) editions are supported.

- Microsoft Windows XP Service Pack 3\*
- Microsoft Windows Vista Service Pack 2
- Microsoft Windows 7 Service Pack 1
- Microsoft Windows 8
- Microsoft Windows 8.1
- Microsoft Windows 10

\*This works with Service Pack 2 when using 64 bit (x64) edition.




## Connection between Computer and Driver

Use the following specifications for the USB cable.

Specification	USB 2.0 (full speed)
Cable	Length: 3 m (or less) Format: A-mini-B

# Actuator Lineup

We offer a lineup of actuators with the built-in AZ Series.

Series Name	Features	Main Specification
<b>αSTEP AZ Series Equipped</b> Motorized Slider <b>EZS Series</b> AC power DC power 	<ul style="list-style-type: none"> <li>• Compact with high rigidity.</li> <li>• Simple dust-proof structure.</li> <li>• Clean room support (ISO standard clean level class 3)</li> </ul>	<ul style="list-style-type: none"> <li>• Stroke: 50–850 mm</li> <li>• High speed: 800 mm/s</li> <li>• Maximum transportable mass: 60 kg (horizontal), 30 kg (vertical)</li> </ul>
<b>αSTEP AZ Series Equipped</b> Motorized Slider <b>EAC Series</b> AC power DC power 	<ul style="list-style-type: none"> <li>• Possible to drive at high speeds from light loads to heavy loads.</li> <li>• Can drive stably even at low speeds (1.25 mm/s).</li> <li>• Compact with high rigidity.</li> <li>• High thrust.</li> </ul>	<ul style="list-style-type: none"> <li>• Stroke: 50–300 mm</li> <li>• High speed: 600 mm/s</li> <li>• Maximum transportable mass: 60 kg (horizontal), 30 kg (vertical)</li> </ul>
Hollow Rotary Actuator <b>DG II Series</b> Frame Size 85 mm, 130 mm, 200 mm AC power 	<ul style="list-style-type: none"> <li>• As this is a hollow output table, wiring, such as cables and air tubes etc. is simple.</li> <li>• Possible to directly attach tables and arms.</li> </ul>	<ul style="list-style-type: none"> <li>• Maximum permissible torque: 50 Nm</li> <li>• Maximum permissible moment: 100 Nm</li> <li>• Maximum permissible axial load: 4000 Nm</li> </ul>

# Orientalmotor

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

Specifications are subject to change without notice. This catalogue was published in January 2024.

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