

Stepper Motor and Driver Package  $\alpha$ STEP

## AZ Series

with Neugart Gearheads

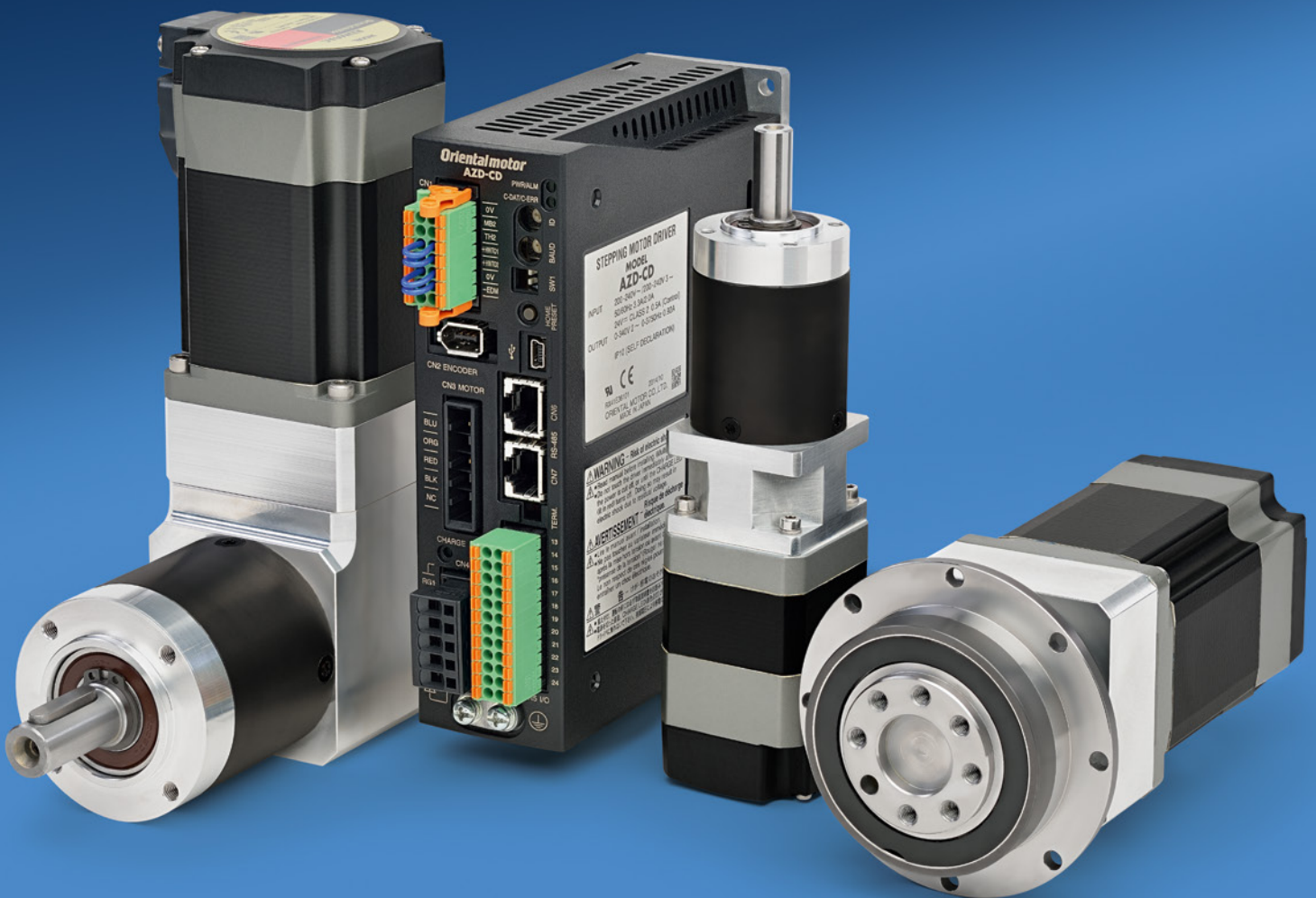
 Built-In Controller Package

Pulse Input Package

 High-Efficiency Closed Loop Combination  
with Neugart Planetary Gearheads

 Motor and Gearhead are Pre-assembled

  $\phi 40 \sim \phi 80$  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 control using a closed loop, and perform positioning correction.

- **Tuning not required**

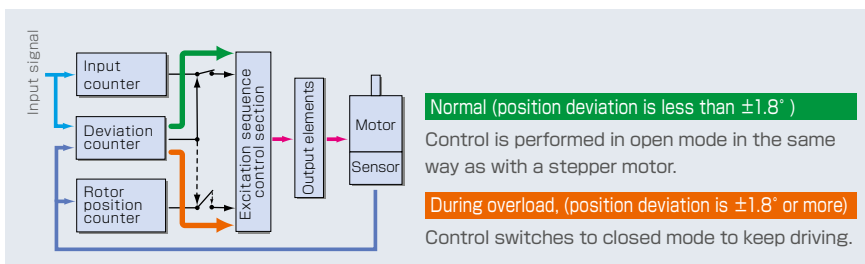
As normally it drives with open loop control, when there is a change in load, such as in the belt mechanism, cam and chain drive, the positioning can be determined without gain adjustment.

- **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.

- **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.



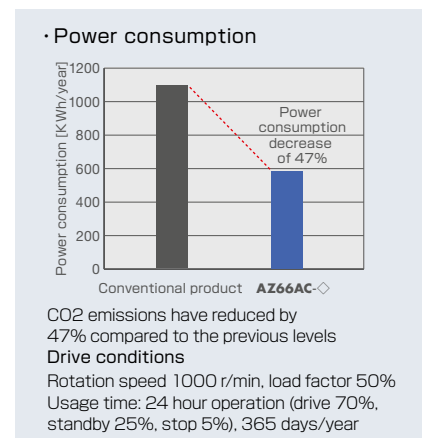
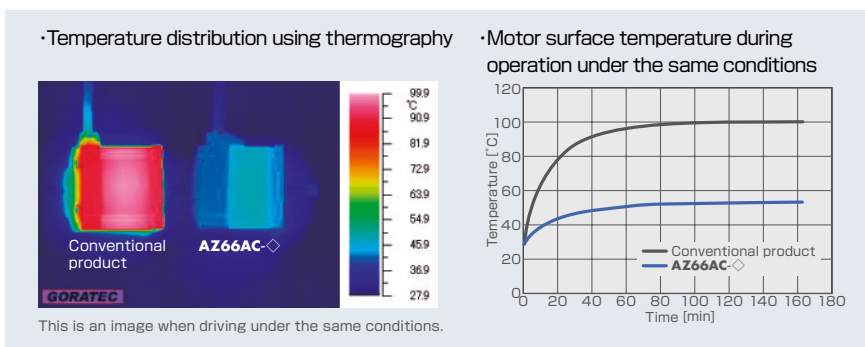
### Energy Saving

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



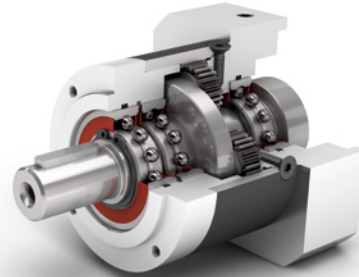
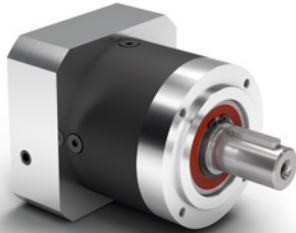
# Gearhead Features

## Pre-assembled Motor and Gearhead



### PLE & PLN Features

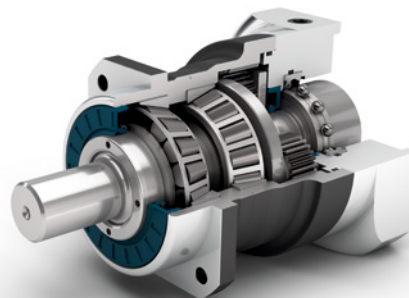
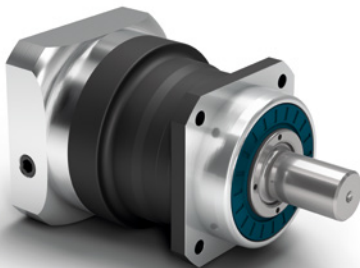
#### PLE Planetary



**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. 150Nm

#### 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. 150Nm



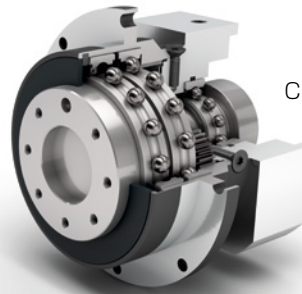
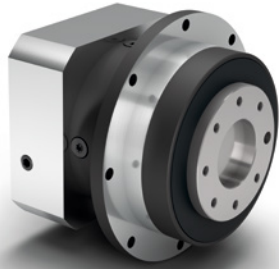
# Gearhead Features

## Pre-assembled Motor and Gearhead



### PLFE & WPLE Features

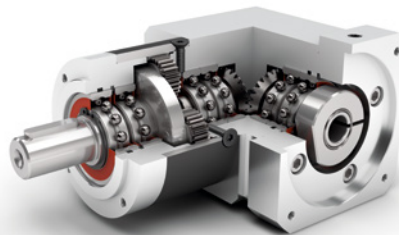
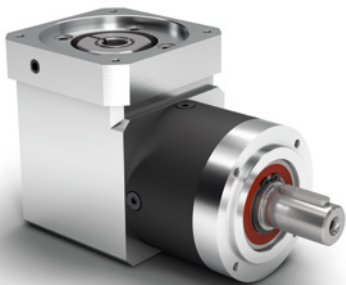
#### PLFE Planetary



**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. 150Nm

#### 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.

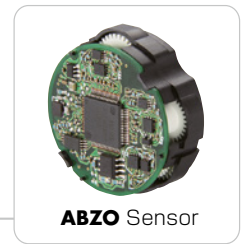
- Right Angle Planetary Gear
- Low Backlash
- High Output Torque Max. 140Nm

# *α*STEP AZ Series

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

## Newly developed **ABZO** sensor

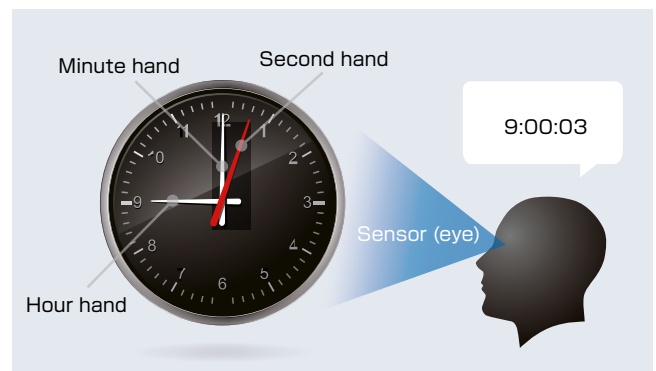
We have developed a compact, low cost, battery-free mechanical absolute sensor (patented). This affordable motor series allows for productivity improvements and cost reductions.



### ● 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).



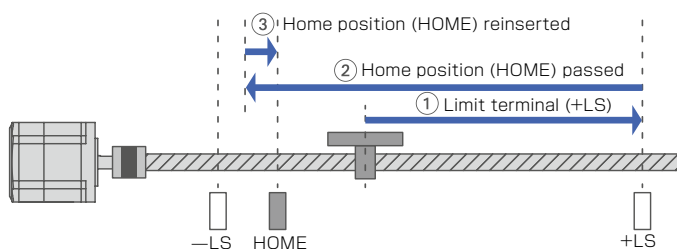
### ● Home Position Setting

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

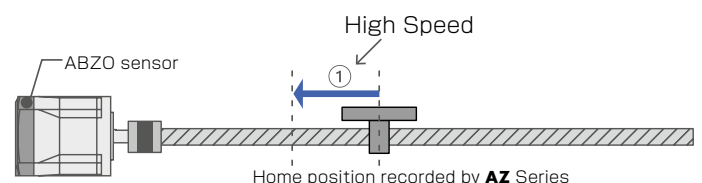
Because return-to-home is possible without using an external sensor, return-to-home can be performed at high speed without taking the sensor sensitivity into account, allowing for a shortened machine cycle.



### 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.

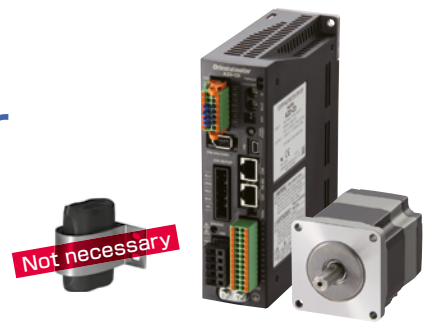


### AZ Series utilising ABZO sensor homing method

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.

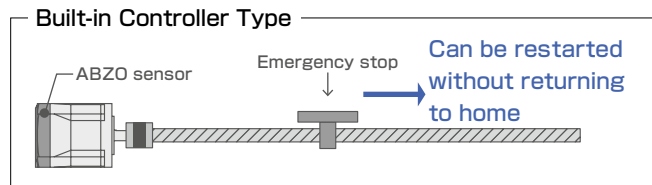
# Battery-Free ABZO Sensor

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.

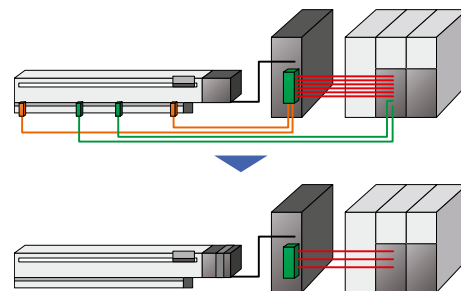
## Cost and Space reduction

### ● Cost reductions

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

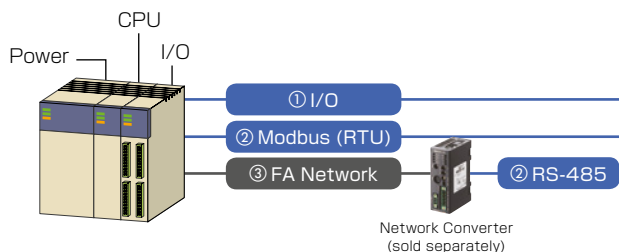
### ● Cable savings

This reduces cabling, increasing device design degree of freedom.



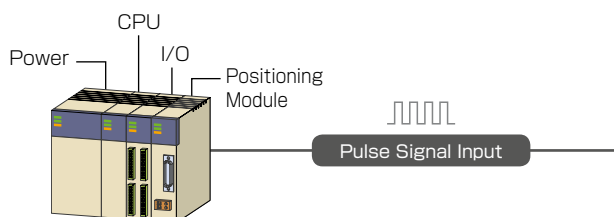
## Two Types of Driver

### ● Built-in Controller Type FLEX



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

### ● Pulse-Input Type



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

## Product Number Code

● Motor

◇ Standard Type

# AZM 6 9 A C

① ② ③ ④ ⑤

◇ PLE, PLN, PLFE, Neugart Geared Type

# AZM 6 9 A C - PLN 70-10

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

◇ WPLE Neugart Geared Type

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

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

● Driver

# AZD C D

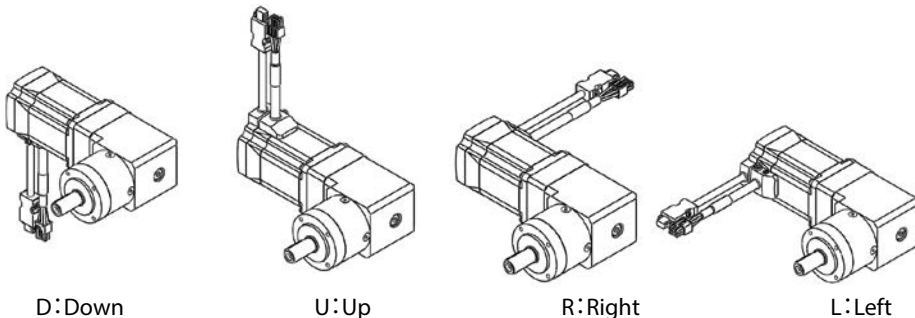
① ② ③

● Connection Cable Sets/Flexible Connection Cable Sets

# CC 050 V Z F B

① ② ③ ④ ⑤ ⑥

● Cable Direction – Only for WPLE Neugart geared type.



|   |                      |   |   |                  |
|---|----------------------|---|---|------------------|
| ① | Motor Type           | <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 | Motor Type           | <b>A:</b> Standard (Single shaft)<br><b>M:</b> Electromagnetic Brake Type* <sup>1</sup> |   |                  |
| ⑤ | Power Supply Voltage | <b>C:</b> Single-Phase 200-240 VAC <b>K:</b> 24/48 VDC* <sup>2</sup>                    |   |                  |
| ⑥ | Gear Series Name     | <b>PLE: PLE Series</b> <b>PLN: PLN Series</b><br><b>PLFE: PLFE Series</b>               |   |                  |
| ⑦ | Gear Size            | <b>40:</b> PLE40<br><b>70:</b> PLN70<br><b>64:</b> PLFE64                               | <b>60:</b> PLE60<br><b>90:</b> PLN90* <sup>3</sup><br><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 Type                    | <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 | Motor Type                    | <b>A:</b> Standard (Single shaft)<br><b>M:</b> Electromagnetic Brake Type* <sup>1</sup> |                   |  |
| ⑤ | Power Supply Voltage          | <b>C:</b> Single-Phase 200-240 VAC <b>K:</b> 24/48 VDC Input* <sup>1</sup>              |                   |  |
| ⑥ | Gear Series Name              | <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 Driver</b>   |
| ② | Power Supply Input | <b>AZ Series Built-in Controller Type/Pulse Input Type</b><br><b>C:</b> Single-Phase 200-240 VAC |
| ③ | Type               | <b>D:</b> Built-in Controller Type<br>Blank: Pulse Input Type                                    |

|   |                       |  |                 |                   |                 |                   |                 |                 |                 |                 |                  |                  |                  |
|---|-----------------------|--|-----------------|-------------------|-----------------|-------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| 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<br><b>R:</b> Flexible Connection Cable Sets  |                 |                   |                 |                   |                 |                 |                 |                 |                  |                  |                  |
| ⑥ | Electromagnetic Brake | Blank: Without Electromagnetic Brake<br><b>B:</b> With Electromagnetic Brake |                 |                   |                 |                   |                 |                 |                 |                 |                  |                  |                  |

## Product Line

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

| Product Name             | Gear Ratio | List Price |
|--------------------------|------------|------------|
| <b>AZM46AC-PLE40-</b> □  | 5, 10      | 413 €      |
|                          | 20, 40     | 450 €      |
| <b>AZM48AC-PLE40-</b> □  | 5, 10      | 422 €      |
|                          | 20, 40     | 459 €      |
| <b>AZM69AC-PLE60-</b> □  | 5, 10      | 500 €      |
|                          | 20, 40     | 551 €      |
| <b>AZM911AC-PLE80-</b> □ | 5, 10      | 588 €      |
|                          | 20, 40     | 676 €      |

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

| Product Name            | Gear Ratio | List Price |
|-------------------------|------------|------------|
| <b>AZM46AK-PLE40-</b> □ | 5, 10      | 413 €      |
|                         | 20, 40     | 450 €      |
| <b>AZM48AK-PLE40-</b> □ | 5, 10      | 422 €      |
|                         | 20, 40     | 459 €      |
| <b>AZM69AK-PLE60-</b> □ | 5, 10      | 500 €      |
|                         | 20, 40     | 551 €      |

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

| Product Name             | Gear Ratio | List Price |
|--------------------------|------------|------------|
| <b>AZM69AC-PLN70-</b> □  | 5, 10      | 804 €      |
|                          | 20, 40     | 1,024 €    |
| <b>AZM911AC-PLN70-</b> □ | 5, 10      | 842 €      |
|                          | 20         | 1,062 €    |
| <b>AZM911AC-PLN90-</b> □ | 40         | 1,240 €    |

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

| Product Name              | Gear Ratio | List Price |
|---------------------------|------------|------------|
| <b>AZM69AC-PLFE64-</b> □  | 5, 10      | 590 €      |
|                           | 20, 40     | 682 €      |
| <b>AZM911AC-PLFE90-</b> □ | 5, 10      | 716 €      |
|                           | 20, 40     | 802 €      |

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

| Product Name                | Gear Ratio | List Price |
|-----------------------------|------------|------------|
| <b>AZM69AC-WPLE60-</b> □-◇  | 5, 10      | 680 €      |
|                             | 20, 40     | 731 €      |
| <b>AZM911AC-WPLE80-</b> □-◇ | 5, 10      | 778 €      |
|                             | 20, 40     | 866 €      |

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

| Product Name               | Gear Ratio | List Price |
|----------------------------|------------|------------|
| <b>AZM69AK-WPLE60-</b> □-◇ | 5, 10      | 680 €      |
|                            | 20, 40     | 731 €      |

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

| Product Name            | Gear Ratio | List Price |
|-------------------------|------------|------------|
| <b>AZM46MC-PLE40-</b> □ | 5, 10      | 535 €      |
|                         | 20, 40     | 572 €      |
| <b>AZM69MC-PLE60-</b> □ | 5, 10      | 657 €      |
|                         | 20, 40     | 708 €      |

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

| Product Name            | List Price | List Price |
|-------------------------|------------|------------|
| <b>AZM46MK-PLE40-</b> □ | 5, 10      | 535 €      |
|                         | 20, 40     | 572 €      |
| <b>AZM69MK-PLE60-</b> □ | 5, 10      | 657 €      |
|                         | 20, 40     | 708 €      |

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

| Product Name            | Gear Ratio | List Price |
|-------------------------|------------|------------|
| <b>AZM69MC-PLN70-</b> □ | 5, 10      | 961 €      |
|                         | 20, 40     | 1,181 €    |

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

| Product Name             | Gear Ratio | List Price |
|--------------------------|------------|------------|
| <b>AZM69MC-PLFE64-</b> □ | 5, 10      | 747 €      |
|                          | 20, 40     | 839 €      |

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

| Product Name               | Gear Ratio | List Price |
|----------------------------|------------|------------|
| <b>AZM69MC-WPLE60-</b> □-◇ | 5, 10      | 837 €      |
|                            | 20, 40     | 888 €      |

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

| Product Name               | Gear Ratio | List Price |
|----------------------------|------------|------------|
| <b>AZM69MK-WPLE60-</b> □-◇ | 5, 10      | 837 €      |
|                            | 20, 40     | 888 €      |

● 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 (Single-Phase 200-240 VAC)

### Stepper Motor

#### Standard Type



| Frame Size | Product Name    | List Price |
|------------|-----------------|------------|
| 42 mm      | <b>AZM46AC</b>  | 246 €      |
|            | <b>AZM48AC</b>  | 255 €      |
| 60 mm      | <b>AZM66AC</b>  | 290 €      |
|            | <b>AZM69AC</b>  | 295 €      |
| 85 mm      | <b>AZM98AC</b>  | 315 €      |
|            | <b>AZM911AC</b> | 333 €      |

#### Standard Type with Electromagnetic Brake



| Frame Size | Product Name   | List Price |
|------------|----------------|------------|
| 42 mm      | <b>AZM46MC</b> | 368 €      |
| 60 mm      | <b>AZM66MC</b> | 447 €      |
|            | <b>AZM69MC</b> | 452 €      |
| 85 mm      | <b>AZM98MC</b> | 489 €      |

### Driver

#### Built-in Controller Type



| Power Supply Input       | Product Name  | List Price |
|--------------------------|---------------|------------|
| Single-Phase 200-240 VAC | <b>AZD-CD</b> | 480 €      |

#### Pulse Input Type



| Power Supply Input       | Product Name | List Price |
|--------------------------|--------------|------------|
| Single-Phase 200-240 VAC | <b>AZD-C</b> | 430 €      |

### Cable

#### Without Electromagnetic Brake For Motor For Encoder



| Product Line          | Length L [m] | Product Name    | List Price |
|-----------------------|--------------|-----------------|------------|
| Connection Cable Sets | 0.5          | <b>CC005VZF</b> | €29.00     |
|                       | 1            | <b>CC010VZF</b> | €29.00     |
|                       | 1.5          | <b>CC015VZF</b> | €33.00     |
|                       | 2            | <b>CC020VZF</b> | €38.00     |
|                       | 2.5          | <b>CC025VZF</b> | €43.00     |
|                       | 3            | <b>CC030VZF</b> | €48.00     |
|                       | 4            | <b>CC040VZF</b> | €75.00     |
|                       | 5            | <b>CC050VZF</b> | €84.00     |
|                       | 7            | <b>CC070VZF</b> | €104.00    |
|                       | 10           | <b>CC100VZF</b> | €135.00    |
|                       | 15           | <b>CC150VZF</b> | €187.00    |
|                       | 20           | <b>CC200VZF</b> | €237.00    |

| Product Line                   | Length L [m] | Product Name    | List Price |
|--------------------------------|--------------|-----------------|------------|
| Flexible Connection Cable Sets | 0.5          | <b>CC005VZR</b> | €65.00     |
|                                | 1            | <b>CC010VZR</b> | €65.00     |
|                                | 1.5          | <b>CC015VZR</b> | €70.00     |
|                                | 2            | <b>CC020VZR</b> | €76.00     |
|                                | 2.5          | <b>CC025VZR</b> | €80.00     |
|                                | 3            | <b>CC030VZR</b> | €85.00     |
|                                | 4            | <b>CC040VZR</b> | €97.00     |
|                                | 5            | <b>CC050VZR</b> | €108.00    |
|                                | 7            | <b>CC070VZR</b> | €137.00    |
|                                | 10           | <b>CC100VZR</b> | €181.00    |
|                                | 15           | <b>CC150VZR</b> | €262.00    |
|                                | 20           | <b>CC200VZR</b> | €326.00    |

#### Type with an Electromagnetic Brake For Motor For Encoder For Electromagnetic Brake



| Product Line          | Length L (m) | Product Name     | List Price |
|-----------------------|--------------|------------------|------------|
| Connection Cable Sets | 0.5          | <b>CC005VZFB</b> | €40.00     |
|                       | 1            | <b>CC010VZFB</b> | €40.00     |
|                       | 1.5          | <b>CC015VZFB</b> | €46.00     |
|                       | 2            | <b>CC020VZFB</b> | €52.00     |
|                       | 2.5          | <b>CC025VZFB</b> | €57.00     |
|                       | 3            | <b>CC030VZFB</b> | €63.00     |
|                       | 4            | <b>CC040VZFB</b> | €93.00     |
|                       | 5            | <b>CC050VZFB</b> | €103.00    |
|                       | 7            | <b>CC070VZFB</b> | €127.00    |
|                       | 10           | <b>CC100VZFB</b> | €163.00    |
|                       | 15           | <b>CC150VZFB</b> | €225.00    |
|                       | 20           | <b>CC200VZFB</b> | €285.00    |

| Product Line                   | Length L (m) | Product Name     | List Price |
|--------------------------------|--------------|------------------|------------|
| Flexible Connection Cable Sets | 0.5          | <b>CC005VZRB</b> | €87.00     |
|                                | 1            | <b>CC010VZRB</b> | €87.00     |
|                                | 1.5          | <b>CC015VZRB</b> | €95.00     |
|                                | 2            | <b>CC020VZRB</b> | €103.00    |
|                                | 2.5          | <b>CC025VZRB</b> | €109.00    |
|                                | 3            | <b>CC030VZRB</b> | €115.00    |
|                                | 4            | <b>CC040VZRB</b> | €131.00    |
|                                | 5            | <b>CC050VZRB</b> | €146.00    |
|                                | 7            | <b>CC070VZRB</b> | €184.00    |
|                                | 10           | <b>CC100VZRB</b> | €237.00    |
|                                | 15           | <b>CC150VZRB</b> | €331.00    |
|                                | 20           | <b>CC200VZRB</b> | €422.00    |

## Product Line (24 VDC / 48 VDC)

- Stepper Motor
- Standard Type



| Frame Size | Product Name   | List Price |
|------------|----------------|------------|
| 42 mm      | <b>AZM46AK</b> | 246 €      |
|            | <b>AZM48AK</b> | 255 €      |
| 60 mm      | <b>AZM69AK</b> | 295 €      |

- Standard Type with Electromagnetic Brake



| Frame Size | Product Name   | List Price |
|------------|----------------|------------|
| 42 mm      | <b>AZM46MK</b> | 368 €      |
| 60 mm      | <b>AZM69MK</b> | 452 €      |

- Driver

- Built-in Controller Type



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

- Pulse Input Type



| Power Supply Input | Product Name | List Price |
|--------------------|--------------|------------|
| 24 VDC / 48 VDC    | <b>AZD-K</b> | 310 €      |

- Cable

- Without Electromagnetic Brake



For Motor For Encoder

| Product Line          | Length L [m]     | Product Name     | List Price |
|-----------------------|------------------|------------------|------------|
| Connection Cable Sets | 0.5              | <b>CC005VZF2</b> | €29.00     |
|                       | 1                | <b>CC010VZF2</b> | €29.00     |
|                       | 1.5              | <b>CC015VZF2</b> | €33.00     |
|                       | 2                | <b>CC020VZF2</b> | €38.00     |
|                       | 2.5              | <b>CC025VZF2</b> | €43.00     |
|                       | 3                | <b>CC030VZF2</b> | €48.00     |
|                       | 4                | <b>CC040VZF2</b> | €75.00     |
|                       | 5                | <b>CC050VZF2</b> | €84.00     |
|                       | 7                | <b>CC070VZF2</b> | €104.00    |
|                       | 10               | <b>CC100VZF2</b> | €135.00    |
|                       | 15               | <b>CC150VZF2</b> | €187.00    |
| 20                    | <b>CC200VZF2</b> | €237.00          |            |

| Product Line                   | Length L [m]     | Product Name     | List Price |
|--------------------------------|------------------|------------------|------------|
| Flexible Connection Cable Sets | 0.5              | <b>CC005VZR2</b> | €65.00     |
|                                | 1                | <b>CC010VZR2</b> | €65.00     |
|                                | 1.5              | <b>CC015VZR2</b> | €70.00     |
|                                | 2                | <b>CC020VZR2</b> | €76.00     |
|                                | 2.5              | <b>CC025VZR2</b> | €80.00     |
|                                | 3                | <b>CC030VZR2</b> | €85.00     |
|                                | 4                | <b>CC040VZR2</b> | €97.00     |
|                                | 5                | <b>CC050VZR2</b> | €108.00    |
|                                | 7                | <b>CC070VZR2</b> | €137.00    |
|                                | 10               | <b>CC100VZR2</b> | €181.00    |
|                                | 15               | <b>CC150VZR2</b> | €262.00    |
| 20                             | <b>CC200VZR2</b> | €326.00          |            |

- Type with an Electromagnetic Brake



For Motor For Encoder For Electromagnetic Brake

| Product Line          | Length L [m]     | Product Name     | List Price |
|-----------------------|------------------|------------------|------------|
| Connection Cable Sets | 0.5              | <b>CC005VZFB</b> | €40.00     |
|                       | 1                | <b>CC010VZFB</b> | €40.00     |
|                       | 1.5              | <b>CC015VZFB</b> | €46.00     |
|                       | 2                | <b>CC020VZFB</b> | €52.00     |
|                       | 2.5              | <b>CC025VZFB</b> | €57.00     |
|                       | 3                | <b>CC030VZFB</b> | €63.00     |
|                       | 4                | <b>CC040VZFB</b> | €93.00     |
|                       | 5                | <b>CC050VZFB</b> | €103.00    |
|                       | 7                | <b>CC070VZFB</b> | €127.00    |
|                       | 10               | <b>CC100VZFB</b> | €163.00    |
|                       | 15               | <b>CC150VZFB</b> | €225.00    |
| 20                    | <b>CC200VZFB</b> | €285.00          |            |

| Product Line                   | Length L [m]     | Product Name     | List Price |
|--------------------------------|------------------|------------------|------------|
| Flexible Connection Cable Sets | 0.5              | <b>CC005VZRB</b> | €87.00     |
|                                | 1                | <b>CC010VZRB</b> | €87.00     |
|                                | 1.5              | <b>CC015VZRB</b> | €95.00     |
|                                | 2                | <b>CC020VZRB</b> | €103.00    |
|                                | 2.5              | <b>CC025VZRB</b> | €109.00    |
|                                | 3                | <b>CC030VZRB</b> | €115.00    |
|                                | 4                | <b>CC040VZRB</b> | €131.00    |
|                                | 5                | <b>CC050VZRB</b> | €146.00    |
|                                | 7                | <b>CC070VZRB</b> | €184.00    |
|                                | 10               | <b>CC100VZRB</b> | €237.00    |
|                                | 15               | <b>CC150VZRB</b> | €331.00    |
| 20                             | <b>CC200VZRB</b> | €422.00          |            |

## Holding Torque

| Motor Size      | Gear Series              | Gear Ratio | Holding Torque at Motor Standstill (N·m) |                       |
|-----------------|--------------------------|------------|--|-----------------------|
|                 |                          |            | 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 (1) |    |    |    | PLE60 (1) |    |    |    | PLE80 (1) |     |     |     |
|---|-----------|----|----|----|-----------|----|----|----|-----------|-----|-----|-----|
|   | 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.

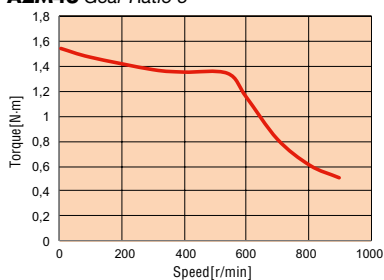
(9) With respect to center of output shaft.

## Speed – Torque Characteristics

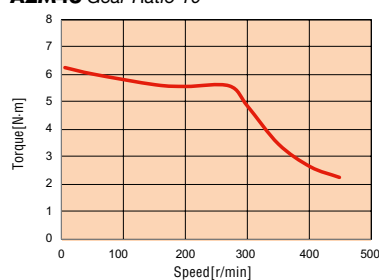
### Single-Phase 200-240VAC

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

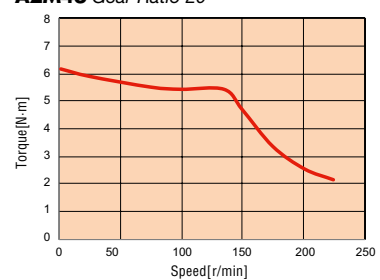
**AZM46 Gear Ratio 5**



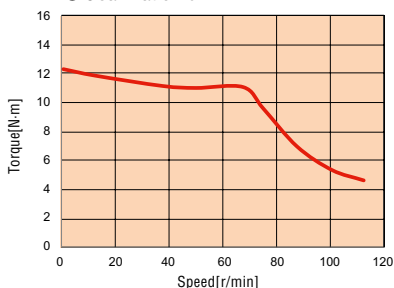
**AZM46 Gear Ratio 10**



**AZM46 Gear Ratio 20**

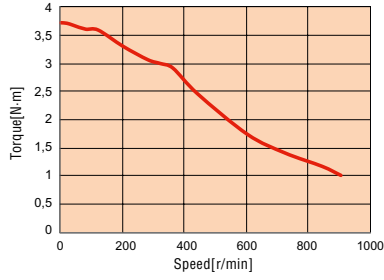


**AZM46 Gear Ratio 40**

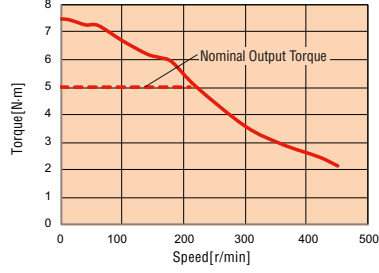


◇ AZM48AC-PLE40 (Reference value)\*

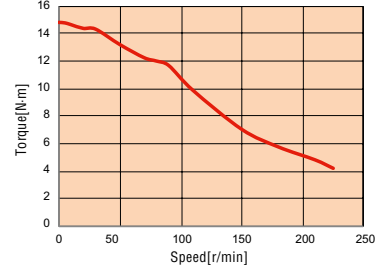
**AZM48 Gear Ratio 5**



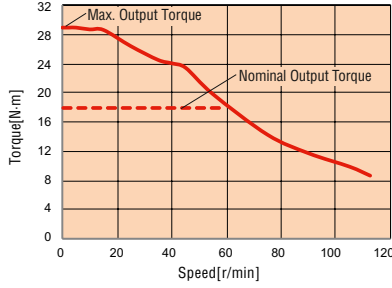
**AZM48 Gear Ratio 10**



**AZM48 Gear Ratio 20**

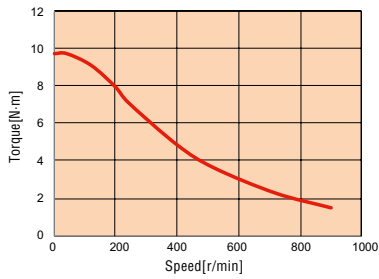


**AZM48 Gear Ratio 40**

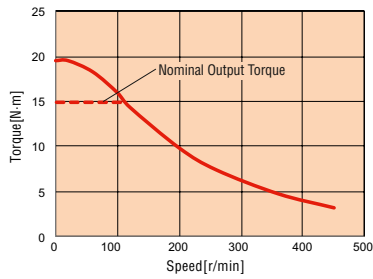


◇ AZM69AC-PLE60 / AZM69MC-PLE60 (Reference value)\*

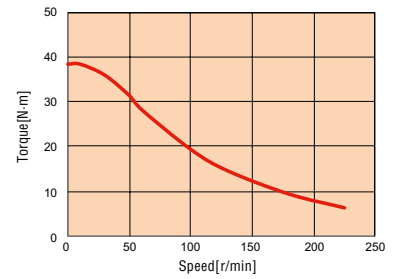
**AZM69 Gear Ratio 5**



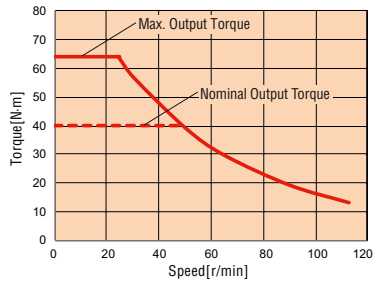
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**

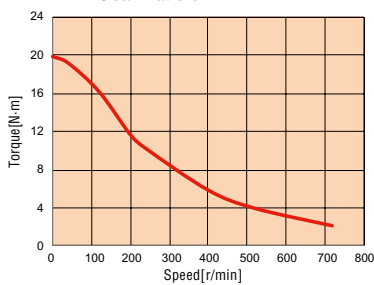


**AZM69 Gear Ratio 40**

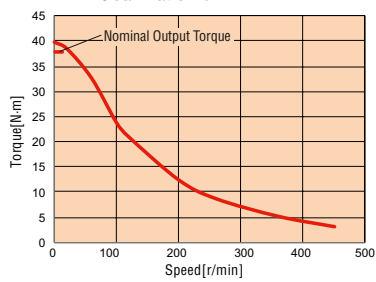


◇ AZM911AC-PLE80 (Reference value)\*

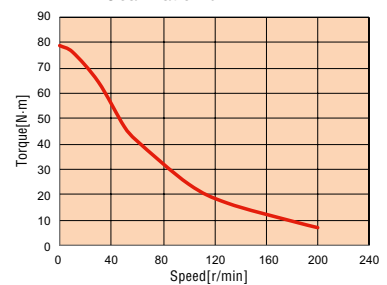
**AZM911 Gear Ratio 5**



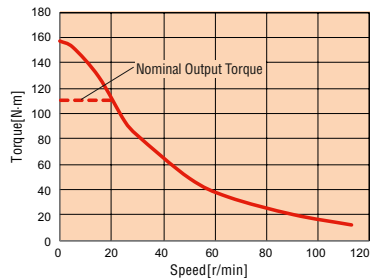
**AZM911 Gear Ratio 10**



**AZM911 Gear Ratio 20**



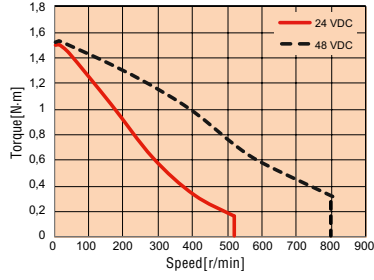
**AZM911 Gear Ratio 40**



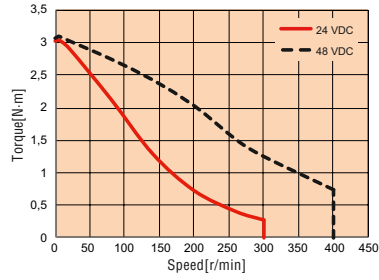
● 24/48 VDC

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

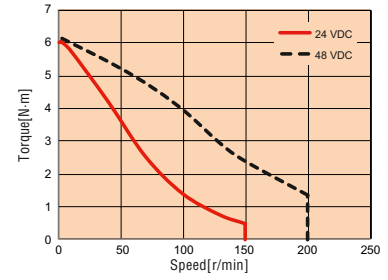
**AZM46 Gear Ratio 5**



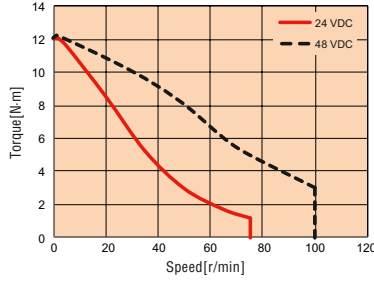
**AZM46 Gear Ratio 10**



**AZM46 Gear Ratio 20**

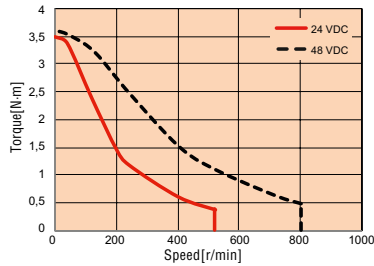


**AZ46 Gear Ratio 40**

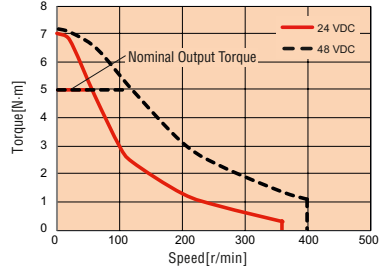


◇ AZM48AK-PLE40 (Reference value)\*

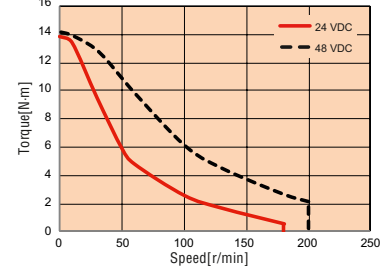
**AZM48 Gear Ratio 5**



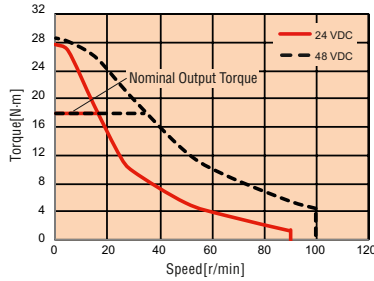
**AZM48 Gear Ratio 10**



**AZM48 Gear Ratio 20**

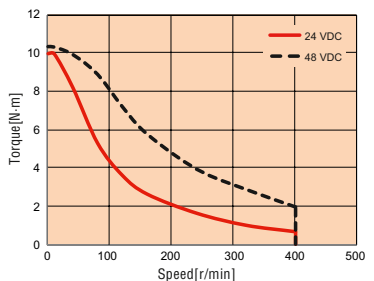


**AZ48 Gear Ratio 40**

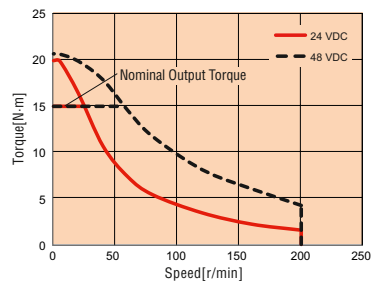


◇ AZM69AK-PLE60 / AZM69MK-PLE60 (Reference value)\*

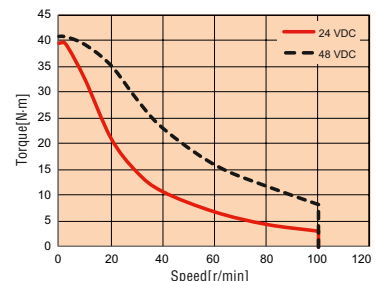
**AZM69 Gear Ratio 5**



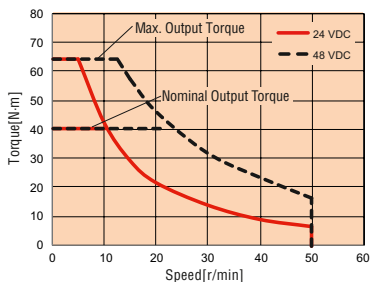
**AZM69 Gear Ratio 10**



**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°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.

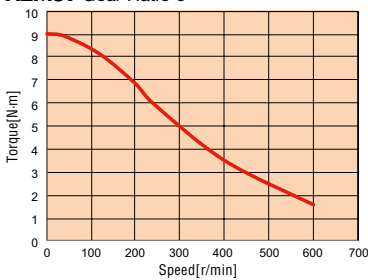
(8) With respect to center of output shaft.

## Speed – Torque Characteristics

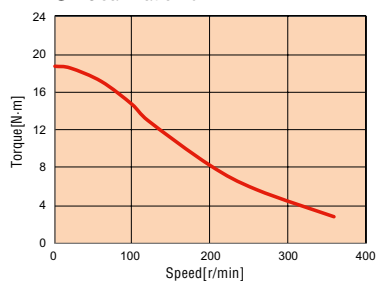
### Single-Phase 200-240VAC

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

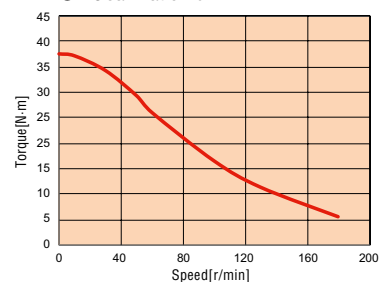
**AZM69 Gear Ratio 5**



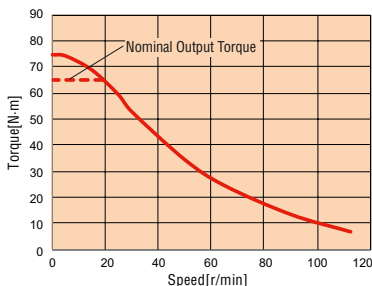
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**

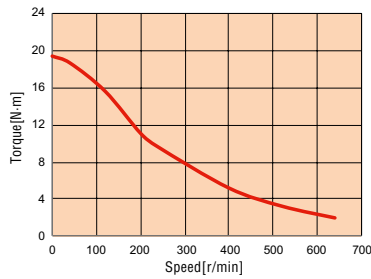


**AZM69 Gear Ratio 40**

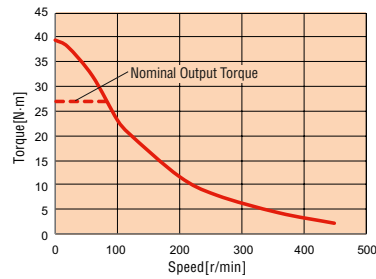


◇AZM911AC-PLN70 / AZM911AC-PLN90 (Reference value)\*

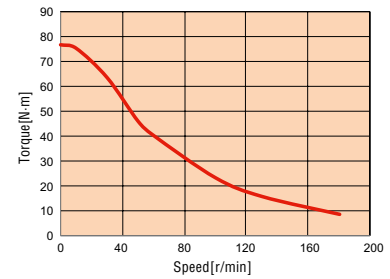
**AZM911 Gear Ratio 5 (PLN70-5)**



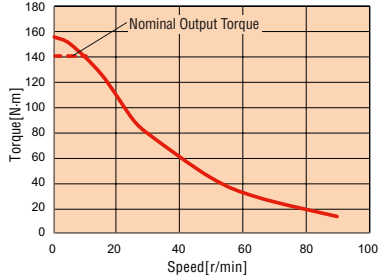
**AZM911 Gear Ratio 10 (PLN70-10)**



**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.

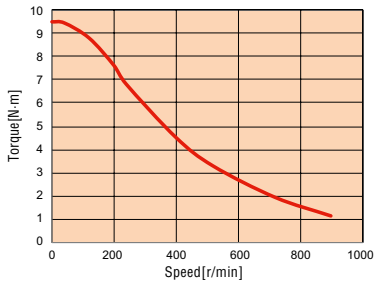
(8) With respect to center of output shaft.

## Speed – Torque Characteristics

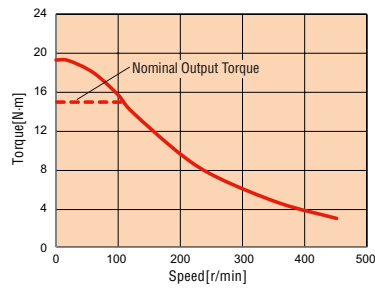
● Single-Phase 200-240VAC

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

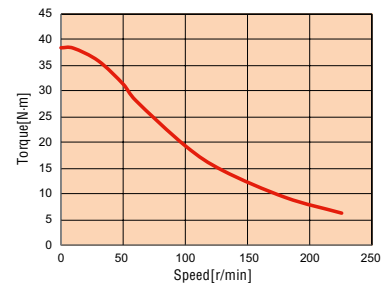
**AZM69 Gear Ratio 5**



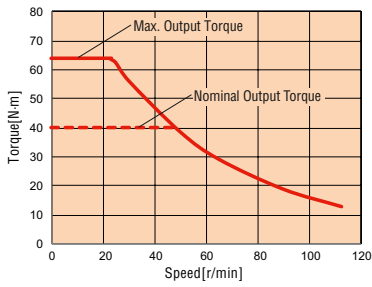
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**

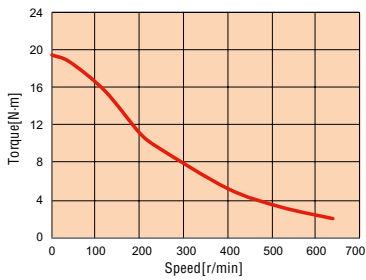


**AZM69 Gear Ratio 40**

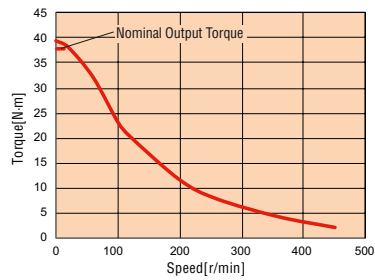


◇ AZM911AC-PLFE90 (Reference value)\*

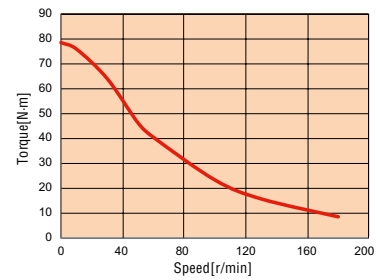
**AZM911 Gear Ratio 5**



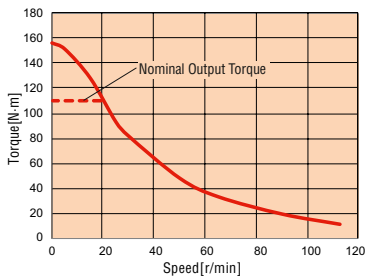
**AZM911 Gear Ratio 10**



**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.

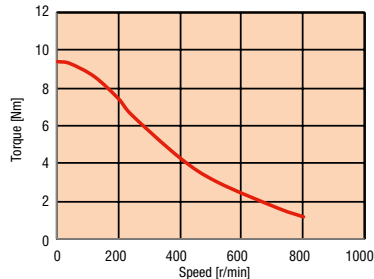
(9) With respect to center of output shaft.

## Speed – Torque Characteristics

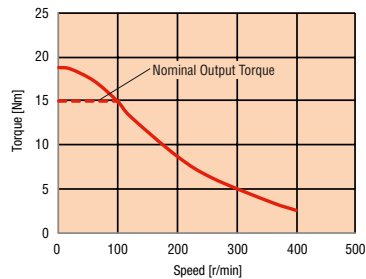
### Single-Phase 200-240VAC

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

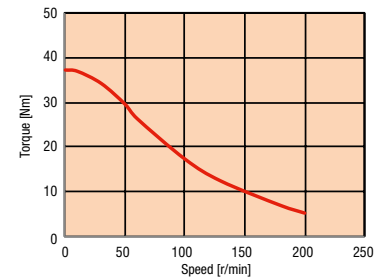
**AZM69 Gear Ratio 5**



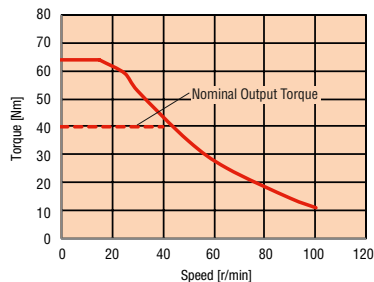
**AZM69 Gear Ratio 10**



**AZM69 Gear Ratio 20**

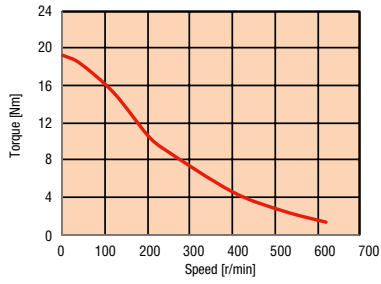


**AZM69 Gear Ratio 40**

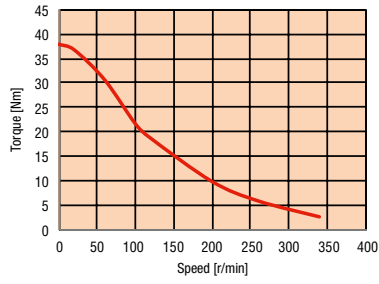


◇ AZM911AC-WPLE80 (Reference value)\*

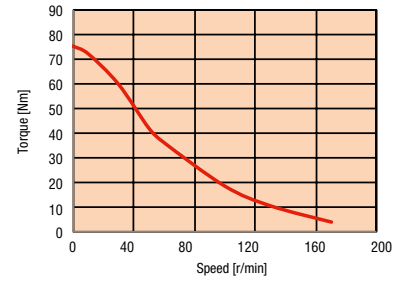
**AZM911 Gear Ratio 5**



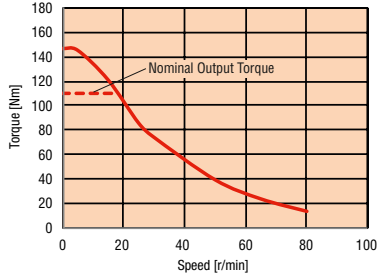
**AZM911 Gear Ratio 10**



**AZM911 Gear Ratio 20**



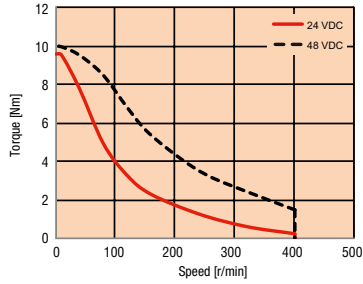
**AZM911 Gear Ratio 40**



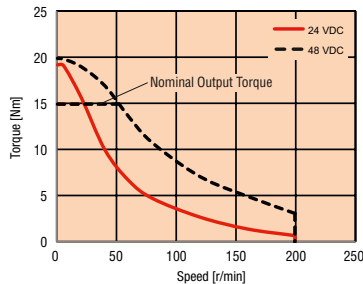
● 24/48 VDC

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

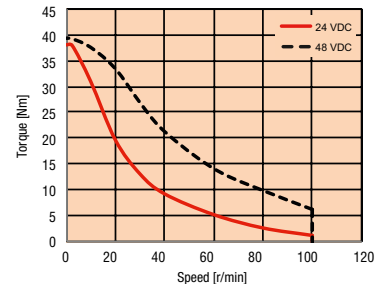
**AZM69 Gear Ratio 5**



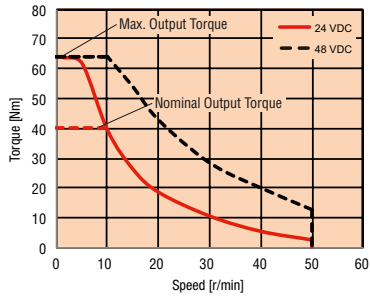
**AZM69 Gear Ratio 10**



**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

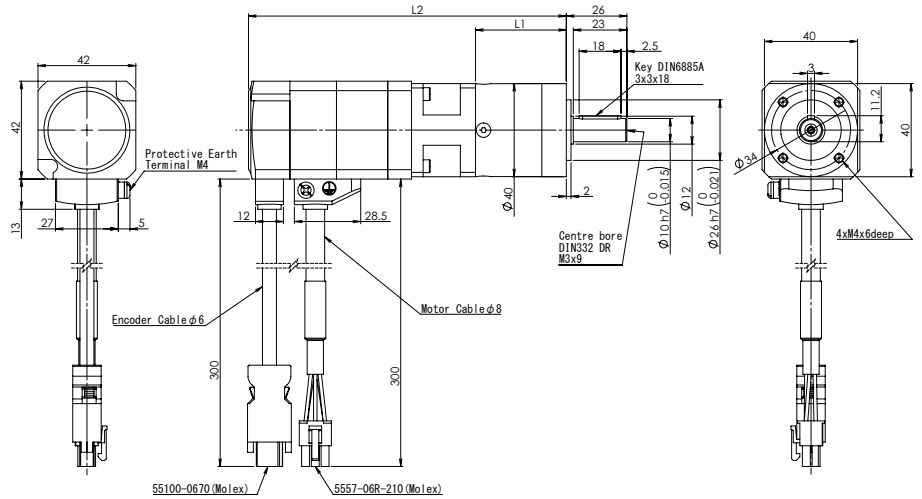
### PLE Geared Type

◇ AZM46AC-PLE40

3D CAD

◇ AZM46AK-PLE40

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

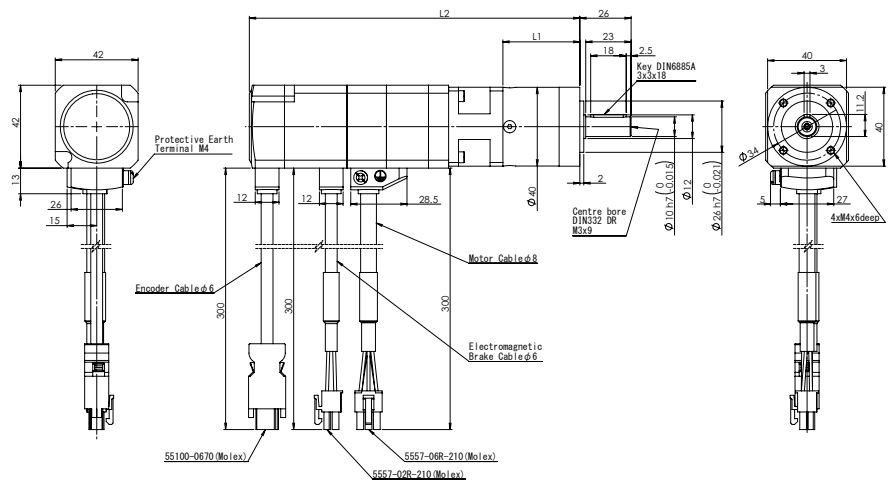


◇ AZM46MC-PLE40

3D CAD

◇ AZM46MK-PLE40

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

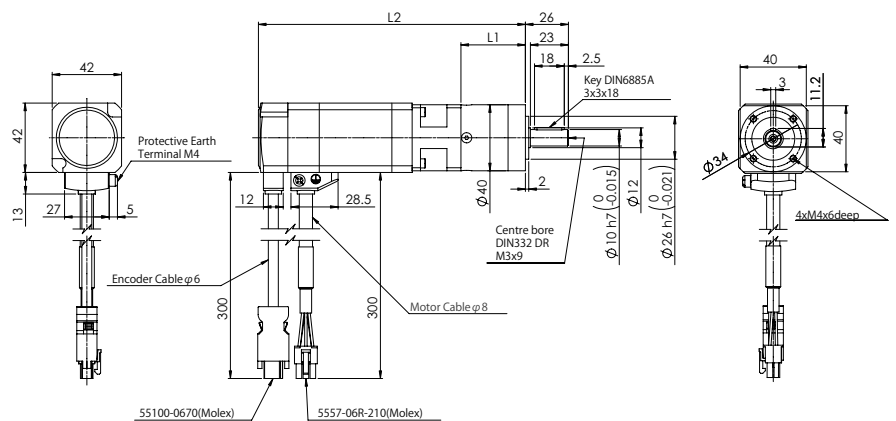


◇ AZM48AC-PLE40

3D CAD

◇ AZM48AK-PLE40

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



3D CAD

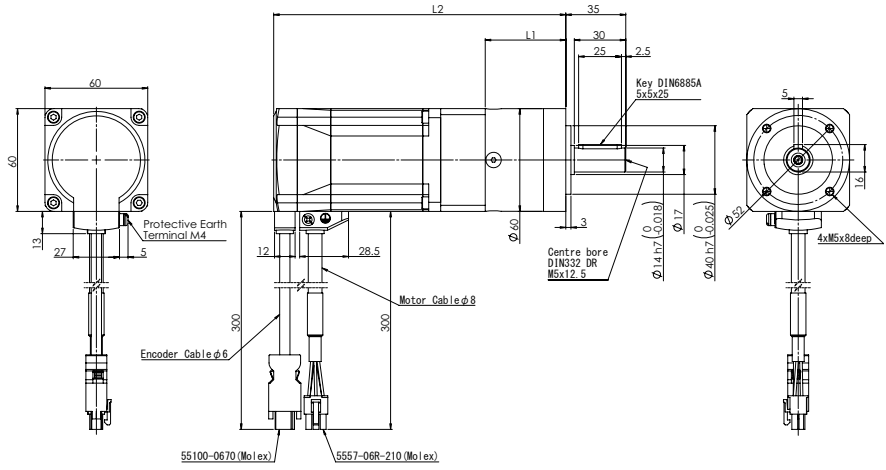
3D data available on the website: <http://www.orientalmotor.eu>  
Or please ask the OM Customer Center: [info@orientalmotor.de](mailto:info@orientalmotor.de)

◇ AZM69AC-PLE60

3D CAD

◇ AZM69AK-PLE60

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

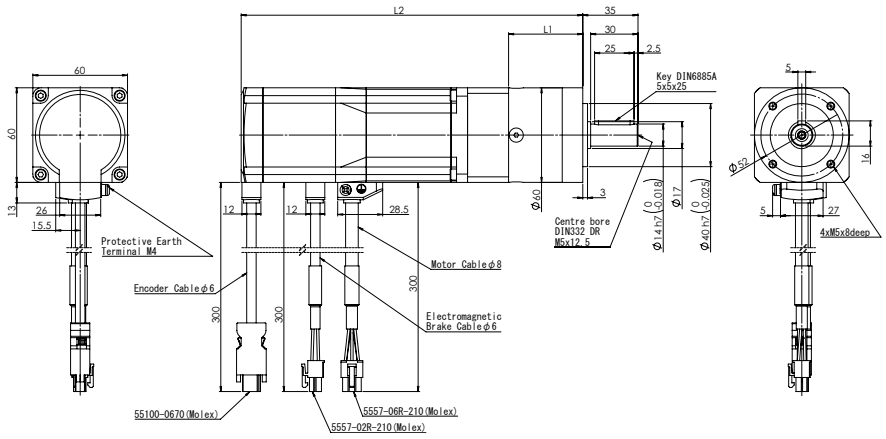


◇ AZM69MC-PLE60

3D CAD

◇ AZM69MK-PLE60

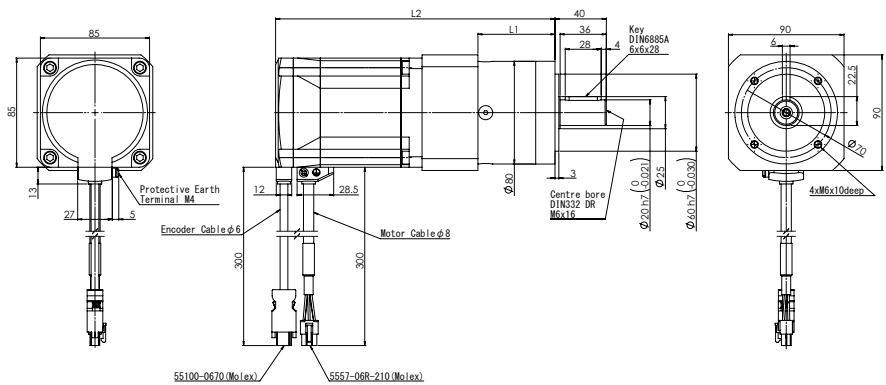
| Ratio  | L1   | L2    | Mass kg |
|--------|------|-------|---------|
| 5, 10  | 47   | 216.5 | 2.7     |
| 20, 40 | 59.5 | 229   | 2.9     |



◇ AZM911AC-PLE80

3D CAD

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

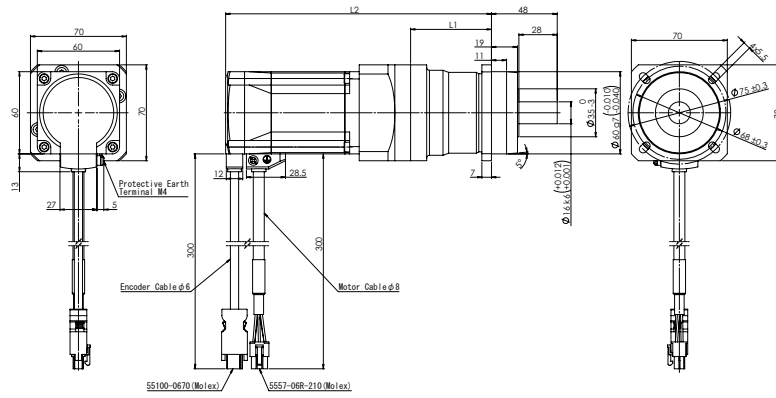


● PLN Geared Type

◇ AZM69AC-PLN70

3D CAD

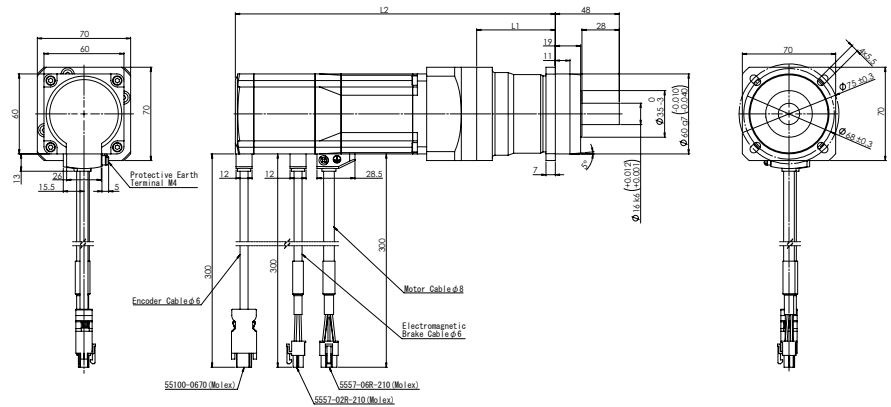
| Ratio  | L1 | L2  | Mass kg |
|--------|----|-----|---------|
| 5, 10  | 59 | 194 | 3.4     |
| 20, 40 | 88 | 223 | 3.9     |



◇ AZM69MC-PLN70

3D CAD

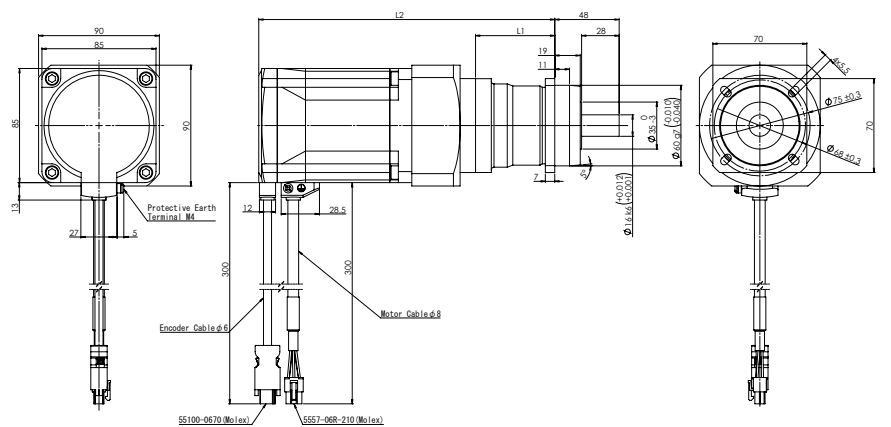
| Ratio  | L1 | L2  | Mass kg |
|--------|----|-----|---------|
| 5, 10  | 59 | 240 | 3.8     |
| 20, 40 | 88 | 269 | 4.3     |



◇ AZM911AC-PLN70

3D CAD

| Ratio | L1 | L2    | Mass kg |
|-------|----|-------|---------|
| 5, 10 | 59 | 220.5 | 5.1     |
| 20    | 88 | 249.5 | 5.6     |

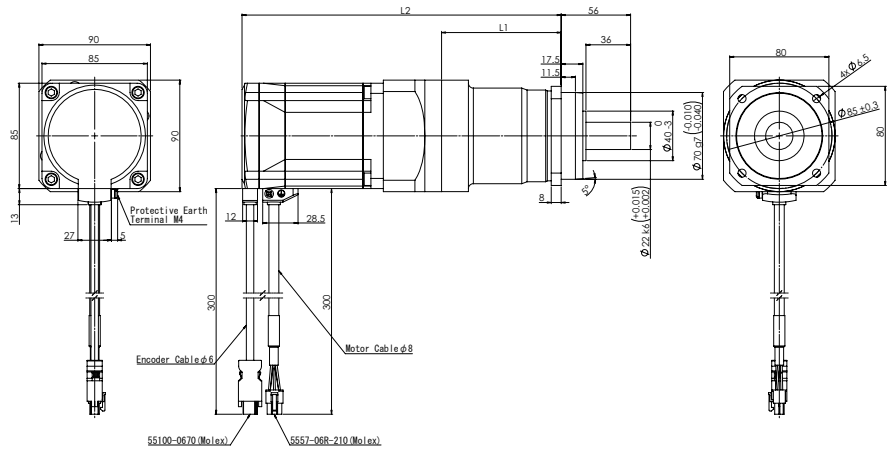


3D data available on the website: <http://www.orientalmotor.eu>  
Or please ask the OM Customer Center: [info@orientalmotor.de](mailto:info@orientalmotor.de)

◇ AZM911AC-PLN90-40

3D CAD

| Ratio | L1   | L2    | Mass kg |
|-------|------|-------|---------|
| 40    | 96.5 | 257.5 | 7.3     |

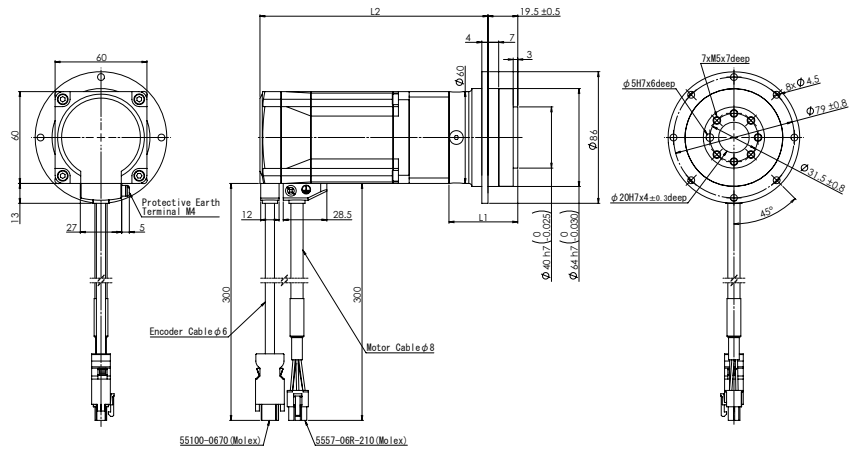


● PLFE Geared Type

◇ AZM69AC-PLFE64

3D CAD

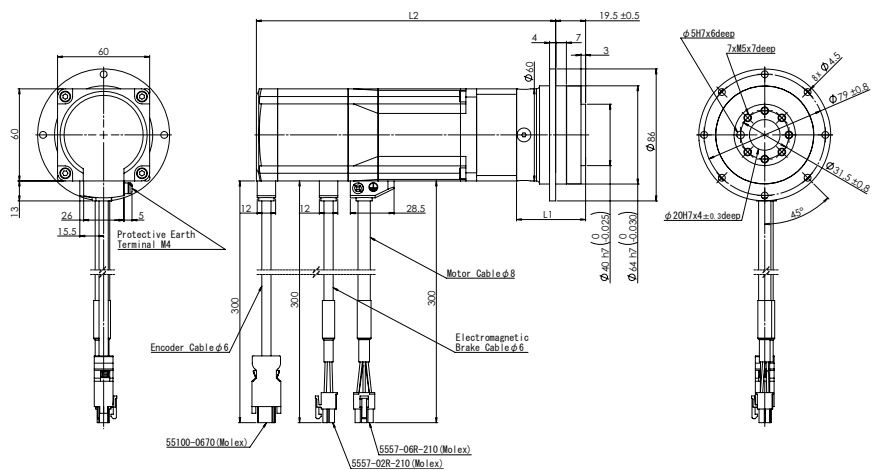
| Ratio  | L1   | L2    | Mass kg |
|--------|------|-------|---------|
| 5, 10  | 45   | 149   | 2.5     |
| 20, 40 | 57.5 | 161.5 | 2.9     |



◇ AZM69MC-PLFE64

3D CAD

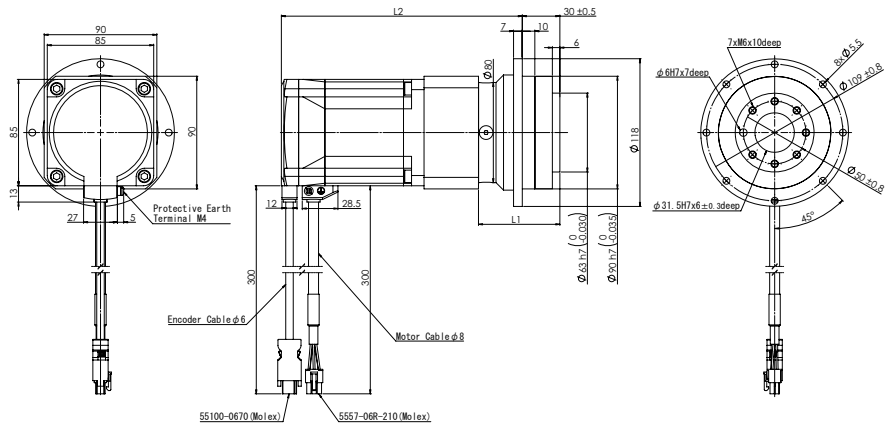
| Ratio  | L1   | L2    | Mass kg |
|--------|------|-------|---------|
| 5, 10  | 45   | 195   | 2.9     |
| 20, 40 | 57.5 | 207.5 | 3.3     |



◇ AZM911AC-PLFE90

3D CAD

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

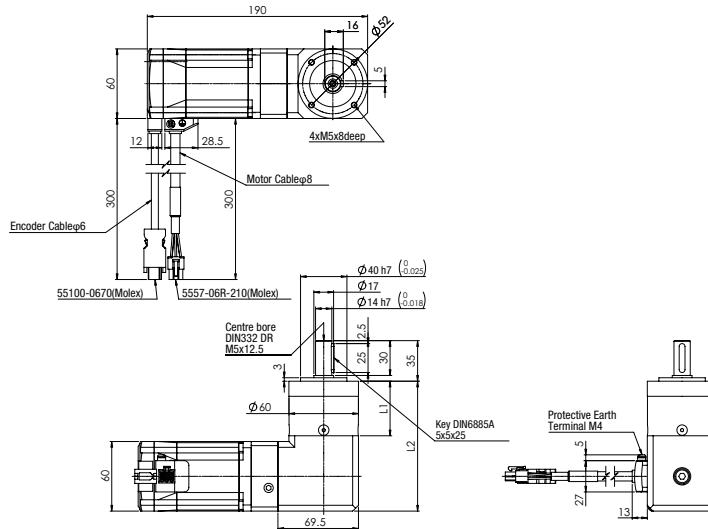


● WPLE Geared Type

◇ AZM69AC-WPLE60  
AZM69AK-WPLE60

3D CAD

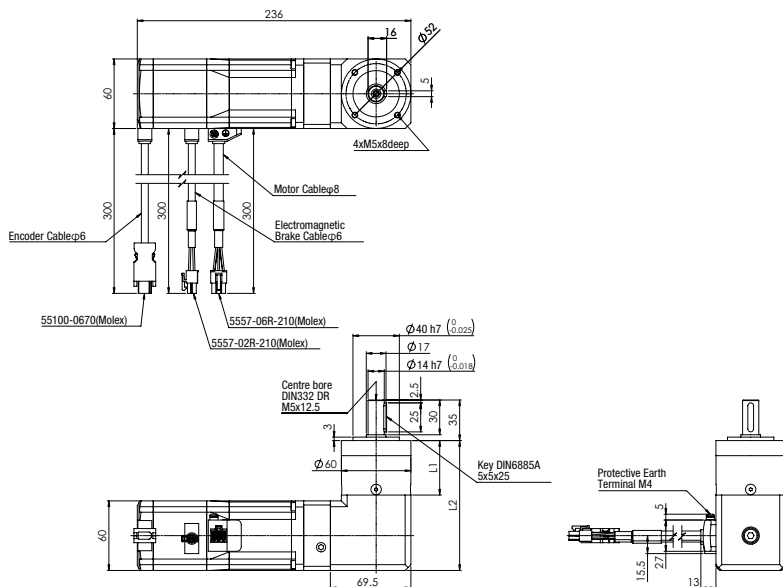
| Ratio | L1   | L2    | Mass kg |
|-------|------|-------|---------|
| 5,10  | 47   | 112   | 3,1     |
| 20,40 | 59,5 | 124,5 | 3,3     |



◇ AZM69MC-WPLE60  
AZM69MK-WPLE60

3D CAD

| 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)"

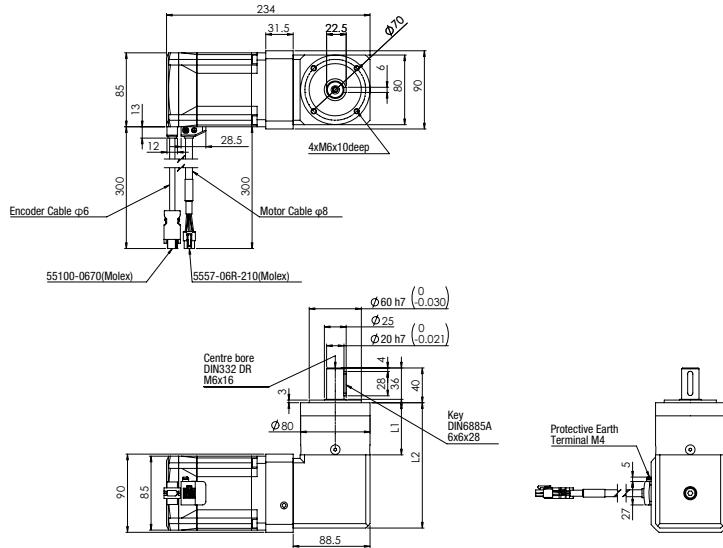
3D CAD

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

3D CAD

| 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 CAD

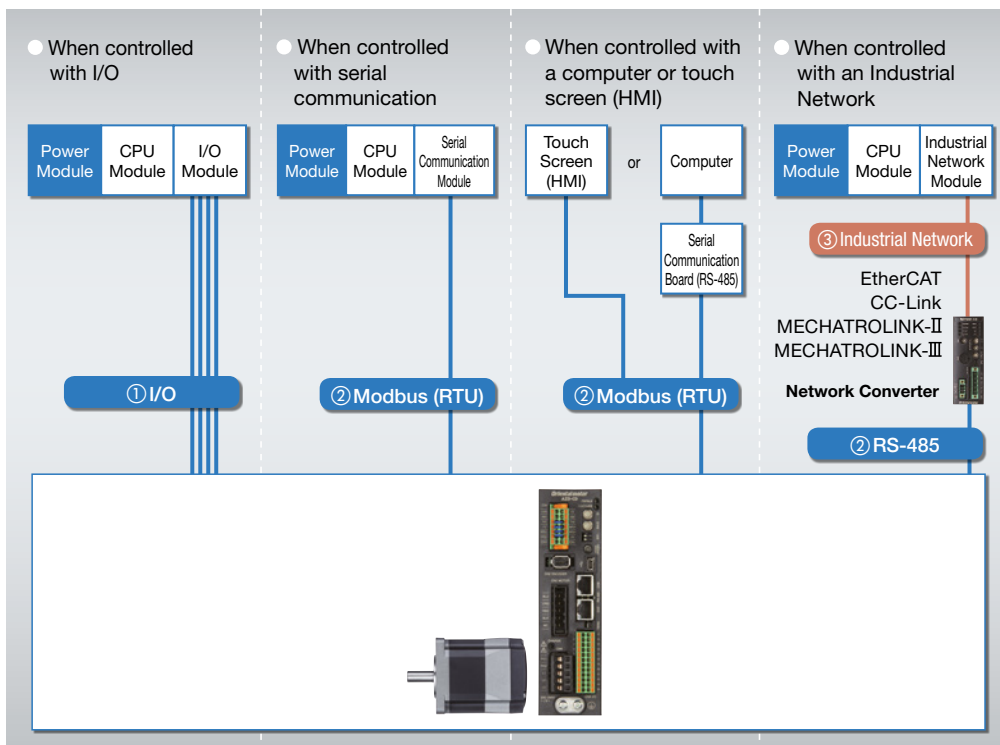
3D data available on the website: <http://www.orientalmotor.eu>  
Or please ask the OM Customer Center: [info@orientalmotor.de](mailto:info@orientalmotor.de)

## FLEX Handles a Variety of System Configurations

FLEX is the generic name for products supporting I/O control, Modbus (RTU) control and Industrial Network via a network converter. FLEX products enable easy connection, easy control and reduce the complexity of system configuration.

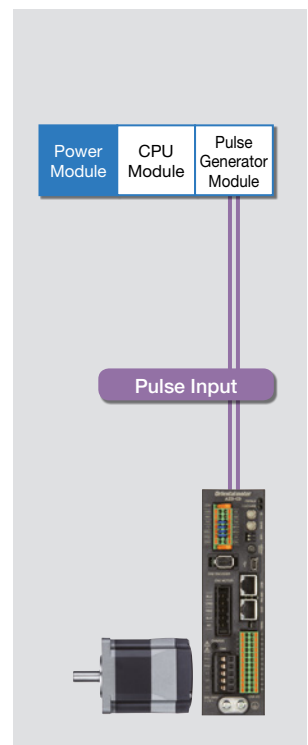
### Built-in Controller (Stored Data) Type FLEX

Operating data is set in the driver and the operating data is selected and executed from the master controller. Connection and control with the master controller is done through either ① I/O, ② Modbus (RTU)/RS-485, or ③ Industrial Network.



### Pulse Input

Operations are executed by inputting the pulses into the driver. The motor can be controlled using a positioning module (pulse generator) provided by the customer.





# Network Converter

The network converter is a transducer that converts from the host communication protocol to Oriental Motor's unique RS-485 communication protocol. You can use the network converter to control products supporting Oriental Motor's RS-485 in the host communication environment.

## Product Line

| Network Type                 | Product Name      |
|------------------------------|-------------------|
| EtherCAT-Compatible          | <b>NETC01-ECT</b> |
| CC-Link-Compatible           | <b>NETC02-CC</b>  |
| MECHATROLINK- II Compatible  | <b>NETC01-M2</b>  |
| MECHATROLINK- III Compatible | <b>NETC01-M3</b>  |



# Universal Controller

## SCX11

Equipped with program editing and execution functions, the highly-functional and sophisticated **SCX11** controller is now available. Use the **SCX11** as a stored program controller to connect to any of Oriental Motor's standard pulse input drivers. The **SCX11** is also able to control the motor via various serial ports such as USB, RS-232C and **CANopen**.

- 100 Sequence Programs can be Stored
- Easy Operation
- Intelligent Setting



## Product Line

| Product Name | Compatible Driver | List Price |
|--------------|-------------------|------------|
| <b>SCX11</b> | AZD-C, AZD-K      | €215.00    |

# Accessories (Sold separately)

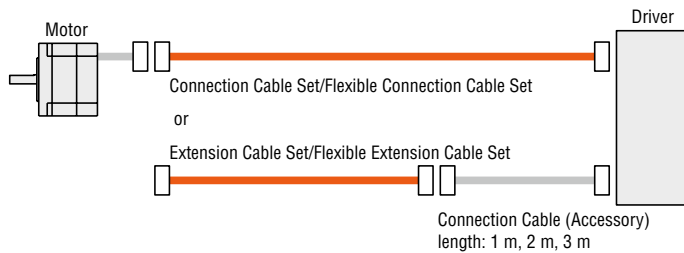
## Connection Cable Sets, Flexible Connection Cable Sets Extension Cable Sets, Flexible Extension Cable Sets

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

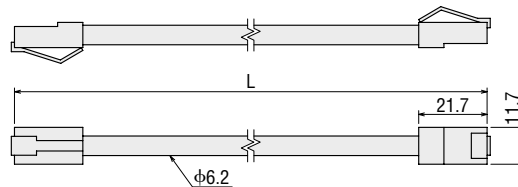
The cable is to link drivers when the driver is being operated under multi-axis mode, it also connects the network converter and driver.



### 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<br>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.

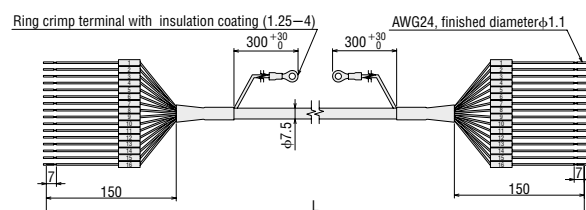
Choose the necessary cable in accordance with the number of connecting I/O signals.



### 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<br>(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<br>64 bit (x64) version: 2 GB or more |
| Hard Disk*2          | Available disk space of 60 MB or more                                    |
| USB Port             | USB2.0 1 port  |
| Disk Device          | CD-ROM drive (use for installation of software)                          |

\*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

\*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 | USB2.0 (full speed)                       |
| Cable         | Length: 3 m (or less)<br>Format: A-mini-B |

# Actuator Lineup

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

| Series Name  | Features   | Main Specification  |
|--|--|---|
| <b>αSTEP AZ Series Equipped</b><br>Motorized Slider <b>EAS Series</b><br>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> </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><br>Motorized Slider <b>EZS Series</b><br>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><br>Motorized Slider <b>EAC Series</b><br>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<br><b>DG II Series</b><br>Frame Size<br>85 mm, 130 mm, 200 mm<br>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 N·m</li> <li>• Maximum permissible moment: 100 N·m</li> <li>• Maximum permissible axial load: 4000 N·m</li> </ul> |