Ezi-SERVO® II

Closed Loop Stepping System

- Motor + High Resolution Encoder + Drive + EtherCAT Interface
- Space Saving / Reduced Wiring
- CiA402 Drive Profile Support
- Closed-Loop Stepping System
- Tuning Not Required / No Hunting
- Low Heat Generation / High Torque

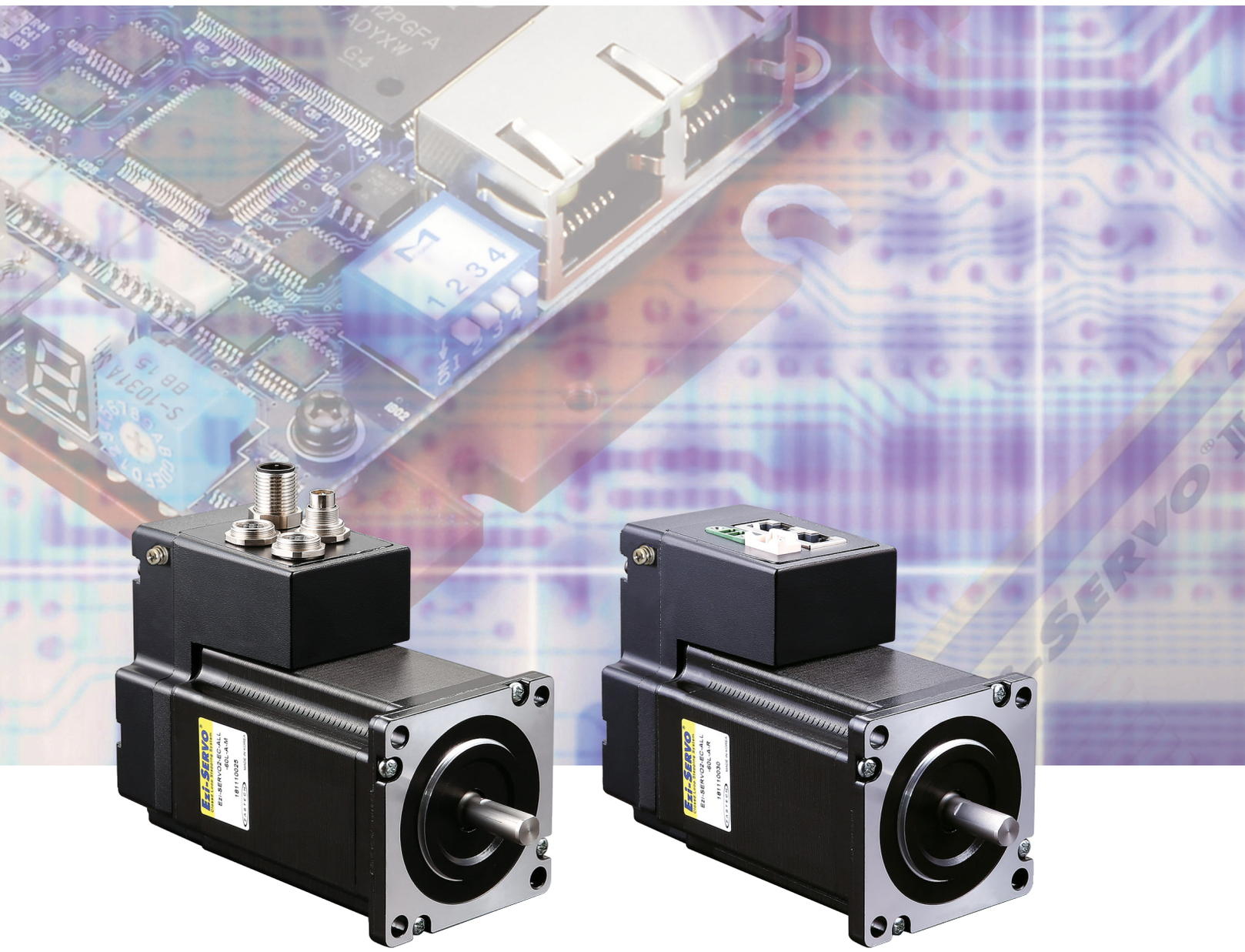
EtherCAT®

ALL

CE

FASTECH

Fast, Accurate, Smooth Motion



FASTECH

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Ezi-SERVO® II

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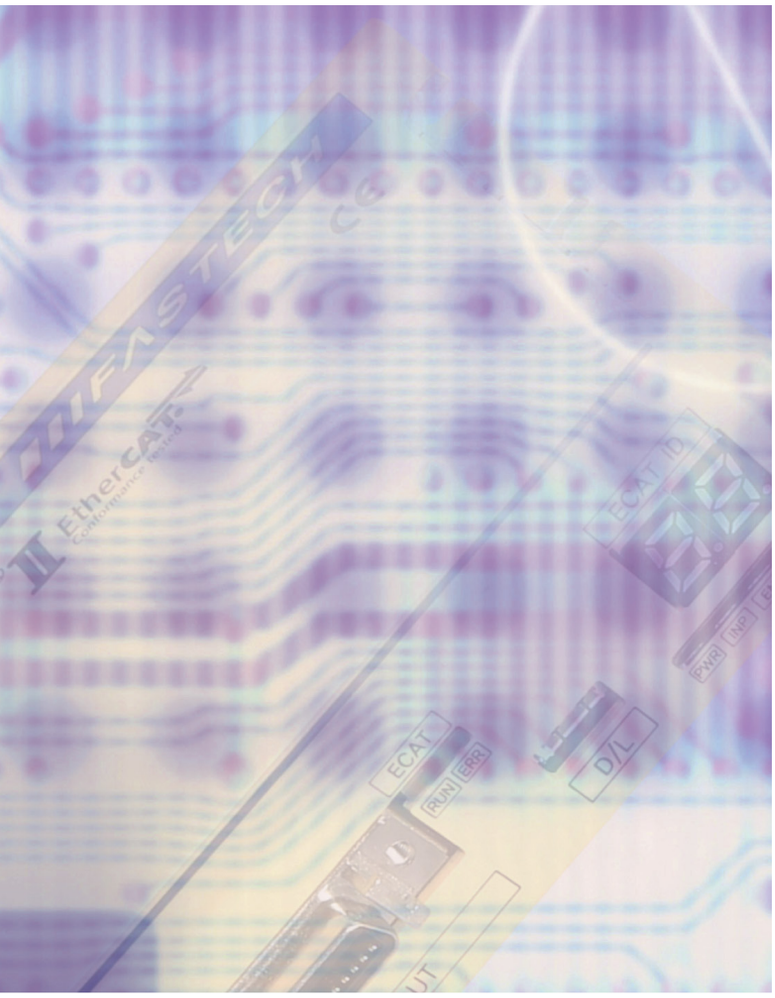
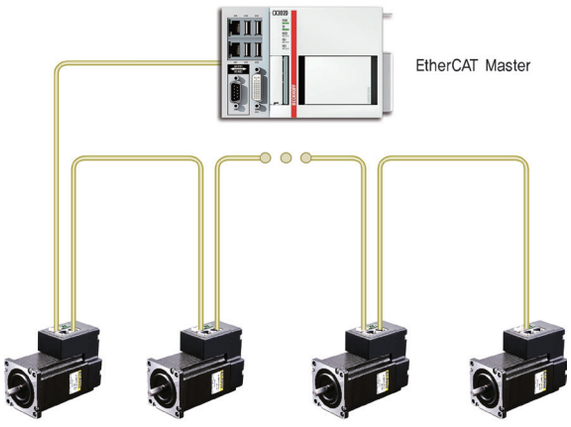
EtherCAT®

ALL



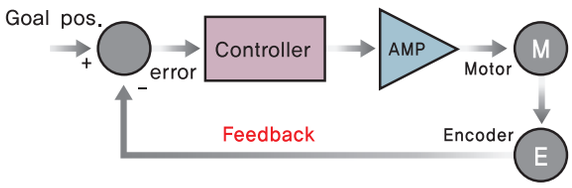
1 EtherCAT Based Motion Control

Ezi-SERVO II EtherCAT ALL is stepping motor control system using EtherCAT, high speed ethernet (100Mbps Full-Duplex) based fieldbus. Ezi-SERVO II EtherCAT ALL is EtherCAT slave module which supports CAN application layer over EtherCAT (CoE). It employs CiA 402 Drive Profile and supports Profile Position Mode, Homing Mode, Cyclic Synchronous Position Mode.



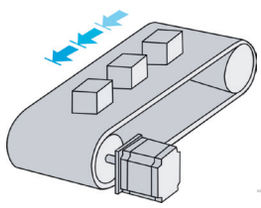
2 Closed-Loop System

Ezi-SERVO II is an innovative Closed-Loop System that utilizes a high-resolution motor mounted encoder constantly to monitor the current position. The encoder feedback allows the Ezi-SERVO II to update the current position every 50μs. It allows the Ezi-SERVO II drive to compensate for the loss of position, ensuring accurate positioning. For example, due to a sudden load change, a conventional stepping motor and drive could lose a step but Ezi-SERVO II automatically correct the position by encoder feedback.



3 Tuning Not Required

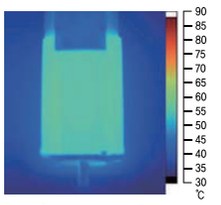
To ensure machine performance, conventional servo systems require the adjustment of its servo' s gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed. Ezi-SERVO II employs the best characteristics of the stepping motor to eliminate the need of tedious gain tuning required for conventional closed-loop servo systems. Ezi-SERVO II is especially well suited for low-rigidity loads (e.g., a belt and pulley system) that sometimes require conventional servo systems to use the additional bulky and expensive gearbox.



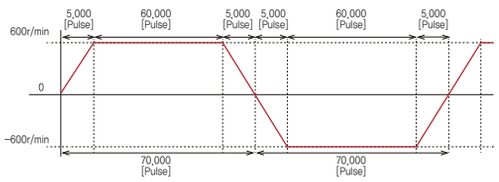
4 Low Heat Generation / Energy Savings

(Motor Current Control according to load)

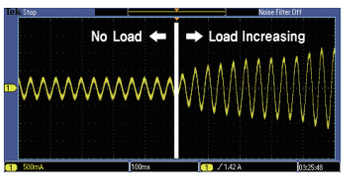
Ezi-SERVO II automatically controls motor current according to load.
Ezi-SERVO II reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



Condition to measure the motor temperature
[4hours operation, Motor surface temperature saturation]

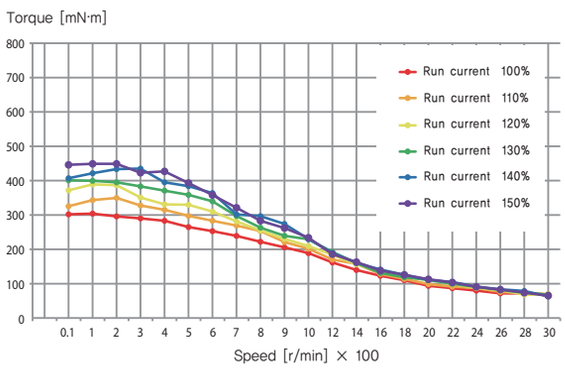


Example of the Motor Current Control according to load

5 High Torque

(Motor Current Setting)

Ezi-SERVO II can increase the motor current up to 150% by setting the Run Current by parameter. Therefore acceleration and deceleration characteristics and torque characteristics at low speed can be increased. Ezi-SERVO II can improve the torque in the low speed range by about 30%.

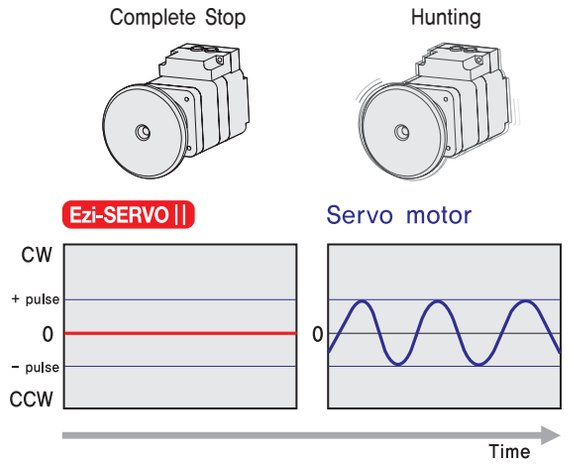


※ The torque at low speed is improved about 30%

Measured Condition : Drive = Ezi-SERVO II-EC-ALL-42L

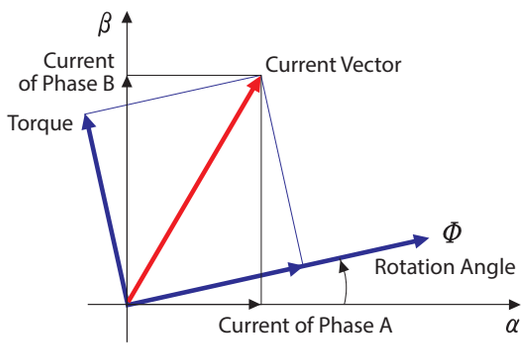
6 No Hunting

Ezi-SERVO II utilizes the unique characteristics of stepping motors and locks itself into the desired target position, preventing vibration and eliminating Null Hunt which happens to the conventional servo systems.
This feature is especially useful in applications such as vision systems in which system oscillation and vibration could be a problem.



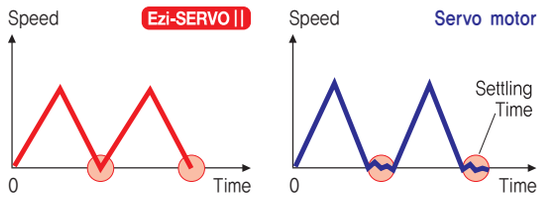
7 Smooth and Accurate Operation

Ezi-SERVO II is a high-precision servo drive, using a high-resolution encoder with 20,000 pulses/revolution. Unlike a conventional Microstep drive, the on-board high performance MCU (Micro Controller Unit) performs vector control and filtering, producing a smooth rotational control with minimum ripples.



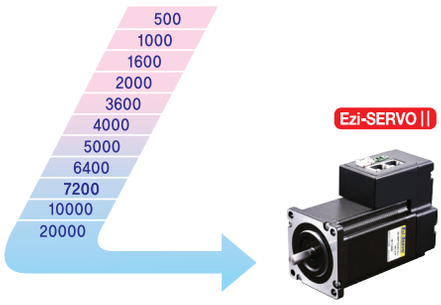
8 High Response

Similar to conventional stepping motors, Ezi-SERVO II instantly synchronizes with command pulses providing fast positional response. Ezi-SERVO II is the optimal choice when zero-speed stability and rapid motions within a short distance are required. Traditional servo motor systems have a natural delay called settling time between the command input signals and the resultant motion because of the constant monitoring of the current position.



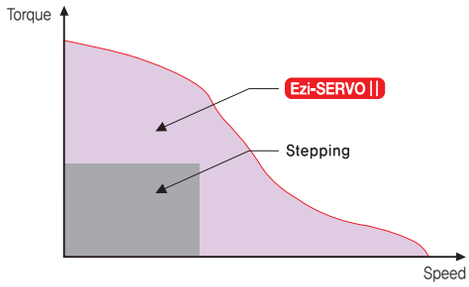
9 High Resolution

The unit of the position command can be divided precisely. (Max. 20,000 pulses/revolution)



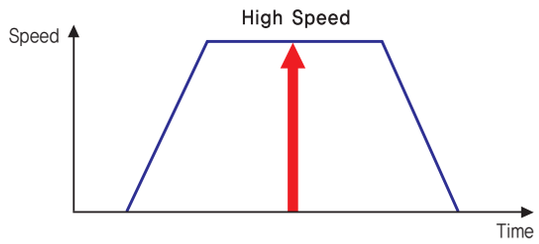
10 High Torque / Continuous Operation

Compared with common stepping motors and drives, Ezi-SERVO II motion control systems can maintain a high torque state over relatively long period of time. This means that Ezi-SERVO II continuously operates without loss of position under 100% of the load. Unlike conventional Microstep drives, Ezi-SERVO II exploits continuous high torque operation during high speed motion due to its innovative optimum current phase control.



11 High Speed

The Ezi-SERVO II operates well at high speed without the loss of synchronism or positioning error. Ezi-SERVO II' s ability to monitor current position continuously enables the stepping motor to generate high torque, even under a 100% load condition.



● Advantages over Open-Loop Stepping System Drive

1. Positioning is reliable without loss of synchronism.
2. It can hold stable position and automatically recover to the original position even after experiencing positioning error due to external forces, such as mechanical vibration or vertical positional holding.
3. Ezi-SERVO II utilizes 100% of rated motor torque, contrary to a conventional open-loop stepping driver that can use up to 50% of the rated motor torque due to the loss of synchronism.
4. Ezi-SERVO II can operate at high speed due to load-dependent current control, while open-loop stepping drives use a constant current control at all speed ranges without considering load variations. (Max Speed : 3,000r/min)

● Advantages over Servo Motor Controller

1. Tuning is not required. (Automatic gain adjustment in response to a load change)
2. It can maintain the stable holding position without oscillation after completion of positioning.
3. Positioning is fast due to the independent control by on-board MCU.
4. Operation is constant during rapid short-stroke movement due to instantaneous positioning.

● Ezi-SERVOII EtherCAT ALL Part Numbering

Ezi-SERVOII-EC-ALL-56L-A-BK-PN05-M

Product Name

Drive Series

EC-ALL : EtherCAT ALL

Motor Flange Size

42 : 42mm
56 : 56mm
60 : 60mm
86 : 86mm

Motor Length

S : Small
M : Medium
L : Large
XL : Extra Large

Encoder Resolution

A : 10,000P/R
B : 20,000P/R

Brake

Blank : Without Brake
BK : Brake

Gear Ratio

Blank : Without Gear
PN03 : 1:3
PN05 : 1:5
PN08 : 1:8
PN10 : 1:10
PN15 : 1:15
PN25 : 1:25
PN40 : 1:40
PN50 : 1:50

Connector Type

M : M Connector
R : RJ45 Connector

● Standard Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVOII-EC-ALL-42M-A-M		
Ezi-SERVOII-EC-ALL-42M-B-M		
Ezi-SERVOII-EC-ALL-42M-A-R		
Ezi-SERVOII-EC-ALL-42M-B-R		
Ezi-SERVOII-EC-ALL-42L-A-M		
Ezi-SERVOII-EC-ALL-42L-B-M		
Ezi-SERVOII-EC-ALL-42L-A-R		
Ezi-SERVOII-EC-ALL-42L-B-R		
Ezi-SERVOII-EC-ALL-42XL-A-M		
Ezi-SERVOII-EC-ALL-42XL-B-M		
Ezi-SERVOII-EC-ALL-42XL-A-R		
Ezi-SERVOII-EC-ALL-42XL-B-R		
Ezi-SERVOII-EC-ALL-56S-A-M		
Ezi-SERVOII-EC-ALL-56S-B-M		
Ezi-SERVOII-EC-ALL-56S-A-R		
Ezi-SERVOII-EC-ALL-56S-B-R		
Ezi-SERVOII-EC-ALL-56M-A-M		
Ezi-SERVOII-EC-ALL-56M-B-M		
Ezi-SERVOII-EC-ALL-56M-A-R		
Ezi-SERVOII-EC-ALL-56M-B-R		
Ezi-SERVOII-EC-ALL-56L-A-M		
Ezi-SERVOII-EC-ALL-56L-B-M		
Ezi-SERVOII-EC-ALL-56L-A-R		
Ezi-SERVOII-EC-ALL-56L-B-R	Motor & Drive Integrated	
Ezi-SERVOII-EC-ALL-60S-A-M		
Ezi-SERVOII-EC-ALL-60S-B-M		
Ezi-SERVOII-EC-ALL-60S-A-R		
Ezi-SERVOII-EC-ALL-60S-B-R		
Ezi-SERVOII-EC-ALL-60M-A-M		
Ezi-SERVOII-EC-ALL-60M-B-M		
Ezi-SERVOII-EC-ALL-60M-A-R		
Ezi-SERVOII-EC-ALL-60M-B-R		
Ezi-SERVOII-EC-ALL-60L-A-M		
Ezi-SERVOII-EC-ALL-60L-B-M		
Ezi-SERVOII-EC-ALL-60L-A-R		
Ezi-SERVOII-EC-ALL-60L-B-R		
Ezi-SERVOII-EC-ALL-86M-A-M		
Ezi-SERVOII-EC-ALL-86M-B-M		
Ezi-SERVOII-EC-ALL-86M-A-R		
Ezi-SERVOII-EC-ALL-86M-B-R		
Ezi-SERVOII-EC-ALL-86L-A-M		
Ezi-SERVOII-EC-ALL-86L-B-M		
Ezi-SERVOII-EC-ALL-86L-A-R		
Ezi-SERVOII-EC-ALL-86L-B-R		
Ezi-SERVOII-EC-ALL-86XL-A-M		
Ezi-SERVOII-EC-ALL-86XL-B-M		
Ezi-SERVOII-EC-ALL-86XL-A-R		
Ezi-SERVOII-EC-ALL-86XL-B-R		

Combination with Brake

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVOII-EC-ALL-42M-A-BK-M	Motor & Drive Integrated	
Ezi-SERVOII-EC-ALL-42M-B-BK-M		
Ezi-SERVOII-EC-ALL-42M-A-BK-R		
Ezi-SERVOII-EC-ALL-42M-B-BK-R		
Ezi-SERVOII-EC-ALL-42L-A-BK-M		
Ezi-SERVOII-EC-ALL-42L-B-BK-M		
Ezi-SERVOII-EC-ALL-42L-A-BK-R		
Ezi-SERVOII-EC-ALL-42L-B-BK-R		
Ezi-SERVOII-EC-ALL-42XL-A-BK-M		
Ezi-SERVOII-EC-ALL-42XL-B-BK-M		
Ezi-SERVOII-EC-ALL-42XL-A-BK-R		
Ezi-SERVOII-EC-ALL-42XL-B-BK-R		
Ezi-SERVOII-EC-ALL-56S-A-BK-M		
Ezi-SERVOII-EC-ALL-56S-B-BK-M		
Ezi-SERVOII-EC-ALL-56S-A-BK-R		
Ezi-SERVOII-EC-ALL-56S-B-BK-R		
Ezi-SERVOII-EC-ALL-56M-A-BK-M		
Ezi-SERVOII-EC-ALL-56M-B-BK-M		
Ezi-SERVOII-EC-ALL-56M-A-BK-R		
Ezi-SERVOII-EC-ALL-56M-B-BK-R		
Ezi-SERVOII-EC-ALL-56L-A-BK-M		
Ezi-SERVOII-EC-ALL-56L-B-BK-M		
Ezi-SERVOII-EC-ALL-56L-A-BK-R		
Ezi-SERVOII-EC-ALL-56L-B-BK-R		
Ezi-SERVOII-EC-ALL-60S-A-BK-M		
Ezi-SERVOII-EC-ALL-60S-B-BK-M		
Ezi-SERVOII-EC-ALL-60S-A-BK-R		
Ezi-SERVOII-EC-ALL-60S-B-BK-R		
Ezi-SERVOII-EC-ALL-60M-A-BK-M		
Ezi-SERVOII-EC-ALL-60M-B-BK-M		
Ezi-SERVOII-EC-ALL-60M-A-BK-R		
Ezi-SERVOII-EC-ALL-60M-B-BK-R		
Ezi-SERVOII-EC-ALL-60L-A-BK-M		
Ezi-SERVOII-EC-ALL-60L-B-BK-M		
Ezi-SERVOII-EC-ALL-60L-A-BK-R		
Ezi-SERVOII-EC-ALL-60L-B-BK-R		
Ezi-SERVOII-EC-ALL-86M-A-BK-M		
Ezi-SERVOII-EC-ALL-86M-B-BK-M		
Ezi-SERVOII-EC-ALL-86M-A-BK-R		
Ezi-SERVOII-EC-ALL-86M-B-BK-R		
Ezi-SERVOII-EC-ALL-86L-A-BK-M		
Ezi-SERVOII-EC-ALL-86L-B-BK-M		
Ezi-SERVOII-EC-ALL-86L-A-BK-R		
Ezi-SERVOII-EC-ALL-86L-B-BK-R		
Ezi-SERVOII-EC-ALL-86XL-A-BK-M		
Ezi-SERVOII-EC-ALL-86XL-B-BK-M		
Ezi-SERVOII-EC-ALL-86XL-A-BK-R		
Ezi-SERVOII-EC-ALL-86XL-B-BK-R		

Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVOII-EC-ALL-42M-A-PN3-M	Motor & Drive Integrated		1:3
Ezi-SERVOII-EC-ALL-42M-B-PN3-M			
Ezi-SERVOII-EC-ALL-42M-A-PN3-R			
Ezi-SERVOII-EC-ALL-42M-B-PN3-R			
Ezi-SERVOII-EC-ALL-42M-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-42M-B-PN5-M			
Ezi-SERVOII-EC-ALL-42M-A-PN5-R			
Ezi-SERVOII-EC-ALL-42M-B-PN5-R			
Ezi-SERVOII-EC-ALL-42M-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-42M-B-PN8-M			
Ezi-SERVOII-EC-ALL-42M-A-PN8-R			
Ezi-SERVOII-EC-ALL-42M-B-PN8-R			
Ezi-SERVOII-EC-ALL-42M-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-42M-B-PN10-M			
Ezi-SERVOII-PE-ALL-42M-A-PN10-R			
Ezi-SERVOII-EC-ALL-42M-B-PN10-R			
Ezi-SERVOII-EC-ALL-42M-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-42M-B-PN15-M			
Ezi-SERVOII-EC-ALL-42M-A-PN15-R			
Ezi-SERVOII-EC-ALL-42M-B-PN15-R			
Ezi-SERVOII-EC-ALL-42M-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-42M-B-PN25-M			
Ezi-SERVOII-EC-ALL-42M-A-PN25-R			
Ezi-SERVOII-EC-ALL-42M-B-PN25-R			
Ezi-SERVOII-EC-ALL-42M-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-42M-B-PN40-M			
Ezi-SERVOII-EC-ALL-42M-A-PN40-R			
Ezi-SERVOII-EC-ALL-42M-B-PN40-R			
Ezi-SERVOII-EC-ALL-42M-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-42M-B-PN50-M			
Ezi-SERVOII-EC-ALL-42M-A-PN50-R			
Ezi-SERVOII-EC-ALL-42M-B-PN50-R			
Ezi-SERVOII-EC-ALL-42L-A-PN3-M			1:3
Ezi-SERVOII-EC-ALL-42L-B-PN3-M			
Ezi-SERVOII-EC-ALL-42L-A-PN3-R			
Ezi-SERVOII-EC-ALL-42L-B-PN3-R			
Ezi-SERVOII-EC-ALL-42L-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-42L-B-PN5-M			
Ezi-SERVOII-EC-ALL-42L-A-PN5-R			
Ezi-SERVOII-EC-ALL-42L-B-PN5-R			
Ezi-SERVOII-EC-ALL-42L-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-42L-B-PN8-M			
Ezi-SERVOII-EC-ALL-42L-A-PN8-R			
Ezi-SERVOII-EC-ALL-42L-B-PN8-R			
Ezi-SERVOII-EC-ALL-42L-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-42L-B-PN10-M			
Ezi-SERVOII-EC-ALL-42L-A-PN10-R			
Ezi-SERVOII-EC-ALL-42L-B-PN10-R			
Ezi-SERVOII-EC-ALL-42L-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-42L-B-PN15-M			
Ezi-SERVOII-EC-ALL-42L-A-PN15-R			
Ezi-SERVOII-EC-ALL-42L-B-PN15-R			
Ezi-SERVOII-EC-ALL-42L-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-42L-B-PN25-M			
Ezi-SERVOII-EC-ALL-42L-A-PN25-R			
Ezi-SERVOII-EC-ALL-42L-B-PN25-R			
Ezi-SERVOII-EC-ALL-42L-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-42L-B-PN40-M			
Ezi-SERVOII-EC-ALL-42L-A-PN40-R			
Ezi-SERVOII-EC-ALL-42L-B-PN40-R			
Ezi-SERVOII-EC-ALL-42L-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-42L-B-PN50-M			
Ezi-SERVOII-EC-ALL-42L-A-PN50-R			
Ezi-SERVOII-EC-ALL-42L-B-PN50-R			

● Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVOII-EC-ALL-42XL-A-PN3-M	Motor & Drive Integrated		1:3
Ezi-SERVOII-EC-ALL-42XL-B-PN3-M			
Ezi-SERVOII-EC-ALL-42XL-A-PN3-R			
Ezi-SERVOII-EC-ALL-42XL-B-PN3-R			
Ezi-SERVOII-EC-ALL-42XL-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-42XL-B-PN5-M			
Ezi-SERVOII-EC-ALL-42XL-A-PN5-R			
Ezi-SERVOII-EC-ALL-42XL-B-PN5-R			
Ezi-SERVOII-EC-ALL-42XL-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-42XL-B-PN8-M			
Ezi-SERVOII-EC-ALL-42XL-A-PN8-R			
Ezi-SERVOII-EC-ALL-42XL-B-PN8-R			
Ezi-SERVOII-EC-ALL-42XL-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-42XL-B-PN10-M			
Ezi-SERVOII-EC-ALL-42XL-A-PN10-R			
Ezi-SERVOII-EC-ALL-42XL-B-PN10-R			
Ezi-SERVOII-EC-ALL-42XL-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-42XL-B-PN15-M			
Ezi-SERVOII-EC-ALL-42XL-A-PN15-R			
Ezi-SERVOII-EC-ALL-42XL-B-PN15-R			
Ezi-SERVOII-EC-ALL-42XL-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-42XL-B-PN25-M			
Ezi-SERVOII-EC-ALL-42XL-A-PN25-R			
Ezi-SERVOII-EC-ALL-42XL-B-PN25-R			
Ezi-SERVOII-EC-ALL-42XL-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-42XL-B-PN40-M			
Ezi-SERVOII-EC-ALL-42XL-A-PN40-R			
Ezi-SERVOII-EC-ALL-42XL-B-PN40-R			
Ezi-SERVOII-EC-ALL-42XL-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-42XL-B-PN50-M			
Ezi-SERVOII-EC-ALL-42XL-A-PN50-R			
Ezi-SERVOII-EC-ALL-42XL-B-PN50-R			
Ezi-SERVOII-EC-ALL-56S-A-PN3-M			1:3
Ezi-SERVOII-EC-ALL-56S-B-PN3-M			
Ezi-SERVOII-EC-ALL-56S-A-PN3-R			
Ezi-SERVOII-EC-ALL-56S-B-PN3-R			
Ezi-SERVOII-EC-ALL-56S-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-56S-B-PN5-M			
Ezi-SERVOII-EC-ALL-56S-A-PN5-R			
Ezi-SERVOII-EC-ALL-56S-B-PN5-R			
Ezi-SERVOII-EC-ALL-56S-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-56S-B-PN8-M			
Ezi-SERVOII-EC-ALL-56S-A-PN8-R			
Ezi-SERVOII-EC-ALL-56S-B-PN8-R			
Ezi-SERVOII-EC-ALL-56S-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-56S-B-PN10-M			
Ezi-SERVOII-EC-ALL-56S-A-PN10-R			
Ezi-SERVOII-EC-ALL-56S-B-PN10-R			
Ezi-SERVOII-EC-ALL-56S-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-56S-B-PN15-M			
Ezi-SERVOII-EC-ALL-56S-A-PN15-R			
Ezi-SERVOII-EC-ALL-56S-B-PN15-R			
Ezi-SERVOII-EC-ALL-56S-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-56S-B-PN25-M			
Ezi-SERVOII-EC-ALL-56S-A-PN25-R			
Ezi-SERVOII-EC-ALL-56S-B-PN25-R			
Ezi-SERVOII-EC-ALL-56S-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-56S-B-PN40-M			
Ezi-SERVOII-EC-ALL-56S-A-PN40-R			
Ezi-SERVOII-EC-ALL-56S-B-PN40-R			
Ezi-SERVOII-EC-ALL-56S-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-56S-B-PN50-M			
Ezi-SERVOII-EC-ALL-56S-A-PN50-R			
Ezi-SERVOII-EC-ALL-56S-B-PN50-R			

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVOII-EC-ALL-56M-A-PN3-M	Motor & Drive Integrated		1:3
Ezi-SERVOII-EC-ALL-56M-B-PN3-M			
Ezi-SERVOII-EC-ALL-56M-A-PN3-R			
Ezi-SERVOII-EC-ALL-56M-B-PN3-R			
Ezi-SERVOII-EC-ALL-56M-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-56M-B-PN5-M			
Ezi-SERVOII-EC-ALL-56M-A-PN5-R			
Ezi-SERVOII-EC-ALL-56M-B-PN5-R			
Ezi-SERVOII-EC-ALL-56M-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-56M-B-PN8-M			
Ezi-SERVOII-EC-ALL-56M-A-PN8-R			
Ezi-SERVOII-EC-ALL-56M-B-PN8-R			
Ezi-SERVOII-EC-ALL-56M-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-56M-B-PN10-M			
Ezi-SERVOII-EC-ALL-56M-A-PN10-R			
Ezi-SERVOII-EC-ALL-56M-B-PN10-R			
Ezi-SERVOII-EC-ALL-56M-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-56M-B-PN15-M			
Ezi-SERVOII-EC-ALL-56M-A-PN15-R			
Ezi-SERVOII-EC-ALL-56M-B-PN15-R			
Ezi-SERVOII-EC-ALL-56M-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-56M-B-PN25-M			
Ezi-SERVOII-EC-ALL-56M-A-PN25-R			
Ezi-SERVOII-EC-ALL-56M-B-PN25-R			
Ezi-SERVOII-EC-ALL-56M-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-56M-B-PN40-M			
Ezi-SERVOII-EC-ALL-56M-A-PN40-R			
Ezi-SERVOII-EC-ALL-56M-B-PN40-R			
Ezi-SERVOII-EC-ALL-56M-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-56M-B-PN50-M			
Ezi-SERVOII-EC-ALL-56M-A-PN50-R			
Ezi-SERVOII-EC-ALL-56M-B-PN50-R			
Ezi-SERVOII-EC-ALL-56L-A-PN3-M	Motor & Drive Integrated		1:3
Ezi-SERVOII-EC-ALL-56L-B-PN3-M			
Ezi-SERVOII-EC-ALL-56L-A-PN3-R			
Ezi-SERVOII-EC-ALL-56L-B-PN3-R			
Ezi-SERVOII-EC-ALL-56L-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-56L-B-PN5-M			
Ezi-SERVOII-EC-ALL-56L-A-PN5-R			
Ezi-SERVOII-EC-ALL-56L-B-PN5-R			
Ezi-SERVOII-EC-ALL-56L-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-56L-B-PN8-M			
Ezi-SERVOII-EC-ALL-56L-A-PN8-R			
Ezi-SERVOII-EC-ALL-56L-B-PN8-R			
Ezi-SERVOII-EC-ALL-56L-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-56L-B-PN10-M			
Ezi-SERVOII-EC-ALL-56L-A-PN10-R			
Ezi-SERVOII-EC-ALL-56L-B-PN10-R			
Ezi-SERVOII-EC-ALL-56L-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-56L-B-PN15-M			
Ezi-SERVOII-EC-ALL-56L-A-PN15-R			
Ezi-SERVOII-EC-ALL-56L-B-PN15-R			
Ezi-SERVOII-EC-ALL-56L-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-56L-B-PN25-M			
Ezi-SERVOII-EC-ALL-56L-A-PN25-R			
Ezi-SERVOII-EC-ALL-56L-B-PN25-R			
Ezi-SERVOII-EC-ALL-56L-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-56L-B-PN40-M			
Ezi-SERVOII-EC-ALL-56L-A-PN40-R			
Ezi-SERVOII-EC-ALL-56L-B-PN40-R			
Ezi-SERVOII-EC-ALL-56L-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-56L-B-PN50-M			
Ezi-SERVOII-EC-ALL-56L-A-PN50-R			
Ezi-SERVOII-EC-ALL-56L-B-PN50-R			

● Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVOII-EC-ALL-60S-A-PN3-M	Motor & Drive Integrated		1:3
Ezi-SERVOII-EC-ALL-60S-B-PN3-M			
Ezi-SERVOII-EC-ALL-60S-A-PN3-R			
Ezi-SERVOII-EC-ALL-60S-B-PN3-R			
Ezi-SERVOII-EC-ALL-60S-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-60S-B-PN5-M			
Ezi-SERVOII-EC-ALL-60S-A-PN5-R			
Ezi-SERVOII-EC-ALL-60S-B-PN5-R			
Ezi-SERVOII-EC-ALL-60S-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-60S-B-PN8-M			
Ezi-SERVOII-EC-ALL-60S-A-PN8-R			
Ezi-SERVOII-EC-ALL-60S-B-PN8-R			
Ezi-SERVOII-EC-ALL-60S-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-60S-B-PN10-M			
Ezi-SERVOII-EC-ALL-60S-A-PN10-R			
Ezi-SERVOII-EC-ALL-60S-B-PN10-R			
Ezi-SERVOII-EC-ALL-60S-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-60S-B-PN15-M			
Ezi-SERVOII-EC-ALL-60S-A-PN15-R			
Ezi-SERVOII-EC-ALL-60S-B-PN15-R			
Ezi-SERVOII-EC-ALL-60S-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-60S-B-PN25-M			
Ezi-SERVOII-EC-ALL-60S-A-PN25-R			
Ezi-SERVOII-EC-ALL-60S-B-PN25-R			
Ezi-SERVOII-EC-ALL-60S-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-60S-B-PN40-M			
Ezi-SERVOII-EC-ALL-60S-A-PN40-R			
Ezi-SERVOII-EC-ALL-60S-B-PN40-R			
Ezi-SERVOII-EC-ALL-60S-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-60S-B-PN50-M			
Ezi-SERVOII-EC-ALL-60S-A-PN50-R			
Ezi-SERVOII-EC-ALL-60S-B-PN50-R			
Ezi-SERVOII-EC-ALL-60M-A-PN3-M			1:3
Ezi-SERVOII-EC-ALL-60M-B-PN3-M			
Ezi-SERVOII-EC-ALL-60M-A-PN3-R			
Ezi-SERVOII-EC-ALL-60M-B-PN3-R			
Ezi-SERVOII-EC-ALL-60M-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-60M-B-PN5-M			
Ezi-SERVOII-EC-ALL-60M-A-PN5-R			
Ezi-SERVOII-EC-ALL-60M-B-PN5-R			
Ezi-SERVOII-EC-ALL-60M-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-60M-B-PN8-M			
Ezi-SERVOII-EC-ALL-60M-A-PN8-R			
Ezi-SERVOII-EC-ALL-60M-B-PN8-R			
Ezi-SERVOII-EC-ALL-60M-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-60M-B-PN10-M			
Ezi-SERVOII-EC-ALL-60M-A-PN10-R			
Ezi-SERVOII-EC-ALL-60M-B-PN10-R			
Ezi-SERVOII-EC-ALL-60M-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-60M-B-PN15-M			
Ezi-SERVOII-EC-ALL-60M-A-PN15-R			
Ezi-SERVOII-EC-ALL-60M-B-PN15-R			
Ezi-SERVOII-EC-ALL-60M-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-60M-B-PN25-M			
Ezi-SERVOII-EC-ALL-60M-A-PN25-R			
Ezi-SERVOII-EC-ALL-60M-B-PN25-R			
Ezi-SERVOII-EC-ALL-60M-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-60M-B-PN40-M			
Ezi-SERVOII-EC-ALL-60M-A-PN40-R			
Ezi-SERVOII-EC-ALL-60M-B-PN40-R			
Ezi-SERVOII-EC-ALL-60M-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-60M-B-PN50-M			
Ezi-SERVOII-EC-ALL-60M-A-PN50-R			
Ezi-SERVOII-EC-ALL-60M-B-PN50-R			

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVOII-EC-ALL-60L-A-PN3-M	Motor & Drive Integrated		1:3
Ezi-SERVOII-EC-ALL-60L-B-PN3-M			
Ezi-SERVOII-EC-ALL-60L-A-PN3-R			
Ezi-SERVOII-EC-ALL-60L-B-PN3-R			
Ezi-SERVOII-EC-ALL-60L-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-60L-B-PN5-M			
Ezi-SERVOII-EC-ALL-60L-A-PN5-R			
Ezi-SERVOII-EC-ALL-60L-B-PN5-R			
Ezi-SERVOII-EC-ALL-60L-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-60L-B-PN8-M			
Ezi-SERVOII-EC-ALL-60L-A-PN8-R			
Ezi-SERVOII-EC-ALL-60L-B-PN8-R			
Ezi-SERVOII-EC-ALL-60L-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-60L-B-PN10-M			
Ezi-SERVOII-EC-ALL-60L-A-PN10-R			
Ezi-SERVOII-EC-ALL-60L-B-PN10-R			
Ezi-SERVOII-EC-ALL-60L-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-60L-B-PN15-M			
Ezi-SERVOII-EC-ALL-60L-A-PN15-R			
Ezi-SERVOII-EC-ALL-60L-B-PN15-R			
Ezi-SERVOII-EC-ALL-60L-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-60L-B-PN25-M			
Ezi-SERVOII-EC-ALL-60L-A-PN25-R			
Ezi-SERVOII-EC-ALL-60L-B-PN25-R			
Ezi-SERVOII-EC-ALL-60L-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-60L-B-PN40-M			
Ezi-SERVOII-EC-ALL-60L-A-PN40-R			
Ezi-SERVOII-EC-ALL-60L-B-PN40-R			
Ezi-SERVOII-EC-ALL-60L-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-60L-B-PN50-M			
Ezi-SERVOII-EC-ALL-60L-A-PN50-R			
Ezi-SERVOII-EC-ALL-60L-B-PN50-R			
Ezi-SERVOII-EC-ALL-86M-A-PN3-M			1:3
Ezi-SERVOII-EC-ALL-86M-B-PN3-M			
Ezi-SERVOII-EC-ALL-86M-A-PN3-R			
Ezi-SERVOII-EC-ALL-86M-B-PN3-R			
Ezi-SERVOII-EC-ALL-86M-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-86M-B-PN5-M			
Ezi-SERVOII-EC-ALL-86M-A-PN5-R			
Ezi-SERVOII-EC-ALL-86M-B-PN5-R			
Ezi-SERVOII-EC-ALL-86M-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-86M-B-PN8-M			
Ezi-SERVOII-EC-ALL-86M-A-PN8-R			
Ezi-SERVOII-EC-ALL-86M-B-PN8-R			
Ezi-SERVOII-EC-ALL-86M-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-86M-B-PN10-M			
Ezi-SERVOII-EC-ALL-86M-A-PN10-R			
Ezi-SERVOII-EC-ALL-86M-B-PN10-R			
Ezi-SERVOII-EC-ALL-86M-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-86M-B-PN15-M			
Ezi-SERVOII-EC-ALL-86M-A-PN15-R			
Ezi-SERVOII-EC-ALL-86M-B-PN15-R			
Ezi-SERVOII-EC-ALL-86M-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-86M-B-PN25-M			
Ezi-SERVOII-EC-ALL-86M-A-PN25-R			
Ezi-SERVOII-EC-ALL-86M-B-PN25-R			
Ezi-SERVOII-EC-ALL-86M-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-86M-B-PN40-M			
Ezi-SERVOII-EC-ALL-86M-A-PN40-R			
Ezi-SERVOII-EC-ALL-86M-B-PN40-R			
Ezi-SERVOII-EC-ALL-86M-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-86M-B-PN50-M			
Ezi-SERVOII-EC-ALL-86M-A-PN50-R			
Ezi-SERVOII-EC-ALL-86M-B-PN50-R			

● Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVOII-EC-ALL-86L-A-PN3-M	Motor & Drive Integrated		1:3
Ezi-SERVOII-EC-ALL-86L-B-PN3-M			
Ezi-SERVOII-EC-ALL-86L-A-PN3-R			
Ezi-SERVOII-EC-ALL-86L-B-PN3-R			
Ezi-SERVOII-EC-ALL-86L-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-86L-B-PN5-M			
Ezi-SERVOII-EC-ALL-86L-A-PN5-R			
Ezi-SERVOII-EC-ALL-86L-B-PN5-R			
Ezi-SERVOII-EC-ALL-86L-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-86L-B-PN8-M			
Ezi-SERVOII-EC-ALL-86L-A-PN8-R			
Ezi-SERVOII-EC-ALL-86L-B-PN8-R			
Ezi-SERVOII-EC-ALL-86L-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-86L-B-PN10-M			
Ezi-SERVOII-EC-ALL-86L-A-PN10-R			
Ezi-SERVOII-EC-ALL-86L-B-PN10-R			
Ezi-SERVOII-EC-ALL-86L-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-86L-B-PN15-M			
Ezi-SERVOII-EC-ALL-86L-A-PN15-R			
Ezi-SERVOII-EC-ALL-86L-B-PN15-R			
Ezi-SERVOII-EC-ALL-86L-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-86L-B-PN25-M			
Ezi-SERVOII-EC-ALL-86L-A-PN25-R			
Ezi-SERVOII-EC-ALL-86L-B-PN25-R			
Ezi-SERVOII-EC-ALL-86L-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-86L-B-PN40-M			
Ezi-SERVOII-EC-ALL-86L-A-PN40-R			
Ezi-SERVOII-EC-ALL-86L-B-PN40-R			
Ezi-SERVOII-EC-ALL-86L-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-86L-B-PN50-M			
Ezi-SERVOII-EC-ALL-86L-A-PN50-R			
Ezi-SERVOII-EC-ALL-86L-B-PN50-R			
Ezi-SERVOII-EC-ALL-86XL-A-PN3-M			1:3
Ezi-SERVOII-EC-ALL-86XL-B-PN3-M			
Ezi-SERVOII-EC-ALL-86XL-A-PN3-R			
Ezi-SERVOII-EC-ALL-86XL-B-PN3-R			
Ezi-SERVOII-EC-ALL-86XL-A-PN5-M			1:5
Ezi-SERVOII-EC-ALL-86XL-B-PN5-M			
Ezi-SERVOII-EC-ALL-86XL-A-PN5-R			
Ezi-SERVOII-EC-ALL-86XL-B-PN5-R			
Ezi-SERVOII-EC-ALL-86XL-A-PN8-M			1:8
Ezi-SERVOII-EC-ALL-86XL-B-PN8-M			
Ezi-SERVOII-EC-ALL-86XL-A-PN8-R			
Ezi-SERVOII-EC-ALL-86XL-B-PN8-R			
Ezi-SERVOII-EC-ALL-86XL-A-PN10-M			1:10
Ezi-SERVOII-EC-ALL-86XL-B-PN10-M			
Ezi-SERVOII-EC-ALL-86XL-A-PN10-R			
Ezi-SERVOII-EC-ALL-86XL-B-PN10-R			
Ezi-SERVOII-EC-ALL-86XL-A-PN15-M			1:15
Ezi-SERVOII-EC-ALL-86XL-B-PN15-M			
Ezi-SERVOII-EC-ALL-86XL-A-PN15-R			
Ezi-SERVOII-EC-ALL-86XL-B-PN15-R			
Ezi-SERVOII-EC-ALL-86XL-A-PN25-M			1:25
Ezi-SERVOII-EC-ALL-86XL-B-PN25-M			
Ezi-SERVOII-EC-ALL-86XL-A-PN25-R			
Ezi-SERVOII-EC-ALL-86XL-B-PN25-R			
Ezi-SERVOII-EC-ALL-86XL-A-PN40-M			1:40
Ezi-SERVOII-EC-ALL-86XL-B-PN40-M			
Ezi-SERVOII-EC-ALL-86XL-A-PN40-R			
Ezi-SERVOII-EC-ALL-86XL-B-PN40-R			
Ezi-SERVOII-EC-ALL-86XL-A-PN50-M			1:50
Ezi-SERVOII-EC-ALL-86XL-B-PN50-M			
Ezi-SERVOII-EC-ALL-86XL-A-PN50-R			
Ezi-SERVOII-EC-ALL-86XL-B-PN50-R			

● Specifications of Drive

Model		Ezi-SERVO II-EC-ALL-42 series	Ezi-SERVO II-EC-ALL-56 series	Ezi-SERVO II-EC-ALL-60 series	Ezi-SERVO II-EC-ALL-86 series
Input Voltage		DC24V±10%			DC48V±10%
Control Method		Closed-loop control with 32bit MCU			
Current Consumption		Max. 500mA (Except motor current)			
Operating Condition	Ambient Temperature	· In Use: 0~50℃ · In Storage: -20~70℃			
	Humidity	· In Use: 35~85%RH (Non-Condensing) · In Storage: 10~90%RH (Non-Condensing)			
	Vib. Resist.	0.5g			
Function	Rotation Speed	0~3,000r/min *1			0~2,000r/min *2
	Resolution	Encoder Resolution [P/R] / Configurable Resolution [P/R] 10,000 / 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 20,000 / 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 20,000 (Selectable by parameter)			
	Error Types	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, Encoder Connect Error, In-Position Error, ROM Error, Position Overflow Error			
EtherCAT	Supported Protocol	CoE (CiA 402 Drive Profile), FoE (Firmware Download)			
	Supported Mode	Profile Position Mode, Homing Mode, Cyclic Synchronous Position Mode			
	Synchronization	Free Run, SM Event, DC SYNC Event			
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 3 programmable inputs (Photocoupler Input)			
	Output Signals	2 programmable outputs (Photocoupler Output), 1 Brake output			

*1 : Up to the resolution of 10,000P/R, maximum speed can be reached by 3,000r/min and with the resolution more than 10,000P/R, maximum speed shall be reduced accordingly.

*2 : Up to the resolution of 10,000P/R, maximum speed can be reached by 2,000r/min and with the resolution more than 10,000P/R, maximum speed shall be reduced accordingly.

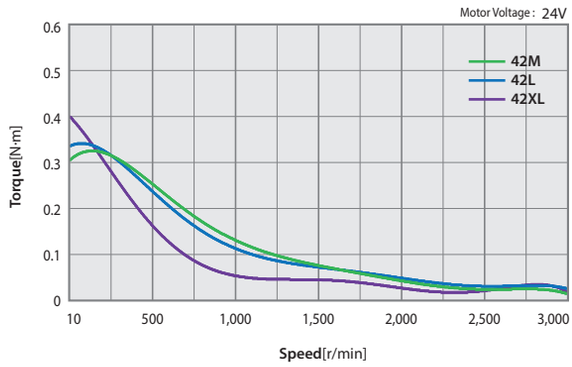
● Specifications of Motor

MODEL				Ezi-SERVO II-EC-ALL-42 series			Ezi-SERVO II-EC-ALL-56 series		
			UNIT	42M	42L	42XL	56S	56M	56L
DRIVE METHOD			-	Bipolar					
NUMBER OF PHASES			-	2 Phase					
CURRENT per PHASE			A/Phase	1.2	1.2	1.2	3.0	3.0	3.0
MAXIMUM HOLDING TORQUE			N·m	0.44	0.5	0.65	0.64	1.0	1.5
ROTOR INERTIA			g·cm^2	54	77	114	180	280	520
WEIGHTS			kg	0.440	0.520	0.660	0.760	0.920	1.360
LENGTH(L)			mm	40	48	60	46	55	80
PERMISSIBLE RADIAL LOAD	DIS-TANCE FROM END OF SHAFT	3mm	N	22	22	22	52	52	52
		8mm		26	26	26	65	65	65
		13mm		33	33	33	85	85	85
		18mm		46	46	46	123	123	123
PERMISSIBLE AXIAL LOAD			N	Lower than motor Unit's Weight					
INSULATION RESISTANCE			MΩ	Min. 100(When measured with a DC500V insulation resistance meter)					
INSULATION CLASS			-	CLASS B(130℃)					
OPERATING TEMPERATURE			℃	0 ~ 55					

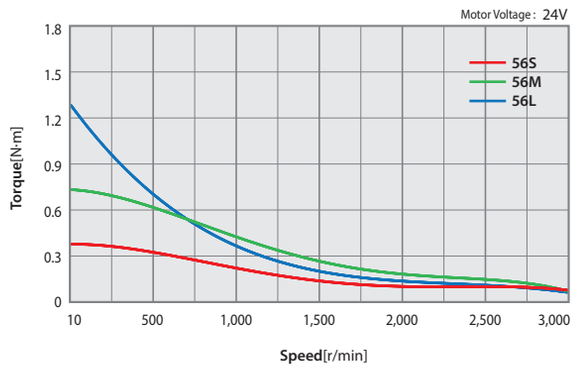
MODEL				Ezi-SERVO II-EC-ALL-60 series			Ezi-SERVO II-EC-ALL-86 series		
			UNIT	60S	60M	60L	86M	86L	86XL
DRIVE METHOD			-	Bipolar					
NUMBER OF PHASES			-	2 Phase					
CURRENT per PHASE			A/Phase	4.0	4.0	4.0	6.0	6.0	6.0
MAXIMUM HOLDING TORQUE			N·m	0.88	1.28	2.4	4.5	8.5	12
ROTOR INERTIA			g·cm^2	240	490	690	1800	3600	5400
WEIGHTS			kg	0.840	0.980	1.540	2.682	4.226	5.756
LENGTH(L)			mm	47	56	85	78	117	155
PERMISSIBLE RADIAL LOAD	DIS-TANCE FROM END OF SHAFT	3mm	N	70	70	70	270	270	270
		8mm		87	87	87	300	300	300
		13mm		114	114	114	350	350	350
		18mm		165	165	165	400	400	400
PERMISSIBLE AXIAL LOAD			N	Lower than motor Unit's Weight					
INSULATION RESISTANCE			MΩ	Min. 100(When measured with a DC500V insulation resistance meter)					
INSULATION CLASS			-	CLASS B(130℃)					
OPERATING TEMPERATURE			℃	0 ~ 55					

● Torque Characteristics of Motor

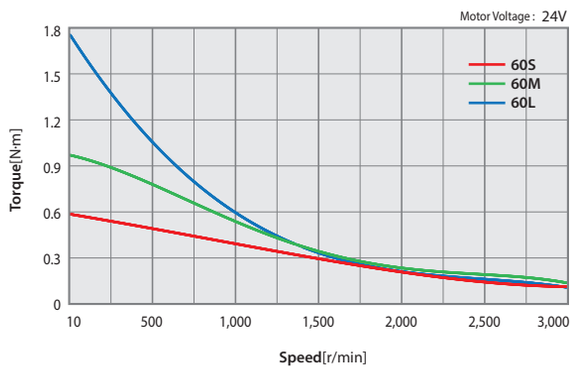
Ezi-SERVOII-EC-ALL-42 series



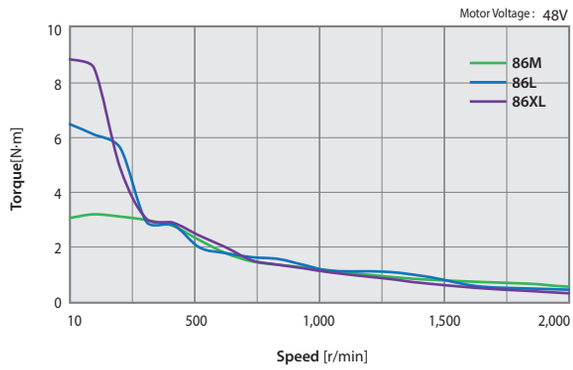
Ezi-SERVOII-EC-ALL-56 series



Ezi-SERVOII-EC-ALL-60 series

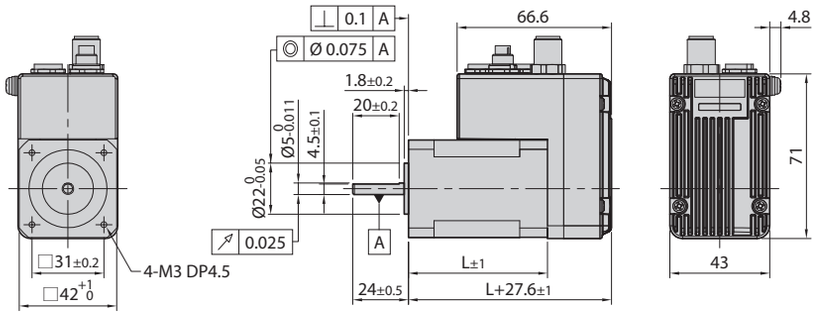


Ezi-SERVOII-EC-ALL-86 series



● Dimensions of Motor [mm]

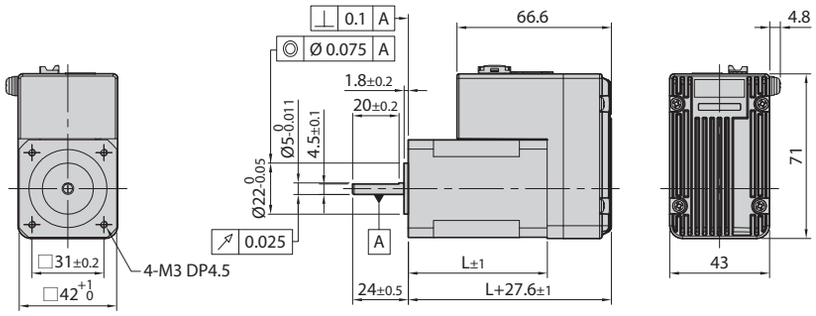
◆ M Type



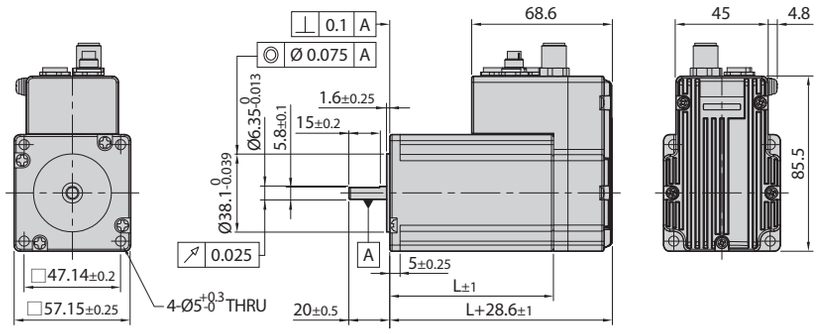
42mm

Model name	Length(L)
42M	40
42L	48
42XL	60

◆ R Type



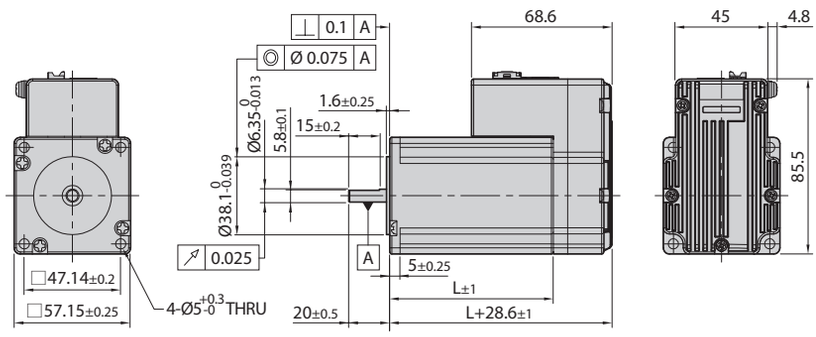
◆ M Type



56mm

Model name	Length(L)
56S	46
56M	55
56L	80

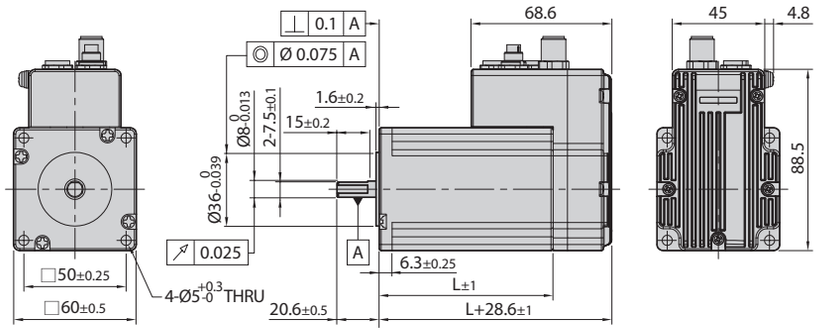
◆ R Type



※ There are 2 kinds size of front shaft diameter for EzM2-56 series as Ø6.35 and Ø8.0.

● Dimensions of Motor [mm]

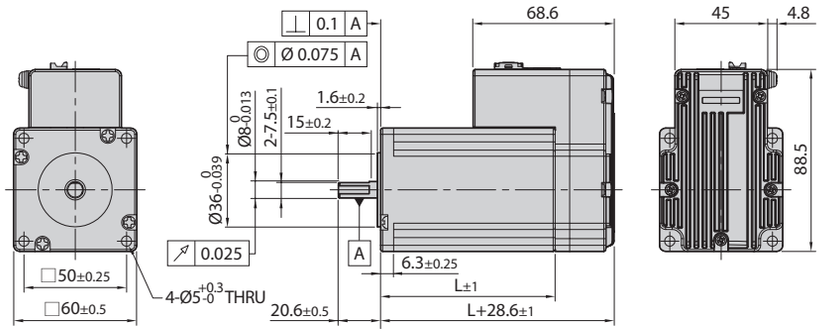
◆ M Type



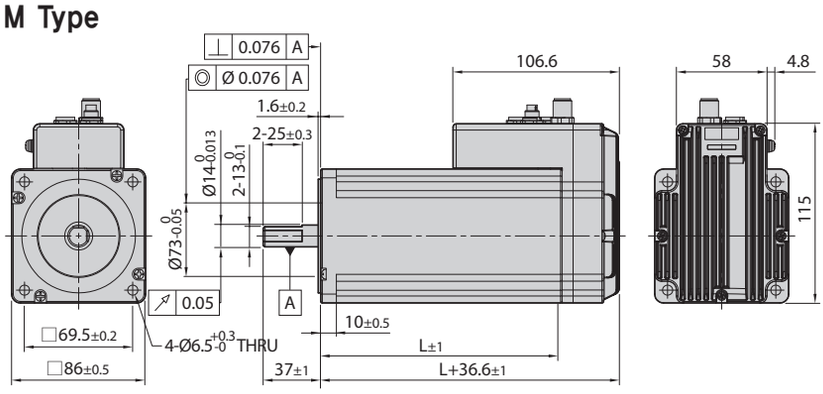
60mm

Model name	Length(L)
60S	47
60M	56
60L	85

◆ R Type



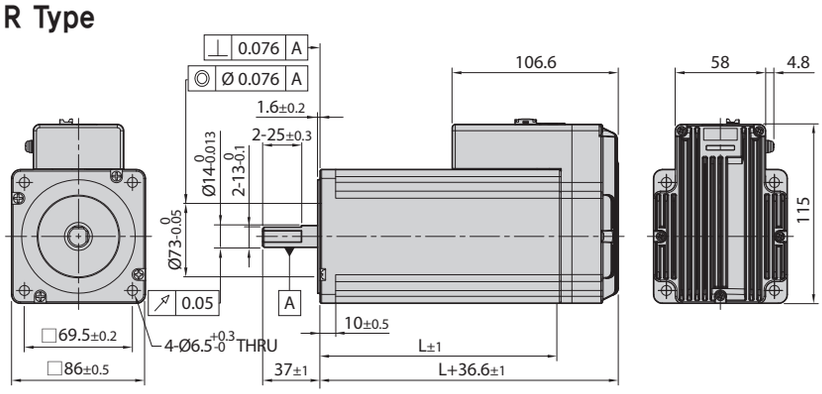
◆ M Type



86mm

Model name	Length(L)
86M	78
86L	117
86XL	155

◆ R Type



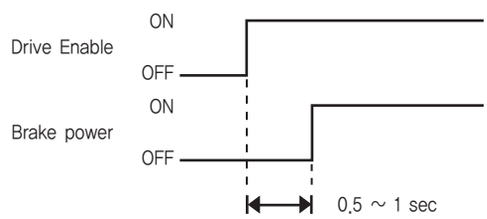
● Specifications of Motor with Brake

Unit Part Number	Motor Model Number	Electromagnetic Brake					Motor Unit Weight [kg]	Permissible Radial Load [N]				Permissible Axial Load [N]
		Type	Voltage Input [V]	Rated Current [A]	Power Consumption [W]	Static Friction Torque [N·m]		Motor Model Number [mm]				
								3	8	13	18	
Ezi-SERVO II-EC-ALL-42M-■-BK-▲	Motor & Drive Integrated	Non-excitation run Type	DC24V ±10%	0.2	5	0.2	0.700	22	26	33	46	Must be Lower than Unit's Weight
Ezi-SERVO II-EC-ALL-42L-■-BK-▲							0.780					
Ezi-SERVO II-EC-ALL-42XL-■-BK-▲							0.920					
Ezi-SERVO II-EC-ALL-56S-■-BK-▲				0.27	6.6	0.7	1.180	52	65	85	123	
Ezi-SERVO II-EC-ALL-56M-■-BK-▲							1.340					
Ezi-SERVO II-EC-ALL-56L-■-BK-▲							1.780					
Ezi-SERVO II-EC-ALL-60S-■-BK-▲							1.280	70	87	114	165	
Ezi-SERVO II-EC-ALL-60M-■-BK-▲							1.420					
Ezi-SERVO II-EC-ALL-60L-■-BK-▲							1.980					
Ezi-SERVO II-EC-ALL-86M-■-BK-▲				0.54	13	4	3.982	270	300	350	400	
Ezi-SERVO II-EC-ALL-86L-■-BK-▲							5.526					
Ezi-SERVO II-EC-ALL-86XL-■-BK-▲							7.056					

* The code of encoder resolution will be marked in" ■" .
* The code of connector type will be marked in "▲" .
* Electronic Brake cannot be used for braking. Position hold purpose only when power OFF.
* The weight means Motor Unit Weight including Motor and Electronic Brake.
* Motor specification and torque characteristic are same as Standard Motor.
* An external power supply (DC24V) is not required when installing the Electric Brake on the 86mm motor drive.

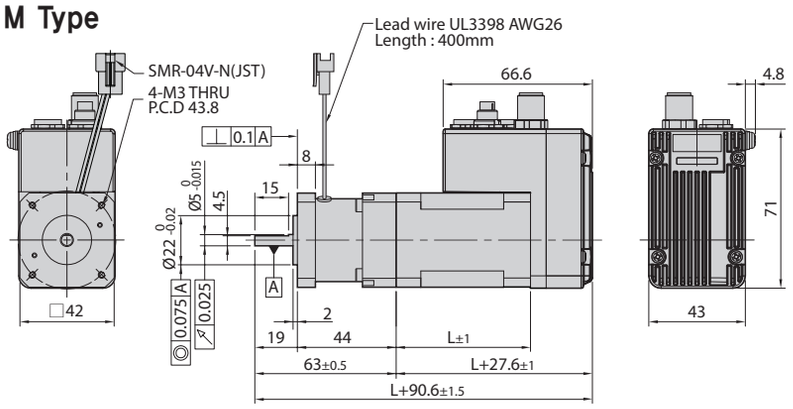
* Brake Operation Timing Chart

Ezi-SERVO II EtherCAT ALL controls Brake by Drive automatically.
Please refer to below Timing Chart when Brake is controlled by the upper controller other than using Ezi-SERVO II EtherCAT ALL Brake control.
Otherwise, Drive might malfunction and loads might fall down.
Also, please do not operate Brake during motor operation to prevent damage.

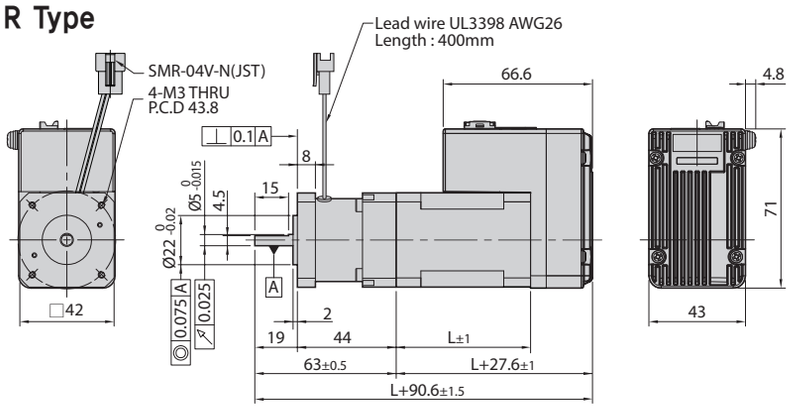


● Dimensions of Motor with Brake [mm]

◆ M Type



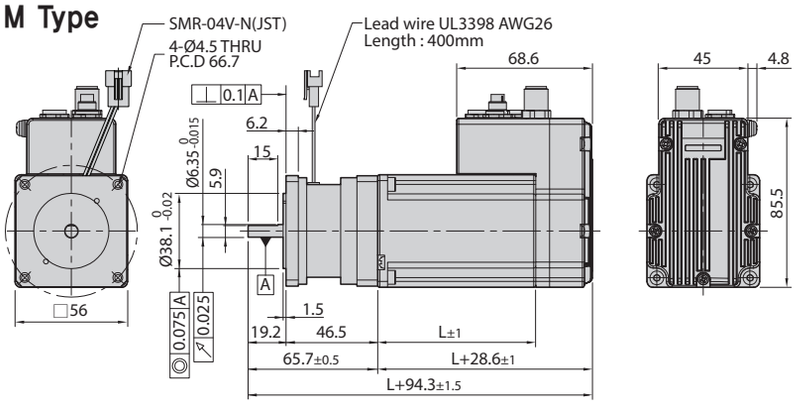
◆ R Type



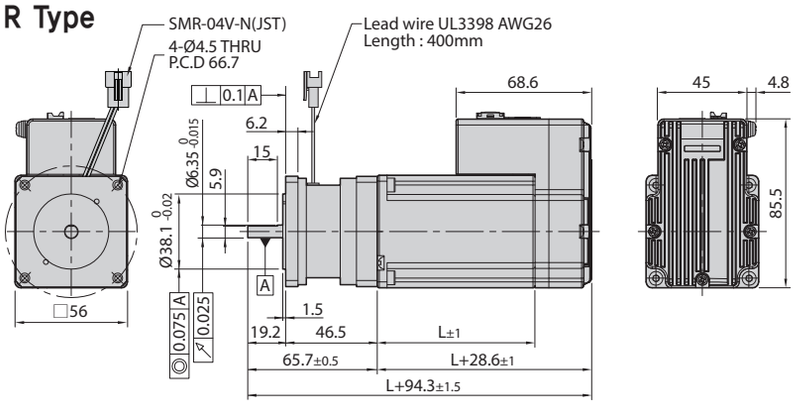
42mm

Model name	Length(L)
42M	40
42L	48
42XL	60

◆ M Type



◆ R Type

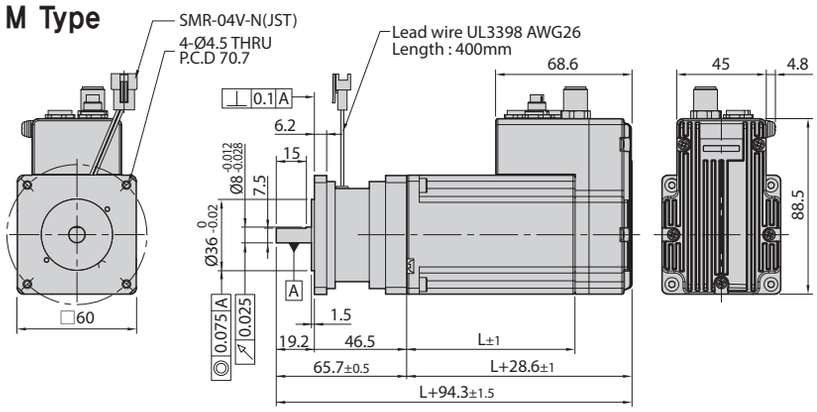


56mm

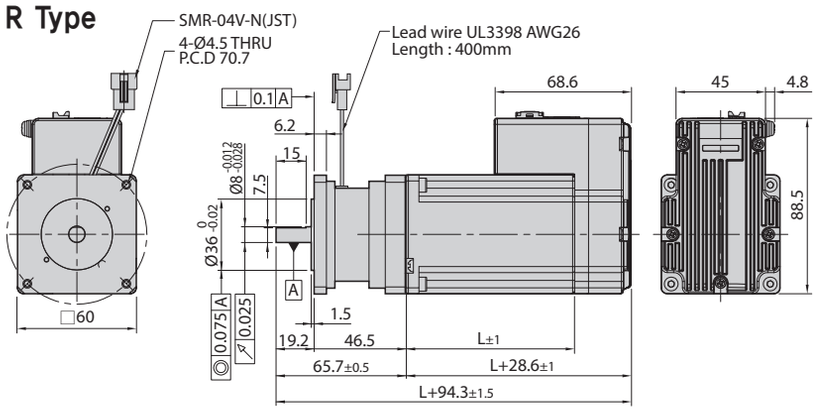
Model name	Length(L)
56S	46
56M	55
56L	80

● Dimensions of Motor with Brake [mm]

◆ M Type



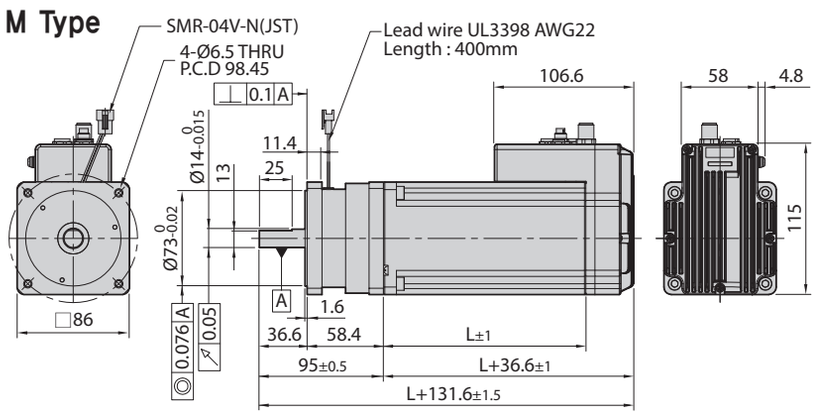
◆ R Type



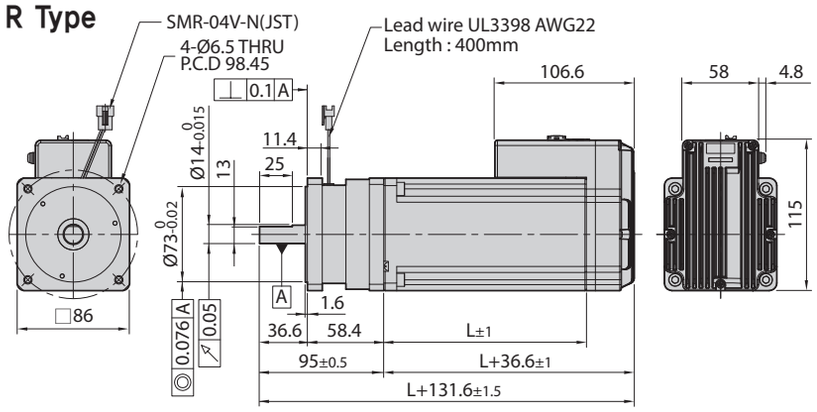
60mm

Model name	Length(L)
60S	47
60M	56
60L	85

◆ M Type



◆ R Type



86mm

Model name	Length(L)
86M	78
86L	117
86XL	155

● How to Read Specifications

Unit Part Number	① Maximum Holding Torque [N·m]	② Rotor Inertia Moment [kg·m²]	③ Backlash [arc-min]	④ Angle Transmission Error [arc-min]	⑤ Gear Ratio	⑥ Resolution (10,000 P/R Standard)	⑦ Permissible Torque [N·m]	⑧ Instantaneous Maximum Torque [N·m]	⑨ Permissible Speed Range [r/min]	⑩ Unit Weight [kg]	⑪ Permissible Radial Load (At Center of Axis) [N]	⑫ Permissible Axial Load [N]
Ezi-SERVOII-EC-ALL-42M-■-PN3-▲	0.85	$54x10^{-7}$	3	5	3	0.012°	6	12	0~1000	0.90	240	270
Ezi-SERVOII-EC-ALL-42M-■-PN5-▲	1.42				5	0.0072°	9	18	0~600		290	330
Ezi-SERVOII-EC-ALL-42M-■-PN8-▲	2.28				8	0.0045°	9	18	0~375		340	410
Ezi-SERVOII-EC-ALL-42M-■-PN10-▲	2.85				10	0.0036°	6	12	0~300		360	450
Ezi-SERVOII-EC-ALL-42M-■-PN15-▲	4.14		5	7	15	0.0024°	6	12	0~200	1.06	410	540
Ezi-SERVOII-EC-ALL-42M-■-PN25-▲	6.90				25	0.00144°	9	18	0~120		490	640
Ezi-SERVOII-EC-ALL-42M-■-PN40-▲	9.00				40	0.0009°	9	18	0~75		570	640
Ezi-SERVOII-EC-ALL-42M-■-PN50-▲	9.00				50	0.00072°	9	18	0~60		620	640

Description of Specification Items

No.	Item	Description
①	Maximum Holding Torque	This is the maximum torque that can be exerted through the gearbox when the motor is stopped. (Based on 100% of stop current) Use the torque below the permissible torque of the gearbox.
②	Rotor Inertia Moment	It is the value of the moment of inertia of the motor.
③	Backlash	It is the gap between the gear and the gear, and it is the angle at which the gearbox shaft moves without external force when stopped.
④	Angle Transmission Error	This is the transmission characteristic of the gearbox, which means the difference between the theoretical rotation angle and the actual rotation angle of the output shaft.
⑤	Gear Ratio	It is the value obtained by dividing the number of output rotation by the number of input rotation.
⑥	Resolution	This is the angle at which the gearbox output shaft moves when the motor is driven by 1 pulse.
⑦	Permissible Torque	It refers to the maximum value of the torque that can be continuously applied to the output shaft of the gearbox during constant speed operation. (When the input rotation speed is 3,000r/min and the lifetime of the motor becomes 20,000 hours)
⑧	Instantaneous Maximum Torque	This is the maximum torque allowed to the output shaft of the gearbox during acceleration/deceleration.
⑨	Permissible Speed Range	It is the range of rotation speed based on the output shaft of the gearbox.
⑩	Unit Weight	It is the sum of the weight of the gearbox and the motor.
⑪	Permissible Radial Load	It is the maximum value of the load applied in the direction perpendicular to the gearbox output shaft.
⑫	Permissible Axial Load	It is the maximum value of the load applied in the axial direction to the gearbox output shaft.

● Specifications of Motor with Gearbox

42mm

Unit Part Number	Maximum Holding Torque [N·m]	Rotor Inertia Moment [kg·m²]	Backlash [arc-min]	Angle Transmission Error [arc-min]	Gear Ratio	Resolution (10,000 P/R Standard)	Permissible Torque [N·m]	Instantaneous Maximum Torque [N·m]	Permissible Speed Range [r/min]	Unit Weight [kg]	Permissible Radial Load (At Center of Axis) [N]	Permissible Axial Load [N]
Ezi-SERVO II-EC-ALL-42M-■-PN3-▲	0.85	54x10⁻⁷	3	5	3	0.012°	6	12	0~1000	0.90	240	270
Ezi-SERVO II-EC-ALL-42M-■-PN5-▲	1.42				5	0.0072°	9	18	0~600		290	330
Ezi-SERVO II-EC-ALL-42M-■-PN8-▲	2.28				8	0.0045°	9	18	0~375		340	410
Ezi-SERVO II-EC-ALL-42M-■-PN10-▲	2.85				10	0.0036°	6	12	0~300		360	450
Ezi-SERVO II-EC-ALL-42M-■-PN15-▲	4.14		5	7	15	0.0024°	6	12	0~200	1.06	410	540
Ezi-SERVO II-EC-ALL-42M-■-PN25-▲	6.90				25	0.00144°	9	18	0~120		490	640
Ezi-SERVO II-EC-ALL-42M-■-PN40-▲	9.00				40	0.0009°	9	18	0~75		570	640
Ezi-SERVO II-EC-ALL-42M-■-PN50-▲	9.00				50	0.00072°	9	18	0~60		620	640
Ezi-SERVO II-EC-ALL-42L-■-PN3-▲	0.92	77x10⁻⁷	3	5	3	0.012°	6	12	0~1000	0.98	240	270
Ezi-SERVO II-EC-ALL-42L-■-PN5-▲	1.54				5	0.0072°	9	18	0~600		290	330
Ezi-SERVO II-EC-ALL-42L-■-PN8-▲	2.47				8	0.0045°	9	18	0~375		340	410
Ezi-SERVO II-EC-ALL-42L-■-PN10-▲	3.09				10	0.0036°	6	12	0~300		360	450
Ezi-SERVO II-EC-ALL-42L-■-PN15-▲	4.49		5	7	15	0.0024°	6	12	0~200	1.14	410	540
Ezi-SERVO II-EC-ALL-42L-■-PN25-▲	7.49				25	0.00144°	9	18	0~120		490	640
Ezi-SERVO II-EC-ALL-42L-■-PN40-▲	9.00				40	0.0009°	9	18	0~75		570	640
Ezi-SERVO II-EC-ALL-42L-■-PN50-▲	9.00				50	0.00072°	9	18	0~60		620	640
Ezi-SERVO II-EC-ALL-42XL-■-PN3-▲	1.45	114x10⁻⁷	3	5	3	0.012°	6	12	0~1000	1.12	240	270
Ezi-SERVO II-EC-ALL-42XL-■-PN5-▲	2.42				5	0.0072°	9	18	0~600		290	330
Ezi-SERVO II-EC-ALL-42XL-■-PN8-▲	3.87				8	0.0045°	9	18	0~375		340	410
Ezi-SERVO II-EC-ALL-42XL-■-PN10-▲	4.84				10	0.0036°	6	12	0~300		360	450
Ezi-SERVO II-EC-ALL-42XL-■-PN15-▲	6.00		5	7	15	0.0024°	6	12	0~200	1.28	410	540
Ezi-SERVO II-EC-ALL-42XL-■-PN25-▲	9.00				25	0.00144°	9	18	0~120		490	640
Ezi-SERVO II-EC-ALL-42XL-■-PN40-▲	9.00				40	0.0009°	9	18	0~75		570	640
Ezi-SERVO II-EC-ALL-42XL-■-PN50-▲	9.00				50	0.00072°	9	18	0~60		620	640

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

● Specifications of Motor with Gearbox

56mm

Unit Part Number	Maximum Holding Torque [N·m]	Rotor Inertia Moment [kg·m²]	Backlash [arc-min]	Angle Transmission Error [arc-min]	Gear Ratio	Resolution (10,000 P/R Standard)	Permissible Torque [N·m]	Instantaneous Maximum Torque [N·m]	Permissible Speed Range [r/min]	Unit Weight [kg]	Permissible Radial Load (At Center of Axis) [N]	Permissible Axial Load [N]
Ezi-SERVOII-EC-ALL-56S-■-PN3-▲	1.1	$180x10^{-7}$	3	5	3	0.012°	18	35	0~1000	1.90	430	310
Ezi-SERVOII-EC-ALL-56S-■-PN5-▲	1.9				5	0.0072°	27	50	0~600		510	390
Ezi-SERVOII-EC-ALL-56S-■-PN8-▲	3.0				8	0.0045°	27	50	0~375		600	480
Ezi-SERVOII-EC-ALL-56S-■-PN10-▲	3.8				10	0.0036°	18	35	0~300		640	530
Ezi-SERVOII-EC-ALL-56S-■-PN15-▲	5.5				15	0.0024°	18	35	0~200	2.20	740	630
Ezi-SERVOII-EC-ALL-56S-■-PN25-▲	9.3				25	0.00144°	27	50	0~120		870	790
Ezi-SERVOII-EC-ALL-56S-■-PN40-▲	14.9				40	0.0009°	27	50	0~75		1000	970
Ezi-SERVOII-EC-ALL-56S-■-PN50-▲	18.6				50	0.00072°	27	50	0~60		1100	1100
Ezi-SERVOII-EC-ALL-56M-■-PN3-▲	2.0	$280x10^{-7}$	3	5	3	0.012°	18	35	0~1000	2.06	430	310
Ezi-SERVOII-EC-ALL-56M-■-PN5-▲	3.4				5	0.0072°	27	50	0~600		510	390
Ezi-SERVOII-EC-ALL-56M-■-PN8-▲	5.4				8	0.0045°	27	50	0~375		600	480
Ezi-SERVOII-EC-ALL-56M-■-PN10-▲	6.8				10	0.0036°	18	35	0~300		640	530
Ezi-SERVOII-EC-ALL-56M-■-PN15-▲	9.9				15	0.0024°	18	35	0~200	2.36	740	630
Ezi-SERVOII-EC-ALL-56M-■-PN25-▲	16.6				25	0.00144°	27	50	0~120		870	790
Ezi-SERVOII-EC-ALL-56M-■-PN40-▲	27.0				40	0.0009°	27	50	0~75		1000	970
Ezi-SERVOII-EC-ALL-56M-■-PN50-▲	27.0				50	0.00072°	27	50	0~60		1100	1100
Ezi-SERVOII-EC-ALL-56L-■-PN3-▲	4.0	$520x10^{-7}$	3	5	3	0.012°	18	35	0~1000	2.50	430	310
Ezi-SERVOII-EC-ALL-56L-■-PN5-▲	6.8				5	0.0072°	27	50	0~600		510	390
Ezi-SERVOII-EC-ALL-56L-■-PN8-▲	10.8				8	0.0045°	27	50	0~375		600	480
Ezi-SERVOII-EC-ALL-56L-■-PN10-▲	13.6				10	0.0036°	18	35	0~300		640	530
Ezi-SERVOII-EC-ALL-56L-■-PN15-▲	18.0				15	0.0024°	18	35	0~200	2.80	740	630
Ezi-SERVOII-EC-ALL-56L-■-PN25-▲	27.0				25	0.00144°	27	50	0~120		870	790
Ezi-SERVOII-EC-ALL-56L-■-PN40-▲	27.0				40	0.0009°	27	50	0~75		1000	970
Ezi-SERVOII-EC-ALL-56L-■-PN50-▲	27.0				50	0.00072°	27	50	0~60		1100	1100

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

● Specifications of Motor with Gearbox

60mm

Unit Part Number	Maximum Holding Torque [N·m]	Rotor Inertia Moment [kg·m²]	Backlash [arc-min]	Angle Transmission Error [arc-min]	Gear Ratio	Resolution (10,000 P/R Standard)	Permissible Torque [N·m]	Instantaneous Maximum Torque [N·m]	Permissible Speed Range [r/min]	Unit Weight [kg]	Permissible Radial Load (At Center of Axis) [N]	Permissible Axial Load [N]
Ezi-SERVO II-EC-ALL-60S-■-PN3-▲	1.5	$240x10^{-7}$	3	5	3	0.012°	18	35	0~1000	1.98	430	310
Ezi-SERVO II-EC-ALL-60S-■-PN5-▲	2.5				5	0.0072°	27	50	0~600		510	390
Ezi-SERVO II-EC-ALL-60S-■-PN8-▲	4.0				8	0.0045°	27	50	0~375		600	480
Ezi-SERVO II-EC-ALL-60S-■-PN10-▲	5.1				10	0.0036°	18	35	0~300		640	530
Ezi-SERVO II-EC-ALL-60S-■-PN15-▲	7.4				15	0.0024°	18	35	0~200	2.28	740	630
Ezi-SERVO II-EC-ALL-60S-■-PN25-▲	12.3				25	0.00144°	27	50	0~120		870	790
Ezi-SERVO II-EC-ALL-60S-■-PN40-▲	19.8				40	0.0009°	27	50	0~75		1000	970
Ezi-SERVO II-EC-ALL-60S-■-PN50-▲	24.7				50	0.00072°	27	50	0~60		1100	1100
Ezi-SERVO II-EC-ALL-60M-■-PN3-▲	2.6	$490x10^{-7}$	3	5	3	0.012°	18	35	0~1000	2.12	430	310
Ezi-SERVO II-EC-ALL-60M-■-PN5-▲	4.4				5	0.0072°	27	50	0~600		510	390
Ezi-SERVO II-EC-ALL-60M-■-PN8-▲	7.0				8	0.0045°	27	50	0~375		600	480
Ezi-SERVO II-EC-ALL-60M-■-PN10-▲	8.8				10	0.0036°	18	35	0~300		640	530
Ezi-SERVO II-EC-ALL-60M-■-PN15-▲	12.8				15	0.0024°	18	35	0~200	2.42	740	630
Ezi-SERVO II-EC-ALL-60M-■-PN25-▲	21.4				25	0.00144°	27	50	0~120		870	790
Ezi-SERVO II-EC-ALL-60M-■-PN40-▲	27.0				40	0.0009°	27	50	0~75		1000	970
Ezi-SERVO II-EC-ALL-60M-■-PN50-▲	27.0				50	0.00072°	27	50	0~60		1100	1100
Ezi-SERVO II-EC-ALL-60L-■-PN3-▲	5.2	$690x10^{-7}$	3	5	3	0.012°	18	35	0~1000	2.68	430	310
Ezi-SERVO II-EC-ALL-60L-■-PN5-▲	8.7				5	0.0072°	27	50	0~600		510	390
Ezi-SERVO II-EC-ALL-60L-■-PN8-▲	13.9				8	0.0045°	27	50	0~375		600	480
Ezi-SERVO II-EC-ALL-60L-■-PN10-▲	18.0				10	0.0036°	18	35	0~300		640	530
Ezi-SERVO II-EC-ALL-60L-■-PN15-▲	18.0				15	0.0024°	18	35	0~200	2.98	740	630
Ezi-SERVO II-EC-ALL-60L-■-PN25-▲	27.0				25	0.00144°	27	50	0~120		870	790
Ezi-SERVO II-EC-ALL-60L-■-PN40-▲	27.0				40	0.0009°	27	50	0~75		1000	970
Ezi-SERVO II-EC-ALL-60L-■-PN50-▲	27.0				50	0.00072°	27	50	0~60		1100	1100

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

● Specifications of Motor with Gearbox

86mm

Unit Part Number	Maximum Holding Torque [N·m]	Rotor Inertia Moment [kg·m²]	Backlash [arc-min]	Angle Transmission Error [arc-min]	Gear Ratio	Resolution (10,000 P/R Standard)	Permissible Torque [N·m]	Instantaneous Maximum Torque [N·m]	Permissible Speed Range [r/min]	Unit Weight [kg]	Permissible Radial Load (At Center of Axis) [N]	Permissible Axial Load [N]
Ezi-SERVOII-EC-ALL-86M-■-PN3-▲	9.6	$1800x10^{-7}$	3	5	3	0.012°	50	80	0~1000	6.07	810	930
Ezi-SERVOII-EC-ALL-86M-■-PN5-▲	16.0				5	0.0072°	75	125	0~600		960	1200
Ezi-SERVOII-EC-ALL-86M-■-PN8-▲	25.7				8	0.0045°	75	125	0~375		1100	1400
Ezi-SERVOII-EC-ALL-86M-■-PN10-▲	32.1				10	0.0036°	50	80	0~300		1200	1600
Ezi-SERVOII-EC-ALL-86M-■-PN15-▲	46.6				15	0.0024°	50	80	0~200	6.87	1200	1900
Ezi-SERVOII-EC-ALL-86M-■-PN25-▲	75.0				25	0.00144°	75	125	0~120		1600	2200
Ezi-SERVOII-EC-ALL-86M-■-PN40-▲	75.0				40	0.0009°	75	125	0~75		1900	2200
Ezi-SERVOII-EC-ALL-86M-■-PN50-▲	75.0				50	0.00072°	75	125	0~60		2100	2200
Ezi-SERVOII-EC-ALL-86L-■-PN3-▲	17.1	$3600x10^{-7}$	3	5	3	0.012°	50	80	0~1000	7.61	810	930
Ezi-SERVOII-EC-ALL-86L-■-PN5-▲	28.5				5	0.0072°	75	125	0~600		960	1200
Ezi-SERVOII-EC-ALL-86L-■-PN8-▲	45.6				8	0.0045°	75	125	0~375		1100	1400
Ezi-SERVOII-EC-ALL-86L-■-PN10-▲	50.0				10	0.0036°	50	80	0~300		1200	1600
Ezi-SERVOII-EC-ALL-86L-■-PN15-▲	50.0				15	0.0024°	50	80	0~200	8.41	1200	1900
Ezi-SERVOII-EC-ALL-86L-■-PN25-▲	75.0				25	0.00144°	75	125	0~120		1600	2200
Ezi-SERVOII-EC-ALL-86L-■-PN40-▲	75.0				40	0.0009°	75	125	0~75		1900	2200
Ezi-SERVOII-EC-ALL-86L-■-PN50-▲	75.0				50	0.00072°	75	125	0~60		2100	2200
Ezi-SERVOII-EC-ALL-86XL-■-PN3-▲	23.6	$5400x10^{-7}$	3	5	3	0.012°	50	80	0~1000	9.14	810	930
Ezi-SERVOII-EC-ALL-86XL-■-PN5-▲	39.4				5	0.0072°	75	125	0~600		960	1200
Ezi-SERVOII-EC-ALL-86XL-■-PN8-▲	63.0				8	0.0045°	75	125	0~375		1100	1400
Ezi-SERVOII-EC-ALL-86XL-■-PN10-▲	50.0				10	0.0036°	50	80	0~300		1200	1600
Ezi-SERVOII-EC-ALL-86XL-■-PN15-▲	50.0				15	0.0024°	50	80	0~200	9.94	1200	1900
Ezi-SERVOII-EC-ALL-86XL-■-PN25-▲	75.0				25	0.00144°	75	125	0~120		1600	2200
Ezi-SERVOII-EC-ALL-86XL-■-PN40-▲	75.0				40	0.0009°	75	125	0~75		1900	2200
Ezi-SERVOII-EC-ALL-86XL-■-PN50-▲	75.0				50	0.00072°	75	125	0~60		2100	2200

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

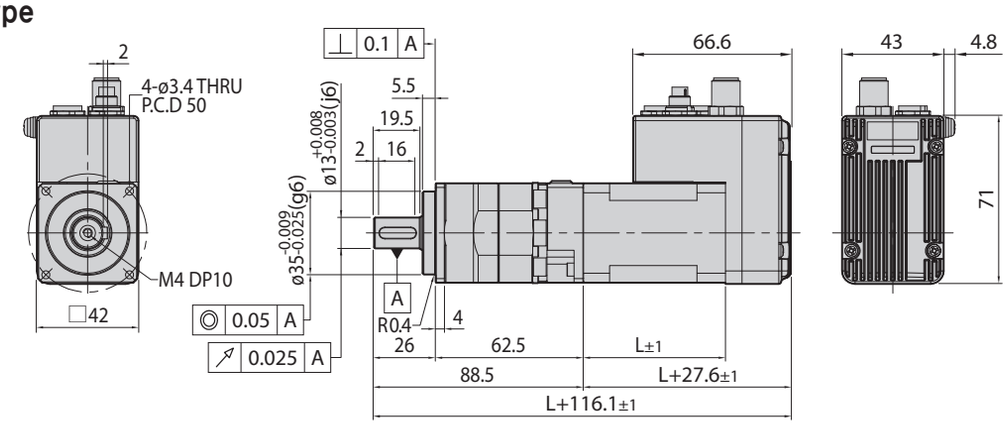
● Dimensions of Motor with Gearbox [mm] Single Stage

42mm

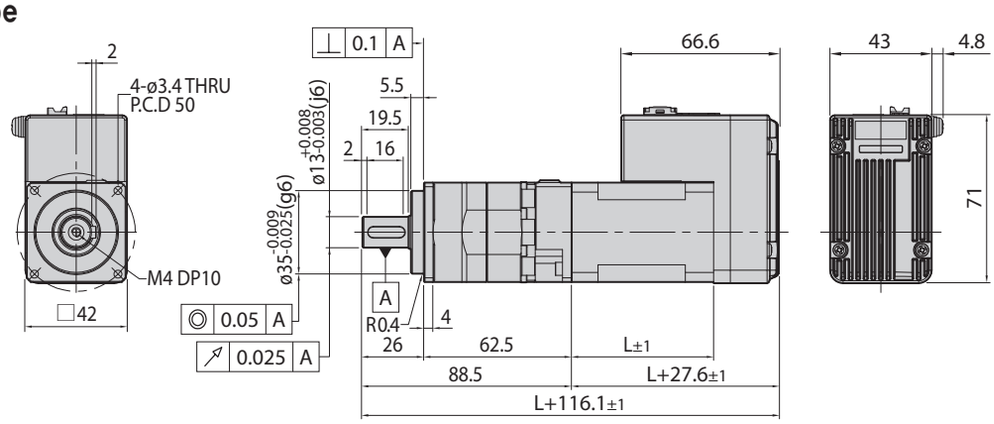
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi-SERVO II-EC-ALL-42M-■-PN□-▲	Motor & Drive Integrated	Single Stage	3, 5, 8, 10	40
Ezi-SERVO II-EC-ALL-42L-■-PN□-▲			3, 5, 8, 10	48
Ezi-SERVO II-EC-ALL-42XL-■-PN□-▲			3, 5, 8, 10	60

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

◆ M Type



◆ R Type



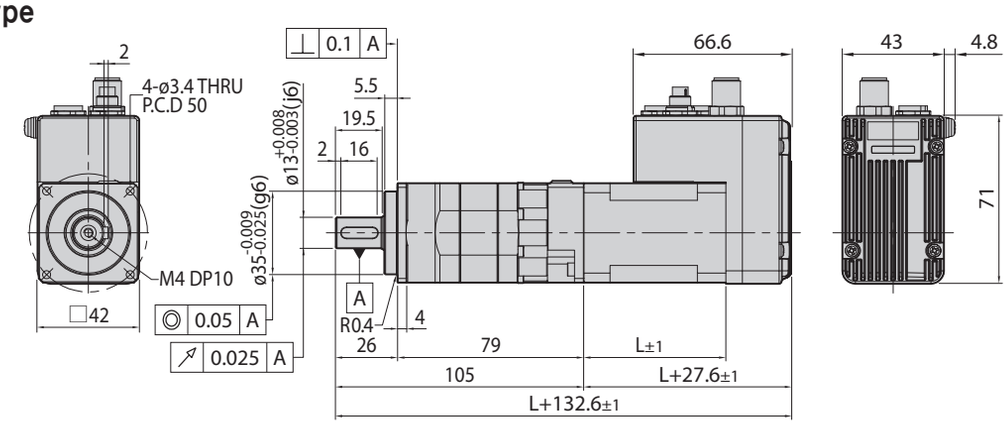
● Dimensions of Motor with Gearbox [mm] Double Stage

42mm

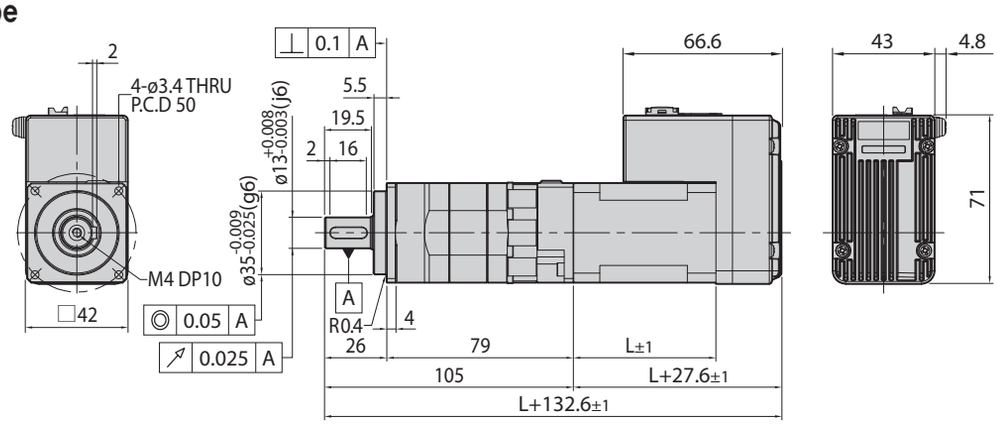
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi-SERVO II-EC-ALL-42M-■-PN□-▲	Motor & Drive Integrated	Double Stage	15, 25, 40, 50	40
Ezi-SERVO II-EC-ALL-42L-■-PN□-▲			15, 25, 40, 50	48
Ezi-SERVO II-EC-ALL-42XL-■-PN□-▲			15, 25, 40, 50	60

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

◆ M Type



◆ R Type



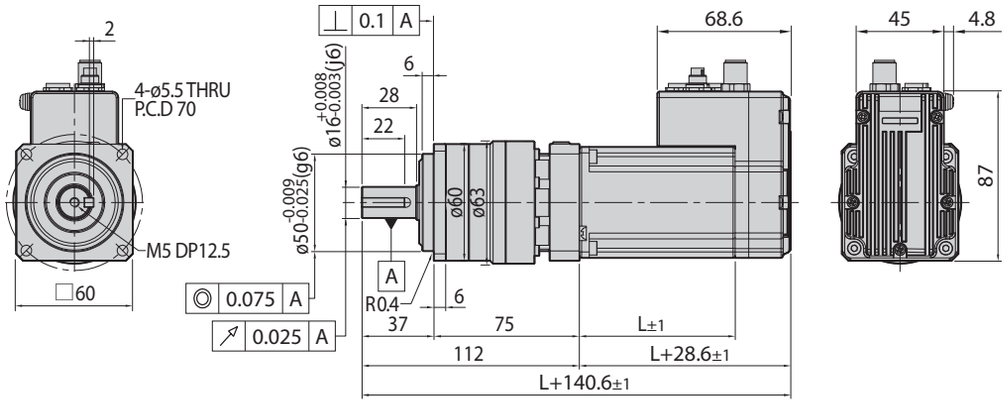
● Dimensions of Motor with Gearbox [mm] Single Stage

56mm

Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi-SERVO II-EC-ALL-56S-■-PN□-▲	Motor & Drive Integrated	Single Stage	3, 5, 8, 10	46
Ezi-SERVO II-EC-ALL-56M-■-PN□-▲			3, 5, 8, 10	55
Ezi-SERVO II-EC-ALL-56L-■-PN□-▲			3, 5, 8, 10	80

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

◆ M Type



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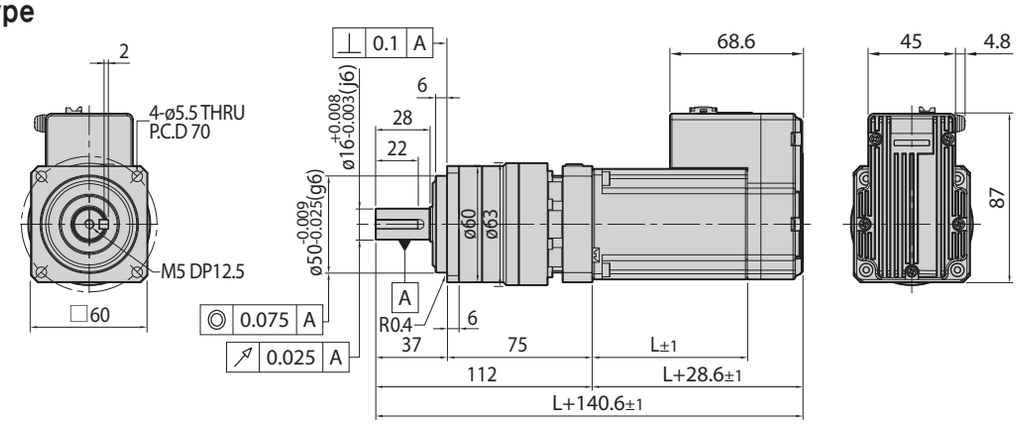


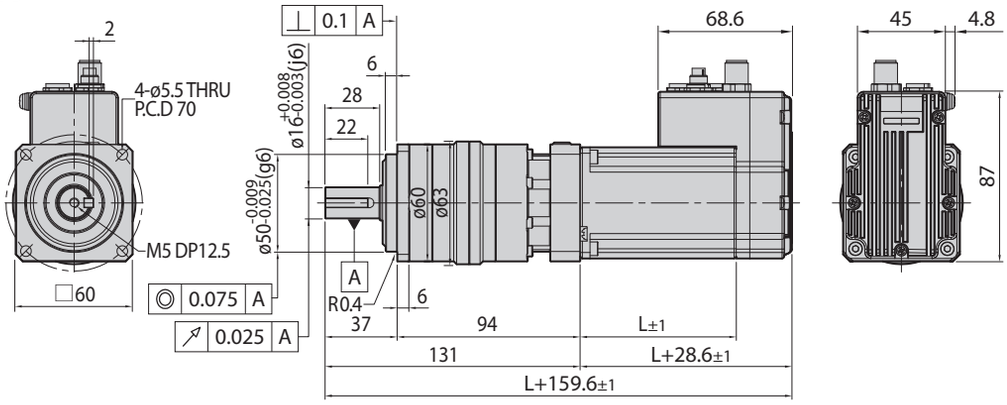
● Dimensions of Motor with Gearbox [mm] Double Stage

56mm

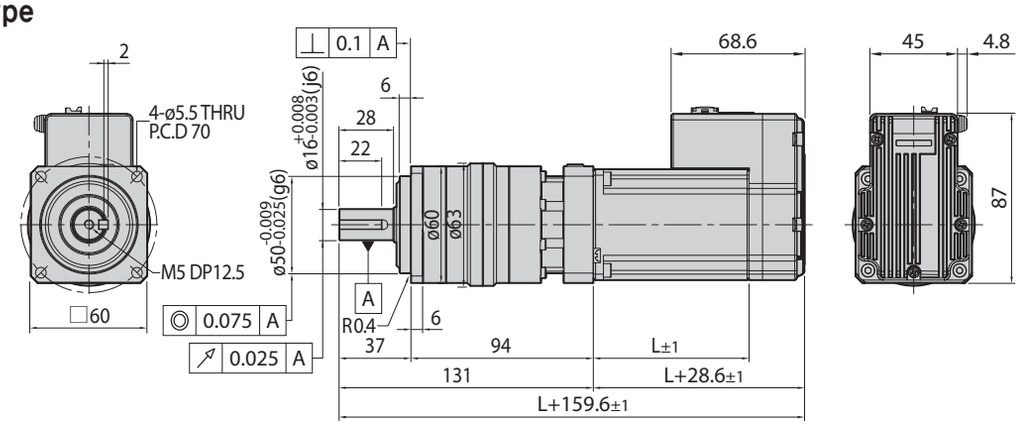
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi-SERVO II-EC-ALL-56S-■-PN□-▲	Motor & Drive Integrated	Double Stage	15, 25, 40, 50	46
Ezi-SERVO II-EC-ALL-56M-■-PN□-▲			15, 25, 40, 50	55
Ezi-SERVO II-EC-ALL-56L-■-PN□-▲			15, 25, 40, 50	80

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

◆ M Type



◆ R Type



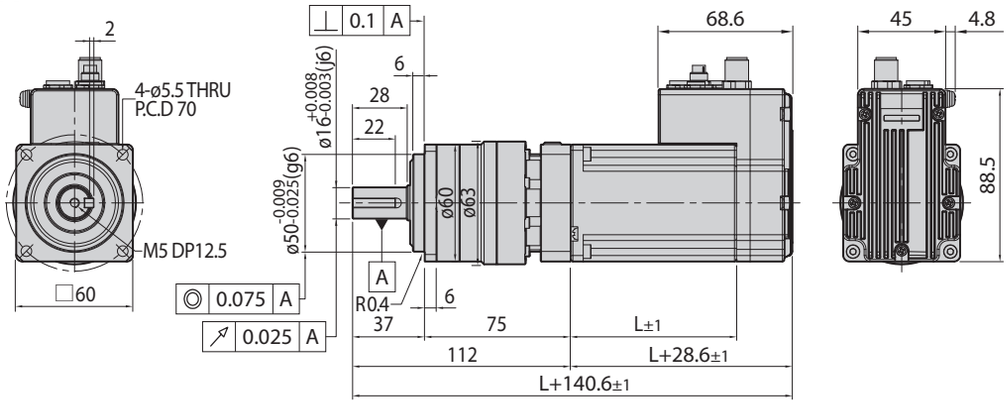
● Dimensions of Motor with Gearbox [mm] Single Stage

60mm

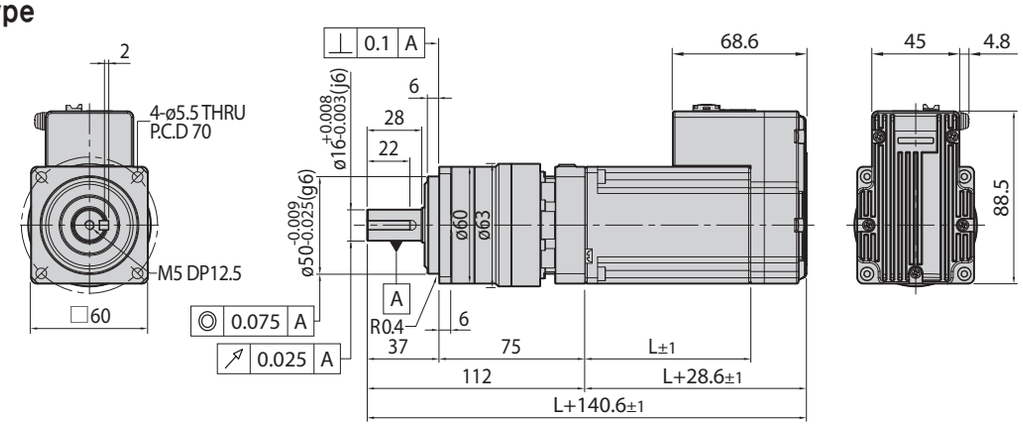
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi-SERVO II-EC-ALL-60S-■-PN□-▲	Motor & Drive Integrated	Single Stage	3, 5, 8, 10	47
Ezi-SERVO II-EC-ALL-60M-■-PN□-▲			3, 5, 8, 10	56
Ezi-SERVO II-EC-ALL-60L-■-PN□-▲			3, 5, 8, 10	85

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

◆ M Type



◆ R Type



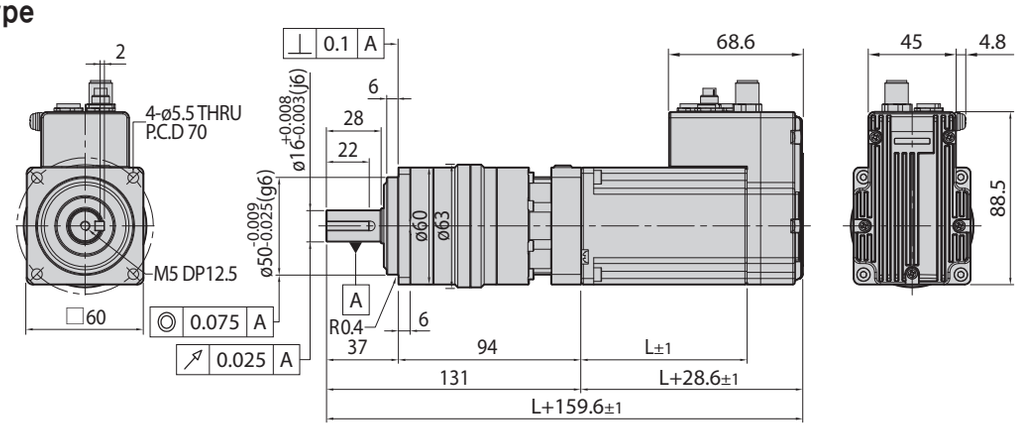
● Dimensions of Motor with Gearbox [mm] Double Stage

60mm

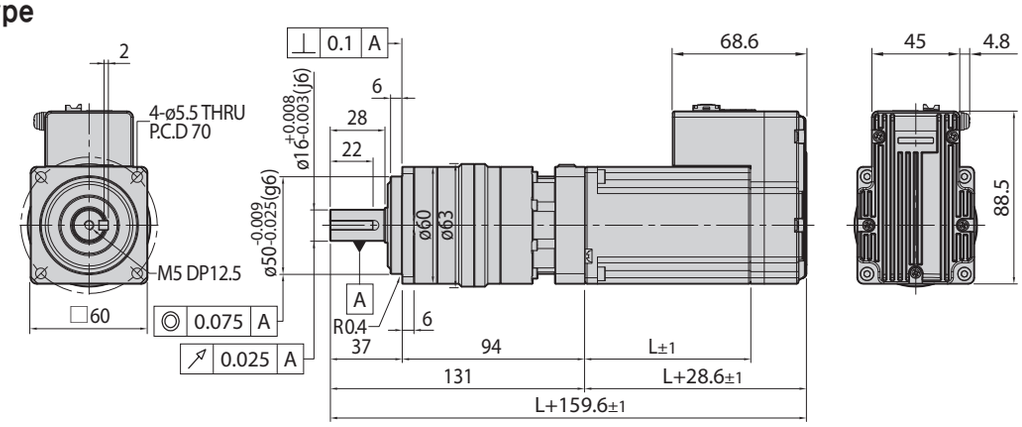
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi-SERVO II-EC-ALL-60S-■-PN□-▲	Motor & Drive Integrated	Double Stage	15, 25, 40, 50	47
Ezi-SERVO II-EC-ALL-60M-■-PN□-▲			15, 25, 40, 50	56
Ezi-SERVO II-EC-ALL-60L-■-PN□-▲			15, 25, 40, 50	85

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

◆ M Type



◆ R Type



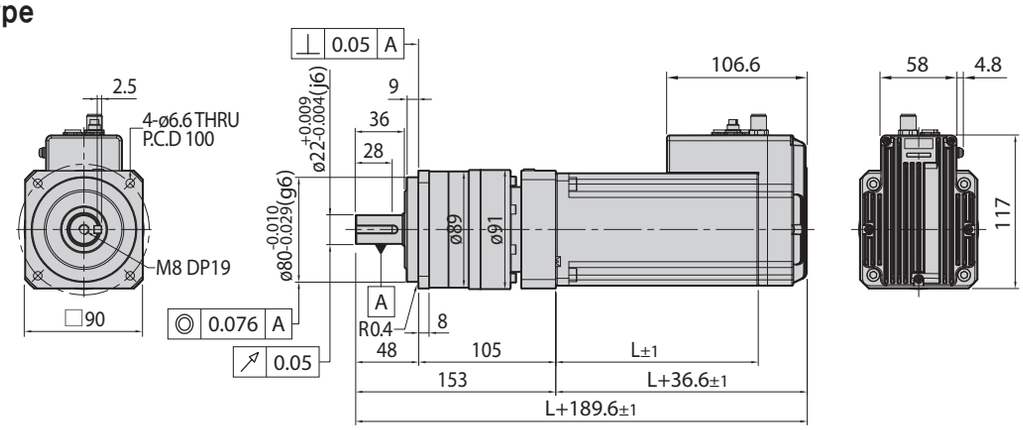
● Dimensions of Motor with Gearbox [mm] Single Stage

86mm

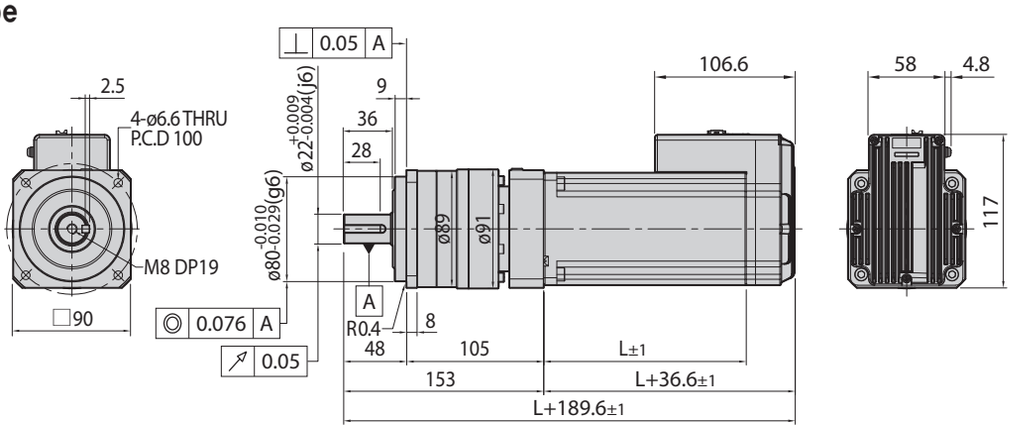
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi-SERVO II-EC-ALL-86M-■-PN□-▲	Motor & Drive Integrated	Single Stage	3, 5, 8, 10	78
Ezi-SERVO II-EC-ALL-86L-■-PN□-▲			3, 5, 8, 10	117
Ezi-SERVO II-EC-ALL-86XL-■-PN□-▲			3, 5, 8, 10	155

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

◆ M Type



◆ R Type



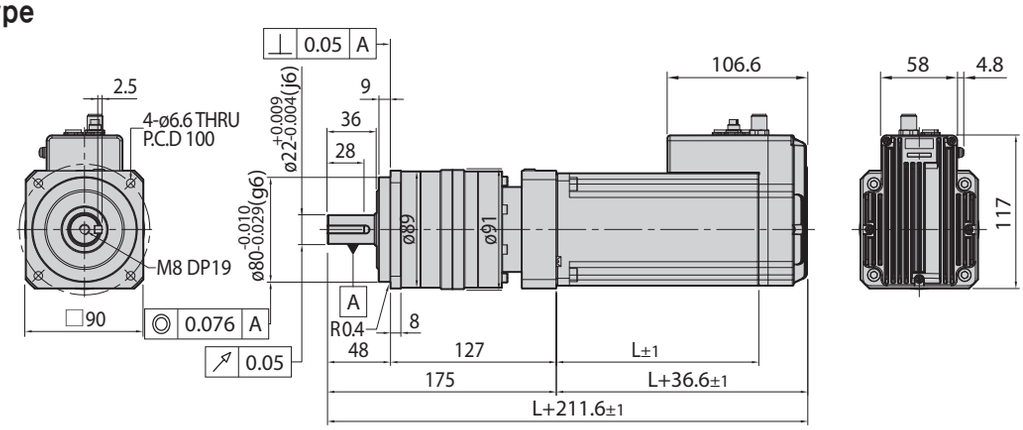
● Dimensions of Motor with Gearbox [mm] Double Stage

86mm

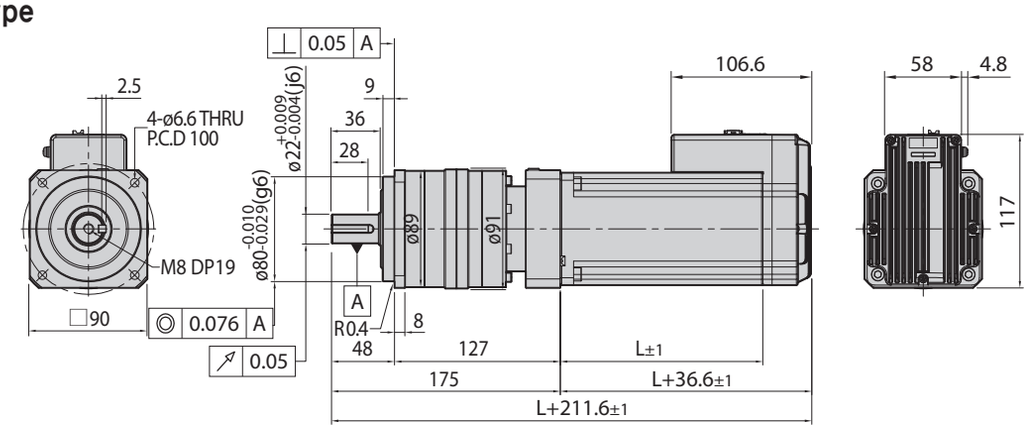
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi-SERVO II-EC-ALL-86M-■-PN□-▲	Motor & Drive Integrated	Double Stage	3, 5, 8, 10	78
Ezi-SERVO II-EC-ALL-86L-■-PN□-▲			3, 5, 8, 10	117
Ezi-SERVO II-EC-ALL-86XL-■-PN□-▲			3, 5, 8, 10	155

* The code of encoder resolution will be marked in "■".
* The code of connector type will be marked in "▲".

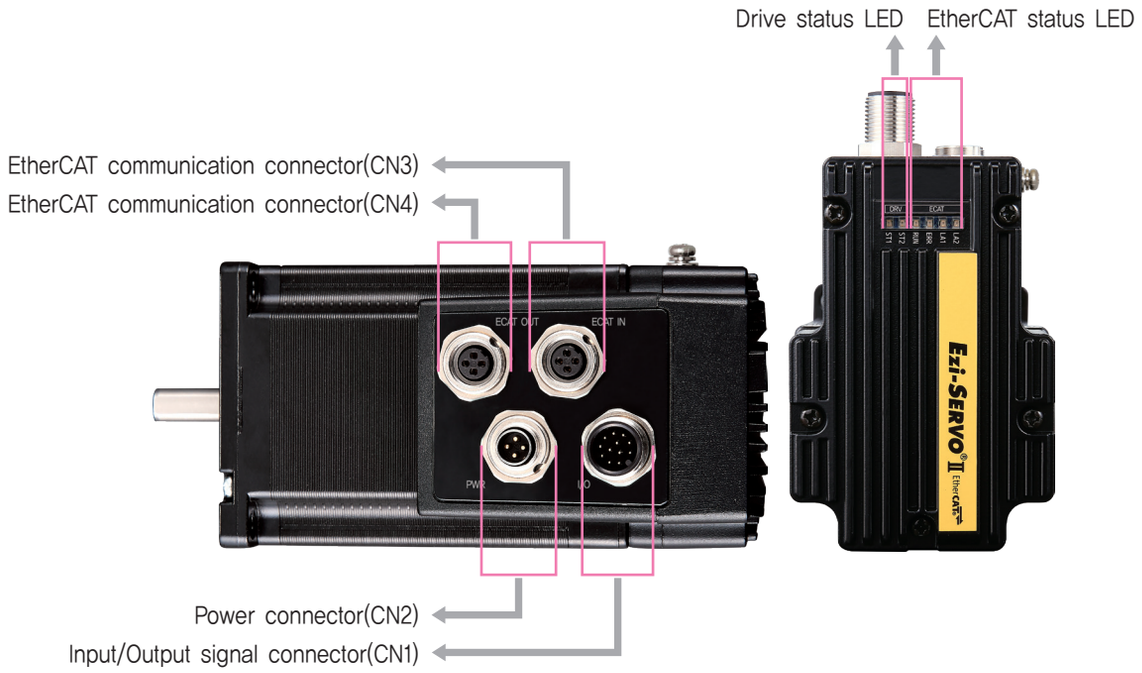
◆ M Type



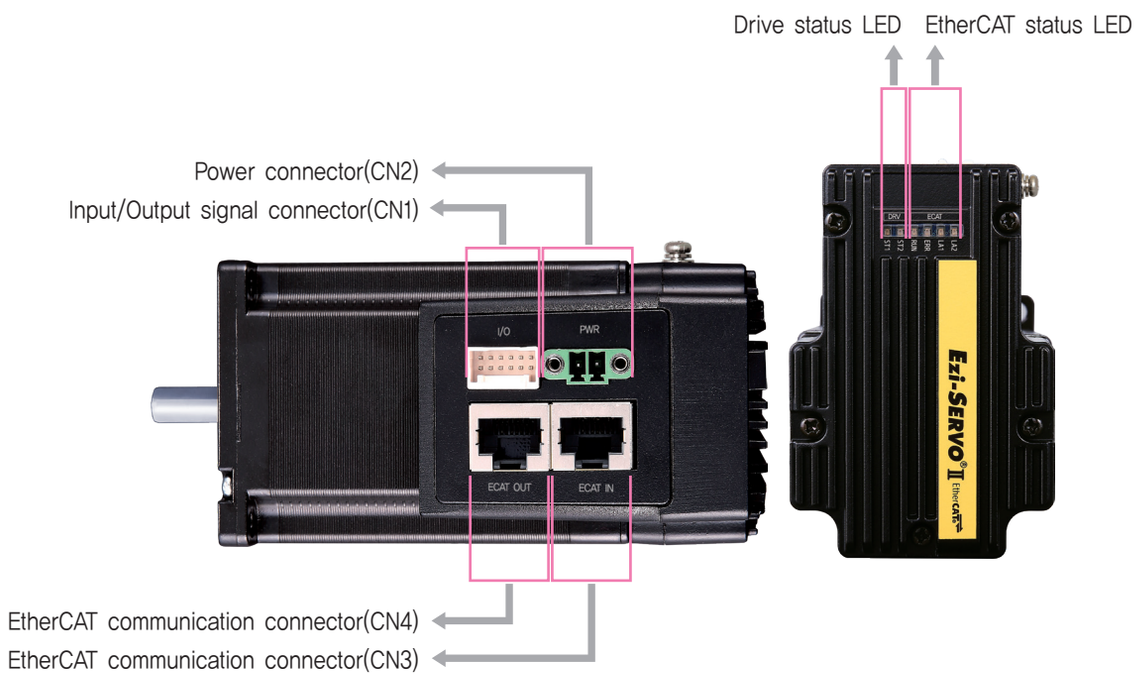
◆ R Type



◆ M Type


Drive status LED
EtherCAT status LED
EtherCAT communication connector(CN3)
EtherCAT communication connector(CN4)
ECAT OUT
ECAT IN
PWR
I/O
Power connector(CN2)
Input/Output signal connector(CN1)
Ezi-SERVO II EtherCAT

◆ R Type


Drive status LED
EtherCAT status LED
Power connector(CN2)
Input/Output signal connector(CN1)
I/O
PWR
ECAT OUT
ECAT IN
EtherCAT communication connector(CN4)
EtherCAT communication connector(CN3)
Ezi-SERVO II EtherCAT

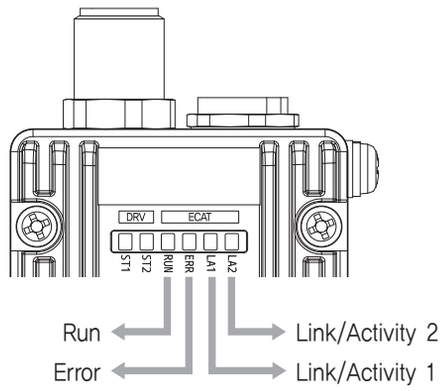
1. EtherCAT Status LED

LED indicates communication status of EtherCAT.

Name	Color	Status	Description
RUN	Green	OFF	State INIT or Power OFF
		Blinking	State PRE-OPERATIONAL
		Single Flash	State SAFE-OPERATIONAL
		ON	State OPERATIONAL
		Flickering	State BOOTSTRAP

Name	Color	Status	Description
ERR	Red	OFF	No Error or Power OFF
		Blinking	Invalid Configuration
		Single Flash	Communication Data Error
		Double Flash	Watchdog Time Out

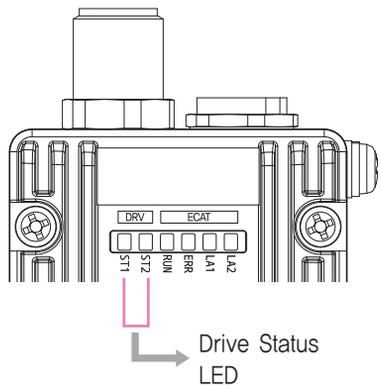
Name	Color	Status	Description
LA1/ LA2	Green	OFF	Link not Established
		ON	Link Established
		Flickering	Link Established and in Operation



2. Drive Status LED

LED informs operation status of the drive.

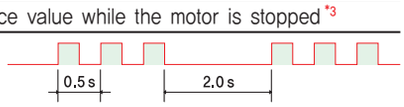
LED Indication	LED Status	Description
ST1 : ST2 :	ST1 blinks, ST2 is OFF.	Servo Off
ST1 : ST2 :	ST1 is ON, ST2 is OFF.	Servo On
ST1 : ST2 :	ST1 and ST2 are ON.	In motion
ST1 : ST2 :	ST1 and ST2 blink alternately.	A position error is greater than the set value (Inposition Value) while the motor is stopped.
ST1 : ST2 :	ST1 is OFF, ST2 blinks repeatedly for a set number of times depending on the type of error	Error



◆ List of error types by the number of ST2 LED blinking

No.	Error Type	Causes
1	Over Current Error	The current through power devices in drive exceeds the limit. *1
2	Over Speed Error	The motor speed exceeds 3,000r/min *2
3	Position Tracking Error	Position error value is greater than the reference value while the motor is running *3
4	Over Load Error	The motor is continuously operated more than 5 seconds under a load exceeding the max. torque.
5	Over Temperature Error	Internal temperature of the drive exceeds 85℃
6	Over Regenerative Voltage Error	Back-EMF is higher than limit value *4
7	Motor Connect Error	There is a problem with the connection between the drive and the motor
8	Encoder Connect Error	There is a problem with the connection between the drive and the encoder
10	In-Position Error	After operation is finished, position error larger than 1 pulse is continued for more than 3 seconds
12	ROM Error	Error occurs in parameter storage device(ROM)
14	Input Voltage Error	Input voltage exceeds the limit value *5
15	Position Overflow Error	Position error value is greater than the reference value while the motor is stopped *3

*1 : Limit value depends on motor model. (Refer to the Manual)
*2 : The speed limit of Ezi-SERVOII-EC-ALL 86 model is 2,000r/min.
*3 : The default setting value is 180°, and it can be changed by parameter. (Refer to the Manual)
*4 : Voltage limit of Back-EMF depends on motor model. (Refer to the Manual)
*5 : Applied model : Ezi-SERVOII-EC-ALL-86, limit value = DC53V
※ Please refer to user Manual for the details of protection functions.

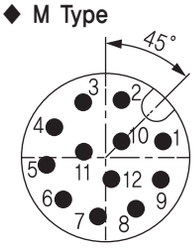


Alarm LED flash
(e.g., Position tracking error)

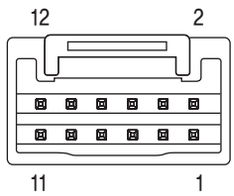
3. Input/Output Signal Connector(CN1)

No.	Function	I/O
1	EXT_DC24V	Input
2	EXT_GND	Input
3	BRAKE+	Output
4	BRAKE−	Output
5	LIMIT+	Input
6	LIMIT−	Input
7	ORIGIN	Input
8	Digital In1	Input
9	Digital In2	Input
10	Digital In3	Input
11	Digital Out1	Output
12	Digital Out2	Output

◆ M Type



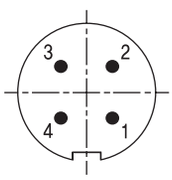
◆ R Type



4. Power Connector(CN2)

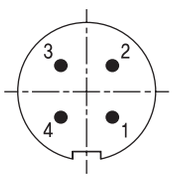
◆ M Type

No.	Function	I/O
1	DC24V	Input
2	DC24V	Input
3	GND	Input
4	GND	Input



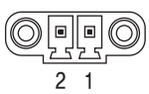
◆ M Type(86mm)

No.	Function	I/O
1	DC48V	Input
2	DC48V	Input
3	GND	Input
4	GND	Input



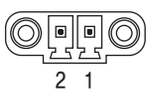
◆ R Type

No.	Function	I/O
1	DC24V	Input
2	GND	Input



◆ R Type(86mm)

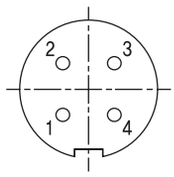
No.	Function	I/O
1	DC48V	Input
2	GND	Input



5. EtherCAT Communication Connector(CN3, CN4)

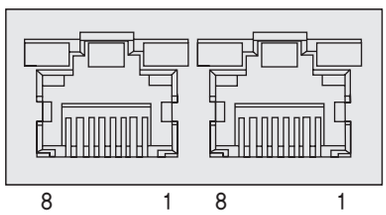
◆ M Type

No.	Function
1	TD+
2	TD−
3	RD+
4	RD−
Connection hood	F.GND

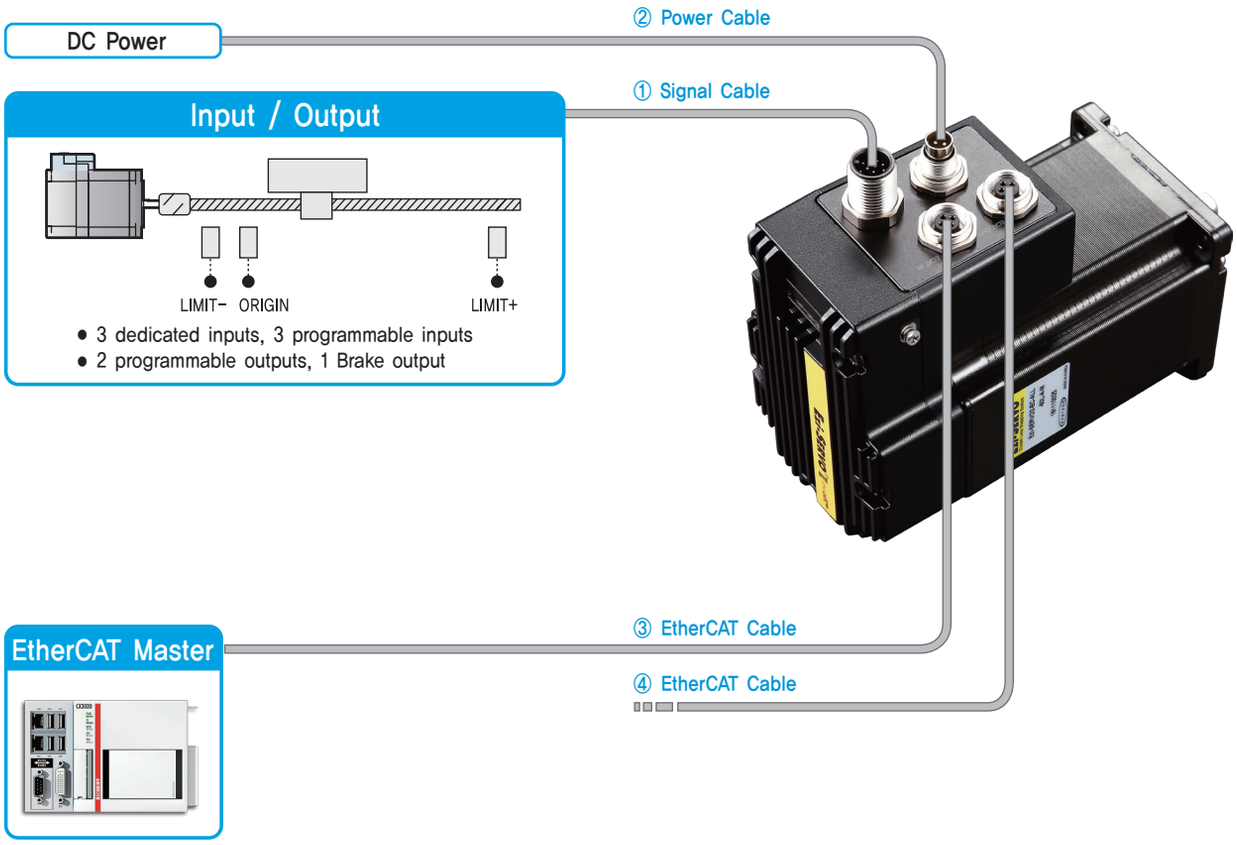


◆ R Type

No.	Function	No.	Function
1	TD+	6	RD−
2	TD−	7	-----
3	RD+	8	-----
4	-----	Connection hood	F.GND
5	-----		



● System Configuration [M Type]



Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold separately)
② Power Cable	2m	
③/④ EtherCAT Cable	100m	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose	Item	Part Number	Manufacturer
Power (CN2)	Connector	99 0410 75 04	BINDER
Signal (CN1)	Connector	99 0492 52 12	BINDER
EtherCAT (CN3, CN4)	Connector	99 0409 75 04	BINDER

※ The connectors above are supplied with the product. If you are using other parts, please make sure they meet the specifications.

2. Options

① Signal Cable

These are the cables to connect Ezi-SERVO II EtherCAT ALL drive and other input/output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – I/O Device Connection	CSNM-S-001F	1	Normal Cable	Maximum Length: 20m
	CSNM-S-002F	2		
	CSNM-S-003F	3		
	CSNM-S-005F	5		
	CSNM-S-001M	1	Robot Cable	
	CSNM-S-002M	2		
	CSNM-S-003M	3		
	CSNM-S-005M	5		

* If you need cables with length(in units of 1m) not listed on the table, please contact FASTECH for more information.

② Signal Cable

These are the cables to connect Ezi-SERVO II EtherCAT ALL drive and the power.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Power Connection	CWPA-P-001F	1	Normal Cable	Maximum Length: 2m
	CWPA-P-002F	2		
	CWPA-P-001M	1	Robot Cable	
	CWPA-P-002M	2		

③ EtherCAT Cable (M Type Connector – RJ45)

These are the cables to connect Ezi-SERVO II EtherCAT ALL M Type and Ezi-SERVO II EtherCAT, Ezi-SERVO II EtherCAT ALL R Type with EtherCAT network.

Purpose	Part Number	Length [m]	Cable Type	Remarks
EtherCAT Connection	CGNM-EC-001F	1	Normal Cable	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m
	CGNM-EC-002F	2		
	CGNM-EC-003F	3		
	CGNM-EC-005F	5		
	CGNM-EC-001M	1	Robot Cable	
	CGNM-EC-002M	2		
	CGNM-EC-003M	3		
	CGNM-EC-005M	5		

* If you need cables with length(in units of 1m) not listed on the table, please contact FASTECH for more information.

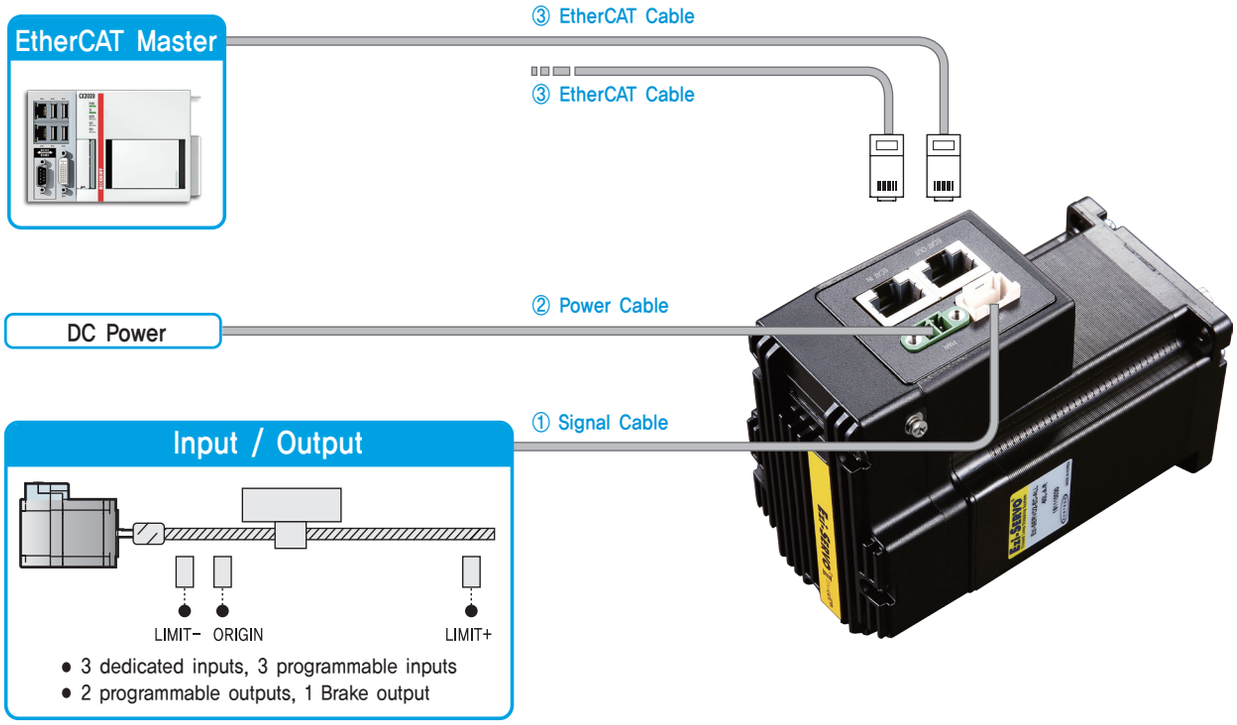
④ EtherCAT Cable (M Type Connector – M Type Connector)

These are the cables to connect between Ezi-SERVO II EtherCAT ALL M Type products with EtherCAT network.

Purpose	Part Number	Length [m]	Cable Type	Remarks
EtherCAT Connection	CWMD-EC-001F	1	Normal Cable	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m
	CWMD-EC-002F	2		
	CWMD-EC-003F	3		
	CWMD-EC-005F	5		
	CWMD-EC-001M	1	Robot Cable	
	CWMD-EC-002M	2		
	CWMD-EC-003M	3		
	CWMD-EC-005M	5		

* If you need cables with length(in units of 1m) not listed on the table, please contact FASTECH for more information.

● System Configuration [R Type]



Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold separately)
② Power Cable	2m	
③ EtherCAT Cable	100m	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose	Item	Part Number	Manufacturer
Power (CN2)	Terminal Block	MC421-38102	DECA
Signal (CN1)	Housing	501646-1200	MOLEX
	Terminal	501648-1000 (AWG 26~28)	

※ The connectors above are supplied with the product. If you are using other parts, please make sure they meet the specifications.

2. Options

① Signal Cable

These are the cables to connect Ezi-SERVO II EtherCAT ALL drive and other input/output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – I/O Device Connection	CSNR-S-001F	1	Normal Cable	Maximum Length: 20m
	CSNR-S-002F	2		
	CSNR-S-003F	3		
	CSNR-S-005F	5		
	CSNR-S-001M	1	Robot Cable	
	CSNR-S-002M	2		
	CSNR-S-003M	3		
	CSNR-S-005M	5		

* If you need cables with length(in units of 1m) not listed on the table, please contact FASTECH for more information.

② Drive Power Cable

These are the cables to connect Ezi-SERVO II EtherCAT ALL drive and the power.

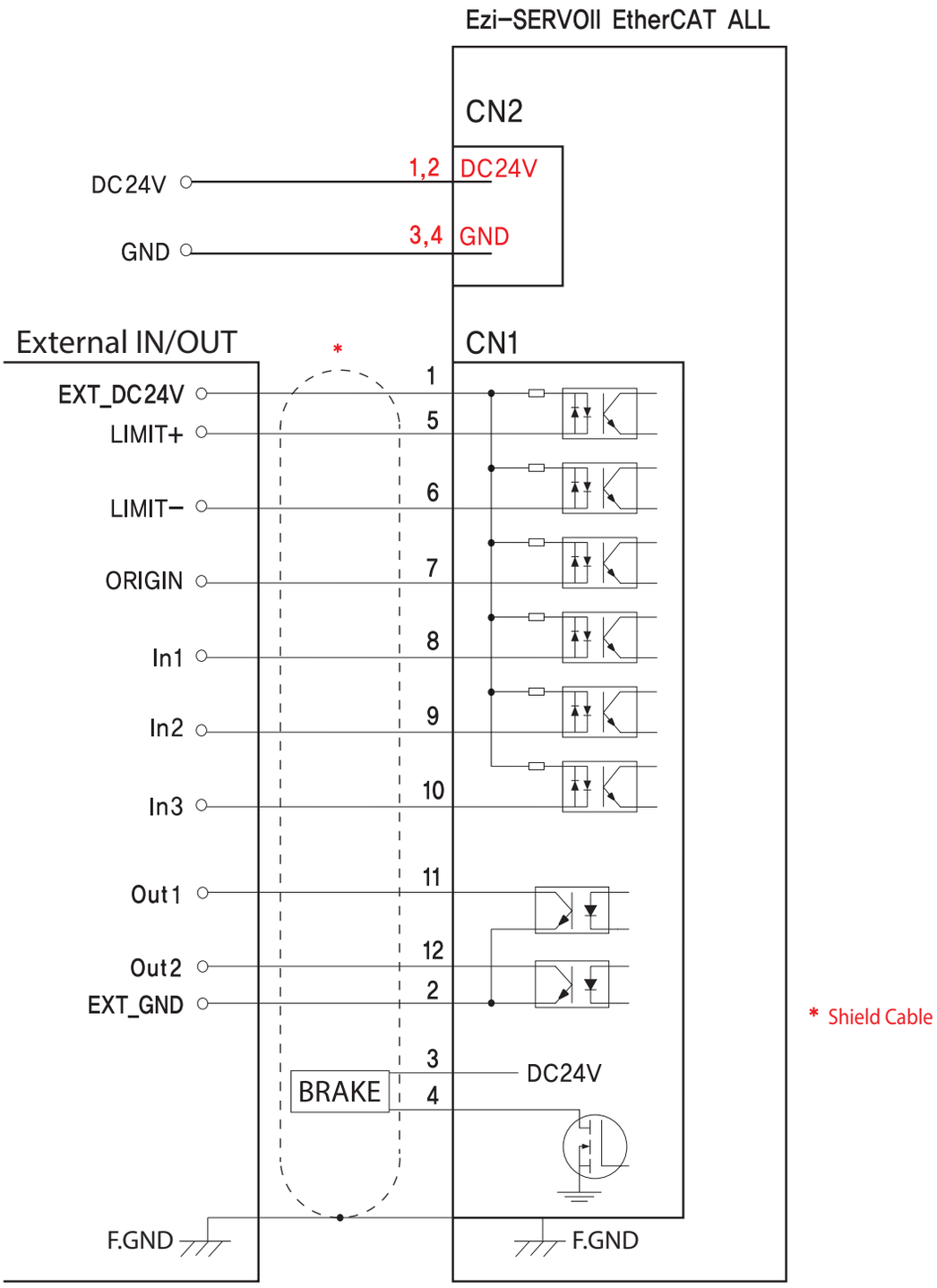
Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Power Connection	CSVA-P-001F	1	Normal Cable	Maximum Length: 2m
	CSVA-P-002F	2		
	CSVA-P-001M	1	Robot Cable	
	CSVA-P-002M	2		
R Type 86mm products Drive – Power Connection	CSPA-P-001F	1	Normal Cable	
	CSPA-P-002F	2		
	CSPA-P-001M	1	Robot Cable	
	CSPA-P-002M	2		

③ EtherCAT Cable

Purpose	Part Number	Length [m]	Cable Type	Remarks
EtherCAT Connection	CGNR-EC-001F	1	Normal Cable	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m
	CGNR-EC-002F	2		
	CGNR-EC-003F	3		
	CGNR-EC-005F	5		
	CGNR-EC-001M	1	Robot Cable	
	CGNR-EC-002M	2		
	CGNR-EC-003M	3		
	CGNR-EC-005M	5		

* If you need cables with length(in units of 1m) not listed on the table, please contact FASTECH for more information.

● External Wiring Diagram [M Type]

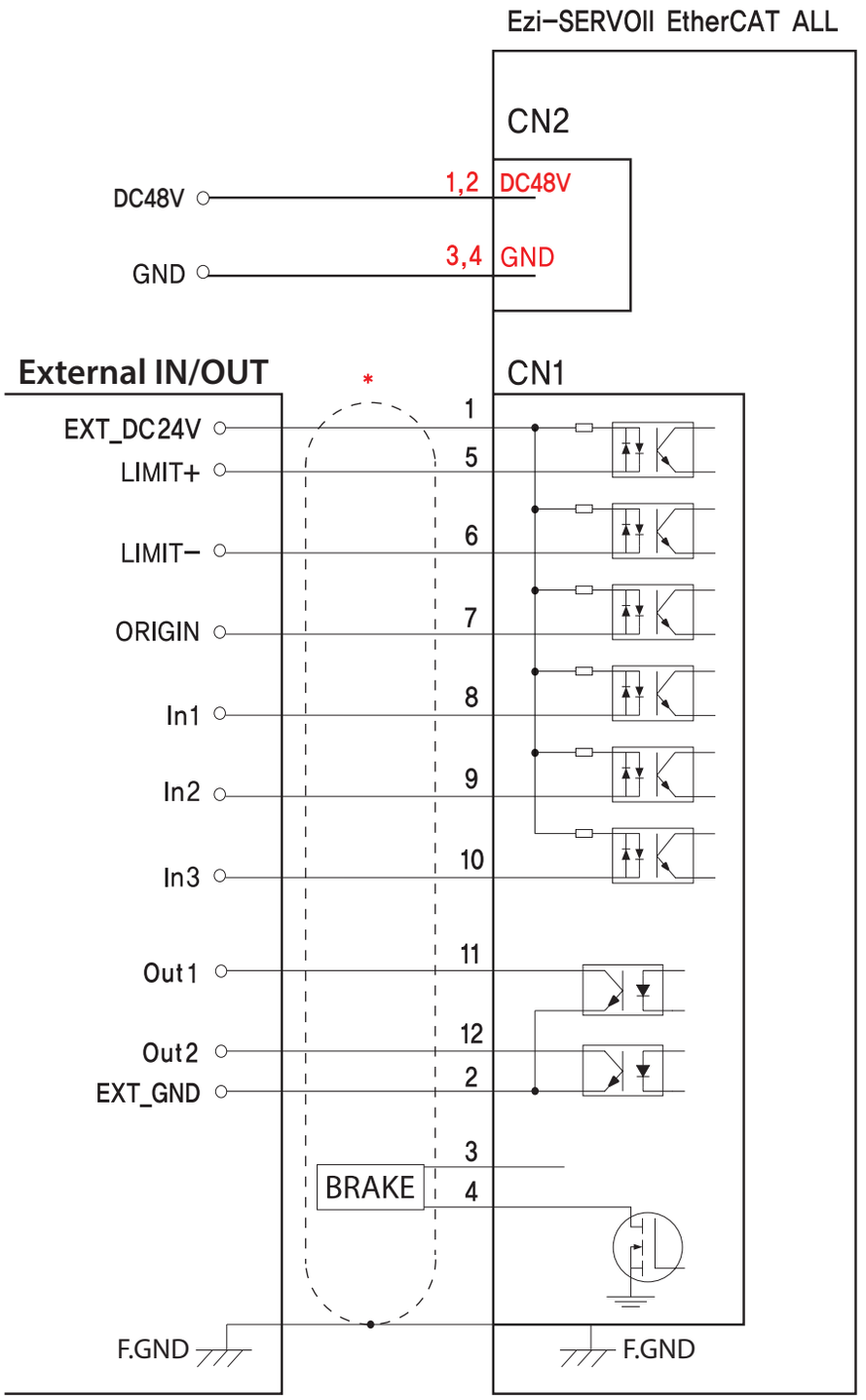


※ When connects I/O cable between controller and drive, please turn off the power of both controller and drive to prevent electric shock or to protect the drive from any damage.

CAUTION

In order to use the products listed in this catalog safely and correctly, be sure to read the instruction manual before using the product.

● External Wiring Diagram [M Type 86mm]



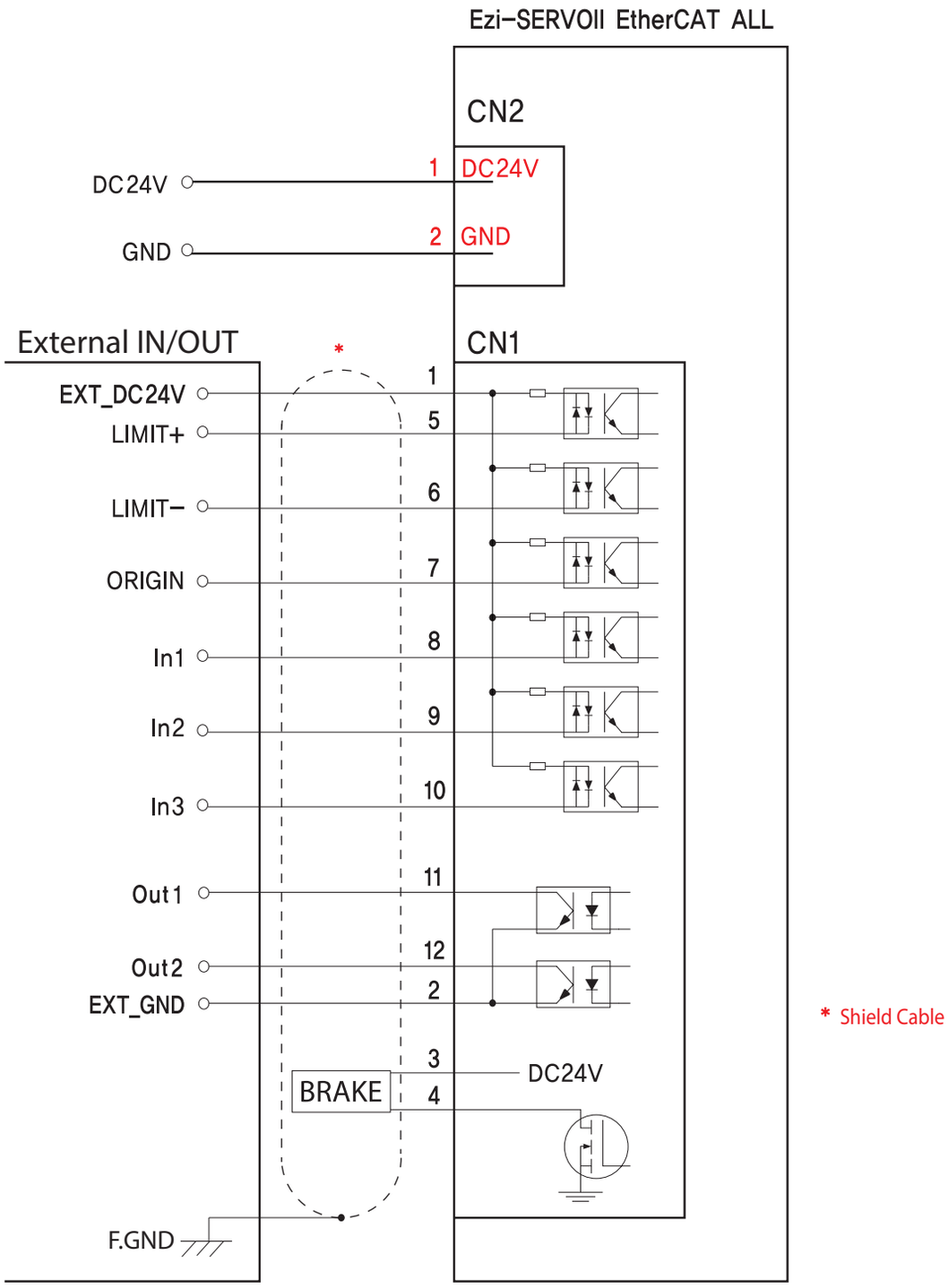
* Shield Cable

※ When connects I/O cable between controller and drive, please turn off the power of both controller and drive to prevent electric shock or to protect the drive from any damage.

CAUTION

In order to use the products listed in this catalog safely and correctly, be sure to read the instruction manual before using the product.

● External Wiring Diagram [R Type]

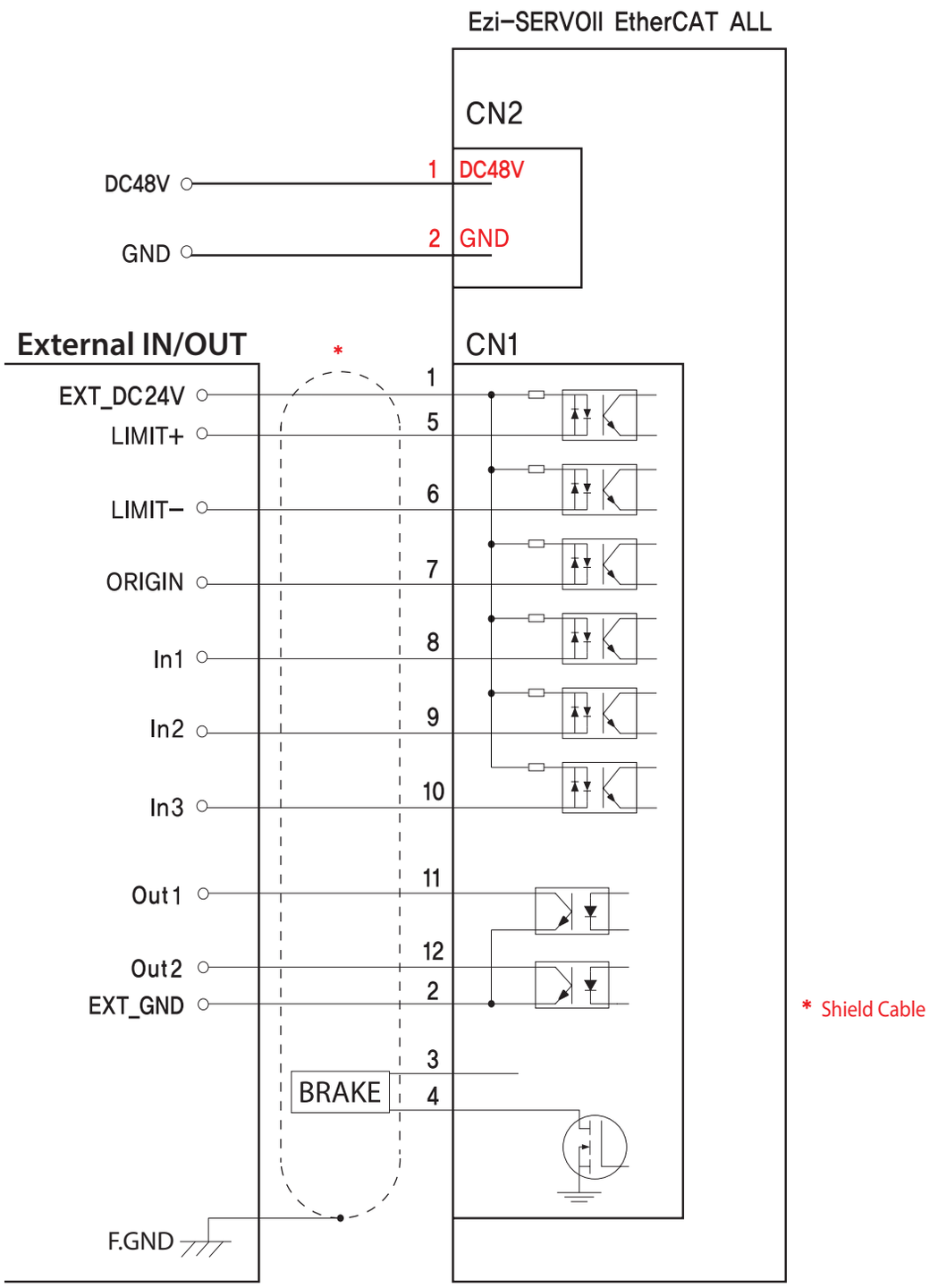


※ When connects I/O cable between controller and drive, please turn off the power of both controller and drive to prevent electric shock or to protect the drive from any damage.

CAUTION

In order to use the products listed in this catalog safely and correctly, be sure to read the instruction manual before using the product.

● External Wiring Diagram [R Type 86mm]



※ When connects I/O cable between controller and drive, please turn off the power of both controller and drive to prevent electric shock or to protect the drive from any damage.

CAUTION

In order to use the products listed in this catalog safely and correctly, be sure to read the instruction manual before using the product.

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