

Orientalmotor

α STEP AZ Series Connector Type

Built-in Battery-Free Absolute Sensor

The same features of AZ Series,
but now with a single cable.

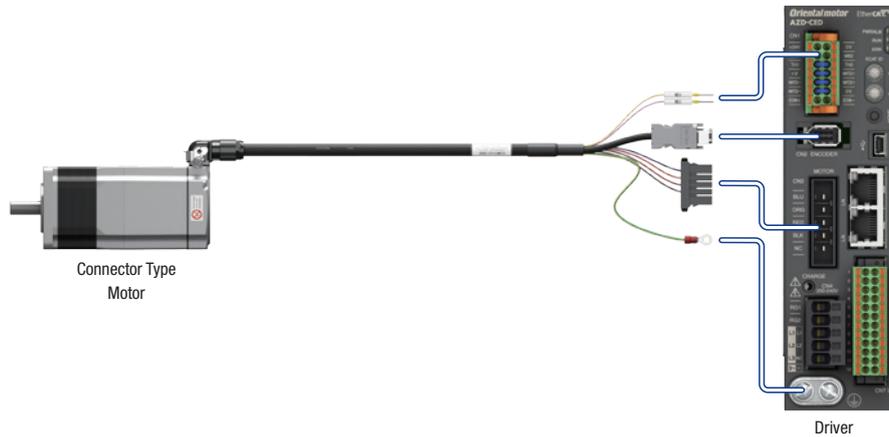


EtherCAT EtherNet/IP PROFINET MECHATROLINK SSCNET III/H Modbus (RTU)

Direct Connection of Motor and Driver

Without an extension cable, a connection of up to 10 m is possible. No extension cable is required.

The wiring process is more efficient thanks to the power line, signal line, electromagnetic brake line and ground wire all being consolidated into one cable.



Lock Lever Connector for Simple Connection

Connecting the cable is easy due to the lock lever that does not require screws.



Three Cable Outlet Directions Can be Selected

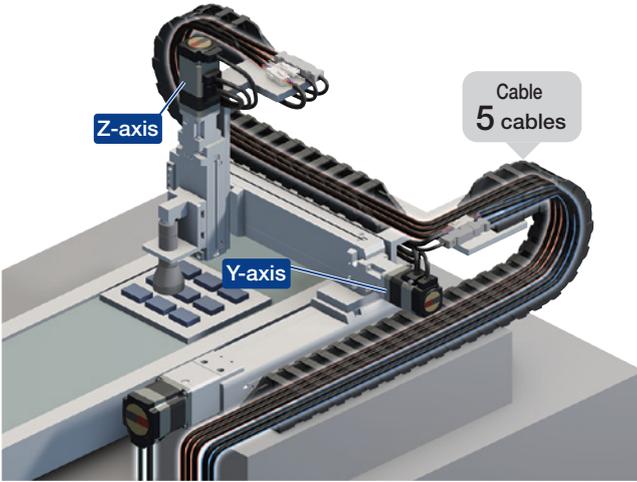
Select from three cable outlet directions. This increases the degree of cable outlet freedom around the motor.



Use of a Single Cable Reduces Routing Work and Smaller Cable Holders

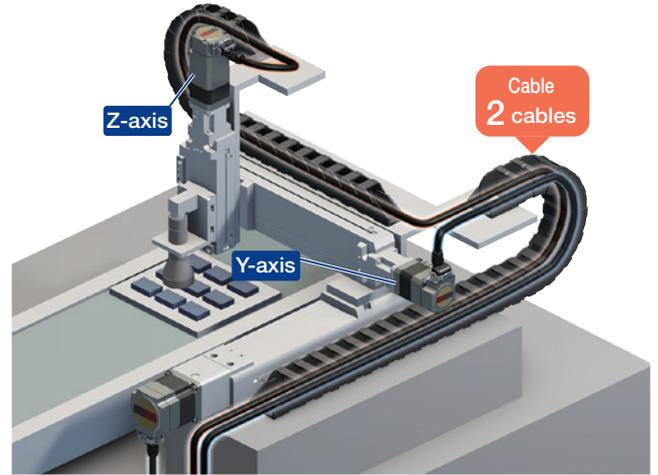
Conventional Product (Cable type)

Z-axis (Electromagnetic brake motor): 3 cables
Y-axis (Standard motor) : 2 cables



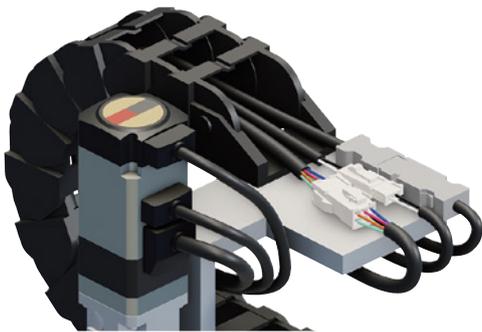
Connector Type

Z-axis (Electromagnetic brake motor): 1 cable
Y-axis (Standard motor) : 1 cable

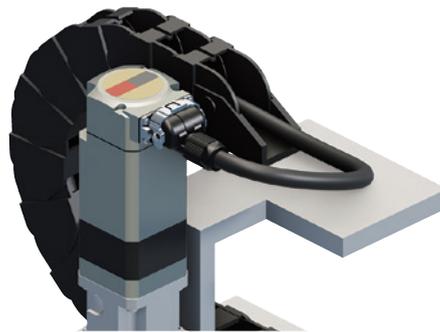


Direct Connection Leads to Quicker Replacement of Motors and Cables

Conventional Product (Cable type)



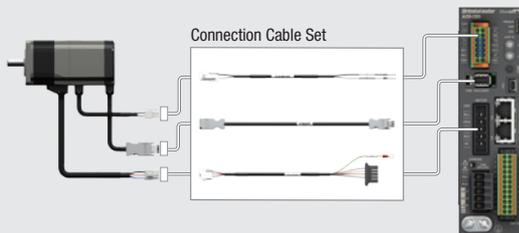
Connector Type



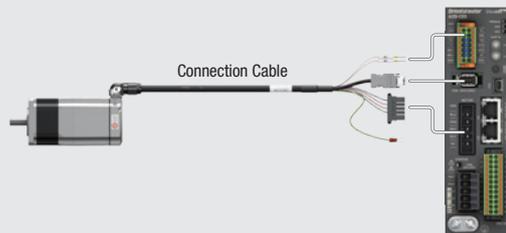
Reference: Comparison of Connection Cable Diameters, Cross-Section Areas and Masses

For electromagnetic brake motor, single-axis driver and flexible connection cable (5 m in length)

Cable Type



Connector Type



	Cable Type (3 cables)	Connector Type (1 cable)
Diameter [mm]	<ul style="list-style-type: none"> • $\phi 8$ for motors • $\phi 6$ for electromagnetic brakes • $\phi 6.5$ for encoders 	$\phi 8.9$
Cross-Sectional Area [mm ²]	111.7	62.2
		44.3% reduction
Mass [kg]	1.19	0.53
		55.5% reduction

*3 cables: one for motor, one for encoder and one for electromagnetic brake

Product Line of **AZ** Series

AC : Single-Phase 100-120 VAC,
Single-Phase/Three-Phase 200-240 VAC Input
DC : 24/48 VDC Input

Motor (Frame Size: 42 mm, 60 mm)

Type	Electromagnetic Brake	Permissible Torque and Max. Instantaneous Torque [Nm]	Backlash [arcmin]	Basic Resolution [°/pulse]	Output Shaft Speed [r/min]
Standard AC DC  Motor Shaft Type Round with a Flat/Straight/Keyed	Not equipped	Max. Holding Torque 2	—	0.36	4500
	Equipped				
TS Geared AC DC NEW (Spur gear mechanism) Select the Connector Direction Down/Up/Right/Left Low Gear Ratio, High Speed Operation Gear Ratio: 3.6, 7.2, 10, 20, 30	Not equipped	Permissible Torque / Maximum Instantaneous Torque 6 / 10	10	0.012	833
	Equipped				
Right-Angle FC Geared AC DC NEW (Face gear mechanism) Select the Connector Direction Down/Up Right-Angle Gear for Positioning Gear Ratio: 7.2, 10, 20, 30	Not equipped	Permissible Torque 10.5	10	0.012	416
	Equipped				
PS Geared AC DC NEW (Planetary gear mechanism) Gear Ratios for Selecting the Desired Step Angle Gear Ratio: 5, 7.2, 10, 25, 36, 50	Not equipped	Permissible Torque / Maximum Instantaneous Torque 8 / 20	7	0.0072	600
	Equipped				
PLE Geared AC DC NEW (Planetary gear mechanism)  Gear Ratio: 5, 10, 20, 40	Not equipped	For more information please check page 17 and 66	7	0.009	900
	Equipped				
Harmonic Geared Type (Harmonic drive) AC DC NEW  High Positioning Accuracy Gear Ratio: 50, 100	Not equipped	Permissible Torque / Maximum Instantaneous Torque 10 / 36	0	0.0036	70
	Equipped				

Note Please use the above values as reference to see the differences between each type. These values vary depending on the motor frame size and gear ratio.

Geared motors, which have been pre-assembled with gears, are offered as variants of the **AZ** Series. Based on torque, accuracy (backlash) and price, the optimal type can be selected from the various geared motors.



● Harmonic Drive and  are registered trademarks of Harmonic Drive Systems Inc.

Single-Axis Drivers

Network Compatible Driver

The driver can be controlled directly from the host control device via the FA network.






Modbus (RTU)



AC Input



DC Input

Built-In Positioning Function Type

Set the positioning data in the driver (256 points). Capable of FA network control when a network converter (sold separately) is used.

Modbus (RTU)



AC Input



DC Input

Pulse Input Type with RS-485 Communication

Control the motor from a positioning module (pulse generator). Monitor the motor's position, speed, torque, alarms and temperature via RS-485 communication.



AC Input



DC Input

Pulse Input Type

The motor is controlled from the positioning module (pulse generator).



AC Input



DC Input

mini Drivers

More compact and lightweight than single-axis drivers. They are also compatible with FA network.



Ethernet Type
Modbus (TCP, UDP)



Network Compatible
EtherCAT  



RS-485 Communication Type
Modbus (RTU)



Pulse Input Type with
RS-485 Communication

Connection Cables/Flexible Connection Cables

Use a flexible connection cable in applications where the cable is bent and flexed.



Single-Axis Driver for AC Input
(1 to 10 m)



Single-Axis Driver for DC Input
(0.5 to 10 m)



For mini Driver
(0.2 to 10 m)

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- EtherNet/IP is a registered trademark of ODVA,  MECHATROLINK is a registered trademark of MECHATROLINK Members Association, [CC-Link] is a registered trademark of CC-Link Partner Association, and **Modbus (RTU)** is a registered trademark of Schneider Automation Inc.
-  is a registered trademark or trademark of PROFIBUS Nutzerorganisation e.V.(PNO) and  is a registered trademark or trademark of Mitsubishi Electric Corporation.

What is FLEX?

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

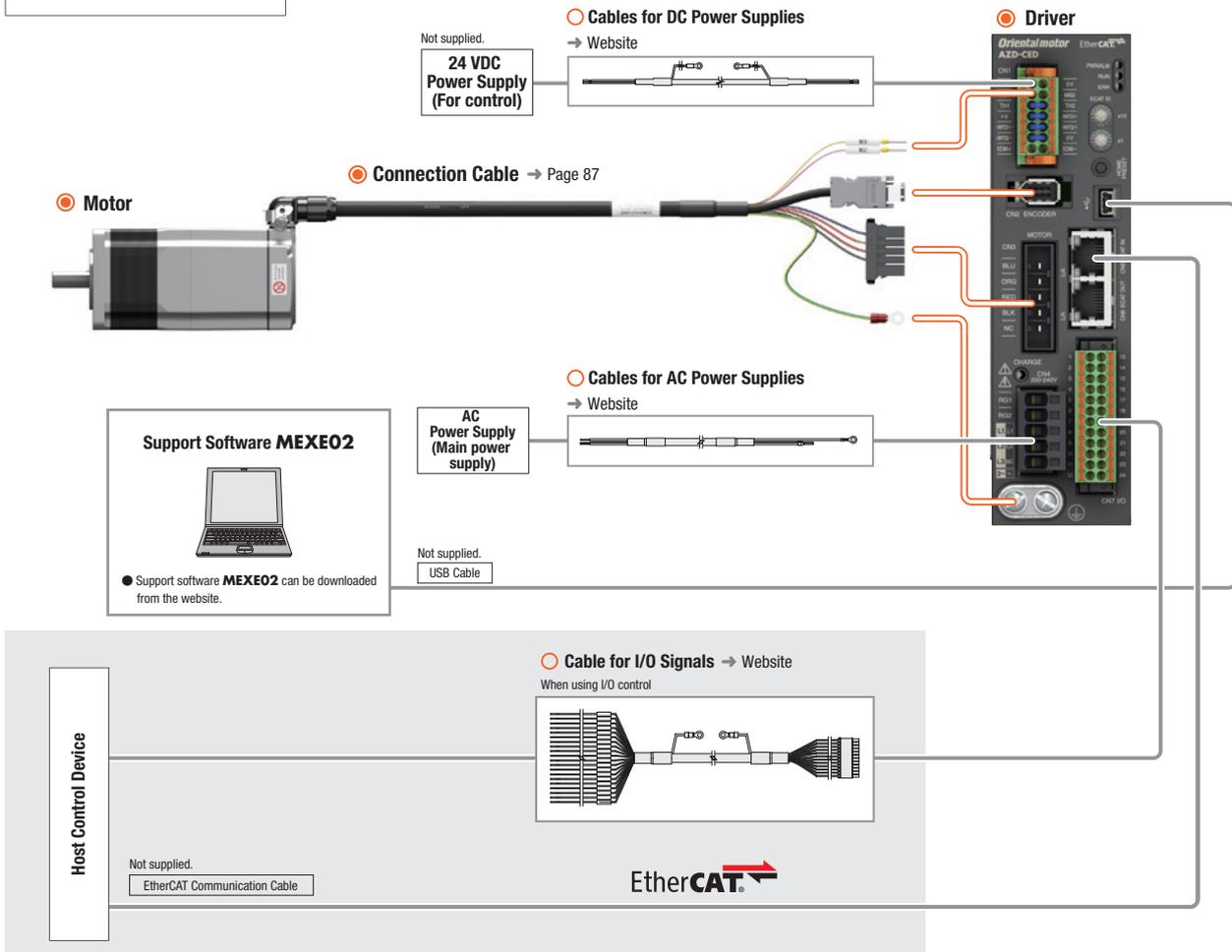
System Configuration

Combination of Connector Type Electromagnetic Brake Motor and Network-Compatible Driver

An example of a configuration using I/O control with EtherCAT-compatible driver or EtherCAT is shown below.

Motors, drivers, and connection cables/flexible connection cables must be ordered individually.

- Required for Operation
- Optional Accessory



Example of System Configuration

Motor	+	Driver	+	Cable	
AZM66MCH		AZD-CED		Connection Cable Cable Outlet Direction Output Shaft Side (1 m)	I/O Signal Cable Connector Type (1 m)
○		○		CCM010Z1BFF	CC24D010C-1
				○	○

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

Product Number

● Motor

◇ Standard Type

AZM 6 6 A 0 C H

① ② ③ ④ ⑤ ⑥ ⑦

◇ PS, Harmonic Geared Type

AZM 6 6 A C H-PS 7.2

① ② ③ ④ ⑥ ⑦ ⑧ ⑩

◇ PLE Geared Type

AZM 6 9 A C H-PLE 60-5

① ② ③ ④ ⑥ ⑦ ⑧ ⑨ ⑩

◇ TS Geared Type

AZM 6 6 A C H-TS 7.2 U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

◇ FC Geared Type

AZM 6 6 A C H-FC 7.2 U A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

● Connection Cables/Flexible Connection Cables

CCM 010 Z1 A F F

① ② ③ ④ ⑤ ⑥

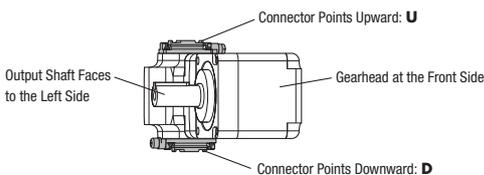
①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	4: 42 mm 6: 60 mm
③	Motor Case Length	
④	Output Shaft Type	A: Single Shaft M: Type with Electromagnetic Brake
⑤	Additional Function*	0: Round Shaft 1: Key Type
⑥	Motor Type	C: AC Input Specification
⑦	Motor Connection Method	H: Connector Type
⑧	Geared Type	PS: PS Geared Type PLE: PLE Geared Type HS: Harmonic Geared Type
⑨	Gear Size	
⑩	Gear Ratio	

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

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

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

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



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

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



F: Output Shaft Direction



V: Vertical



B: Opposite to Output Shaft Direction

Product Line

Motors, drivers, and connection cables must be ordered individually.

- Motor
- ◇ Standard Type



Frame Size	Product Name
42 mm	AZM46ACH AZM46A0CH AZM48ACH AZM48A0CH AZM48A1CH
60 mm	AZM66ACH AZM66A0CH AZM66A1CH AZM69ACH AZM69A0CH AZM69A1CH

- ◇ Standard Type with an Electromagnetic Brake



Frame Size	Product Name
42 mm	AZM46MCH AZM46M0CH
60 mm	AZM66MCH AZM66M0CH AZM66M1CH AZM69MCH AZM69M0CH AZM69M1CH

- ◇ TS Geared Type



Frame Size	Product Name
42 mm	AZM46ACH-TS3.6 AZM46ACH-TS3.6R AZM46ACH-TS3.6U AZM46ACH-TS3.6L AZM46ACH-TS7.2 AZM46ACH-TS7.2R AZM46ACH-TS7.2U AZM46ACH-TS7.2L AZM46ACH-TS10 AZM46ACH-TS10R AZM46ACH-TS10U AZM46ACH-TS10L AZM46ACH-TS20 AZM46ACH-TS20R AZM46ACH-TS20U AZM46ACH-TS20L AZM46ACH-TS30 AZM46ACH-TS30R AZM46ACH-TS30U AZM46ACH-TS30L
60 mm	AZM66ACH-TS3.6 AZM66ACH-TS3.6R AZM66ACH-TS3.6U AZM66ACH-TS3.6L AZM66ACH-TS7.2 AZM66ACH-TS7.2R AZM66ACH-TS7.2U AZM66ACH-TS7.2L AZM66ACH-TS10 AZM66ACH-TS10R AZM66ACH-TS10U AZM66ACH-TS10L AZM66ACH-TS20 AZM66ACH-TS20R AZM66ACH-TS20U AZM66ACH-TS20L AZM66ACH-TS30 AZM66ACH-TS30R AZM66ACH-TS30U AZM66ACH-TS30L

- ◇ TS Geared Type with Electromagnetic Brake



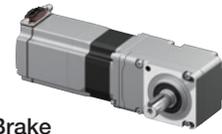
Frame Size	Product Name
42 mm	AZM46MCH-TS3.6 AZM46MCH-TS3.6R AZM46MCH-TS3.6U AZM46MCH-TS3.6L AZM46MCH-TS7.2 AZM46MCH-TS7.2R AZM46MCH-TS7.2U AZM46MCH-TS7.2L AZM46MCH-TS10 AZM46MCH-TS10R AZM46MCH-TS10U AZM46MCH-TS10L AZM46MCH-TS20 AZM46MCH-TS20R AZM46MCH-TS20U AZM46MCH-TS20L AZM46MCH-TS30 AZM46MCH-TS30R AZM46MCH-TS30U AZM46MCH-TS30L
60 mm	AZM66MCH-TS3.6 AZM66MCH-TS3.6R AZM66MCH-TS3.6U AZM66MCH-TS3.6L AZM66MCH-TS7.2 AZM66MCH-TS7.2R AZM66MCH-TS7.2U AZM66MCH-TS7.2L AZM66MCH-TS10 AZM66MCH-TS10R AZM66MCH-TS10U AZM66MCH-TS10L AZM66MCH-TS20 AZM66MCH-TS20R AZM66MCH-TS20U AZM66MCH-TS20L AZM66MCH-TS30 AZM66MCH-TS30R AZM66MCH-TS30U AZM66MCH-TS30L

System Configuration	Product Line	Specifications and Characteristics	Dimensions
AC Input	DC Input	System Configuration	Product Line
		Specifications and Characteristics	Dimensions
		Cable	



◇FC Geared Type

Frame Size	Product Name
42 mm	AZM46ACH-FC7.2UA AZM46ACH-FC7.2DA AZM46ACH-FC10UA AZM46ACH-FC10DA AZM46ACH-FC20UA AZM46ACH-FC20DA AZM46ACH-FC30UA AZM46ACH-FC30DA
60 mm	AZM66ACH-FC7.2UA AZM66ACH-FC7.2DA AZM66ACH-FC10UA AZM66ACH-FC10DA AZM66ACH-FC20UA AZM66ACH-FC20DA AZM66ACH-FC30UA AZM66ACH-FC30DA



◇FC Geared Type
with Electromagnetic Brake

Frame Size	Product Name
42 mm	AZM46MCH-FC7.2UA AZM46MCH-FC7.2DA AZM46MCH-FC10UA AZM46MCH-FC10DA AZM46MCH-FC20UA AZM46MCH-FC20DA AZM46MCH-FC30UA AZM46MCH-FC30DA
60 mm	AZM66MCH-FC7.2UA AZM66MCH-FC7.2DA AZM66MCH-FC10UA AZM66MCH-FC10DA AZM66MCH-FC20UA AZM66MCH-FC20DA AZM66MCH-FC30UA AZM66MCH-FC30DA



◇PS Geared Type

Frame Size	Product Name
42 mm	AZM46ACH-PS5 AZM46ACH-PS7.2 AZM46ACH-PS10 AZM46ACH-PS25 AZM46ACH-PS36 AZM46ACH-PS50
60 mm	AZM66ACH-PS5 AZM66ACH-PS7.2 AZM66ACH-PS10 AZM66ACH-PS25 AZM66ACH-PS36 AZM66ACH-PS50



◇PS Geared Type
with Electromagnetic Brake

Frame Size	Product Name
42 mm	AZM46MCH-PS5 AZM46MCH-PS7.2 AZM46MCH-PS10 AZM46MCH-PS25 AZM46MCH-PS36 AZM46MCH-PS50
60 mm	AZM66MCH-PS5 AZM66MCH-PS7.2 AZM66MCH-PS10 AZM66MCH-PS25 AZM66MCH-PS36 AZM66MCH-PS50



◇PLE Geared Type

Frame Size	Product Name
42 mm	AZM46ACH-PLE40-5 AZM46ACH-PLE40-10 AZM46ACH-PLE40-20 AZM46ACH-PLE40-40 AZM48ACH-PLE40-5 AZM48ACH-PLE40-10 AZM48ACH-PLE40-20 AZM48ACH-PLE40-40
60 mm	AZM69ACH-PLE60-5 AZM69ACH-PLE60-10 AZM69ACH-PLE60-20 AZM69ACH-PLE60-40



◇PLE Geared Type
with Electromagnetic Brake

Frame Size	Product Name
42 mm	AZM46MCH-PLE40-5 AZM46MCH-PLE40-10 AZM46MCH-PLE40-20 AZM46MCH-PLE40-40
60 mm	AZM69MCH-PLE60-5 AZM69MCH-PLE60-10 AZM69MCH-PLE60-20 AZM69MCH-PLE60-40



◇Harmonic Geared Type

Frame Size	Product Name
42 mm	AZM46ACH-HS50 AZM46ACH-HS100
60 mm	AZM66ACH-HS50 AZM66ACH-HS100



◇Harmonic Geared Type
with Electromagnetic Brake

Frame Size	Product Name
42 mm	AZM46MCH-HS50 AZM46MCH-HS100
60 mm	AZM66MCH-HS50 AZM66MCH-HS100

●Connection Cables/Flexible Connection Cables

A connection cable is needed to connect the motor and driver. Please be sure to purchase one.

Use a flexible connection cable in applications where the cable is bent and flexed. Refer to page 87 for details.

Included Items

Type	Included Items	Parallel Key	Motor Installation Screws
Standard Type	Round Shaft with Flat	-	-
	Straight Type	-	-
	With Key	1 piece	-
TS Geared Type	Frame Size 42 mm	-	-
	Frame Size 60 mm	1 piece	M4×60 P0.7 (4 screws)
FC Geared Type		1 piece	-
PS Geared Type		1 piece	-
PLE Geared Type		1 piece	-
Harmonic Geared Type		1 piece	-

List of Combinations

Product	Type	Product Name
Motor	Standard Type	AZM46 \square CH, AZM48A \square CH AZM66 \square CH, AZM69 \square CH
	TS Geared Type	AZM46 \square CH-TS \square \square AZM66 \square CH-TS \square \square
	FC Geared Type	AZM46 \square CH-FC \square \square A AZM66 \square CH-FC \square \square A
	PS Geared Type	AZM46 \square CH-PS \square AZM66 \square CH-PS \square
	PLE Geared Type	AZM46 \square CH-PLE \square - \square , AZM48 \square CH-PLE \square - \square AZM46 \square CH-PLE \square - \square
	Harmonic Geared Type	AZM46 \square CH-HS \square AZM69 \square CH-HS \square

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Product Line	Type	Product Name
Driver	EtherCAT Drive Profile-Compatible	AZD-AED, AZD-CED
	EtherNet/IP-Compatible	AZD-AEP, AZD-CEP
	PROFINET-Compatible	AZD-APN, AZD-CPN
	MECHATROLINK-III-Compatible	AZD-AM3, AZD-CM3
	SSCNETIII/H-Compatible	AZD-AS3, AZD-CS3
	Built-in Controller Type	AZD-AD, AZD-CD
	Pulse Input Type with RS-485 Communication	AZD-AX, AZD-CX
Pulse Input Type	AZD-A, AZD-C	

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Product Line	Type	Product Name
Connection Cables/Flexible Connection Cables	Connection Cable	For motor/encoder: CCM \diamond \diamond \diamond Z1A \blacksquare F For motor/encoder/electromagnetic brake: CCM \diamond \diamond \diamond Z1B \blacksquare F
	Flexible Connection Cable	For motor/encoder: CCM \diamond \diamond \diamond Z1A \blacksquare R For motor/encoder/electromagnetic brake: CCM \diamond \diamond \diamond Z1B \blacksquare R

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

- \square : Output Shaft Configuration
- \square : Additional Function
- \square : Gear Ratio
- \square : Connector Direction
- \blacksquare : Cable Outlet Direction
- \diamond : Cable Length
- \square : Gear Size

● AZ Series Catalog

- Driver Functions
- Communication Specifications
- Driver Dimensions
- Cables & Peripheral Equipment



● Please see the Oriental Motor website or the AZ Series catalog for details about the drivers that can be combined.

Standard Type Frame Size 42 mm, 60 mm

Specifications



Motor Product Name	Single Shaft	AZM46A□CH	AZM48A□CH	AZM66A□CH	AZM69A□CH
Driver Product Name	With Electromagnetic Brake	AZM46M□CH	—	AZM66M□CH	AZM69M□CH
Max. Holding Torque	Nm	0.3	0.77	1.2	2
Holding Torque at Motor Standstill	Power ON	0.15	0.38	0.6	1
	Electromagnetic Brake	0.15	—	0.6	1
Rotor Inertia	J: kgm ²	55×10^{-7} [71×10^{-7}]*	115×10^{-7}	370×10^{-7} [530×10^{-7}]*	740×10^{-7} [900×10^{-7}]*
Resolution	Resolution Setting: 1000 P/R	0.36°/Pulse			
Power Supply Input	Please check "Driver Specifications" on page 18 for the driver current specifications when combined with a motor.				
Control Power Supply					

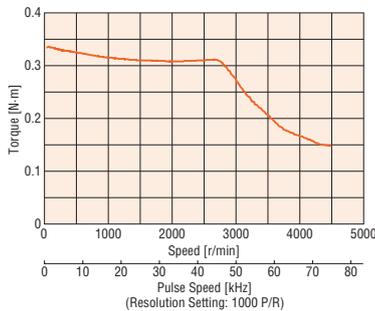
● Either a **0** (straight type) or **1** (key type) indicating the additional function is specified where the box □ is located in the product name. (**AZM46** is straight type only) For single shaft flat type motors, there is no number in the □ box.

A letter indicating the driver type is specified where the box ■ is located in the product name. Please check "List of Combinations" on page 9 for driver product names.

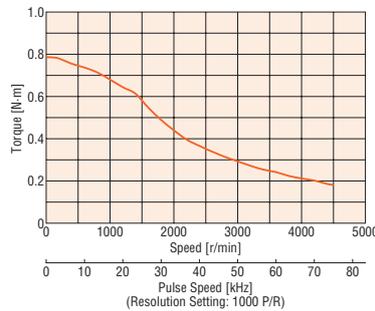
*The value inside the () represents the value when an electromagnetic brake motor is connected.

Speed – Torque Characteristics (Reference values)

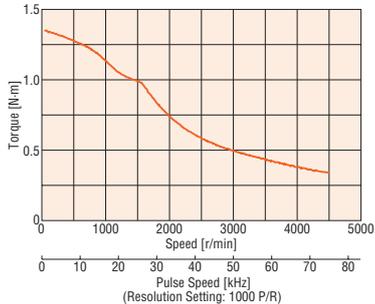
AZM46



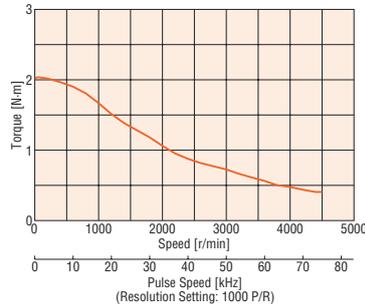
AZM48



AZM66



AZM69



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the Absolute Sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

Explanation of Terminology in Specifications Table

Maximum Holding Torque	:This is the max. holding torque (holding force) the motor has when power is supplied (at rated current) but the motor is not rotating. (With geared types, the value of holding torque considers the permissible strength of the gear.)
Permissible Torque	:This is the maximum value of the torque continuously applied to the output gear shaft.
Maximum Instantaneous Torque	:This is the max. torque that can be applied to the output gear shaft during acceleration/deceleration such when an inertial load is started and stopped.
Holding Torque at Motor Standstill	While Power is ON :Holding torque when the automatic current cutback function is active is shown. Electromagnetic Brake :Static friction torque when the electromagnetic brake is activated at standstill is shown. (Electromagnetic brake is power off activated type.)

TS Geared Type Frame Size 42 mm

Specifications



Motor Product Name	Single Shaft	AZM46ACH-TS3.6	AZM46ACH-TS7.2	AZM46ACH-TS10	AZM46ACH-TS20	AZM46ACH-TS30	
Motor Product Name	With Electromagnetic Brake	AZM46MCH-TS3.6	AZM46MCH-TS7.2	AZM46MCH-TS10	AZM46MCH-TS20	AZM46MCH-TS30	
Driver Product Name	AZD-A, AZD-C						
Max. Holding Torque	Nm	0.65	1.2	1.7	2	2.3	
Rotor Inertia	J: kgm ²	55×10 ⁻⁷ (71×10 ⁻⁷)*1					
Gear Ratio		3.6	7.2	10	20	30	
Resolution	Resolution Setting: 1000 P/R *2	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	Nm	0.65	1.2	1.7	2	2.3	
Max. Instantaneous Torque	Nm	0.85	1.6	2	3		
Holding Torque at Motor Standstill	Power ON	Nm	0.54	1	1.5	1.9	2.2
	Electromagnetic Brake	Nm	0.54	1	1.5	1.9	2.2
Permissible Speed Range	r/min	0~833	0~416	0~300	0~150	0~100	
Backlash	arcmin	45 (0.75°)	25 (0.42°)		15 (0.25°)		
Power Supply Input	Check "Driver Specifications" on page 18 for the driver current when combined with a motor.						
Control Power Supply							

● Either **R** (Right), **U** (Up), or **L** (Left) indicating the cable outlet direction is specified where the box is located in the product name. For down, there is no character in the box .

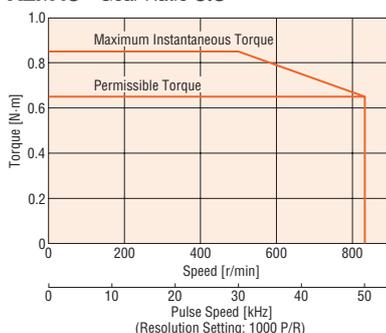
A letter indicating the driver type is specified where the box is located in the product name. Check "List of Combinations" on page 9 for driver product names.

*1 The value inside the () represents the value when connecting an electromagnetic brake motor.

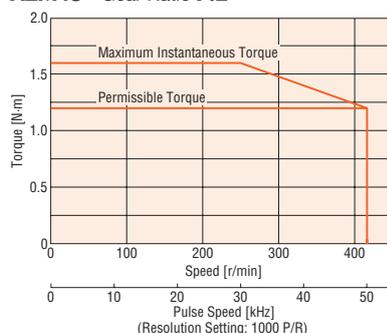
*2 For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

Speed – Torque Characteristics (Reference values)

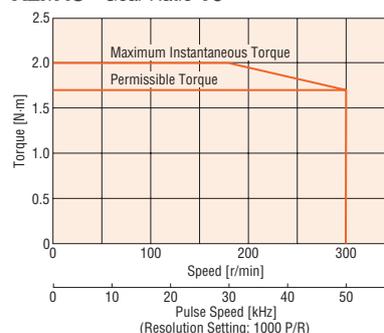
AZM46 Gear Ratio 3.6



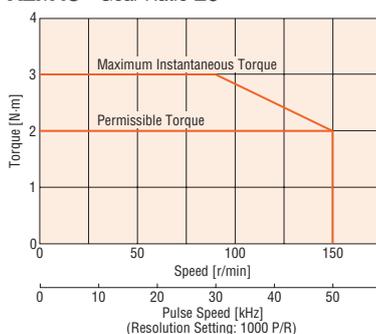
AZM46 Gear Ratio 7.2



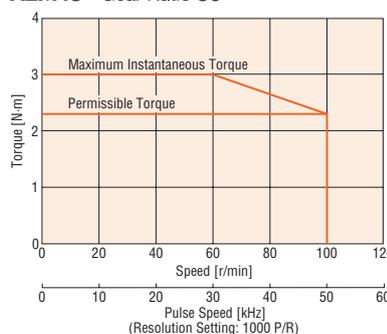
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20



AZM46 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)
- For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

System Configuration

Product Line

Specifications and Characteristics

Dimensions

System Configuration

Product Line

Specifications and Characteristics

Dimensions

Cable

TS Geared Type Frame Size 60 mm

Specifications



Motor Product Name	Single Shaft	AZM66ACH-TS3.6	AZM66ACH-TS7.2	AZM66ACH-TS10	AZM66ACH-TS20	AZM66ACH-TS30
Motor Product Name	With Electromagnetic Brake	AZM66MCH-TS3.6	AZM66MCH-TS7.2	AZM66MCH-TS10	AZM66MCH-TS20	AZM66MCH-TS30
Driver Product Name	AZD-A, AZD-C					
Max. Holding Torque	Nm	1.8	3	4	5	6
Rotor Inertia	J: kgm ²	370×10 ⁻⁷ (530×10 ⁻⁷)* ¹				
Gear Ratio		3.6	7.2	10	20	30
Resolution	Resolution Setting: 1000 P/R * ²	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Permissible Torque	Nm	1.8	3	4	5	6
Max. Instantaneous Torque*	Nm	*	4.5	6	8	10
Holding Torque at Power ON	Nm	1.3	2.6	3.7	5	6
Holding Torque at Motor Standstill	Electromagnetic Brake Nm	1.3	2.6	3.7	5	6
Permissible Speed Range	r/min	0~833	0~416	0~300	0~150	0~100
Backlash	arcmin	35 (0.59°)	15 (0.25°)		10 (0.17°)	
Power Supply Input	Check "Driver Specifications" on page 18 for the driver current when combined with a motor.					
Control Power Supply						

● Either **R** (Right), **U** (Up), or **L** (Left) indicating the cable outlet direction is specified where the box is located in the product name. For down, there is no character in the box .

A letter indicating the driver type is specified where the box is located in the product name. Check "List of Combinations" on page 9 for driver product names.

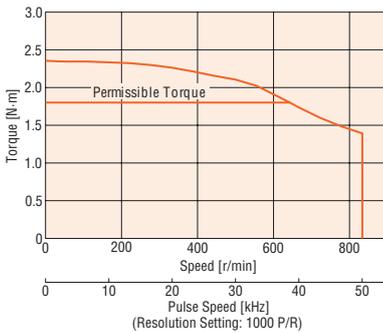
* For the geared motor output torque, refer to the speed-torque characteristics.

*¹ The value inside the () represents the value when connecting an electromagnetic brake motor.

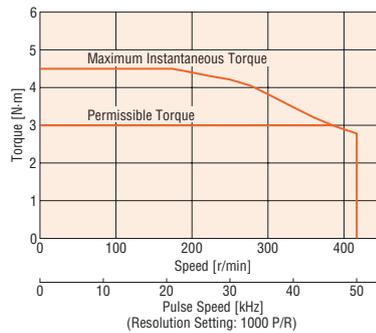
*² For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

Speed – Torque Characteristics (Reference values)

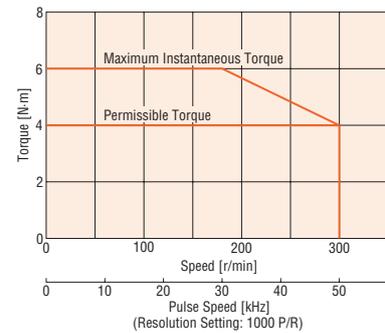
AZM66 Gear Ratio 3.6



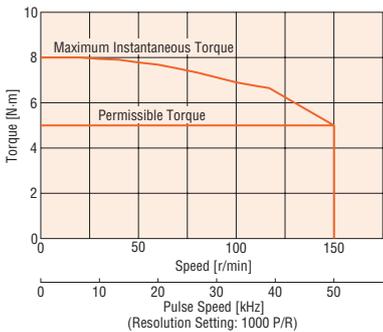
AZM66 Gear Ratio 7.2



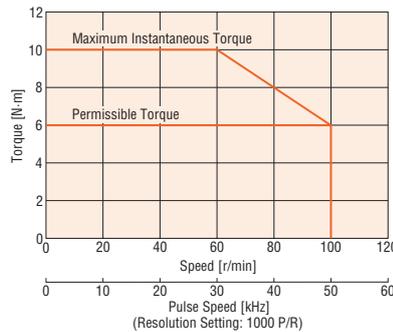
AZM66 Gear Ratio 10



AZM66 Gear Ratio 20



AZM66 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)
- For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

FC Geared Type Frame Size 42 mm

Specifications

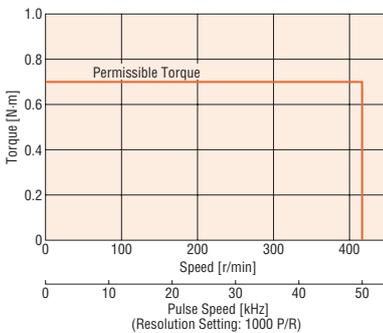


Motor Product Name	Single Shaft	AZM46ACH-FC7.2□A	AZM46ACH-FC10□A	AZM46ACH-FC20□A	AZM46ACH-FC30□A
Driver Product Name	With Electromagnetic Brake	AZM46MCH-FC7.2□A	AZM46MCH-FC10□A	AZM46MCH-FC20□A	AZM46MCH-FC30□A
Max. Holding Torque	Nm	0.7	1	2	3
Rotor Inertia	J: kgm ²	55×10 ⁻⁷ (71×10 ⁻⁷)*1			
Gear Ratio		7.2	10	20	30
Resolution	Resolution Setting: 1000 P/R *2	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Permissible Torque	Nm	0.7	1	2	3
Holding Torque at	Power ON	0.7	1	2	3
Motor Standstill	Electromagnetic Brake	0.7	1	2	3
Permissible Speed Range	r/min	0~416	0~300	0~150	0~100
Backlash	arcmin	25 (0.42°)		15 (0.25°)	
Power Supply Input		Check "Driver Specifications" on page 18 for the driver current when combined with a motor.			
Control Power Supply					

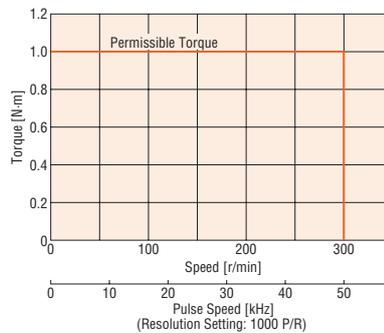
- Either **U** (Up) or **D** (Down) indicating the cable outlet direction is specified where the box □ is located in the product name.
- A letter indicating the driver type is specified where the box ■ is located in the product name. Check "List of Combinations" on page 9 for driver product names.
- *1 The value inside the () represents the value when connecting an electromagnetic brake motor.
- *2 For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

Speed – Torque Characteristics (Reference values)

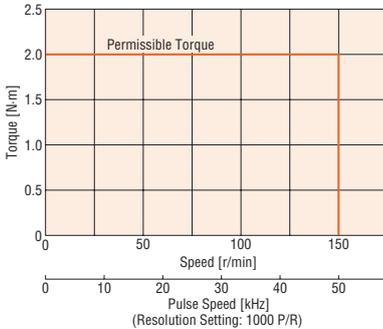
AZM46 Gear Ratio 7.2



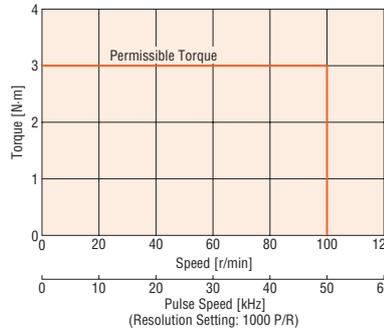
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20



AZM46 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)
- For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

System Configuration
Product Line
AC Input
Specifications and Characteristics
Dimensions
System Configuration
Product Line
DC Input
Specifications and Characteristics
Dimensions
Cable

FC Geared Type Frame Size 60 mm

Specifications



Motor Product Name	Single Shaft	AZM66ACH-FC7.2□A	AZM66ACH-FC10□A	AZM66ACH-FC20□A	AZM66ACH-FC30□A
Driver Product Name	With Electromagnetic Brake	AZM66MCH-FC7.2□A	AZM66MCH-FC10□A	AZM66MCH-FC20□A	AZM66MCH-FC30□A
Max. Holding Torque	Nm	2.5	3.5	7	10.5
Rotor Inertia	J: kgm ²	370×10 ⁻⁷ (530×10 ⁻⁷)*1			
Gear Ratio		7.2	10	20	30
Resolution	Resolution Setting: 1000 P/R *2	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Permissible Torque	Nm	2.5	3.5	7	10.5
Holding Torque at	Power ON	2.5	3.5	7	10.5
Motor Standstill	Electromagnetic Brake	2.5	3.5	7	10.5
Permissible Speed Range	r/min	0~416	0~300	0~150	0~100
Backlash	arcmin	15 (0.25°)		10 (0.17°)	
Power Supply Input		Check "Driver Specifications" on page 18 for the driver current when combined with a motor.			
Control Power Supply					

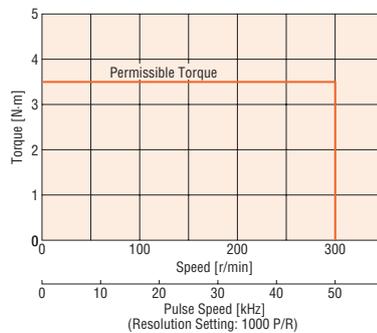
- Either **U** (Up) or **D** (Down) indicating the cable outlet direction is specified where the box □ is located in the product name.
- A letter indicating the driver type is specified where the box ■ is located in the product name. Check "List of Combinations" on page 9 for driver product names.
- *1 The value inside the () represents the value when connecting an electromagnetic brake motor.
- *2 For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

Speed – Torque Characteristics (Reference values)

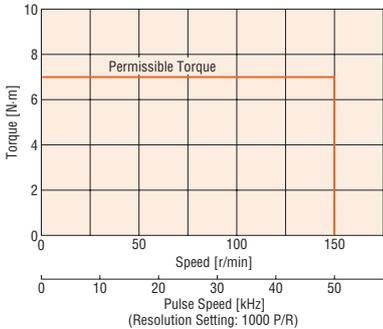
AZM66 Gear Ratio 7.2



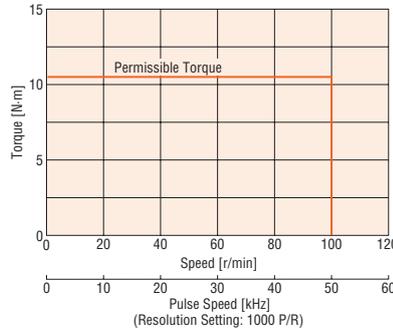
AZM66 Gear Ratio 10



AZM66 Gear Ratio 20



AZM66 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)
- For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

PS Geared Type Frame Size 42 mm

Specifications



Motor Product Name	Single Shaft	AZM46ACH-PS5	AZM46ACH-PS7.2	AZM46ACH-PS10	AZM46ACH-PS25	AZM46ACH-PS36	AZM46ACH-PS50
Motor Product Name	With Electromagnetic Brake	AZM46MCH-PS5	AZM46MCH-PS7.2	AZM46MCH-PS10	AZM46MCH-PS25	AZM46MCH-PS36	AZM46MCH-PS50
Driver Product Name		AZD-A□, AZD-C□					
Max. Holding Torque	Nm	1		1.5		2.5	3
Rotor Inertia	J: kgm ²	55×10 ⁻⁷ (71×10 ⁻⁷)*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Resolution Setting: 1000 P/R *2	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	Nm	1		1.5		2.5	3
Max. Instantaneous Torque	Nm	1.5		2		6	
Holding Torque at Power ON	Nm	0.75	1	1.5	2.5		3
Motor Standstill Electromagnetic Brake	Nm	0.75	1	1.5	2.5		3
Permissible Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin	15 (0.25°)					
Power Supply Input		Check "■ Driver Specifications" on page 18 for the driver current when combined with a motor.					
Control Power Supply							

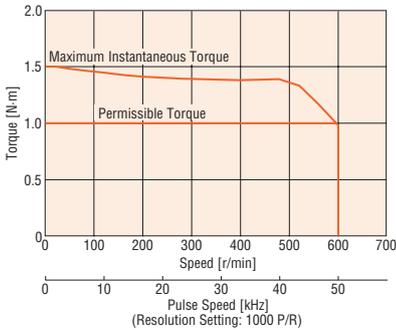
● A letter indicating the driver type is specified where the box □ is located in the product name. Check "■ List of Combinations" on page 9 for driver product names.

*1 The value inside the () represents the value when connecting an electromagnetic brake motor.

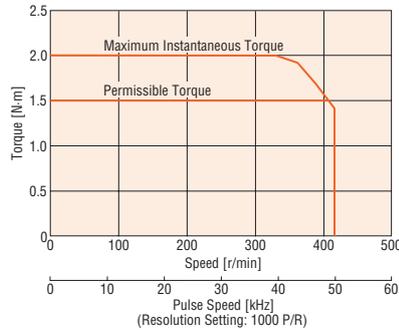
*2 For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

Speed – Torque Characteristics (Reference values)

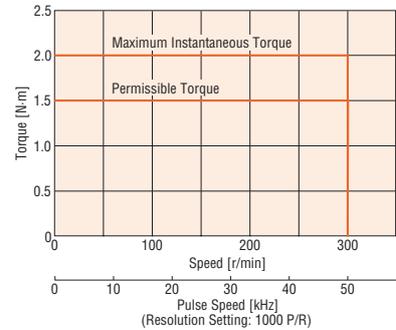
AZM46 Gear Ratio 5



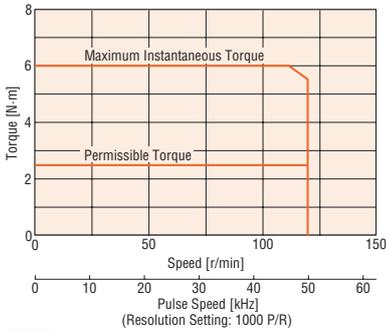
AZM46 Gear Ratio 7.2



AZM46 Gear Ratio 10



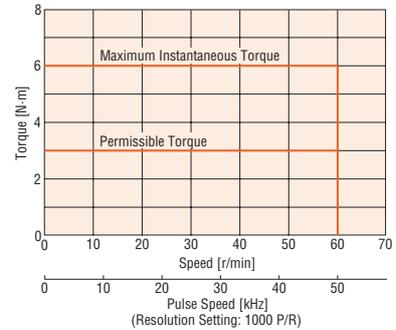
AZM46 Gear Ratio 25



AZM46 Gear Ratio 36



AZM46 Gear Ratio 50



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)
- For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

System Configuration

Product Line

Specifications and Characteristics

Dimensions

System Configuration

Product Line

Specifications and Characteristics

Dimensions

Cable

PS Geared Type Frame Size 60 mm

Specifications



Motor Product Name	Single Shaft	AZM66ACH-PS5	AZM66ACH-PS7.2	AZM66ACH-PS10	AZM66ACH-PS25	AZM66ACH-PS36	AZM66ACH-PS50
Motor Product Name	With Electromagnetic Brake	AZM66MCH-PS5	AZM66MCH-PS7.2	AZM66MCH-PS10	AZM66MCH-PS25	AZM66MCH-PS36	AZM66MCH-PS50
Driver Product Name		AZD-A, AZD-C					
Max. Holding Torque	Nm	3.5	4	5	8		
Rotor Inertia	J: kgm ²	370×10 ⁻⁷ (530×10 ⁻⁷)*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Resolution Setting: 1000 P/R *2	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	Nm	3.5	4	5	8		
Max. Instantaneous Torque*	Nm	*	*	11	16	20	
Holding Torque at Power ON	Nm	3	4	5	8		
Holding Torque at Motor Standstill	Electromagnetic Brake Nm	3	4	5	8		
Permissible Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin	7 (0.12°)			9 (0.15°)		
Power Supply Input		Check "Driver Specifications" on page 18 for the driver current when combined with a motor.					
Control Power Supply							

● A letter indicating the driver type is specified where the box is located in the product name. Check "List of Combinations" on page 9 for driver product names.

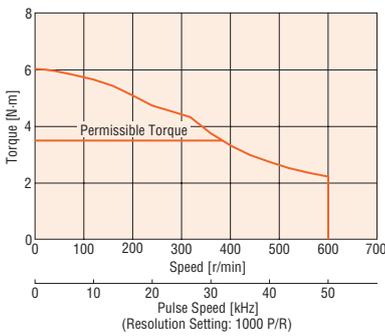
* For the geared motor output torque, refer to the speed-torque characteristics.

*1 The value inside the () represents the value when connecting an electromagnetic brake motor.

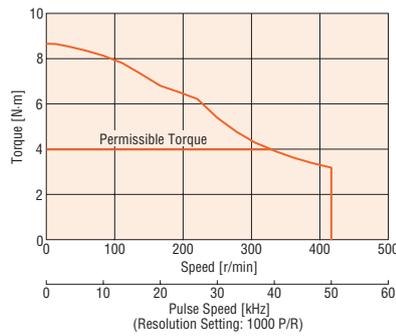
*2 For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

Speed – Torque Characteristics (Reference values)

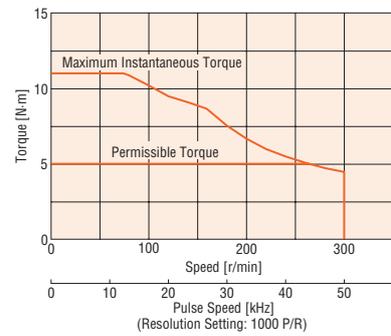
AZM66 Gear Ratio 5



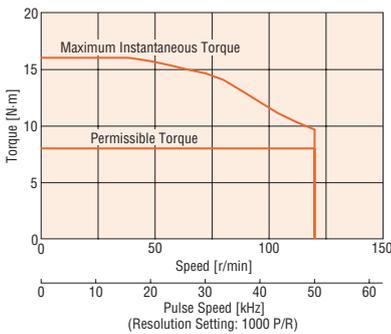
AZM66 Gear Ratio 7.2



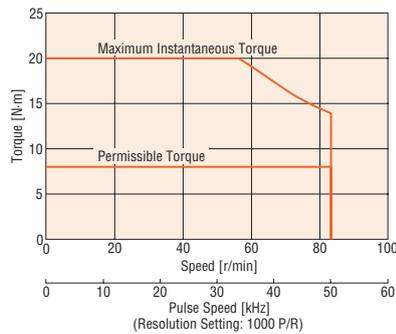
AZM66 Gear Ratio 10



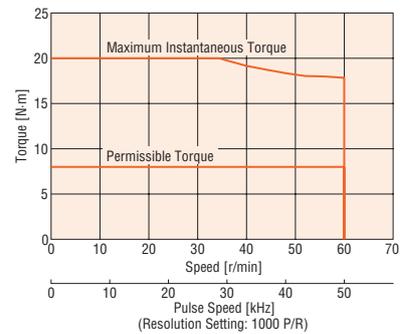
AZM66 Gear Ratio 25



AZM66 Gear Ratio 36



AZM66 Gear Ratio 50



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)
- For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

PLE Geared Type

Specifications

Type	PLE40 ⁽¹⁾				PLE60 ⁽¹⁾				PLE80 ⁽¹⁾			
	1		2		1		2		1		2	
Stage	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] ^{(2),(3)}	14	5	20	18	40	15	44	40	110	38	120	110
Max. output torque [Nm] ^{(2),(3),(4)}	22	8	32	29	64	24	70	64	176	61	192	176
Emergency stop torque [Nm] ⁽⁵⁾	36	27	40	36	80	80	88	80	220	200	240	220
Max. input speed [r/min] ⁽⁶⁾	18000				13000				7000			
Running noise [dB (A)] ⁽⁷⁾	58				58				60			
Permitted radial load for 30000h (Fa=0) [N] ^{(2),(8)}	160				340				650			
Permitted axial load for 30000h (Fr=0) [N] ^{(2),(9)}	160				450				900			
Permitted radial load for 20000h (Fa=0) [N] ^{(2),(8)}	200				400				750			
Permitted axial load for 20000h (Fr=0) [N] ^{(2),(9)}	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.

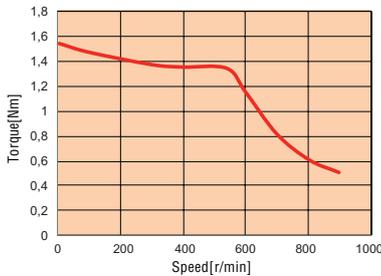
(9) With respect to center of output shaft.

Speed – Torque Characteristics

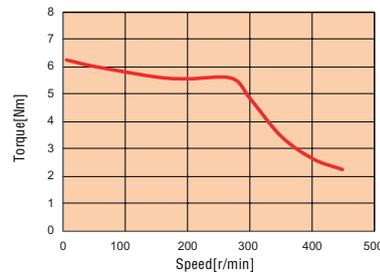
Single-Phase 200-240VAC

◇ AZM46ACH-PLE40 / AZM46MCH-PLE40 (Reference value)*

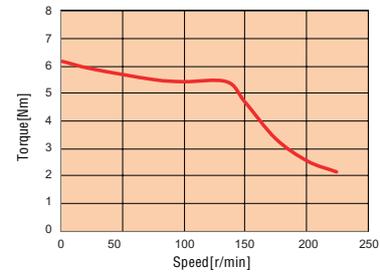
AZM46 Gear Ratio 5



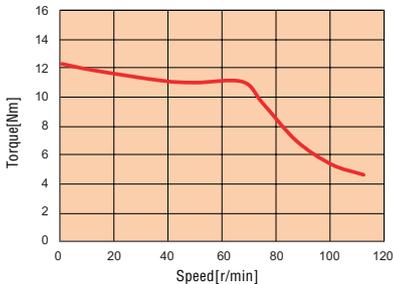
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20

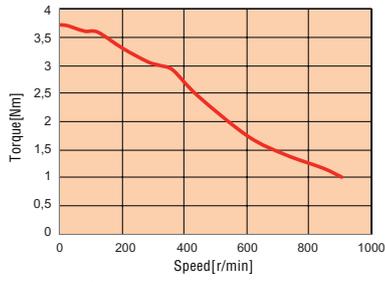


AZM46 Gear Ratio 40

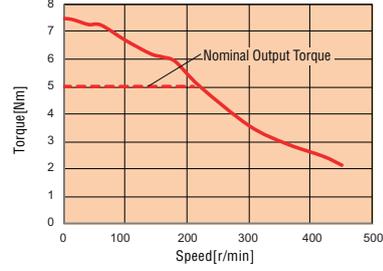


◇ **AZM48ACH-PLE40 (Reference value)***

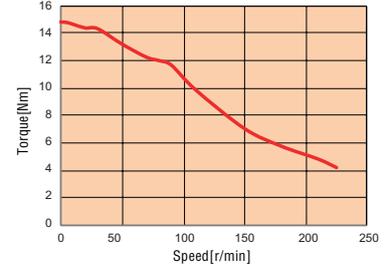
AZM48 Gear Ratio 5



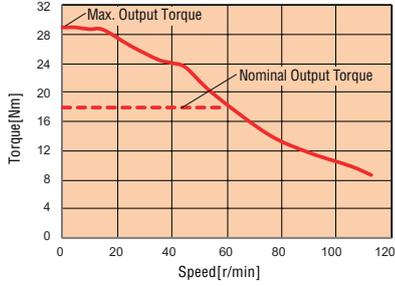
AZM48 Gear Ratio 10



AZM48 Gear Ratio 20

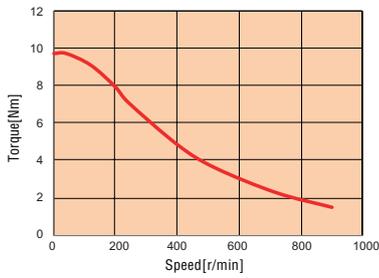


AZM48 Gear Ratio 40

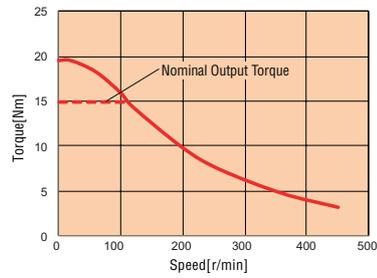


◇ **AZM69ACH-PLE60 / AZM69MCH-PLE60 (Reference value)***

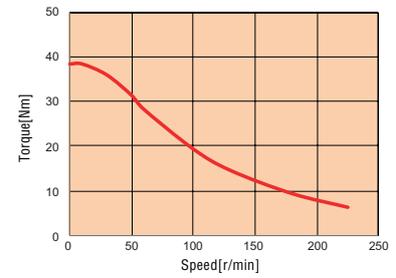
AZM69 Gear Ratio 5



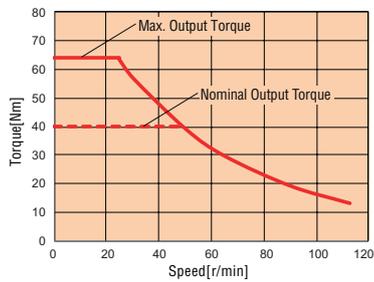
AZM69 Gear Ratio 10



AZM69 Gear Ratio 20



AZM69 Gear Ratio 40



Harmonic Geared Type Frame Size 42 mm, 60 mm

Specifications



Motor Product Name	Single Shaft	AZM46ACH-HS50	AZM46ACH-HS100	AZM66ACH-HS50	AZM66ACH-HS100
Driver Product Name	With Electromagnetic Brake	AZM46MCH-HS50	AZM46MCH-HS100	AZM66MCH-HS50	AZM66MCH-HS100
Max. Holding Torque	Nm	3.5	5	7	10
Rotor Inertia	J: kgm ²	72×10 ⁻⁷ (88×10 ⁻⁷)*1		405×10 ⁻⁷ (565×10 ⁻⁷)*1	
Gear Ratio		50	100	50	100
Resolution	Resolution Setting: 1000 P/R *2	0.0072°/Pulse	0.0036°/Pulse	0.0072°/Pulse	0.0036°/Pulse
Permissible Torque	Nm	3.5	5	7	10
Max. Instantaneous Torque*	Nm	8.3	11	23	36
Holding Torque at Power ON	Nm	3.5	5	7	10
Motor Standstill Electromagnetic Brake	Nm	3.5	5	7	10
Permissible Speed Range	r/min	0~70	0~35	0~70	0~35
Lost Motion (Load torque)	arcmin	1.5 max. (±0.16 Nm)	1.5 max. (±0.20 Nm)	0.7 max. (±0.28 Nm)	0.7 max. (±0.39 Nm)
Power Supply Input	Check "Driver Specifications" on page 18 for the driver current when combined with a motor.				
Control Power Supply					

● A letter indicating the driver type is specified where the box is located in the product name. Check "List of Combinations" on page 9 for driver product names.

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

*1 The value inside the () represents the value when connecting an electromagnetic brake motor.

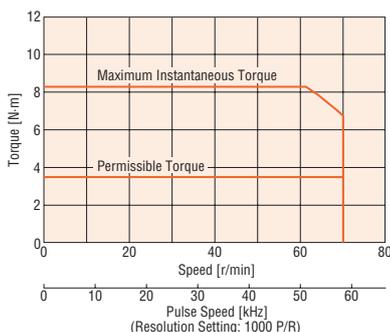
*2 For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

Note

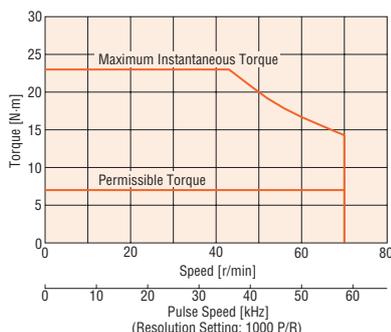
● The rotor inertia represents a sum of the inertia of the harmonic gear converted to motor shaft values.

Speed – Torque Characteristics (Reference values)

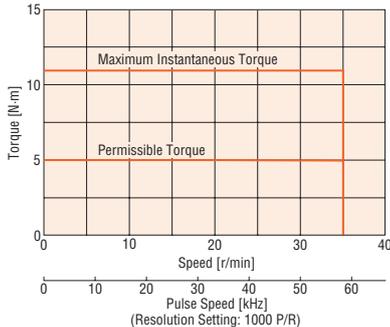
AZM46 Gear Ratio 50



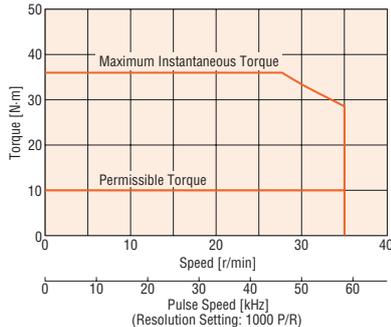
AZM66 Gear Ratio 50



AZM46 Gear Ratio 100



AZM66 Gear Ratio 100



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

● For SSCNETIII/H compatible drivers, the resolution is fixed at 10,000 P/R.

System Configuration

Product Line

Specifications and Characteristics

Dimensions

System Configuration

Product Line

Specifications and Characteristics

Dimensions

Cable

Driver Specifications

Driver Product Name		AZD-AED AZD-AEP AZD-APN AZD-AX AZD-A	AZD-CED AZD-CEP AZD-CPN AZD-CX AZD-C		
Main Power Supply	Input Voltage	Single-phase 100-120 VAC -15 - +6% 50/60 Hz	Single-phase 200-240 VAC -15 - +6% 50/60 Hz	Three-phase 200-240 VAC -15 - +6% 50/60 Hz	
	Input Current	AZM46	2.7 A	1.7 A	1.0 A
		AZM48	2.7 A	1.6 A	1.0 A
		AZM66	3.8 A	2.3 A	1.4 A
		AZM69	5.4 A	3.3 A	2.0 A
Control Power Supply	Input Voltage	24 VDC±5%			
	Input Current	0.25 A (0.5 A)*			
Interface	Pulse Input	<ul style="list-style-type: none"> · 2 Points, Photocoupler · Max. Input Pulse Frequency Line Driver: 1 MHz (at 50% duty) Open Collector: 250 kHz (at 50% duty) 			
	Control Input	6 Points, Photocoupler			
	Pulse Output	2 Points, Line Driver			
	Control Output	6 Points, Photocoupler and Open-Collector			
	Power Shut Down Signal Input	2 Points, Photocoupler			
	Power Shut Down Monitor Output	1 Points, Photocoupler and Open-Collector			

* The value inside the () represents the value when an electromagnetic brake motor is connected. **AZM46** is 0.33 A.

Driver Product Name		AZD-AM3 AZD-AS3	AZD-CM3 AZD-CS3		AZD-AD	AZD-CD		
Main Power Supply	Input Voltage	Single-phase 100-120 VAC -15 - +6% 50/60 Hz	Single-phase 200-240 VAC -15 - +6% 50/60 Hz	Three-phase 200-240 VAC -15 - +6% 50/60 Hz	Single-phase 100-120 VAC -15 - +6% 50/60 Hz	Single-phase 200-240 VAC -15 - +6% 50/60 Hz	Three-phase 200-240 VAC -15 - +6% 50/60 Hz	
	Input Current	AZM46	2.7 A	1.7 A	1.0 A	2.7 A	1.7 A	1.0 A
		AZM48	2.7 A	1.6 A	1.0 A	2.7 A	1.6 A	1.0 A
		AZM66	3.8 A	2.3 A	1.4 A	3.8 A	2.3 A	1.4 A
		AZM69	5.4 A	3.3 A	2.0 A	5.4 A	3.3 A	2.0 A
Control Power Supply	Input Voltage	24 VDC±5%						
	Input Current	0.25 A (0.5 A)*						
Interface	Control Input	4 Points, Photocoupler			10 Points, Photocoupler			
	Pulse Output	-			2 Points, Line Driver			
	Control Output	3 Points, Photocoupler and Open-Collector			6 Points, Photocoupler and Open-Collector			
	Power Shut Down Signal Input	2 Points, Photocoupler						
	Power Shut Down Monitor Output	1 Points, Photocoupler and Open-Collector						

* The value inside the () represents the value when an electromagnetic brake motor is connected. **AZM46** is 0.33 A.

General Specifications

	Motor	Driver	
		EtherCAT Driver Profile-Compatible EtherNet/IP-Compatible PROFINET-Compatible Built-in Positional Function Type Pulse Input Type with RS-485 Communication	MECHATROLINK- Compatible SSCNET /H-Compatible Pulse Input Type
Thermal Class	130 (B) [UL/CSA is certified as compliant with 105 (A)]	—	
Insulation Resistance	100 MΩ or more when a 500 VDC megger is applied between the following places: • Case–Motor Winding • Case–Electromagnetic Brake Winding*1	100 MΩ or more when a 500 VDC megger is applied between the following places: • Protective Earth Terminal–Main Power Supply Terminal • Encoder Connector–Main Power Supply Terminal • I/O Signal Terminal–Main Power Supply Terminal	
Dielectric Strength	Sufficient to withstand the following for 1 minute: • Between the case and motor windings: 1.5 kVAC, 50 Hz or 60 Hz • Between the case and electromagnetic brake windings*1: 1.5 kVAC, 50 Hz or 60 Hz	Sufficient to withstand the following for 1 minute: • Protective Earth Terminal–Main Power Supply Terminal 1.5 kVAC, 50 Hz or 60 Hz • Encoder Connector–Main Power Supply Terminal 1.8 kVAC, 50 Hz or 60 Hz • I/O Signal Terminal–Main Power Supply Terminal 1.8 kVAC, 50 Hz or 60 Hz	
Operating Environment (In operation)	Ambient Temperature	0 - +40°C (Non-Freezing)*2	
	Ambient Humidity	85% or less (Non-Condensing)	
	Altitude	Max. 1000 m above sea level	
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.	
Degree of Protection	IP66 when a connection cable has been attached (excludes installation surface and the connector on the driver side of the connection)	IP10	IP20
Stop Position Accuracy	AZM46, AZM48: ±4 minutes (±0.067°) AZM66, AZM69: ±3 minutes (±0.05°)		
Shaft Runout	0.05T.I.R. (mm)*4	—	
Concentricity of Installation Pilot to the Shaft	0.075T.I.R. (mm)*4	—	
Perpendicularity of Installation Surface to the Shaft	0.075T.I.R. (mm)*4	—	
Multiple Rotation Detection Range in Power OFF State	±900 Rotation (1800 Rotations)		

*1 Only for products with an electromagnetic brake

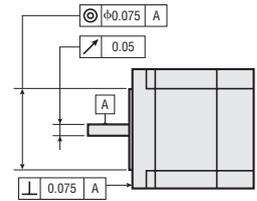
*2 Based on Oriental Motor's internal measurement conditions

*3 When a heat sink of a capacity at least equivalent to an aluminum plate with a size of 200×200 mm and 2 mm thickness

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

Note

- When measuring insulation resistance or performing dielectric voltage withstand test, disconnect the motor and driver.
Also, do not perform these tests on the ABZO Sensor (Absolute Sensor) part of the motor.



Electromagnetic Brake Specifications

Product Name	AZM46	AZM66	AZM69
Type	Power Off Activated Type		
Power Supply Voltage	24 VDC±5%		
Power Supply Current	A 0.08	0.25	0.25
Time Rating	Continuous		

Rotation Direction

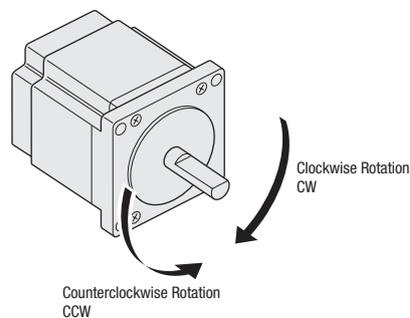
This indicates the rotation direction when viewed from the output shaft side of the motor.

The rotation direction of the output gear shaft relative to the standard type motor output shaft varies depending on the gear type and gear ratio.

Please check the following table.

Type	Gear Ratio	Rotation Direction when Viewed from the Output Shaft Side of the Motor
TS Geared Type	3.6, 7.2, 10	Same Direction
	20, 30	Opposite Direction
FC Geared Type	Total Gear Ratio	Same Direction
PS Geared Type	Total Gear Ratio	Opposite Direction

● Standard Type Motor



Permissible Radial Load and Permissible Axial Load

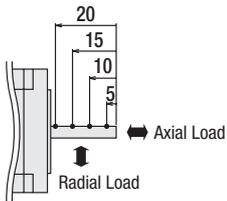
Unit: N

Type	Motor Frame Size	Product Name	Gear Ratio	Permissible Radial Load					Permissible Axial Load
				Distance from Shaft End [mm]					
				0	5	10	15	20	
Standard Type	42 mm	AZM46	-	35	44	58	85	-	15
		AZM48		30	35	44	58	85	
	60 mm	AZM66, AZM69		90	100	130	180	270	30
TS Geared Type	42 mm	AZM46	3.6, 7.2, 10	20	30	40	50	-	15
			20, 30	40	50	60	70	-	
	60 mm	AZM66	3.6, 7.2, 10	120	135	150	165	180	40
			20, 30	170	185	200	215	230	
FC Geared Type	42 mm	AZM46	7.2, 10, 20, 30	180	200	220	250	-	100
	60 mm	AZM66		270	290	310	330	350	200
PS Geared Type	42 mm	AZM46	5	70	80	95	120	-	100
			7.2	80	90	110	140	-	
			10	85	100	120	150	-	
			25	120	140	170	210	-	
			36	130	160	190	240	-	
			50	150	170	210	260	-	
	60 mm	AZM66	5	170	200	230	270	320	200
			7.2	200	220	260	310	370	
			10	220	250	290	350	410	
			25	300	340	400	470	560	
			36	340	380	450	530	630	
			50	380	430	500	600	700	
Harmonic Geared Type	42 mm	AZM46	50, 100	180	220	270	360	510	220
	60 mm	AZM66		320	370	440	550	720	450

- The product names are listed such that the product names are distinguishable.
- The **PS** geared type has a full lifespan of 20,000 hours when either the permissible radial load or the permissible axial load is applied. For the life of gearhead, please contact the nearest Oriental Motor sales office, or visit the Oriental Motor website.
- For **PLe** gear type, please refer to page 17.

Radial Load and Axial Load

Distance from Shaft End [mm]



Permissible Moment Load

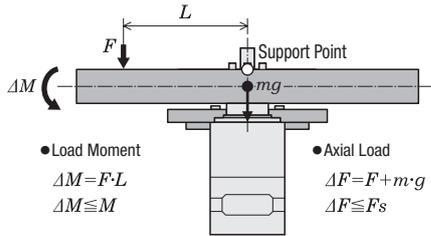
If an eccentric load is applied to the output flange-installation surface, load moment acts on the bearing. Confirm before use that the axial load and load moment are within specification with the following formulas.

Harmonic Geared Type

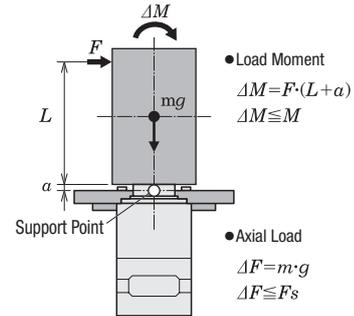
Motor Frame Size	Permissible Axial Load [N]	Permissible Moment Load [Nm]	Constant α [m]
42 mm	220	5.6	0.009
60 mm	450	11.6	0.0114

The permissible moment load can be calculated with the following formula.

Example 1: External force F (N) applied to the overhung position L [m] in a horizontal direction from the center of the output flange

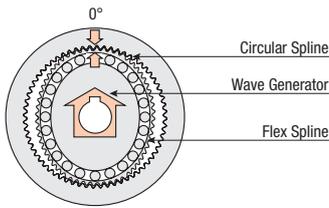


Example 2: External force F (N) applied to the overhung position L [m] in a vertical direction from the installation surface of the output flange



Harmonic Geared Type Accuracy

Principle and Structure



Accuracy

Unlike the conventional spur gear gearhead, the harmonic gear has no backlash. The harmonic gear has many teeth in simultaneous meshing engagement, and is designed to average out the effects of tooth pitch error and cumulative pitch error on rotation accuracy to ensure high positioning accuracy. Also, harmonic gears have high gear ratio, so that the torsion when the load torque is applied to the output shaft is much smaller than a single motor and other geared motor, and the rigidity is high. High rigidity is less subject to load fluctuation and enables stable positioning. When the high positioning accuracy and rigidity are required, refer to the following characteristics.

Angular Transmission Accuracy

Angular transmission error is the difference between the theoretical rotation angle of the output shaft, as calculated from the input pulse count, and actual rotation angle. Represented as the difference between the min. value and max. value in the set of measurements taken for a single rotation of the output shaft, starting from an arbitrary position.

Product Name	Angular Transmission Accuracy [arcmin]
AZM46-HS □	1.5 (0.025°)
AZM66-HS □	

● Values under no load conditions (gear reference values)

Torque – Torsion Characteristics

In actual applications, there is always frictional load, and displacement is produced as a result of this frictional load. If the frictional load is constant, the displacement will be constant for unidirectional operation. However, in bidirectional operation, double the displacement is produced over a round trip. This displacement can be estimated from the following torque – torsion characteristics.

This displacement occurs when an external force is applied as the gear is stopped, or when the gear is driven under a frictional load. The slope can be approximated with the spring constant in the following 3 classes, depending on the size of the load torque, and can be estimated through calculation.

1. Load torque T_L is T_1 max.

$$\theta = \frac{T_L}{K_1} \text{ [min]}$$

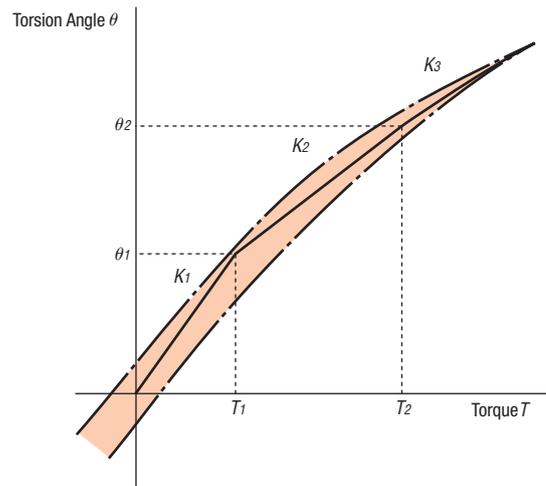
2. Load torque T_L exceeds T_1 but is less than T_2

$$\theta = \theta_1 + \frac{T_L - T_1}{K_2} \text{ [min]}$$

3. Load torque T_L exceeds T_2

$$\theta = \theta_2 + \frac{T_L - T_2}{K_3} \text{ [min]}$$

The torsion angle of the harmonic gear alone is calculated according to the size of the load torque.



Torsion Angle – Torque Characteristics

Values for Determining Torsion Angle

Product Name	Gear Ratio	T1 Nm	K1 Nm/min	θ_1 min	T2 Nm	K2 Nm/min	θ_2 min	K3 Nm/min
AZM46-HS50	50	0.8	0.64	1.25	2	0.87	2.6	0.93
AZM46-HS100	100	0.8	0.79	1.02	2	0.99	2.2	1.28
AZM66-HS50	50	2	0.99	2	6.9	1.37	5.6	1.66
AZM66-HS100	100	2	1.37	1.46	6.9	1.77	4.2	2.1

Dimensions (Unit: mm)

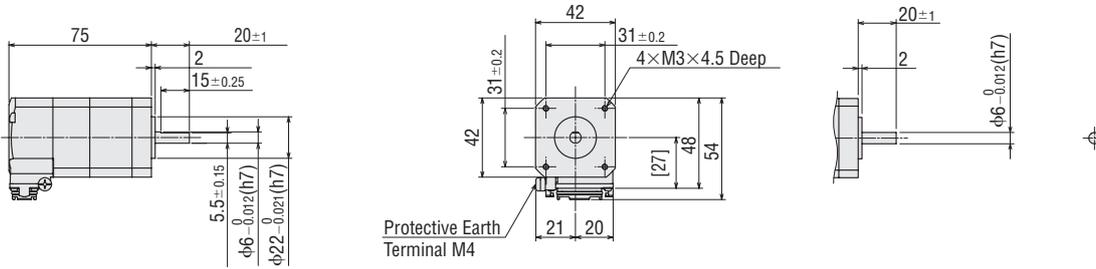
● Motor

◇ Standard Type

Frame Size 42 mm

Shaft Type	Product Name	Mass [kg]
Single Shaft Flat Type	AZM46ACH	0.4
Straight Type	AZM46A0CH	

Single Shaft Flat Type

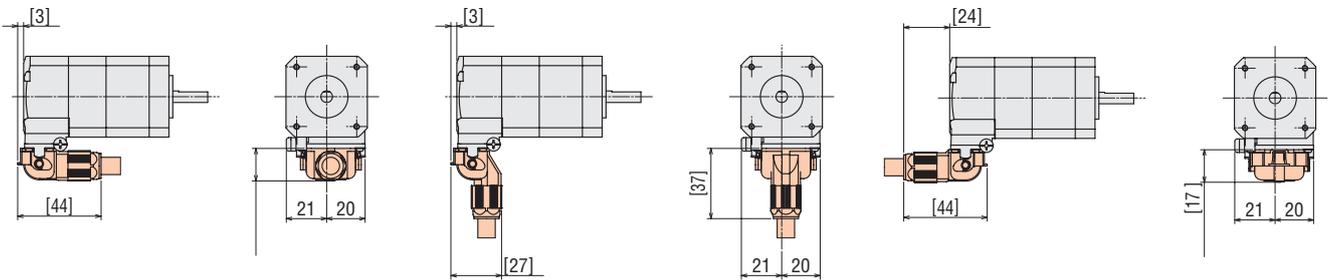


● With Connection Cable Attached

Cable Drawn in the Same Direction As the Output Shaft

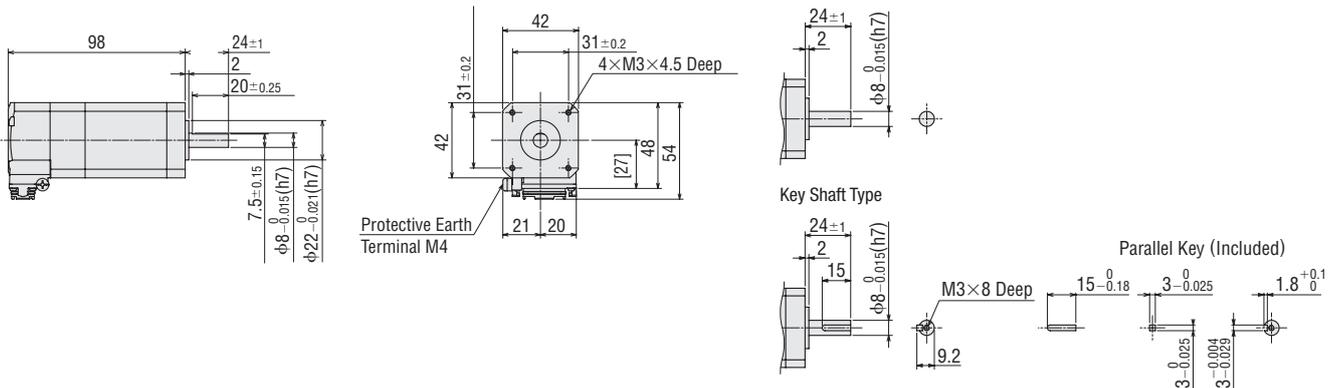
Cable Drawn Vertically

Cable Drawn in the Opposite Direction of the Output Shaft



Shaft Type	Product Name	Mass [kg]
Single Shaft Flat Type	AZM48ACH	0.63
Straight Type	AZM48A0CH	
Key Shaft Type	AZM48A1CH	

Single Shaft Flat Type

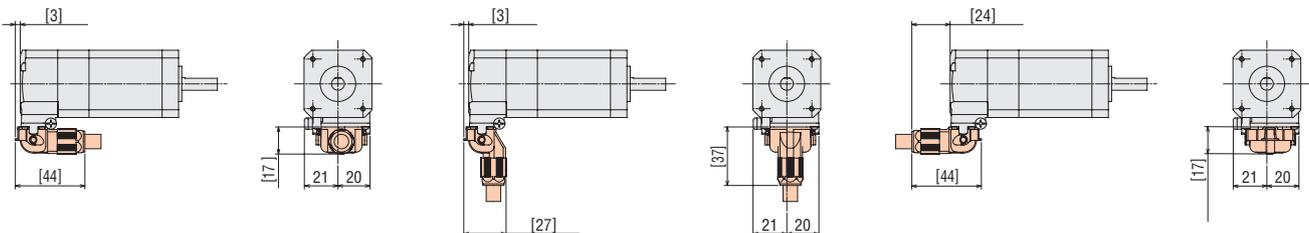


● With Connection Cable Attached

Cable Drawn in the Same Direction As the Output Shaft

Cable Drawn Vertically

Cable Drawn in the Opposite Direction of the Output Shaft



● The color in the dimensions indicates the connection cable that is sold separately.

System Configuration

Product Line

AC Input

Specifications and Characteristics

Dimensions

System Configuration

Product Line

DC Input

Specifications and Characteristics

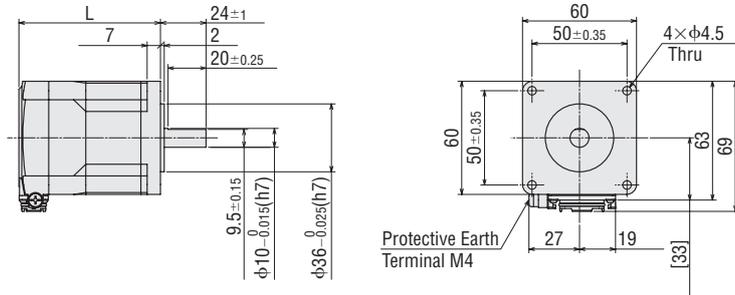
Dimensions

Cable

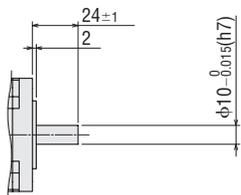
Frame Size 60 mm

Shaft Type	Product Name	L	Mass [kg]
Single Shaft Flat Type	AZM66ACH	74.5	0.84
Straight Type	AZM66A0CH		
Key Type	AZM66A1CH		
Single Shaft Flat Type	AZM69ACH	100	1.3
Straight Type	AZM69A0CH		
Key Type	AZM69A1CH		

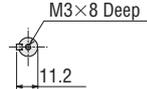
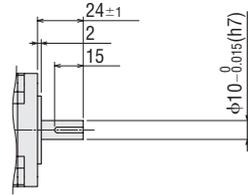
Single Shaft Flat Type



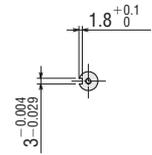
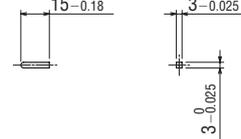
Straight Type



Key Type

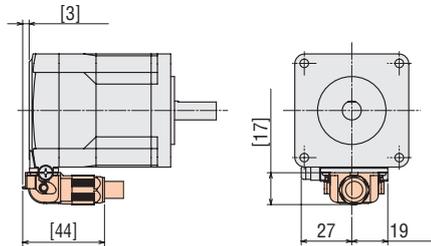


Parallel Key (Included)

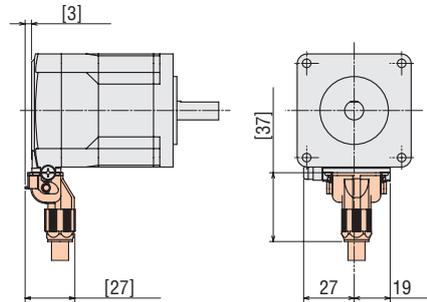


● With Connection Cable Attached

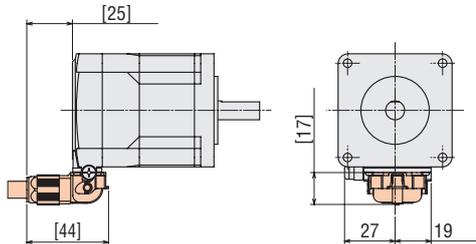
Cable Drawn in the Same Direction As the Output Shaft



Cable Drawn Vertically



Cable Drawn in the Opposite Direction of the Output Shaft

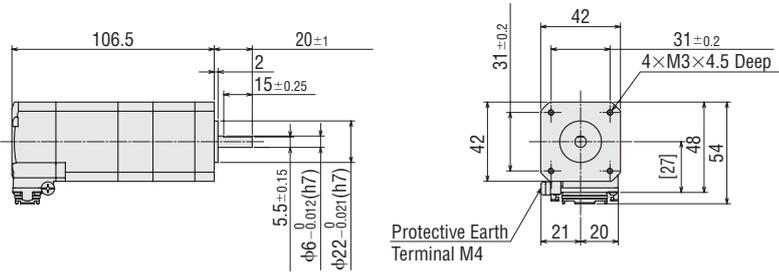


● The color in the dimensions indicates the connection cable that is sold separately.

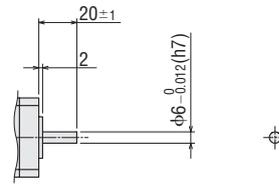
◇ Standard Type with Electromagnetic Brake
Frame Size 42 mm

Shaft Type	Product Name	Mass [kg]
Single Shaft Flat Type	AZM46MCH	0.54
Straight Type	AZM46MOCH	

Single Shaft Flat Type

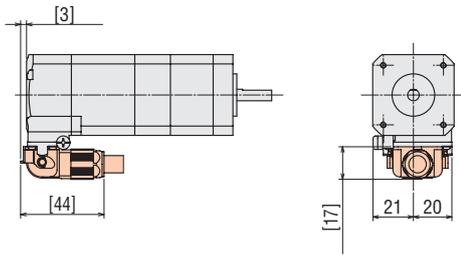


Straight Type

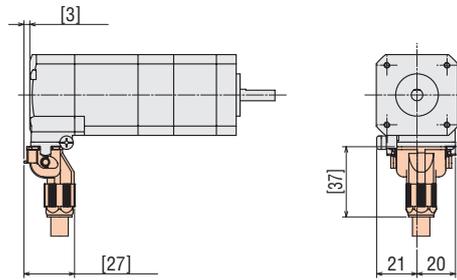


● With Connection Cable Attached

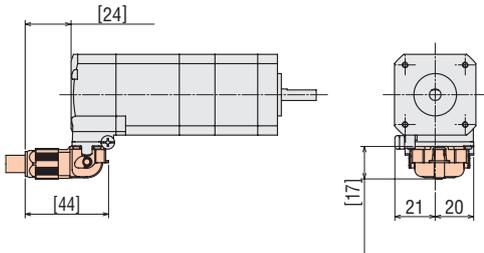
Cable Drawn in the Same Direction As the Output Shaft



Cable Drawn Vertically



Cable Drawn in the Opposite Direction of the Output Shaft



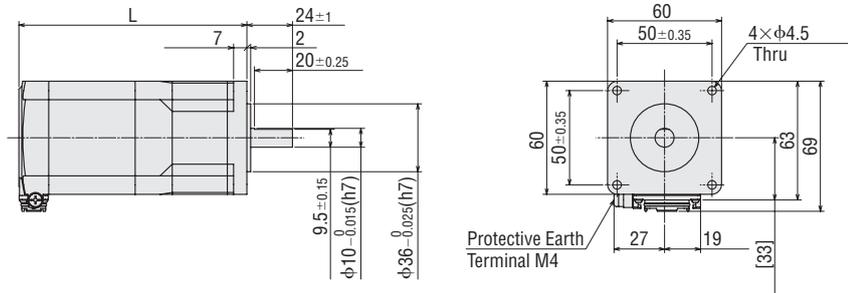
● The color in the dimensions indicates the connection cable that is sold separately.

System Configuration	AC Input	System Configuration
Product Line	Specifications and Characteristics	Product Line
Dimensions	Dimensions	Dimensions
System Configuration	DC Input	System Configuration
Product Line	Specifications and Characteristics	Product Line
Dimensions	Dimensions	Dimensions
Cable		Cable

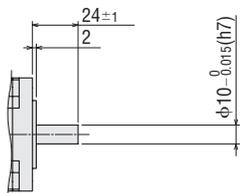
Frame Size 60 mm

Shaft Type	Product Name	L	Mass [kg]
Single Shaft Flat Type	AZM66MCH	120	1.2
Straight Type	AZM66M0CH		
Key Type	AZM66M1CH		
Single Shaft Flat Type	AZM69MCH	145.5	1.7
Straight Type	AZM69M0CH		
Key Type	AZM69M1CH		

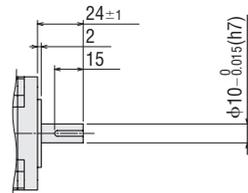
Single Shaft Flat Type



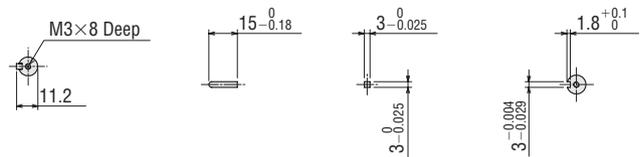
Straight Type



Key Type

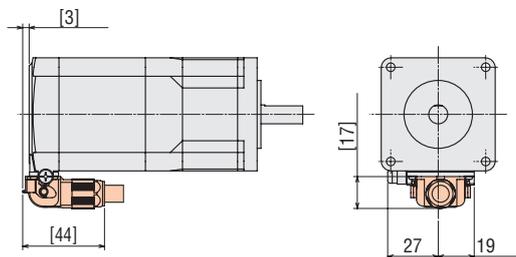


Parallel Key (Included)

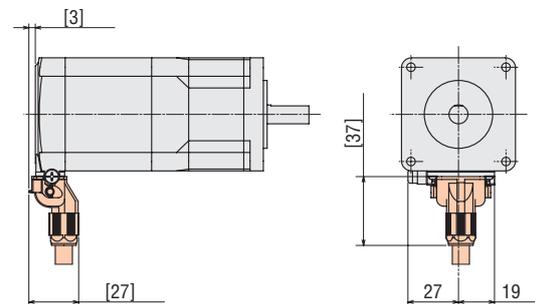


● With Connection Cable Attached

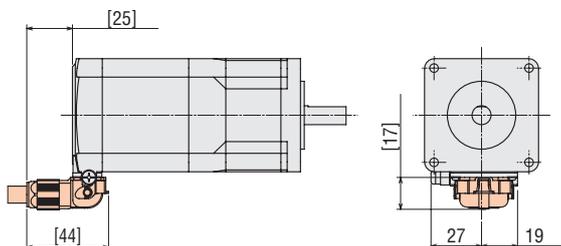
Cable Drawn in the Same Direction as the Output Shaft



Cable Drawn Vertically



Cable Drawn in the Opposite Direction of the Output Shaft

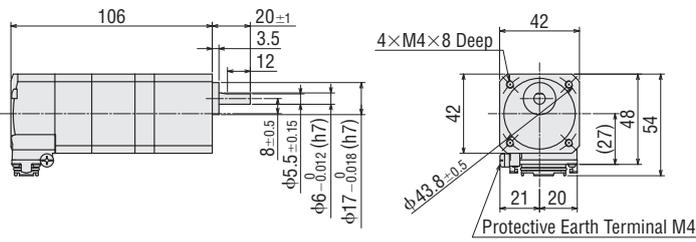


● The color in the dimensions indicates the connection cable that is sold separately.

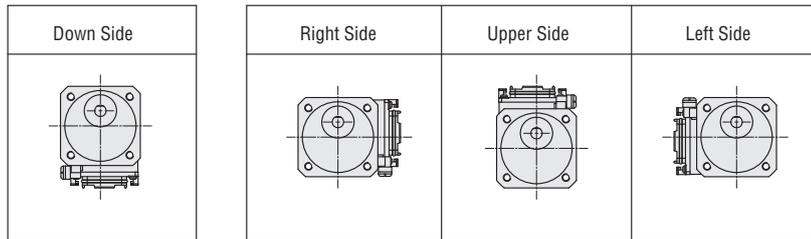
◇ **TS Geared Type**

Frame Size 42 mm

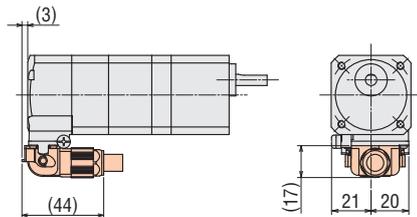
Connector Direction	Product Name	Gear Ratio	Mass [kg]
Down Side	AZM46ACH-TS 	3.6, 7.2, 10, 20, 30	0.55
Right Side	AZM46ACH-TS R		
Upper Side	AZM46ACH-TS U		
Left Side	AZM46ACH-TS L		



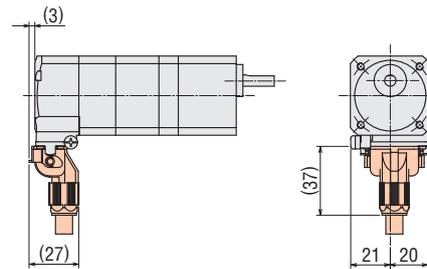
● **Connector Direction**



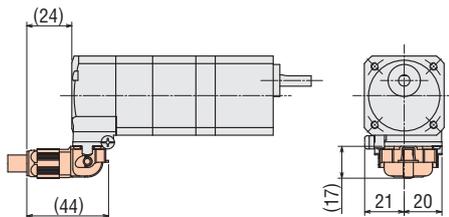
● **When the Connection Cable is Attached**
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

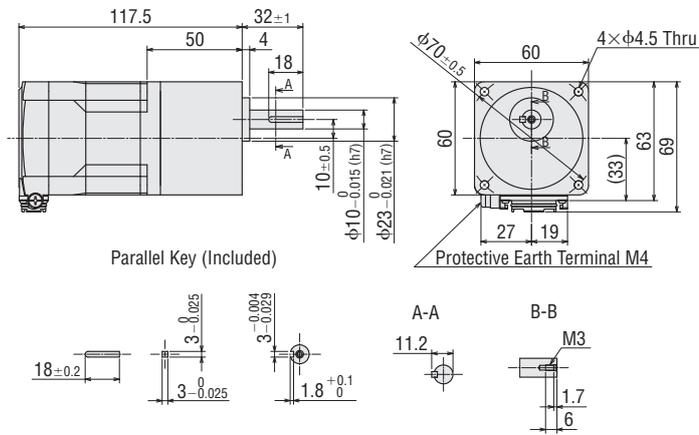


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

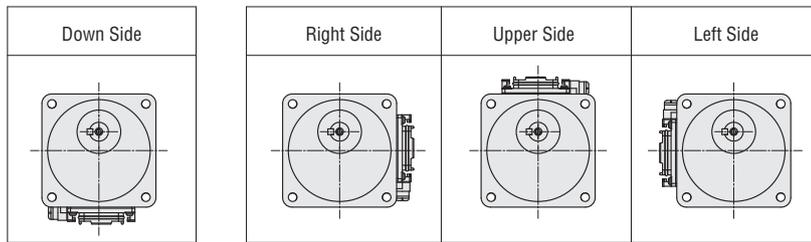
Frame Size 60 mm

Connector Direction	Product Name	Gear Ratio	Mass [kg]
Down Side	AZM66ACH-TS 	3.6, 7.2, 10, 20, 30	1.2
Right Side	AZM66ACH-TS R		
Upper Side	AZM66ACH-TS U		
Left Side	AZM66ACH-TS L		

● Mounting Screws: M4×60 P0.7 (4 pieces included)

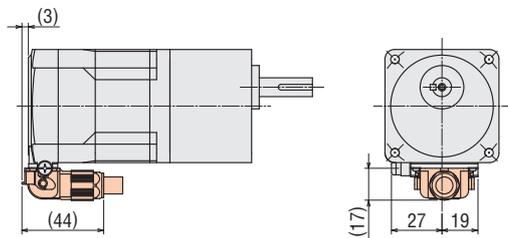


● Connector Direction

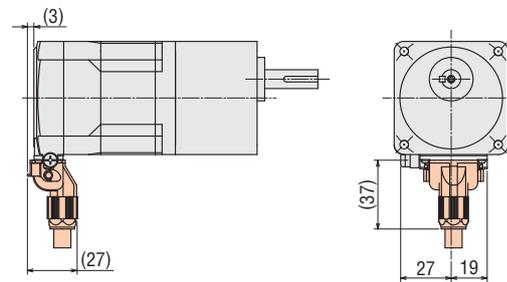


● When the Connection Cable is Attached

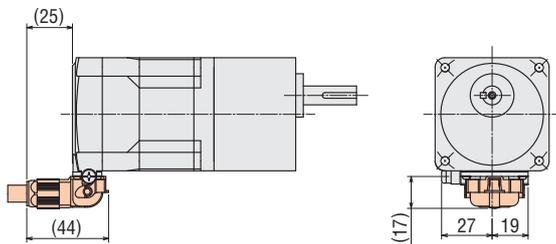
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

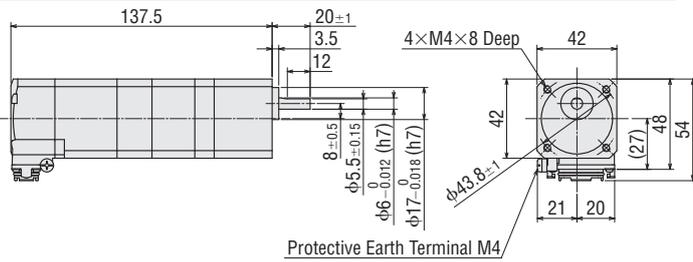


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

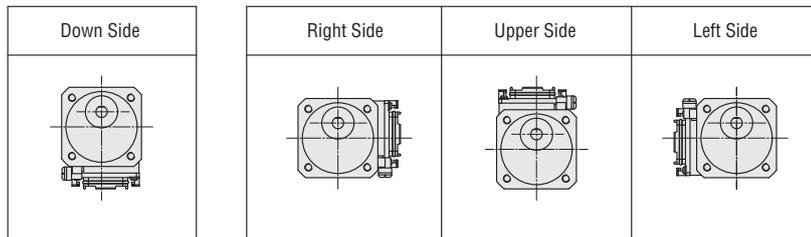
◇ **TS Geared Type with Electromagnetic Brake**

Frame Size 42 mm

Connector Direction	Product Name	Gear Ratio	Mass [kg]
Down Side	AZM46MCH-TS 	3.6, 7.2, 10, 20, 30	0.69
Right Side	AZM46MCH-TS R		
Upper Side	AZM46MCH-TS U		
Left Side	AZM46MCH-TS L		

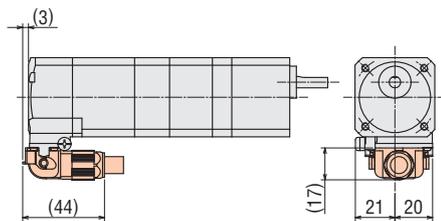


● Connector Direction

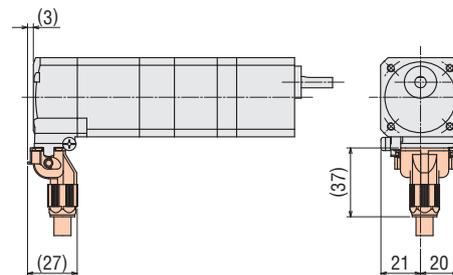


● When the Connection Cable is Attached

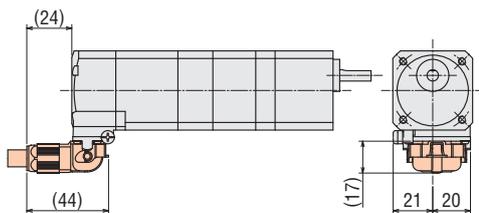
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

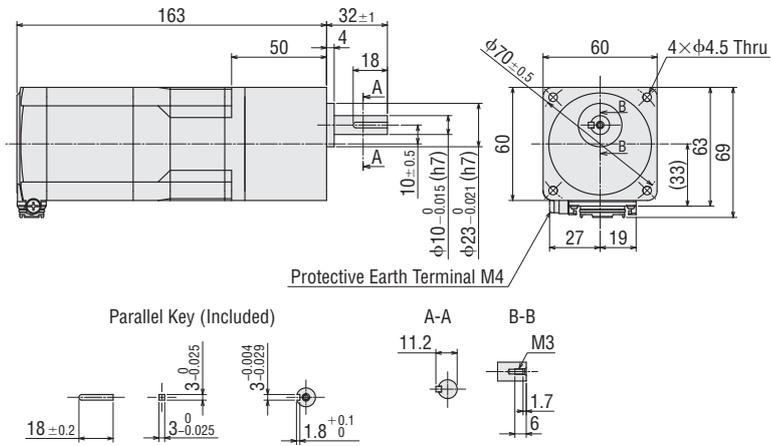


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

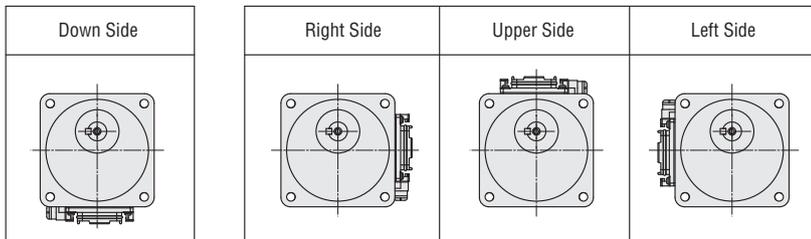
Frame Size 60 mm

Connector Direction	Product Name	Gear Ratio	Mass [kg]
Down Side	AZM66MCH-TS 	3.6, 7.2, 10, 20, 30	1.6
Right Side	AZM66MCH-TS R		
Upper Side	AZM66MCH-TS U		
Left Side	AZM66MCH-TS L		

● Mounting Screws: M4×60 P0.7 (4 pieces included)

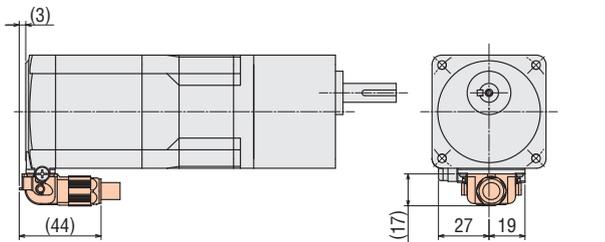


● Connector Direction

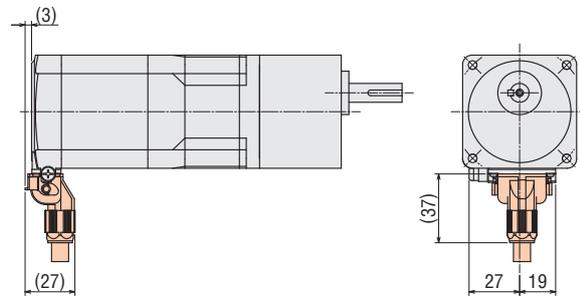


● When the Connection Cable is Attached

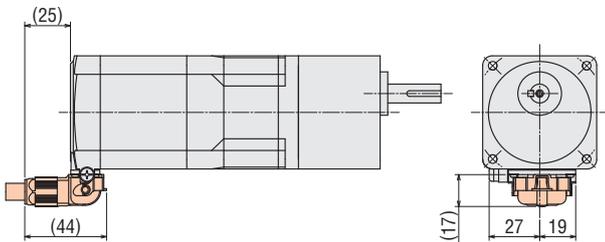
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

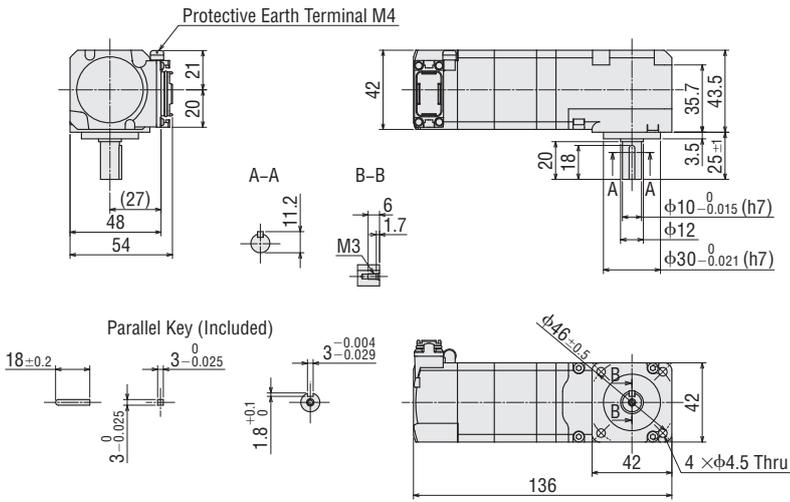


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

◇FC Geared Type

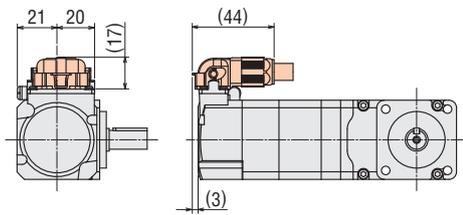
Frame Size 42 mm Connector Direction Upper Side

Product Name	Gear Ratio	Mass [kg]
AZM46ACH-FC ■ UA	7.2, 10, 20, 30	0.75

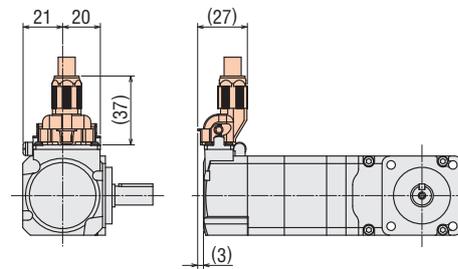


● When the Connection Cable is Attached

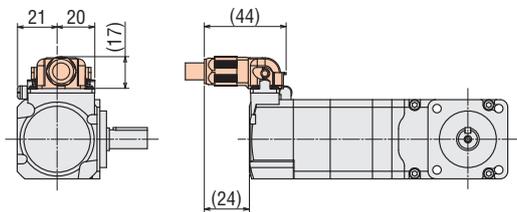
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



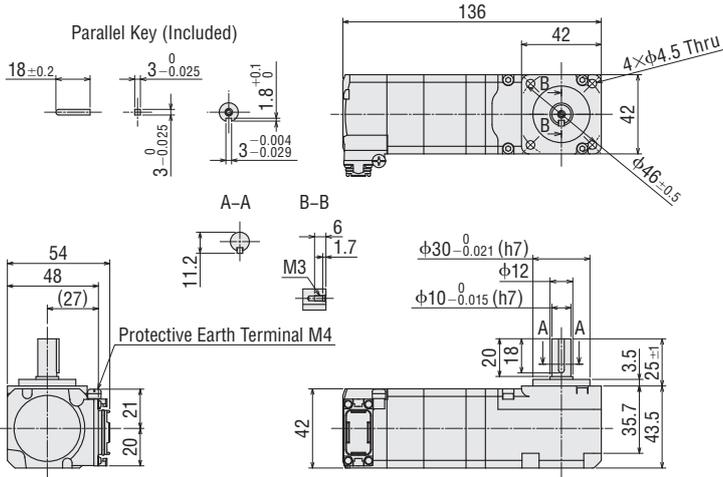
Cable Outlet Opposite to Output Shaft Direction



● A number indicating the gear ratio is entered where the box ■ is located within the product name.
 ● The shaded areas are the separately sold connection cables.

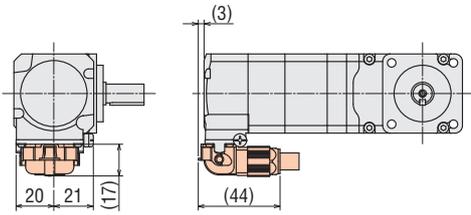
Frame Size 42 mm Connector Direction Down Side

Product Name	Gear Ratio	Mass [kg]
AZM46ACH-FC DA	7.2, 10, 20, 30	0.75

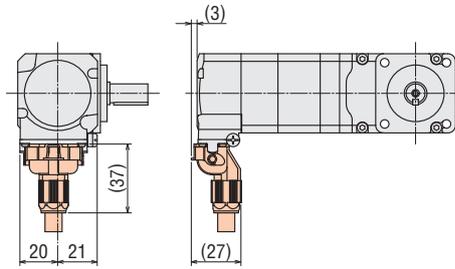


● When the Connection Cable is Attached

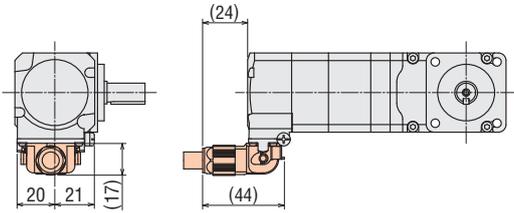
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



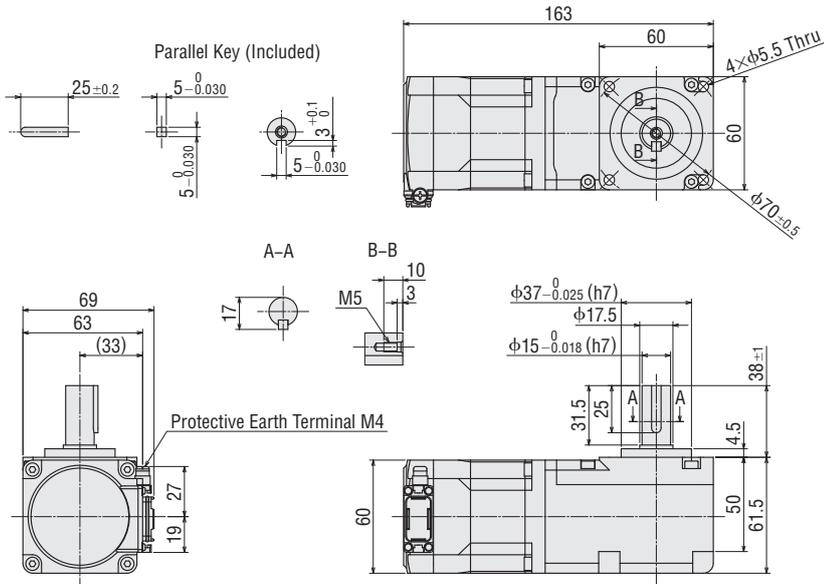
Cable Outlet Opposite to Output Shaft Direction



● A number indicating the gear ratio is entered where the box is located within the product name.
 ● The shaded areas are the separately sold connection cables.

Frame Size 60 mm Connector Direction Down Side

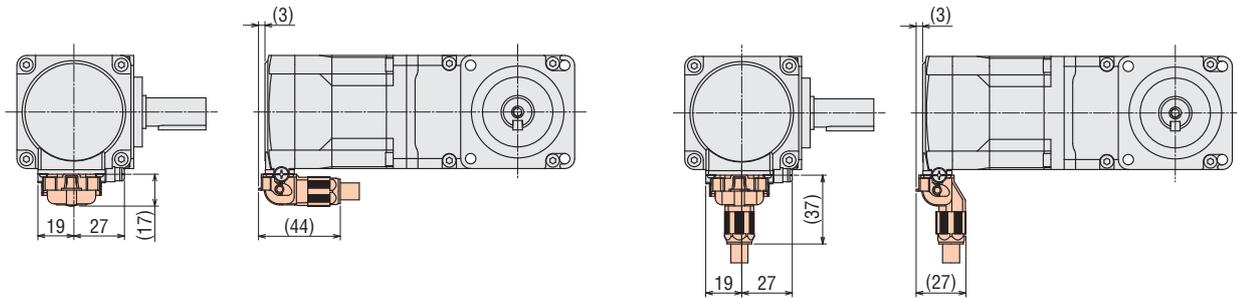
Product Name	Gear Ratio	Mass [kg]
AZM66ACH-FC■DA	7.2, 10, 20, 30	1.7



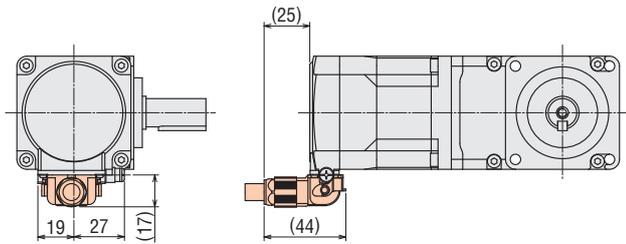
● When the Connection Cable is Attached

Cable Outlet in Output Shaft Direction

Cable Outlet in Vertical Direction



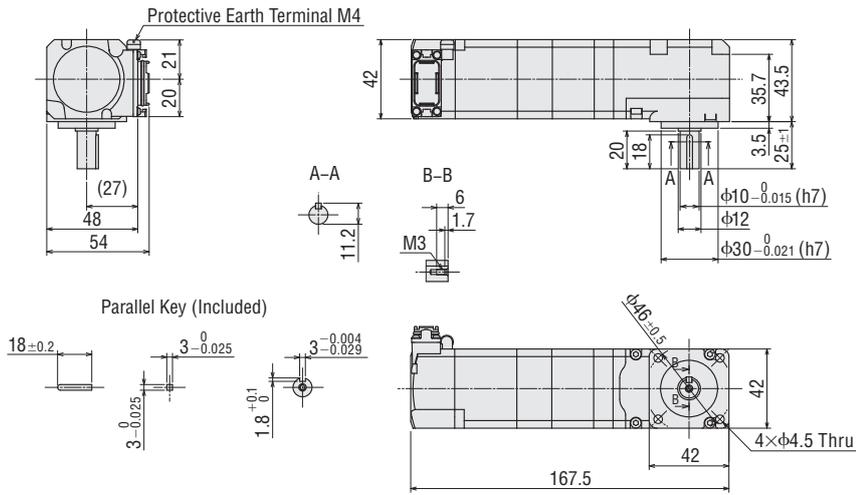
Cable Outlet Opposite to Output Shaft Direction



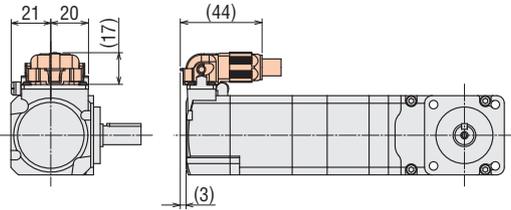
- A number indicating the gear ratio is entered where the box ■ is located within the product name.
- The shaded areas are the separately sold connection cables.

◇FC Geared Type with Electromagnetic Brake
 Frame Size 42 mm Connector Direction Upper Side

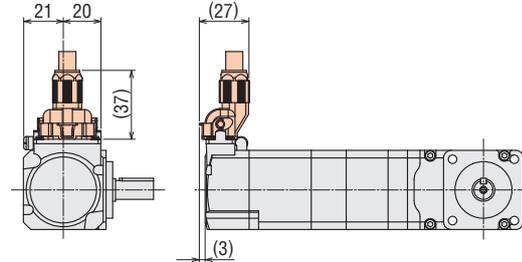
Product Name	Gear Ratio	Mass [kg]
AZM46MCH-FC ■ UA	7.2, 10, 20, 30	0.89



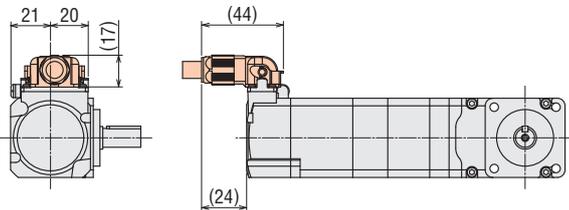
● When the Connection Cable is Attached
 Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



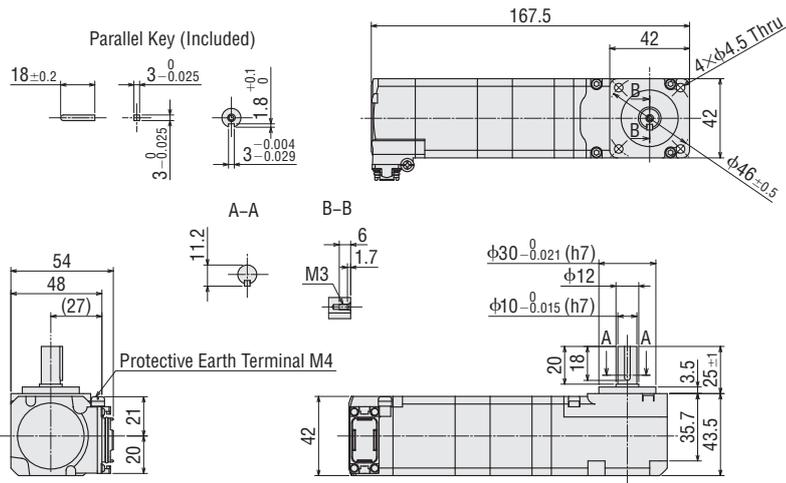
Cable Outlet Opposite to Output Shaft Direction



● A number indicating the gear ratio is entered where the box ■ is located within the product name.
 ● The shaded areas are the separately sold connection cables.

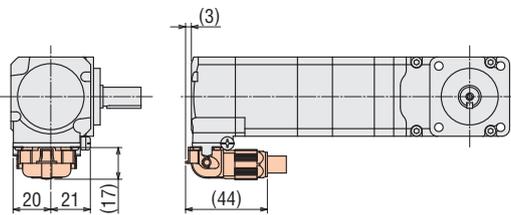
Frame Size 42 mm Connector Direction Down Side

Product Name	Gear Ratio	Mass [kg]
AZM46MCH-FC DA	7.2, 10, 20, 30	0.89

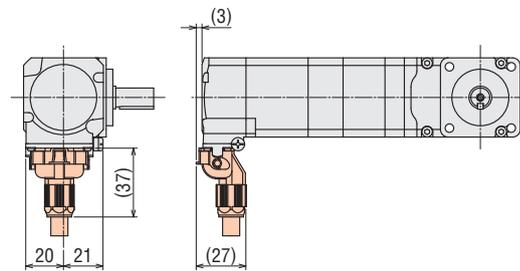


● When the Connection Cable is Attached

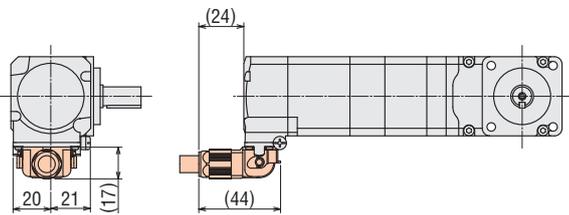
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



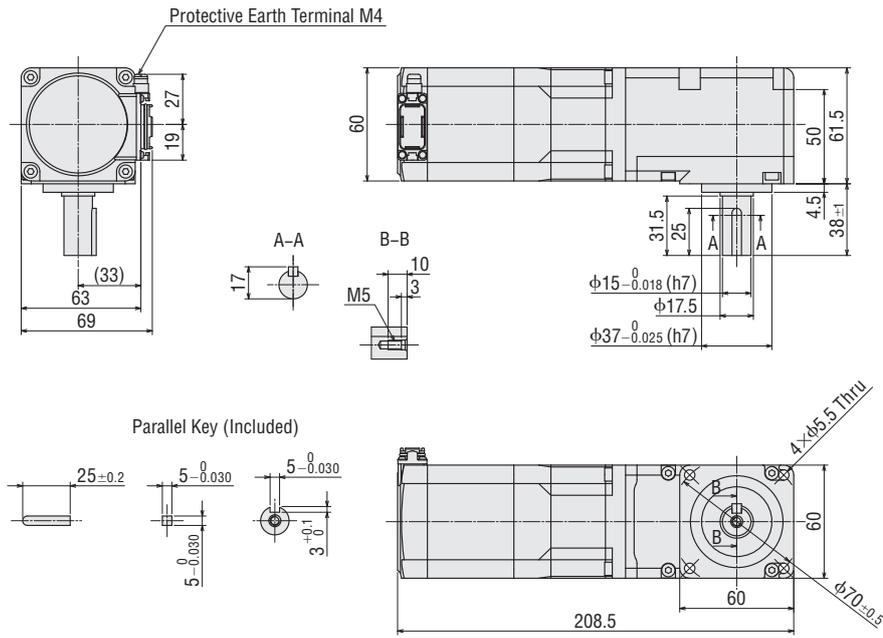
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

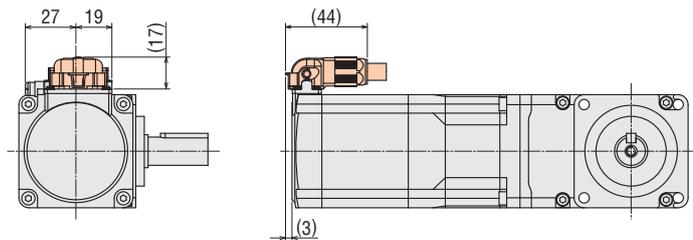
Frame Size 60 mm Connector Direction Upper Side

Product Name	Gear Ratio	Mass [kg]
AZM66MCH-FC UA	7.2, 10, 20, 30	2.1

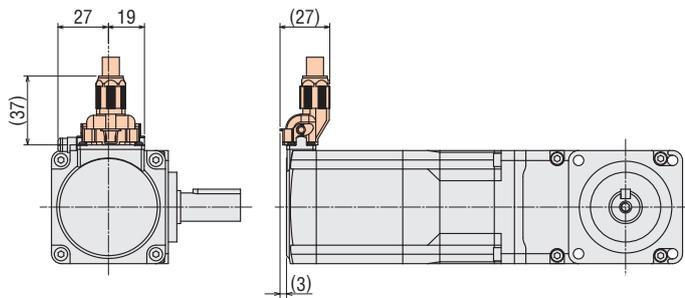


● When the Connection Cable is Attached

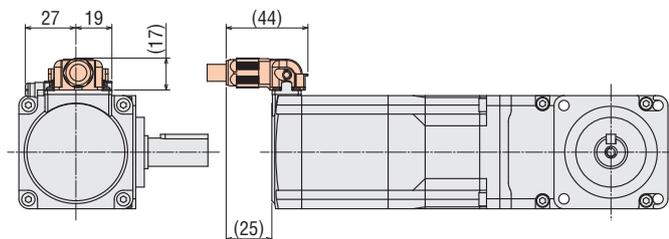
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

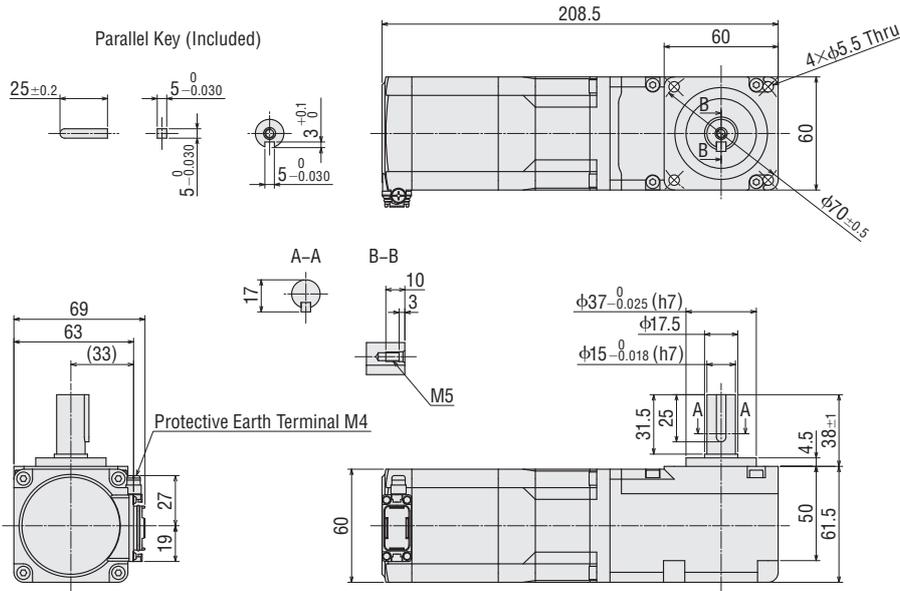


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

System Configuration	Product Line	Specifications and Characteristics	Dimensions	System Configuration	Product Line	Specifications and Characteristics	Dimensions	Cable
AC Input	DC Input							

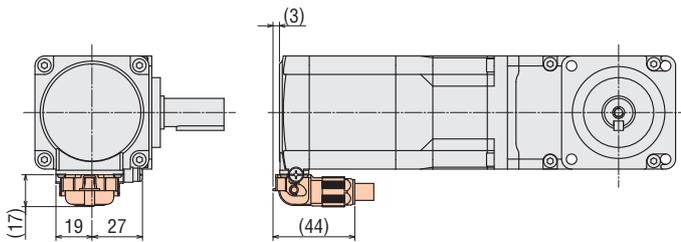
Frame Size 60 mm Connector Direction Down Side

Product Name	Gear Ratio	Mass [kg]
AZM66MCH-FC DA	7.2, 10, 20, 30	2.1

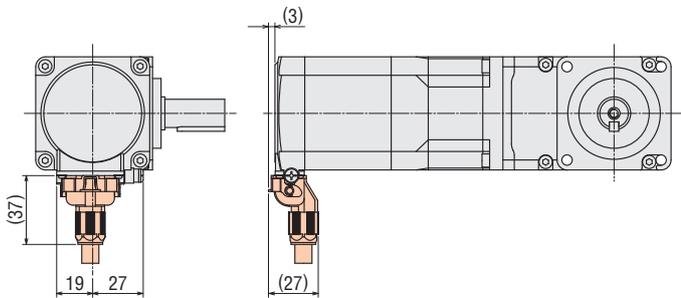


● When the Connection Cable is Attached

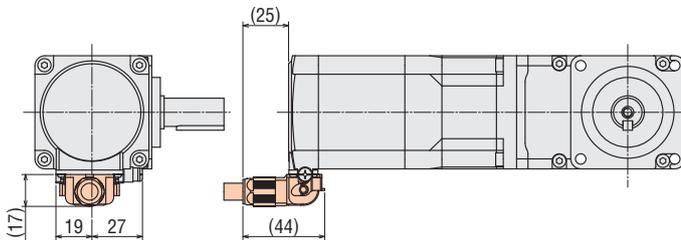
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



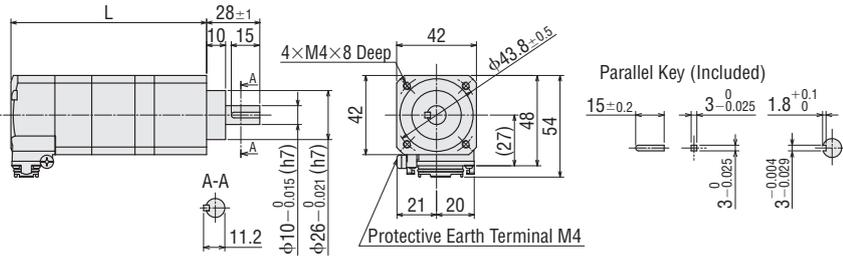
Cable Outlet Opposite to Output Shaft Direction



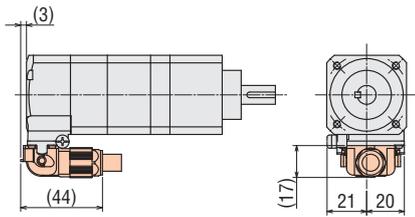
- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

◇ **PS Geared Type**
Frame Size 42 mm

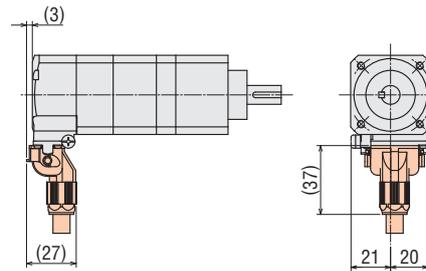
Product Name	Gear Ratio	L	Mass [kg]
AZM46ACH-PS 	5, 7.2, 10	103	0.6
	25, 36, 50	126.5	0.75



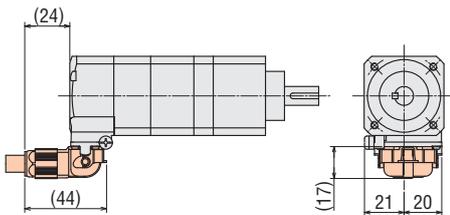
● **When the Connection Cable is Attached**
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



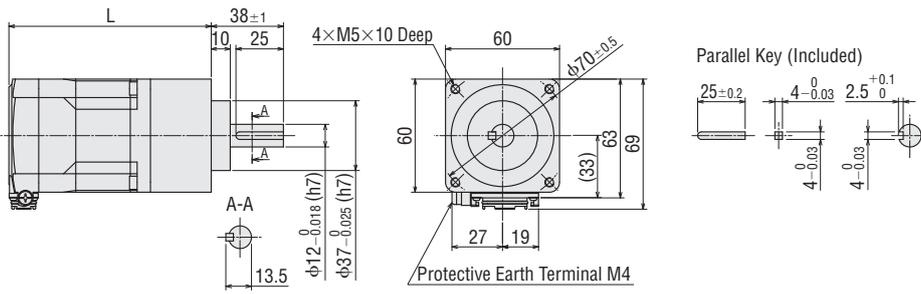
Cable Outlet Opposite to Output Shaft Direction



● A number indicating the gear ratio is entered where the box is located within the product name.
 ● The shaded areas are the separately sold connection cables.

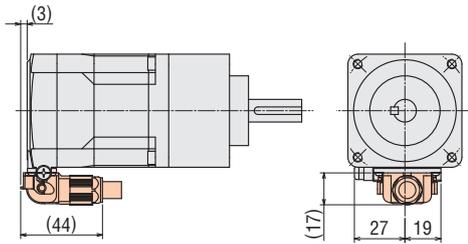
Frame Size 60 mm

Product Name	Gear Ratio	L	Mass [kg]
AZM66ACH-PS 	5, 7.2, 10	106.5	1.2
	25, 36, 50	126.5	1.5

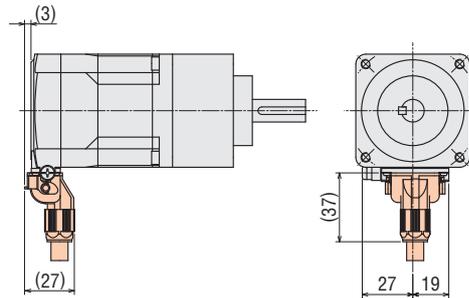


● When the Connection Cable is Attached

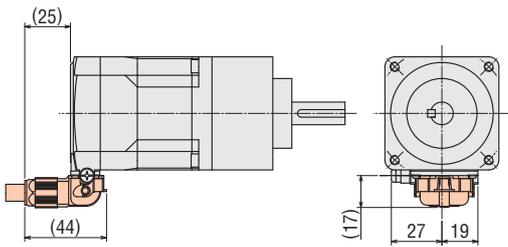
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



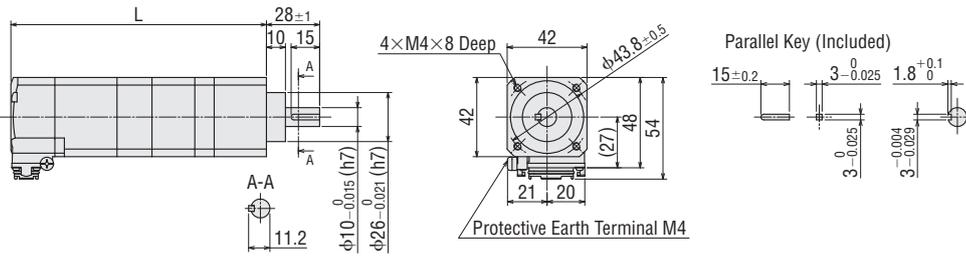
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

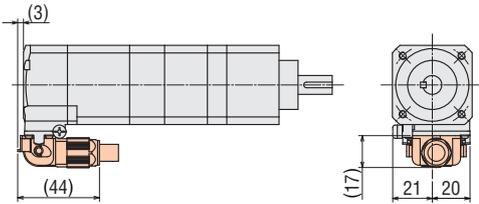
◇ **PS Geared Type with Electromagnetic Brake**
Frame Size 42 mm

Product Name	Gear Ratio	L	Mass [kg]
AZM46MCH-PS 	5, 7, 2, 10	134.5	0.74
	25, 36, 50	157.5	0.89

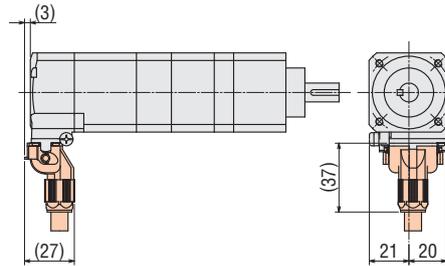


● **When the Connection Cable is Attached**

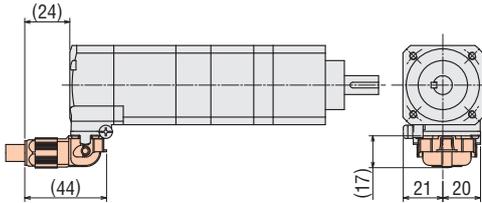
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

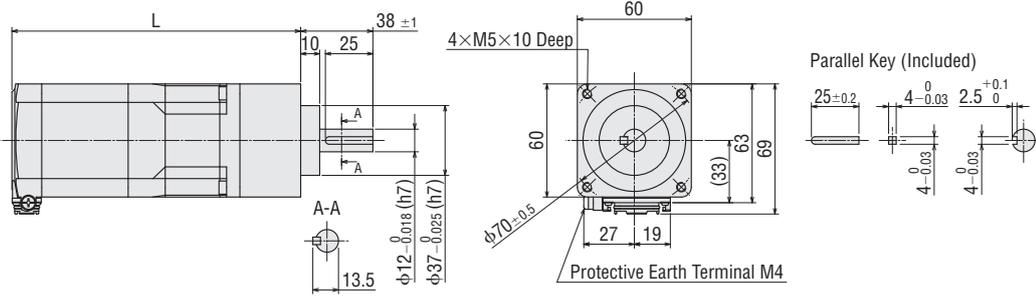


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

AC Input	System Configuration
	Product Line
	Specifications and Characteristics
DC Input	Dimensions
	System Configuration
	Product Line
Cable	Specifications and Characteristics
	Dimensions
	System Configuration

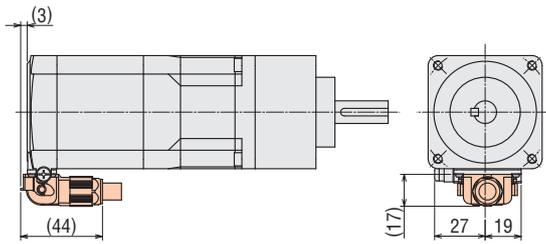
Frame Size 60 mm

Product Name	Gear Ratio	L	Mass [kg]
AZM66MCH-PS 	5, 7.2, 10	152	1.6
	25, 36, 50	172	1.9

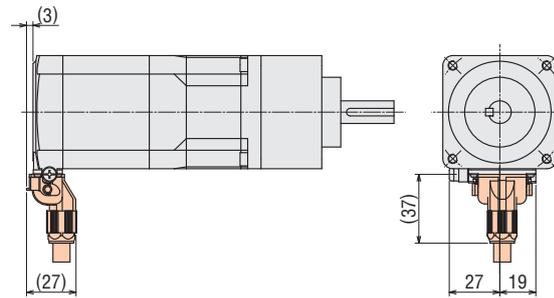


● When the Connection Cable is Attached

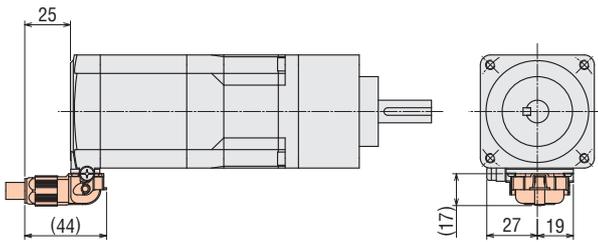
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

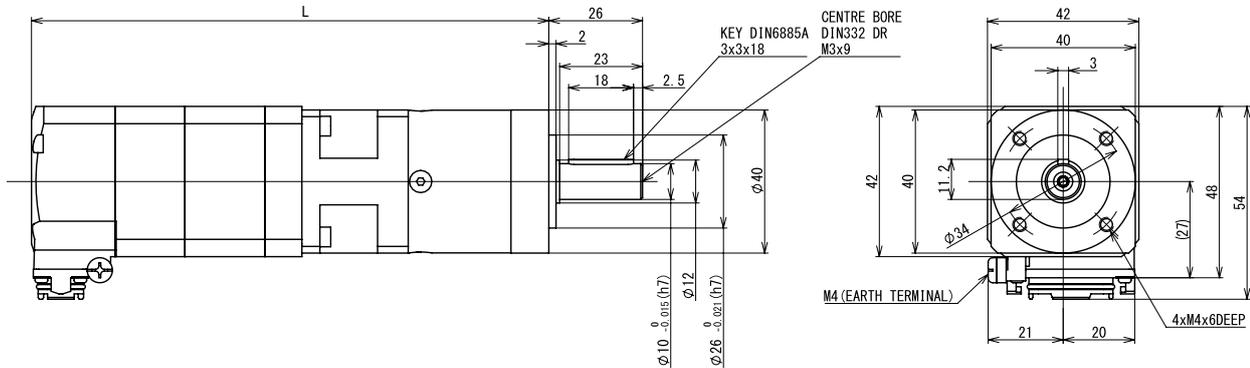


● A number indicating the gear ratio is entered where the box is located within the product name.
 ● The shaded areas are the separately sold connection cables.

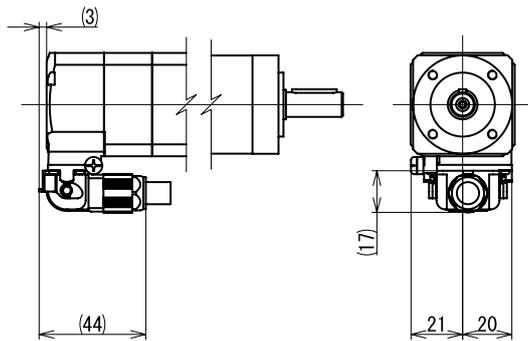
◇ **PLE Geared Type**

Frame Size 42 mm

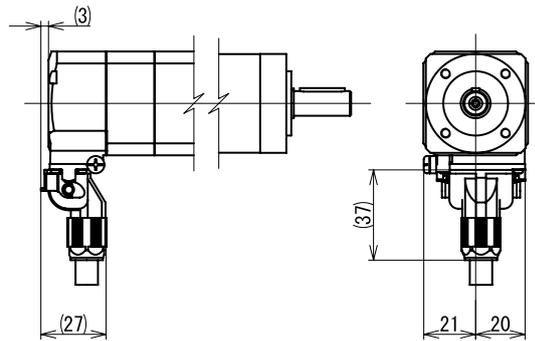
Product Name	Gear Ratio	L	Mass [kg]
AZM46ACH-PLE40-■	5	143.5	0.75
	10		0.76
	20	156.5	0.84
	40		0.85
AZM48ACH-PLE40-■	5	166.5	0.98
	10		0.99
	20	179.5	1.07
	40		1.08



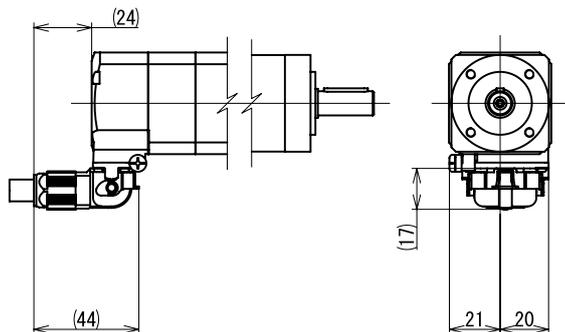
● When the Connection Cable is Attached
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction

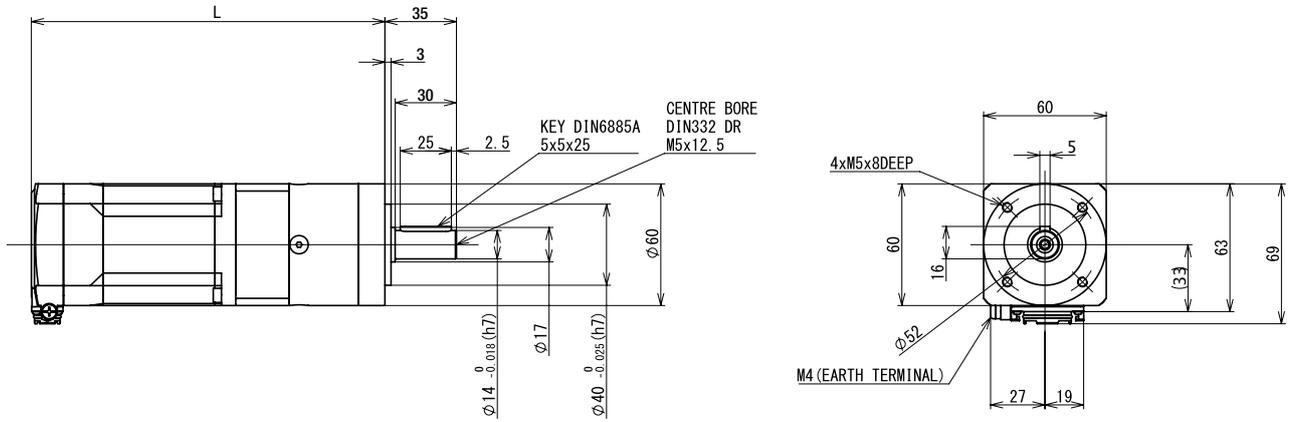


Cable Outlet Opposite to Output Shaft Direction

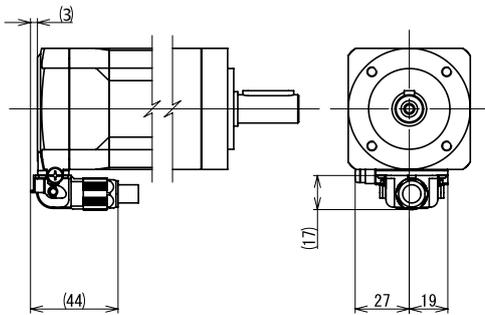


Frame Size 60 mm

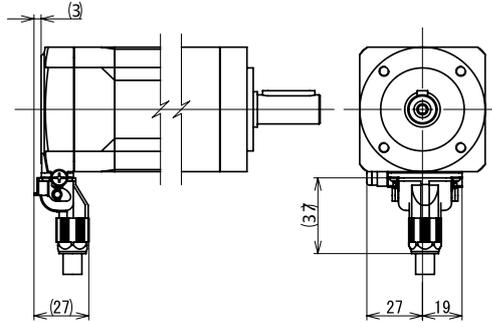
Product Name	Gear Ratio	L	Mass [kg]
AZM69ACH-PLE60-■	5	173	2.22
	10		2.22
	20	185.5	2.41
	40		2.43



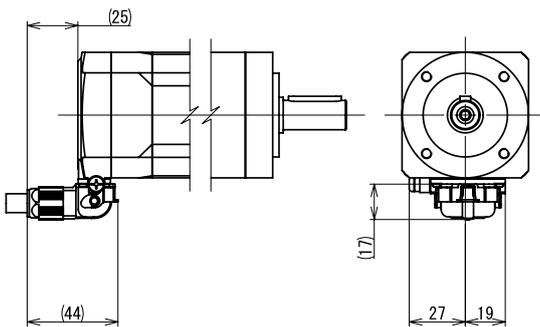
● When the Connection Cable is Attached
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction

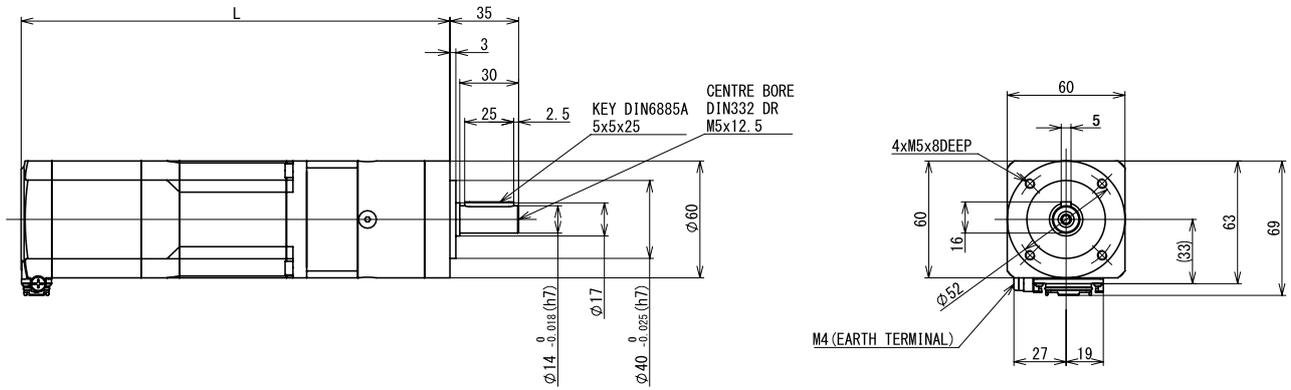


Cable Outlet Opposite to Output Shaft Direction

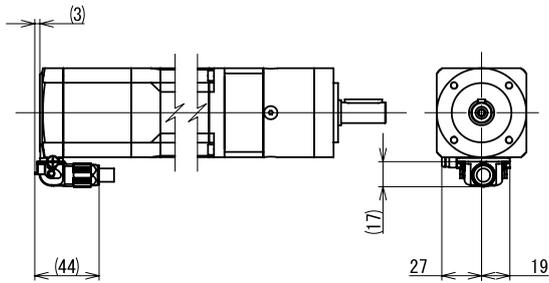


Frame Size 60 mm

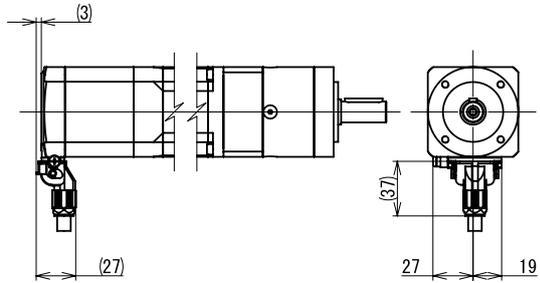
Product Name	Gear Ratio	L	Mass [kg]
AZM69MCH-PLE-60- ■	5	218.5	2.62
	10		2.62
	20	231	2.81
	40		2.83



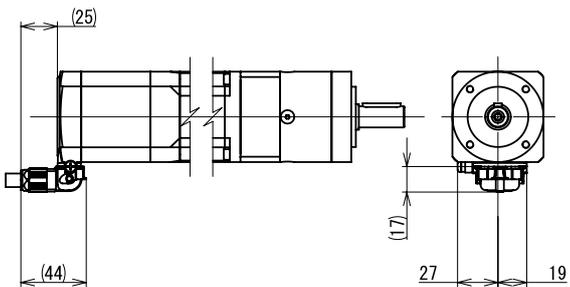
● When the Connection Cable is Attached
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



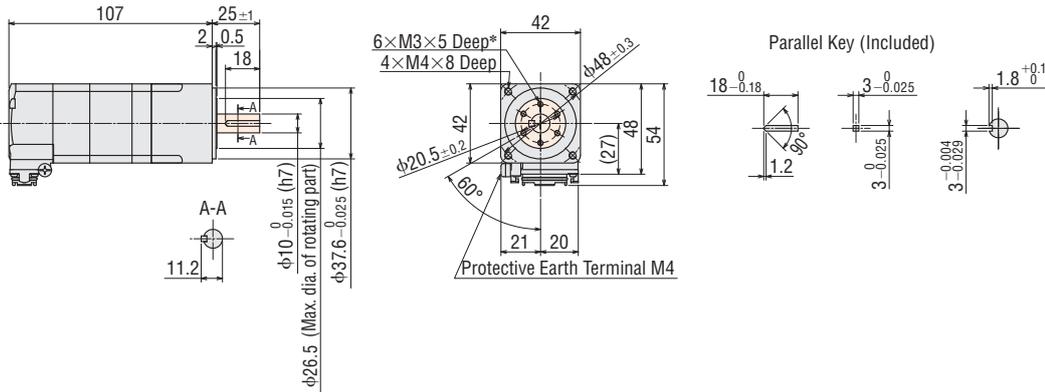
Cable Outlet Opposite to Output Shaft Direction



◇ Harmonic Geared Type

Frame Size 42 mm

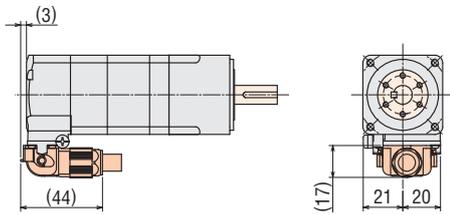
Product Name	Gear Ratio	Mass [kg]
AZM46ACH-HS 	50, 100	0.61



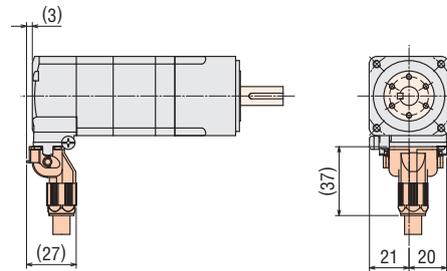
*The position of the key slot of the output shaft relative to 6×M3 is arbitrary.

● When the Connection Cable is Attached

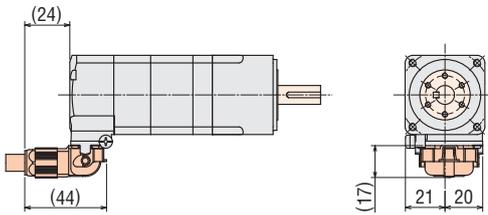
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



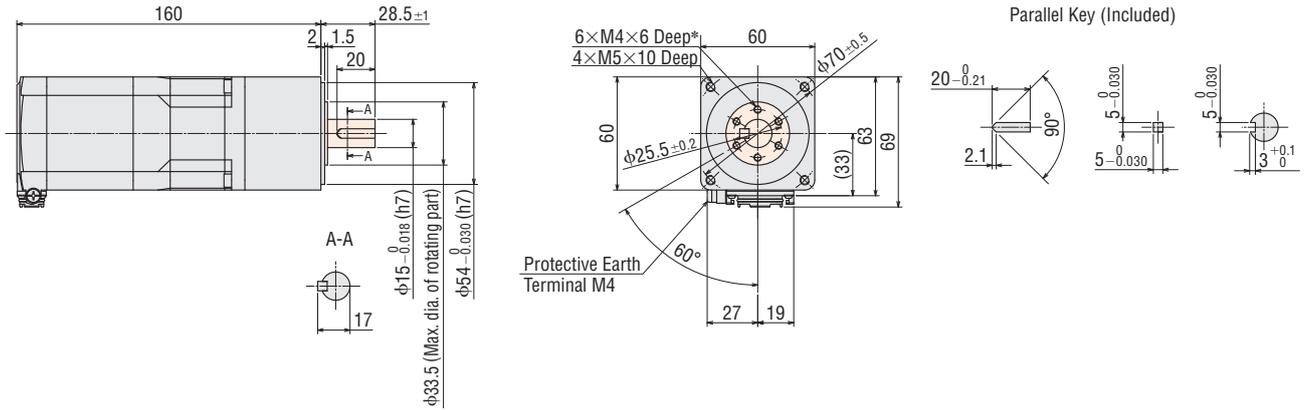
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas in the dimensions are rotating parts.
- The shaded areas are the separately sold connection cables.

Frame Size 60 mm

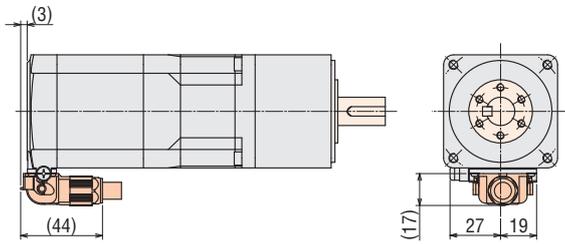
Product Name	Gear Ratio	Mass [kg]
AZM66MCH-HS 	50, 100	1.7



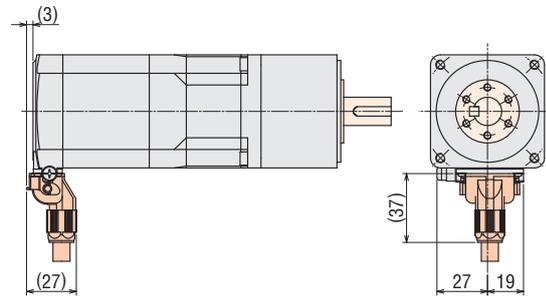
*The position of the key slot of the output shaft relative to 6×M4 is arbitrary.

● When the Connection Cable is Attached

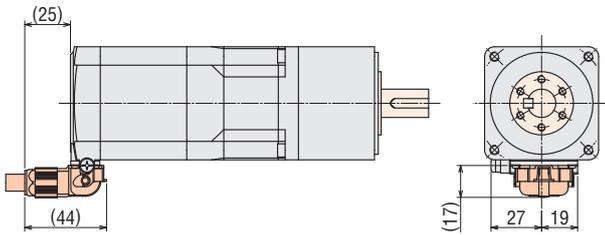
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction



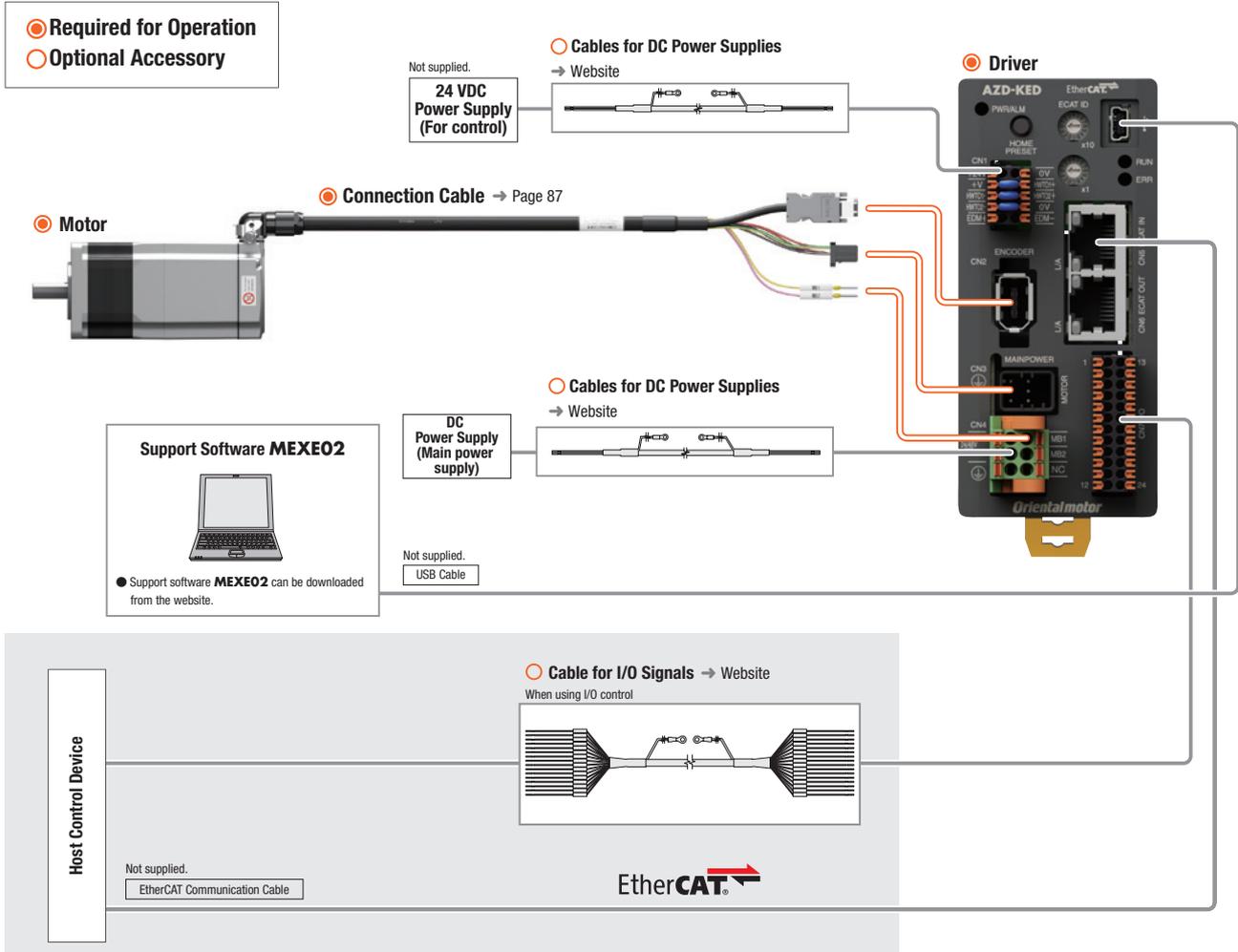
- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas in the dimensions are rotating parts.
- The shaded areas are the separately sold connection cables.

System Configuration

Combination of Connector Type Electromagnetic Brake Motor and Network-Compatible Driver

An example of a configuration using I/O control with EtherCAT-compatible driver or EtherCAT is shown below.

Motors, drivers, and connection cables/flexible connection cables must be ordered individually.



Example of System Configuration

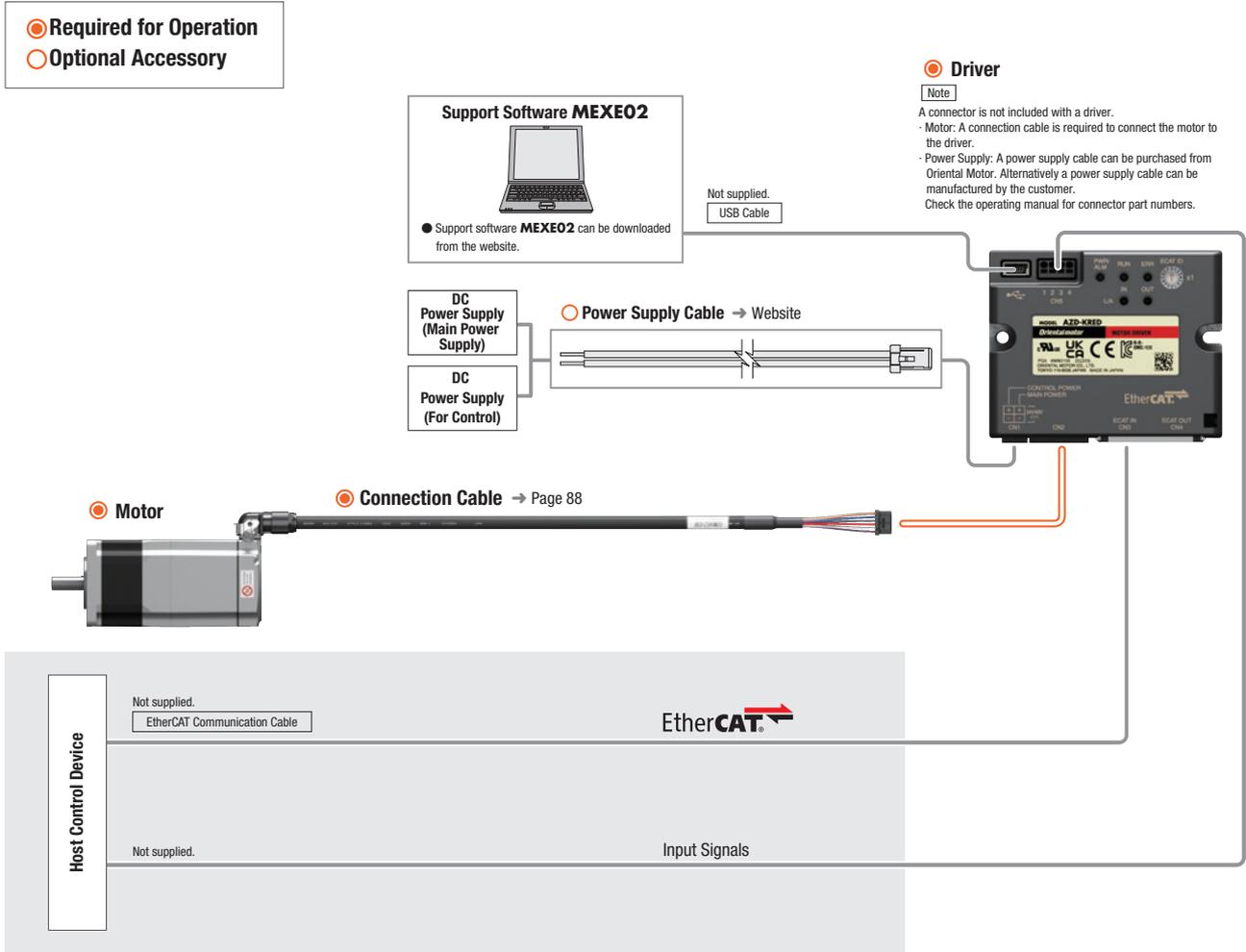
Motor	+	Driver	+	Cable	
AZM66MKH		AZD-KED		Connection Cable Cable Outlet Direction Output Shaft Side (1 m)	I/O Signal Cable General Purpose Type (1 m)
○		○		CCM010Z1DFF	CC16D010B-1
				○	○

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

● **Combination of Connector Type Electromagnetic Brake Motor and mini Driver Network-Compatible Driver**

An example of a configuration using I/O control with EtherCAT-compatible driver or EtherCAT is shown below.

Motors, drivers, and connection cables/flexible connection cables must be ordered individually.



● **Example of System Configuration**



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

Product Number

● Motor

◇ Standard Type

AZM 6 6 A 0 K H

① ② ③ ④ ⑤ ⑥ ⑦

◇ PS, Harmonic Geared Type

AZM 6 6 A K H-PS 7.2

① ② ③ ④ ⑥ ⑦ ⑧ ⑩

◇ PLE Geared Type

AZM 6 9 A K H-PLE 60-5

① ② ③ ④ ⑥ ⑦ ⑧ ⑨ ⑩

◇ TS Geared Type

AZM 6 6 A K H - TS 7.2 U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

◇ FC Geared Type

AZM 6 6 A K H-FC 7.2 U A

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

● Connection Cables/Flexible Connection Cables

CCM 010 Z1 C F F

① ② ③ ④ ⑤ ⑥

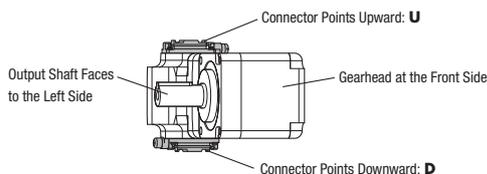
①	Motor Type	AZM: AZ Series Motor
②	Motor Frame Size	4: 42 mm 6: 60 mm
③	Motor Case Length	
④	Output Shaft Type	A: Single Shaft M: Type with Electromagnetic Brake
⑤	Additional Function*	0: Round Shaft 1: Key Type
⑥	Motor Type	K: DC Input Specification
⑦	Motor Connection Method	H: Connector Type
⑧	Geared Type	PS: PS Geared Type PLE: PLE Geared Type HS: Harmonic Geared Type
⑨	Gear Size	
⑩	Gear Ratio	

* If there isn't a number for an additional function, it is a single shaft flat.

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

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

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



①		CCM: Cable
②	Length	002: 0.2 m, 005: 0.5 m, 010: 1 m, 020: 2 m, 030: 3 m, 050: 5 m, 070: 7 m, 100: 10 m
③	Applicable Model	Z1: AZ Series Connector Type
④	Description	C: Single-Axis Driver for DC Input (For motor/encoder) D: Single-Axis Driver for DC Input (For motor/encoder/type with an electromagnetic brake) E: For mini Driver
⑤	Cable Outlet Direction*	F: Output Shaft Direction V: Vertical B: Opposite to Output Shaft Direction
⑥	Cable Type	F: Connection Cable R: Flexible Connection Cable

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



F: Output Shaft Direction



V: Vertical



B: Opposite to Output Shaft Direction

System Configuration

Product Line

AC Input

Specifications and Characteristics

Dimensions

System Configuration

Product Line

DC Input

Specifications and Characteristics

Dimensions

Cable

Product Line

Motors, drivers, and connection cables must be ordered individually.

Motor

Standard Type



Frame Size	Product Name
42 mm	AZM46AKH AZM46A0KH AZM48AKH AZM48A0KH AZM48A1KH
60 mm	AZM66AKH AZM66A0KH AZM66A1KH AZM69AKH AZM69A0KH AZM69A1KH

Standard Type

with an Electromagnetic Brake



Frame Size	Product Name
42 mm	AZM46MKH AZM46M0KH
60 mm	AZM66MKH AZM66M0KH AZM66M1KH AZM69MKH AZM69M0KH AZM69M1KH

TS Geared Type



Frame Size	Product Name
42 mm	AZM46AKH-TS3.6 AZM46AKH-TS3.6R AZM46AKH-TS3.6U AZM46AKH-TS3.6L AZM46AKH-TS7.2 AZM46AKH-TS7.2R AZM46AKH-TS7.2U AZM46AKH-TS7.2L AZM46AKH-TS10 AZM46AKH-TS10R AZM46AKH-TS10U AZM46AKH-TS10L AZM46AKH-TS20 AZM46AKH-TS20R AZM46AKH-TS20U AZM46AKH-TS20L AZM46AKH-TS30 AZM46AKH-TS30R AZM46AKH-TS30U AZM46AKH-TS30L
60 mm	AZM66AKH-TS3.6 AZM66AKH-TS3.6R AZM66AKH-TS3.6U AZM66AKH-TS3.6L AZM66AKH-TS7.2 AZM66AKH-TS7.2R AZM66AKH-TS7.2U AZM66AKH-TS7.2L AZM66AKH-TS10 AZM66AKH-TS10R AZM66AKH-TS10U AZM66AKH-TS10L AZM66AKH-TS20 AZM66AKH-TS20R AZM66AKH-TS20U AZM66AKH-TS20L AZM66AKH-TS30 AZM66AKH-TS30R AZM66AKH-TS30U AZM66AKH-TS30L

TS Geared Type

with Electromagnetic Brake



Frame Size	Product Name
42 mm	AZM46MKH-TS3.6 AZM46MKH-TS3.6R AZM46MKH-TS3.6U AZM46MKH-TS3.6L AZM46MKH-TS7.2 AZM46MKH-TS7.2R AZM46MKH-TS7.2U AZM46MKH-TS7.2L AZM46MKH-TS10 AZM46MKH-TS10R AZM46MKH-TS10U AZM46MKH-TS10L AZM46MKH-TS20 AZM46MKH-TS20R AZM46MKH-TS20U AZM46MKH-TS20L AZM46MKH-TS30 AZM46MKH-TS30R AZM46MKH-TS30U AZM46MKH-TS30L
60 mm	AZM66MKH-TS3.6 AZM66MKH-TS3.6R AZM66MKH-TS3.6U AZM66MKH-TS3.6L AZM66MKH-TS7.2 AZM66MKH-TS7.2R AZM66MKH-TS7.2U AZM66MKH-TS7.2L AZM66MKH-TS10 AZM66MKH-TS10R AZM66MKH-TS10U AZM66MKH-TS10L AZM66MKH-TS20 AZM66MKH-TS20R AZM66MKH-TS20U AZM66MKH-TS20L AZM66MKH-TS30 AZM66MKH-TS30R AZM66MKH-TS30U AZM66MKH-TS30L



◇FC Geared Type

Frame Size	Product Name
42 mm	AZM46AKH-FC7.2UA AZM46AKH-FC7.2DA AZM46AKH-FC10UA AZM46AKH-FC10DA AZM46AKH-FC20UA AZM46AKH-FC20DA AZM46AKH-FC30UA AZM46AKH-FC30DA
60 mm	AZM66AKH-FC7.2UA AZM66AKH-FC7.2DA AZM66AKH-FC10UA AZM66AKH-FC10DA AZM66AKH-FC20UA AZM66AKH-FC20DA AZM66AKH-FC30UA AZM66AKH-FC30DA



◇PS Geared Type

Frame Size	Product Name
42 mm	AZM46AKH-PS5 AZM46AKH-PS7.2 AZM46AKH-PS10 AZM46AKH-PS25 AZM46AKH-PS36 AZM46AKH-PS50
60 mm	AZM66AKH-PS5 AZM66AKH-PS7.2 AZM66AKH-PS10 AZM66AKH-PS25 AZM66AKH-PS36 AZM66AKH-PS50



◇PLE Geared Type

Frame Size	Product Name
42 mm	AZM46AKH-PLE40-5 AZM46AKH-PLE40-10 AZM46AKH-PLE40-20 AZM46AKH-PLE40-40 AZM48AKH-PLE40-5 AZM48AKH-PLE40-10 AZM48AKH-PLE40-20 AZM48AKH-PLE40-40
60 mm	AZM69AKH-PLE60-5 AZM69AKH-PLE60-10 AZM69AKH-PLE60-20 AZM69AKH-PLE60-40



◇Harmonic Geared Type

Frame Size	Product Name
42 mm	AZM46AKH-HS50 AZM46AKH-HS100
60 mm	AZM66AKH-HS50 AZM66AKH-HS100



◇FC Geared Type with Electromagnetic Brake

Frame Size	Product Name
42 mm	AZM46MKH-FC7.2UA AZM46MKH-FC7.2DA AZM46MKH-FC10UA AZM46MKH-FC10DA AZM46MKH-FC20UA AZM46MKH-FC20DA AZM46MKH-FC30UA AZM46MKH-FC30DA
60 mm	AZM66MKH-FC7.2UA AZM66MKH-FC7.2DA AZM66MKH-FC10UA AZM66MKH-FC10DA AZM66MKH-FC20UA AZM66MKH-FC20DA AZM66MKH-FC30UA AZM66MKH-FC30DA



◇PS Geared Type with Electromagnetic Brake

Frame Size	Product Name
42 mm	AZM46MKH-PS5 AZM46MKH-PS7.2 AZM46MKH-PS10 AZM46MKH-PS25 AZM46MKH-PS36 AZM46MKH-PS50
60 mm	AZM66MKH-PS5 AZM66MKH-PS7.2 AZM66MKH-PS10 AZM66MKH-PS25 AZM66MKH-PS36 AZM66MKH-PS50



◇PLE Geared Type with Electromagnetic Brake

Frame Size	Product Name
42 mm	AZM46MKH-PLE40-5 AZM46MKH-PLE40-10 AZM46MKH-PLE40-20 AZM46MKH-PLE40-40
60 mm	AZM69MKH-PLE60-5 AZM69MKH-PLE60-10 AZM69MKH-PLE60-20 AZM69MKH-PLE60-40



◇Harmonic Geared Type with Electromagnetic Brake

Frame Size	Product Name
42 mm	AZM46MKH-HS50 AZM46MKH-HS100
60 mm	AZM66MKH-HS50 AZM66MKH-HS100

●Connection Cables/Flexible Connection Cables

A connection cable is needed to connect the motor and driver. Please be sure to purchase one.

Use a flexible connection cable in applications where the cable is bent and flexed. Refer to page 87 for details.

Standard Type Frame Size 42 mm, 60 mm

Specifications



Motor Product Name	Single Shaft With Electromagnetic Brake	AZM46A□KH AZM46M□KH	AZM48A□KH -	AZM66A□KH AZM66M□KH	AZM69A□KH AZM69M□KH	
Driver Product Name		AZD-K□, AZD-KR□				
Max. Holding Torque	Nm	0.3	0.72	1	2	
Holding Torque at Motor Standstill	Power ON	Nm	0.15	0.36	0.5	1
	Electromagnetic Brake	Nm	0.15	-	0.5	1
Rotor Inertia	J: kgm ²	55×10^{-7} (71×10^{-7})*1	115×10^{-7}	370×10^{-7} (530×10^{-7})*1	740×10^{-7} (900×10^{-7})*1	
Resolution	Resolution Setting: 1000 P/R	0.36°/Pulse				
Power Supply Input						
Control Power Supply*2		Please check "Driver Specifications" on page 61 for the driver current specifications when combined with a motor.				

● Either a **0** (straight type) or **1** (key type) indicating the additional function is specified where the box □ is located in the product name. (**AZM46** is straight type only) For single shaft flat type motors, there is no number in the □ box.

A letter indicating the driver type is specified where the box ■ is located in the product name. Please check "List of Combinations" on page 52 for driver product names.

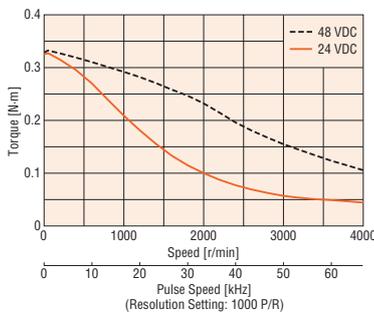
● When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque. (Except for **AZM46**)

*1 The value inside the () represents the value when an electromagnetic brake motor is connected.

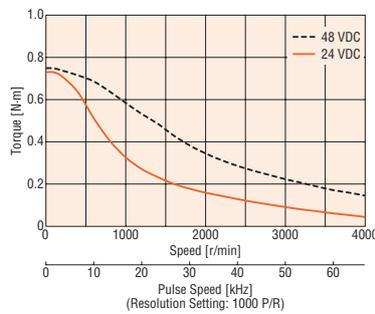
*2 Except for **AZD-KD**, **AZD-KX**, and **AZD-K**

Speed – Torque Characteristics (Reference values)

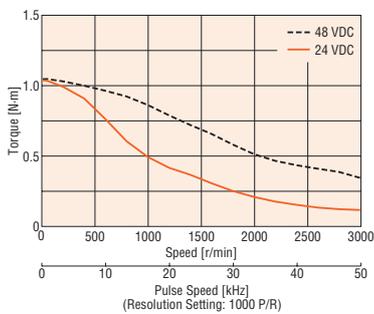
AZM46



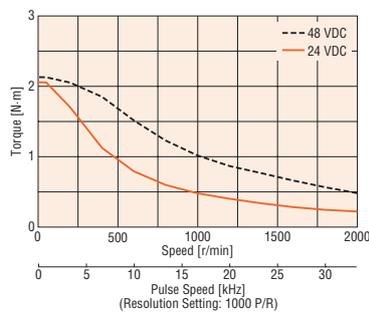
AZM48



AZM66



AZM69



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the Absolute Sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

Explanation of Terminology in Specifications Table

Maximum Holding Torque	:This is the max. holding torque (holding force) the motor has when power is supplied (at rated current) but the motor is not rotating. (With geared types, the value of holding torque considers the permissible strength of the gear.)
Permissible Torque	:This is the maximum value of the torque continuously applied to the output gear shaft.
Maximum Instantaneous Torque	:This is the max. torque that can be applied to the output gear shaft during acceleration/deceleration such when an inertial load is started and stopped.
Holding Torque at Motor Standstill	While Power is ON :Holding torque when the automatic current cutback function is active is shown. Electromagnetic Brake :Static friction torque when the electromagnetic brake is activated at standstill is shown. (Electromagnetic brake is power off activated type.)

System Configuration
Product Line
AC Input
Specifications and Characteristics
Dimensions
System Configuration
Product Line
DC Input
Specifications and Characteristics
Dimensions
Cable

TS Geared Type Frame Size 42 mm



Specifications

Motor Product Name	Single Shaft	AZM46AKH-TS3.6	AZM46AKH-TS7.2	AZM46AKH-TS10	AZM46AKH-TS20	AZM46AKH-TS30	
	With Electromagnetic Brake	AZM46MKH-TS3.6	AZM46MKH-TS7.2	AZM46MKH-TS10	AZM46MKH-TS20	AZM46MKH-TS30	
Driver Product Name	AZD-K, AZD-KR						
Max. Holding Torque	Nm	0.65	1.2	1.7	2	2.3	
Rotor Inertia	J: kgm ²	55×10 ⁻⁷ (71×10 ⁻⁷)*1					
Gear Ratio		3.6	7.2	10	20	30	
Resolution	Resolution Setting: 1000 P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	Nm	0.65	1.2	1.7	2	2.3	
Max. Instantaneous Torque*	Nm	0.85	1.6	2	*	3	
Holding Torque at Motor Standstill	Power ON	Nm	0.54	1	1.5	1.8	2.3
	Electromagnetic Brake	Nm	0.54	1	1.5	1.8	2.3
Speed Range	r/min	0~833	0~416	0~300	0~150	0~100	
Backlash	arcmin	45 (0.75)	25 (0.42°)		15 (0.25°)		
Power Supply Input	Check "Driver Specifications" on page 61 for the driver current when combined with a motor.						
Control Power Supply*2							

● Either **R** (Right), **U** (Up), or **L** (Left) indicating the cable outlet direction is specified where the box □ is located in the product name. For down, there is no character in the box □.

A letter indicating the driver type is specified where the box ■ is located in the product name. Check "List of Combinations" on page 52 for driver product names.

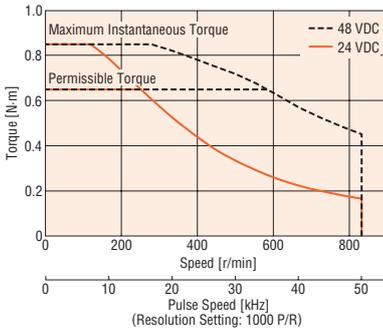
* For the geared motor output torque, refer to the speed-torque characteristics.

*1 The value inside the () represents the value when connecting an electromagnetic brake motor.

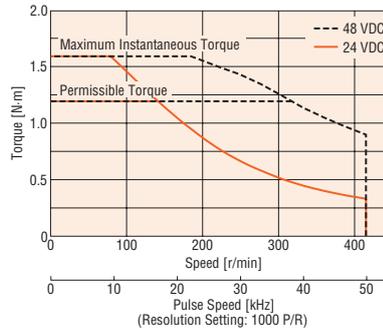
*2 Excluding **AZD-KD**, **AZD-KX**, and **AZD-K**

Speed – Torque Characteristics (Reference values)

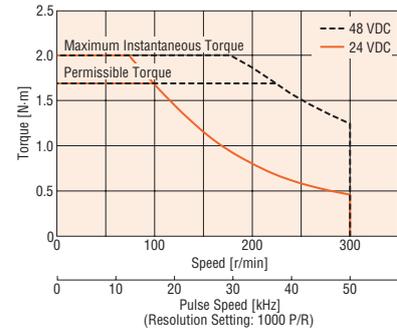
AZM46 Gear Ratio 3.6



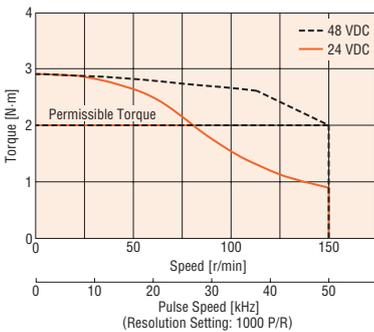
AZM46 Gear Ratio 7.2



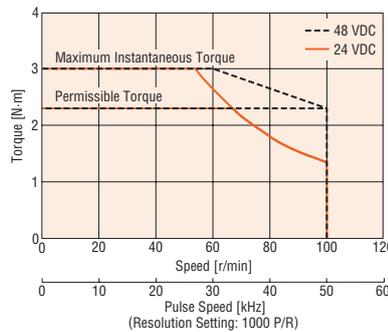
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20



AZM46 Gear Ratio 30



Note

● Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.

● Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

TS Geared Type Frame Size 60 mm

Specifications

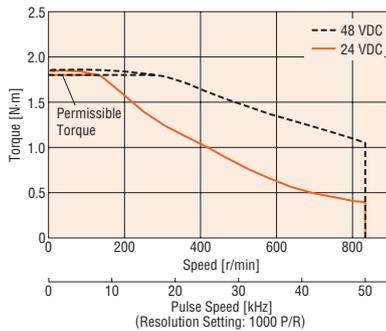


Motor Product Name	Single Shaft	AZM66AKH-TS3.6	AZM66AKH-TS7.2	AZM66AKH-TS10	AZM66AKH-TS20	AZM66AKH-TS30	
Driver Product Name	With Electromagnetic Brake	AZM66MKH-TS3.6	AZM66MKH-TS7.2	AZM66MKH-TS10	AZM66MKH-TS20	AZM66MKH-TS30	
Max. Holding Torque	Nm	1.8	3	4	5	6	
Rotor Inertia	J: kgm ²	370×10 ⁻⁷ (530×10 ⁻⁷)*1					
Gear Ratio		3.6	7.2	10	20	30	
Resolution	Resolution Setting: 1000 P/R	0.1°/Pulse	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse	
Permissible Torque	Nm	1.8	3	4	5	6	
Max. Instantaneous Torque*	Nm	*	*	*	8	10	
Holding Torque at Motor Standstill	Power ON	Nm	1.1	2.2	3	5	6
	Electromagnetic Brake	Nm	1.1	2.2	3	5	6
Speed Range	r/min	0~833	0~416	0~300	0~150	0~100	
Backlash	arcmin	35 (0.59°)	15 (0.25°)		10 (0.17°)		
Power Supply Input		Check "Driver Specifications" on page 61 for the driver current when combined with a motor.					
Control Power Supply*2							

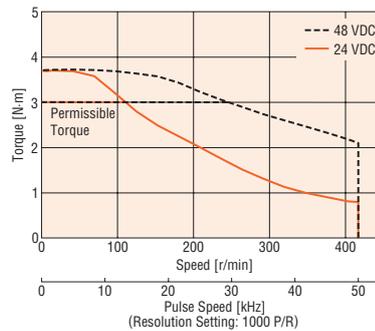
- Either **R** (Right), **U** (Up), or **L** (Left) indicating the cable outlet direction is specified where the box is located in the product name. For down, there is no character in the box .
- A letter indicating the driver type is specified where the box is located in the product name. Check "List of Combinations" on page 52 for driver product names.
- When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque.
- * For the geared motor output torque, refer to the speed-torque characteristics.
- *1 The value inside the () represents the value when connecting an electromagnetic brake motor.
- *2 Excluding **AZD-KD**, **AZD-KX**, and **AZD-K**

Speed – Torque Characteristics (Reference values)

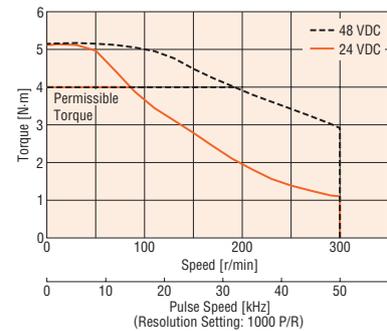
AZM66 Gear Ratio 3.6



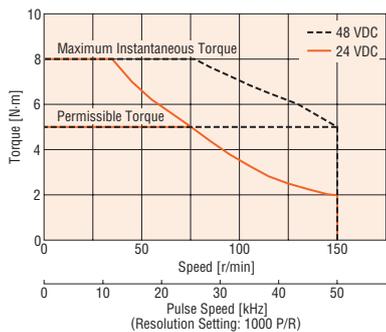
AZM66 Gear Ratio 7.2



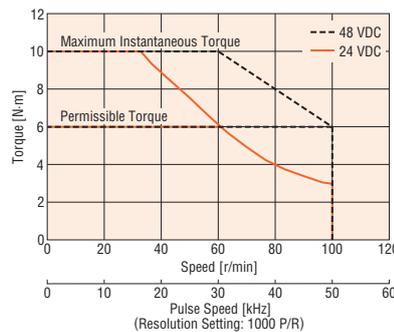
AZM66 Gear Ratio 10



AZM66 Gear Ratio 20



AZM66 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

System Configuration
 Product Line
 AC Input
 Specifications and Characteristics
 Dimensions
 System Configuration
 Product Line
 DC Input
 Specifications and Characteristics
 Dimensions
 Cable

FC Geared Type Frame Size 42 mm

Specifications

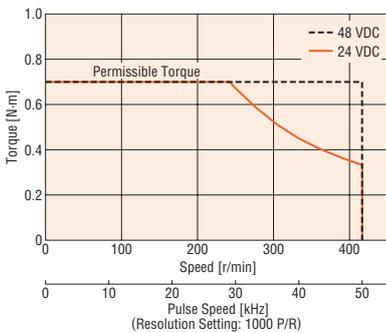


Motor Product Name	Single Shaft	AZM46AKH-FC7.2 □A	AZM46AKH-FC10 □A	AZM46AKH-FC20 □A	AZM46AKH-FC30 □A
	With Electromagnetic Brake	AZM46MKH-FC7.2 □A	AZM46MKH-FC10 □A	AZM46MKH-FC20 □A	AZM46MKH-FC30 □A
Driver Product Name		AZD-K □, AZD-KR □			
Max. Holding Torque	Nm	0.7	1	2	3
Rotor Inertia	J: kgm ²	55×10^{-7} (71×10^{-7})*1			
Gear Ratio		7.2	10	20	30
Resolution	Resolution Setting: 1000 P/R	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Permissible Torque		0.7	1	2	3
Holding Torque at Motor Standstill	Power ON Nm Electromagnetic Brake Nm	0.7 0.7	1 1	2 2	3 3
Speed Range	r/min	0~416	0~300	0~150	0~100
Backlash	arcmin	25 (0.42°)		15 (0.25°)	
Power Supply Input		Check "Driver Specifications" on page 61 for the driver current when combined with a motor.			
Control Power Supply*2					

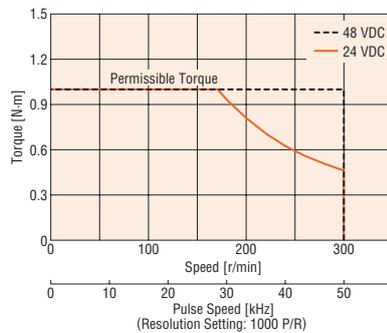
● Either **U** (Up) or **D** (Down) indicating the cable outlet direction is specified where the box □ is located in the product name.
 A letter indicating the driver type is specified where the box ■ is located in the product name. Check "List of Combinations" on page 52 for driver product names.
 *1 The value inside the () represents the value when connecting an electromagnetic brake motor.
 *2 Excluding **AZD-KD**, **AZD-KX**, and **AZD-K**

Speed – Torque Characteristics (Reference values)

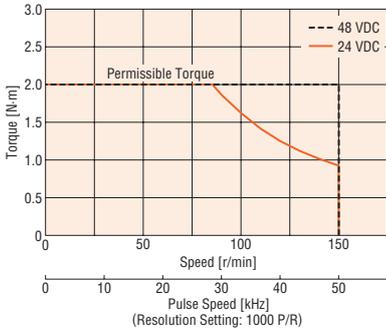
AZM46 Gear Ratio 7.2



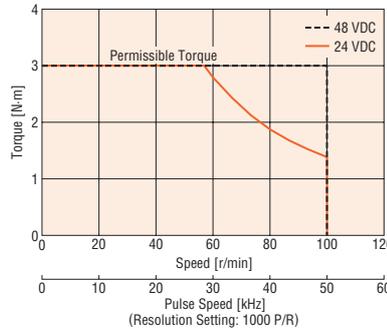
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20



AZM46 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

FC Geared Type Frame Size 60 mm

Specifications

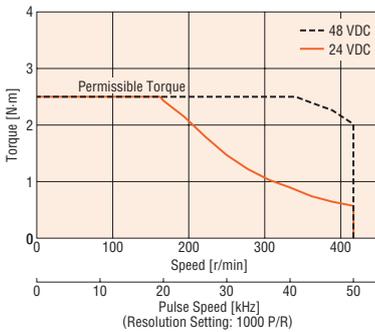


Motor Product Name	Single Shaft	AZM66AKH-FC7.2□A	AZM66AKH-FC10□A	AZM66AKH-FC20□A	AZM66AKH-FC30□A
Driver Product Name	With Electromagnetic Brake	AZM66MKH-FC7.2□A	AZM66MKH-FC10□A	AZM66MKH-FC20□A	AZM66MKH-FC30□A
Max. Holding Torque	Nm	2.5	3.5	7	10.5
Rotor Inertia	J: kgm ²	370×10 ⁻⁷ (530×10 ⁻⁷)*1			
Gear Ratio		7.2	10	20	30
Resolution	Resolution Setting: 1000 P/R	0.05°/Pulse	0.036°/Pulse	0.018°/Pulse	0.012°/Pulse
Permissible Torque		2.5	3.5	7	10.5
Holding Torque at Motor	Power ON	2.5	3.5	7	10.5
Standstill	Electromagnetic Brake	2.5	3.5	7	10.5
Permissible Speed Range	r/min	0~416	0~300	0~150	0~100
Backlash	arcmin	15 (0.25°)		10 (0.17°)	
Power Supply Input		Check "Driver Specifications" on page 61 for the driver current when combined with a motor.			
Control Power Supply*2					

- Either **U** (Up) or **D** (Down) indicating the cable outlet direction is specified where the box □ is located in the product name.
- A letter indicating the driver type is specified where the box ■ is located in the product name. Check "List of Combinations" on page 52 for driver product names.
- When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque.
- *1 The value inside the () represents the value when connecting an electromagnetic brake motor.
- *2 Excluding **AZD-KD**, **AZD-KX**, and **AZD-K**

Speed – Torque Characteristics (Reference values)

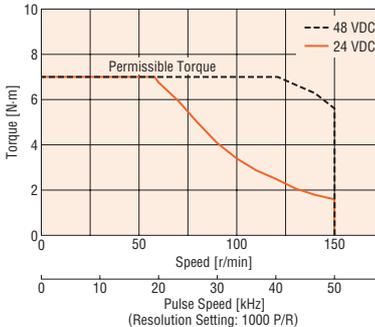
AZM66 Gear Ratio 7.2



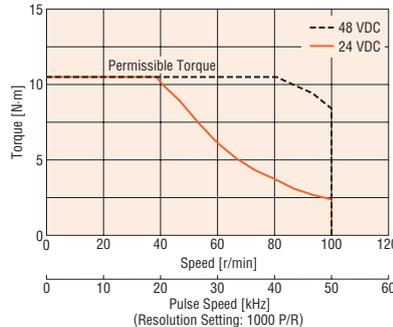
AZM66 Gear Ratio 10



AZM66 Gear Ratio 20



AZM66 Gear Ratio 30



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

System Configuration

Product Line

Specifications and Characteristics

Dimensions

System Configuration

Product Line

Specifications and Characteristics

Dimensions

Cable

PS Geared Type Frame Size 42 mm

Specifications



Motor Product Name	Single Shaft	AZM46AKH-PS5	AZM46AKH-PS7.2	AZM46AKH-PS10	AZM46AKH-PS25	AZM46AKH-PS36	AZM46AKH-PS50
Driver Product Name	With Electromagnetic Brake	AZM46MKH-PS5	AZM46MKH-PS7.2	AZM46MKH-PS10	AZM46MKH-PS25	AZM46MKH-PS36	AZM46MKH-PS50
		AZD-K, AZD-KR					
Max. Holding Torque	Nm	1	1.5	2.5	3	3	3
Rotor Inertia	J: kgm ²	55×10^{-7} (71×10^{-7})*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Resolution Setting: 1000 P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	Nm	1	1.5	2.5	3	3	3
Max. Instantaneous Torque*	Nm	*	2	6	*	6	6
Holding Torque at Motor Standstill	Power ON	Nm	0.75	1	1.5	2.5	3
	Electromagnetic Brake	Nm	0.75	1	1.5	2.5	3
Permissible Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin	15 (0.25°)					
Power Supply Input		Check "Driver Specifications" on page 61 for the driver current when combined with a motor.					
Control Power Supply*2							

● A letter indicating the driver type is specified where the box is located in the product name. Check "List of Combinations" on page 52 for driver product names.

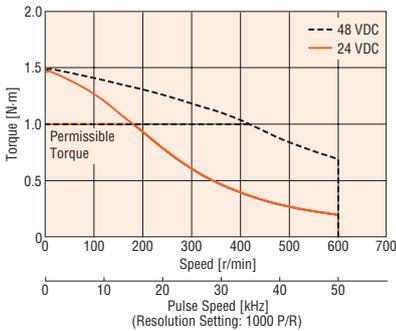
* For the geared motor output torque, refer to the speed-torque characteristics.

*1 The value inside the () represents the value when connecting an electromagnetic brake motor.

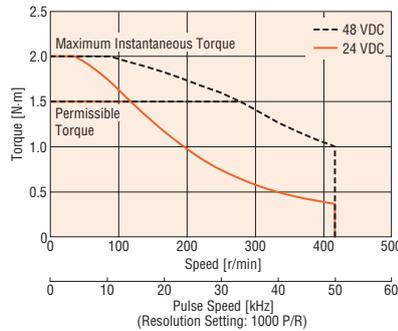
*2 Excluding **AZD-KD**, **AZD-KX**, and **AZD-K**

Speed – Torque Characteristics (Reference values)

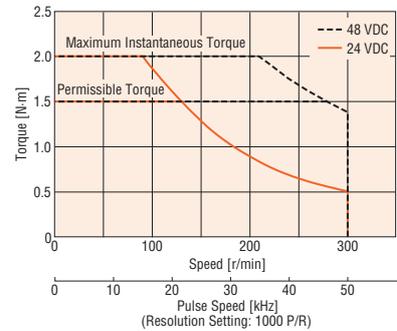
AZM46 Gear Ratio 5



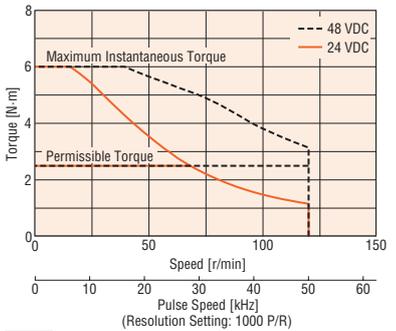
AZM46 Gear Ratio 7.2



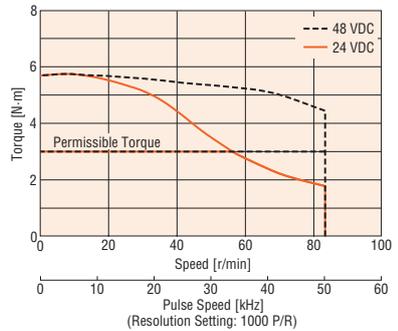
AZM46 Gear Ratio 10



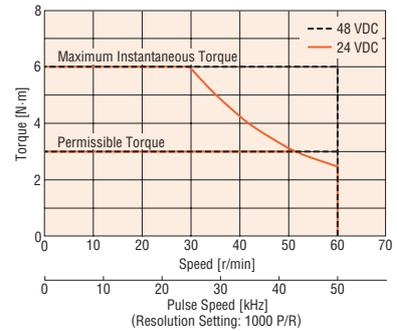
AZM46 Gear Ratio 25



AZM46 Gear Ratio 36



AZM46 Gear Ratio 50



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

PS Geared Type Frame Size 60 mm

Specifications

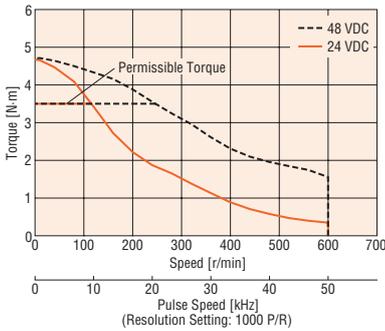


Motor Product Name	Single Shaft	AZM66AKH-PS5	AZM66AKH-PS7.2	AZM66AKH-PS10	AZM66AKH-PS25	AZM66AKH-PS36	AZM66AKH-PS50
Driver Product Name	With Electromagnetic Brake	AZM66MKH-PS5	AZM66MKH-PS7.2	AZM66MKH-PS10	AZM66MKH-PS25	AZM66MKH-PS36	AZM66MKH-PS50
Max. Holding Torque	Nm	3.5	4	5	8		
Rotor Inertia	J: kgm ²	370×10 ⁻⁷ (530×10 ⁻⁷)*1					
Gear Ratio		5	7.2	10	25	36	50
Resolution	Resolution Setting: 1000 P/R	0.072°/Pulse	0.05°/Pulse	0.036°/Pulse	0.0144°/Pulse	0.01°/Pulse	0.0072°/Pulse
Permissible Torque	Nm	3.5	4	5	8		
Max. Instantaneous Torque*	Nm	*	*	*	*	*	20
Holding Torque at Motor	Power ON	2.5	3.6	5	7.6	8	
Standstill	Electromagnetic Brake	2.5	3.6	5	7.6	8	
Speed Range	r/min	0~600	0~416	0~300	0~120	0~83	0~60
Backlash	arcmin	7 (0.12°)			9 (0.15°)		
Power Supply Input		Check "■ Driver Specifications" on page 61 for the driver current when combined with a motor.					
Control Power Supply*2							

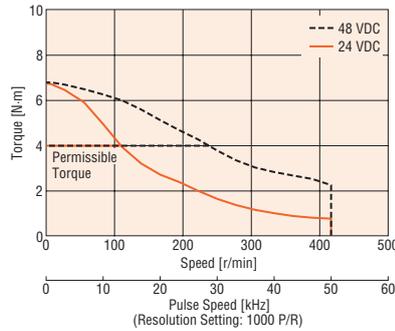
- A letter indicating the driver type is specified where the box ■ is located in the product name. Check "■ List of Combinations" on page 52 for driver product names.
- When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertial ratio or less and twice the safety factor or more when calculating the acceleration torque.
- * For the geared motor output torque, refer to the speed-torque characteristics.
- *1 The value inside the () represents the value when connecting an electromagnetic brake motor.
- *2 Excluding AZD-KD, AZD-KX, and AZD-K

Speed – Torque Characteristics (Reference values)

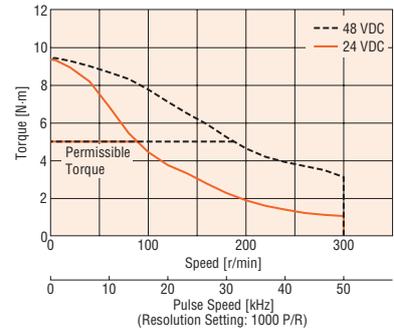
AZM66 Gear Ratio 5



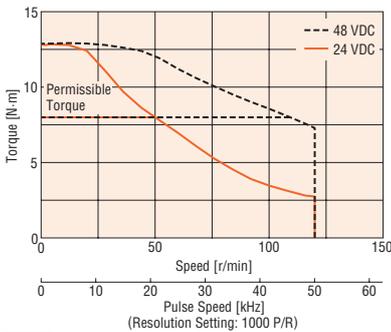
AZM66 Gear Ratio 7.2



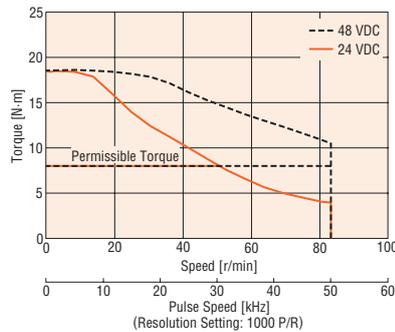
AZM66 Gear Ratio 10



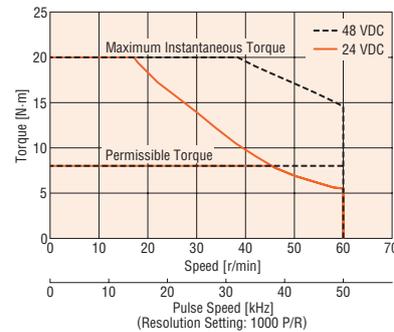
AZM66 Gear Ratio 25



AZM66 Gear Ratio 36



AZM66 Gear Ratio 50



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

System Configuration

Product Line

Specifications and Characteristics

Dimensions

AC Input

System Configuration

Product Line

DC Input

Specifications and Characteristics

Dimensions

Cable

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] ^{(2),(3)}	14	5	20	18	40	15	44	40	110	38	120	110
Max. output torque [Nm] ^{(2),(3),(4)}	22	8	32	29	64	24	70	64	176	61	192	176
Emergency stop torque [Nm] ⁽⁵⁾	36	27	40	36	80	80	88	80	220	200	240	220
Max. input speed [r/min] ⁽⁶⁾	18000				13000				7000			
Running noise [dB (A)] ⁽⁷⁾	58				58				60			
Permitted radial load for 30000h (Fa=0) [N] ^{(2),(8)}	160				340				650			
Permitted axial load for 30000h (Fr=0) [N] ^{(2),(9)}	160				450				900			
Permitted radial load for 20000h (Fa=0) [N] ^{(2),(8)}	200				400				750			
Permitted axial load for 20000h (Fr=0) [N] ^{(2),(9)}	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.

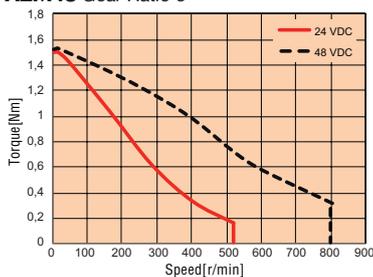
(9) With respect to center of output shaft.

Speed – Torque Characteristics

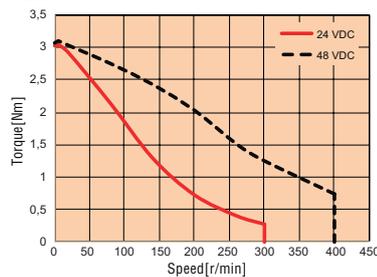
● 24/48 VDC

◇ AZM46AKH-PLE40 / AZM46MKH-PLE40 (Reference value)*

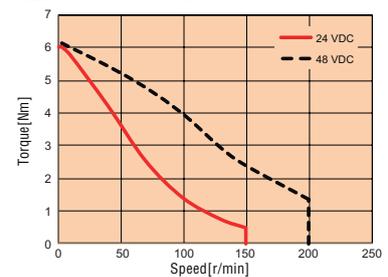
AZM46 Gear Ratio 5



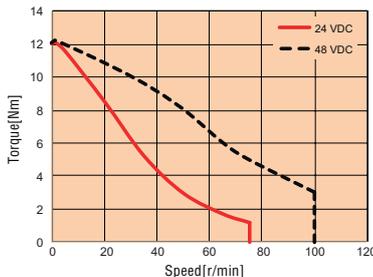
AZM46 Gear Ratio 10



AZM46 Gear Ratio 20

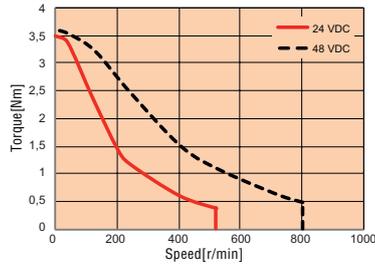


AZM46 Gear Ratio 40

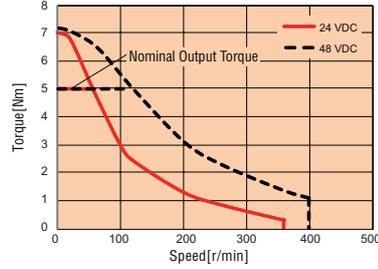


◇ **AZM48AKH-PLE40** (Reference value)*

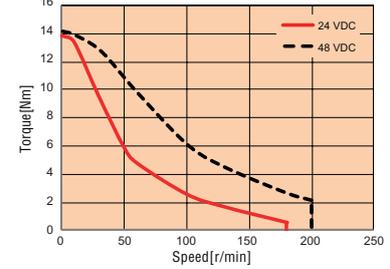
AZM48 Gear Ratio 5



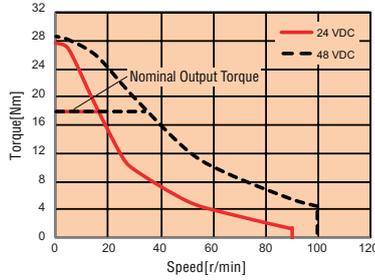
AZM48 Gear Ratio 10



AZM48 Gear Ratio 20

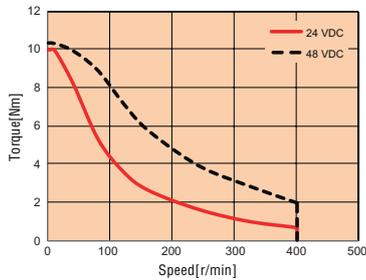


AZ48 Gear Ratio 40

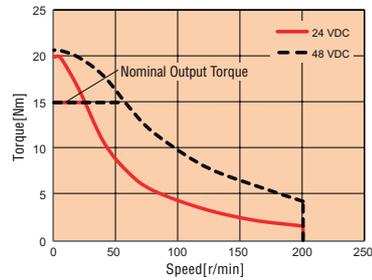


◇ **AZM69AKH-PLE60 / AZM69MKH-PLE60** (Reference value)*

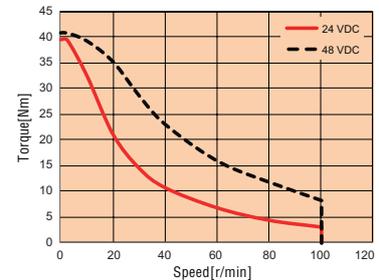
AZM69 Gear Ratio 5



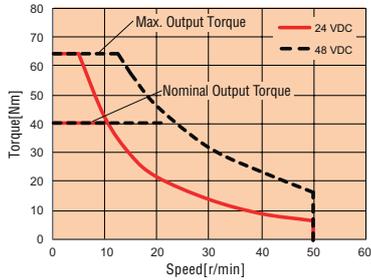
AZM69 Gear Ratio 10



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.

AC Input	System Configuration
	Product Line
	Specifications and Characteristics
DC Input	Dimensions
	System Configuration
	Product Line
Cable	Specifications and Characteristics
	Dimensions
	Cable

Harmonic Geared Type Frame Size 42 mm, 60 mm

Specifications



Motor Product Name	Single Shaft	AZM46AKH-HS50	AZM46AKH-HS100	AZM66AKH-HS50	AZM66AKH-HS100
	With Electromagnetic Brake	AZM46MKH-HS50	AZM46MKH-HS100	AZM66MKH-HS50	AZM66MKH-HS100
Driver Product Name	AZD-K□, AZD-KR□				
Max. Holding Torque	Nm	3.5	5	7	10
Rotor Inertia	J: kgm ²	72×10 ⁻⁷ (88×10 ⁻⁷)*1		405×10 ⁻⁷ (565×10 ⁻⁷)*1	
Gear Ratio		50	100	50	100
Resolution	Resolution Setting: 1000 P/R	0.0072°/Pulse	0.0036°/Pulse	0.0072°/Pulse	0.0036°/Pulse
Permissible Torque	Nm	3.5	5	7	10
Max. Instantaneous Torque*	Nm	8.3	11	*	36
Holding Torque at Power ON	Nm	3.5	5	7	10
Motor Standstill	Electromagnetic Brake Nm	3.5	5	7	10
Permissible Speed Range	r/min	0~70	0~35	0~60	0~30
Lost Motion (Load torque)	arcmin	1.5 max. (±0.16 Nm)	1.5 max. (±0.20 Nm)	0.7 max. (±0.28 Nm)	0.7 max. (±0.39 Nm)
Power Supply Input					
Control Power Supply*2	Check "Driver Specifications" on page 61 for the driver current when combined with a motor.				

- A letter indicating the driver type is specified where the box □ is located in the product name. Check "List of Combinations" on page 52 for driver product names.
- When the motor is operated from 48 VDC input, as a reference, use an inertial load 10 times the rotor inertia ratio or less and twice the safety factor or more when calculating the acceleration torque (excluding **AZM46**).

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

*1 The value inside the () represents the value when connecting an electromagnetic brake motor.

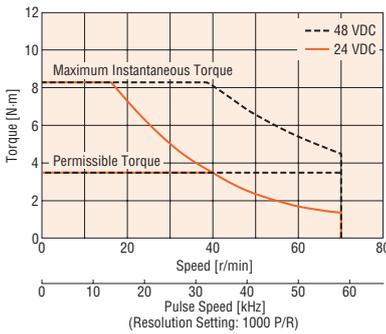
*2 Excluding **AZD-KD**, **AZD-KX**, and **AZD-K**

Note

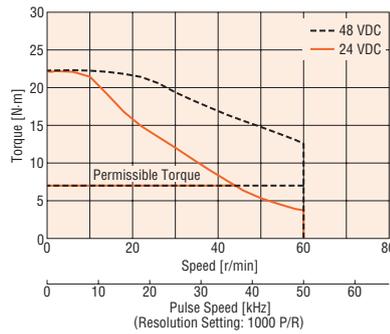
- The rotor inertia represents a sum of the inertia of the harmonic gear converted to motor shaft values.

Speed – Torque Characteristics (Reference values)

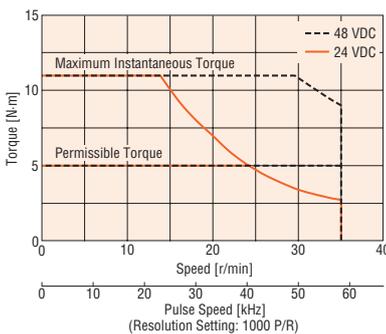
AZM46 Gear Ratio 50



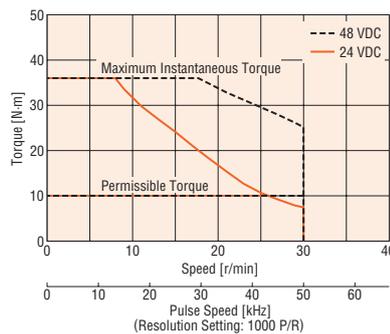
AZM66 Gear Ratio 50



AZM46 Gear Ratio 100



AZM66 Gear Ratio 100



Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the motor. To protect the absolute sensor, be sure to keep the temperature of the motor case at 80°C or less. (When conforming to the UL or CSA Standards, the temperature of the motor case must be kept at 75°C or less since the motor is recognized as heat-resistant class A.)

Driver Specifications

Single-Axis Driver

Driver Product Name		AZD-KED AZD-KEP AZD-KPN	AZD-KX AZD-K	AZD-KD
Main Power Supply	Input Voltage	• 24 VDC±5% • 48 VDC±5%		
	Input Current	AZM46	1.5 A	1.72 A (1.8 A)* ¹
		AZM48	2.1 A	2.2 A
		AZM66	3.3 A	3.55 A (3.8 A)* ¹
AZM69	3.1 A	3.45 A (3.7 A)* ¹		
Control Power Supply	Input Voltage	24 VDC±5%		
	Input Current	0.15 A (0.4 A)* ²		
Interface	Pulse Input	• 2 Points, Photocoupler • Maximum Input Pulse Frequency Line driver: 1 MHz (at 50% duty) Open collector: 250 kHz (at 50% duty)		—
	Control Input	6 Points, Photocoupler		10 Points, Photocoupler
	Pulse Output	2 Points, Line Driver		
	Control Output	6 Points, Photocoupler and Open-Collector		
	Power Shut Down Signal Input	2 Points, Photocoupler		—
	Power Shut Down Monitor Output	1 Points, Photocoupler/ Open Collector		—

*1 The value inside the () represents the value when an electromagnetic brake motor is connected.

*2 The values in parentheses () indicate the specifications when connected to the electromagnetic brake motor. **AZM46** is 0.23 A.

mini Driver

Driver Product Name		AZD-KRED AZD-KREP AZD-KRPN	AZD-KR2D	AZD-KRX
Main Power Supply	Rated Voltage	• 24 VDC±5% • 48 VDC±5%		
	Input Current* ¹	AZM46 : 1.6 A, AZM48 : 2.1 A, AZM66 : 3.7 A, AZM69 : 3.5 A		
	Permissible Operating Voltage	24 VDC Input: 20 to 32 VDC (22.8 to 32 VDC)* ² 48 VDC Input: 40 to 55 VDC		
Control Power Supply	Rated Voltage	• 24 VDC±5% • 48 VDC±5%		
	Input Current	0.15 A (0.4 A)* ³		
	Permissible Voltage Range	24 VDC Input: 20 to 32 VDC (22.8 to 32 VDC)* ² 48 VDC Input: 40 to 55 VDC		
Interface	Pulse Input	—	—	• 2 Points, Photocoupler • Maximum Input Pulse Frequency Line driver: 1 MHz (at 50% duty) Open Collector: 250 kHz (50% duty)
	Control Input	20 to 32 VDC 2 Points, Photocoupler	—	4.5–32 VDC 5 Points, Photocoupler
	Control Output	—	—	4.5–32 VDC 3 Points, Photocoupler and Open-Collector

*1 The value of the input current depends on the motor used in combination.

*2 The values in parentheses () indicate the specifications when connected to the electromagnetic brake motor.

*3 The value in parentheses () indicates the specification when connected to the electromagnetic brake motor. **AZM46** is 0.23 A.

General Specifications

		Motor	Driver
Thermal Class		130 (B) [UL/CSA is certified as compliant with 105 (A)]	—
Insulation Resistance		100 MΩ or more when a 500 VDC megger is applied between the following places: <ul style="list-style-type: none"> Case–Motor Winding Case–Electromagnetic Brake Winding*1 	100 MΩ or more when a 500 VDC megger is applied between the following places: *2 <ul style="list-style-type: none"> Protective Earth Terminal–Power Supply Terminal
Dielectric Strength		Sufficient to withstand the following for 1 minute: <ul style="list-style-type: none"> Between the case and motor sensor windings: 1.0 kVAC, 50 Hz or 60 Hz Between the case and electromagnetic brake windings*1 1.0 kVAC, 50 Hz or 60 Hz 	—
Operating Environment (In operation)	Ambient Temperature	0 to +40°C (Non-Freezing)	0 to +50°C (Non-Freezing)
	Ambient Humidity	85% or less (Non-Condensing)	
	Altitude	Max. 1000 m above sea level	
	Atmosphere	No corrosive gases or dust. The product should not be exposed to water, oil or other liquids.	
Degree of Protection		IP66 when a connection cable has been attached (excluding installation surface and the connector on the driver side of the connection cable)	IP10*3
Stop Position Accuracy		AZM46, AZM48: ±4 minutes (±0.067°) AZM66, AZM69: ±3 minutes (±0.05°)	
Shaft Runout		0.05T.I.R. (mm)*4	—
Concentricity of Installation Pilot to the Shaft		0.075T.I.R. (mm)*4	—
Perpendicularity of Installation Surface to the Shaft		0.075T.I.R. (mm)*4	—
Multiple Rotation Detection Range in Power OFF State		±900 Rotation (1800 Rotations)	

*1 Only for products with an electromagnetic brake

*2 Excluding mini driver

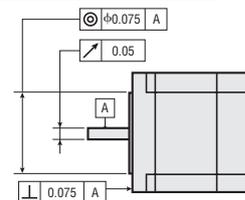
*3 IP20 for **AZD-KRED, AZD-KREP, AZD-KRPN, AZD-KRX**

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

Note

● When measuring insulation resistance or performing dielectric voltage withstand test, disconnect the motor and driver.

Also, do not perform these tests on the ABZO Sensor (Absolute Sensor) part of the motor.



Electromagnetic Brake Specifications

→ Page 19

Rotation Direction

→ Page 19

Permissible Radial Load and Permissible Axial Load

→ Page 20

Permissible Moment Load

→ Page 21

Harmonic Geared Type Accuracy

→ Page 22

Dimensions (Unit: mm)

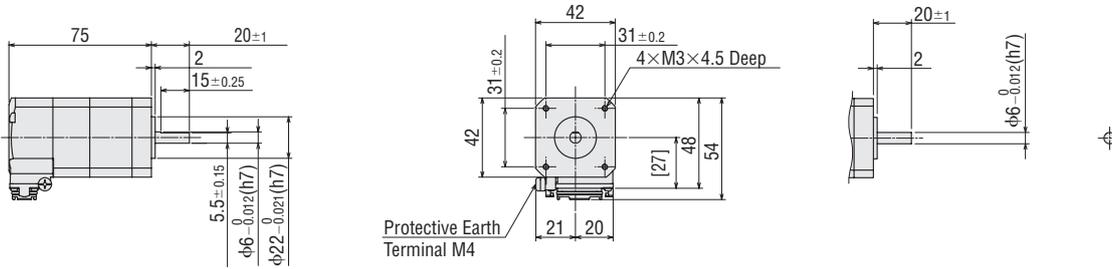
Motor

Standard Type

Frame Size 42 mm

Shaft Type	Product Name	Mass [kg]
Single Shaft Flat Type	AZM46AKH	0.4
Straight Type	AZM46A0KH	

Single Shaft Flat Type

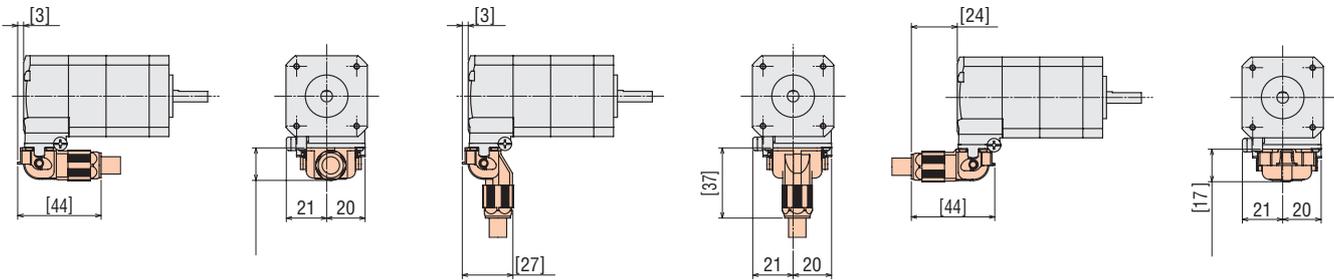


With Connection Cable Attached

Cable Drawn in the Same Direction As the Output Shaft

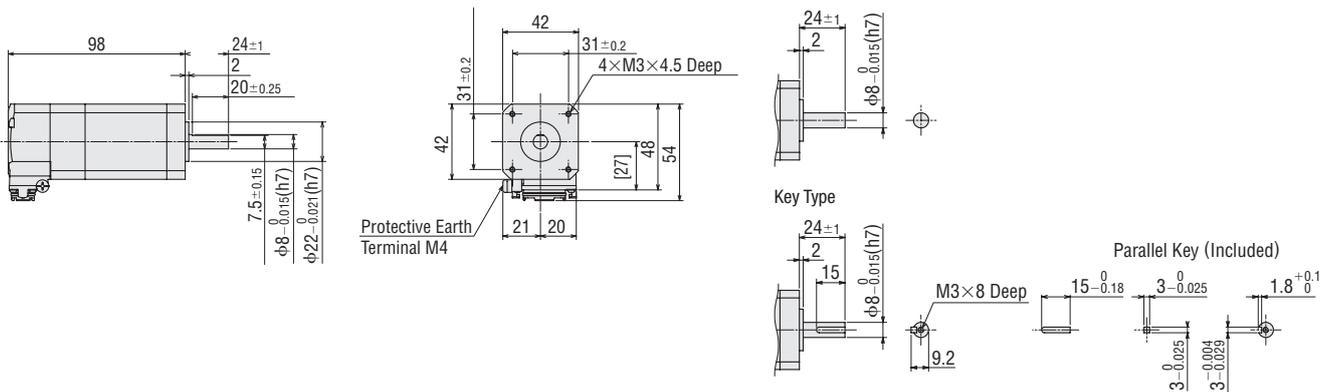
Cable Drawn Vertically

Cable Drawn in the Opposite Direction of the Output Shaft



Shaft Type	Product Name	Mass [kg]
Single Shaft Flat Type	AZM48AKH	0.63
Straight Type	AZM48A0KH	
Key Type	AZM48A1KH	

Single Shaft Flat Type

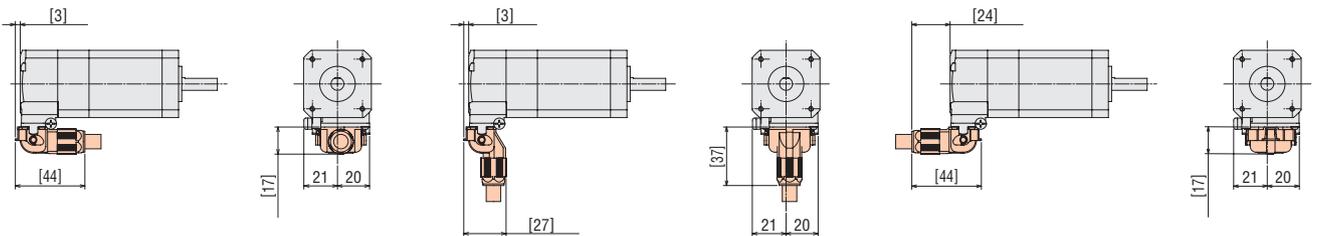


With Connection Cable Attached

Cable Drawn in the Same Direction As the Output Shaft

Cable Drawn Vertically

Cable Drawn in the Opposite Direction of the Output Shaft

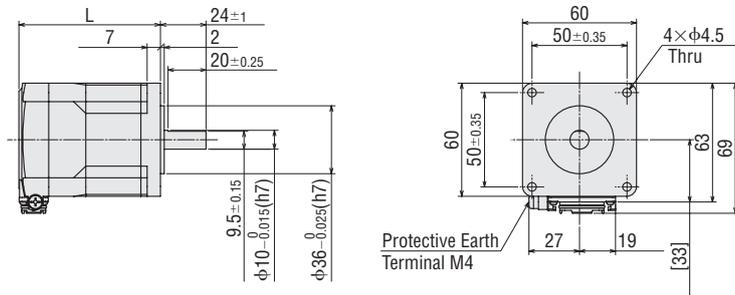


The color in the dimensions indicates the connection cable that is sold separately.

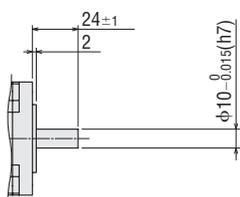
Frame Size 60 mm

Shaft Type	Product Name	L	Mass [kg]
Single Shaft Flat Type	AZM66AKH	74.5	0.84
Straight Type	AZM66A0KH		
Key Type	AZM66A1KH		
Single Shaft Flat Type	AZM69AKH	100	1.3
Straight Type	AZM69A0KH		
Key Type	AZM69A1KH		

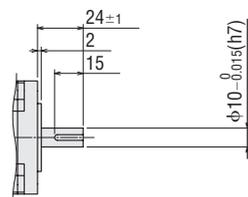
Single Shaft Flat Type



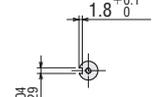
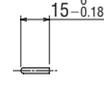
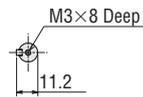
Straight Type



Key Type

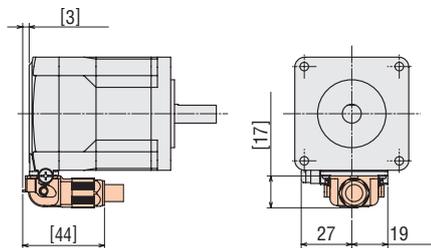


Parallel Key (Included)

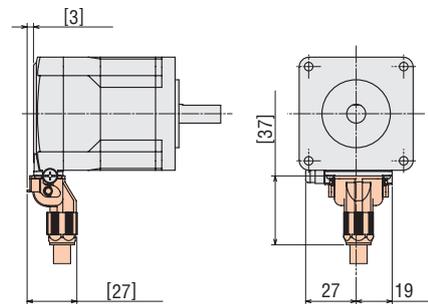


● With Connection Cable Attached

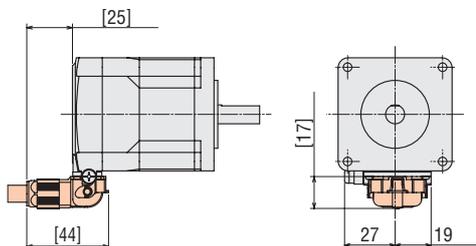
Cable Drawn in the Same Direction As the Output Shaft



Cable Drawn Vertically



Cable Drawn in the Opposite Direction of the Output Shaft

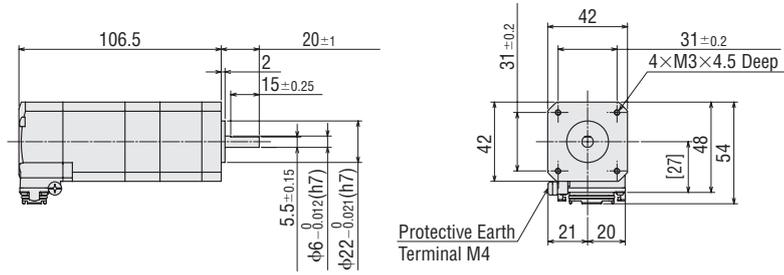


● The color in the dimensions indicates the connection cable that is sold separately.

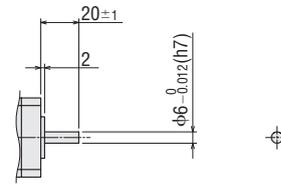
◇ Standard Type with Electromagnetic Brake
Frame Size 42 mm

Shaft Type	Product Name	Mass [kg]
Single Shaft Flat Type	AZM46MKH	0.54
Straight Type	AZM46MOKH	

Single Shaft Flat Type

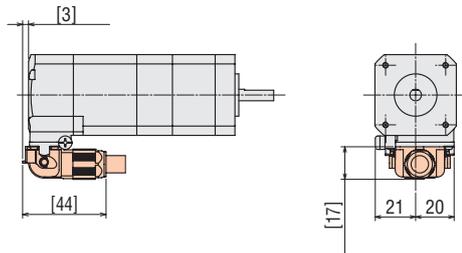


Straight Type

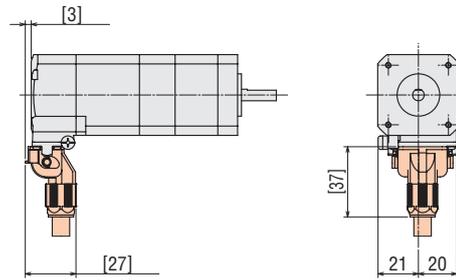


● With Connection Cable Attached

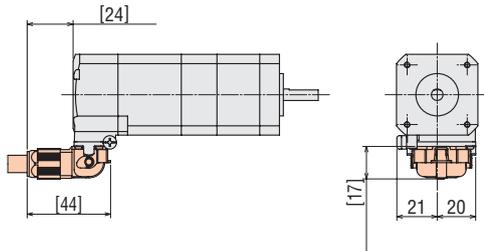
Cable Drawn in the Same Direction As the Output Shaft



Cable Drawn Vertically



Cable Drawn in the Opposite Direction of the Output Shaft



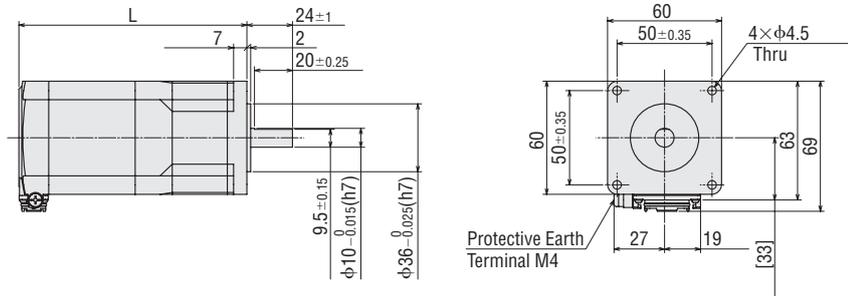
● The color in the dimensions indicates the connection cable that is sold separately.

System Configuration	AC Input	System Configuration
Product Line	Specifications and Characteristics	Product Line
Dimensions	Dimensions	Dimensions
DC Input	Specifications and Characteristics	System Configuration
	DC Input	Product Line
		Specifications and Characteristics
		Dimensions
		Cable

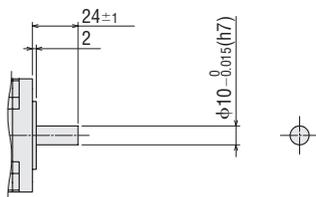
Frame Size 60 mm

Shaft Type	Product Name	L	Mass [kg]
Single Shaft Flat Type	AZM66MKH	120	1.2
Straight Type	AZM66M0KH		
Key Type	AZM66M1KH		
Single Shaft Flat Type	AZM69MKH	145.5	1.7
Straight Type	AZM69M0KH		
Key Type	AZM69M1KH		

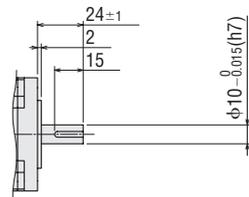
Single Shaft Flat Type



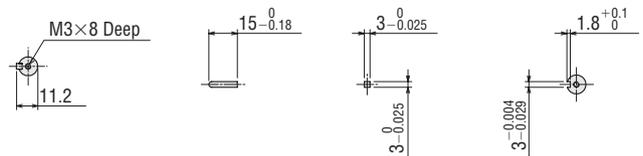
Straight Type



Key Type

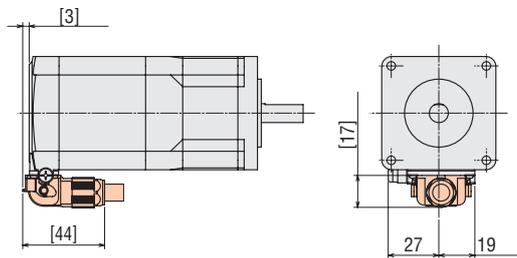


Parallel Key (Included)

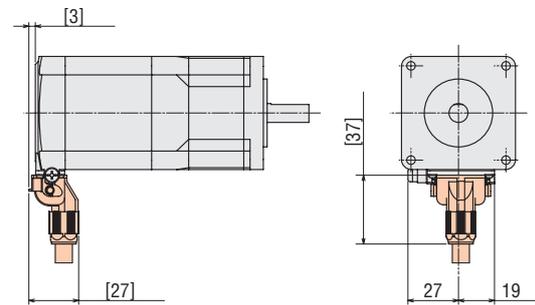


● With Connection Cable Attached

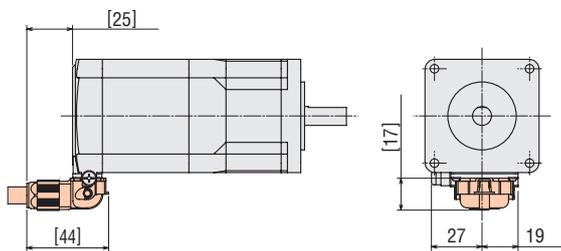
Cable Drawn in the Same Direction As the Output Shaft



Cable Drawn Vertically



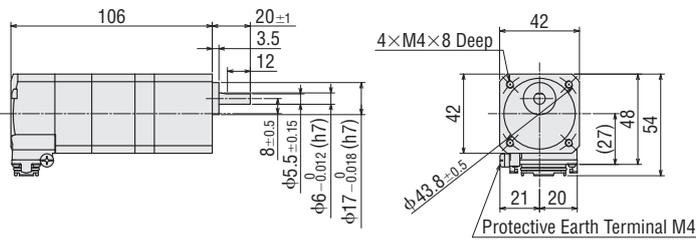
Cable Drawn in the Opposite Direction of the Output Shaft



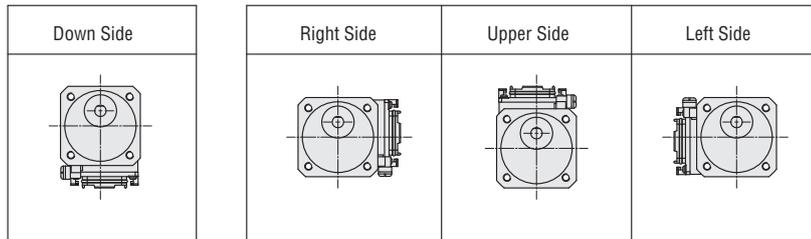
● The color in the dimensions indicates the connection cable that is sold separately.

◇ **TS Geared Type**
Frame Size 42 mm

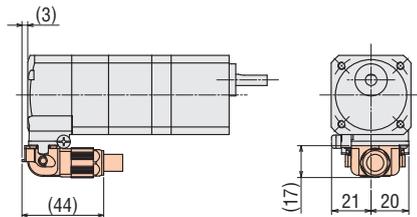
Connector Direction	Product Name	Gear Ratio	Mass [kg]
Down Side	AZM46AKH-TS 	3.6, 7.2, 10, 20, 30	0.55
Right Side	AZM46AKH-TS R		
Upper Side	AZM46AKH-TS U		
Left Side	AZM46AKH-TS L		



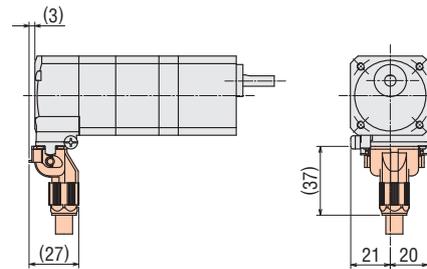
● Connector Direction



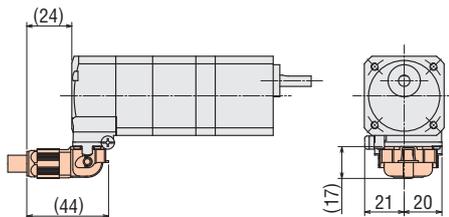
● When the Connection Cable is Attached
 Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

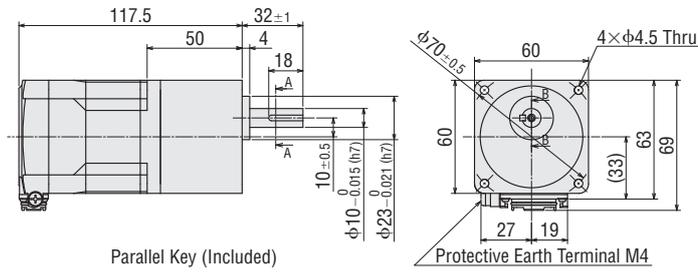


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

Frame Size 60 mm

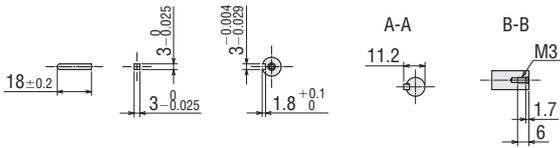
Connector Direction	Product Name	Gear Ratio	Mass [kg]
Down Side	AZM66AKH-TS 	3.6, 7.2, 10, 20, 30	1.2
Right Side	AZM66AKH-TS R		
Upper Side	AZM66AKH-TS U		
Left Side	AZM66AKH-TS L		

● Mounting Screws: M4×60 P0.7 (4 pieces included)

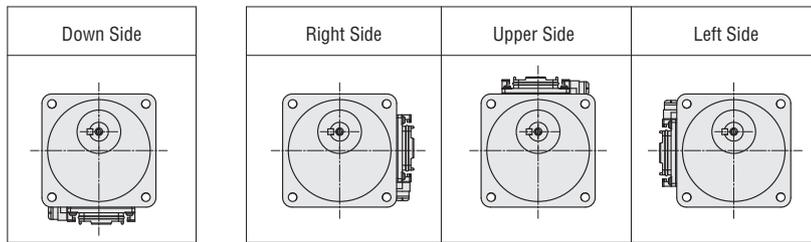


Parallel Key (Included)

Protective Earth Terminal M4

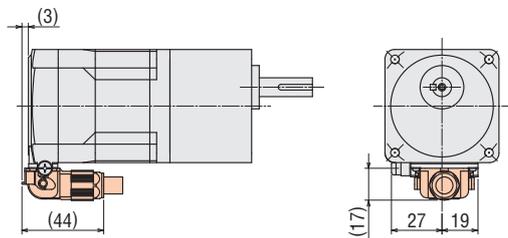


● Connector Direction

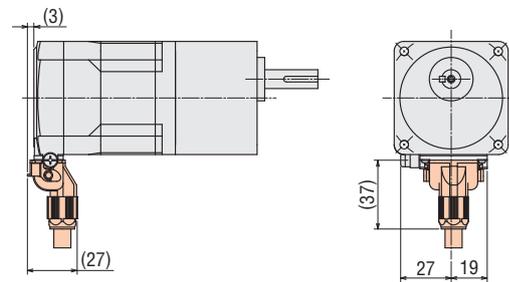


● When the Connection Cable is Attached

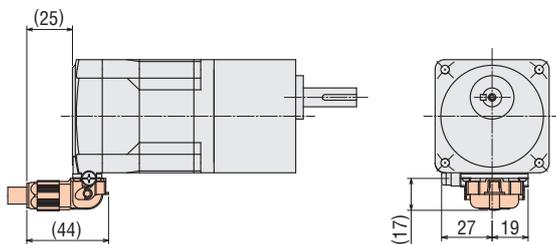
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

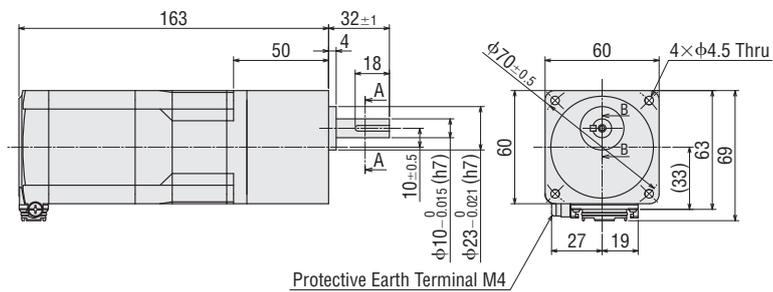


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

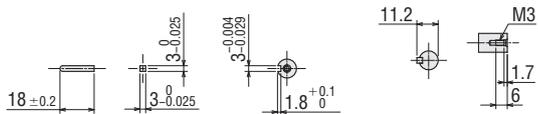
Frame Size 60 mm

Connector Direction	Product Name	Gear Ratio	Mass [kg]
Down Side	AZM66MKH-TS 	3.6, 7.2, 10, 20, 30	1.6
Right Side	AZM66MKH-TS R 		
Upper Side	AZM66MKH-TS U 		
Left Side	AZM66MKH-TS L 		

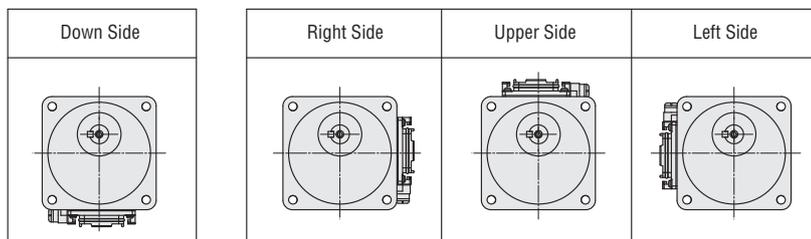
● Mounting Screws: M4×60 P0.7 (4 pieces included)



Parallel Key (Included)

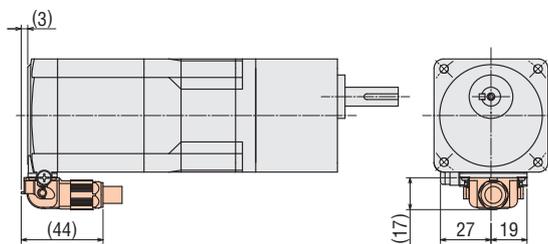


● Connector Direction

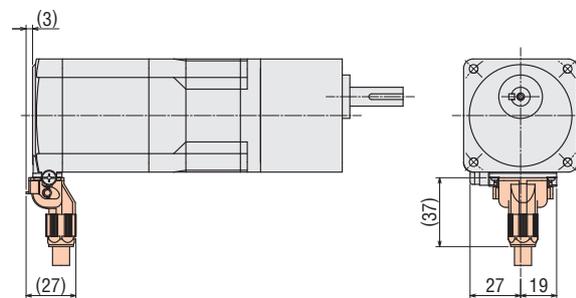


● When the Connection Cable is Attached

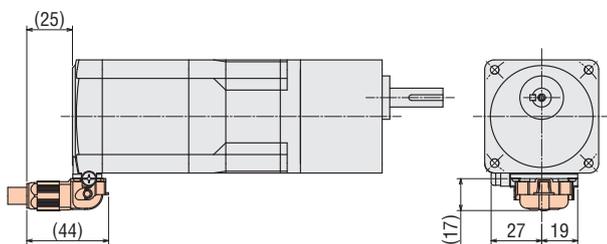
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

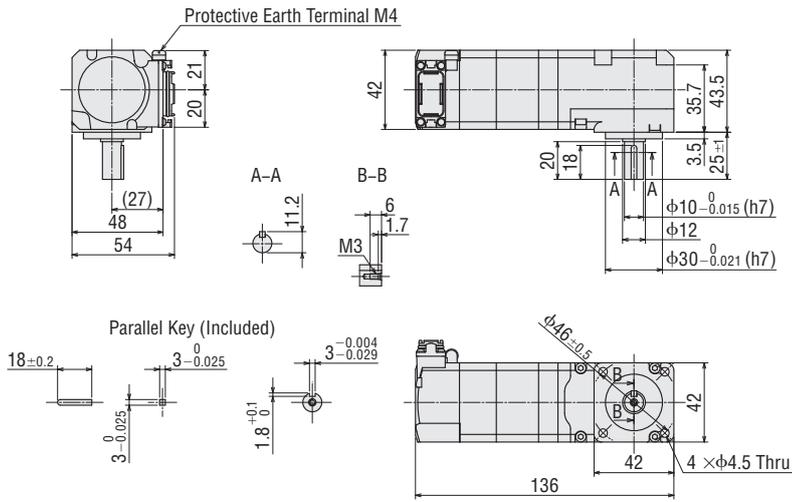


● A number indicating the gear ratio is entered where the box is located within the product name.
 ● The shaded areas are the separately sold connection cables.

◇FC Geared Type

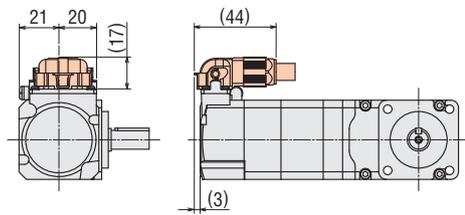
Frame Size 42 mm Connector Direction Upper Side

Product Name	Gear Ratio	Mass [kg]
AZM46AKH-FC ■ UA	7.2, 10, 20, 30	0.75

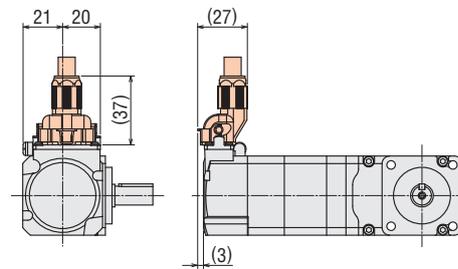


● When the Connection Cable is Attached

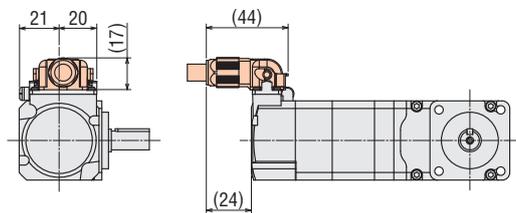
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

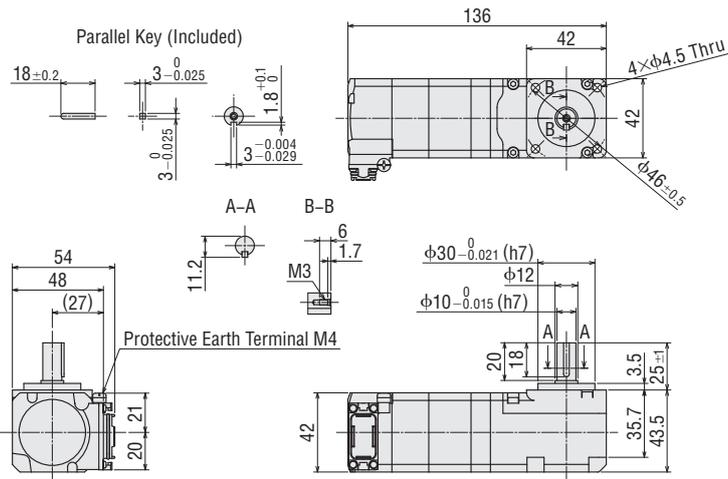


- A number indicating the gear ratio is entered where the box ■ is located within the product name.
- The shaded areas are the separately sold connection cables.

System Configuration	AC Input	System Configuration
Product Line	Specifications and Characteristics	Product Line
Dimensions	DC Input	Specifications and Characteristics
		Dimensions
		Cable

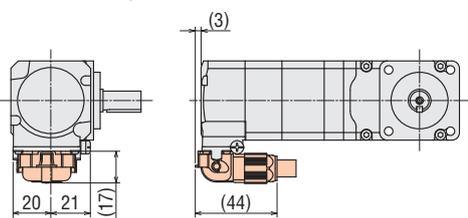
Frame Size 42 mm Connector Direction Down Side

Product Name	Gear Ratio	Mass [kg]
AZM46AKH-FC DA	7.2, 10, 20, 30	0.75

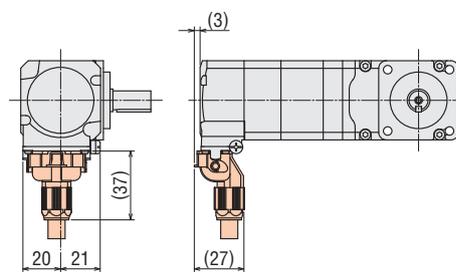


● When the Connection Cable is Attached

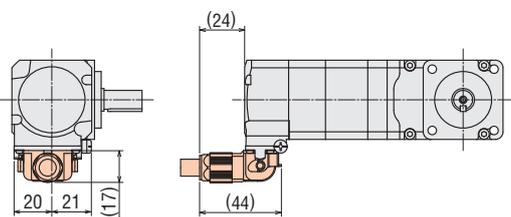
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



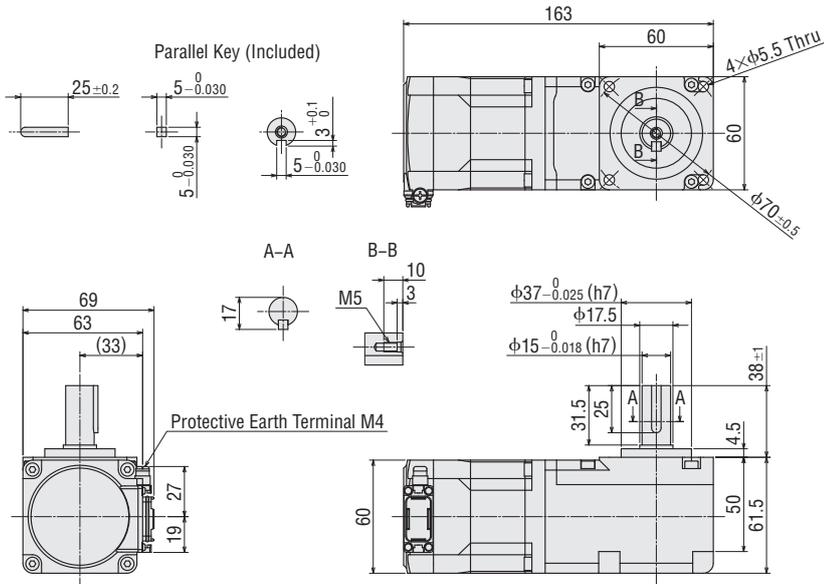
Cable Outlet Opposite to Output Shaft Direction



● A number indicating the gear ratio is entered where the box is located within the product name.
 ● The shaded orange areas are the separately sold connection cables.

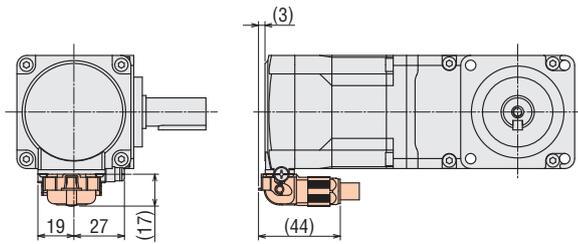
Frame Size 60 mm Connector Direction Down Side

Product Name	Gear Ratio	Mass [kg]
AZM66AKH-FC DA	7.2, 10, 20, 30	1.7

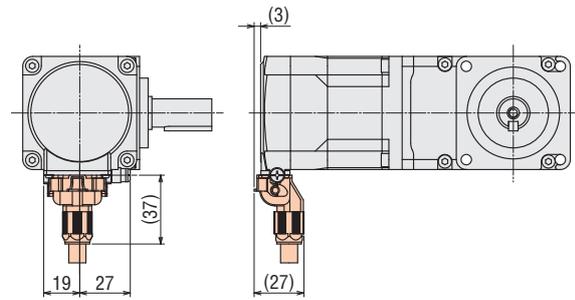


● When the Connection Cable is Attached

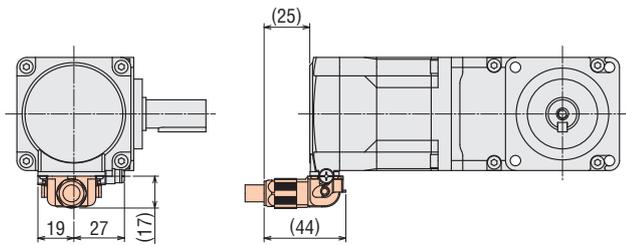
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



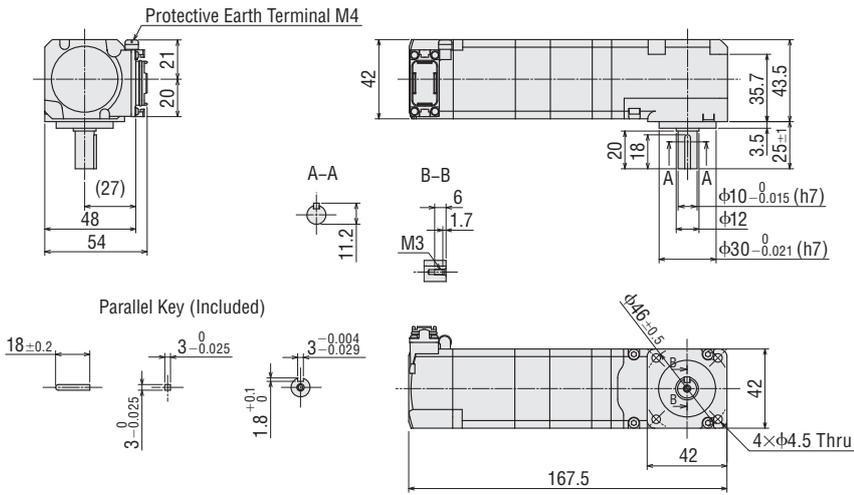
Cable Outlet Opposite to Output Shaft Direction



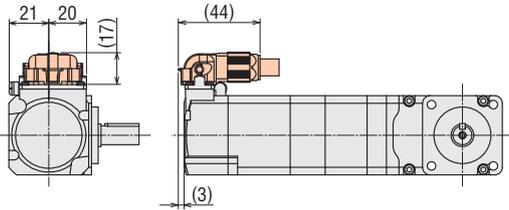
- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

◇FC Geared Type with Electromagnetic Brake
 Frame Size 42 mm Connector Direction Upper Side

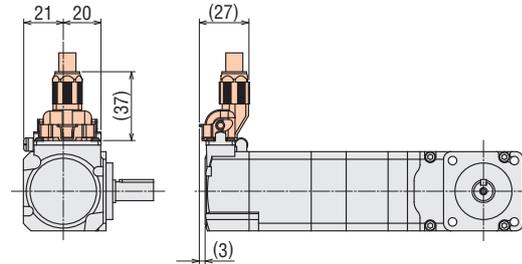
Product Name	Gear Ratio	Mass [kg]
AZM46MKH-FC■UA	7.2, 10, 20, 30	0.89



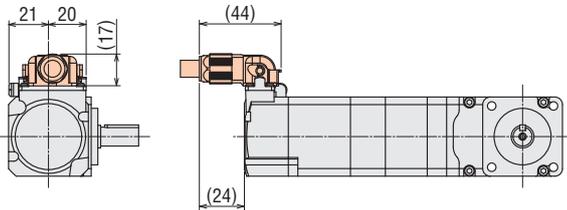
● When the Connection Cable is Attached
 Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



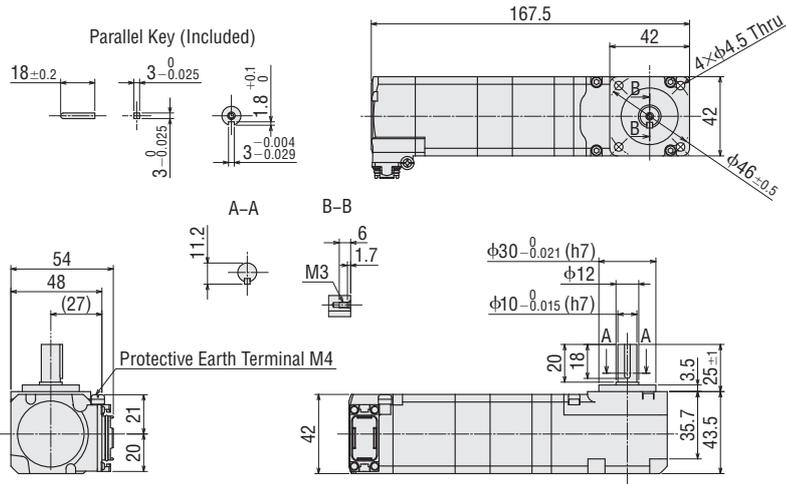
Cable Outlet Opposite to Output Shaft Direction



● A number indicating the gear ratio is entered where the box ■ is located within the product name.
 ● The shaded ■ areas are the separately sold connection cables.

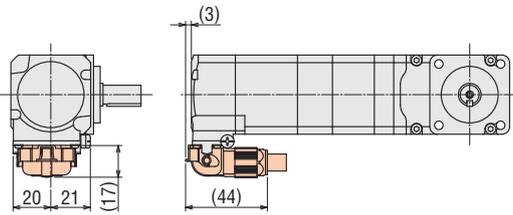
Frame Size 42 mm Connector Direction Down Side

Product Name	Gear Ratio	Mass [kg]
AZM46MKH-FC DA	7.2, 10, 20, 30	0.89

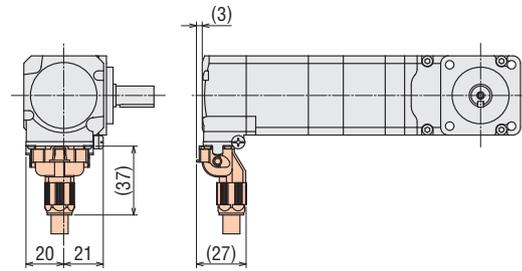


● When the Connection Cable is Attached

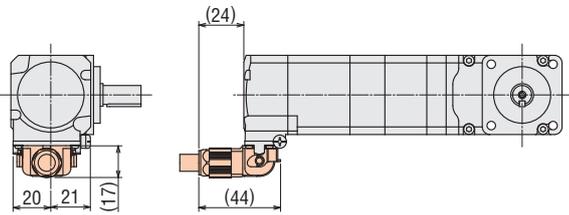
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



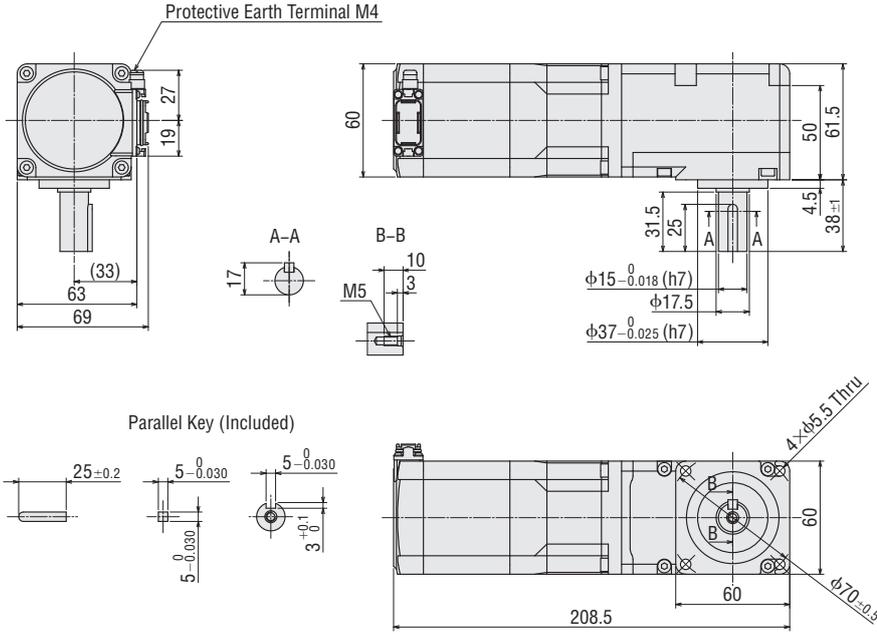
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

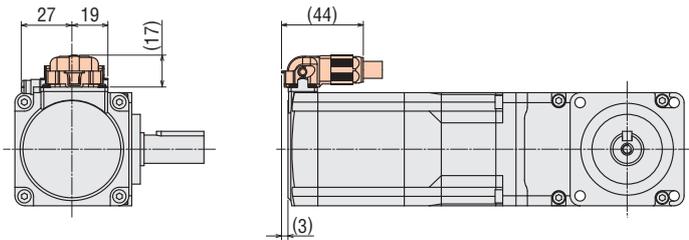
Frame Size 60 mm Connector Direction Upper Side

Product Name	Gear Ratio	Mass [kg]
AZM66MKH-FC UA	7.2, 10, 20, 30	2.1

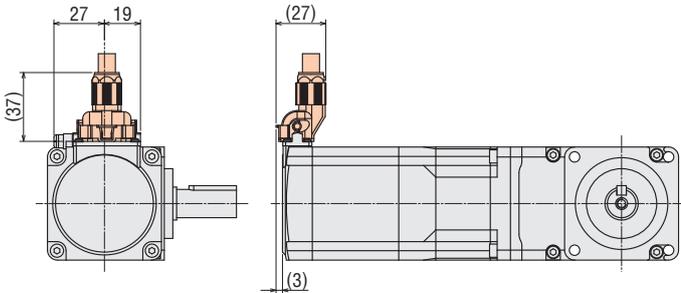


● When the Connection Cable is Attached

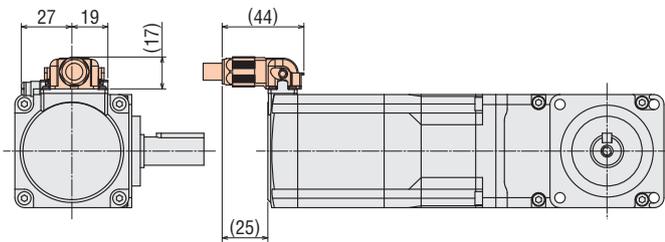
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

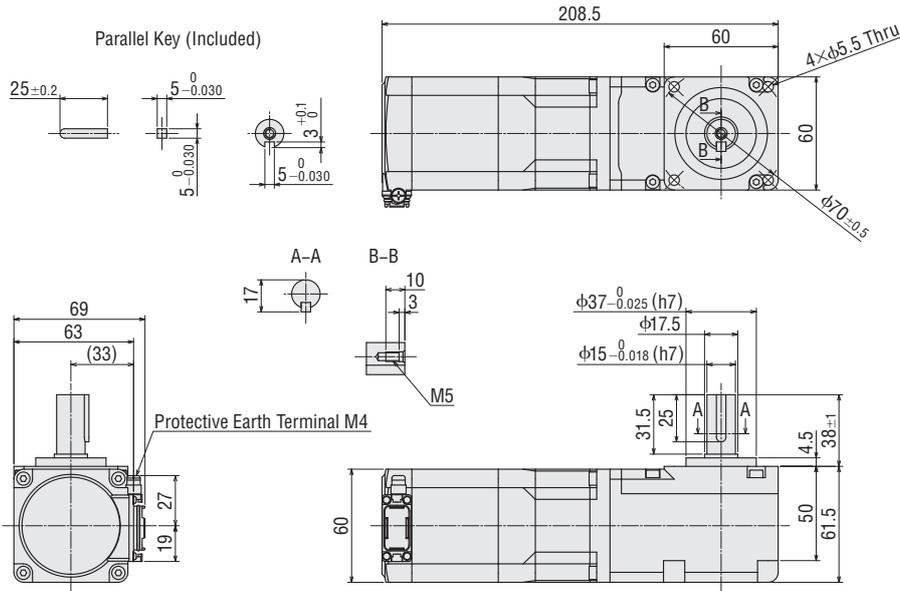


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

AC Input	System Configuration
	Product Line
	Specifications and Characteristics
DC Input	Dimensions
	System Configuration
	Product Line
Cable	Specifications and Characteristics
	Dimensions
	Cable

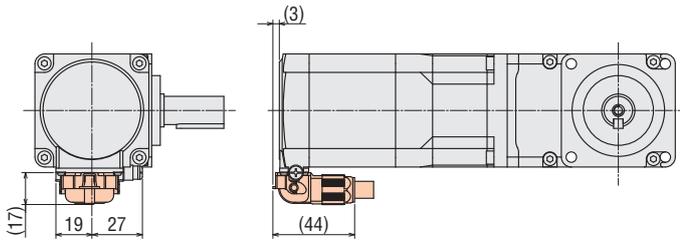
Frame Size 60 mm Connector Direction Down Side

Product Name	Gear Ratio	Mass [kg]
AZM66MKH-FC■DA	7.2, 10, 20, 30	2.1

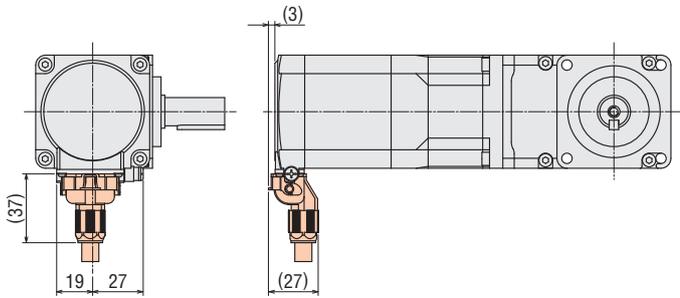


● When the Connection Cable is Attached

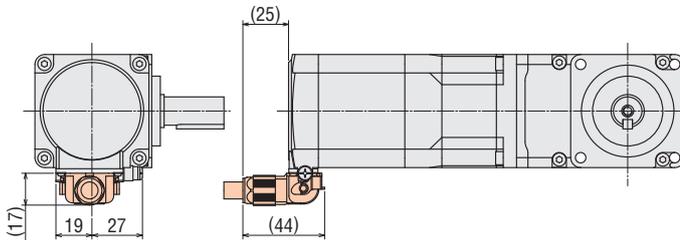
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



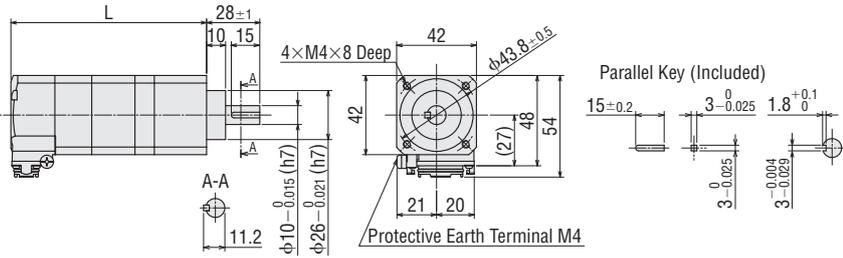
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box ■ is located within the product name.
- The shaded areas are the separately sold connection cables.

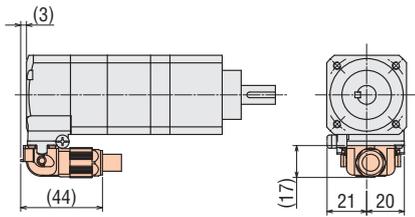
◇ **PS Geared Type**
Frame Size 42 mm

Product Name	Gear Ratio	L	Mass [kg]
AZM46AKH-PS ■	5, 7, 2, 10	103	0.6
	25, 36, 50	126.5	0.75

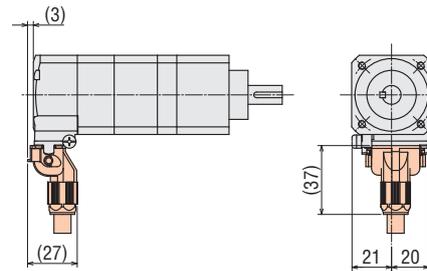


● **When the Connection Cable is Attached**

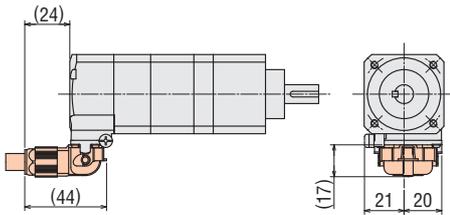
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



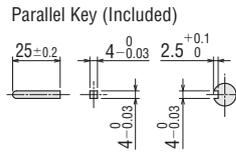
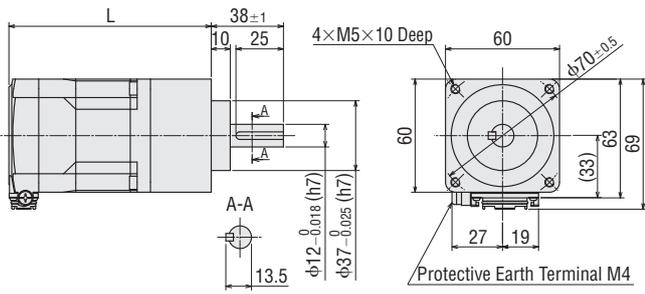
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box ■ is located within the product name.
- The shaded ■ areas are the separately sold connection cables.

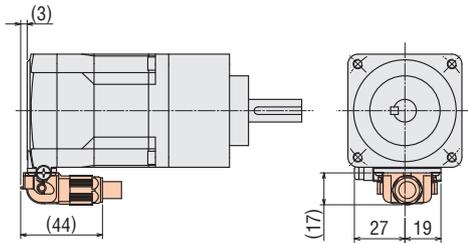
Frame Size 60 mm

Product Name	Gear Ratio	L	Mass [kg]
AZM66AKH-PS 	5, 7.2, 10	106.5	1.2
	25, 36, 50	126.5	1.5

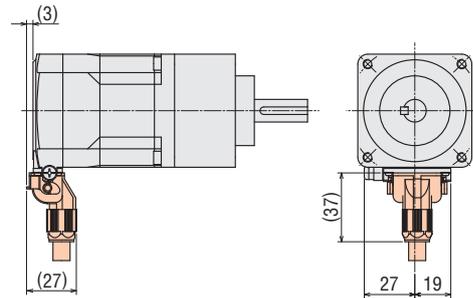


● When the Connection Cable is Attached

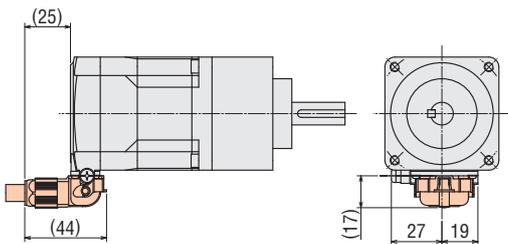
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



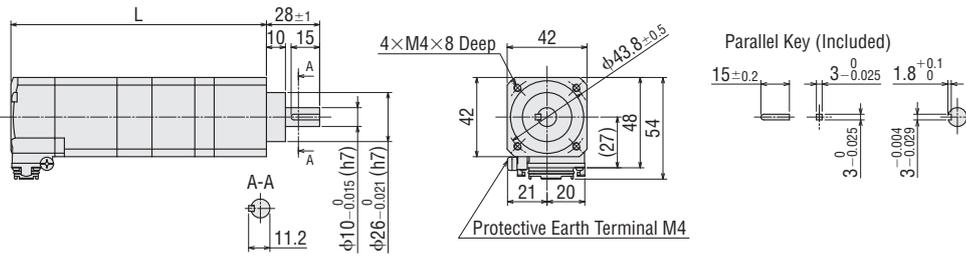
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

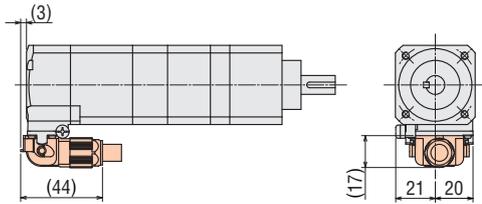
◇ **PS Geared Type with Electromagnetic Brake**
Frame Size 42 mm

Product Name	Gear Ratio	L	Mass [kg]
AZM46MKH-PS 	5. 7. 2. 10	134.5	0.74
	25. 36. 50	157.5	0.89

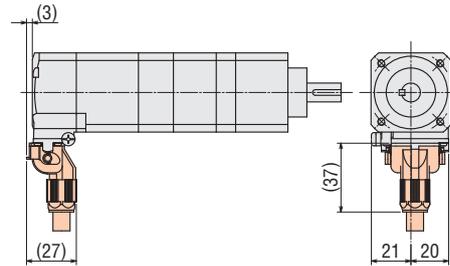


● **When the Connection Cable is Attached**

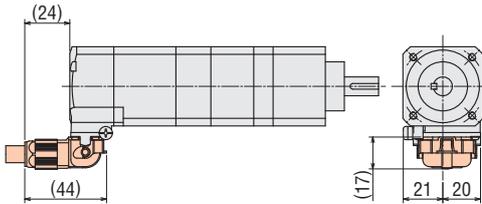
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



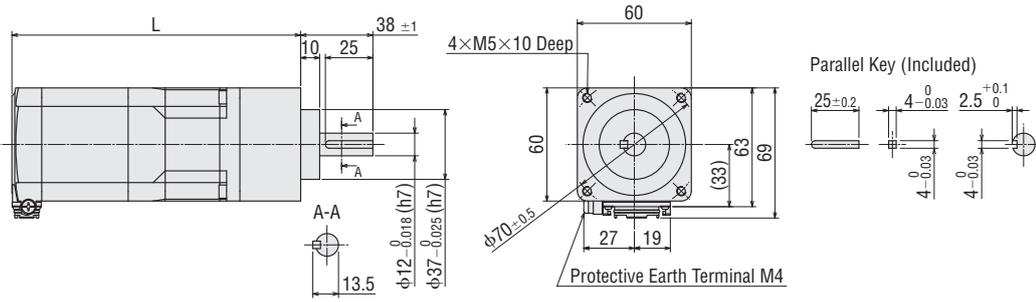
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

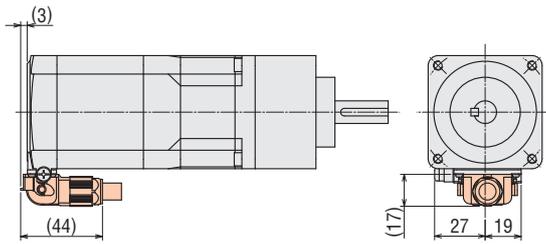
Frame Size 60 mm

Product Name	Gear Ratio	L	Mass [kg]
AZM66MKH-PS 	5, 7.2, 10	152	1.6
	25, 36, 50	172	1.9

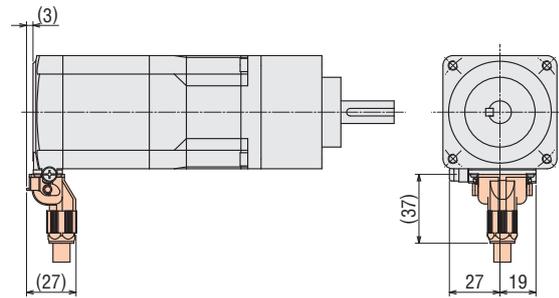


● When the Connection Cable is Attached

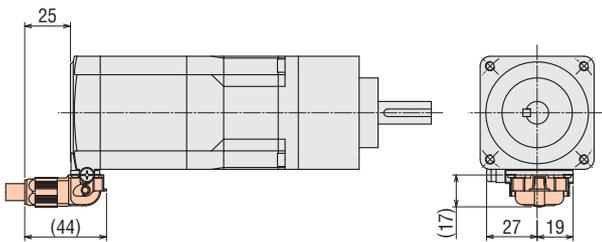
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

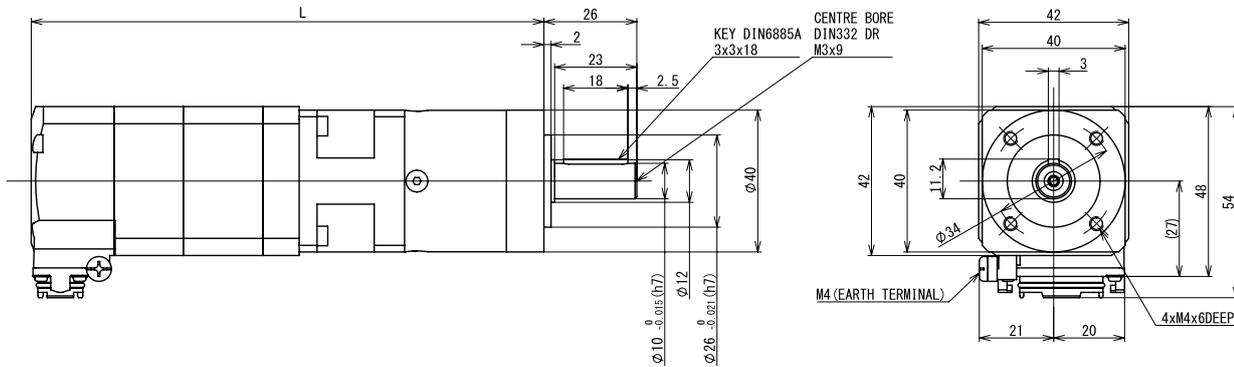


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas are the separately sold connection cables.

◇ PLE Geared Type

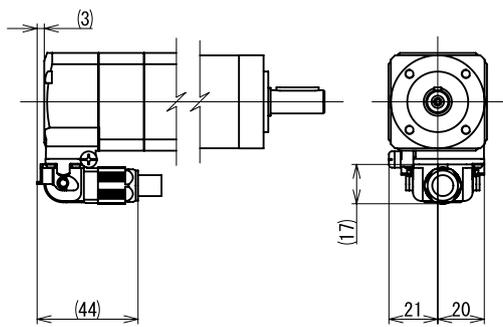
Frame Size 42 mm

Product Name	Gear Ratio	L	Mass [kg]
AZM46AKH-PLE40-■	5	143.5	0.75
	10		0.76
	20	156.5	0.84
	40		0.85
AZM48AKH-PLE40-■	5	166.5	0.98
	10		0.99
	20	179.5	1.07
	40		1.08

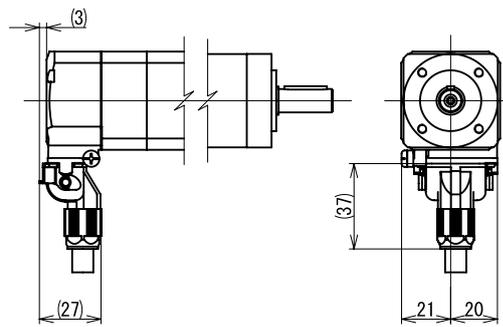


● When the Connection Cable is Attached

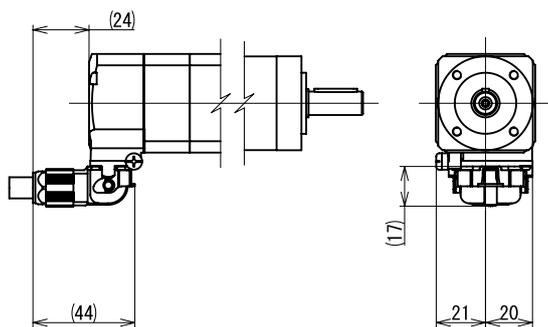
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction

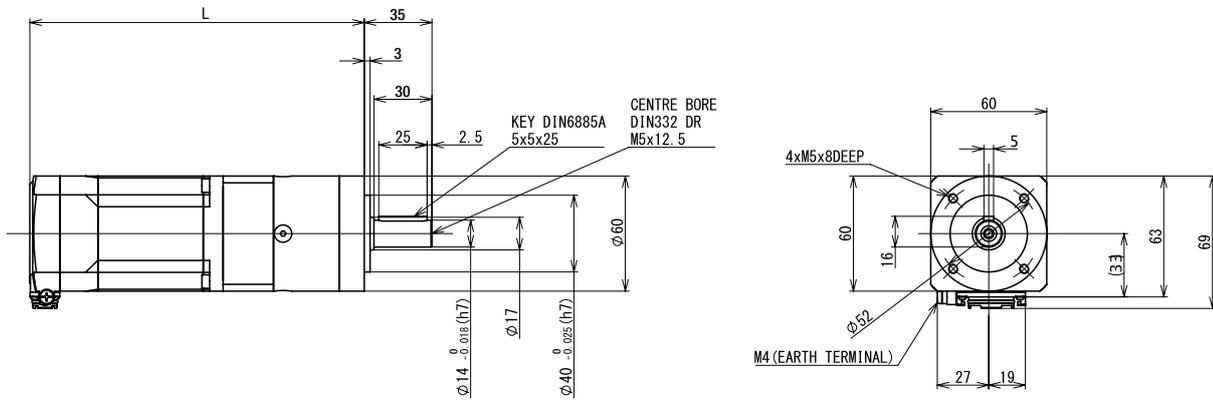


Cable Outlet Opposite to Output Shaft Direction

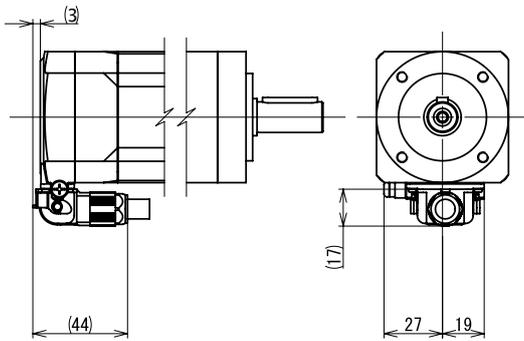


Frame Size 60 mm

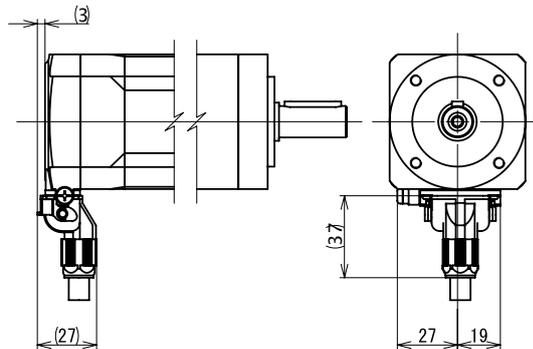
Product Name	Gear Ratio	L	Mass [kg]
AZM69AKH-PLE60-■	5	173	2.22
	10		2.22
	20	185.5	2.41
	40		2.43



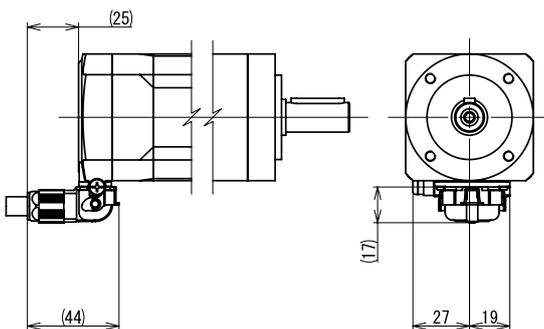
● When the Connection Cable is Attached
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction

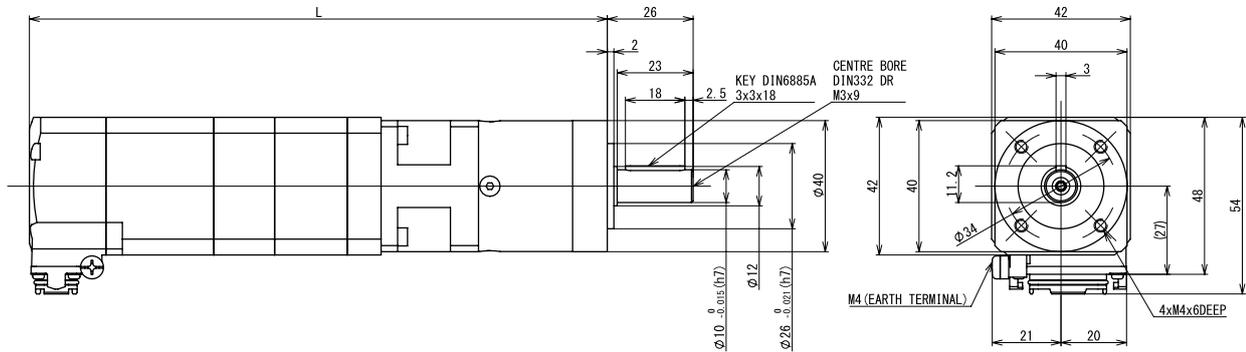


Cable Outlet Opposite to Output Shaft Direction

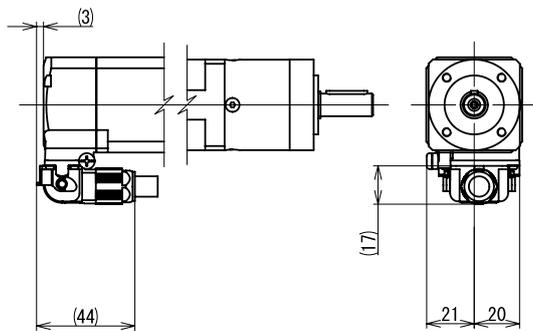


◇ **PLE** Geared Type with Electromagnetic Brake
Frame Size 42 mm

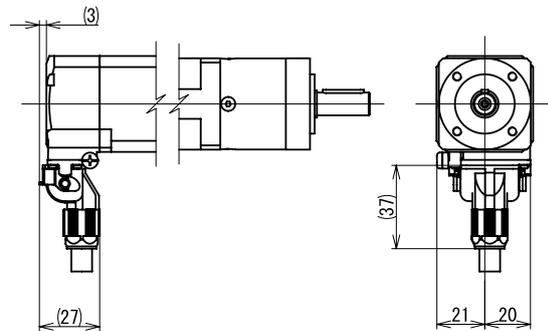
Product Name	Gear Ratio	L	Mass [kg]
AZM46MKH-PLE40-■	5	175	0.89
	10		0.9
	20		0.98
	40	188	0.99



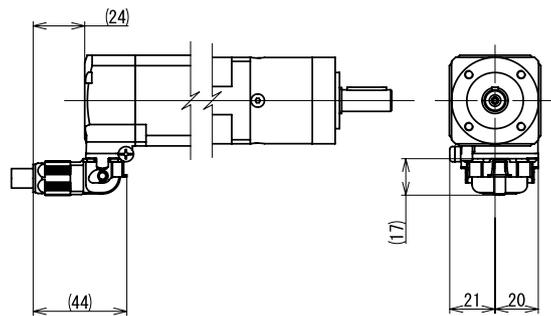
● When the Connection Cable is Attached
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



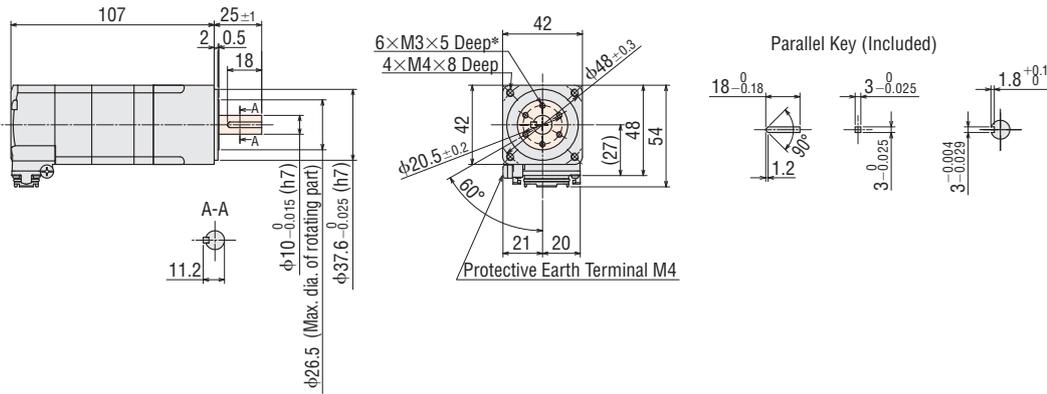
Cable Outlet Opposite to Output Shaft Direction



System Configuration	AC Input	System Configuration
Product Line	Specifications and Characteristics	Product Line
Dimensions	DC Input	Specifications and Characteristics
		Dimensions
		Cable

◇ Harmonic Geared Type
Frame Size 42 mm

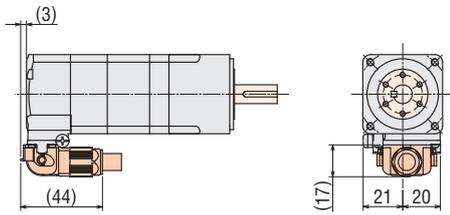
Product Name	Gear Ratio	Mass [kg]
AZM46AKH-HS 	50, 100	0.61



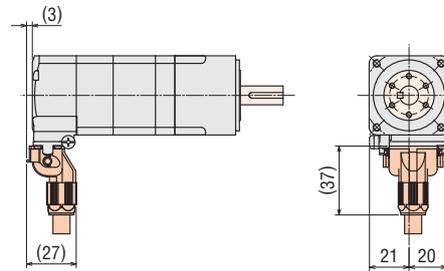
*The position of the key slot of the output shaft relative to 6×M3 is arbitrary.

● When the Connection Cable is Attached

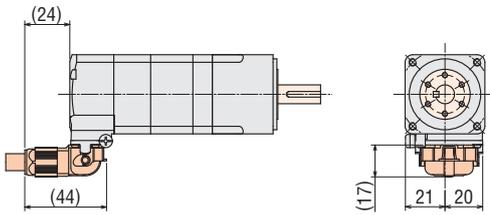
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



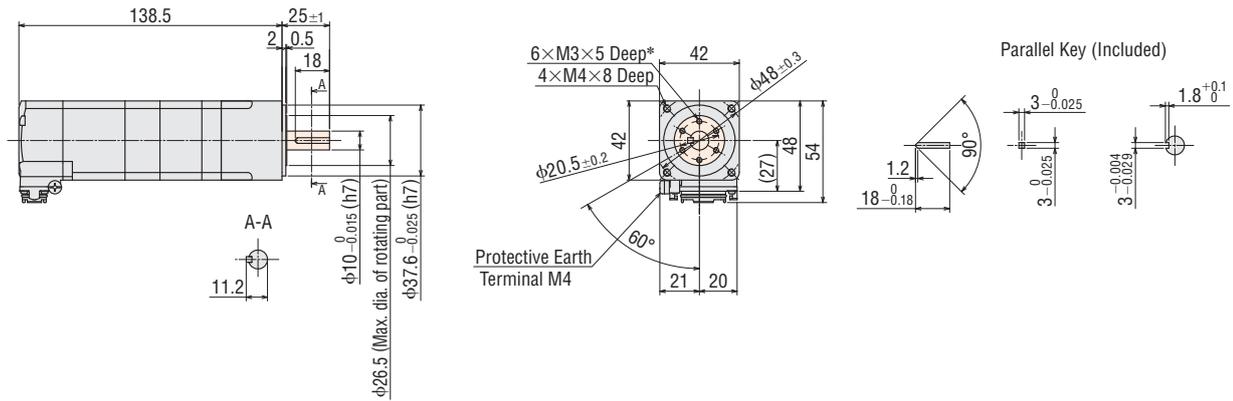
Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas in the dimensions are rotating parts.
- The shaded areas are the separately sold connection cables.

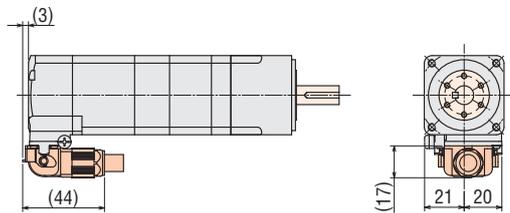
◇ Harmonic Geared Type With Electromagnetic Brake
Frame Size 42 mm

Product Name	Gear Ratio	Mass [kg]
AZM46MKH-HS 	50, 100	0.75

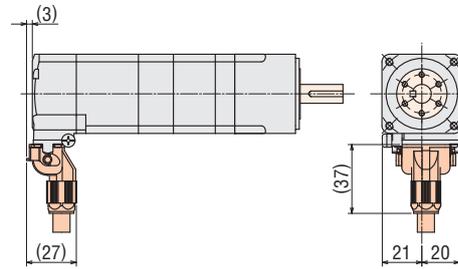


*The position of the key slot of the output shaft relative to 6 × M3 is arbitrary.

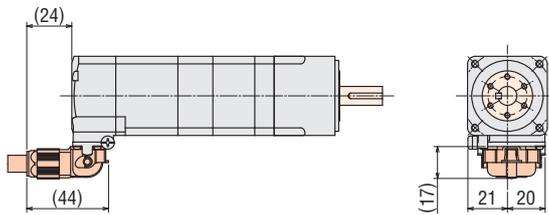
● When the Connection Cable is Attached
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction

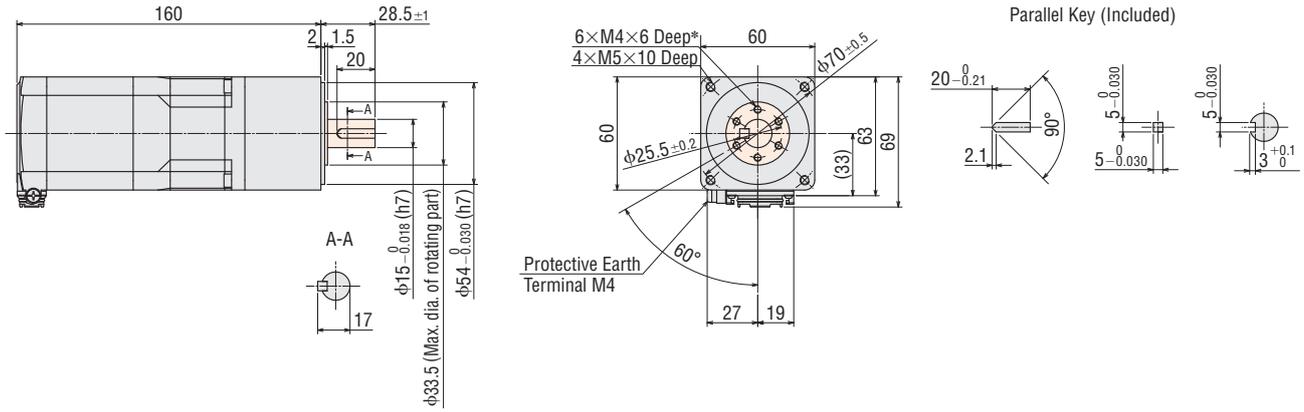


- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas in the dimensions are rotating parts.
- The shaded areas are the separately sold connection cables.

AC Input	System Configuration
	Product Line
DC Input	Specifications and Characteristics
	Dimensions
Cable	System Configuration
	Product Line
Cable	Specifications and Characteristics
	Dimensions

Frame Size 60 mm

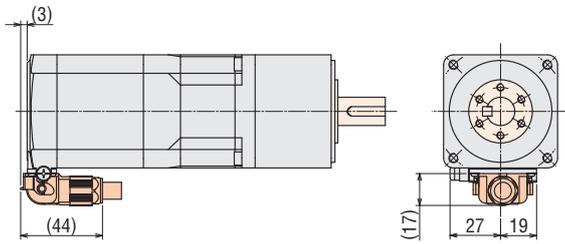
Product Name	Gear Ratio	Mass [kg]
AZM66MKH-HS 	50, 100	1.7



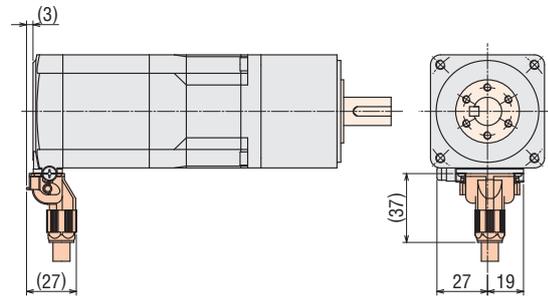
*The position of the key slot of the output shaft relative to 6×M4 is arbitrary.

● When the Connection Cable is Attached

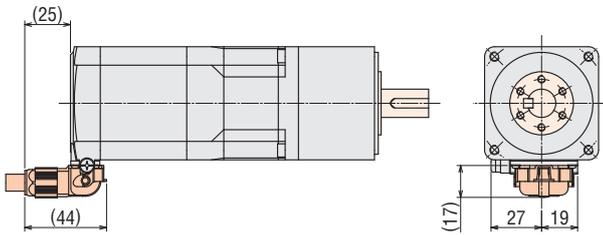
Cable Outlet in Output Shaft Direction



Cable Outlet in Vertical Direction



Cable Outlet Opposite to Output Shaft Direction



- A number indicating the gear ratio is entered where the box is located within the product name.
- The shaded areas in the dimensions are rotating parts.
- The shaded areas are the separately sold connection cables.

Cable

Connection Cables/Flexible Connection Cables

These cables directly connect a motor and driver. Use a flexible connection cable in applications where the cable is bent and flexed.

- Three types of cables with different drawing directions are available. Please select the cable outlet direction needed for the installation.
(The connection cable will vary depending on the driver used in combination. Check the product name of the driver before selecting the compatible cable.)



Cable Outlet Direction
Output Shaft Side



Cable Outlet Direction
Vertical



Cable Outlet Direction
Opposite Side of Output Shaft

Product Line

- A letter indicating the driver type is specified where the box is located in the driver's product name.

Connection Cable

[Single-axis driver for AC input (Driver product name: **AZD-A**, **AZD-A** , **AZD-C**, **AZD-C**)]

● For Motor/Encoder



Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	1	CCM010Z1AFF
	2	CCM020Z1AFF
	3	CCM030Z1AFF
	5	CCM050Z1AFF
	7	CCM070Z1AFF
Vertical	10	CCM100Z1AFF
	1	CCM010Z1AVF
	2	CCM020Z1AVF
	3	CCM030Z1AVF
	5	CCM050Z1AVF
Opposite to Output Shaft Direction	7	CCM070Z1AVF
	10	CCM100Z1AVF
	1	CCM010Z1ABF
	2	CCM020Z1ABF
	3	CCM030Z1ABF
Opposite to Output Shaft Direction	5	CCM050Z1ABF
	7	CCM070Z1ABF
	10	CCM100Z1ABF

● For Motor/Encoder/Type with Electromagnetic Brake



Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	1	CCM010Z1BFF
	2	CCM020Z1BFF
	3	CCM030Z1BFF
	5	CCM050Z1BFF
	7	CCM070Z1BFF
Vertical	10	CCM100Z1BFF
	1	CCM010Z1BVF
	2	CCM020Z1BVF
	3	CCM030Z1BVF
	5	CCM050Z1BVF
Opposite to Output Shaft Direction	7	CCM070Z1BVF
	10	CCM100Z1BVF
	1	CCM010Z1BBF
	2	CCM020Z1BBF
	3	CCM030Z1BBF
Opposite to Output Shaft Direction	5	CCM050Z1BBF
	7	CCM070Z1BBF
	10	CCM100Z1BBF

[Single-axis driver for DC input (Driver product name: **AZD-K**, **AZD-K**)]

● For Motor/Encoder



Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	0.5	CCM005Z1CFF
	1	CCM010Z1CFF
	2	CCM020Z1CFF
	3	CCM030Z1CFF
	5	CCM050Z1CFF
	7	CCM070Z1CFF
Vertical	10	CCM100Z1CFF
	0.5	CCM005Z1CVF
	1	CCM010Z1CVF
	2	CCM020Z1CVF
Vertical	3	CCM030Z1CVF
	5	CCM050Z1CVF
	7	CCM070Z1CVF
	10	CCM100Z1CVF
Opposite to Output Shaft Direction	0.5	CCM005Z1CBF
	1	CCM010Z1CBF
	2	CCM020Z1CBF
	3	CCM030Z1CBF
	5	CCM050Z1CBF
	7	CCM070Z1CBF
Opposite to Output Shaft Direction	10	CCM100Z1CBF

● For Motor/Encoder/Type with Electromagnetic Brake



Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	0.5	CCM005Z1DFF
	1	CCM010Z1DFF
	2	CCM020Z1DFF
	3	CCM030Z1DFF
	5	CCM050Z1DFF
	7	CCM070Z1DFF
Vertical	10	CCM100Z1DFF
	0.5	CCM005Z1DVF
	1	CCM010Z1DVF
	2	CCM020Z1DVF
Vertical	3	CCM030Z1DVF
	5	CCM050Z1DVF
	7	CCM070Z1DVF
	10	CCM100Z1DVF
Opposite to Output Shaft Direction	0.5	CCM005Z1DBF
	1	CCM010Z1DBF
	2	CCM020Z1DBF
	3	CCM030Z1DBF
	5	CCM050Z1DBF
	7	CCM070Z1DBF
Opposite to Output Shaft Direction	10	CCM100Z1DBF

[For mini driver (Driver product name: **AZD-KR**)]

- For Motor/Encoder,
For Motor/Encoder/Electromagnetic Brake



Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	0.2	CCM002Z1EFF
	0.5	CCM005Z1EFF
	1	CCM010Z1EFF
	2	CCM020Z1EFF
	3	CCM030Z1EFF
	5	CCM050Z1EFF
	7	CCM070Z1EFF
Vertical	10	CCM100Z1EFF
	0.2	CCM002Z1EVF
	0.5	CCM005Z1EVF
	1	CCM010Z1EVF
	2	CCM020Z1EVF
	3	CCM030Z1EVF
	5	CCM050Z1EVF
Opposite to Output Shaft Direction	7	CCM070Z1EVF
	10	CCM100Z1EVF
	0.2	CCM002Z1EBF
	0.5	CCM005Z1EBF
	1	CCM010Z1EBF
	2	CCM020Z1EBF
	3	CCM030Z1EBF
Opposite to Output Shaft Direction	5	CCM050Z1EBF
	7	CCM070Z1EBF
	10	CCM100Z1EBF

◇ Flexible Connection Cable

[Single-axis driver for AC input (Driver product name: **AZD-A, AZD-A**, **AZD-C, AZD-C**)]

- For Motor/Encoder



Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	1	CCM010Z1AFR
	2	CCM020Z1AFR
	3	CCM030Z1AFR
	5	CCM050Z1AFR
	7	CCM070Z1AFR
	10	CCM100Z1AFR
Vertical	1	CCM010Z1AVR
	2	CCM020Z1AVR
	3	CCM030Z1AVR
	5	CCM050Z1AVR
	7	CCM070Z1AVR
	10	CCM100Z1AVR
Opposite to Output Shaft Direction	1	CCM010Z1ABR
	2	CCM020Z1ABR
	3	CCM030Z1ABR
	5	CCM050Z1ABR
	7	CCM070Z1ABR
	10	CCM100Z1ABR

- For Motor/Encoder/Type with Electromagnetic Brake



Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	1	CCM010Z1BFR
	2	CCM020Z1BFR
	3	CCM030Z1BFR
	5	CCM050Z1BFR
	7	CCM070Z1BFR
	10	CCM100Z1BFR
Vertical	1	CCM010Z1BVR
	2	CCM020Z1BVR
	3	CCM030Z1BVR
	5	CCM050Z1BVR
	7	CCM070Z1BVR
	10	CCM100Z1BVR
Opposite to Output Shaft Direction	1	CCM010Z1BBR
	2	CCM020Z1BBR
	3	CCM030Z1BBR
	5	CCM050Z1BBR
	7	CCM070Z1BBR
	10	CCM100Z1BBR

[Single-axis driver for DC input (Driver product name: **AZD-K**, **AZD-K**)]



● For Motor/Encoder

Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	0.5	CCM005Z1CFR
	1	CCM010Z1CFR
	2	CCM020Z1CFR
	3	CCM030Z1CFR
	5	CCM050Z1CFR
	7	CCM070Z1CFR
Vertical	10	CCM100Z1CFR
	0.5	CCM005Z1CVR
	1	CCM010Z1CVR
	2	CCM020Z1CVR
	3	CCM030Z1CVR
	5	CCM050Z1CVR
Opposite to Output Shaft Direction	7	CCM070Z1CVR
	10	CCM100Z1CVR
	0.5	CCM005Z1CBR
	1	CCM010Z1CBR
	2	CCM020Z1CBR
	3	CCM030Z1CBR
Opposite to Output Shaft Direction	5	CCM050Z1CBR
	7	CCM070Z1CBR
	10	CCM100Z1CBR



● For Motor/Encoder/Type with Electromagnetic Brake

Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	0.5	CCM005Z1DFR
	1	CCM010Z1DFR
	2	CCM020Z1DFR
	3	CCM030Z1DFR
	5	CCM050Z1DFR
	7	CCM070Z1DFR
Vertical	10	CCM100Z1DFR
	0.5	CCM005Z1DVR
	1	CCM010Z1DVR
	2	CCM020Z1DVR
	3	CCM030Z1DVR
	5	CCM050Z1DVR
Opposite to Output Shaft Direction	7	CCM070Z1DVR
	10	CCM100Z1DVR
	0.5	CCM005Z1DBR
	1	CCM010Z1DBR
	2	CCM020Z1DBR
	3	CCM030Z1DBR
Opposite to Output Shaft Direction	5	CCM050Z1DBR
	7	CCM070Z1DBR
	10	CCM100Z1DBR

[For mini driver (Driver product name: **AZD-KR**)]

- For Motor/Encoder,
- For Motor/Encoder/Electromagnetic Brake

Cable Outlet Direction	Length L [m]	Product Name
Output Shaft Direction	0.5	CCM005Z1EFR
	1	CCM010Z1EFR
	2	CCM020Z1EFR
	3	CCM030Z1EFR
	5	CCM050Z1EFR
	7	CCM070Z1EFR
Vertical	10	CCM100Z1EFR
	0.5	CCM005Z1EVR
	1	CCM010Z1EVR
	2	CCM020Z1EVR
	3	CCM030Z1EVR
	5	CCM050Z1EVR
Opposite to Output Shaft Direction	7	CCM070Z1EVR
	10	CCM100Z1EVR
	0.5	CCM005Z1EBR
	1	CCM010Z1EBR
	2	CCM020Z1EBR
	3	CCM030Z1EBR
Opposite to Output Shaft Direction	5	CCM050Z1EBR
	7	CCM070Z1EBR
	10	CCM100Z1EBR

System Configuration

Product Line

AC Input

Specifications and Characteristics

Dimensions

System Configuration

Product Line

DC Input

Specifications and Characteristics

Dimensions

Cable

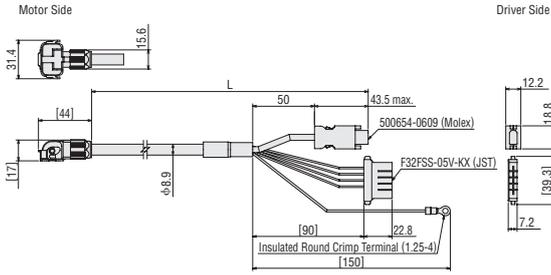
● **Dimensions (Unit: mm)**

● An alphabet indicating the driver type is specified where the box ■ is located in the driver's product name.

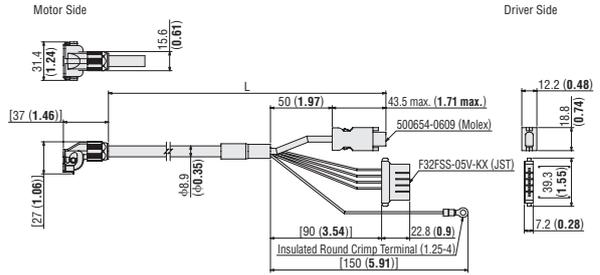
[Single-axis driver for AC input (Driver product name: **AZD-A**, **AZD-A■**, **AZD-C**, **AZD-C■**)]

● **For Motor/Encoder**

● Cable drawn on output shaft direction, Cable drawn on opposite to output shaft direction

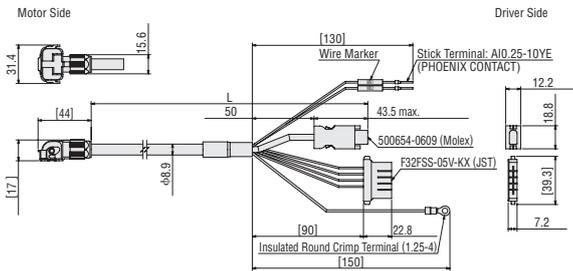


● Cable drawn vertically

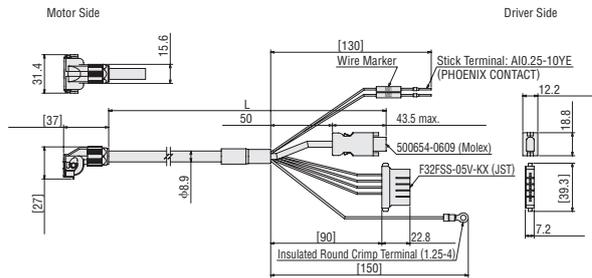


● **For Motor/Encoder/Type with Electromagnetic Brake**

● Cable drawn on output shaft direction, Cable drawn on opposite to output shaft direction



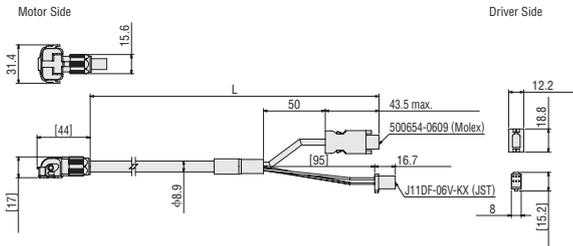
● Cable drawn vertically



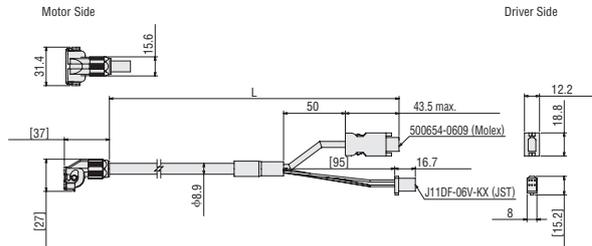
[Single-axis driver for DC input (Driver product name: **AZD-K**, **AZD-K■**)]

● **For Motor/Encoder**

● Cable drawn on output shaft direction, Cable drawn on opposite to output shaft direction

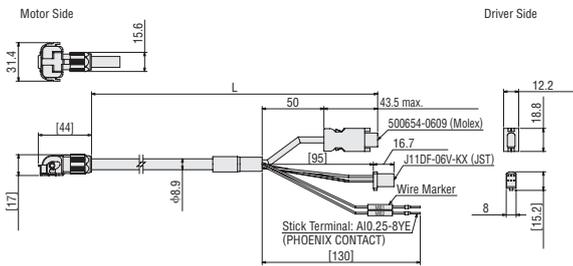


● Cable drawn vertically

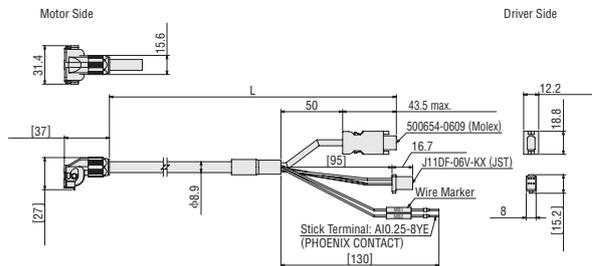


● **For Motor/Encoder/Type with Electromagnetic Brake**

● Cable drawn on output shaft direction, Cable drawn on opposite to output shaft direction



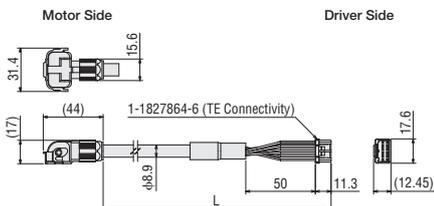
● Cable drawn vertically



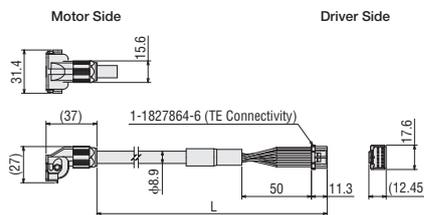
[For mini driver (Driver product name: **AZD-KR■**)]

● **For Motor/Encoder, for Motor/Encoder/Type with Electromagnetic Brake**

● Cable drawn on output shaft direction, Cable drawn on opposite to output shaft direction



● Cable drawn vertically



Extension Cables/Flexible Extension Cables, Driver Side

[For mini driver (Driver product name: **AZD-KR**)]

These are cables to provide an extension between the connection cable and the driver. When using an extension, the total length of the cable must be less than 10 m.

Use the flexible connection cable in applications where the cable is bent and flexed repeatedly.

Product Line

Extension Cable

Length L [m]	Product Name
1	CCM010Z2ADFT
3	CCM030Z2ADFT
5	CCM050Z2ADFT

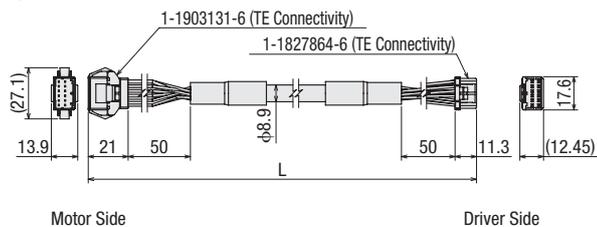


Flexible Extension Cable

Length L [m]	Product Name
1	CCM010Z2ADRT
3	CCM030Z2ADRT
5	CCM050Z2ADRT



Dimensions (Unit: mm)



AC Input	System Configuration
	Product Line
	Specifications and Characteristics
DC Input	Dimensions
	System Configuration
	Product Line
Cable	Specifications and Characteristics
	Dimensions
	Product Line

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 August 2024.

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