FASTECH

Ezi-SERVO®
Closed Loop Stepping System

2022 / 2023
Ethernet General Catalogue [English]

Ezi-SERVO® II Plus-E MINI
Closed Loop Stepping System

Ezi-SERVO® II Plus-E
Closed Loop Stepping System

Ezi-STEP® II Plus-E
Micro Stepping System

Ezi-SERVO® II Plus-E ALL
Closed Loop Stepping System

Ethernet

Ezi-STEP® II Plus-E MINI
Micro Stepping System

Ezi-MOTIONLINK® Plus-E
Network based Motion Controller Plug-in to Servo Drives

Ezi-IO® Ethernet DA
Input/Output Module

Ezi-IO® Ethernet AD
Input/Output Module

Ezi-IO® Ethernet DIO
Input/Output Module

Product Contents

Ezi-SERVO II Plus-E Series

Ezi-STEP II Plus-E Series

Ezi-MOTIONLINK **Plus-E** Series

Ezi-IO **Ethernet** Series

OPTION


Ezi-SERVO II Plus-E
Ezi-SERVO
EzS2-PE-56L-A
PWR
MOTOR
ENCODER
RUN
ERR
D/L
NET ID

Ezi-SERVO® II Plus-E

Closed Loop Stepping System

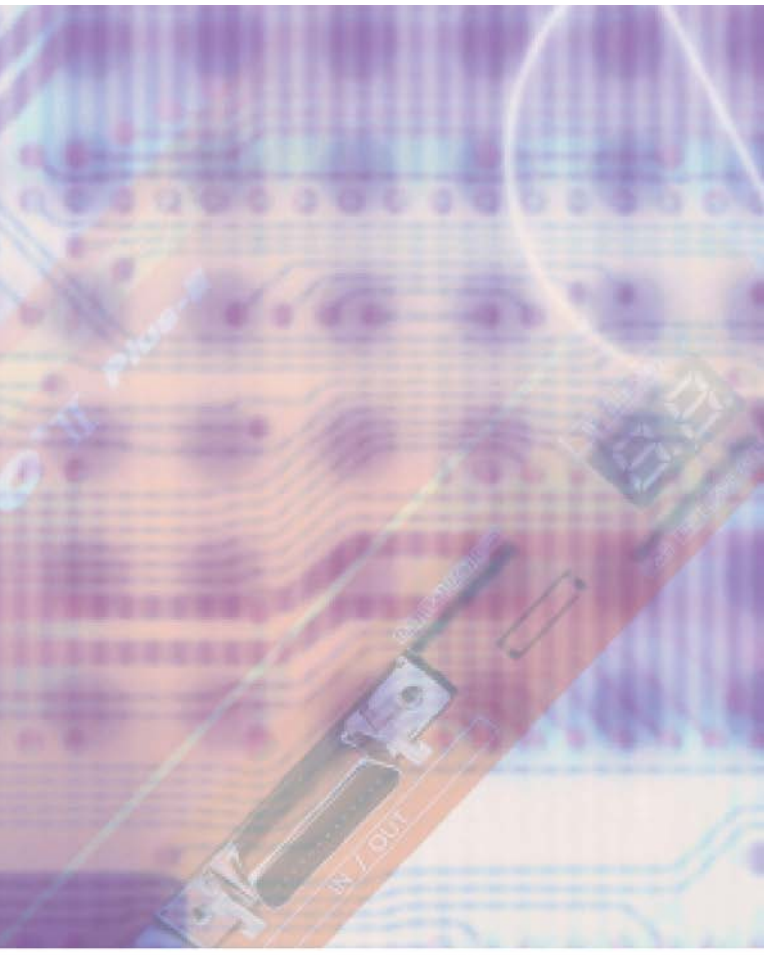
- Embedded Motion Controller
- Ethernet Interface
- Position Table
- Closed-Loop Stepping System
- Tuning Not Required / No Hunting
- High Resolution / High Response
- Low Heat Generation / High Torque

FASTECH

Fast, Accurate, Smooth Motion

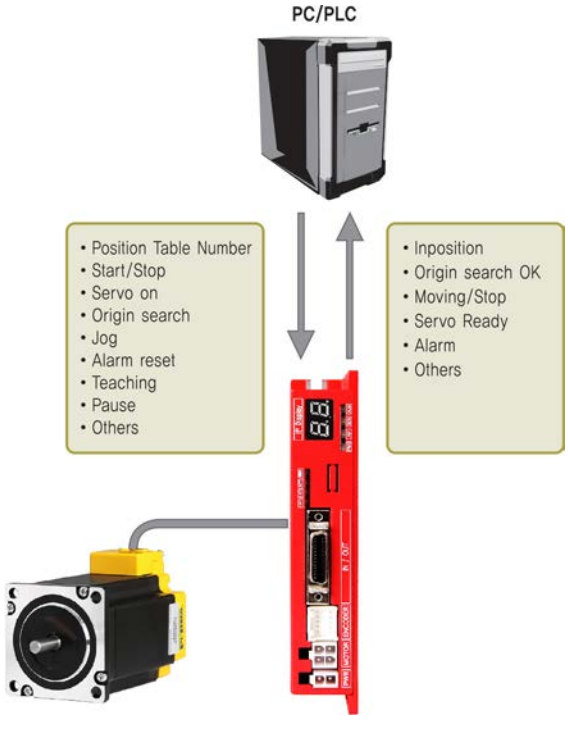
Ezi-SERVO® II Plus-E

Closed Loop Stepping System



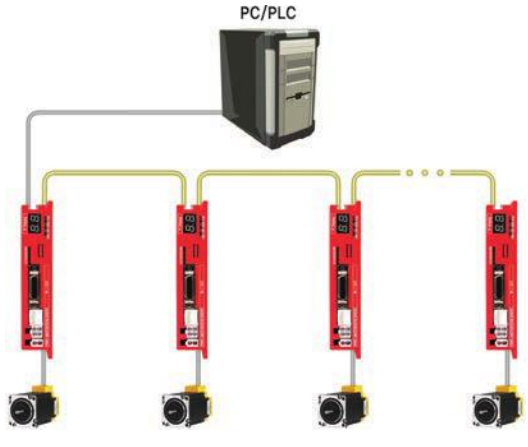
2 Position Table Function

Position Table can be used for motion control by digital input and output signals of host controller.
You can operate the motor directly by sending the position table number, start/stop, origin search and other digital input values from a PC.
The PC can monitor the In-Position, origin search, moving/stop, servo ready and other digital output signals from a drive. A maximum of 256 positioning points can be set from PC.



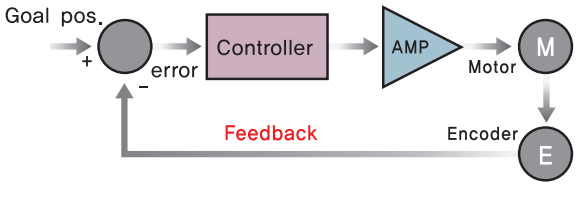
1 Network Based Motion Control

A maximum of 254 axis can be operated from a PC through Ethernet communications. And daisy-chain connection is available thru internally equipped Ethernet HUB. All of the Motion conditions are set through the network and saved in Flash ROM as a parameter. Motion Library(API) is provided for programming under Windows 7/8/10.



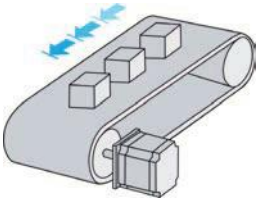
3 Closed-Loop System

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.



4 Tuning Not Required

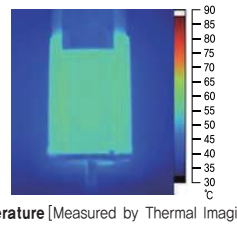
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed.
Ezi-SERVO II employs the best characteristics of the stepping motor to eliminate 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.



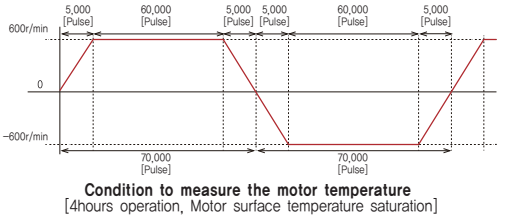
5 Low Heat Generation / Energy Savings

(Motor Current Control according to load)

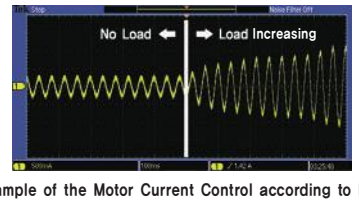
Ezi-SERVO II automatically controls motor current according to load.
Ezi-SERVO II reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

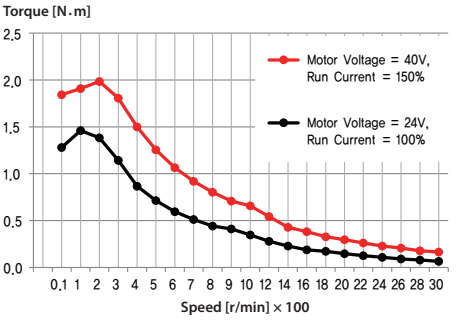


Example of the Motor Current Control according to load

6 High Torque

(Motor Voltage Increasing and Motor Current Setting)

Ezi-SERVO II boosts the voltage supplied to the motor by internal DC-DC Converter. The torque at the high speed is increased. In addition, it is possible to set the Run Current up to 150%, whereby the torque at low speed is increased.
Torque can be improved by about 30% over the entire speed range.

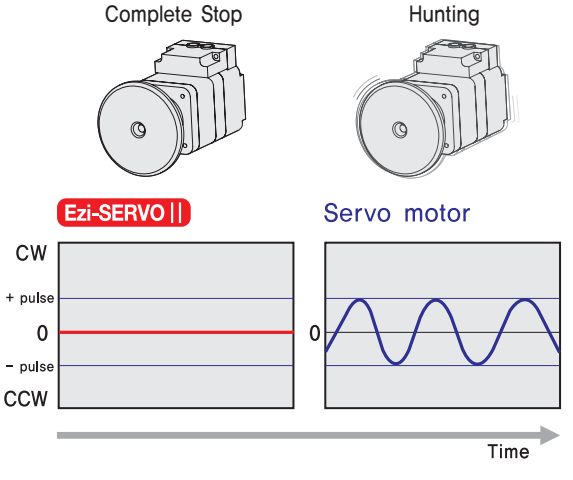


※ The torque at low speed and high speed is improved about 30%.

Measured Condition : Drive = Ezi-SERVO II-PE-56L
Motor Voltage = DC40V
Input Voltage = DC24V

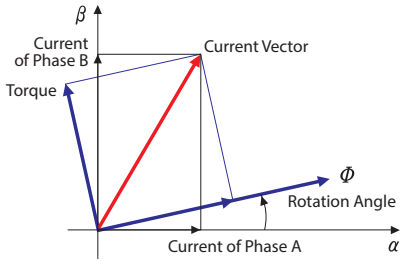
7 No Hunting

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.



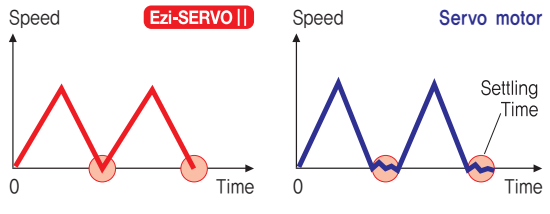
8 Smooth and Accurate Operation

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.



9 High Response

Similar to conventional stepping motors, Ezi-SERVO II instantly synchronizes with command pulses providing fast positional response. Ezi-SERVOII 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.

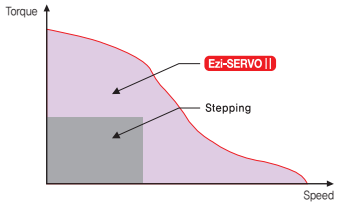


10 High Resolution

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

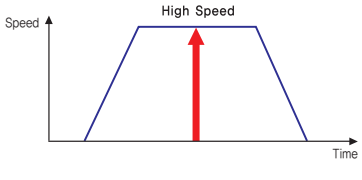
11 High Torque / Continuous Operation

Compared with common step 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.



12 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)

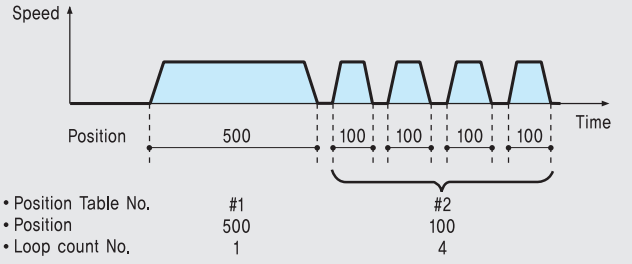
● Advantages over Servo Motor Controller

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.

● Motion Controller Features of Ezi-SERVO II

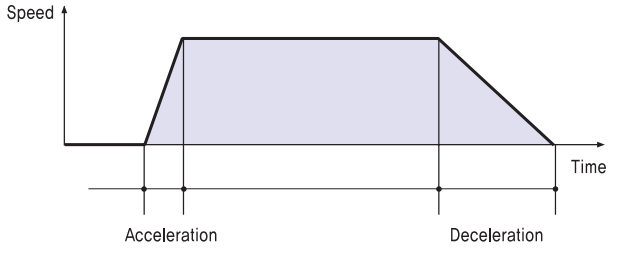
1. Loop Count

This function allows positioning repeatedly according to the Loop Count Number.



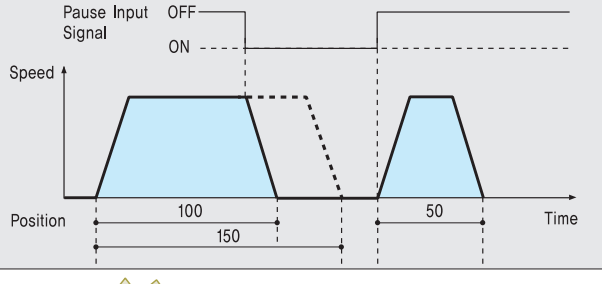
2. Acceleration/Deceleration

For quick acceleration and gradual deceleration, you can set each acceleration and deceleration time separately.



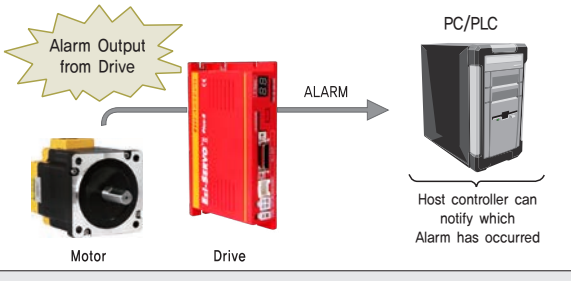
3. Pause

You can pause the motion upon the input of an external signal. When Pause signal change to OFF, the motor will restart to original target position.



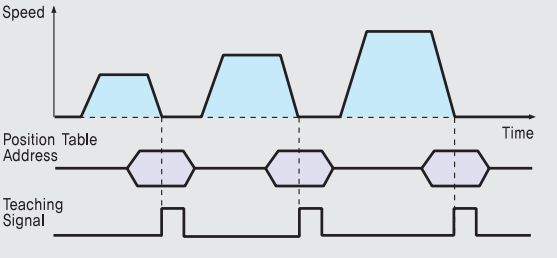
4. Alarm

The number of LED flashing time and information displayed on the 7-segment LED display indicates which Alarm has occurred.



5. Teaching

Teaching signal is used to memorize current Position data into the selected Position Table item.

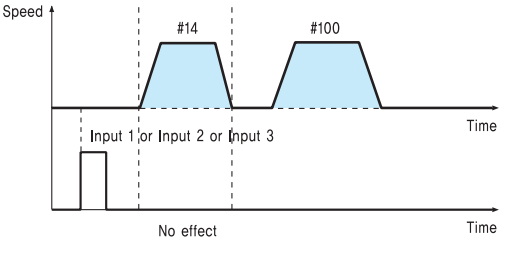


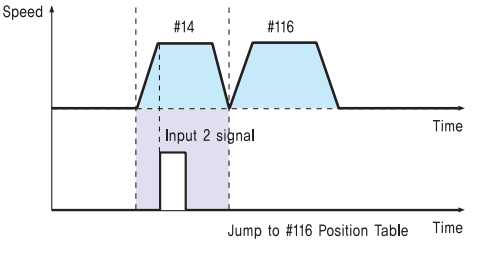
6. Jump

Within one Position Table, you can select various Position Table numbers that you want to jump.
With three external input signal during movement, the next jump Position Table number can be select.

◆ Position Table #14

Position	– – –	Next	– – –	Input 1	Input 2	Input 3	– – –
10000		100		115	116	117	





● Ezi-SERVO II Plus-E Part Numbering

Ezi-SERVO II -PE-42S-A-BK-PN10

Product Name

Drive Series

PE : Plus Ethernet

Motor Flange Size

20 : 20mm
28 : 28mm
35 : 35mm
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
D : 16,000P/R
F : 4,000P/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

● Standard Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO II -PE-20M-F	EzM2-20M-F	EzS2-PE-20M-F
Ezi-SERVO II -PE-20L-F	EzM2-20L-F	EzS2-PE-20L-F
Ezi-SERVO II -PE-28S-D	EzM2-28S-D	EzS2-PE-28S-D
Ezi-SERVO II -PE-28SM-D	EzM2-28SM-D	EzS2-PE-28S-D
Ezi-SERVO II -PE-28M-D	EzM2-28M-D	EzS2-PE-28M-D
Ezi-SERVO II -PE-28MM-D	EzM2-28MM-D	EzS2-PE-28M-D
Ezi-SERVO II -PE-28L-D	EzM2-28L-D	EzS2-PE-28L-D
Ezi-SERVO II -PE-28LM-D	EzM2-28LM-D	EzS2-PE-28L-D
Ezi-SERVO II -PE-35M-D	EzM2-35M-D	EzS2-PE-35M-D
Ezi-SERVO II -PE-35MM-D	EzM2-35MM-D	EzS2-PE-35M-D
Ezi-SERVO II -PE-35L-D	EzM2-35L-D	EzS2-PE-35L-D
Ezi-SERVO II -PE-35LM-D	EzM2-35LM-D	EzS2-PE-35L-D
Ezi-SERVO II -PE-42S-A	EzM2-42S-A	EzS2-PE-42S-A
Ezi-SERVO II -PE-42S-B	EzM2-42S-B	EzS2-PE-42S-B
Ezi-SERVO II -PE-42M-A	EzM2-42M-A	EzS2-PE-42M-A
Ezi-SERVO II -PE-42M-B	EzM2-42M-B	EzS2-PE-42M-B
Ezi-SERVO II -PE-42L-A	EzM2-42L-A	EzS2-PE-42L-A
Ezi-SERVO II -PE-42L-B	EzM2-42L-B	EzS2-PE-42L-B
Ezi-SERVO II -PE-42XL-A	EzM2-42XL-A	EzS2-PE-42XL-A
Ezi-SERVO II -PE-42XL-B	EzM2-42XL-B	EzS2-PE-42XL-B
Ezi-SERVO II -PE-56S-A	EzM2-56S-A	EzS2-PE-56S-A
Ezi-SERVO II -PE-56S-B	EzM2-56S-B	EzS2-PE-56S-B
Ezi-SERVO II -PE-56M-A	EzM2-56M-A	EzS2-PE-56M-A
Ezi-SERVO II -PE-56M-B	EzM2-56M-B	EzS2-PE-56M-B
Ezi-SERVO II -PE-56L-A	EzM2-56L-A	EzS2-PE-56L-A
Ezi-SERVO II -PE-56L-B	EzM2-56L-B	EzS2-PE-56L-B
Ezi-SERVO II -PE-60S-A	EzM2-60S-A	EzS2-PE-60S-A
Ezi-SERVO II -PE-60S-B	EzM2-60S-B	EzS2-PE-60S-B
Ezi-SERVO II -PE-60M-A	EzM2-60M-A	EzS2-PE-60M-A
Ezi-SERVO II -PE-60M-B	EzM2-60M-B	EzS2-PE-60M-B
Ezi-SERVO II -PE-60L-A	EzM2-60L-A	EzS2-PE-60L-A
Ezi-SERVO II -PE-60L-B	EzM2-60L-B	EzS2-PE-60L-B
Ezi-SERVO II -PE-86M-A	EzM2-86M-A	EzS2-PE-86M-A
Ezi-SERVO II -PE-86M-B	EzM2-86M-B	EzS2-PE-86M-B
Ezi-SERVO II -PE-86L-A	EzM2-86L-A	EzS2-PE-86L-A
Ezi-SERVO II -PE-86L-B	EzM2-86L-B	EzS2-PE-86L-B
Ezi-SERVO II -PE-86XL-A	EzM2-86XL-A	EzS2-PE-86XL-A
Ezi-SERVO II -PE-86XL-B	EzM2-86XL-B	EzS2-PE-86XL-B

* When places an order for Stopper type 28mm, 35mm motor, please write "M" additionally after motor length of unit part number.
(Ex : Ezi-SERVO II -PE-28LM-D, Ezi-SERVO II -PE-35LM-D)

Combination with Brake

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO II-PE-42S-A-BK	EzM2-42S-A-BK	EzS2-PE-42S-A
Ezi-SERVO II-PE-42S-B-BK	EzM2-42S-B-BK	EzS2-PE-42S-B
Ezi-SERVO II-PE-42M-A-BK	EzM2-42M-A-BK	EzS2-PE-42M-A
Ezi-SERVO II-PE-42M-B-BK	EzM2-42M-B-BK	EzS2-PE-42M-B
Ezi-SERVO II-PE-42L-A-BK	EzM2-42L-A-BK	EzS2-PE-42L-A
Ezi-SERVO II-PE-42L-B-BK	EzM2-42L-B-BK	EzS2-PE-42L-B
Ezi-SERVO II-PE-42XL-A-BK	EzM2-42XL-A-BK	EzS2-PE-42XL-A
Ezi-SERVO II-PE-42XL-B-BK	EzM2-42XL-B-BK	EzS2-PE-42XL-B
Ezi-SERVO II-PE-56S-A-BK	EzM2-56S-A-BK	EzS2-PE-56S-A
Ezi-SERVO II-PE-56S-B-BK	EzM2-56S-B-BK	EzS2-PE-56S-B
Ezi-SERVO II-PE-56M-A-BK	EzM2-56M-A-BK	EzS2-PE-56M-A
Ezi-SERVO II-PE-56M-B-BK	EzM2-56M-B-BK	EzS2-PE-56M-B
Ezi-SERVO II-PE-56L-A-BK	EzM2-56L-A-BK	EzS2-PE-56L-A
Ezi-SERVO II-PE-56L-B-BK	EzM2-56L-B-BK	EzS2-PE-56L-B
Ezi-SERVO II-PE-60S-A-BK	EzM2-60S-A-BK	EzS2-PE-60S-A
Ezi-SERVO II-PE-60S-B-BK	EzM2-60S-B-BK	EzS2-PE-60S-B
Ezi-SERVO II-PE-60M-A-BK	EzM2-60M-A-BK	EzS2-PE-60M-A
Ezi-SERVO II-PE-60M-B-BK	EzM2-60M-B-BK	EzS2-PE-60M-B
Ezi-SERVO II-PE-60L-A-BK	EzM2-60L-A-BK	EzS2-PE-60L-A
Ezi-SERVO II-PE-60L-B-BK	EzM2-60L-B-BK	EzS2-PE-60L-B
Ezi-SERVO II-PE-86M-A-BK	EzM2-86M-A-BK	EzS2-PE-86M-A
Ezi-SERVO II-PE-86M-B-BK	EzM2-86M-B-BK	EzS2-PE-86M-B
Ezi-SERVO II-PE-86L-A-BK	EzM2-86L-A-BK	EzS2-PE-86L-A
Ezi-SERVO II-PE-86L-B-BK	EzM2-86L-B-BK	EzS2-PE-86L-B
Ezi-SERVO II-PE-86XL-A-BK	EzM2-86XL-A-BK	EzS2-PE-86XL-A
Ezi-SERVO II-PE-86XL-B-BK	EzM2-86XL-B-BK	EzS2-PE-86XL-B

Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVO II-PE-42S-A-PN3	EzM2-42S-A-PN3	EzS2-PE-42S-A	1:3
Ezi-SERVO II-PE-42S-B-PN3	EzM2-42S-B-PN3	EzS2-PE-42S-B	
Ezi-SERVO II-PE-42S-A-PN5	EzM2-42S-A-PN5	EzS2-PE-42S-A	1:5
Ezi-SERVO II-PE-42S-B-PN5	EzM2-42S-B-PN5	EzS2-PE-42S-B	
Ezi-SERVO II-PE-42S-A-PN8	EzM2-42S-A-PN8	EzS2-PE-42S-A	1:8
Ezi-SERVO II-PE-42S-B-PN8	EzM2-42S-B-PN8	EzS2-PE-42S-B	
Ezi-SERVO II-PE-42S-A-PN10	EzM2-42S-A-PN10	EzS2-PE-42S-A	1:10
Ezi-SERVO II-PE-42S-B-PN10	EzM2-42S-B-PN10	EzS2-PE-42S-B	
Ezi-SERVO II-PE-42S-A-PN15	EzM2-42S-A-PN15	EzS2-PE-42S-A	1:15
Ezi-SERVO II-PE-42S-B-PN15	EzM2-42S-B-PN15	EzS2-PE-42S-B	
Ezi-SERVO II-PE-42S-A-PN25	EzM2-42S-A-PN25	EzS2-PE-42S-A	1:25
Ezi-SERVO II-PE-42S-B-PN25	EzM2-42S-B-PN25	EzS2-PE-42S-B	
Ezi-SERVO II-PE-42S-A-PN40	EzM2-42S-A-PN40	EzS2-PE-42S-A	1:40
Ezi-SERVO II-PE-42S-B-PN40	EzM2-42S-B-PN40	EzS2-PE-42S-B	
Ezi-SERVO II-PE-42S-A-PN50	EzM2-42S-A-PN50	EzS2-PE-42S-A	1:50
Ezi-SERVO II-PE-42S-B-PN50	EzM2-42S-B-PN50	EzS2-PE-42S-B	
Ezi-SERVO II-PE-42M-A-PN3	EzM2-42M-A-PN3	EzS2-PE-42M-A	1:3
Ezi-SERVO II-PE-42M-B-PN3	EzM2-42M-B-PN3	EzS2-PE-42M-B	
Ezi-SERVO II-PE-42M-A-PN5	EzM2-42M-A-PN5	EzS2-PE-42M-A	1:5
Ezi-SERVO II-PE-42M-B-PN5	EzM2-42M-B-PN5	EzS2-PE-42M-B	
Ezi-SERVO II-PE-42M-A-PN8	EzM2-42M-A-PN8	EzS2-PE-42M-A	1:8
Ezi-SERVO II-PE-42M-B-PN8	EzM2-42M-B-PN8	EzS2-PE-42M-B	
Ezi-SERVO II-PE-42M-A-PN10	EzM2-42M-A-PN10	EzS2-PE-42M-A	1:10
Ezi-SERVO II-PE-42M-B-PN10	EzM2-42M-B-PN10	EzS2-PE-42M-B	
Ezi-SERVO II-PE-42M-A-PN15	EzM2-42M-A-PN15	EzS2-PE-42M-A	1:15
Ezi-SERVO II-PE-42M-B-PN15	EzM2-42M-B-PN15	EzS2-PE-42M-B	
Ezi-SERVO II-PE-42M-A-PN25	EzM2-42M-A-PN25	EzS2-PE-42M-A	1:25
Ezi-SERVO II-PE-42M-B-PN25	EzM2-42M-B-PN25	EzS2-PE-42M-B	
Ezi-SERVO II-PE-42M-A-PN40	EzM2-42M-A-PN40	EzS2-PE-42M-A	1:40
Ezi-SERVO II-PE-42M-B-PN40	EzM2-42M-B-PN40	EzS2-PE-42M-B	
Ezi-SERVO II-PE-42M-A-PN50	EzM2-42M-A-PN50	EzS2-PE-42M-A	1:50
Ezi-SERVO II-PE-42M-B-PN50	EzM2-42M-B-PN50	EzS2-PE-42M-B	

Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVO II-PE-42L-A-PN3	EzM2-42L-A-PN3	EzS2-PE-42L-A	1:3
Ezi-SERVO II-PE-42L-B-PN3	EzM2-42L-B-PN3	EzS2-PE-42L-B	
Ezi-SERVO II-PE-42L-A-PN5	EzM2-42L-A-PN5	EzS2-PE-42L-A	1:5
Ezi-SERVO II-PE-42L-B-PN5	EzM2-42L-B-PN5	EzS2-PE-42L-B	
Ezi-SERVO II-PE-42L-A-PN8	EzM2-42L-A-PN8	EzS2-PE-42L-A	1:8
Ezi-SERVO II-PE-42L-B-PN8	EzM2-42L-B-PN8	EzS2-PE-42L-B	
Ezi-SERVO II-PE-42L-A-PN10	EzM2-42L-A-PN10	EzS2-PE-42L-A	1:10
Ezi-SERVO II-PE-42L-B-PN10	EzM2-42L-B-PN10	EzS2-PE-42L-B	
Ezi-SERVO II-PE-42L-A-PN15	EzM2-42L-A-PN15	EzS2-PE-42L-A	1:15
Ezi-SERVO II-PE-42L-B-PN15	EzM2-42L-B-PN15	EzS2-PE-42L-B	
Ezi-SERVO II-PE-42L-A-PN25	EzM2-42L-A-PN25	EzS2-PE-42L-A	1:25
Ezi-SERVO II-PE-42L-B-PN25	EzM2-42L-B-PN25	EzS2-PE-42L-B	
Ezi-SERVO II-PE-42L-A-PN40	EzM2-42L-A-PN40	EzS2-PE-42L-A	1:40
Ezi-SERVO II-PE-42L-B-PN40	EzM2-42L-B-PN40	EzS2-PE-42L-B	
Ezi-SERVO II-PE-42L-A-PN50	EzM2-42L-A-PN50	EzS2-PE-42L-A	1:50
Ezi-SERVO II-PE-42L-B-PN50	EzM2-42L-B-PN50	EzS2-PE-42L-B	
Ezi-SERVO II-PE-42XL-A-PN3	EzM2-42XL-A-PN3	EzS2-PE-42XL-A	1:3
Ezi-SERVO II-PE-42XL-B-PN3	EzM2-42XL-B-PN3	EzS2-PE-42XL-B	
Ezi-SERVO II-PE-42XL-A-PN5	EzM2-42XL-A-PN5	EzS2-PE-42XL-A	1:5
Ezi-SERVO II-PE-42XL-B-PN5	EzM2-42XL-B-PN5	EzS2-PE-42XL-B	
Ezi-SERVO II-PE-42XL-A-PN8	EzM2-42XL-A-PN8	EzS2-PE-42XL-A	1:8
Ezi-SERVO II-PE-42XL-B-PN8	EzM2-42XL-B-PN8	EzS2-PE-42XL-B	
Ezi-SERVO II-PE-42XL-A-PN10	EzM2-42XL-A-PN10	EzS2-PE-42XL-A	1:10
Ezi-SERVO II-PE-42XL-B-PN10	EzM2-42XL-B-PN10	EzS2-PE-42XL-B	
Ezi-SERVO II-PE-42XL-A-PN15	EzM2-42XL-A-PN15	EzS2-PE-42XL-A	1:15
Ezi-SERVO II-PE-42XL-B-PN15	EzM2-42XL-B-PN15	EzS2-PE-42XL-B	
Ezi-SERVO II-PE-42XL-A-PN25	EzM2-42XL-A-PN25	EzS2-PE-42XL-A	1:25
Ezi-SERVO II-PE-42XL-B-PN25	EzM2-42XL-B-PN25	EzS2-PE-42XL-B	
Ezi-SERVO II-PE-42XL-A-PN40	EzM2-42XL-A-PN40	EzS2-PE-42XL-A	1:40
Ezi-SERVO II-PE-42XL-B-PN40	EzM2-42XL-B-PN40	EzS2-PE-42XL-B	
Ezi-SERVO II-PE-42XL-A-PN50	EzM2-42XL-A-PN50	EzS2-PE-42XL-A	1:50
Ezi-SERVO II-PE-42XL-B-PN50	EzM2-42XL-B-PN50	EzS2-PE-42XL-B	
Ezi-SERVO II-PE-56S-A-PN3	EzM2-56S-A-PN3	EzS2-PE-56S-A	1:3
Ezi-SERVO II-PE-56S-B-PN3	EzM2-56S-B-PN3	EzS2-PE-56S-B	
Ezi-SERVO II-PE-56S-A-PN5	EzM2-56S-A-PN5	EzS2-PE-56S-A	1:5
Ezi-SERVO II-PE-56S-B-PN5	EzM2-56S-B-PN5	EzS2-PE-56S-B	
Ezi-SERVO II-PE-56S-A-PN8	EzM2-56S-A-PN8	EzS2-PE-56S-A	1:8
Ezi-SERVO II-PE-56S-B-PN8	EzM2-56S-B-PN8	EzS2-PE-56S-B	
Ezi-SERVO II-PE-56S-A-PN10	EzM2-56S-A-PN10	EzS2-PE-56S-A	1:10
Ezi-SERVO II-PE-56S-B-PN10	EzM2-56S-B-PN10	EzS2-PE-56S-B	
Ezi-SERVO II-PE-56S-A-PN15	EzM2-56S-A-PN15	EzS2-PE-56S-A	1:15
Ezi-SERVO II-PE-56S-B-PN15	EzM2-56S-B-PN15	EzS2-PE-56S-B	
Ezi-SERVO II-PE-56S-A-PN25	EzM2-56S-A-PN25	EzS2-PE-56S-A	1:25
Ezi-SERVO II-PE-56S-B-PN25	EzM2-56S-B-PN25	EzS2-PE-56S-B	
Ezi-SERVO II-PE-56S-A-PN40	EzM2-56S-A-PN40	EzS2-PE-56S-A	1:40
Ezi-SERVO II-PE-56S-B-PN40	EzM2-56S-B-PN40	EzS2-PE-56S-B	
Ezi-SERVO II-PE-56S-A-PN50	EzM2-56S-A-PN50	EzS2-PE-56S-A	1:50
Ezi-SERVO II-PE-56S-B-PN50	EzM2-56S-B-PN50	EzS2-PE-56S-B	
Ezi-SERVO II-PE-56M-A-PN3	EzM2-56M-A-PN3	EzS2-PE-56M-A	1:3
Ezi-SERVO II-PE-56M-B-PN3	EzM2-56M-B-PN3	EzS2-PE-56M-B	
Ezi-SERVO II-PE-56M-A-PN5	EzM2-56M-A-PN5	EzS2-PE-56M-A	1:5
Ezi-SERVO II-PE-56M-B-PN5	EzM2-56M-B-PN5	EzS2-PE-56M-B	
Ezi-SERVO II-PE-56M-A-PN8	EzM2-56M-A-PN8	EzS2-PE-56M-A	1:8
Ezi-SERVO II-PE-56M-B-PN8	EzM2-56M-B-PN8	EzS2-PE-56M-B	
Ezi-SERVO II-PE-56M-A-PN10	EzM2-56M-A-PN10	EzS2-PE-56M-A	1:10
Ezi-SERVO II-PE-56M-B-PN10	EzM2-56M-B-PN10	EzS2-PE-56M-B	
Ezi-SERVO II-PE-56M-A-PN15	EzM2-56M-A-PN15	EzS2-PE-56M-A	1:15
Ezi-SERVO II-PE-56M-B-PN15	EzM2-56M-B-PN15	EzS2-PE-56M-B	
Ezi-SERVO II-PE-56M-A-PN25	EzM2-56M-A-PN25	EzS2-PE-56M-A	1:25
Ezi-SERVO II-PE-56M-B-PN25	EzM2-56M-B-PN25	EzS2-PE-56M-B	
Ezi-SERVO II-PE-56M-A-PN40	EzM2-56M-A-PN40	EzS2-PE-56M-A	1:40
Ezi-SERVO II-PE-56M-B-PN40	EzM2-56M-B-PN40	EzS2-PE-56M-B	
Ezi-SERVO II-PE-56M-A-PN50	EzM2-56M-A-PN50	EzS2-PE-56M-A	1:50
Ezi-SERVO II-PE-56M-B-PN50	EzM2-56M-B-PN50	EzS2-PE-56M-B	

● Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVO II-PE-56L-A-PN3	EzM2-56L-A-PN3	EzS2-PE-56L-A	1:3
Ezi-SERVO II-PE-56L-B-PN3	EzM2-56L-B-PN3	EzS2-PE-56L-B	
Ezi-SERVO II-PE-56L-A-PN5	EzM2-56L-A-PN5	EzS2-PE-56L-A	1:5
Ezi-SERVO II-PE-56L-B-PN5	EzM2-56L-B-PN5	EzS2-PE-56L-B	
Ezi-SERVO II-PE-56L-A-PN8	EzM2-56L-A-PN8	EzS2-PE-56L-A	1:8
Ezi-SERVO II-PE-56L-B-PN8	EzM2-56L-B-PN8	EzS2-PE-56L-B	
Ezi-SERVO II-PE-56L-A-PN10	EzM2-56L-A-PN10	EzS2-PE-56L-A	1:10
Ezi-SERVO II-PE-56L-B-PN10	EzM2-56L-B-PN10	EzS2-PE-56L-B	
Ezi-SERVO II-PE-56L-A-PN15	EzM2-56L-A-PN15	EzS2-PE-56L-A	1:15
Ezi-SERVO II-PE-56L-B-PN15	EzM2-56L-B-PN15	EzS2-PE-56L-B	
Ezi-SERVO II-PE-56L-A-PN25	EzM2-56L-A-PN25	EzS2-PE-56L-A	1:25
Ezi-SERVO II-PE-56L-B-PN25	EzM2-56L-B-PN25	EzS2-PE-56L-B	
Ezi-SERVO II-PE-56L-A-PN40	EzM2-56L-A-PN40	EzS2-PE-56L-A	1:40
Ezi-SERVO II-PE-56L-B-PN40	EzM2-56L-B-PN40	EzS2-PE-56L-B	
Ezi-SERVO II-PE-56L-A-PN50	EzM2-56L-A-PN50	EzS2-PE-56L-A	1:50
Ezi-SERVO II-PE-56L-B-PN50	EzM2-56L-B-PN50	EzS2-PE-56L-B	
Ezi-SERVO II-PE-60S-A-PN3	EzM2-60S-A-PN3	EzS2-PE-60S-A	1:3
Ezi-SERVO II-PE-60S-B-PN3	EzM2-60S-B-PN3	EzS2-PE-60S-B	
Ezi-SERVO II-PE-60S-A-PN5	EzM2-60S-A-PN5	EzS2-PE-60S-A	1:5
Ezi-SERVO II-PE-60S-B-PN5	EzM2-60S-B-PN5	EzS2-PE-60S-B	
Ezi-SERVO II-PE-60S-A-PN8	EzM2-60S-A-PN8	EzS2-PE-60S-A	1:8
Ezi-SERVO II-PE-60S-B-PN8	EzM2-60S-B-PN8	EzS2-PE-60S-B	
Ezi-SERVO II-PE-60S-A-PN10	EzM2-60S-A-PN10	EzS2-PE-60S-A	1:10
Ezi-SERVO II-PE-60S-B-PN10	EzM2-60S-B-PN10	EzS2-PE-60S-B	
Ezi-SERVO II-PE-60S-A-PN15	EzM2-60S-A-PN15	EzS2-PE-60S-A	1:15
Ezi-SERVO II-PE-60S-B-PN15	EzM2-60S-B-PN15	EzS2-PE-60S-B	
Ezi-SERVO II-PE-60S-A-PN25	EzM2-60S-A-PN25	EzS2-PE-60S-A	1:25
Ezi-SERVO II-PE-60S-B-PN25	EzM2-60S-B-PN25	EzS2-PE-60S-B	
Ezi-SERVO II-PE-60S-A-PN40	EzM2-60S-A-PN40	EzS2-PE-60S-A	1:40
Ezi-SERVO II-PE-60S-B-PN40	EzM2-60S-B-PN40	EzS2-PE-60S-B	
Ezi-SERVO II-PE-60S-A-PN50	EzM2-60S-A-PN50	EzS2-PE-60S-A	1:50
Ezi-SERVO II-PE-60S-B-PN50	EzM2-60S-B-PN50	EzS2-PE-60S-B	
Ezi-SERVO II-PE-60M-A-PN3	EzM2-60M-A-PN3	EzS2-PE-60M-A	1:3
Ezi-SERVO II-PE-60M-B-PN3	EzM2-60M-B-PN3	EzS2-PE-60M-B	
Ezi-SERVO II-PE-60M-A-PN5	EzM2-60M-A-PN5	EzS2-PE-60M-A	1:5
Ezi-SERVO II-PE-60M-B-PN5	EzM2-60M-B-PN5	EzS2-PE-60M-B	
Ezi-SERVO II-PE-60M-A-PN8	EzM2-60M-A-PN8	EzS2-PE-60M-A	1:8
Ezi-SERVO II-PE-60M-B-PN8	EzM2-60M-B-PN8	EzS2-PE-60M-B	
Ezi-SERVO II-PE-60M-A-PN10	EzM2-60M-A-PN10	EzS2-PE-60M-A	1:10
Ezi-SERVO II-PE-60M-B-PN10	EzM2-60M-B-PN10	EzS2-PE-60M-B	
Ezi-SERVO II-PE-60M-A-PN15	EzM2-60M-A-PN15	EzS2-PE-60M-A	1:15
Ezi-SERVO II-PE-60M-B-PN15	EzM2-60M-B-PN15	EzS2-PE-60M-B	
Ezi-SERVO II-PE-60M-A-PN25	EzM2-60M-A-PN25	EzS2-PE-60M-A	1:25
Ezi-SERVO II-PE-60M-B-PN25	EzM2-60M-B-PN25	EzS2-PE-60M-B	
Ezi-SERVO II-PE-60M-A-PN40	EzM2-60M-A-PN40	EzS2-PE-60M-A	1:40
Ezi-SERVO II-PE-60M-B-PN40	EzM2-60M-B-PN40	EzS2-PE-60M-B	
Ezi-SERVO II-PE-60M-A-PN50	EzM2-60M-A-PN50	EzS2-PE-60M-A	1:50
Ezi-SERVO II-PE-60M-B-PN50	EzM2-60M-B-PN50	EzS2-PE-60M-B	
Ezi-SERVO II-PE-60L-A-PN3	EzM2-60L-A-PN3	EzS2-PE-60L-A	1:3
Ezi-SERVO II-PE-60L-B-PN3	EzM2-60L-B-PN3	EzS2-PE-60L-B	
Ezi-SERVO II-PE-60L-A-PN5	EzM2-60L-A-PN5	EzS2-PE-60L-A	1:5
Ezi-SERVO II-PE-60L-B-PN5	EzM2-60L-B-PN5	EzS2-PE-60L-B	
Ezi-SERVO II-PE-60L-A-PN8	EzM2-60L-A-PN8	EzS2-PE-60L-A	1:8
Ezi-SERVO II-PE-60L-B-PN8	EzM2-60L-B-PN8	EzS2-PE-60L-B	
Ezi-SERVO II-PE-60L-A-PN10	EzM2-60L-A-PN10	EzS2-PE-60L-A	1:10
Ezi-SERVO II-PE-60L-B-PN10	EzM2-60L-B-PN10	EzS2-PE-60L-B	
Ezi-SERVO II-PE-60L-A-PN15	EzM2-60L-A-PN15	EzS2-PE-60L-A	1:15
Ezi-SERVO II-PE-60L-B-PN15	EzM2-60L-B-PN15	EzS2-PE-60L-B	
Ezi-SERVO II-PE-60L-A-PN25	EzM2-60L-A-PN25	EzS2-PE-60L-A	1:25
Ezi-SERVO II-PE-60L-B-PN25	EzM2-60L-B-PN25	EzS2-PE-60L-B	
Ezi-SERVO II-PE-60L-A-PN40	EzM2-60L-A-PN40	EzS2-PE-60L-A	1:40
Ezi-SERVO II-PE-60L-B-PN40	EzM2-60L-B-PN40	EzS2-PE-60L-B	
Ezi-SERVO II-PE-60L-A-PN50	EzM2-60L-A-PN50	EzS2-PE-60L-A	1:50
Ezi-SERVO II-PE-60L-B-PN50	EzM2-60L-B-PN50	EzS2-PE-60L-B	

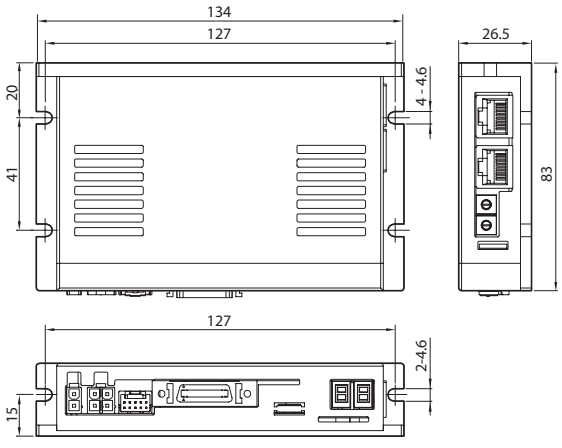
Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVO II-PE-86M-A-PN3	EzM2-86M-A-PN3	EzS2-PE-86M-A	1:3
Ezi-SERVO II-PE-86M-B-PN3	EzM2-86M-B-PN3	EzS2-PE-86M-B	
Ezi-SERVO II-PE-86M-A-PN5	EzM2-86M-A-PN5	EzS2-PE-86M-A	1:5
Ezi-SERVO II-PE-86M-B-PN5	EzM2-86M-B-PN5	EzS2-PE-86M-B	
Ezi-SERVO II-PE-86M-A-PN8	EzM2-86M-A-PN8	EzS2-PE-86M-A	1:8
Ezi-SERVO II-PE-86M-B-PN8	EzM2-86M-B-PN8	EzS2-PE-86M-B	
Ezi-SERVO II-PE-86M-A-PN10	EzM2-86M-A-PN10	EzS2-PE-86M-A	1:10
Ezi-SERVO II-PE-86M-B-PN10	EzM2-86M-B-PN10	EzS2-PE-86M-B	
Ezi-SERVO II-PE-86M-A-PN15	EzM2-86M-A-PN15	EzS2-PE-86M-A	1:15
Ezi-SERVO II-PE-86M-B-PN15	EzM2-86M-B-PN15	EzS2-PE-86M-B	
Ezi-SERVO II-PE-86M-A-PN25	EzM2-86M-A-PN25	EzS2-PE-86M-A	1:25
Ezi-SERVO II-PE-86M-B-PN25	EzM2-86M-B-PN25	EzS2-PE-86M-B	
Ezi-SERVO II-PE-86M-A-PN40	EzM2-86M-A-PN40	EzS2-PE-86M-A	1:40
Ezi-SERVO II-PE-86M-B-PN40	EzM2-86M-B-PN40	EzS2-PE-86M-B	
Ezi-SERVO II-PE-86M-A-PN50	EzM2-86M-A-PN50	EzS2-PE-86M-A	1:50
Ezi-SERVO II-PE-86M-B-PN50	EzM2-86M-B-PN50	EzS2-PE-86M-B	
Ezi-SERVO II-PE-86L-A-PN3	EzM2-86L-A-PN3	EzS2-PE-86L-A	1:3
Ezi-SERVO II-PE-86L-B-PN3	EzM2-86L-B-PN3	EzS2-PE-86L-B	
Ezi-SERVO II-PE-86L-A-PN5	EzM2-86L-A-PN5	EzS2-PE-86L-A	1:5
Ezi-SERVO II-PE-86L-B-PN5	EzM2-86L-B-PN5	EzS2-PE-86L-B	
Ezi-SERVO II-PE-86L-A-PN8	EzM2-86L-A-PN8	EzS2-PE-86L-A	1:8
Ezi-SERVO II-PE-86L-B-PN8	EzM2-86L-B-PN8	EzS2-PE-86L-B	
Ezi-SERVO II-PE-86L-A-PN10	EzM2-86L-A-PN10	EzS2-PE-86L-A	1:10
Ezi-SERVO II-PE-86L-B-PN10	EzM2-86L-B-PN10	EzS2-PE-86L-B	
Ezi-SERVO II-PE-86L-A-PN15	EzM2-86L-A-PN15	EzS2-PE-86L-A	1:15
Ezi-SERVO II-PE-86L-B-PN15	EzM2-86L-B-PN15	EzS2-PE-86L-B	
Ezi-SERVO II-PE-86L-A-PN25	EzM2-86L-A-PN25	EzS2-PE-86L-A	1:25
Ezi-SERVO II-PE-86L-B-PN25	EzM2-86L-B-PN25	EzS2-PE-86L-B	
Ezi-SERVO II-PE-86L-A-PN40	EzM2-86L-A-PN40	EzS2-PE-86L-A	1:40
Ezi-SERVO II-PE-86L-B-PN40	EzM2-86L-B-PN40	EzS2-PE-86L-B	
Ezi-SERVO II-PE-86L-A-PN50	EzM2-86L-A-PN50	EzS2-PE-86L-A	1:50
Ezi-SERVO II-PE-86L-B-PN50	EzM2-86L-B-PN50	EzS2-PE-86L-B	
Ezi-SERVO II-PE-86XL-A-PN3	EzM2-86XL-A-PN3	EzS2-PE-86XL-A	1:3
Ezi-SERVO II-PE-86XL-B-PN3	EzM2-86XL-B-PN3	EzS2-PE-86XL-B	
Ezi-SERVO II-PE-86XL-A-PN5	EzM2-86XL-A-PN5	EzS2-PE-86XL-A	1:5
Ezi-SERVO II-PE-86XL-B-PN5	EzM2-86XL-B-PN5	EzS2-PE-86XL-B	
Ezi-SERVO II-PE-86XL-A-PN8	EzM2-86XL-A-PN8	EzS2-PE-86XL-A	1:8
Ezi-SERVO II-PE-86XL-B-PN8	EzM2-86XL-B-PN8	EzS2-PE-86XL-B	
Ezi-SERVO II-PE-86XL-A-PN10	EzM2-86XL-A-PN10	EzS2-PE-86XL-A	1:10
Ezi-SERVO II-PE-86XL-B-PN10	EzM2-86XL-B-PN10	EzS2-PE-86XL-B	
Ezi-SERVO II-PE-86XL-A-PN15	EzM2-86XL-A-PN15	EzS2-PE-86XL-A	1:15
Ezi-SERVO II-PE-86XL-B-PN15	EzM2-86XL-B-PN15	EzS2-PE-86XL-B	
Ezi-SERVO II-PE-86XL-A-PN25	EzM2-86XL-A-PN25	EzS2-PE-86XL-A	1:25
Ezi-SERVO II-PE-86XL-B-PN25	EzM2-86XL-B-PN25	EzS2-PE-86XL-B	
Ezi-SERVO II-PE-86XL-A-PN40	EzM2-86XL-A-PN40	EzS2-PE-86XL-A	1:40
Ezi-SERVO II-PE-86XL-B-PN40	EzM2-86XL-B-PN40	EzS2-PE-86XL-B	
Ezi-SERVO II-PE-86XL-A-PN50	EzM2-86XL-A-PN50	EzS2-PE-86XL-A	1:50
Ezi-SERVO II-PE-86XL-B-PN50	EzM2-86XL-B-PN50	EzS2-PE-86XL-B	

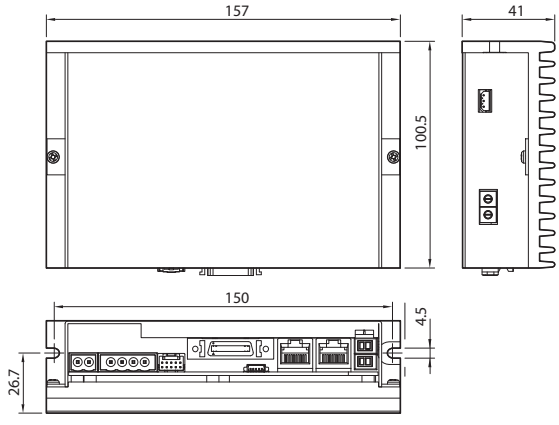
Specifications of Drive

Motor Model		EzM2-20 series	EzM2-28 series	EzM2-35 series	EzM2-42 series	EzM2-56 series	EzM2-60 series	EzM2-86 series
Driver Model		EzS2-PE-20 series	EzS2-PE-28 series	EzS2-PE-35 series	EzS2-PE-42 series	EzS2-PE-56 series	EzS2-PE-60 series	EzS2-PE-86 series
Input Voltage		DC24V±10%						DC40~70V
Control Method		Closed-loop control with 32 bit MCU						
Multi Axis Drive		Maximum 254 axis operating (Selectable IP: 1~254)						
Position Table		256 motion command steps						
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						
	Resolution	Encoder Resolution [P/R] / Configurable Resolution [P/R] 4,000 / 500 1,000 1,600 2,000 3,600 4,000 5,000 6,400 7,200 10,000 10,000 / 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 16,000 / 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 16,000 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						
	LED Display	Power status, In-Position status, Servo ON status, Alarm status						
	In-Position Selection	0~63 (Set by parameter)						
	Position Gain Selection	0~63 (Set by parameter)						
	Rotational Direction	CW/CCW (Set by parameter)						
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 9 programmable inputs (Photocoupler Input)						
	Output Signals	1 dedicated output (Compare Out), 9 programmable outputs (Photocoupler Output), 1 Brake output						
Communication Interface		· Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex · Dual port Ethernet switch embedded						
Position Control		· Incremental mode / Absolute mode Data Range: -134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min						
Return to Origin		Origin Sensor, Z phase, ±Limit sensor, Torque						
GUI		User Interface Program within Windows						
Library		Motion Library (API) for windows 7/8/10						

*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.

● Dimensions of Drive [mm]





※ 86mm motor drive (EzS2-PE-86 series)

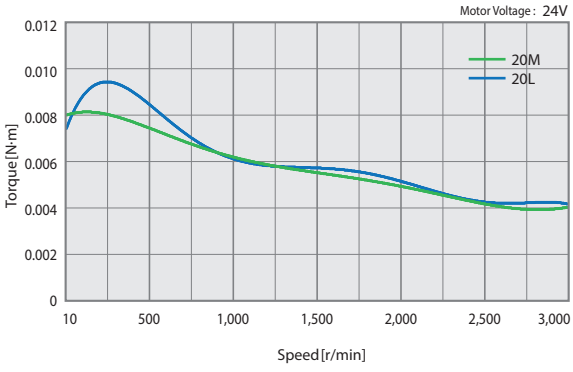
● Specifications of Motor

MODEL			UNIT	EzM2-20 series		EzM2-28 series			EzM2-35 series		EzM2-42 series			
				20M	20L	28S	28M	28L	35M	35L	42S	42M	42L	42XL
DRIVE METHOD			–	Bipolar										
NUMBER OF PHASES			–	2 Phase										
CURRENT per PHASE			A/Phase	0.5	0.5	0.95	0.95	0.95	1.5	1.5	1.2	1.2	1.2	1.2
MAXIMUM HOLDING TORQUE			N·m	0.016	0.025	0.069	0.098	0.118	0.13	0.23	0.32	0.44	0.5	0.65
ROTOR INERTIA			$g \cdot cm^2$	2.5	3.3	9.0	13	18	15	20	35	54	77	114
WEIGHTS			kg	0.080	0.104	0.147	0.204	0.232	0.194	0.226	0.294	0.357	0.426	0.564
LENGTH(L)			mm	28	38	32	45	50	32	36	34	40	48	60
PERMISSIBLE RADIAL LOAD	DIS-TANCE FROM END OF SHAFT	3mm	N	18	18	30	30	30	22	22	22	22	22	22
		8mm		30	30	38	38	38	26	26	26	26	26	26
		13mm		–	–	53	53	53	33	33	33	33	33	33
		18mm		–	–	–	–	–	46	46	46	46	46	46
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										

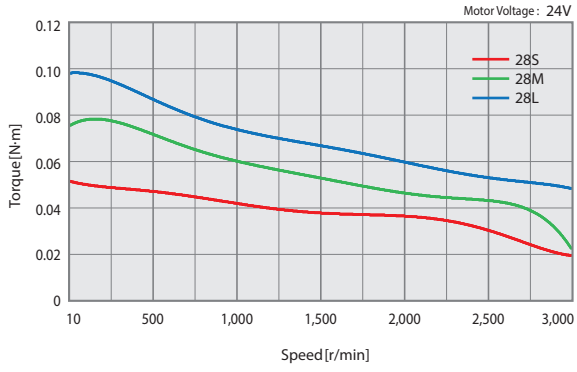
MODEL			UNIT	EzM2-56 series			EzM2-60 series			EzM2-86 series		
				56S	56M	56L	60S	60M	60L	86M	86L	86XL
DRIVE METHOD			–	Bipolar								
NUMBER OF PHASES			–	2 Phase								
CURRENT per PHASE			A/Phase	3.0	3.0	3.0	4.0	4.0	4.0	6.0	6.0	6.0
MAXIMUM HOLDING TORQUE			N·m	0.64	1.0	1.5	0.88	1.28	2.4	4.5	8.5	12
ROTOR INERTIA			$g \cdot cm^2$	180	280	520	240	490	690	1800	3600	5400
WEIGHTS			kg	0.608	0.784	1.230	0.693	0.856	1.419	2.355	3.941	5.453
LENGTH(L)			mm	46	55	80	47	56	85	78	117	155
PERMISSIBLE RADIAL LOAD	DIS-TANCE FROM END OF SHAFT	3mm	N	52	52	52	70	70	70	270	270	270
		8mm		65	65	65	87	87	87	300	300	300
		13mm		85	85	85	114	114	114	350	350	350
		18mm		123	123	123	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

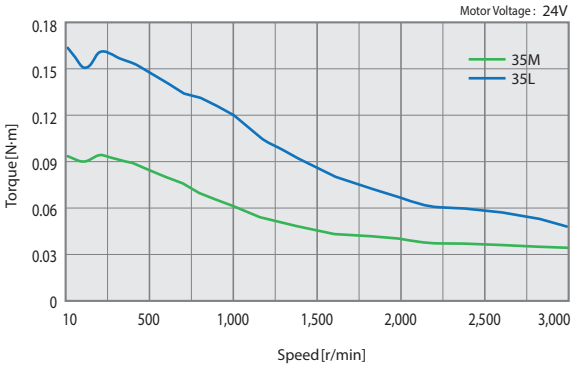
Ezi-SERVO II-PE-20 series



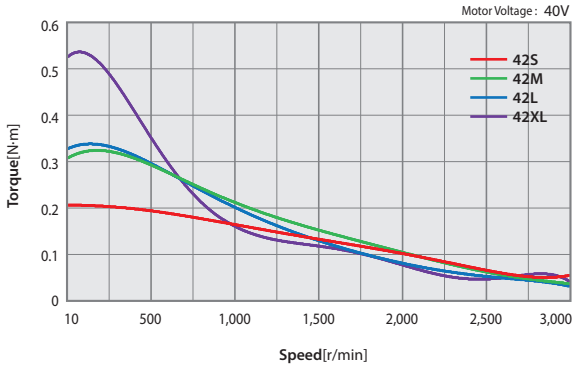
Ezi-SERVO II-PE-28 series



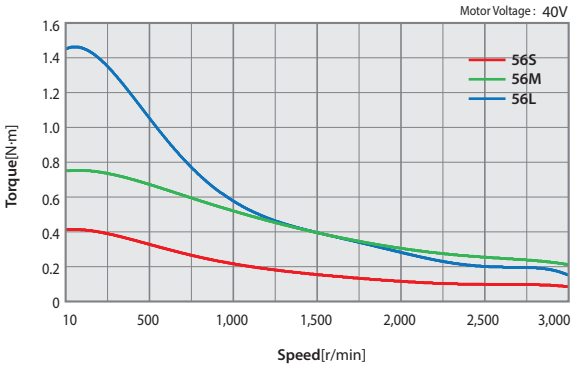
Ezi-SERVO II-PE-35 series



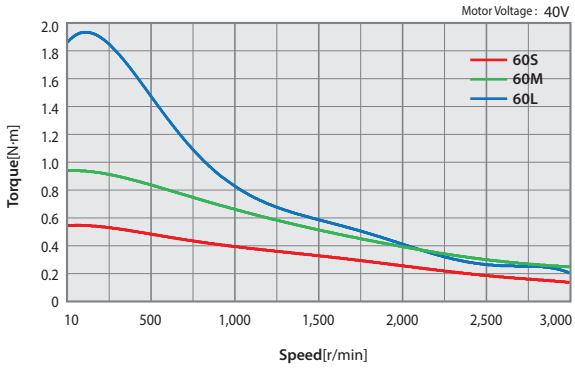
Ezi-SERVO II-PE-42 series



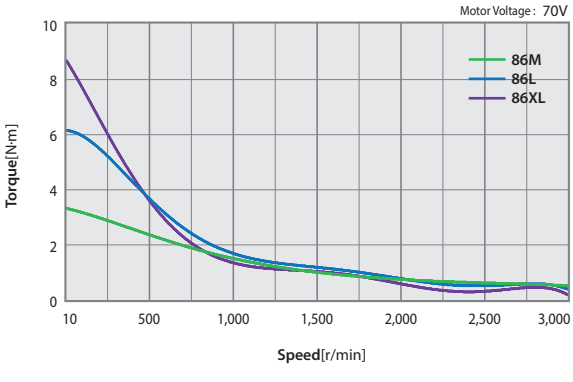
Ezi-SERVO II-PE-56 series



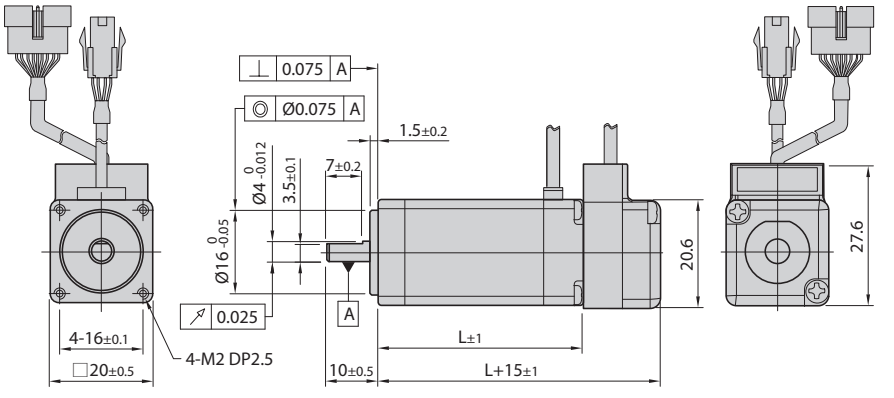
Ezi-SERVO II-PE-60 series



Ezi-SERVO II-PE-86 series

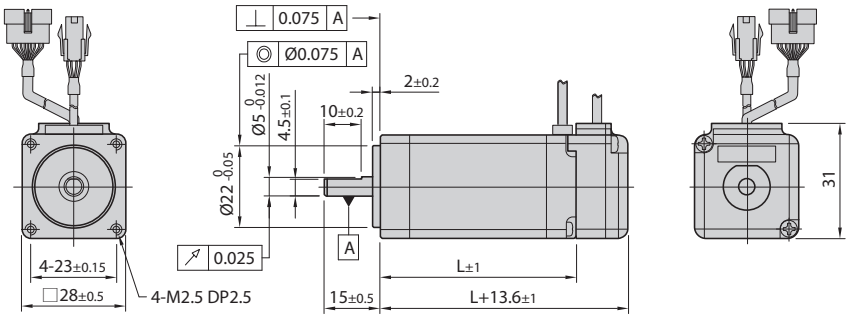


Dimensions of Motor [mm]



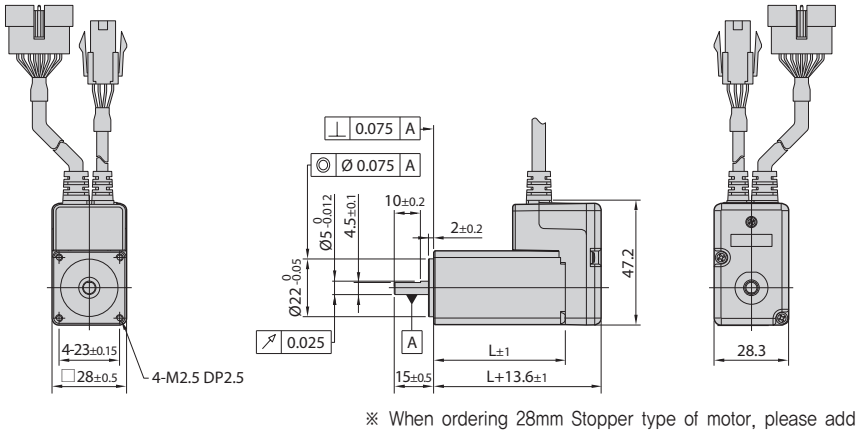
20mm

Model name	Length(L)
EzM2-20M	28
EzM2-20L	38



28mm

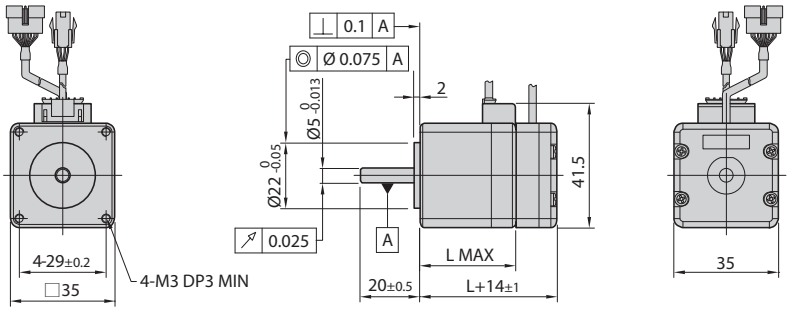
Model name	Length(L)
EzM2-28S	32
EzM2-28M	45
EzM2-28L	50



28mm *(Stopper type)*

Model name	Length(L)
EzM2-28SM	32
EzM2-28MM	45
EzM2-28LM	50

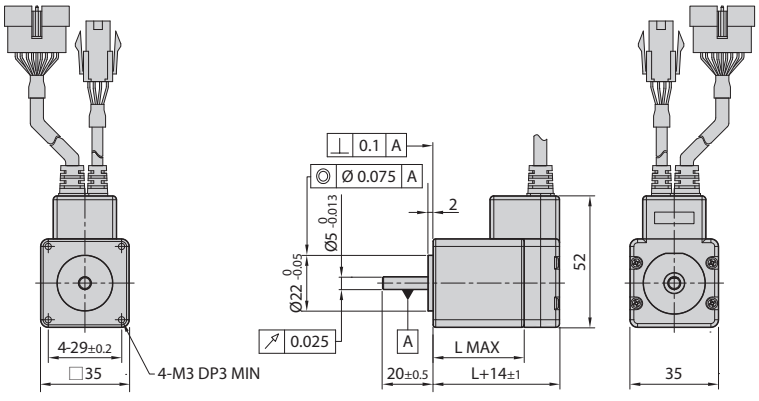
※ When ordering 28mm Stopper type of motor, please add "M" after standard motor model number.



35mm

Model name	Length(L)
EzM2-35M	32
EzM2-35L	36

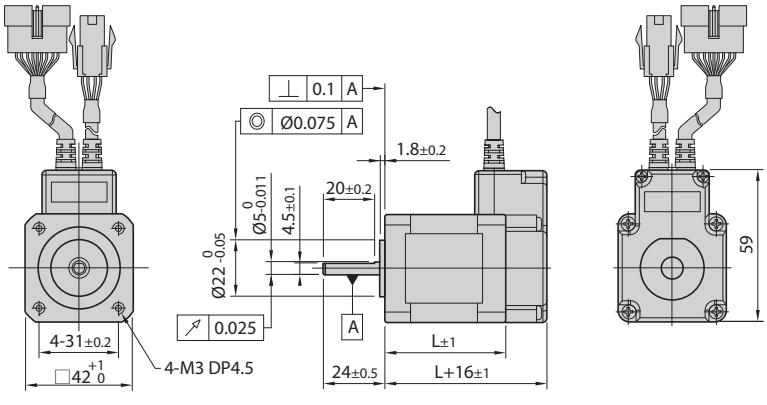
● Dimensions of Motor [mm]



35mm (Stopper type)

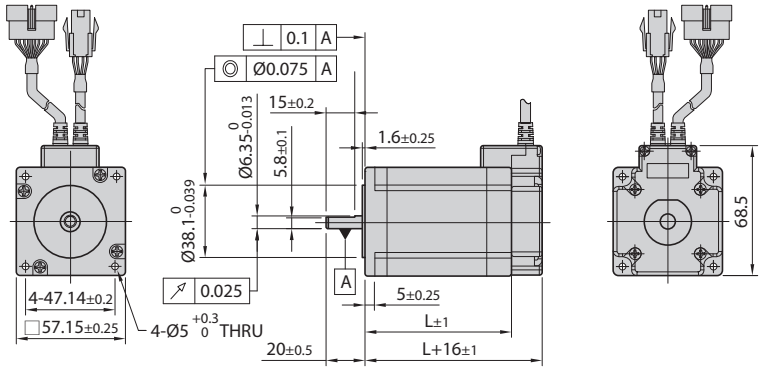
Model name	Length(L)
EzM2-35MM	32
EzM2-35LM	36

※ When ordering 35mm Stopper type of motor, please add "M" after standard motor model number.



42mm

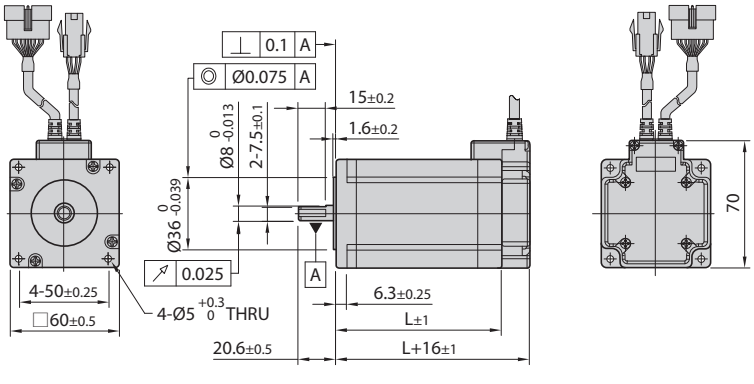
Model name	Length(L)
EzM2-42S	34
EzM2-42M	40
EzM2-42L	48
EzM2-42XL	60



56mm

Model name	Length(L)
EzM2-56S	46
EzM2-56M	55
EzM2-56L	80

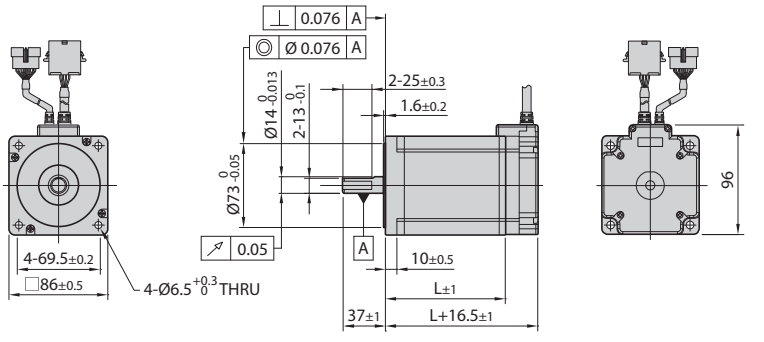
※ There are 2 kinds size of front shaft diameter for EzM2-56 series as Ø6.35 and Ø8.0.



60mm

Model name	Length(L)
EzM2-60S	47
EzM2-60M	56
EzM2-60L	85

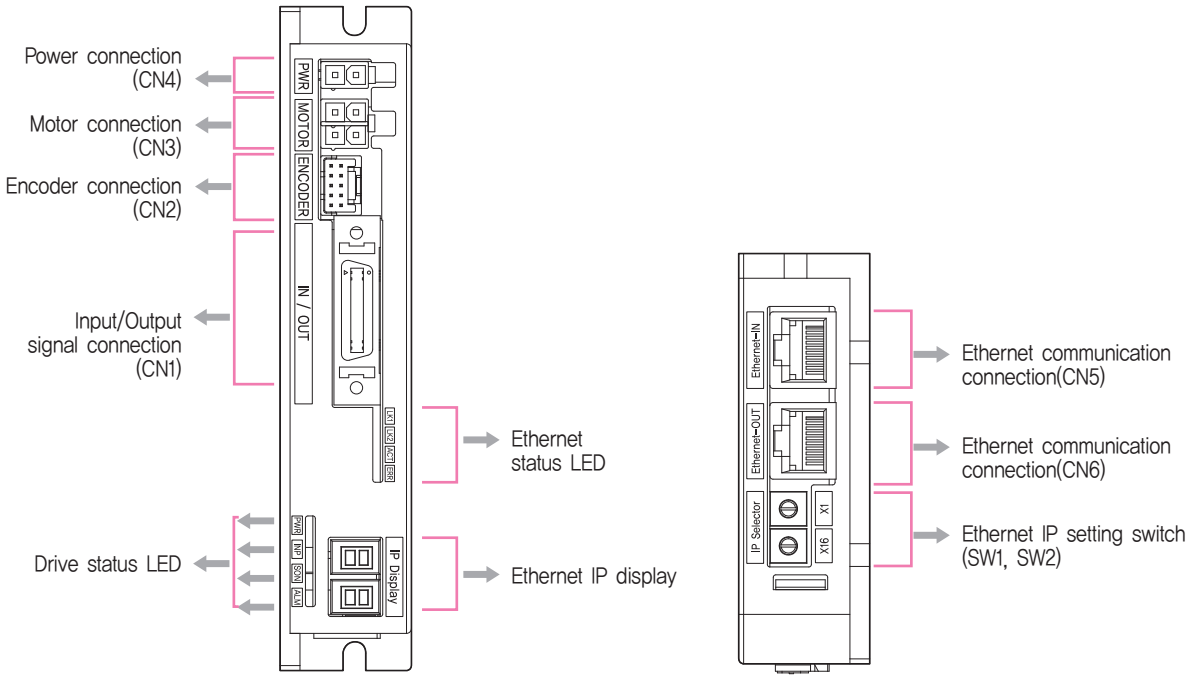
● Dimensions of Motor [mm]



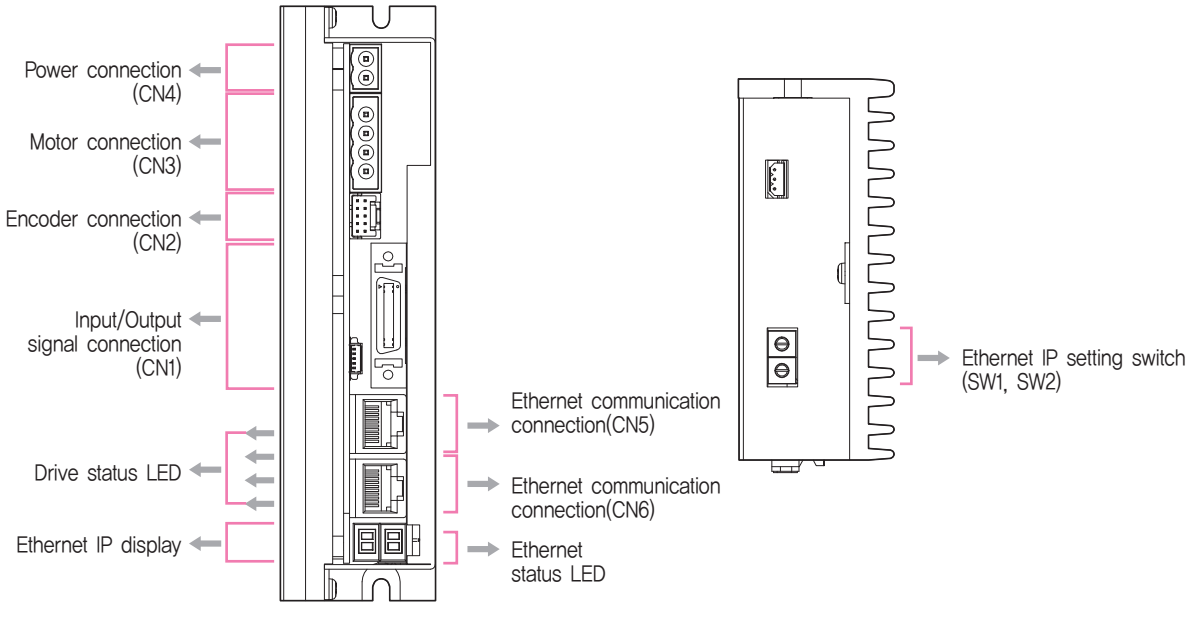
86mm

Model name	Length(L)
EzM2-86M	78
EzM2-86L	117
EzM2-86XL	155

● Settings and Operation

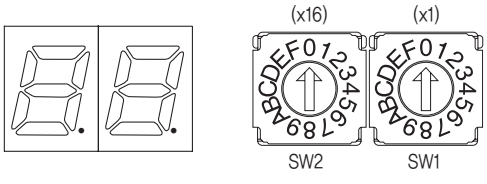


◆ 86mm Motor Drive (EzS2-PE-86 Series)



1. Ethernet IP Display and Setting Switch(SW1, SW2)

These switches set the 4th octet of Ethernet IP, and the value is shown in 7-segment LED display. The 1st octet, the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)



e.g.,) In case of SW2 : **5** and SW1 : **7**
(5×16) + (7×1)= **87**
IP is to be set as 192.168.0.**87**

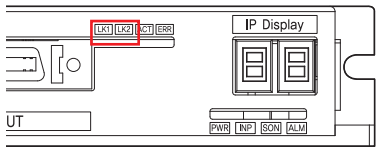
2. Ethernet Status LED

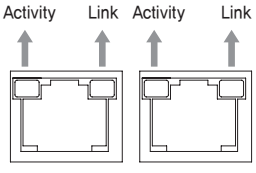
LED indicates communication status of Ethernet. Link/Activity LED exists on each port of Ethernet.

Name	Color	Status	Description
Error	Red	OFF	No Error status
		ON	Communication Data Error

Name	Color	Status	Description
LK1/ LK2	Green	OFF	Link deactivated
		ON	Link activated

Name	Color	Status	Description
Activity	Yellow	OFF	Stand-by
		Flickering	In operation





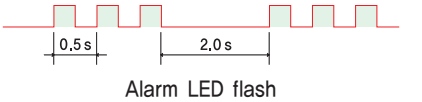
3. Drive Status LED

Name	Color	Function	Description
PWR	Green	Power input indication	LED is turned ON when power is applied
INP	Yellow	Complete Positioning Motion	LED is turned ON when Positioning error reaches within the preset pulse selected by parameter after the positioning is complete
SON	Orange	Servo ON / OFF Indication	Servo ON: Lights ON, Servo OFF: Lights OFF
ALM	Red	Alarm indication	LED blinks when an error occurs.

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

No.	Error Code *4	Error Type	Causes
1	E-001	Over Current Error	The current through power devices in drive exceeds the limit. *1
2	E-002	Over Speed Error	The motor speed exceeds 3,000r/min
3	E-003	Position Tracking Error	Position error value is greater than the reference value while the motor is running *2
4	E-004	Over Load Error	The motor is continuously operated more than 5 seconds under a load exceeding the max. torque.
5	E-005	Over Temperature Error	Internal temperature of the drive exceeds 85℃
6	E-006	Over Regenerative Voltage Error	Back-EMF is higher than limit value *3
7	E-007	Motor Connect Error	There is a problem with the connection between the drive and the motor
8	E-008	Encoder Connect Error	There is a problem with the connection between the drive and the encoder
10	E-010	In-Position Error	After operation is finished, position error larger than 1 pulse is continued for more than 3 seconds
12	E-012	ROM Error	Error occurs in parameter storage device(ROM)
15	E-015	Position Overflow Error	Position error value is greater than the reference value while the motor is stopped *2

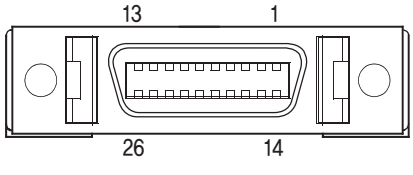
*1 : Limit value depends on motor model. (Refer to the Manual)
*2 : The default reference value is 180 ° , and it can be changed by parameter. (Refer to the Manual)
*3 : Voltage limit of Back-EMF depends on motor model. (Refer to the Manual)
*4 : When an alarm occurs, error code is displayed on the 7-segment LED display instead of Ethernet IP.
※ Please refer to uer Manual for the details of protection functions.



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

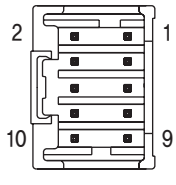
4. Input/Output Signal Connector(CN1)

No.	Function	I/O
1	LIMIT+	Input
2	LIMIT−	Input
3	ORIGIN	Input
4	Digital In1	Input
5	Digital In6	Input
6	Digital In7	Input
7	Compare Out	Output
8	Digital Out1	Output
9	Digital Out2	Output
10	Digital Out3	Output
11	Digital Out4	Output
12	Digital Out5	Output
13	Digital Out6	Output
14	Digital In2	Input
15	Digital In3	Input
16	Digital In4	Input
17	Digital In5	Input
18	Digital In8	Input
19	Digital In9	Input
20	Digital Out7	Output
21	Digital Out8	Output
22	Digital Out9	Output
23	BRAKE+	Output
24	BRAKE−	Output
25	EXT_GND	Input
26	EXT_DC24V	Input



5. Encoder Connector(CN2)

No.	Function	I/O
1	A+	Input
2	A−	Input
3	B+	Input
4	B−	Input
5	Z+	Input
6	Z−	Input
7	DC5V	Output
8	GND	Output
9	F.GND	-----
10	F.GND	-----

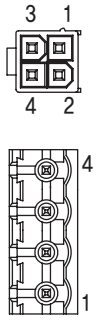


6. Motor Connector(CN3)

No.	Function	I/O
1	A Phase	Output
2	B Phase	Output
3	$\overline{A}$ Phase	Output
4	$\overline{B}$ Phase	Output

No.	Function	I/O
1	$\overline{B}$ Phase	Output
2	B Phase	Output
3	$\overline{A}$ Phase	Output
4	A Phase	Output

※ 86mm motor drive.

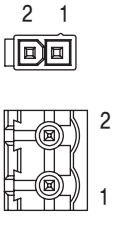


7. Power Connector(CN4)

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

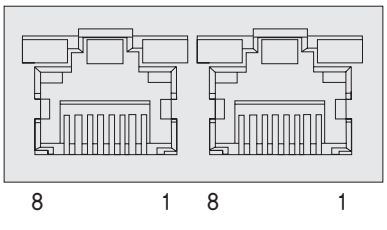
No.	Function	I/O
1	GND	Input
2	DC40~70V	Input

※ 86mm motor drive.

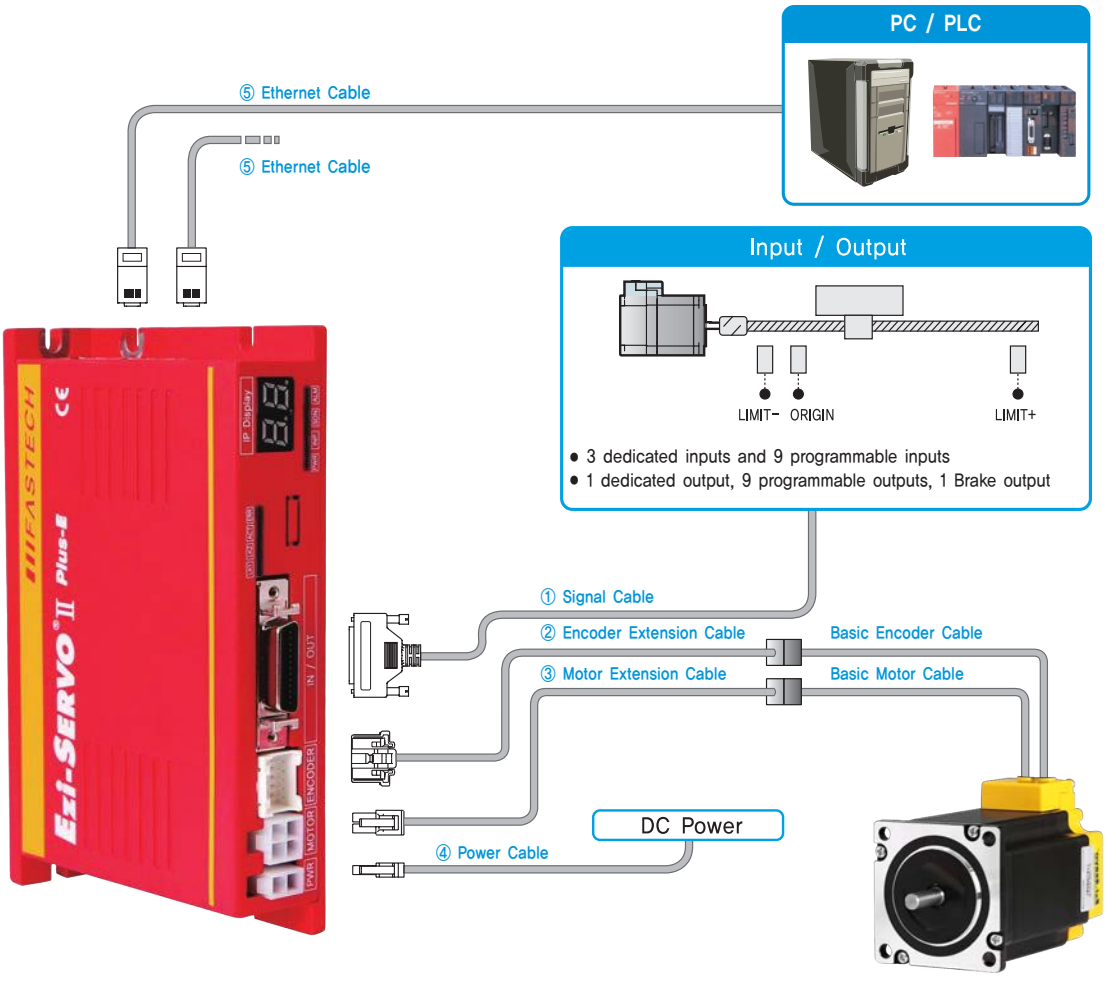


8. Ethernet Communication Connector(CN5, CN6)

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



System Configuration



Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold separately)
② Encoder Extension Cable	20m	
③ Motor Extension Cable	20m	
④ Power Cable	2m	
⑤ Ethernet Cable	100m	
Basic Encoder Cable	0.3m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3m (Basic length)	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Power (CN4)		Housing	5557-02R	MOLEX
		Terminal	5556T	
Motor	Drive Side (CN3)	Housing	5557-04R	MOLEX
		Terminal	5556T	
	Motor Side	Housing	5557-04R	MOLEX
		Terminal	5556T	
Encoder	Drive Side (CN2)	Housing	51353-1000	MOLEX
		Terminal	56134-9000	
	Encoder Side	Housing	SMP-09V-NC	JST
		Terminal	SHF-001T-0.8BS	
Signal (CN1)		Connector	10126-3000PE	3M
		Connector Cover	10326-52F0-008	

※ 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 Plus-E drive and other input/output devices.

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

These are the cables to connect Ezi-SERVO II Plus-E drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Encoder Cable Connection	CSVO-E-001F	1	Normal Cable	Maximum Length: 20m
	CSVO-E-002F	2		
	CSVO-E-003F	3		
	CSVO-E-005F	5		
	CSVO-E-001M	1	Robot Cable	
	CSVO-E-002M	2		
	CSVO-E-003M	3		
	CSVO-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-SERVO II Plus-E drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Motor Cable Connection	CSVO-M-001F	1	Normal Cable	Maximum Length: 20m
	CSVO-M-002F	2		
	CSVO-M-003F	3		
	CSVO-M-005F	5		
	CSVO-M-001M	1	Robot Cable	
	CSVO-M-002M	2		
	CSVO-M-003M	3		
	CSVO-M-005M	5		

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

④ Drive Power Cable

These are the cables to connect Ezi-SERVO II Plus-E drive and the power.

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

⑤ Ethernet Cable

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

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

[Option] TB-Plus Interface Board

This is an interface board to connect Ezi-SERVO II Plus-E drive and I/O signals more conveniently.

Purpose	Part Number	Product Image
Drive – I/O signal Connection Board	TB-Plus	

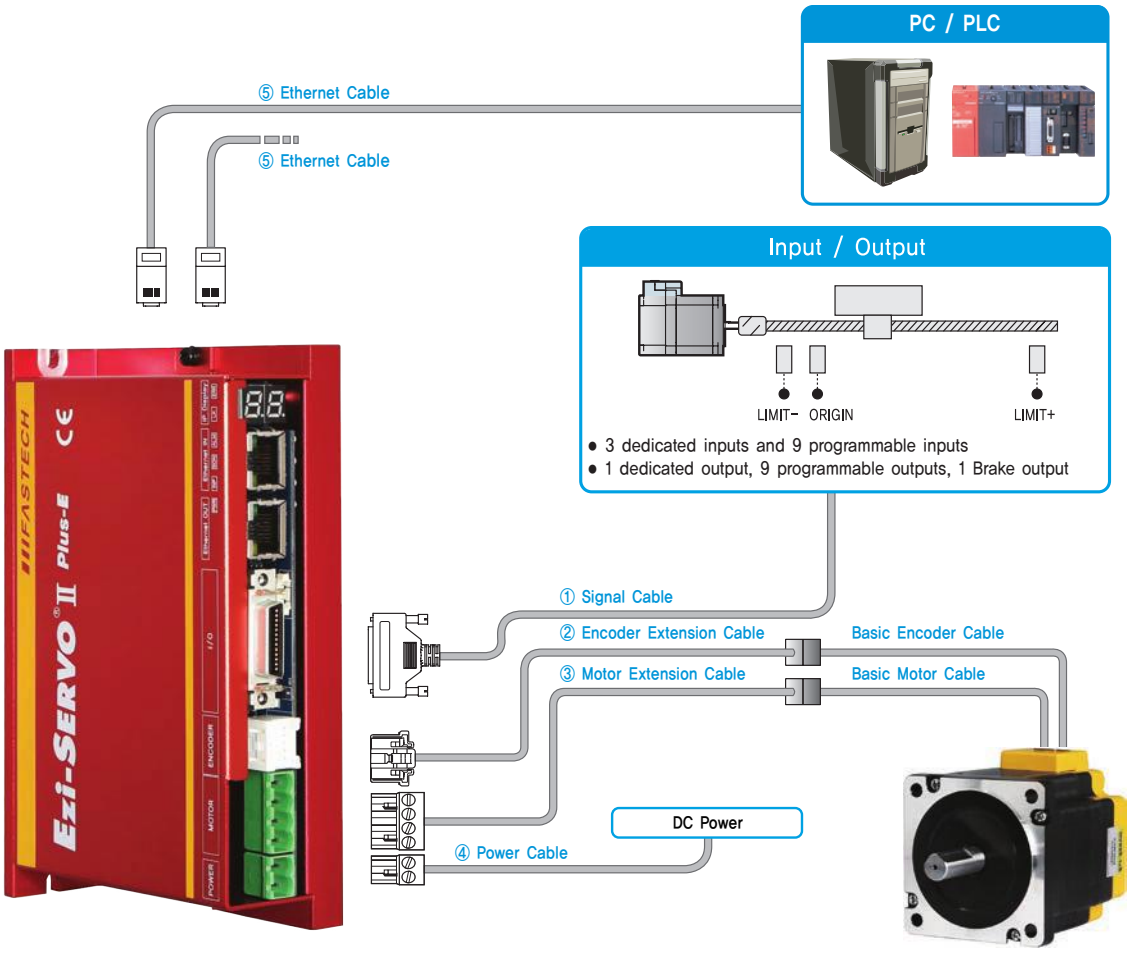
[Option] TB-Plus Interface Cable

These are the cables to connect Ezi-SERVO II Plus-E and TB-Plus interface board.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Interface(TB-Plus) Connection	CIFD-S-001F	1	Normal Cable	Maximum Length: 20m
	CIFD-S-002F	2		
	CIFD-S-003F	3		
	CIFD-S-005F	5		
	CIFD-S-001M	1	Robot Cable	
	CIFD-S-002M	2		
	CIFD-S-003M	3		
	CIFD-S-005M	5		

* If you need cables with length not listed on the table, please contact FASTECH for more information.

System Configuration [86mm Motor Drive]



Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold separately)
② Encoder Extension Cable	20m	
③ Motor Extension Cable	20m	
④ Power Cable	2m	
⑤ Ethernet Cable	100m	
Basic Encoder Cable	0.3m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3m (Basic length)	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Power (CN4)		Terminal Block	AK950-2	PTR
Motor	Drive Side (CN3)	Terminal Block	AK950-4	PTR
	Motor Side	Housing	3191-4R1	MOLEX
		Terminal	1381T	
Encoder	Drive Side (CN2)	Housing	51353-1000	MOLEX
		Terminal	56134-9000	
	Encoder Side	Housing	SMP-09V-NC	JST
		Terminal	SHF-001T-0.8BS	
Signal (CN1)		Connector	10126-3000PE	3M
		Connector Cover	10326-52F0-008	

※ 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 Plus-E drive and other input/output devices.

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

These are the cables to connect Ezi-SERVO II Plus-E drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Encoder Cable Connection	CSVO-E-001F	1	Normal Cable	Maximum Length: 20m
	CSVO-E-002F	2		
	CSVO-E-003F	3		
	CSVO-E-005F	5		
	CSVO-E-001M	1	Robot Cable	
	CSVO-E-002M	2		
	CSVO-E-003M	3		
	CSVO-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-SERVO II Plus-E drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Motor Cable Connection	CSVP-M-001F	1	Normal Cable	Maximum Length: 20m
	CSVP-M-002F	2		
	CSVP-M-003F	3		
	CSVP-M-005F	5		
	CSVP-M-001M	1	Robot Cable	
	CSVP-M-002M	2		
	CSVP-M-003M	3		
	CSVP-M-005M	5		

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

④ Drive Power Cable

These are the cables to connect Ezi-SERVO II Plus-E drive and the power.

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

⑤ Ethernet Cable

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

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

[Option] TB-Plus Interface Board

This is an interface board to connect Ezi-SERVO II Plus-E drive and I/O signals more conveniently.

Purpose	Part Number	Product Image
Drive – I/O signal Connection Board	TB-Plus	

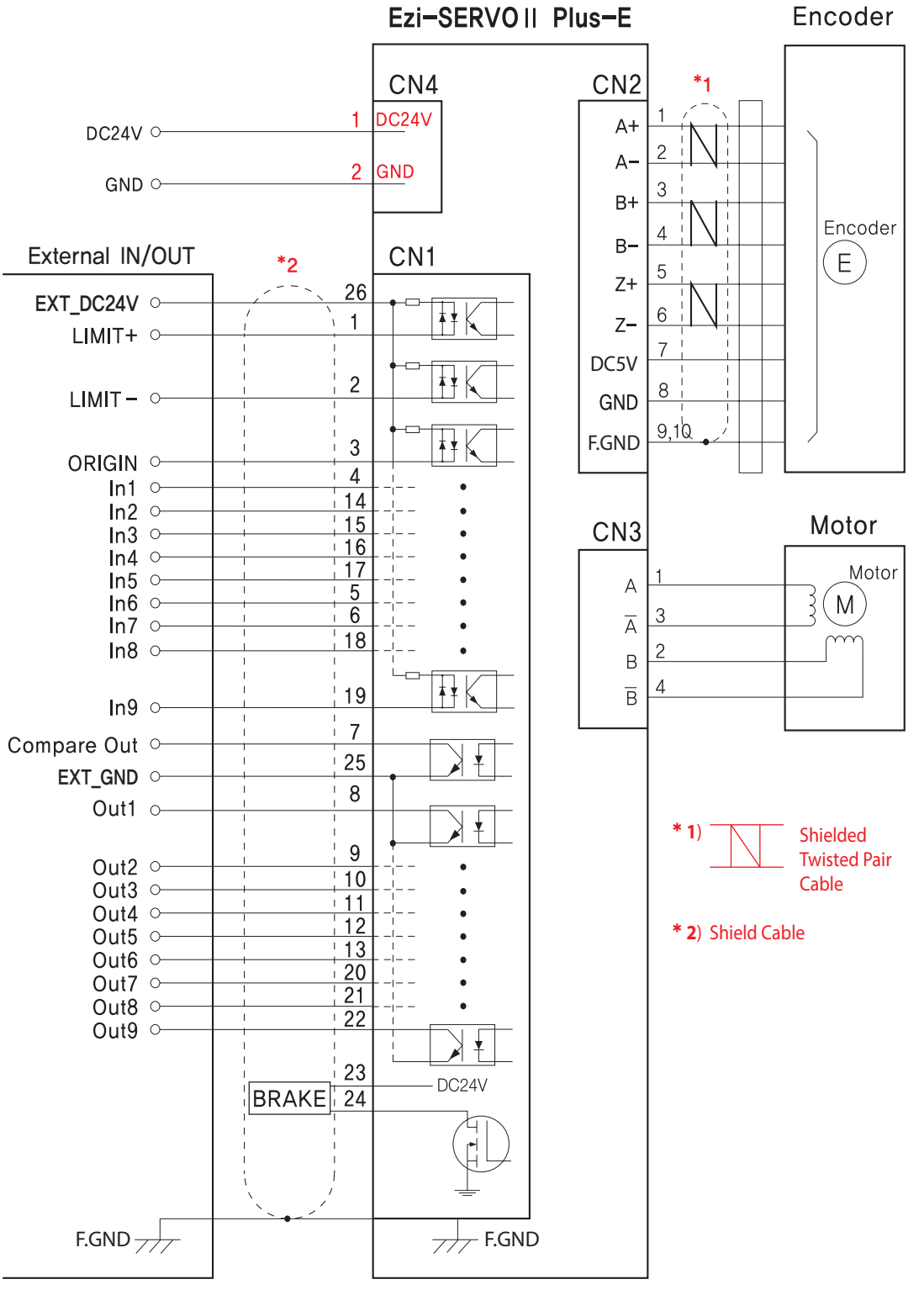
[Option] TB-Plus Interface Cable

These are the cables to connect Ezi-SERVO II Plus-E and TB-Plus interface board.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Interface(TB-Plus) Connection	CIFD-S-001F	1	Normal Cable	Maximum Length: 20m
	CIFD-S-002F	2		
	CIFD-S-003F	3		
	CIFD-S-005F	5		
	CIFD-S-001M	1	Robot Cable	
	CIFD-S-002M	2		
	CIFD-S-003M	3		
	CIFD-S-005M	5		

* If you need cables with length not listed on the table, please contact FASTECH for more information.

External Wiring Diagram

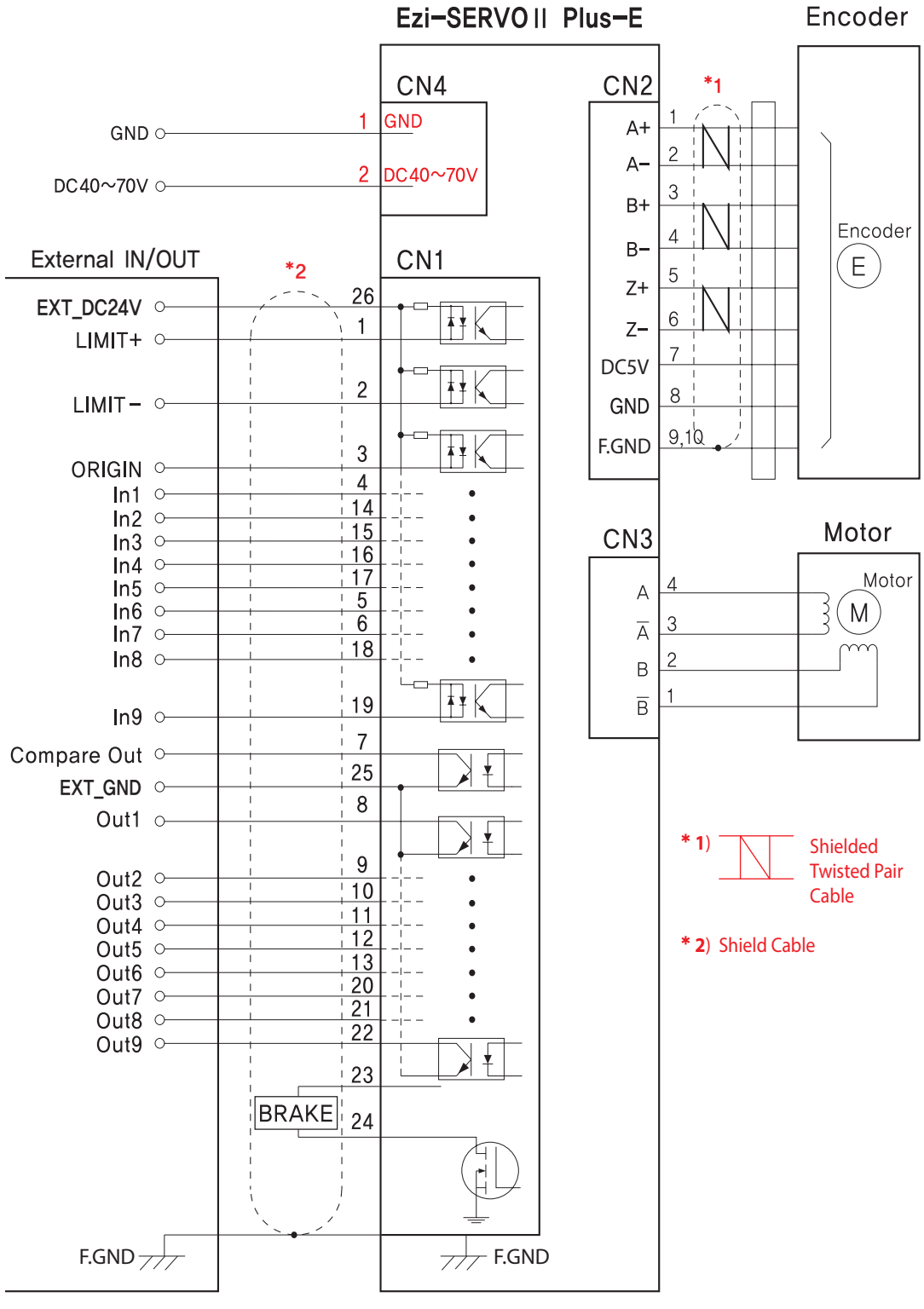


※ When connects I/O cable between controller and drive, please turn off the power of both controller and drive to prevent electric shock or to protect the drive from any damage.

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 [86mm Motor Drive]



※ 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.


Plus-E
Ezi-SERVO® II mini
FASTECH
PWR
MOTOR
ENCODER
IN / OUT
X1B
X1
ST1 ST2 LK1 LK2 ENABLE

Ezi-SERVO® II Plus-E MINI

Closed Loop Stepping System

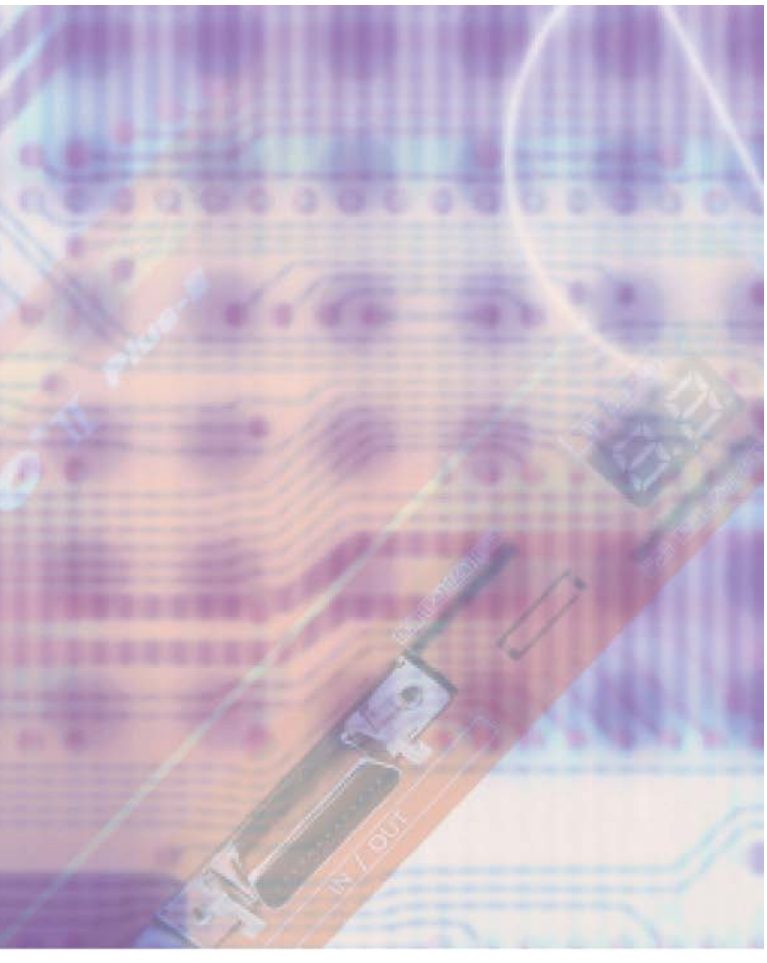
- Embedded Motion Controller
- Ethernet Interface
- Position Table
- Closed-Loop Stepping System
- Tuning Not Required / No Hunting
- High Resolution / High Response
- Space Saving / Reduced Wiring by Compact Drive

FASTECH

Fast, Accurate, Smooth Motion

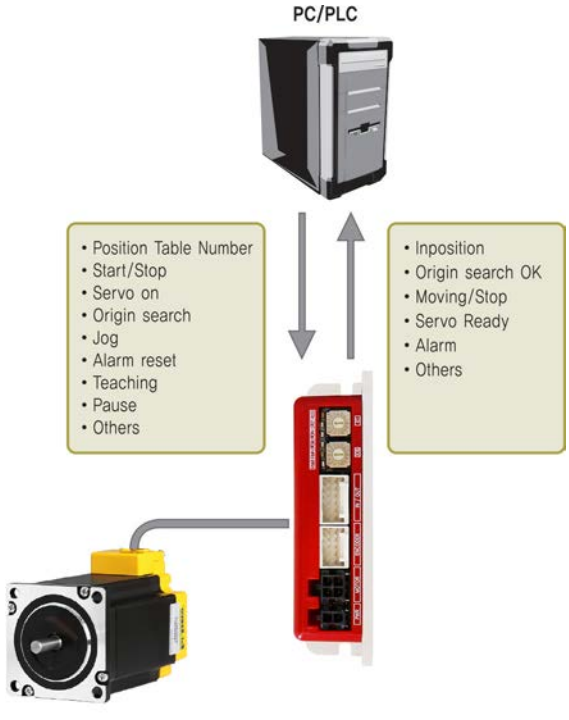
Ezi-SERVO® II Plus-E MINI

Closed Loop Stepping System



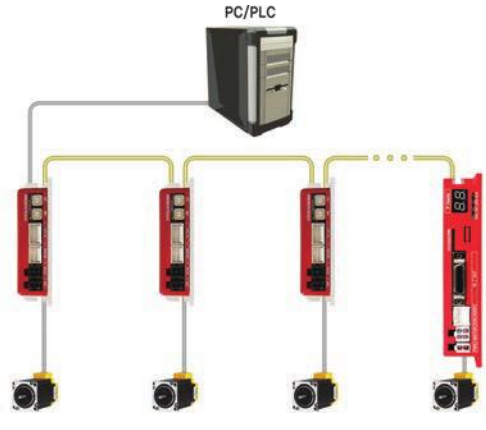
2 Position Table Function

Position Table can be used for motion control by digital input and output signals of host controller.
You can operate the motor directly by sending the position table number, start/stop, origin search and other digital input values from a PC.
The PC can monitor the In-Position, origin search, moving/stop, servo ready and other digital output signals from a drive. A maximum of 256 positioning points can be set from PC.



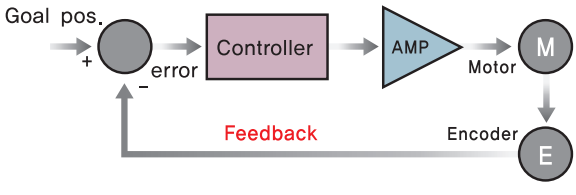
1 Network Based Motion Control

A maximum of 254 axis can be operated from a PC through Ethernet communications. And daisy-chain connection is available thru internally equipped Ethernet HUB. All of the Motion conditions are set through the network and saved in Flash ROM as a parameter. Motion Library(API) is provided for programming under Windows 7/8/10.



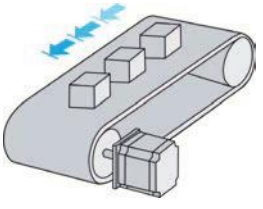
3 Closed-Loop System

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.



4 Tuning Not Required

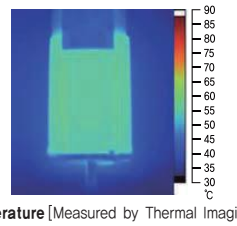
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed.
Ezi-SERVO II employs the best characteristics of the stepping motor to eliminate 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.



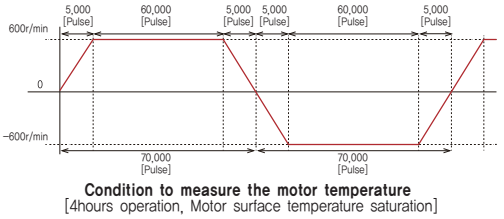
5 Low Heat Generation / Energy Savings

(Motor Current Control according to load)

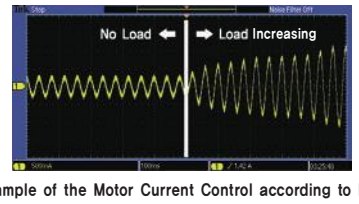
Ezi-SERVO II automatically controls motor current according to load.
Ezi-SERVO II reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

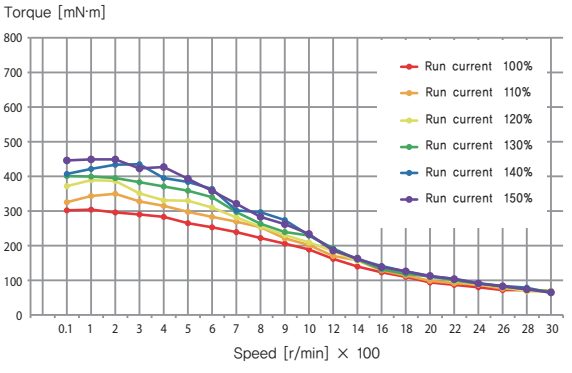


Example of the Motor Current Control according to load

6 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 characteris-tics and torque characteristics at low speed can be increased.
Ezi-SERVO II can improve the torque in the low speed range by about 30%.

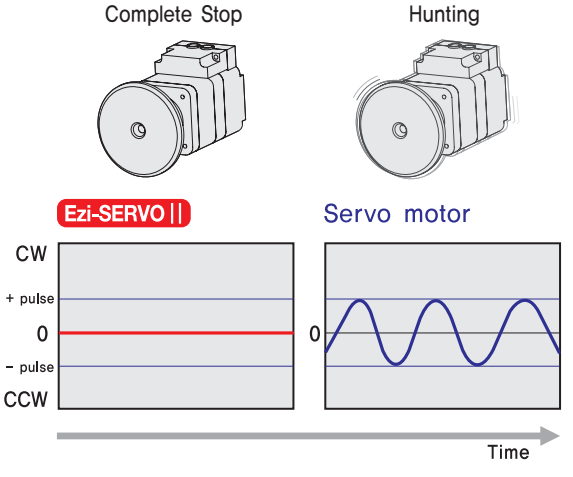


※ The torque at low speed is improved about 30%.

Measured Condition : Drive = Ezi-SERVO II-PE-MI-42L
Motor Voltage = DC24V
Input Voltage = DC24V

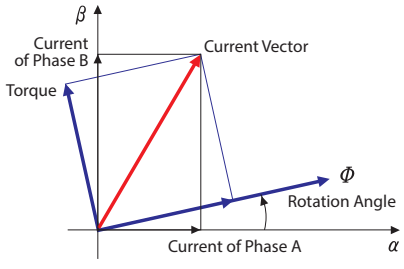
7 No Hunting

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.



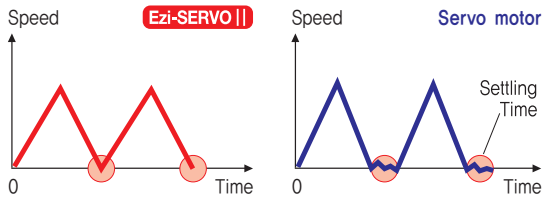
8 Smooth and Accurate Operation

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.



9 High Response

Similar to conventional stepping motors, Ezi-SERVO II instantly synchronizes with command pulses providing fast positional response. Ezi-SERVOII 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.

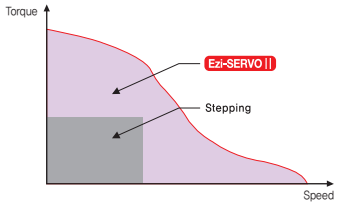


10 High Resolution

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

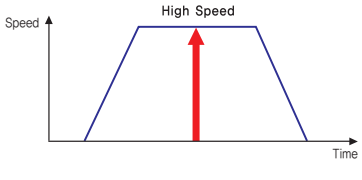
11 High Torque / Continuous Operation

Compared with common step 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.



12 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)

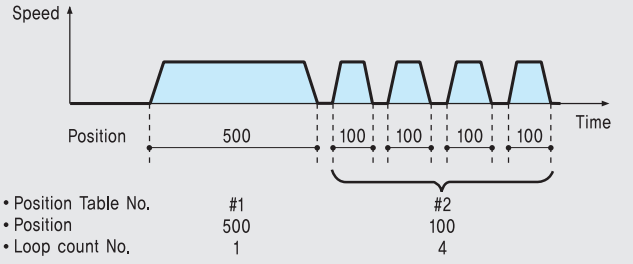
● Advantages over Servo Motor Controller

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.

● Motion Controller Features of Ezi-SERVO II

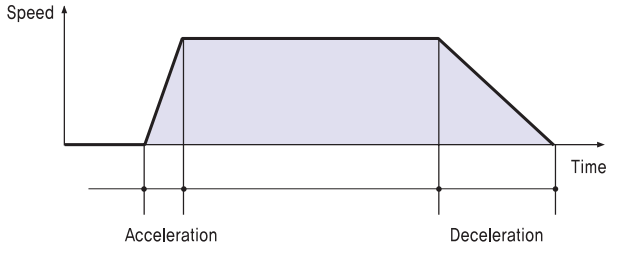
1. Loop Count

This function allows positioning repeatedly according to the Loop Count Number.



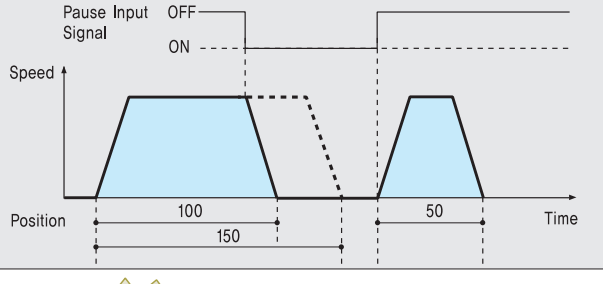
2. Acceleration/Deceleration

For quick acceleration and gradual deceleration, you can set each acceleration and deceleration time separately.



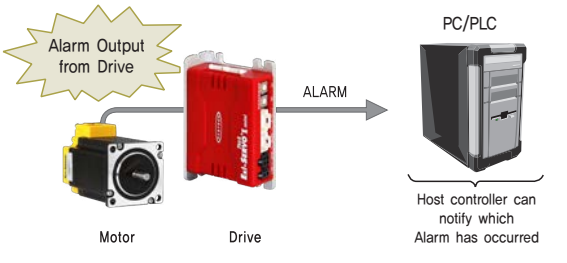
3. Pause

You can pause the motion upon the input of an external signal. When Pause signal change to OFF, the motor will restart to original target position.



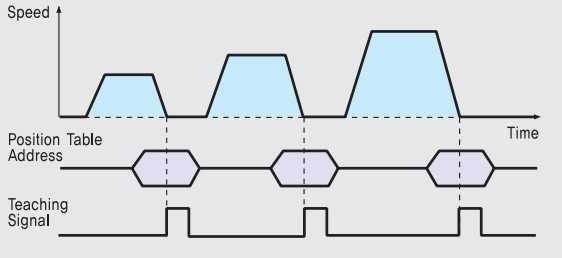
4. Alarm

The number of LED flashing time indicates which Alarm has occurred.



5. Teaching

Teaching signal is used to memorize current Position data into the selected Position Table item.

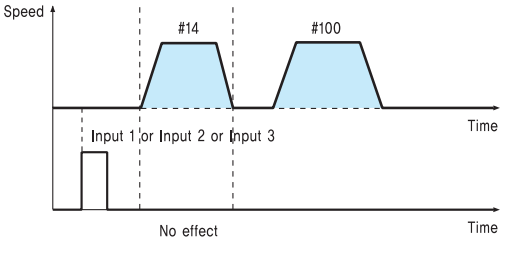


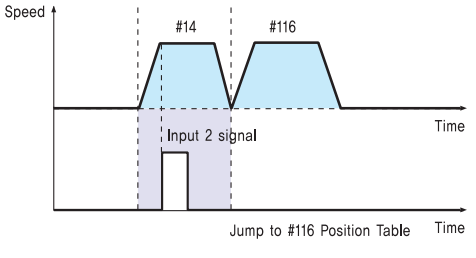
6. Jump

Within one Position Table, you can select various Position Table numbers that you want to jump.
With three external input signal during movement, the next jump Position Table number can be select.

◆ Position Table #14

Position	– – –	Next	– – –	Input 1	Input 2	Input 3	– – –
10000		100		115	116	117	





● Ezi-SERVO II Plus-E MINI Part Numbering

Ezi-SERVO II -PE-MI-42S-A-BK-PN10

Product Name

Drive Series

PE : Plus Ethernet
MI : Mini Type

Motor Flange Size

20 : 20mm
28 : 28mm
35 : 35mm
42 : 42mm
56 : 56mm
60 : 60mm

Motor Length

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

Encoder Resolution

A : 10,000P/R
B : 20,000P/R
D : 16,000P/R
F : 4,000P/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

● Standard Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO II-PE-MI-20M-F	EzM2-20M-F	EzS2-PE-MI-20M-F
Ezi-SERVO II-PE-MI-20L-F	EzM2-20L-F	EzS2-PE-MI-20L-F
Ezi-SERVO II-PE-MI-28S-D	EzM2-28S-D	EzS2-PE-MI-28S-D
Ezi-SERVO II-PE-MI-28SM-D	EzM2-28SM-D	EzS2-PE-MI-28S-D
Ezi-SERVO II-PE-MI-28M-D	EzM2-28M-D	EzS2-PE-MI-28M-D
Ezi-SERVO II-PE-MI-28MM-D	EzM2-28MM-D	EzS2-PE-MI-28M-D
Ezi-SERVO II-PE-MI-28L-D	EzM2-28L-D	EzS2-PE-MI-28L-D
Ezi-SERVO II-PE-MI-28LM-D	EzM2-28LM-D	EzS2-PE-MI-28L-D
Ezi-SERVO II-PE-MI-35M-D	EzM2-35M-D	EzS2-PE-MI-35M-D
Ezi-SERVO II-PE-MI-35MM-D	EzM2-35MM-D	EzS2-PE-MI-35M-D
Ezi-SERVO II-PE-MI-35L-D	EzM2-35L-D	EzS2-PE-MI-35L-D
Ezi-SERVO II-PE-MI-35LM-D	EzM2-35LM-D	EzS2-PE-MI-35L-D
Ezi-SERVO II-PE-MI-42S-A	EzM2-42S-A	EzS2-PE-MI-42S-A
Ezi-SERVO II-PE-MI-42S-B	EzM2-42S-B	EzS2-PE-MI-42S-B
Ezi-SERVO II-PE-MI-42M-A	EzM2-42M-A	EzS2-PE-MI-42M-A
Ezi-SERVO II-PE-MI-42M-B	EzM2-42M-B	EzS2-PE-MI-42M-B
Ezi-SERVO II-PE-MI-42L-A	EzM2-42L-A	EzS2-PE-MI-42L-A
Ezi-SERVO II-PE-MI-42L-B	EzM2-42L-B	EzS2-PE-MI-42L-B
Ezi-SERVO II-PE-MI-42XL-A	EzM2-42XL-A	EzS2-PE-MI-42XL-A
Ezi-SERVO II-PE-MI-42XL-B	EzM2-42XL-B	EzS2-PE-MI-42XL-B
Ezi-SERVO II-PE-MI-56S-A	EzM2-56S-A	EzS2-PE-MI-56S-A
Ezi-SERVO II-PE-MI-56S-B	EzM2-56S-B	EzS2-PE-MI-56S-B
Ezi-SERVO II-PE-MI-56M-A	EzM2-56M-A	EzS2-PE-MI-56M-A
Ezi-SERVO II-PE-MI-56M-B	EzM2-56M-B	EzS2-PE-MI-56M-B
Ezi-SERVO II-PE-MI-56L-A	EzM2-56L-A	EzS2-PE-MI-56L-A
Ezi-SERVO II-PE-MI-56L-B	EzM2-56L-B	EzS2-PE-MI-56L-B
Ezi-SERVO II-PE-MI-60S-A	EzM2-60S-A	EzS2-PE-MI-60S-A
Ezi-SERVO II-PE-MI-60S-B	EzM2-60S-B	EzS2-PE-MI-60S-B
Ezi-SERVO II-PE-MI-60M-A	EzM2-60M-A	EzS2-PE-MI-60M-A
Ezi-SERVO II-PE-MI-60M-B	EzM2-60M-B	EzS2-PE-MI-60M-B
Ezi-SERVO II-PE-MI-60L-A	EzM2-60L-A	EzS2-PE-MI-60L-A
Ezi-SERVO II-PE-MI-60L-B	EzM2-60L-B	EzS2-PE-MI-60L-B

* When places an order for Stopper type 28mm, 35mm motor, please write "M" additionally after motor length of unit product number.
(e.g., Ezi-SERVO II-PE-MI-28LM-D, Ezi-SERVO II-PE-MI-35LM-D)

Combination with Brake

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO II-PE-MI-42S-A-BK	EzM2-42S-A-BK	EzS2-PE-MI-42S-A
Ezi-SERVO II-PE-MI-42S-B-BK	EzM2-42S-B-BK	EzS2-PE-MI-42S-B
Ezi-SERVO II-PE-MI-42M-A-BK	EzM2-42M-A-BK	EzS2-PE-MI-42M-A
Ezi-SERVO II-PE-MI-42M-B-BK	EzM2-42M-B-BK	EzS2-PE-MI-42M-B
Ezi-SERVO II-PE-MI-42L-A-BK	EzM2-42L-A-BK	EzS2-PE-MI-42L-A
Ezi-SERVO II-PE-MI-42L-B-BK	EzM2-42L-B-BK	EzS2-PE-MI-42L-B
Ezi-SERVO II-PE-MI-42XL-A-BK	EzM2-42XL-A-BK	EzS2-PE-MI-42XL-A
Ezi-SERVO II-PE-MI-42XL-B-BK	EzM2-42XL-B-BK	EzS2-PE-MI-42XL-B
Ezi-SERVO II-PE-MI-56S-A-BK	EzM2-56S-A-BK	EzS2-PE-MI-56S-A
Ezi-SERVO II-PE-MI-56S-B-BK	EzM2-56S-B-BK	EzS2-PE-MI-56S-B
Ezi-SERVO II-PE-MI-56M-A-BK	EzM2-56M-A-BK	EzS2-PE-MI-56M-A
Ezi-SERVO II-PE-MI-56M-B-BK	EzM2-56M-B-BK	EzS2-PE-MI-56M-B
Ezi-SERVO II-PE-MI-56L-A-BK	EzM2-56L-A-BK	EzS2-PE-MI-56L-A
Ezi-SERVO II-PE-MI-56L-B-BK	EzM2-56L-B-BK	EzS2-PE-MI-56L-B
Ezi-SERVO II-PE-MI-60S-A-BK	EzM2-60S-A-BK	EzS2-PE-MI-60S-A
Ezi-SERVO II-PE-MI-60S-B-BK	EzM2-60S-B-BK	EzS2-PE-MI-60S-B
Ezi-SERVO II-PE-MI-60M-A-BK	EzM2-60M-A-BK	EzS2-PE-MI-60M-A
Ezi-SERVO II-PE-MI-60M-B-BK	EzM2-60M-B-BK	EzS2-PE-MI-60M-B
Ezi-SERVO II-PE-MI-60L-A-BK	EzM2-60L-A-BK	EzS2-PE-MI-60L-A
Ezi-SERVO II-PE-MI-60L-B-BK	EzM2-60L-B-BK	EzS2-PE-MI-60L-B

Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVO II-PE-MI-42S-A-PN3	EzM2-42S-A-PN3	EzS2-PE-MI-42S-A	1:3
Ezi-SERVO II-PE-MI-42S-B-PN3	EzM2-42S-B-PN3	EzS2-PE-MI-42S-B	
Ezi-SERVO II-PE-MI-42S-A-PN5	EzM2-42S-A-PN5	EzS2-PE-MI-42S-A	1:5
Ezi-SERVO II-PE-MI-42S-B-PN5	EzM2-42S-B-PN5	EzS2-PE-MI-42S-B	
Ezi-SERVO II-PE-MI-42S-A-PN8	EzM2-42S-A-PN8	EzS2-PE-MI-42S-A	1:8
Ezi-SERVO II-PE-MI-42S-B-PN8	EzM2-42S-B-PN8	EzS2-PE-MI-42S-B	
Ezi-SERVO II-PE-MI-42S-A-PN10	EzM2-42S-A-PN10	EzS2-PE-MI-42S-A	1:10
Ezi-SERVO II-PE-MI-42S-B-PN10	EzM2-42S-B-PN10	EzS2-PE-MI-42S-B	
Ezi-SERVO II-PE-MI-42S-A-PN15	EzM2-42S-A-PN15	EzS2-PE-MI-42S-A	1:15
Ezi-SERVO II-PE-MI-42S-B-PN15	EzM2-42S-B-PN15	EzS2-PE-MI-42S-B	
Ezi-SERVO II-PE-MI-42S-A-PN25	EzM2-42S-A-PN25	EzS2-PE-MI-42S-A	1:25
Ezi-SERVO II-PE-MI-42S-B-PN25	EzM2-42S-B-PN25	EzS2-PE-MI-42S-B	
Ezi-SERVO II-PE-MI-42S-A-PN40	EzM2-42S-A-PN40	EzS2-PE-MI-42S-A	1:40
Ezi-SERVO II-PE-MI-42S-B-PN40	EzM2-42S-B-PN40	EzS2-PE-MI-42S-B	
Ezi-SERVO II-PE-MI-42S-A-PN50	EzM2-42S-A-PN50	EzS2-PE-MI-42S-A	1:50
Ezi-SERVO II-PE-MI-42S-B-PN50	EzM2-42S-B-PN50	EzS2-PE-MI-42S-B	
Ezi-SERVO II-PE-MI-42M-A-PN3	EzM2-42M-A-PN3	EzS2-PE-MI-42M-A	1:3
Ezi-SERVO II-PE-MI-42M-B-PN3	EzM2-42M-B-PN3	EzS2-PE-MI-42M-B	
Ezi-SERVO II-PE-MI-42M-A-PN5	EzM2-42M-A-PN5	EzS2-PE-MI-42M-A	1:5
Ezi-SERVO II-PE-MI-42M-B-PN5	EzM2-42M-B-PN5	EzS2-PE-MI-42M-B	
Ezi-SERVO II-PE-MI-42M-A-PN8	EzM2-42M-A-PN8	EzS2-PE-MI-42M-A	1:8
Ezi-SERVO II-PE-MI-42M-B-PN8	EzM2-42M-B-PN8	EzS2-PE-MI-42M-B	
Ezi-SERVO II-PE-MI-42M-A-PN10	EzM2-42M-A-PN10	EzS2-PE-MI-42M-A	1:10
Ezi-SERVO II-PE-MI-42M-B-PN10	EzM2-42M-B-PN10	EzS2-PE-MI-42M-B	
Ezi-SERVO II-PE-MI-42M-A-PN15	EzM2-42M-A-PN15	EzS2-PE-MI-42M-A	1:15
Ezi-SERVO II-PE-MI-42M-B-PN15	EzM2-42M-B-PN15	EzS2-PE-MI-42M-B	
Ezi-SERVO II-PE-MI-42M-A-PN25	EzM2-42M-A-PN25	EzS2-PE-MI-42M-A	1:25
Ezi-SERVO II-PE-MI-42M-B-PN25	EzM2-42M-B-PN25	EzS2-PE-MI-42M-B	
Ezi-SERVO II-PE-MI-42M-A-PN40	EzM2-42M-A-PN40	EzS2-PE-MI-42M-A	1:40
Ezi-SERVO II-PE-MI-42M-B-PN40	EzM2-42M-B-PN40	EzS2-PE-MI-42M-B	
Ezi-SERVO II-PE-MI-42M-A-PN50	EzM2-42M-A-PN50	EzS2-PE-MI-42M-A	1:50
Ezi-SERVO II-PE-MI-42M-B-PN50	EzM2-42M-B-PN50	EzS2-PE-MI-42M-B	

Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVO II-PE-MI-42L-A-PN3	EzM2-42L-A-PN3	EzS2-PE-MI-42L-A	1:3
Ezi-SERVO II-PE-MI-42L-B-PN3	EzM2-42L-B-PN3	EzS2-PE-MI-42L-B	
Ezi-SERVO II-PE-MI-42L-A-PN5	EzM2-42L-A-PN5	EzS2-PE-MI-42L-A	1:5
Ezi-SERVO II-PE-MI-42L-B-PN5	EzM2-42L-B-PN5	EzS2-PE-MI-42L-B	
Ezi-SERVO II-PE-MI-42L-A-PN8	EzM2-42L-A-PN8	EzS2-PE-MI-42L-A	1:8
Ezi-SERVO II-PE-MI-42L-B-PN8	EzM2-42L-B-PN8	EzS2-PE-MI-42L-B	
Ezi-SERVO II-PE-MI-42L-A-PN10	EzM2-42L-A-PN10	EzS2-PE-MI-42L-A	1:10
Ezi-SERVO II-PE-MI-42L-B-PN10	EzM2-42L-B-PN10	EzS2-PE-MI-42L-B	
Ezi-SERVO II-PE-MI-42L-A-PN15	EzM2-42L-A-PN15	EzS2-PE-MI-42L-A	1:15
Ezi-SERVO II-PE-MI-42L-B-PN15	EzM2-42L-B-PN15	EzS2-PE-MI-42L-B	
Ezi-SERVO II-PE-MI-42L-A-PN25	EzM2-42L-A-PN25	EzS2-PE-MI-42L-A	1:25
Ezi-SERVO II-PE-MI-42L-B-PN25	EzM2-42L-B-PN25	EzS2-PE-MI-42L-B	
Ezi-SERVO II-PE-MI-42L-A-PN40	EzM2-42L-A-PN40	EzS2-PE-MI-42L-A	1:40
Ezi-SERVO II-PE-MI-42L-B-PN40	EzM2-42L-B-PN40	EzS2-PE-MI-42L-B	
Ezi-SERVO II-PE-MI-42L-A-PN50	EzM2-42L-A-PN50	EzS2-PE-MI-42L-A	1:50
Ezi-SERVO II-PE-MI-42L-B-PN50	EzM2-42L-B-PN50	EzS2-PE-MI-42L-B	
Ezi-SERVO II-PE-MI-42XL-A-PN3	EzM2-42XL-A-PN3	EzS2-PE-MI-42XL-A	1:3
Ezi-SERVO II-PE-MI-42XL-B-PN3	EzM2-42XL-B-PN3	EzS2-PE-MI-42XL-B	
Ezi-SERVO II-PE-MI-42XL-A-PN5	EzM2-42XL-A-PN5	EzS2-PE-MI-42XL-A	1:5
Ezi-SERVO II-PE-MI-42XL-B-PN5	EzM2-42XL-B-PN5	EzS2-PE-MI-42XL-B	
Ezi-SERVO II-PE-MI-42XL-A-PN8	EzM2-42XL-A-PN8	EzS2-PE-MI-42XL-A	1:8
Ezi-SERVO II-PE-MI-42XL-B-PN8	EzM2-42XL-B-PN8	EzS2-PE-MI-42XL-B	
Ezi-SERVO II-PE-MI-42XL-A-PN10	EzM2-42XL-A-PN10	EzS2-PE-MI-42XL-A	1:10
Ezi-SERVO II-PE-MI-42XL-B-PN10	EzM2-42XL-B-PN10	EzS2-PE-MI-42XL-B	
Ezi-SERVO II-PE-MI-42XL-A-PN15	EzM2-42XL-A-PN15	EzS2-PE-MI-42XL-A	1:15
Ezi-SERVO II-PE-MI-42XL-B-PN15	EzM2-42XL-B-PN15	EzS2-PE-MI-42XL- B	
Ezi-SERVO II-PE-MI-42XL-A-PN25	EzM2-42XL-A-PN25	EzS2-PE-MI-42XL-A	1:25
Ezi-SERVO II-PE-MI-42XL-B-PN25	EzM2-42XL-B-PN25	EzS2-PE-MI-42XL-B	
Ezi-SERVO II-PE-MI-42XL-A-PN40	EzM2-42XL-A-PN40	EzS2-PE-MI-42XL-A	1:40
Ezi-SERVO II-PE-MI-42XL-B-PN40	EzM2-42XL-B-PN40	EzS2-PE-MI-42XL-B	
Ezi-SERVO II-PE-MI-42XL-A-PN50	EzM2-42XL-A-PN50	EzS2-PE-MI-42XL-A	1:50
Ezi-SERVO II-PE-MI-42XL-B-PN50	EzM2-42XL-B-PN50	EzS2-PE-MI-42XL-B	
Ezi-SERVO II-PE-MI-56S-A-PN3	EzM2-56S-A-PN3	EzS2-PE-MI-56S-A	1:3
Ezi-SERVO II-PE-MI-56S-B-PN3	EzM2-56S-B-PN3	EzS2-PE-MI-56S-B	
Ezi-SERVO II-PE-MI-56S-A-PN5	EzM2-56S-A-PN5	EzS2-PE-MI-56S-A	1:5
Ezi-SERVO II-PE-MI-56S-B-PN5	EzM2-56S-B-PN5	EzS2-PE-MI-56S-B	
Ezi-SERVO II-PE-MI-56S-A-PN8	EzM2-56S-A-PN8	EzS2-PE-MI-56S-A	1:8
Ezi-SERVO II-PE-MI-56S-B-PN8	EzM2-56S-B-PN8	EzS2-PE-MI-56S-B	
Ezi-SERVO II-PE-MI-56S-A-PN10	EzM2-56S-A-PN10	EzS2-PE-MI-56S-A	1:10
Ezi-SERVO II-PE-MI-56S-B-PN10	EzM2-56S-B-PN10	EzS2-PE-MI-56S-B	
Ezi-SERVO II-PE-MI-56S-A-PN15	EzM2-56S-A-PN15	EzS2-PE-MI-56S-A	1:15
Ezi-SERVO II-PE-MI-56S-B-PN15	EzM2-56S-B-PN15	EzS2-PE-MI-56S-B	
Ezi-SERVO II-PE-MI-56S-A-PN25	EzM2-56S-A-PN25	EzS2-PE-MI-56S-A	1:25
Ezi-SERVO II-PE-MI-56S-B-PN25	EzM2-56S-B-PN25	EzS2-PE-MI-56S-B	
Ezi-SERVO II-PE-MI-56S-A-PN40	EzM2-56S-A-PN40	EzS2-PE-MI-56S-A	1:40
Ezi-SERVO II-PE-MI-56S-B-PN40	EzM2-56S-B-PN40	EzS2-PE-MI-56S-B	
Ezi-SERVO II-PE-MI-56S-A-PN50	EzM2-56S-A-PN50	EzS2-PE-MI-56S-A	1:50
Ezi-SERVO II-PE-MI-56S-B-PN50	EzM2-56S-B-PN50	EzS2-PE-MI-56S-B	
Ezi-SERVO II-PE-MI-56M-A-PN3	EzM2-56M-A-PN3	EzS2-PE-MI-56M-A	1:3
Ezi-SERVO II-PE-MI-56M-B-PN3	EzM2-56M-B-PN3	EzS2-PE-MI-56M-B	
Ezi-SERVO II-PE-MI-56M-A-PN5	EzM2-56M-A-PN5	EzS2-PE-MI-56M-A	1:5
Ezi-SERVO II-PE-MI-56M-B-PN5	EzM2-56M-B-PN5	EzS2-PE-MI-56M-B	
Ezi-SERVO II-PE-MI-56M-A-PN8	EzM2-56M-A-PN8	EzS2-PE-MI-56M-A	1:8
Ezi-SERVO II-PE-MI-56M-B-PN8	EzM2-56M-B-PN8	EzS2-PE-MI-56M-B	
Ezi-SERVO II-PE-MI-56M-A-PN10	EzM2-56M-A-PN10	EzS2-PE-MI-56M-A	1:10
Ezi-SERVO II-PE-MI-56M-B-PN10	EzM2-56M-B-PN10	EzS2-PE-MI-56M-B	
Ezi-SERVO II-PE-MI-56M-A-PN15	EzM2-56M-A-PN15	EzS2-PE-MI-56M-A	1:15
Ezi-SERVO II-PE-MI-56M-B-PN15	EzM2-56M-B-PN15	EzS2-PE-MI-56M-B	
Ezi-SERVO II-PE-MI-56M-A-PN25	EzM2-56M-A-PN25	EzS2-PE-MI-56M-A	1:25
Ezi-SERVO II-PE-MI-56M-B-PN25	EzM2-56M-B-PN25	EzS2-PE-MI-56M-B	
Ezi-SERVO II-PE-MI-56M-A-PN40	EzM2-56M-A-PN40	EzS2-PE-MI-56M-A	1:40
Ezi-SERVO II-PE-MI-56M-B-PN40	EzM2-56M-B-PN40	EzS2-PE-MI-56M-B	
Ezi-SERVO II-PE-MI-56M-A-PN50	EzM2-56M-A-PN50	EzS2-PE-MI-56M-A	1:50
Ezi-SERVO II-PE-MI-56M-B-PN50	EzM2-56M-B-PN50	EzS2-PE-MI-56M-B	

● Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVO II-PE-MI-56L-A-PN3	EzM2-56L-A-PN3	EzS2-PE-MI-56L-A	1:3
Ezi-SERVO II-PE-MI-56L-B-PN3	EzM2-56L-B-PN3	EzS2-PE-MI-56L-B	
Ezi-SERVO II-PE-MI-56L-A-PN5	EzM2-56L-A-PN5	EzS2-PE-MI-56L-A	1:5
Ezi-SERVO II-PE-MI-56L-B-PN5	EzM2-56L-B-PN5	EzS2-PE-MI-56L-B	
Ezi-SERVO II-PE-MI-56L-A-PN8	EzM2-56L-A-PN8	EzS2-PE-MI-56L-A	1:8
Ezi-SERVO II-PE-MI-56L-B-PN8	EzM2-56L-B-PN8	EzS2-PE-MI-56L-B	
Ezi-SERVO II-PE-MI-56L-A-PN10	EzM2-56L-A-PN10	EzS2-PE-MI-56L-A	1:10
Ezi-SERVO II-PE-MI-56L-B-PN10	EzM2-56L-B-PN10	EzS2-PE-MI-56L-B	
Ezi-SERVO II-PE-MI-56L-A-PN15	EzM2-56L-A-PN15	EzS2-PE-MI-56L-A	1:15
Ezi-SERVO II-PE-MI-56L-B-PN15	EzM2-56L-B-PN15	EzS2-PE-MI-56L-B	
Ezi-SERVO II-PE-MI-56L-A-PN25	EzM2-56L-A-PN25	EzS2-PE-MI-56L-A	1:25
Ezi-SERVO II-PE-MI-56L-B-PN25	EzM2-56L-B-PN25	EzS2-PE-MI-56L-B	
Ezi-SERVO II-PE-MI-56L-A-PN40	EzM2-56L-A-PN40	EzS2-PE-MI-56L-A	1:40
Ezi-SERVO II-PE-MI-56L-B-PN40	EzM2-56L-B-PN40	EzS2-PE-MI-56L-B	
Ezi-SERVO II-PE-MI-56L-A-PN50	EzM2-56L-A-PN50	EzS2-PE-MI-56L-A	1:50
Ezi-SERVO II-PE-MI-56L-B-PN50	EzM2-56L-B-PN50	EzS2-PE-MI-56L-B	
Ezi-SERVO II-PE-MI-60S-A-PN3	EzM2-60S-A-PN3	EzS2-PE-MI-60S-A	1:3
Ezi-SERVO II-PE-MI-60S-B-PN3	EzM2-60S-B-PN3	EzS2-PE-MI-60S-B	
Ezi-SERVO II-PE-MI-60S-A-PN5	EzM2-60S-A-PN5	EzS2-PE-MI-60S-A	1:5
Ezi-SERVO II-PE-MI-60S-B-PN5	EzM2-60S-B-PN5	EzS2-PE-MI-60S-B	
Ezi-SERVO II-PE-MI-60S-A-PN8	EzM2-60S-A-PN8	EzS2-PE-MI-60S-A	1:8
Ezi-SERVO II-PE-MI-60S-B-PN8	EzM2-60S-B-PN8	EzS2-PE-MI-60S-B	
Ezi-SERVO II-PE-MI-60S-A-PN10	EzM2-60S-A-PN10	EzS2-PE-MI-60S-A	1:10
Ezi-SERVO II-PE-MI-60S-B-PN10	EzM2-60S-B-PN10	EzS2-PE-MI-60S-B	
Ezi-SERVO II-PE-MI-60S-A-PN15	EzM2-60S-A-PN15	EzS2-PE-MI-60S-A	1:15
Ezi-SERVO II-PE-MI-60S-B-PN15	EzM2-60S-B-PN15	EzS2-PE-MI-60S-B	
Ezi-SERVO II-PE-MI-60S-A-PN25	EzM2-60S-A-PN25	EzS2-PE-MI-60S-A	1:25
Ezi-SERVO II-PE-MI-60S-B-PN25	EzM2-60S-B-PN25	EzS2-PE-MI-60S-B	
Ezi-SERVO II-PE-MI-60S-A-PN40	EzM2-60S-A-PN40	EzS2-PE-MI-60S-A	1:40
Ezi-SERVO II-PE-MI-60S-B-PN40	EzM2-60S-B-PN40	EzS2-PE-MI-60S-B	
Ezi-SERVO II-PE-MI-60S-A-PN50	EzM2-60S-A-PN50	EzS2-PE-MI-60S-A	1:50
Ezi-SERVO II-PE-MI-60S-B-PN50	EzM2-60S-B-PN50	EzS2-PE-MI-60S-B	
Ezi-SERVO II-PE-MI-60M-A-PN3	EzM2-60M-A-PN3	EzS2-PE-MI-60M-A	1:3
Ezi-SERVO II-PE-MI-60M-B-PN3	EzM2-60M-B-PN3	EzS2-PE-MI-60M-B	
Ezi-SERVO II-PE-MI-60M-A-PN5	EzM2-60M-A-PN5	EzS2-PE-MI-60M-A	1:5
Ezi-SERVO II-PE-MI-60M-B-PN5	EzM2-60M-B-PN5	EzS2-PE-MI-60M-B	
Ezi-SERVO II-PE-MI-60M-A-PN8	EzM2-60M-A-PN8	EzS2-PE-MI-60M-A	1:8
Ezi-SERVO II-PE-MI-60M-B-PN8	EzM2-60M-B-PN8	EzS2-PE-MI-60M-B	
Ezi-SERVO II-PE-MI-60M-A-PN10	EzM2-60M-A-PN10	EzS2-PE-MI-60M-A	1:10
Ezi-SERVO II-PE-MI-60M-B-PN10	EzM2-60M-B-PN10	EzS2-PE-MI-60M-B	
Ezi-SERVO II-PE-MI-60M-A-PN15	EzM2-60M-A-PN15	EzS2-PE-MI-60M-A	1:15
Ezi-SERVO II-PE-MI-60M-B-PN15	EzM2-60M-B-PN15	EzS2-PE-MI-60M-B	
Ezi-SERVO II-PE-MI-60M-A-PN25	EzM2-60M-A-PN25	EzS2-PE-MI-60M-A	1:25
Ezi-SERVO II-PE-MI-60M-B-PN25	EzM2-60M-B-PN25	EzS2-PE-MI-60M-B	
Ezi-SERVO II-PE-MI-60M-A-PN40	EzM2-60M-A-PN40	EzS2-PE-MI-60M-A	1:40
Ezi-SERVO II-PE-MI-60M-B-PN40	EzM2-60M-B-PN40	EzS2-PE-MI-60M-B	
Ezi-SERVO II-PE-MI-60M-A-PN50	EzM2-60M-A-PN50	EzS2-PE-MI-60M-A	1:50
Ezi-SERVO II-PE-MI-60M-B-PN50	EzM2-60M-B-PN50	EzS2-PE-MI-60M-B	
Ezi-SERVO II-PE-MI-60L-A-PN3	EzM2-60L-A-PN3	EzS2-PE-MI-60L-A	1:3
Ezi-SERVO II-PE-MI-60L-B-PN3	EzM2-60L-B-PN3	EzS2-PE-MI-60L-B	
Ezi-SERVO II-PE-MI-60L-A-PN5	EzM2-60L-A-PN5	EzS2-PE-MI-60L-A	1:5
Ezi-SERVO II-PE-MI-60L-B-PN5	EzM2-60L-B-PN5	EzS2-PE-MI-60L-B	
Ezi-SERVO II-PE-MI-60L-A-PN8	EzM2-60L-A-PN8	EzS2-PE-MI-60L-A	1:8
Ezi-SERVO II-PE-MI-60L-B-PN8	EzM2-60L-B-PN8	EzS2-PE-MI-60L-B	
Ezi-SERVO II-PE-MI-60L-A-PN10	EzM2-60L-A-PN10	EzS2-PE-MI-60L-A	1:10
Ezi-SERVO II-PE-MI-60L-B-PN10	EzM2-60L-B-PN10	EzS2-PE-MI-60L-B	
Ezi-SERVO II-PE-MI-60L-A-PN15	EzM2-60L-A-PN15	EzS2-PE-MI-60L-A	1:15
Ezi-SERVO II-PE-MI-60L-B-PN15	EzM2-60L-B-PN15	EzS2-PE-MI-60L-B	
Ezi-SERVO II-PE-MI-60L-A-PN25	EzM2-60L-A-PN25	EzS2-PE-MI-60L-A	1:25
Ezi-SERVO II-PE-MI-60L-B-PN25	EzM2-60L-B-PN25	EzS2-PE-MI-60L-B	
Ezi-SERVO II-PE-MI-60L-A-PN40	EzM2-60L-A-PN40	EzS2-PE-MI-60L-A	1:40
Ezi-SERVO II-PE-MI-60L-B-PN40	EzM2-60L-B-PN40	EzS2-PE-MI-60L-B	
Ezi-SERVO II-PE-MI-60L-A-PN50	EzM2-60L-A-PN50	EzS2-PE-MI-60L-A	1:50
Ezi-SERVO II-PE-MI-60L-B-PN50	EzM2-60L-B-PN50	EzS2-PE-MI-60L-B	

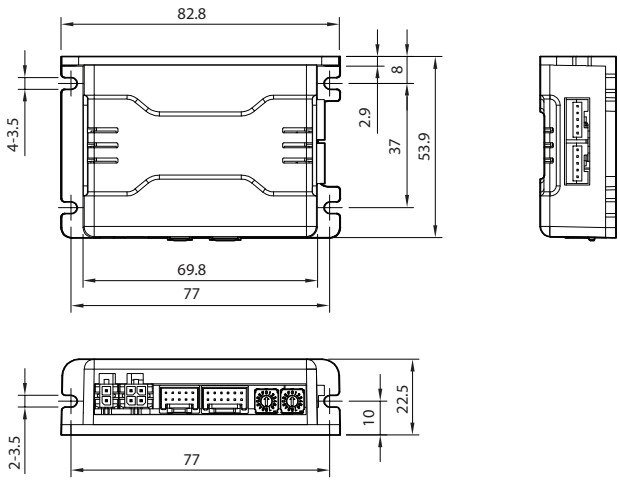
Specifications of Drive

Motor Model		EzM2-20 series	EzM2-28 series	EzM2-35 series	EzM2-42 series	EzM2-56 series	EzM2-60 series
Driver Model		EzS2-PE-MI-20 series	EzS2-PE-MI-28 series	EzS2-PE-MI-35 series	EzS2-PE-MI-42 series	EzS2-PE-MI-56 series	EzS2-PE-MI-60 series
Input Voltage		DC24V±10%					
Control Method		Closed-loop control with 32 bit MCU					
Multi Axis Drive		Maximum 254 axis operating (Selectable IP: 1~254)					
Position Table		256 motion command steps					
Current Consumption		Max 500mA (Except motor current)					
Operating Condition	Ambient Temperature	· In Use: 0~50℃ *2 · 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					
	Resolution	Encoder Resolution [P/R] / Configurable Resolution [P/R] 4,000 / 500 1,000 1,600 2,000 3,600 4,000 5,000 6,400 7,200 10,000 10,000 / 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 16,000 / 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 16,000 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					
	In-Position Selection	0~63 (Set by parameter)					
	Position Gain Selection	0~63 (Set by parameter)					
	Rotational Direction	CW/CCW (Set by parameter)					
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 3 programmable inputs (Photocoupler Input)					
	Output Signals	1 dedicated output (Compare Out), 1 programmable outputs (Photocoupler Output), 1 Brake output					
Communication Interface		· Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex · Dual port Ethernet switch embedded					
Position Control		· Incremental mode / Absolute mode Data Range: -134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min					
Return to Origin		Origin Sensor, Z phase, ±Limit sensor, Torque					
GUI		User Interface Program within Windows					
Library		Motion Library (API) for windows 7/8/10					

*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 : EzS2-PE-MI-56, 60 series should be installed on a heat sink or a structure capable of heat dissipation.

● Dimensions of Drive [mm]



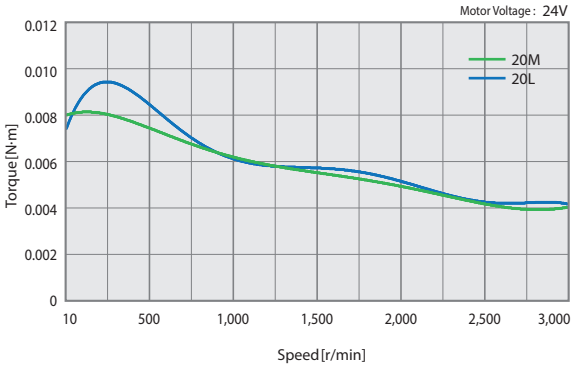
● Specifications of Motor

MODEL			UNIT	EzM2-20 series		EzM2-28 series			EzM2-35 series		EzM2-42 series			
				20M	20L	28S	28M	28L	35M	35L	42S	42M	42L	42XL
DRIVE METHOD			–	Bipolar										
NUMBER OF PHASES			–	2 Phase										
CURRENT per PHASE			A/Phase	0.5	0.5	0.95	0.95	0.95	1.5	1.5	1.2	1.2	1.2	1.2
MAXIMUM HOLDING TORQUE			N·m	0.016	0.025	0.069	0.098	0.118	0.13	0.23	0.32	0.44	0.5	0.65
ROTOR INERTIA			$g \cdot cm^2$	2.5	3.3	9.0	13	18	15	20	35	54	77	114
WEIGHTS			kg	0.080	0.104	0.147	0.204	0.232	0.194	0.226	0.294	0.357	0.426	0.564
LENGTH(L)			mm	28	38	32	45	50	32	36	34	40	48	60
PERMISSIBLE RADIAL LOAD	DISTANCE FROM END OF SHAFT	3mm	N	18	18	30	30	30	22	22	22	22	22	22
		8mm		30	30	38	38	38	26	26	26	26	26	26
		13mm		–	–	53	53	53	33	33	33	33	33	33
		18mm		–	–	–	–	–	46	46	46	46	46	46
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										

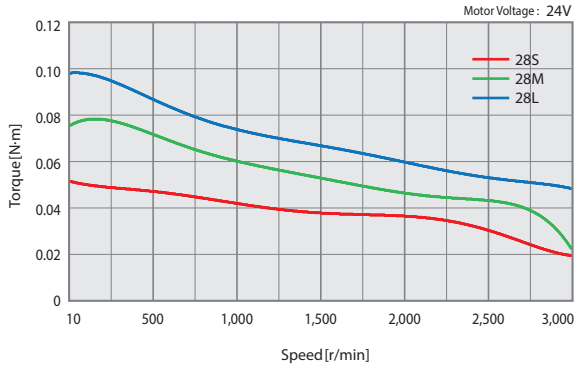
MODEL			UNIT	EzM2-56 series			EzM2-60 series		
				56S	56M	56L	60S	60M	60L
DRIVE METHOD			–	Bipolar					
NUMBER OF PHASES			–	2 Phase					
CURRENT per PHASE			A/Phase	3.0	3.0	3.0	4.0	4.0	4.0
MAXIMUM HOLDING TORQUE			N·m	0.64	1.0	1.5	0.88	1.28	2.4
ROTOR INERTIA			$g \cdot cm^2$	180	280	520	240	490	690
WEIGHTS			kg	0.608	0.784	1.230	0.693	0.856	1.419
LENGTH(L)			mm	46	55	80	47	56	85
PERMISSIBLE RADIAL LOAD	DISTANCE FROM END OF SHAFT	3mm	N	52	52	52	70	70	70
		8mm		65	65	65	87	87	87
		13mm		85	85	85	114	114	114
		18mm		123	123	123	165	165	165
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

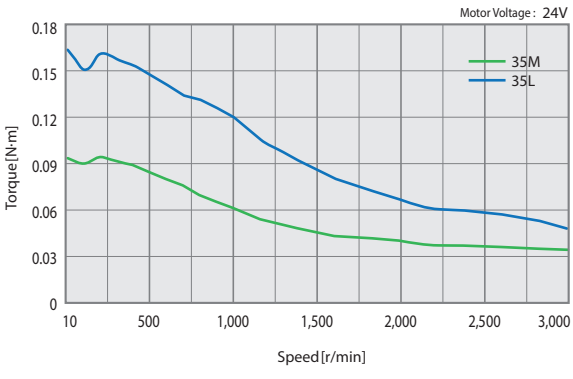
Ezi-SERVO II-PE-MI-20 series



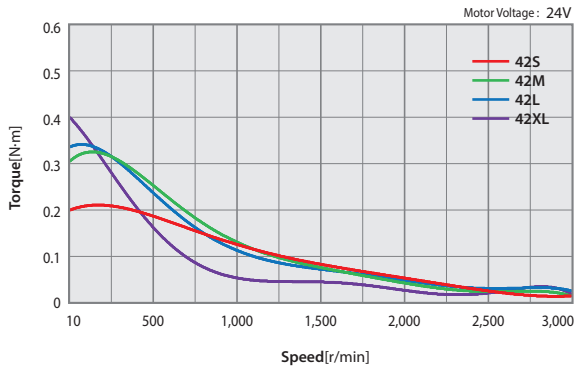
Ezi-SERVO II-PE-MI-28 series



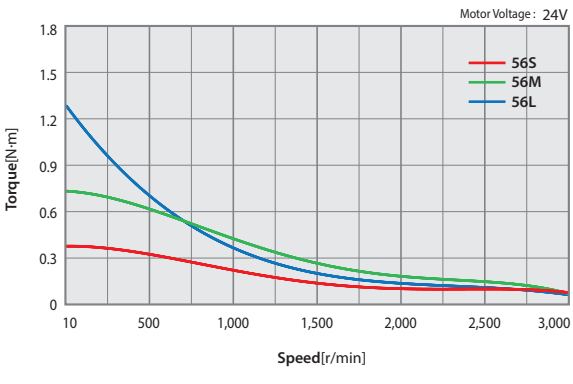
Ezi-SERVO II-PE-MI-35 series



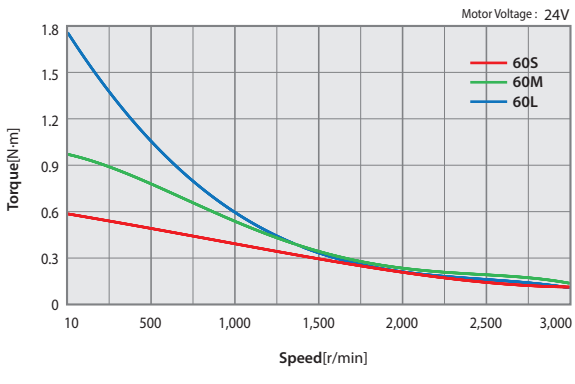
Ezi-SERVO II-PE-MI-42 series



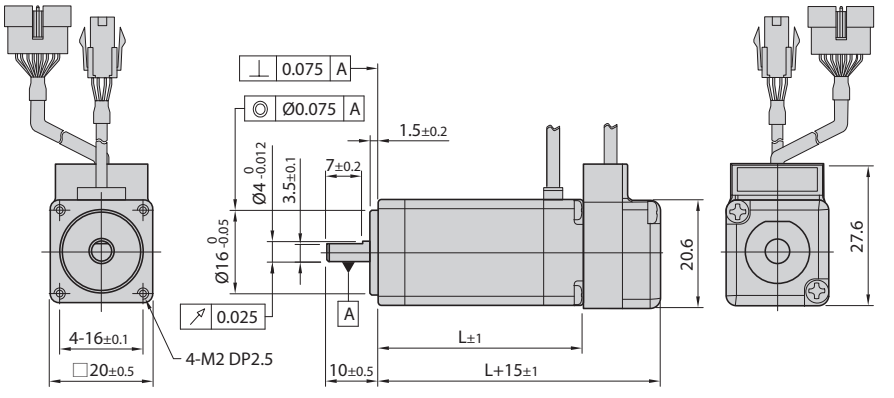
Ezi-SERVO II-PE-MI-56 series



Ezi-SERVO II-PE-MI-60 series

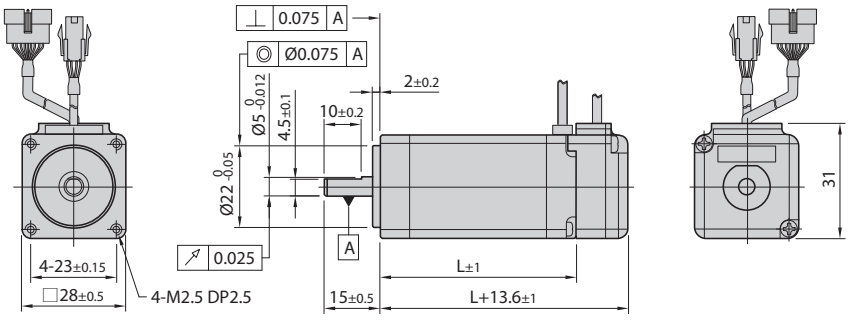


Dimensions of Motor [mm]



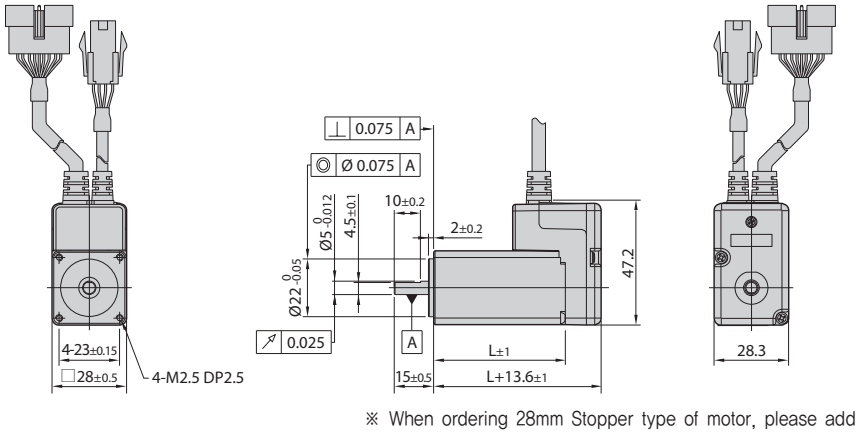
20mm

Model name	Length(L)
EzM2-20M	28
EzM2-20L	38



28mm

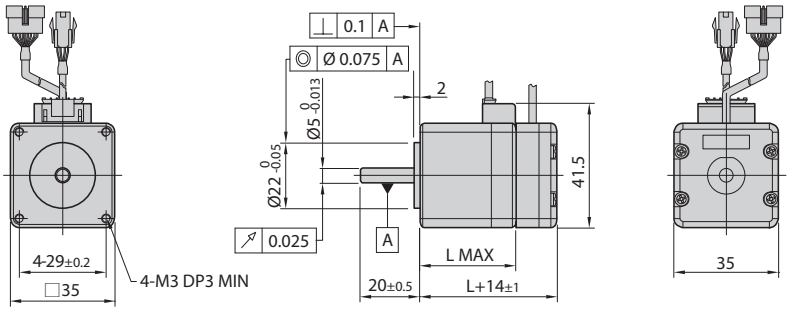
Model name	Length(L)
EzM2-28S	32
EzM2-28M	45
EzM2-28L	50



28mm *(Stopper type)*

Model name	Length(L)
EzM2-28SM	32
EzM2-28MM	45
EzM2-28LM	50

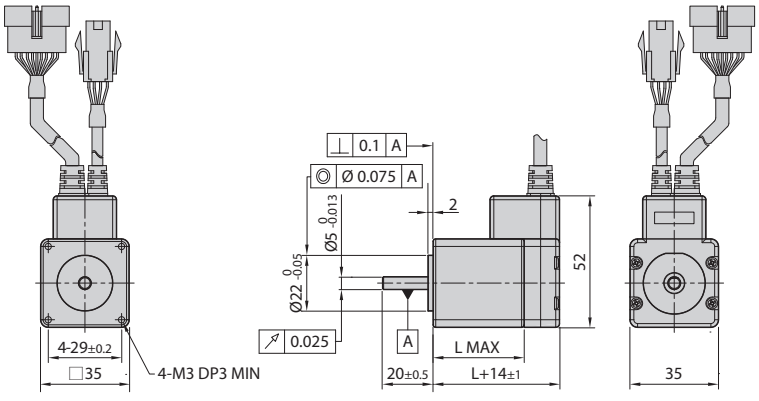
※ When ordering 28mm Stopper type of motor, please add "M" after standard motor model number.



35mm

Model name	Length(L)
EzM2-35M	32
EzM2-35L	36

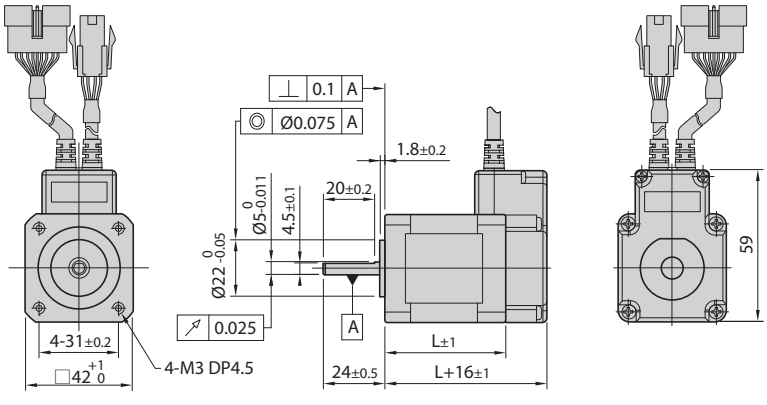
● Dimensions of Motor [mm]



35mm (Stopper type)

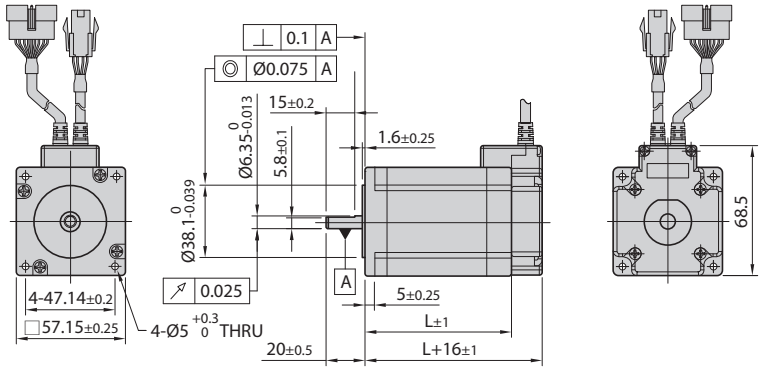
Model name	Length(L)
EzM2-35MM	32
EzM2-35LM	36

※ When ordering 35mm Stopper type of motor, please add "M" after standard motor model number.



42mm

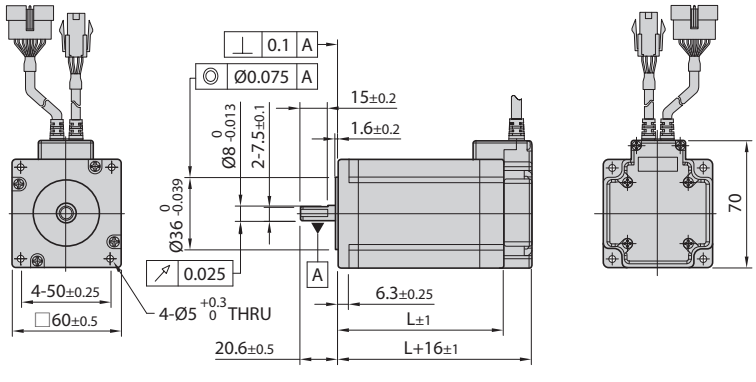
Model name	Length(L)
EzM2-42S	34
EzM2-42M	40
EzM2-42L	48
EzM2-42XL	60



56mm

Model name	Length(L)
EzM2-56S	46
EzM2-56M	55
EzM2-56L	80

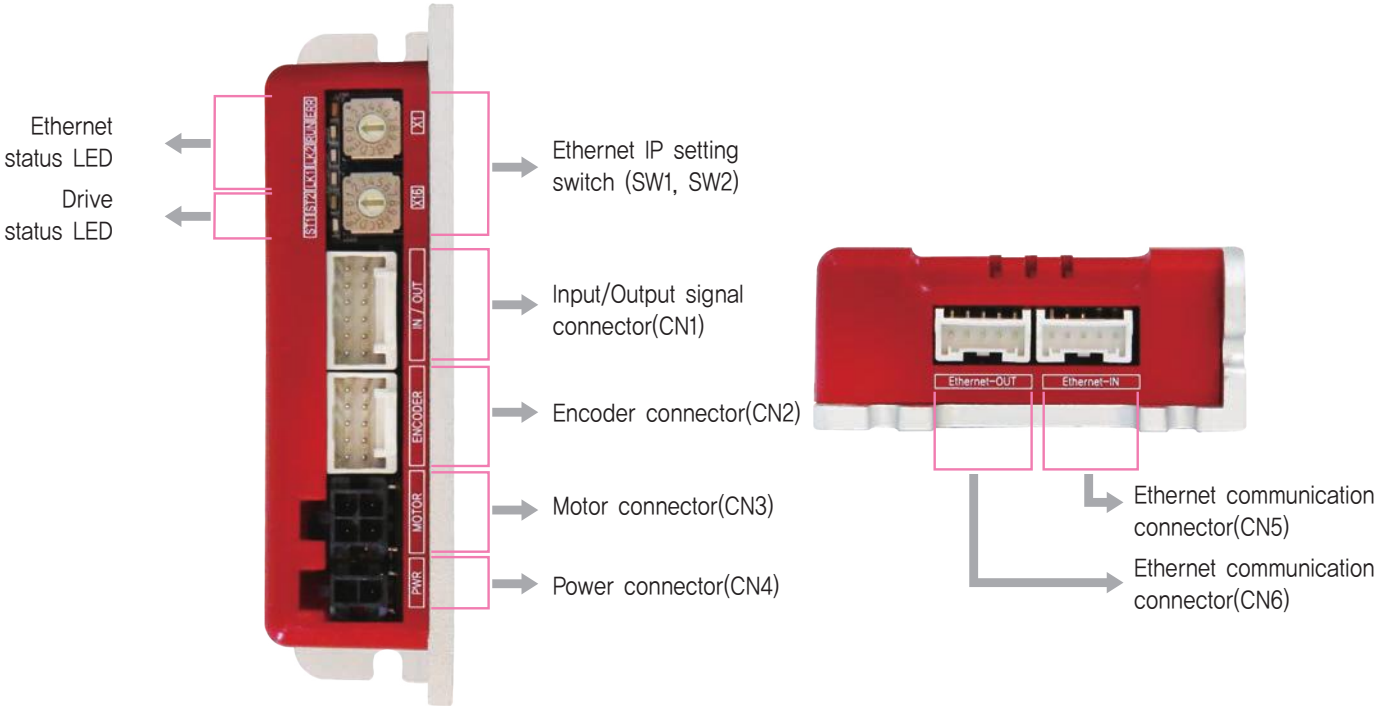
※ There are 2 kinds size of front shaft diameter for EzM2-56 series as Ø6.35 and Ø8.0.



60mm

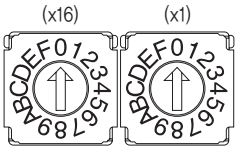
Model name	Length(L)
EzM2-60S	47
EzM2-60M	56
EzM2-60L	85

Settings and Operation



1. Ethernet IP Display and Setting Switch(SW1, SW2)

These switches set the 4th octet of Ethernet IP. The 1st octet, the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)



e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= **87**
IP is to be set as 192.168.0.**87**

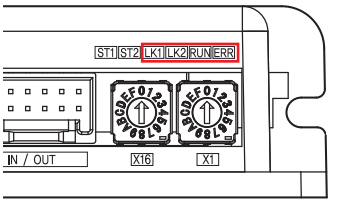
2. Ethernet Status LED

LED indicates communication status of Ethernet.

Name	Color	Status	Description
ERR	Red	OFF	No Error
		ON	Local Error

Name	Color	Status	Description
LK1/ LK2	Green	OFF	Link not Established
		ON	Link Established

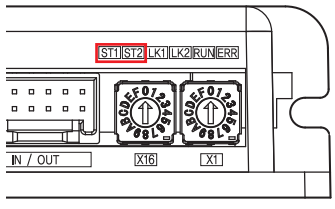
Name	Color	Status	Description
RUN	Orange	Blinking	Operating Normally



3. Drive Status LED

LED informs operation status of the drive.

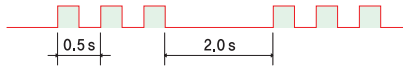
LED Indication	LED Status	Description
ST1 : ▬ ▬ ▬ ▬ ST2 :	ST1 blinks, ST2 is OFF	Servo On
ST1 : ▬▬▬▬▬ ST2 :	ST1 is ON, ST2 is OFF	Servo Off
ST1 : ▬▬▬▬▬ ST2 : ▬▬▬▬▬	ST1 and ST2 are ON	In motion
ST1 : ● ● ● ● ● ● ST2 : ● ● ● ● ● ●	ST1 and ST2 blink alternately	A position error is greater than the set value (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
3	Position Tracking Error	Position error value is greater than the reference value while the motor is running *2
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 *3
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)
15	Position Overflow Error	Position error value is greater than the reference value while the motor is stopped *2

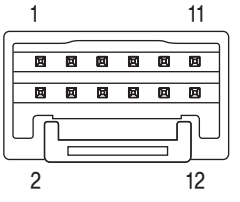
*1 : Limit value depends on motor model. (Refer to the Manual)
*2 : The default setting value is 180 ˚, and it can be changed by parameter. (Refer to the Manual)
*3 : Voltage limit of Back-EMF depends on motor model. (Refer to the Manual)
※ Please refer to user Manual for the details of protection functions.



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

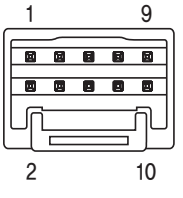
4. Input/Output Signal Connector(CN1)

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	Compare Out	Output
12	Digital Out1	Output



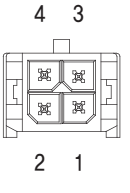
5. Encoder Connector(CN2)

No.	Function	I/O
1	A+	Input
2	A–	Input
3	B+	Input
4	B–	Input
5	Z+	Input
6	Z–	Input
7	DC5V	Output
8	GND	Output
9	F.GND	-----
10	F.GND	-----



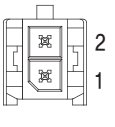
6. Motor Connector(CN3)

No.	Function	I/O
1	A Phase	Output
2	B Phase	Output
3	$\overline{A}$ Phase	Output
4	$\overline{B}$ Phase	Output



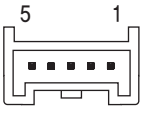
7. Power Connector(CN4)

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

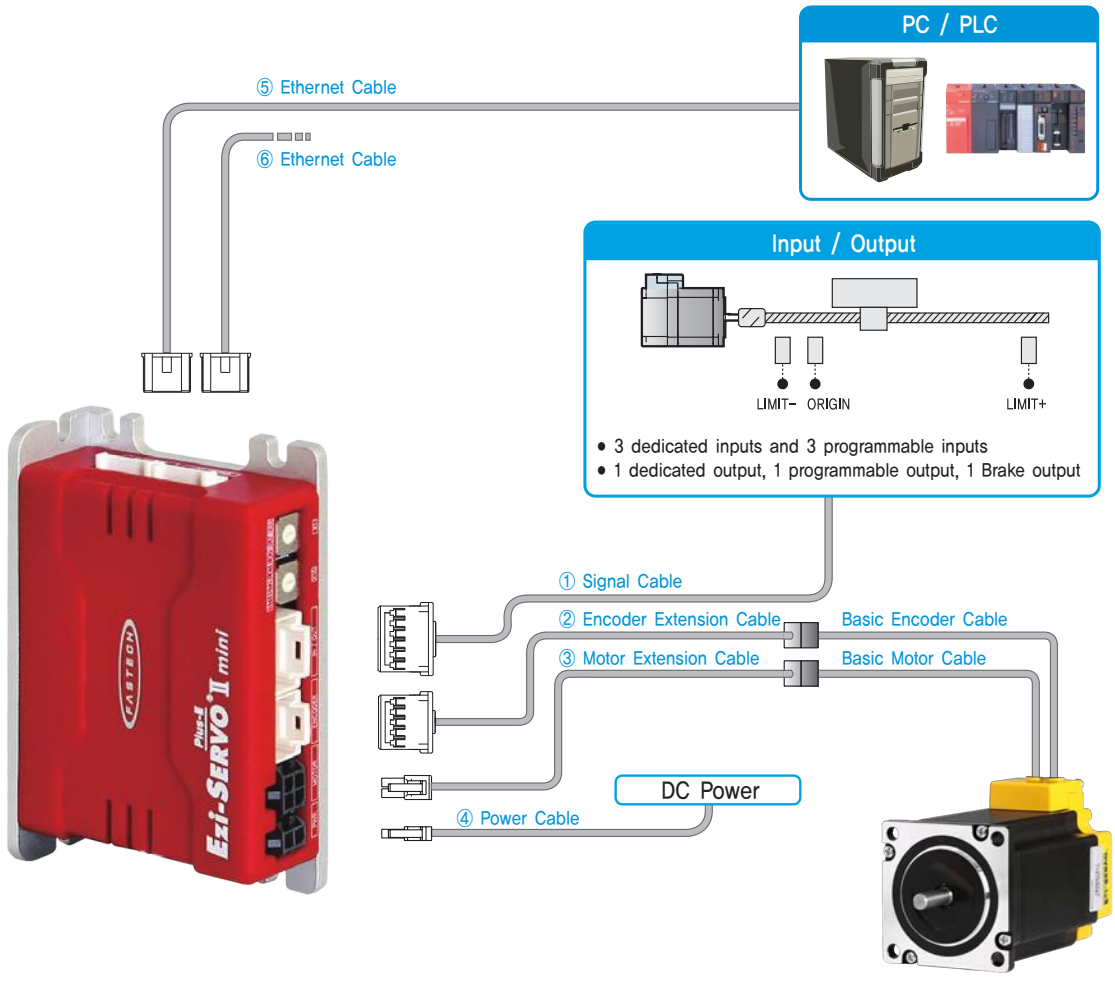


8. Ethernet Communication Connector(CN5, CN6)

No.	Function
1	TD+
2	TD–
3	RD+
4	RD–
5	F.GND



System Configuration



Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold separately)
② Encoder Extension Cable	20m	
③ Motor Extension Cable	20m	
④ Power Cable	2m	
⑤ Ethernet Cable	100m	
Basic Encoder Cable	0.3m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3m (Basic length)	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Ethernet (CN5, CN6)		Housing	PAP-05V-S	JST
		Terminal	SPHD-001T-P0.5	
Power (CN4)		Housing	43025-0200	MOLEX
		Terminal	43030-0001	
Motor	Drive Side (CN3)	Housing	43025-0400	MOLEX
		Terminal	43030-0001	
	Motor Side	Housing	5557-04R	MOLEX
		Terminal	5556T	
Encoder	Drive Side (CN2)	Housing	501646-1000	MOLEX
		Terminal	501648-1000(AWG 26~28)	
	Encoder Side	Housing	SMP-09V-NC	JST
		Terminal	SHF-001T-0.8BS	
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 Plus-E MINI drive and other input/output devices.

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

These are the cables to connect Ezi-SERVO II Plus-E MINI drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Encoder Cable Connection	CSVI-E-001F	1	Normal Cable	Maximum Length: 20m
	CSVI-E-002F	2		
	CSVI-E-003F	3		
	CSVI-E-005F	5		
	CSVI-E-001M	1	Robot Cable	
	CSVI-E-002M	2		
	CSVI-E-003M	3		
	CSVI-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-SERVO II Plus-E MINI drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Motor Cable Connection	CSMI-M-001F	1	Normal Cable	Maximum Length: 20m
	CSMI-M-002F	2		
	CSMI-M-003F	3		
	CSMI-M-005F	5		
	CSMI-M-001M	1	Robot Cable	
	CSMI-M-002M	2		
	CSMI-M-003M	3		
	CSMI-M-005M	5		

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

④ Drive Power Cable

These are the cables to connect Ezi-SERVO II Plus-E MINI drive and the power.

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

⑤ Ethernet Cable (5 pin connector – RJ45)

These are the cables to connect Ezi-SERVO II Plus-E MINI drive and Ezi-SERVO II Plus-E, Ezi-SERVO II Plus-E ALL R Type with Ethernet network.

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

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

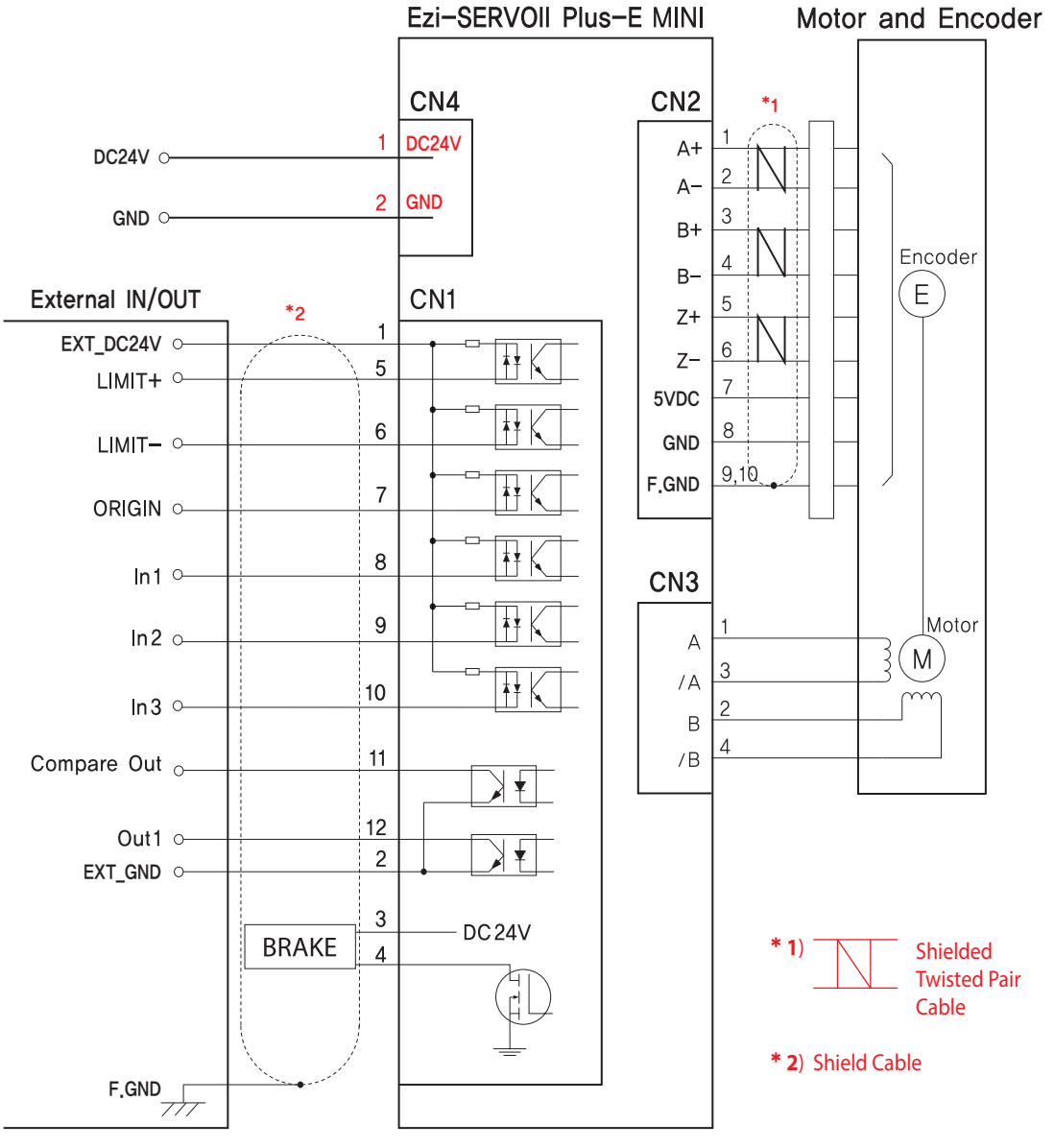
⑥ Ethernet Cable (5 pin connector – 5pin connector)

These are the cables to connect between Ezi-SERVO II Plus-E MINI drives with Ethernet network.

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

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

External Wiring Diagram



※ 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

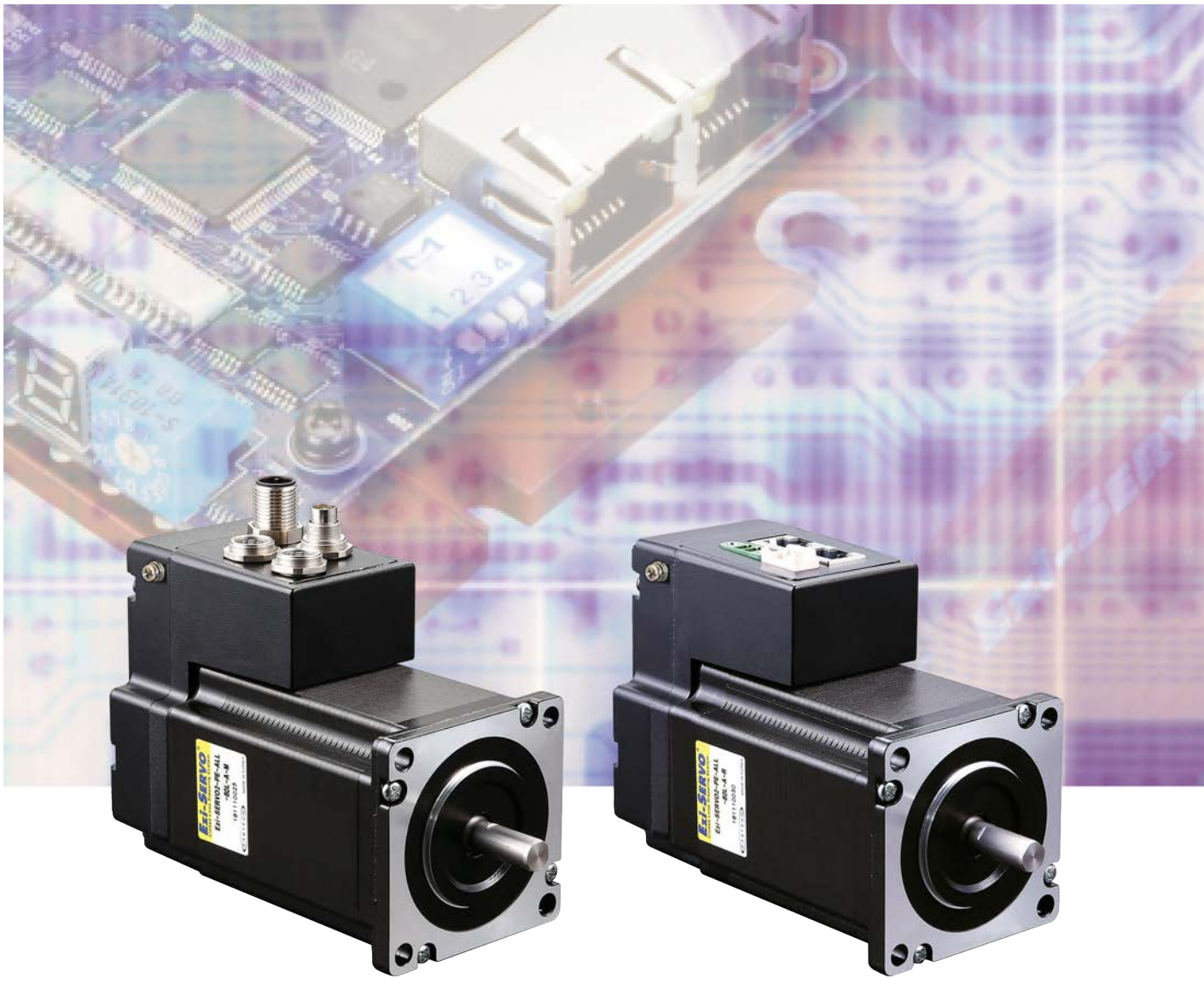
In order to use the products listed in this catalog safely and correctly, be sure to read the instruction manual before using the product.


EzM2-60L
Ezi-SERVO II Plus-E

Ezi-SERVO® II Plus-E ALL

Closed Loop Stepping System

- Motor + High Resolution Encoder + Drive + Motion Controller
- Space Saving / Reduced Wiring
- Ethernet Interface
- Closed-Loop Stepping System
- Tuning Not Required / No Hunting
- Low Heat Generation / High Torque

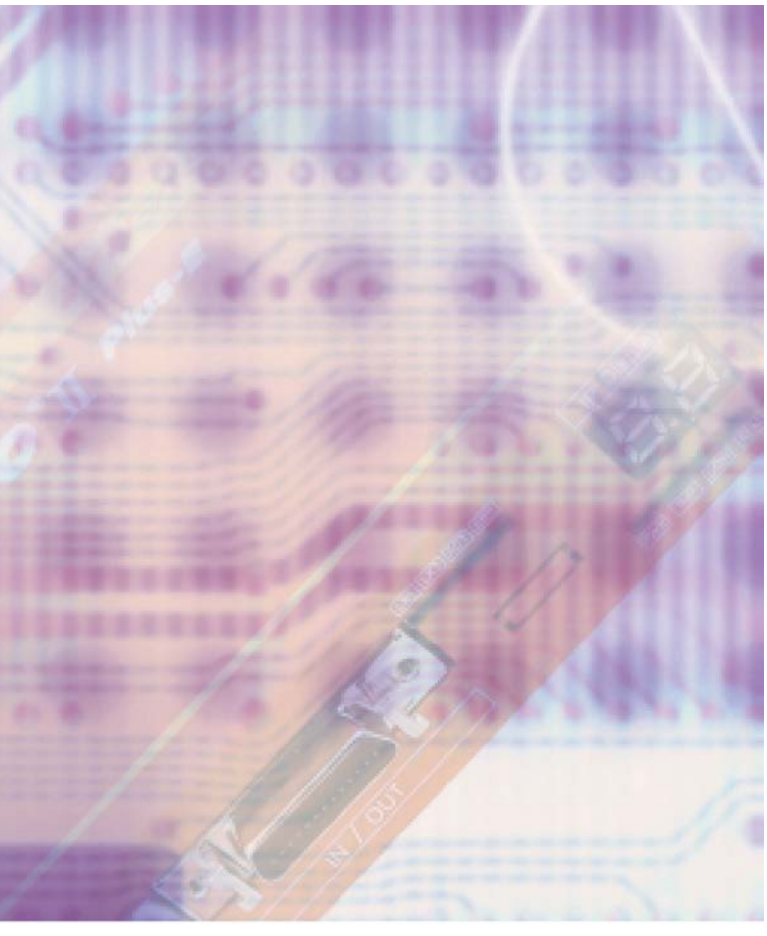


FASTECH

Fast, Accurate, Smooth Motion

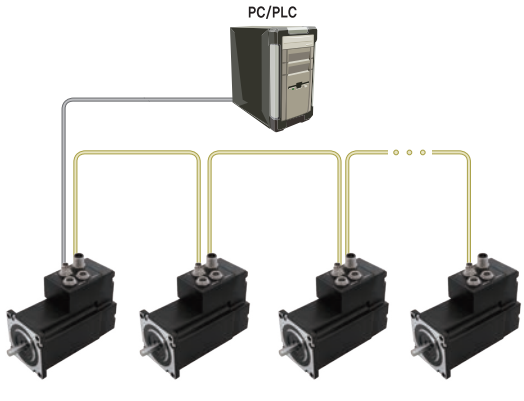
Ezi-SERVO® II Plus-E ALL

Closed Loop Stepping System



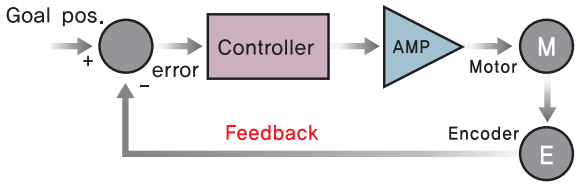
1 Network Based Motion Control

A maximum of 254 axis can be operated from a PC through Ethernet communications. And daisy-chain connection is available thru internally equipped Ether-net HUB. All of the Motion conditions are set through the network and saved in Flash ROM as a parameter. Motion Library(API) is provided for programming under Windows 7/8/10.



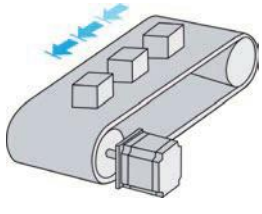
2 Closed-Loop System

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 cur-rent 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 cor-rect the position by encoder feedback.



3 Tuning Not Required

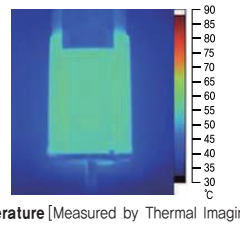
To ensure machine performance, conventional servo systems require the adjustment of its servo' s gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed. Ezi-SERVO II employs the best characteristics of the stepping motor to eliminate 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.



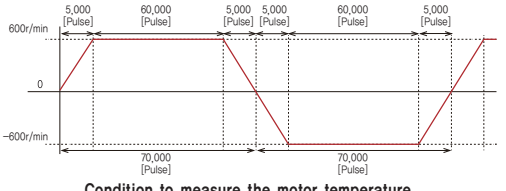
4 Low Heat Generation / Energy Savings

(Motor Current Control according to load)

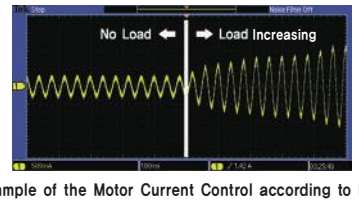
Ezi-SERVO II automatically controls motor current according to load.
Ezi-SERVO II reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

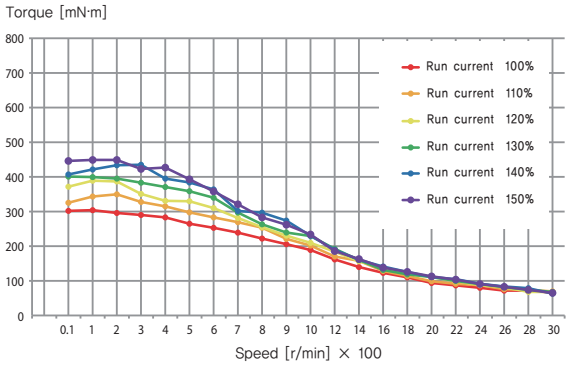


Example of the Motor Current Control according to load

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%.

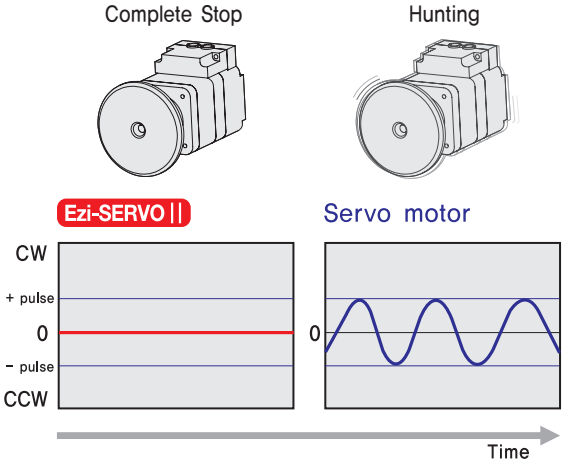


※ The torque at low speed is improved about 30%

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

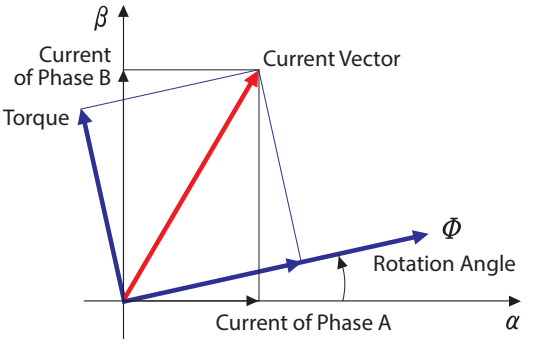
6 No Hunting

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.



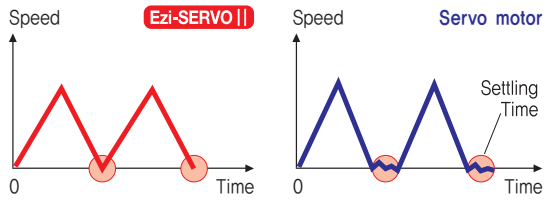
7 Smooth and Accurate Operation

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.



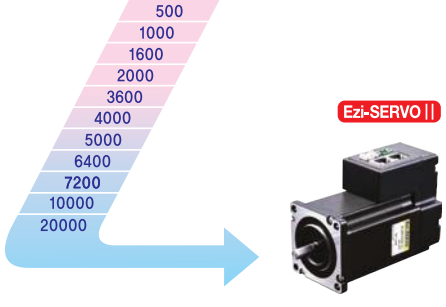
8 High Response

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.



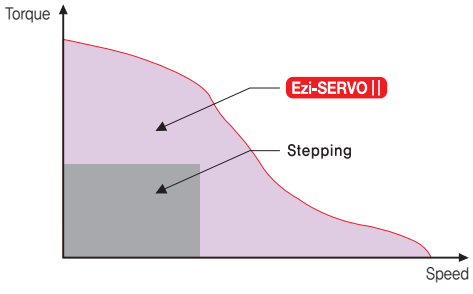
9 High Resolution

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



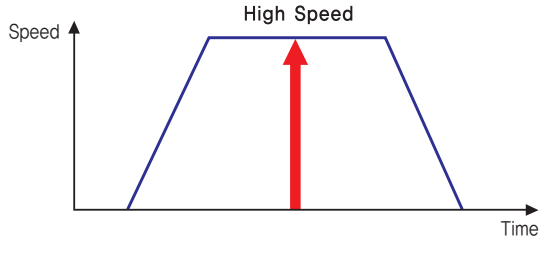
10 High Torque / Continuous Operation

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-SERVO II Plus-E ALL Part Numbering

Ezi-SERVO II -PE-ALL-56L-A-BK-PN05-M

Product Name

Drive Series

PE-ALL : Ethernet 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-SERVO II-PE-ALL-42M-A-M		
Ezi-SERVO II-PE-ALL-42M-B-M		
Ezi-SERVO II-PE-ALL-42M-A-R		
Ezi-SERVO II-PE-ALL-42M-B-R		
Ezi-SERVO II-PE-ALL-42L-A-M		
Ezi-SERVO II-PE-ALL-42L-B-M		
Ezi-SERVO II-PE-ALL-42L-A-R		
Ezi-SERVO II-PE-ALL-42L-B-R		
Ezi-SERVO II-PE-ALL-42XL-A-M		
Ezi-SERVO II-PE-ALL-42XL-B-M		
Ezi-SERVO II-PE-ALL-42XL-A-R		
Ezi-SERVO II-PE-ALL-42XL-B-R		
Ezi-SERVO II-PE-ALL-56S-A-M		
Ezi-SERVO II-PE-ALL-56S-B-M		
Ezi-SERVO II-PE-ALL-56S-A-R		
Ezi-SERVO II-PE-ALL-56S-B-R		
Ezi-SERVO II-PE-ALL-56M-A-M		
Ezi-SERVO II-PE-ALL-56M-B-M		
Ezi-SERVO II-PE-ALL-56M-A-R		
Ezi-SERVO II-PE-ALL-56M-B-R		
Ezi-SERVO II-PE-ALL-56L-A-M		
Ezi-SERVO II-PE-ALL-56L-B-M		
Ezi-SERVO II-PE-ALL-56L-A-R		
Ezi-SERVO II-PE-ALL-56L-B-R	Motor & Drive Integrated	
Ezi-SERVO II-PE-ALL-60S-A-M		
Ezi-SERVO II-PE-ALL-60S-B-M		
Ezi-SERVO II-PE-ALL-60S-A-R		
Ezi-SERVO II-PE-ALL-60S-B-R		
Ezi-SERVO II-PE-ALL-60M-A-M		
Ezi-SERVO II-PE-ALL-60M-B-M		
Ezi-SERVO II-PE-ALL-60M-A-R		
Ezi-SERVO II-PE-ALL-60M-B-R		
Ezi-SERVO II-PE-ALL-60L-A-M		
Ezi-SERVO II-PE-ALL-60L-B-M		
Ezi-SERVO II-PE-ALL-60L-A-R		
Ezi-SERVO II-PE-ALL-60L-B-R		
Ezi-SERVO II-PE-ALL-86M-A-M		
Ezi-SERVO II-PE-ALL-86M-B-M		
Ezi-SERVO II-PE-ALL-86M-A-R		
Ezi-SERVO II-PE-ALL-86M-B-R		
Ezi-SERVO II-PE-ALL-86L-A-M		
Ezi-SERVO II-PE-ALL-86L-B-M		
Ezi-SERVO II-PE-ALL-86L-A-R		
Ezi-SERVO II-PE-ALL-86L-B-R		
Ezi-SERVO II-PE-ALL-86XL-A-M		
Ezi-SERVO II-PE-ALL-86XL-B-M		
Ezi-SERVO II-PE-ALL-86XL-A-R		
Ezi-SERVO II-PE-ALL-86XL-B-R		

Combination with Brake

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

Combination with Gearbox

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

Combination with Gearbox

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

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

● Combination with Gearbox

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

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

Combination with Gearbox

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

Specifications of Drive

Model		Ezi-SERVO II-PE-ALL -42 series	Ezi-SERVO II-PE-ALL -56 series	Ezi-SERVO II-PE-ALL -60 series	Ezi-SERVO II-PE-ALL -86 series
Input Voltage		DC24V±10%			DC48V±10%
Control Method		Closed-loop control with 32 bit 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 *1
	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			
	In-Position Selection	0~63 (Set by parameter)			
	Position Gain Selection	0~63 (Set by parameter)			
	Rotational Direction	CW/CCW (Set by parameter)			
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 3 programmable inputs (Photocoupler Input)			
	Output Signals	1 dedicated output (Compare Out), 1 programmable output (Photocoupler Output), 1 Brake output			
Communication Interface		· Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex · Dual port Ethernet switch embedded			
Position Control		· Incremental mode / Absolute mode Data Range: -134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min			
Return to Origin		Origin Sensor, Z phase, ±Limit sensor, Torque			
GUI		User Interface Program within Windows			
Library		Motion Library (API) for windows 7/8/10			

*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.

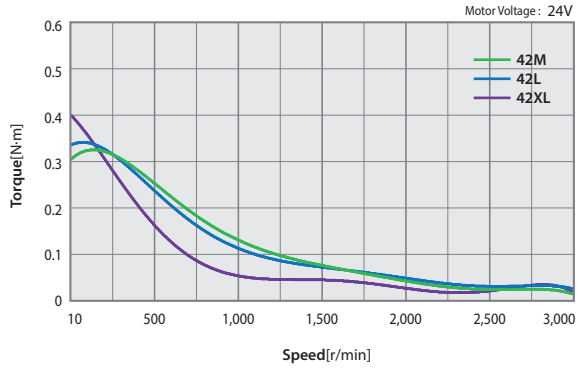
Specifications of Motor

MODEL			UNIT	Ezi-SERVO II-PE-ALL-42 series			Ezi-SERVO II-PE -ALL-56 series		
				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			$g \cdot cm^2$	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	DISTANCE 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 then 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					

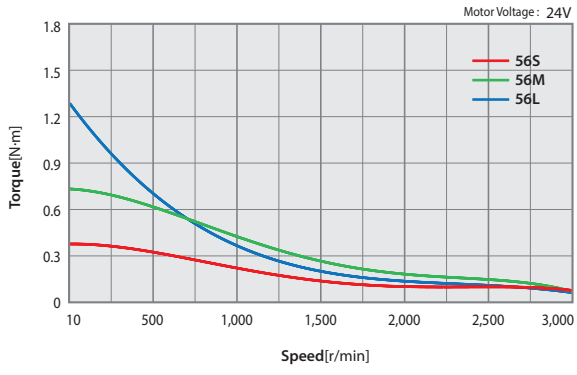
MODEL			UNIT	Ezi-SERVO II-PE-ALL-60 series			Ezi-SERVO II-PE-ALL-86 series		
				60S	60M	60L	86M	86L	86XL
DRIVE METHOD			–	Bipolar					
NUMBER OF PHASES			–	2 Phase					
CURRENT per PHASE			A/Phase	4.0	4.0	4.0	6.0	6.0	6.0
MAXIMUM HOLDING TORQUE			N·m	0.88	1.28	2.4	4.5	8.5	12
ROTOR INERTIA			$g \cdot cm^2$	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	DISTANCE 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 then 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

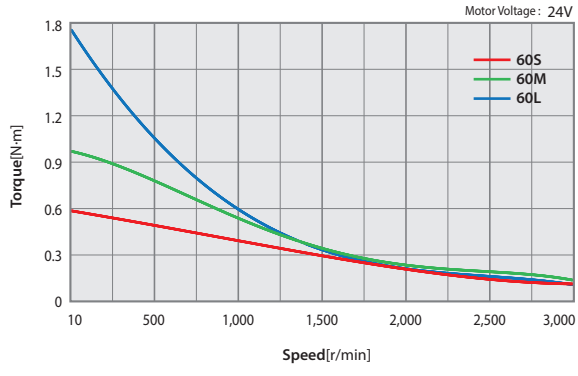
Ezi-SERVO II-PE-ALL-42 series



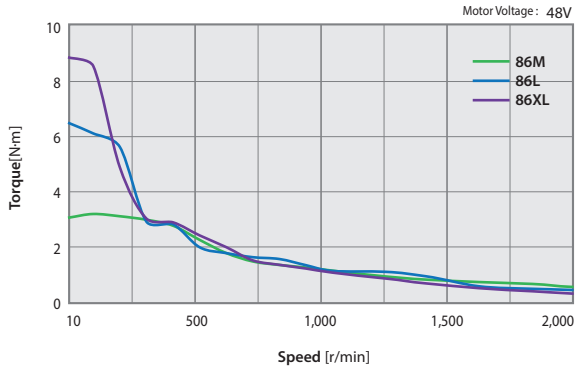
Ezi-SERVO II-PE-ALL-56 series



Ezi-SERVO II-PE-ALL-60 series

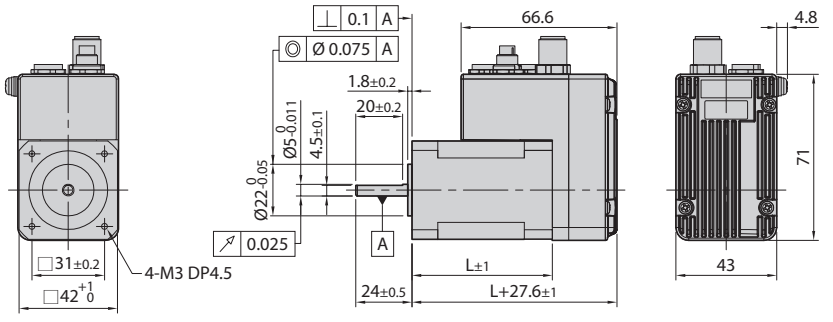


Ezi-SERVO II-PE-ALL-86 series

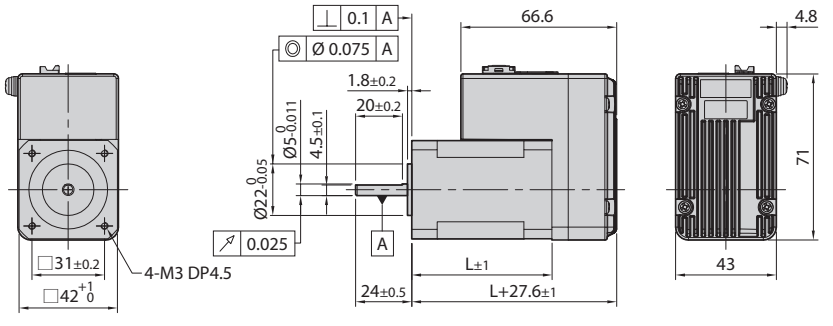


● Dimensions of Motor [mm]

◆ M Type



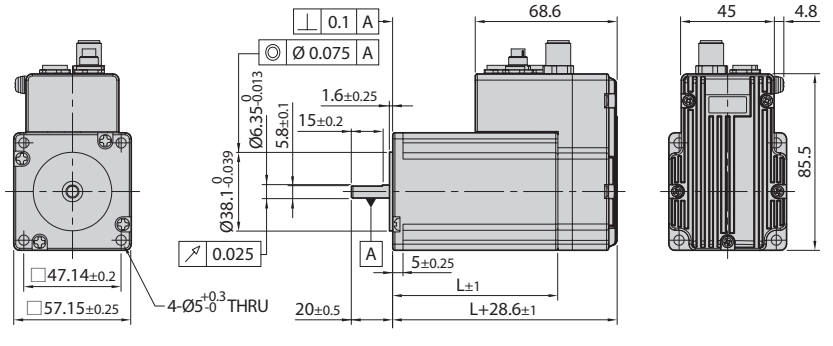
◆ R Type



42mm

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

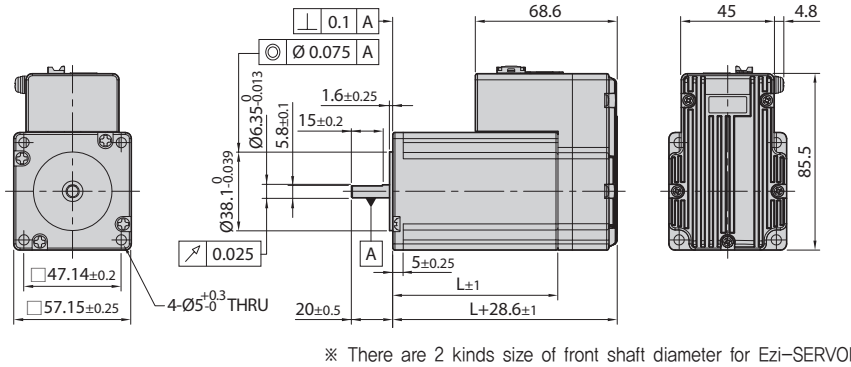
◆ M Type



56mm

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

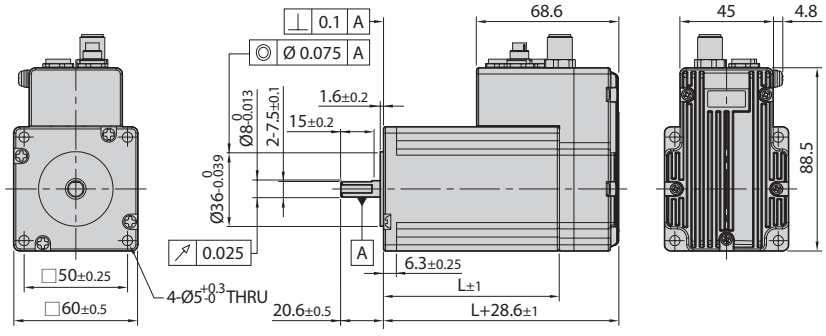
◆ R Type



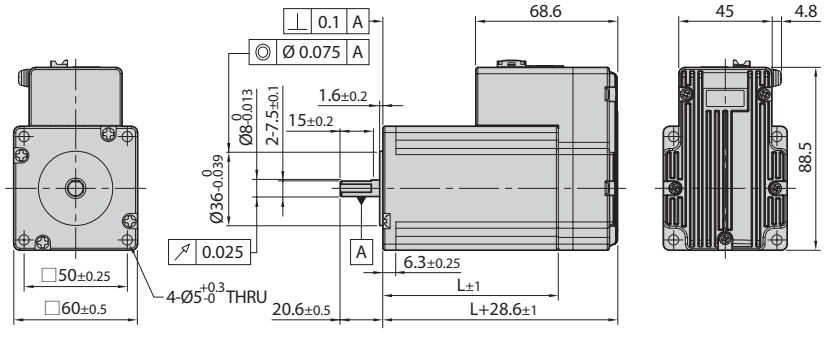
※ There are 2 kinds size of front shaft diameter for Ezi-SERVOII-PE-ALL-56 series as Ø6.35 and Ø8.0

● Dimensions of Motor [mm]

◆ M Type



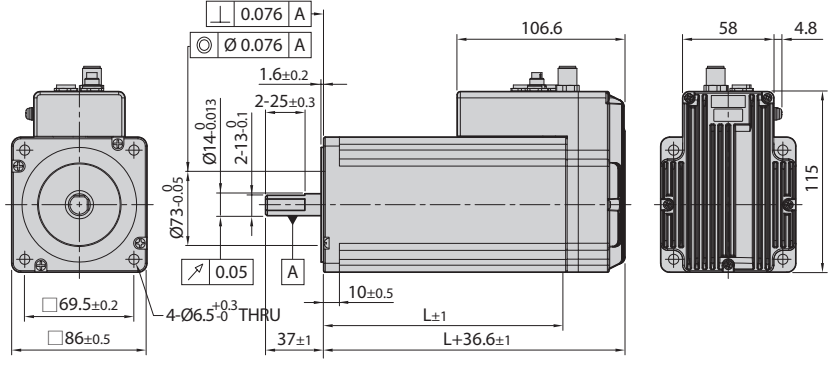
◆ R Type



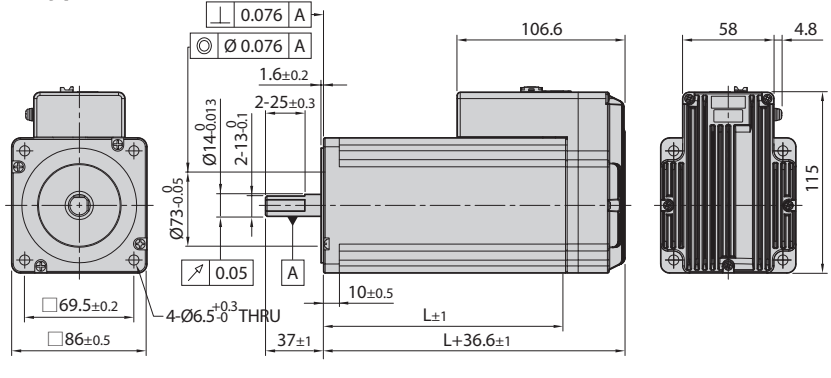
60mm

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

◆ M Type



◆ R Type

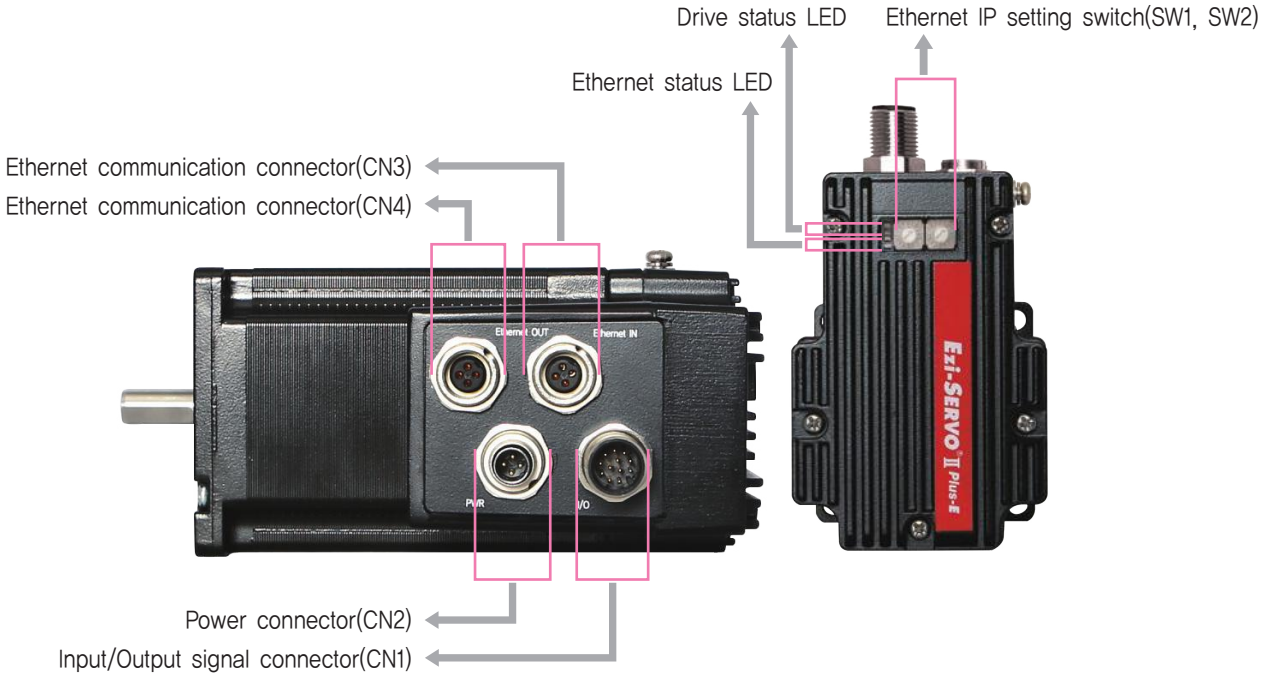


86mm

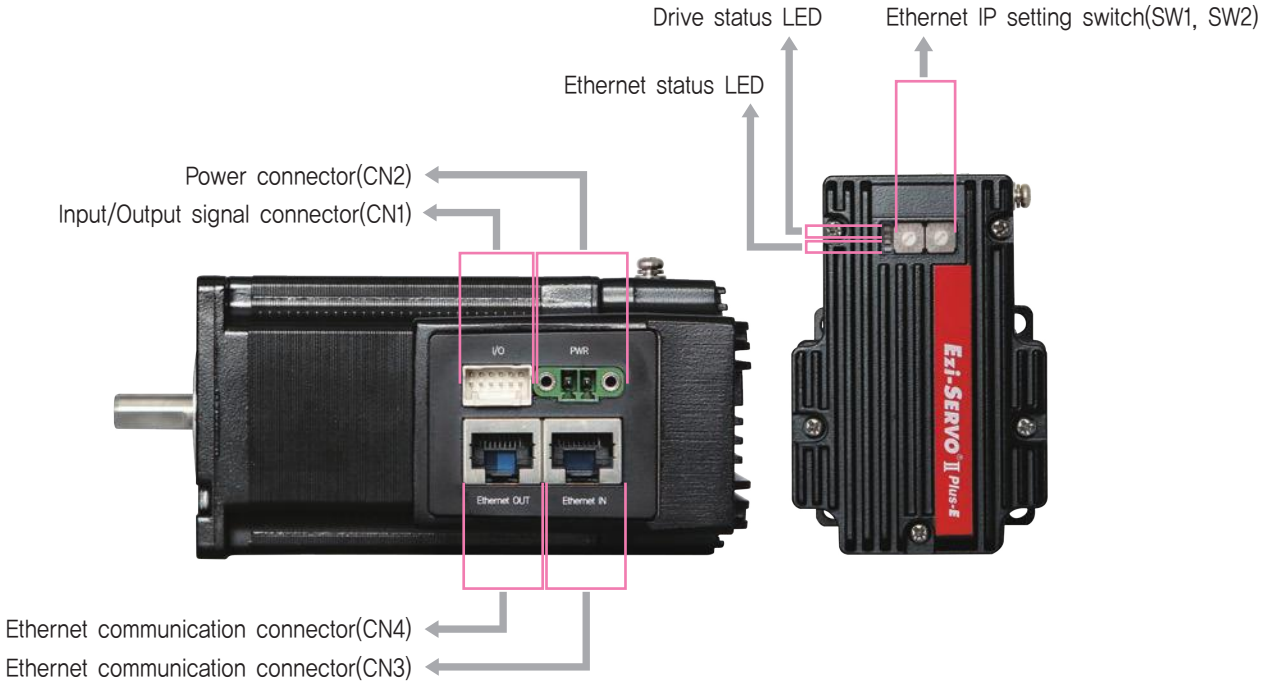
Model name	Length(L)
86M	78
86L	117
86XL	155

● Settings and Operation

◆ M Type

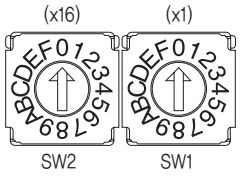


◆ R Type



1. Ethernet IP Setting Switch(SW1, SW2)

These switches set the 4th octet of Ethernet IP. The 1st octet, the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)

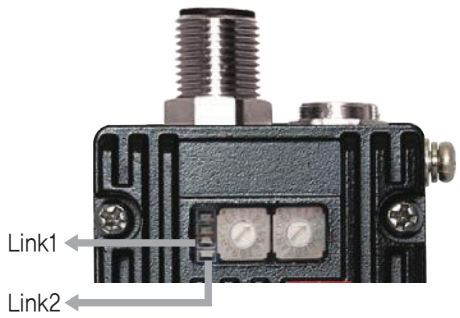


e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= 87
IP is to be set as 192.168.0.87

2. Ethernet Status LED

LED indicates communication status of Ethernet.

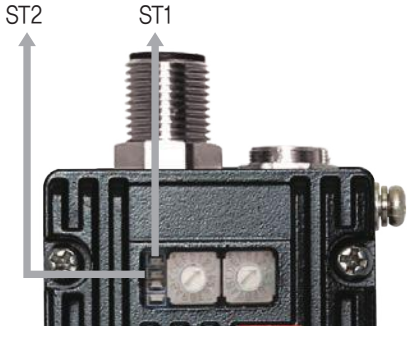
Name	Color	Status	Description
LK1/ LK2	Green	OFF	Link not Established
		ON	Link Established



3. Drive Status LED

LED informs operation status of the drive.

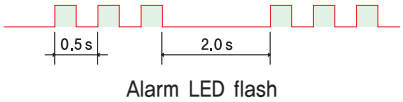
LED Indication	LED Status	Description
ST1 : ▬ ▬ ▬ ▬ ST2 :	ST1 blinks, ST2 is OFF.	Servo On
ST1 : ▬▬▬▬ ST2 :	ST1 is ON, ST2 is OFF.	Servo Off
ST1 : ▬▬▬▬ ST2 : ▬▬▬▬	ST1 and ST2 are ON.	A position error is greater than the set value (Inposition Value) while the motor is stopped.
ST1 : ● ● ● ● ● ● ST2 : ● ● ● ● ● ●	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-PE-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-PE-ALL-86, limit value = DC53V
※ Please refer to user Manual for the details of protection functions.

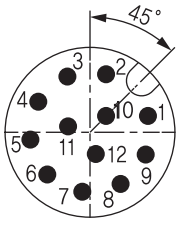


Alarm LED flash
(e.g., Position tracking error)

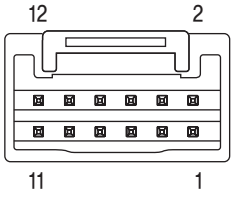
4. Input/Output Signal Connector(CN1)

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	Compare Out	Output
12	Digital Out1	Output

◆ M Type



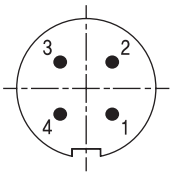
◆ R Type



5. Power Connector(CN2)

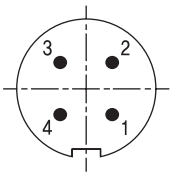
◆ M Type

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



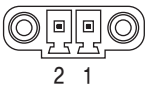
◆ M Type(86mm)

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



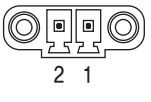
◆ R Type

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



◆ R Type(86mm)

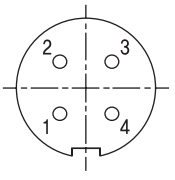
No.	Function	I/O
1	DC48V	Input
2	GND	Input



6. EtherCAT Communication Connector(CN3, CN4)

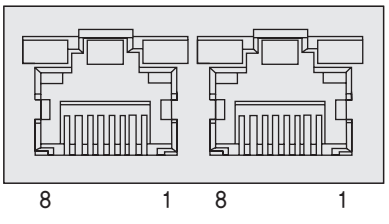
◆ M Type

No.	Function
1	TD+
2	TD–
3	RD+
4	RD–
Connector hood	F.GND

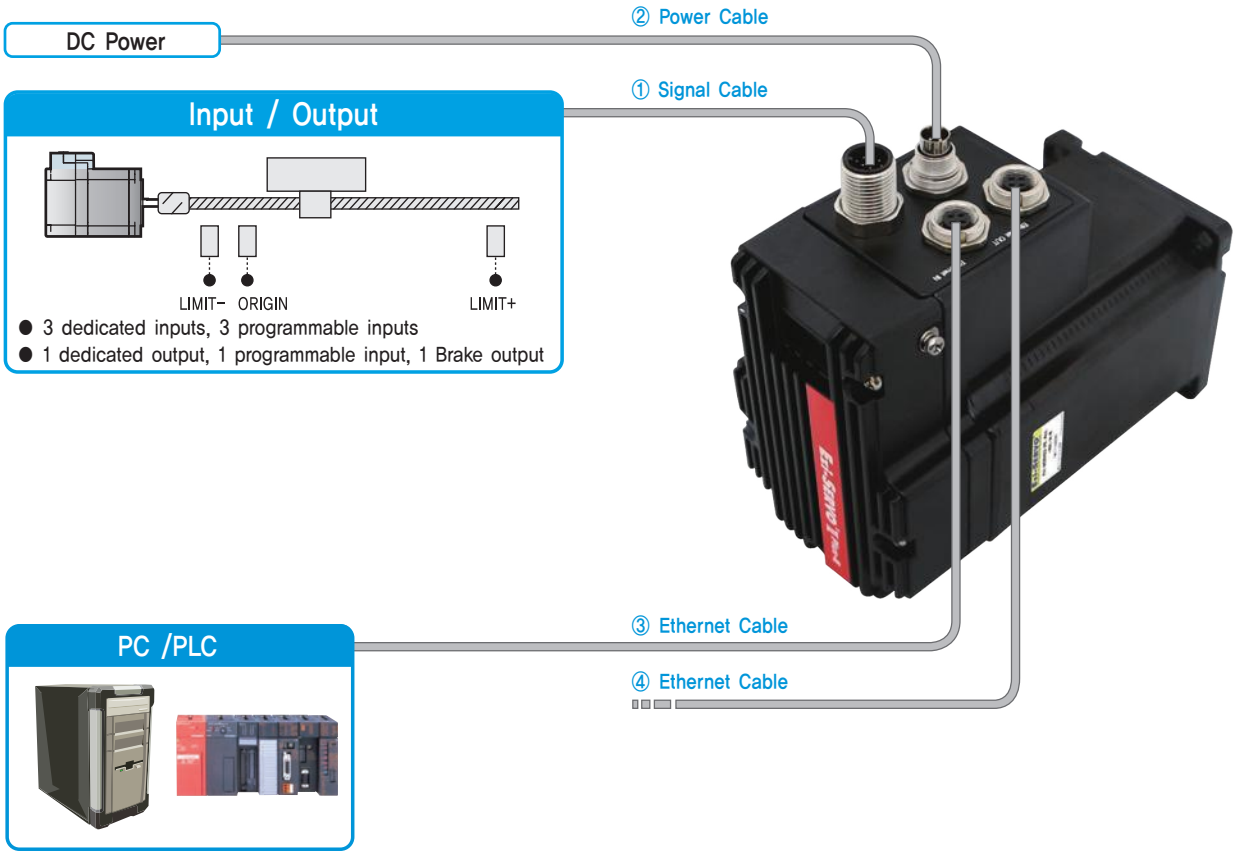


◆ R Type

No.	Function	No.	Function
1	TD+	6	RD–
2	TD–	7	----
3	RD+	8	----
4	----	Connector 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 Ethernet 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
Ethernet (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 Plus-E ALL drive and other input/output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – I/O Device Connection	CSEM-S-001F	1	Normal Cable	Maximum Length: 20m
	CSEM-S-002F	2		
	CSEM-S-003F	3		
	CSEM-S-005F	5		
	CSEM-S-001M	1	Robot Cable	
	CSEM-S-002M	2		
	CSEM-S-003M	3		
	CSEM-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 Plus-E 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 Ethernet Cable (M Type Connector – RJ45)

These are the cables to connect Ezi-SERVO II Plus-E ALL M Type and Ethernet Master, Ezi-SERVO II Plus-E, Ezi-SERVO II Plus-E ALL R Type with Ethernet network.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Ethernet 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.

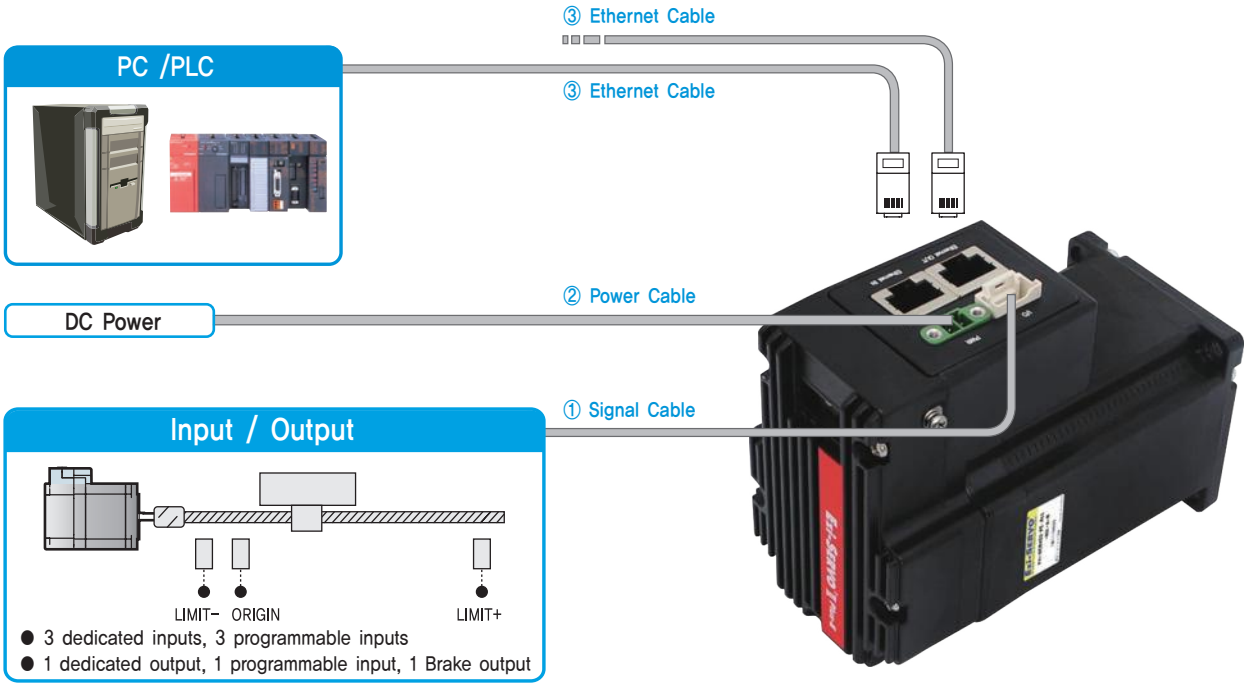
④ Ethernet Cable (M Type Connector – M Type Connector)

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

Purpose	Part Number	Length [m]	Cable Type	Remarks
Ethernet 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	AKZ1550/2F-3.81	PTR
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 Plus-E ALL drive and other input/output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – I/O Device Connection	CSER-S-001F	1	Normal Cable	Maximum Length: 20m
	CSER-S-002F	2		
	CSER-S-003F	3		
	CSER-S-005F	5		
	CSER-S-001M	1	Robot Cable	
	CSER-S-002M	2		
	CSER-S-003M	3		
	CSER-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 Plus-E ALL drive and the power.

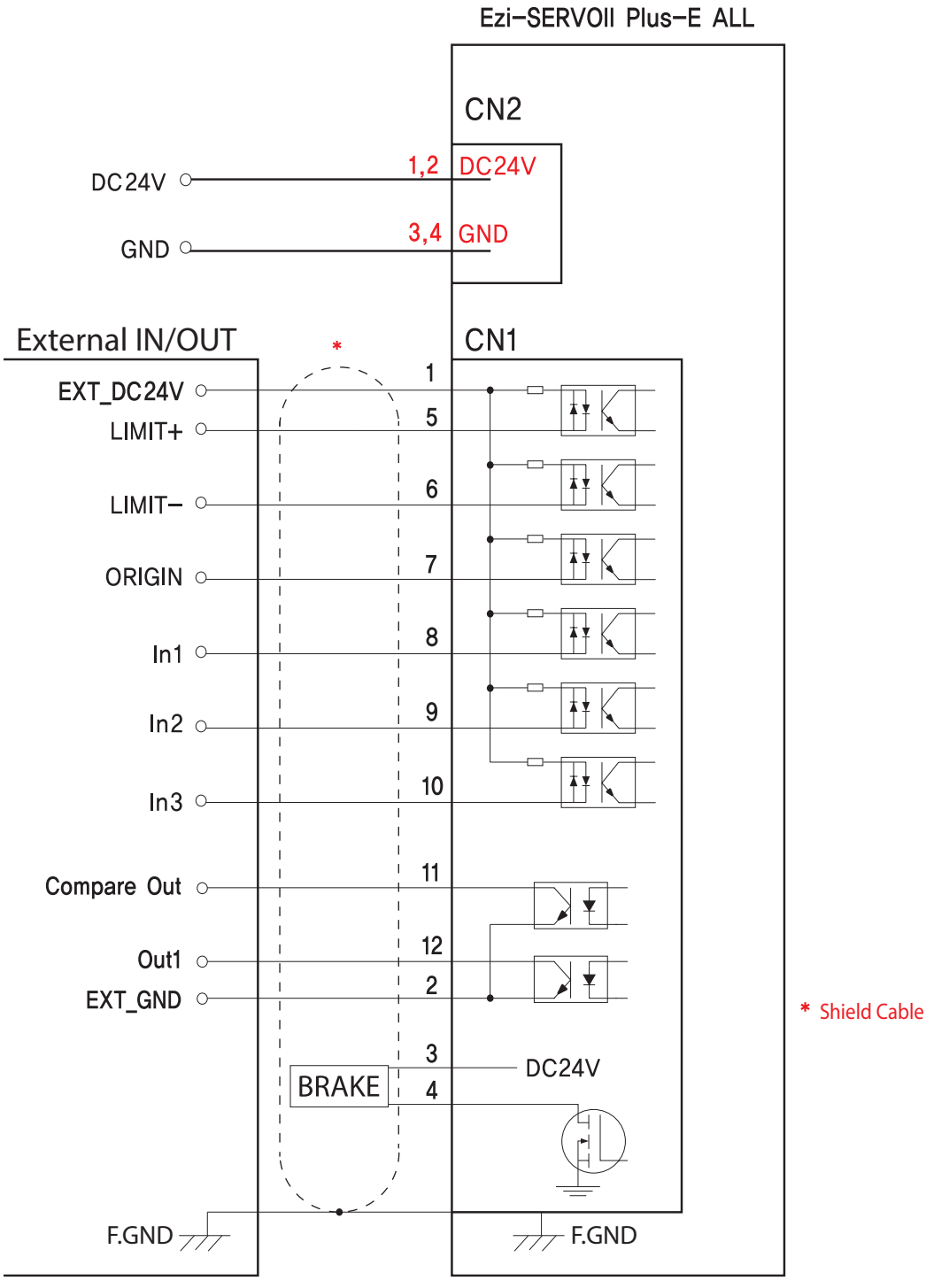
Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Power Connection	CSVA-P-001F	1	Normal Cable	Maximum Length: 2m
	CSVA-P-002F	2		
	CSVA-P-001M	1	Robot Cable	
	CSVA-P-002M	2		
R Type 86mm products Drive – Power Connection	CSPA-P-001F	1	Normal Cable	
	CSPA-P-002F	2		
	CSPA-P-001M	1	Robot Cable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

③ Ethernet Cable

Purpose	Part Number	Length [m]	Cable Type	Remarks
Ethernet 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]



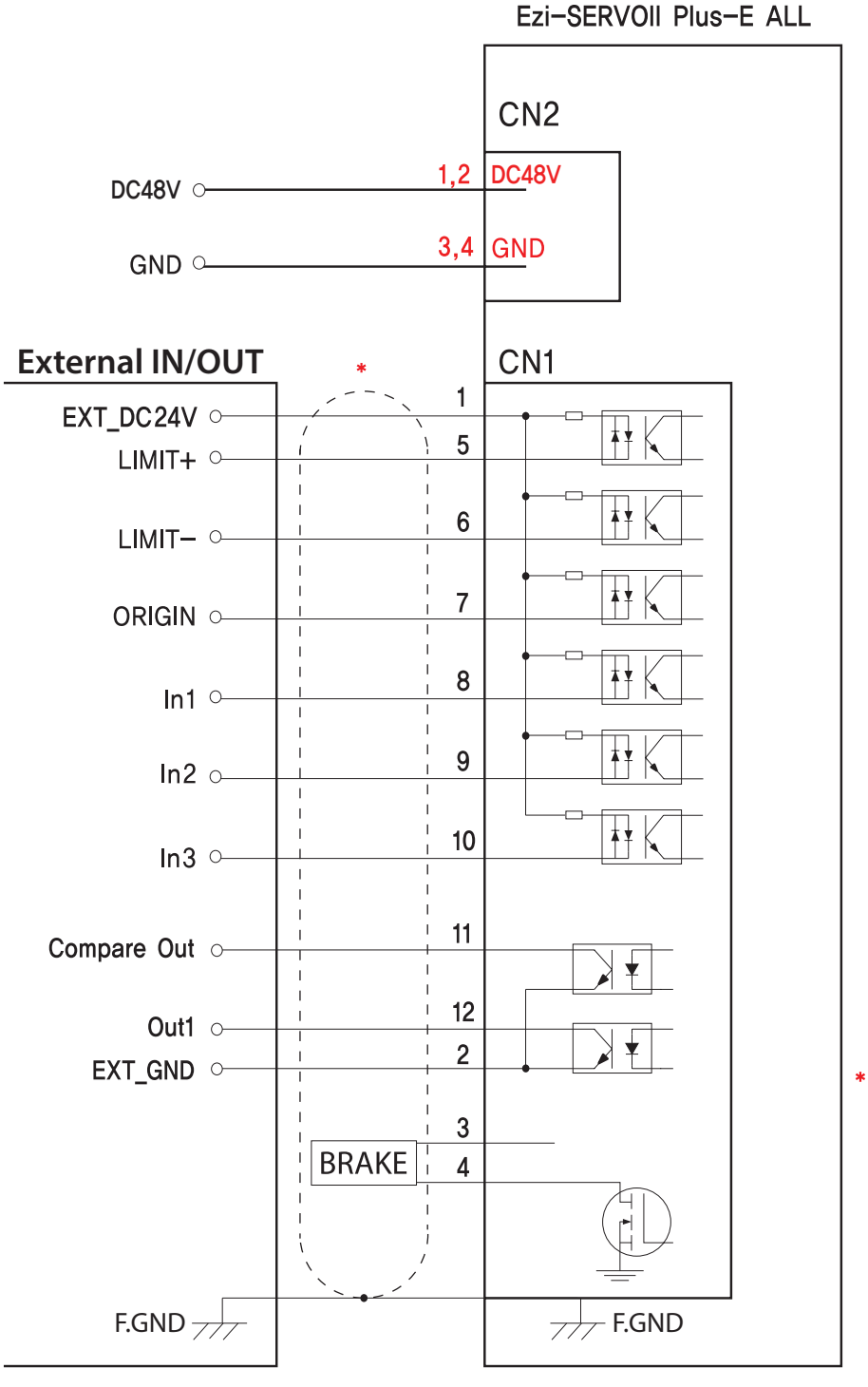
* Shield Cable

※ 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 [M Type 86mm]



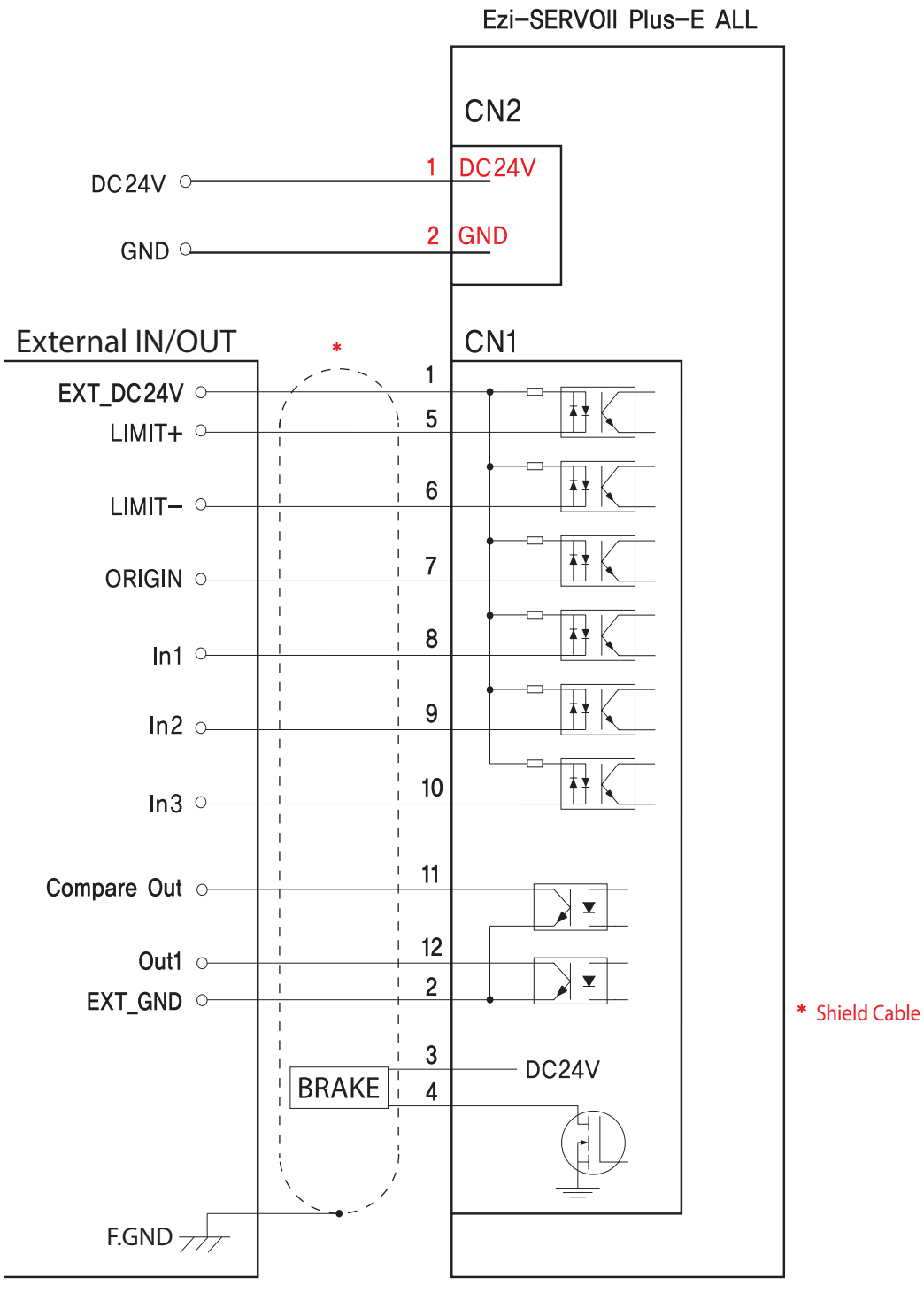
* Shield Cable

※ 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]

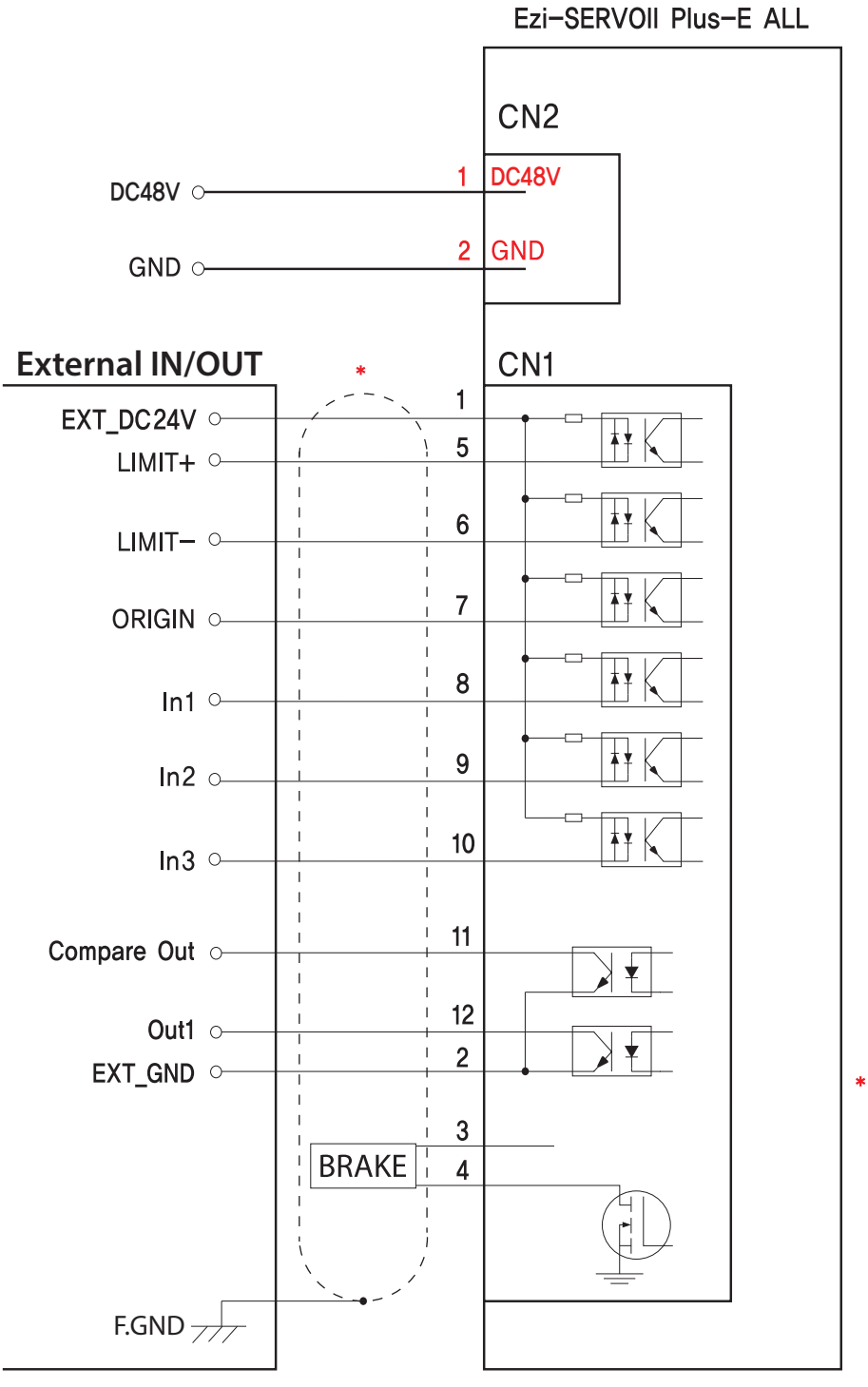


※ When connects I/O cable between controller and drive, please turn off the power of both controller and drive to prevent electric shock or to protect the drive from any damage.

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.


Ezi-STEP II Plus-E
FASTECH
PWR
MOTOR
ENCODER
IN / OUT
LK1
LK2
ACT
ERR
IP Display

Ezi-STEP® II Plus-E

Micro Stepping System

- Embedded Motion Controller
- Ethernet Interface
- Position Table
- Microstepping
- Software Damping
- High Torque

FASTECH

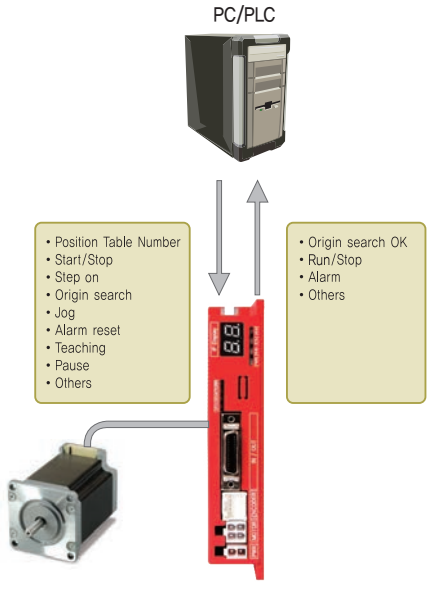
Fast, Accurate, Smooth Motion

Ezi-STEP® II Plus-E

Micro Stepping System

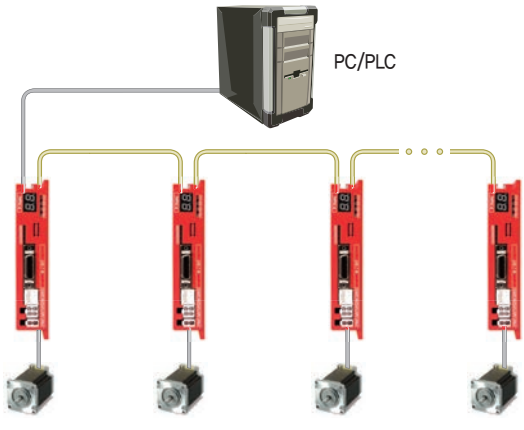
2 Position Table Function

Position Table can be used for motion control by digital input and output signals of host controller.
You can operate the motor directly by sending the position table number, start/stop, origin search and other digital input values from a PC.
The PC can monitor the In-Position, origin search, moving/stop, servo ready and other digital output signals from a drive. A maximum of 256 positioning points can be set from PC.



1 Network Based Motion Control

A maximum of 254 axis can be operated from a PC through Ethernet communications. And daisy-chain connection is available thru internally equipped Ethernet HUB. All of the Motion conditions are set through the network and saved in Flash ROM as a parameter. Motion Library(API) is provided for programming under Windows 7/8/10.

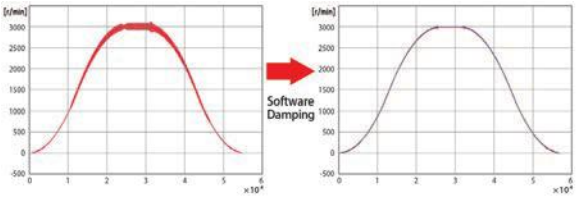


3 Microstep and Filtering

The high-performance MCU operates at step resolutions of 1.8° up to maximum 0.0072° (1/250 steps) and Ezi-STEP II adjusts PWM control signal in every 50μsec, which makes it possible for more precise current control, resulting in high-precision Microstep operation. In addition, Ezi-STEP II applies filtering control to enable smooth operation even at very low-speed.

4 Software Damping

Motor vibration is created by magnetic flux variations of the motor, lower current from the drive due to back-emf from the motor at high speeds and lowering of phase voltages from the drive.
Ezi-STEP II drive detects these problems and the MCU adjusts the phase of the current according to the pole position of the motor, drastically suppressing vibration.
This allows the smooth operation of the motor at high speeds.



Software Damping OFF　　Software Damping ON

※ This is real measured speed that using 100,000 P/R encoder.

5 Improved high-speed operation performance

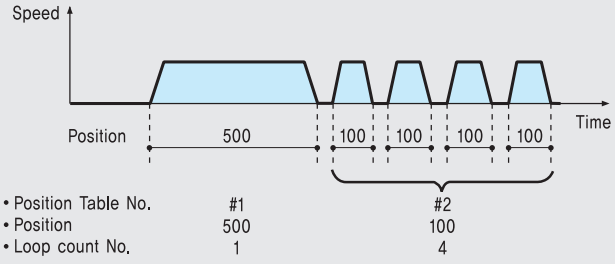
Depending on the speed of a stepping motor, Ezi-STEP II automatically increases the supply voltage and prevents the torque lowering due to the low operating voltage to the motor caused by back-emf voltage, this enables high-speed operation. Additionally, the software damping algorithm minimizes the vibration and prevents the loss-of-synchronization at high-speed.

※ Applicable model : Ezi-STEP II-PE-42 Series
Ezi-STEP II-PE-56 Series
Ezi-STEP II-PE-60 Series

Motion Controller Features of Ezi-STEP II

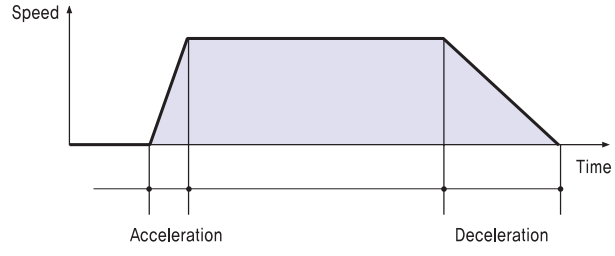
1. Loop Count

This function allows positioning repeatedly according to the Loop Count Number.



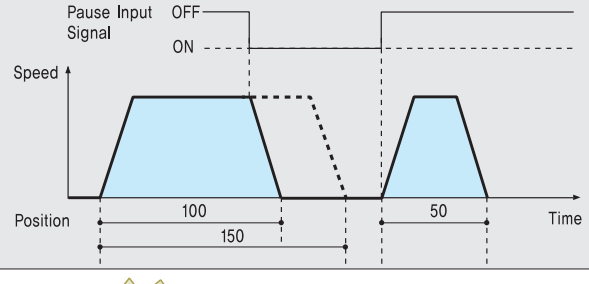
2. Acceleration/Deceleration

For quick acceleration and gradual deceleration, you can set each acceleration and deceleration time separately.



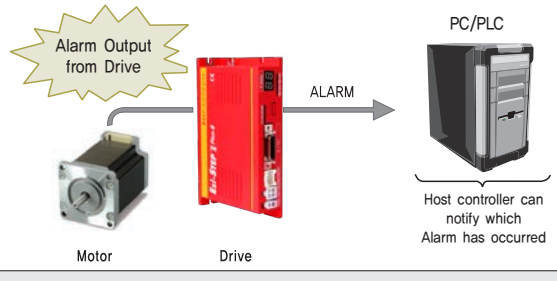
3. Pause

You can pause the motion upon the input of an external signal. When Pause signal change to OFF, the motor will restart to original target position.



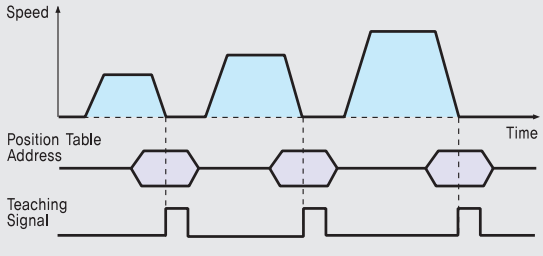
4. Alarm

The number of LED flashing time and information displayed on the 7-segment LED display indicates which Alarm has occurred.



5. Teaching

Teaching signal is used to memorize current Position data into the selected Position Table item.

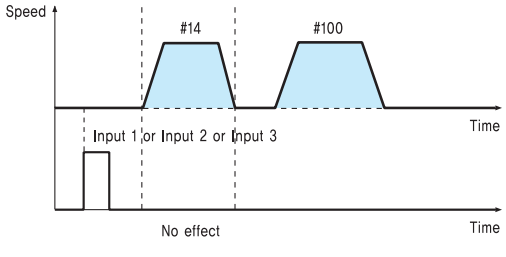


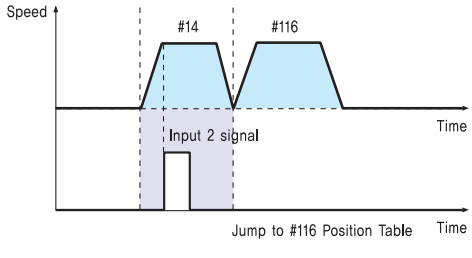
6. Jump

Within one Position Table, you can select various Position Table numbers that you want to jump.
With three external input signal during movement, the next jump Position Table number can be select.

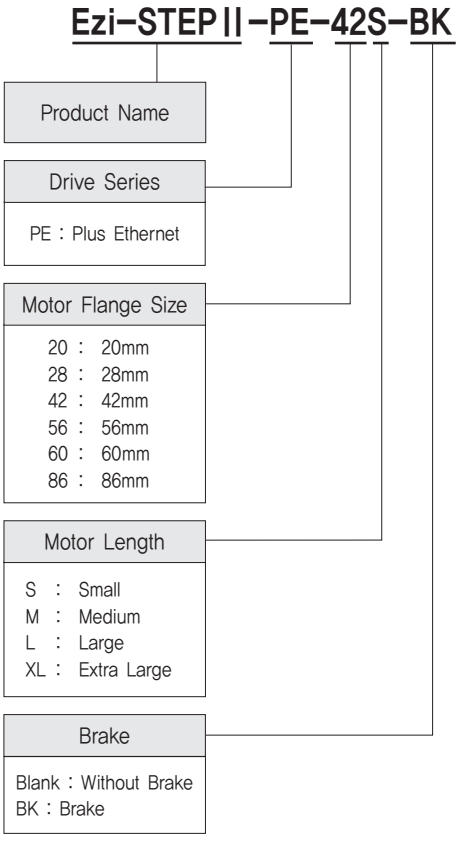
◆ Position Table #14

Position	– – –	Next	– – –	Input 1	Input 2	Input 3	– – –
10000		100		115	116	117	





Ezi-STEPII Plus-E Part Numbering



Standard Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-STEP II-PE-20M	BM-20M	EzT2-PE-20M
Ezi-STEP II-PE-20L	BM-20L	EzT2-PE-20L
Ezi-STEP II-PE-28S	BM-28S	EzT2-PE-28S
Ezi-STEP II-PE-28M	BM-28M	EzT2-PE-28M
Ezi-STEP II-PE-28L	BM-28L	EzT2-PE-28L
Ezi-STEP II-PE-42S	BM-42S	EzT2-PE-42S
Ezi-STEP II-PE-42M	BM-42M	EzT2-PE-42M
Ezi-STEP II-PE-42L	BM-42L	EzT2-PE-42L
Ezi-STEP II-PE-42XL	BM-42XL	EzT2-PE-42XL
Ezi-STEP II-PE-56S	BM-56S	EzT2-PE-56S
Ezi-STEP II-PE-56M	BM-56M	EzT2-PE-56M
Ezi-STEP II-PE-56L	BM-56L	EzT2-PE-56L
Ezi-STEP II-PE-60S	BM-60S	EzT2-PE-60S
Ezi-STEP II-PE-60M	BM-60M	EzT2-PE-60M
Ezi-STEP II-PE-60L	BM-60L	EzT2-PE-60L
Ezi-STEP II-PE-86M	BM-86M	EzT2-PE-86M
Ezi-STEP II-PE-86L	BM-86L	EzT2-PE-86L
Ezi-STEP II-PE-86XL	BM-86XL	EzT2-PE-86XL

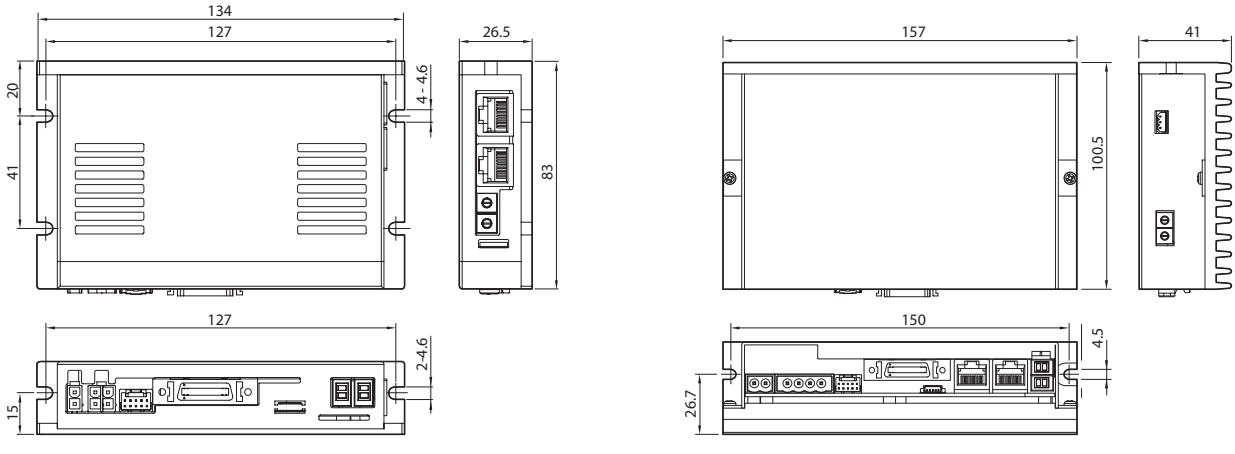
Combination with Brake

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-STEP II-PE-42S-BK	BM-42S-BK	EzT2-PE-42S
Ezi-STEP II-PE-42M-BK	BM-42M-BK	EzT2-PE-42M
Ezi-STEP II-PE-42L-BK	BM-42L-BK	EzT2-PE-42L
Ezi-STEP II-PE-42XL-BK	BM-42XL-BK	EzT2-PE-42XL
Ezi-STEP II-PE-56S-BK	BM-56S-BK	EzT2-PE-56S
Ezi-STEP II-PE-56M-BK	BM-56M-BK	EzT2-PE-56M
Ezi-STEP II-PE-56L-BK	BM-56L-BK	EzT2-PE-56L
Ezi-STEP II-PE-60S-BK	BM-60S-BK	EzT2-PE-60S
Ezi-STEP II-PE-60M-BK	BM-60M-BK	EzT2-PE-60M
Ezi-STEP II-PE-60L-BK	BM-60L-BK	EzT2-PE-60L
Ezi-STEP II-PE-86M-BK	BM-86M-BK	EzT2-PE-86M
Ezi-STEP II-PE-86L-BK	BM-86L-BK	EzT2-PE-86L
Ezi-STEP II-PE-86XL-BK	BM-86XL-BK	EzT2-PE-86XL

Specifications of Drive

Motor Model		BM-20 series	BM-28 series	BM-42 series	BM-56 series	BM-60 series	BM-86 series
Driver Model		EzT2-PE-20 series	EzT2-PE-28 series	EzT2-PE-42 series	EzT2-PE-56 series	EzT2-PE-60 series	EzT2-PE-86 series
Input Voltage		DC24V±10%					DC40~70V
Control Method		Bipolar PWM drive with 32bit MCU					
Multi Axis Drive		Maximum 254 axis operating (Selectable IP: 1~254)					
Position Table		256 motion command steps					
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					
	Resolution	Configurable Resolution [P/R] 500 1,000 1,600 2,000 3,200 3,600 4,000 5,000 6,400 8,000 10,000 20,000 25,000 36,000 40,000 50,000 (Selectable by parameter)					
	Error Types	Over Current Error, Over Speed Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, ROM Error					
	LED Display	Power Status, Alarm Status, Run Status, STEP ON Status					
	Rotational Direction	CW/CCW (Set by parameter)					
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 9 programmable inputs (Photocoupler Input)					
	Output Signals	1 dedicated output (Compare Out), 9 programmable outputs (Photocoupler Output), 1 Brake output					
Communication Interface		· Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex · Dual port Ethernet switch embedded					
Position Control		· Incremental mode / Absolute mode Data Range: -134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min					
Return to Origin		Origin Sensor, ±Limit sensor, Z phase(with external encoder)					
GUI		User Interface Program within Windows					
Library		Motion Library (API) for windows 7/8/10					

Dimensions of Drive [mm]



※ 86mm motor drive (EzT2-PE-86 series)

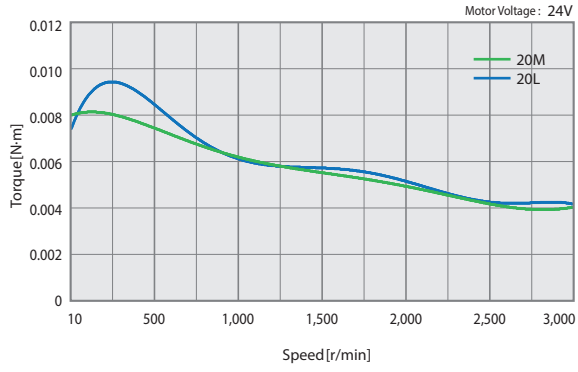
● Specifications of Motor

MODEL				BM-20 series		BM-28 series			BM-42 series			
			UNIT	20M	20L	28S	28M	28L	42S	42M	42L	42XL
DRIVE METHOD			–	Bipolar								
NUMBER OF PHASES			–	2 Phase								
CURRENT per PHASE			A/Phase	0.5	0.5	0.95	0.95	0.95	1.2	1.2	1.2	1.2
MAXIMUM HOLDING TORQUE			N·m	0.016	0.025	0.069	0.098	0.118	0.32	0.44	0.5	0.65
ROTOR INERTIA			$g \cdot cm^2$	2.5	3.3	9.0	13	18	35	54	77	114
WEIGHTS			kg	0.053	0.078	0.115	0.174	0.202	0.238	0.303	0.374	0.508
LENGTH(L)			mm	28	38	32	45	50	34	40	48	60
PERMISSIBLE RADIAL LOAD	DISTANCE FROM END OF SHAFT	3mm	N	18	18	30	30	30	22	22	22	22
		8mm		30	30	38	38	38	26	26	26	26
		13mm		–	–	53	53	53	33	33	33	33
		18mm		–	–	–	–	–	46	46	46	46
PERMISSIBLE AXIAL LOAD			N	Lower then 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								

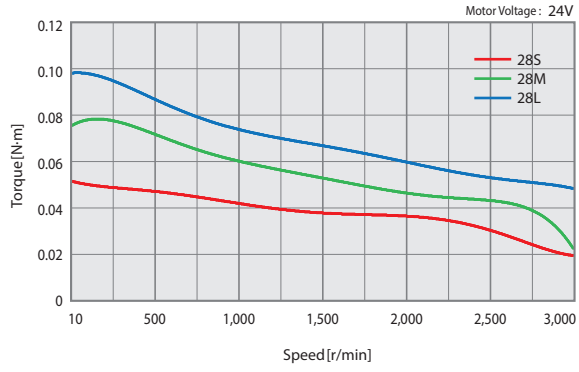
MODEL				BM-56 series			BM-60 series			BM-86 series		
			UNIT	56S	56M	56L	60S	60M	60L	86M	86L	86XL
DRIVE METHOD			–	Bipolar								
NUMBER OF PHASES			–	2 Phase								
CURRENT per PHASE			A/Phase	3.0	3.0	3.0	4.0	4.0	4.0	6.0	6.0	6.0
MAXIMUM HOLDING TORQUE			N·m	0.64	1.0	1.5	0.88	1.28	2.4	4.5	8.5	12
ROTOR INERTIA			$g \cdot cm^2$	180	280	520	240	490	690	1800	3600	5400
WEIGHTS			kg	0.548	0.726	1.159	0.616	0.793	1.349	2.275	3.808	5.330
LENGTH(L)			mm	46	55	80	47	56	85	78	117	155
PERMISSIBLE RADIAL LOAD	DISTANCE FROM END OF SHAFT	3mm	N	52	52	52	70	70	70	270	270	270
		8mm		65	65	65	87	87	87	300	300	300
		13mm		85	85	85	114	114	114	350	350	350
		18mm		123	123	123	165	165	165	400	400	400
PERMISSIBLE AXIAL LOAD			N	Lower then 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

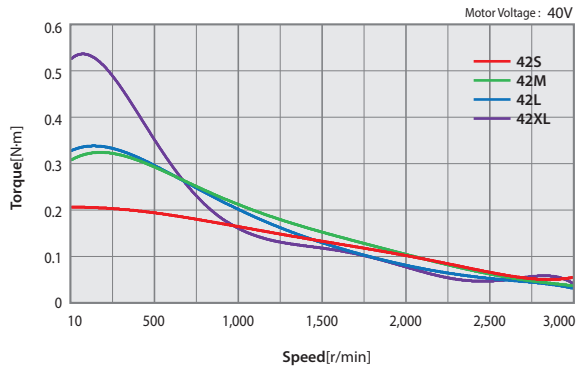
Ezi-STEP II-PE-20 series



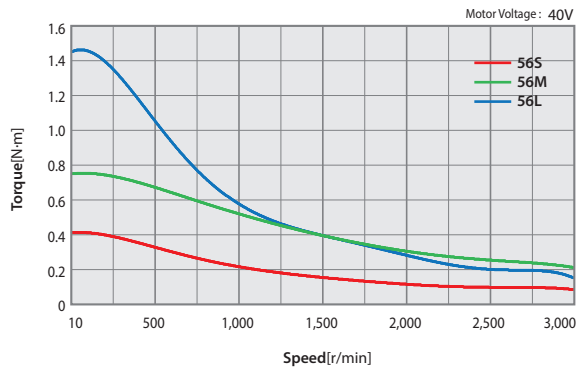
Ezi-STEP II-PE-28 series



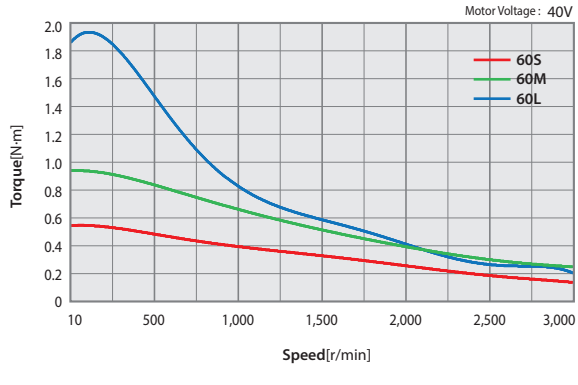
Ezi-STEP II-PE-42 series



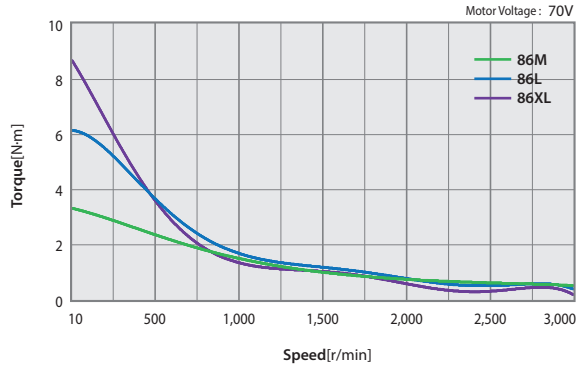
Ezi-STEP II-PE-56 series



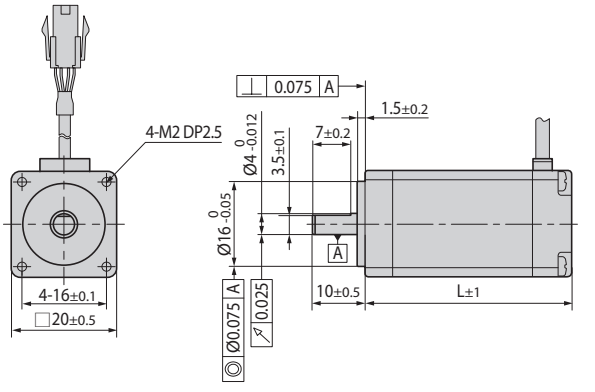
Ezi-STEP II-PE-60 series



Ezi-STEP II-PE-86 series

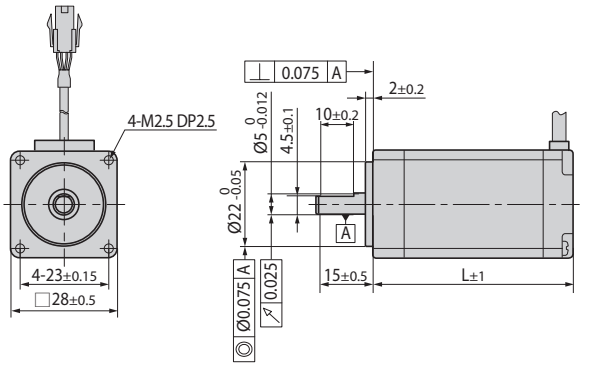


Dimensions of Motor [mm]



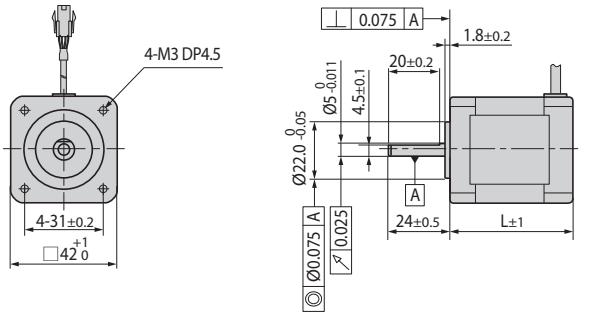
20mm

Model name	Length(L)
BM-20M	28
BM-20L	38



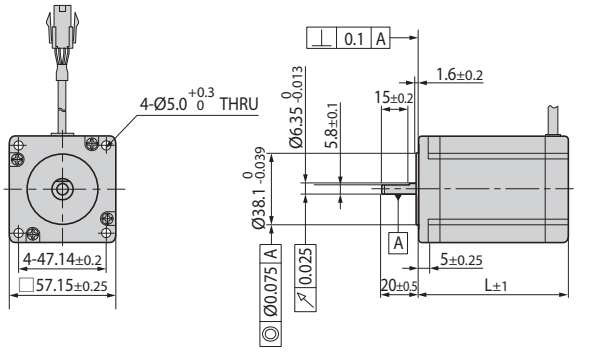
28mm

Model name	Length(L)
BM-28S	32
BM-28M	45
BM-28L	50



42mm

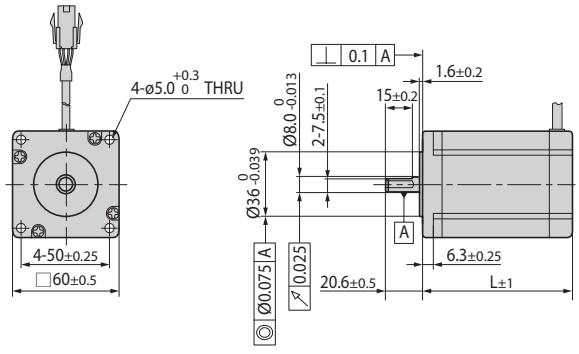
Model name	Length(L)
BM-42S	34
BM-42M	40
BM-42L	48
BM-42XL	60



56mm

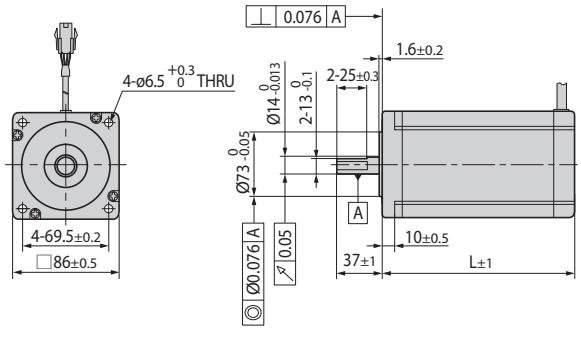
Model name	Length(L)
BM-56S	46
BM-56M	55
BM-56L	80

● Dimensions of Motor [mm]



60mm

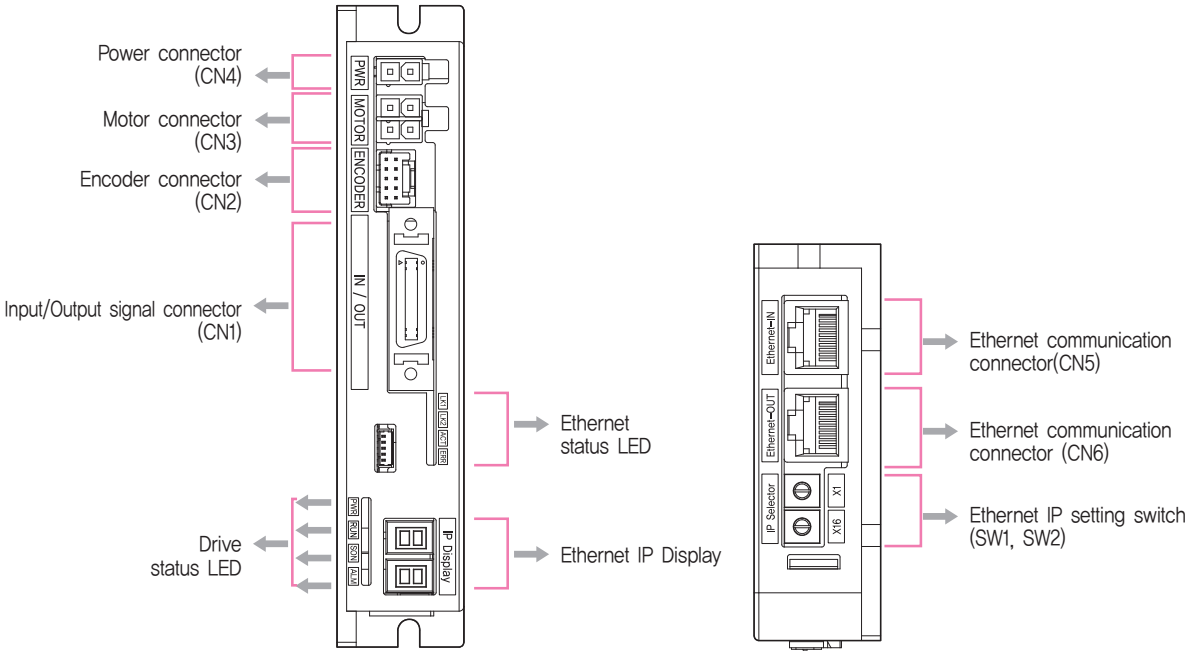
Model name	Length(L)
BM-60S	47
BM-60M	56
BM-60L	85



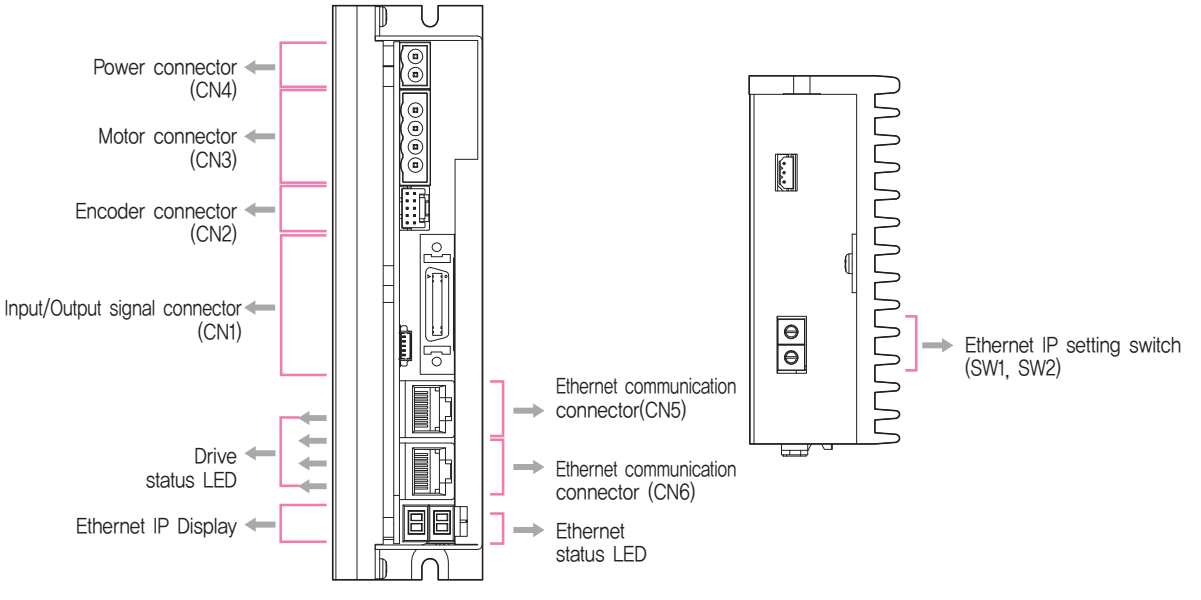
86mm

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

● Settings and Operation

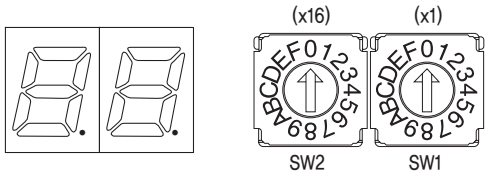


◆ 86mm motor drive (EzT2-PE-86 series)



1. Ethernet IP Display and Setting Switch(SW1, SW2)

These switches set the 4th octet of Ethernet IP, and the value is shown in 7-segment LED display. The 1st octet, the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)



e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= **87**
IP is to be set as 192.168.0.**87**

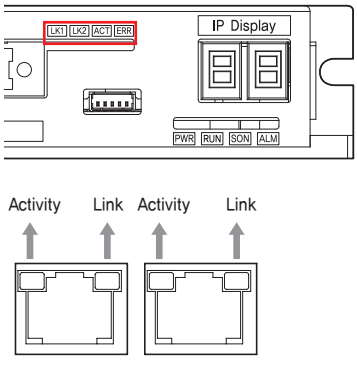
2. Ethernet Status LED

LED indicates communication status of Ethernet. Link/Activity LED exists on each port of Ethernet.

Name	Color	Status	Description
Error	Red	OFF	No Error
		ON	Local Error

Name	Color	Status	Description
LK1/ LK2	Green	OFF	Link not Established
		ON	Link Established

Name	Color	Status	Description
Activity	Yellow	OFF	Stand-by
		Flickering	In operation



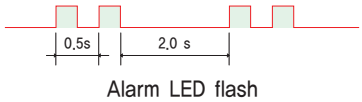
3. Drive Status LED

Name	Color	Function	Description
PWR	Green	Power Input Indication	LED is turned ON when power is applied
RUN	Yellow	Motor Running Indication	LED is turned ON while motor is rotating
SON	Orange	STEP ON / OFF Indication	STEP ON: Lights ON, STEP OFF: Lights OFF
ALM	Red	Alarm Indication	LED blinks when an error occurs.

◆ List of error types by the number of LED blinking

No.	Error Code *3	Error Type	Causes
1	E-001	Over Current Error	The current through power devices in drive exceeds the limit. *1
2	E-002	Over Speed Error	The motor speed exceeds 3,000r/min
5	E-005	Over Temperature Error	Internal temperature of the drive exceeds 85℃
6	E-006	Over Regenerative Voltage Error	Back-EMF is higher than limit value *2
7	E-007	Motor Power Error	There is a problem with the connection between the drive and the motor
12	E-012	ROM Error	Error occurs in parameter storage device(ROM)

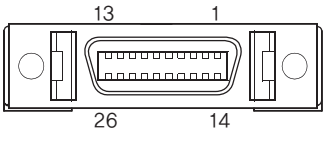
*1 : Limit value depends on motor model. (Refer to the Manual)
*2 : Voltage limit of Back-EMF depends on motor model. (Refer to the Manual)
*3 : When an alarm occurs, error code is displayed on the 7-segment LED display instead of Ethernet IP.
※ Please refer to user Manual for the details of protection functions.



Alarm LED flash
(e.g., Over Speed Error)

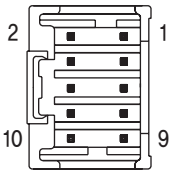
4. Input/Output Signal Connector(CN1)

No.	Function	I/O
1	LIMIT+	Input
2	LIMIT−	Input
3	ORIGIN	Input
4	Digital In1	Input
5	Digital In6	Input
6	Digital In7	Input
7	Compare Out1	Output
8	Digital Out1	Output
9	Digital Out2	Output
10	Digital Out3	Output
11	Digital Out4	Output
12	Digital Out5	Output
13	Digital Out6	Output
14	Digital In2	Input
15	Digital In3	Input
16	Digital In4	Input
17	Digital In5	Input
18	Digital In8	Input
19	Digital In9	Input
20	Digital Out7	Output
21	Digital Out8	Output
22	Digital Out9	Output
23	BRAKE+	Output
24	BRAKE−	Output
25	EXT_GND	Input
26	EXT_DC24V	Input



5. Encoder Connector(CN2)

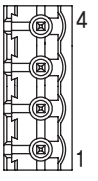
No.	Function	I/O
1	A+	Input
2	A−	Input
3	B+	Input
4	B−	Input
5	Z+	Input
6	Z−	Input
7	DC5V	Output
8	GND	Output
9	F.GND	-----
10	F.GND	-----



6. Motor Connector(CN3)

No.	Function	I/O
1	A Phase	Output
2	B Phase	Output
3	$\overline{A}$ Phase	Output
4	$\overline{B}$ Phase	Output

No.	Function	I/O
1	$\overline{B}$ Phase	Output
2	B Phase	Output
3	$\overline{A}$ Phase	Output
4	A Phase	Output

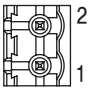


※ 86mm motor drive

7. Power Connector(CN4)

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

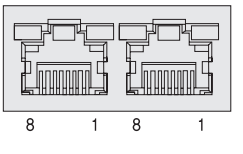
No.	Function	I/O
1	GND	Input
2	DC40~70V	Input



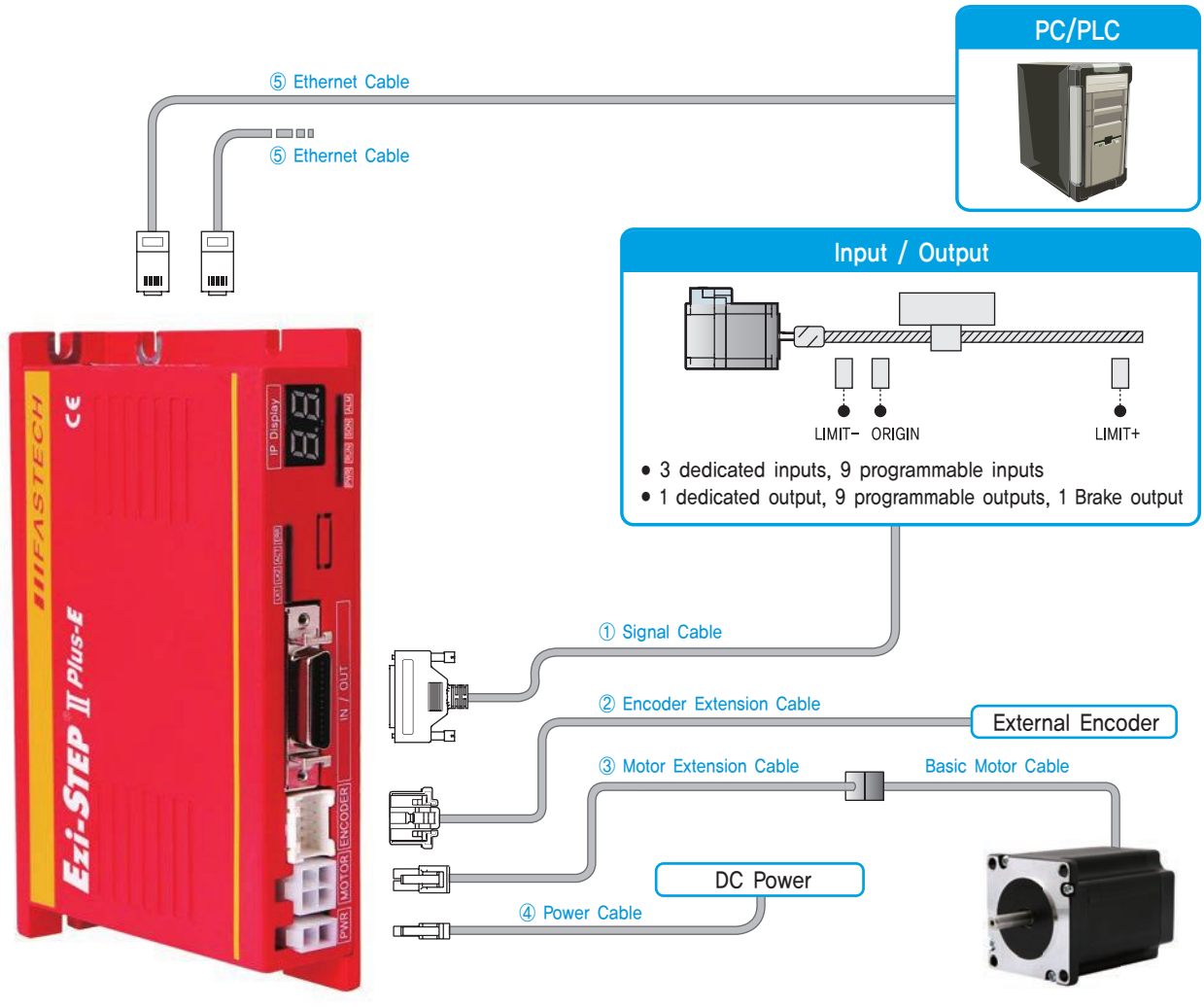
※ 86mm motor drive

8. Ethernet Communication Connector(CN5, CN6)

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



System Configuration



Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold separately)
② Encoder Extension Cable	20m	
③ Motor Extension Cable	20m	
④ Power Cable	2m	
⑤ Ethernet Cable	100m	
Basic Motor Cable	0.3m (Basic length)	Basic cables are attached to motors.

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Power (CN4)		Housing	5557-02R	MOLEX
		Terminal	5556T	
Motor	Drive Side (CN3)	Housing	5557-04R	MOLEX
		Terminal	5556T	
	Motor Side	Housing	5557-04R	MOLEX
		Terminal	5556T	
Encoder	Drive Side (CN2)	Housing	51353-1000	MOLEX
		Terminal	56134-9000	
Signal (CN1)		Connector	10126-3000PE	3M
		Connector Cover	10326-52F0-008	

※ 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-STEP II Plus-E drive and other input/output devices.

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

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

② Encoder Extension Cable

These are the cables to connect Ezi-STEP II Plus-E drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – External Encoder Connection	CTPR-E-001F	1	Normal Cable	Maximum Length: 20m
	CTPR-E-002F	2		
	CTPR-E-003F	3		
	CTPR-E-005F	5		
	CTPR-E-001M	1	Robot Cable	
	CTPR-E-002M	2		
	CTPR-E-003M	3		
	CTPR-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-STEP II Plus-E drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Motor Cable Connection	CSVO-M-001F	1	Normal Cable	Maximum Length: 20m
	CSVO-M-002F	2		
	CSVO-M-003F	3		
	CSVO-M-005F	5		
	CSVO-M-001M	1	Robot Cable	
	CSVO-M-002M	2		
	CSVO-M-003M	3		
	CSVO-M-005M	5		

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

④ Drive Power Cable

These are the cables to connect Ezi-STEP II Plus-E drive and the power.

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

⑤ Ethernet Cable

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

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

[Option] TB-Plus Interface Board

This is an interface board to connect Ezi-STEP II Plus-E drive and I/O signals more conveniently.

Purpose	Part Number	Product Image
Drive – I/O signal Connection Board	TB-Plus	

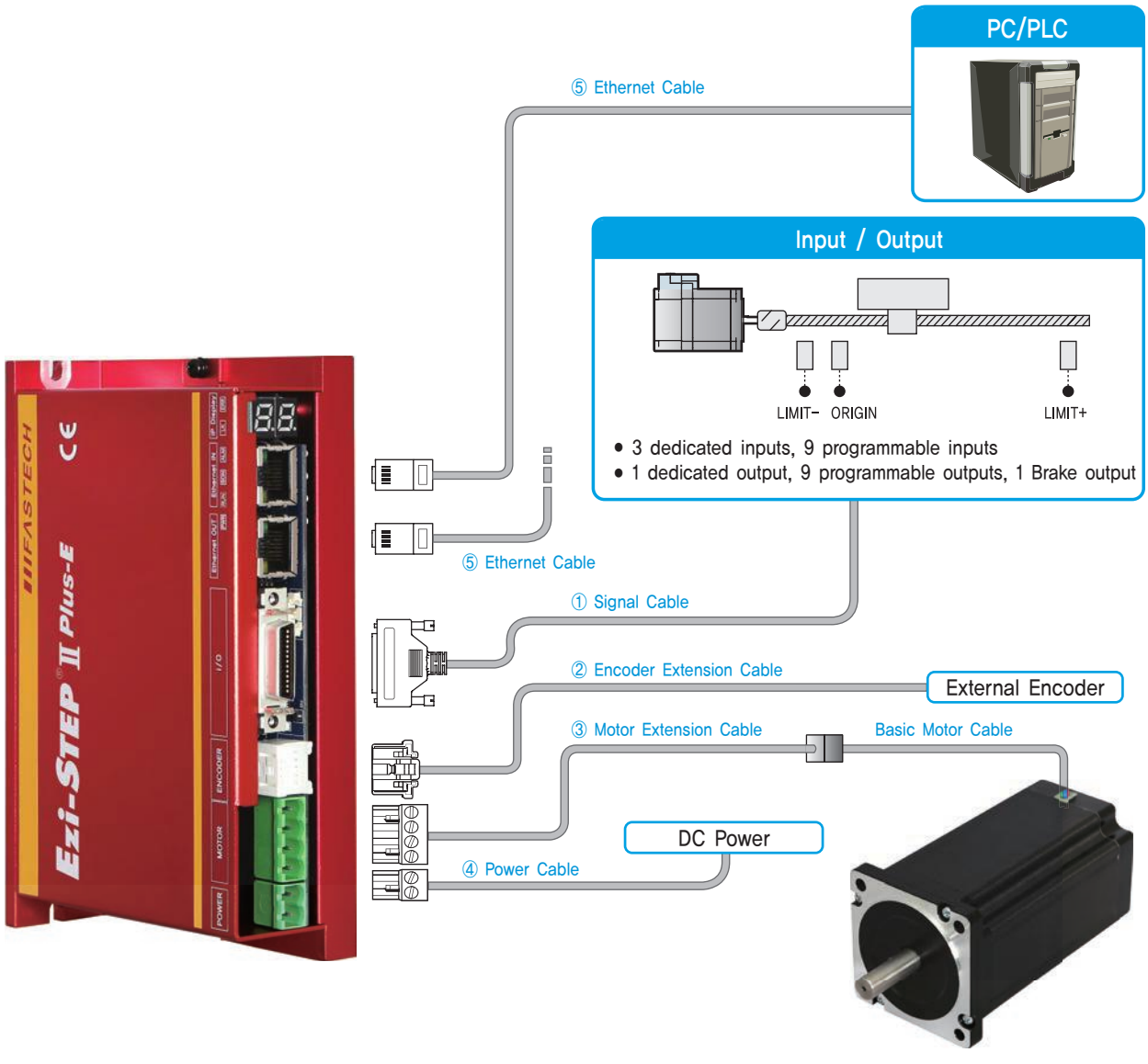
[Option] TB-Plus Interface Cable

These are the cables to connect Ezi-STEP II Plus-E and TB-Plus interface board.

Purpose	Part Number	Part Number	Part Number	Remarks
Drive – Interface(TB-Plus) Connection	CIFD-S-001F	1	Normal Cable	Maximum Length: 20m
	CIFD-S-002F	2		
	CIFD-S-003F	3		
	CIFD-S-005F	5		
	CIFD-S-001M	1	Robot Cable	
	CIFD-S-002M	2		
	CIFD-S-003M	3		
	CIFD-S-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 [86mm Motor Drive]



Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold separately)
② Encoder Extension Cable	20m	
③ Motor Extension Cable	20m	
④ Power Cable	2m	
⑤ Ethernet Cable	100m	
Ethernet Cable	0.3m (Basic length)	Basic cables are attached to motors.

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Power (CN4)		Terminal Block	AK950-2	PTR
Motor	Drive Side (CN3)	Terminal Block	AK950-4	PTR
	Motor Side	Housing	3191-4R1	MOLEX
		Terminal	1381T	
Encoder	Drive Side (CN2)	Housing	51353-1000	MOLEX
		Terminal	56134-9000	
Signal (CN1)		Connector	10126-3000PE	3M
		Connector Cover	10326-52F0-008	

※ 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-STEPII Plus-E drive and other input/output devices.

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

These are the cables to connect Ezi-STEP II Plus-E drive and the encoder

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – External Encoder Connection	CTPR-E-001F	1	Normal Cable	Maximum Length: 20m
	CTPR-E-002F	2		
	CTPR-E-003F	3		
	CTPR-E-005F	5		
	CTPR-E-001M	1	Robot Cable	
	CTPR-E-002M	2		
	CTPR-E-003M	3		
	CTPR-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-STEP II Plus-E drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Motor Cable Connection	CSVP-M-001F	1	Normal Cable	Maximum Length: 20m
	CSVP-M-002F	2		
	CSVP-M-003F	3		
	CSVP-M-005F	5		
	CSVP-M-001M	1	Robot Cable	
	CSVP-M-002M	2		
	CSVP-M-003M	3		
	CSVP-M-005M	5		

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

④ Drive Power Cable

These are the cables to connect Ezi-STEP II Plus-E drive and the control power.

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

⑤ Ethernet Cable

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

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

[Option] TB-Plus Interface Board

This is an interface board to connect Ezi-STEP II Plus-E drive and I/O signals more conveniently.

Purpose	Part Number	Product Image
Drive – I/O signal Connection Board	TB-Plus	

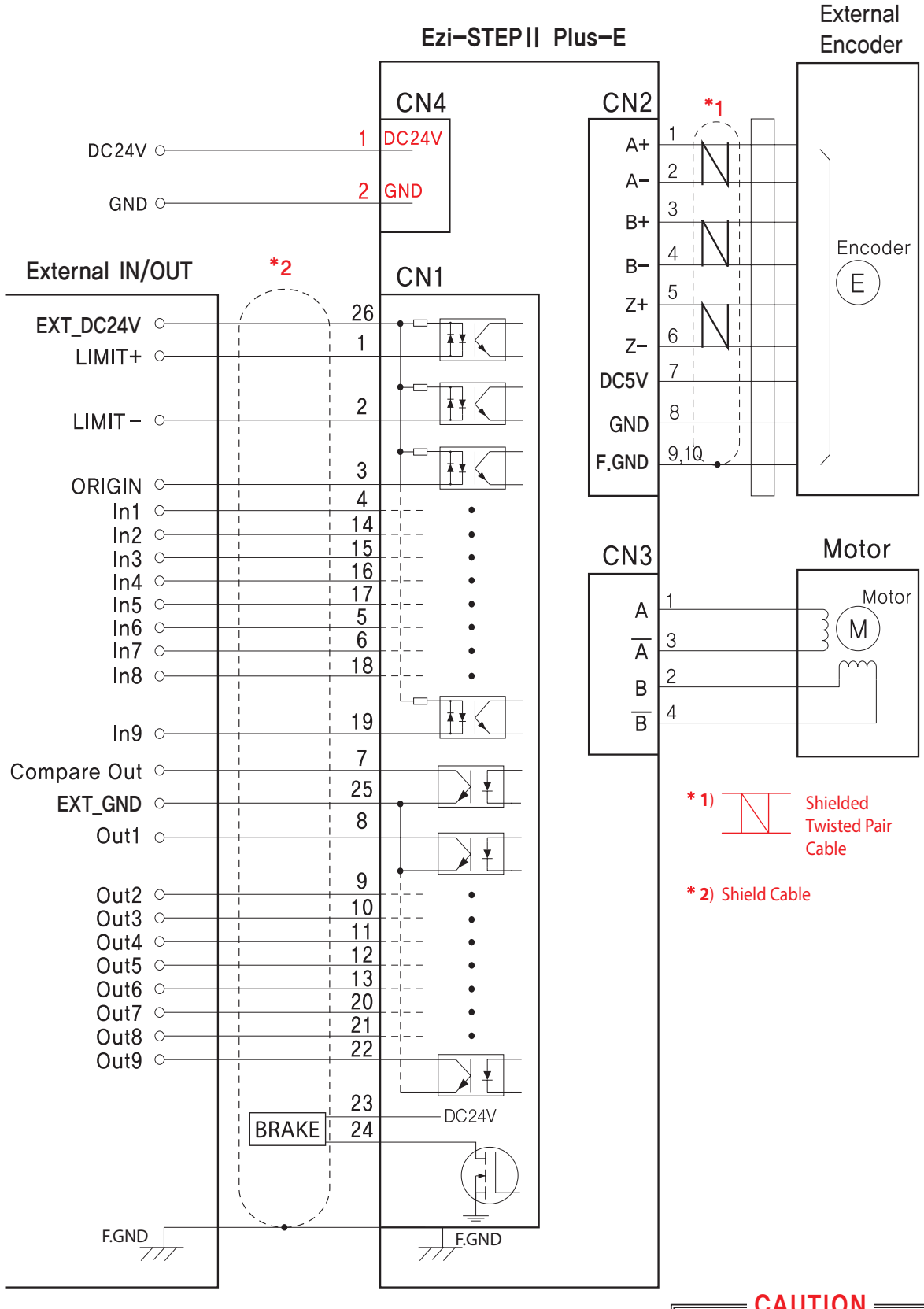
[Option] TB-Plus Interface Board

This is an interface board to connect Ezi-STEP II Plus-E drive and I/O signals more conveniently.

Part Number	Part Number	Length [m]	Cable Type	Remarks
Drive – Interface(TB-Plus) Connection	CIFD-S-001F	1	Normal Cable	Maximum Length: 20m
	CIFD-S-002F	2		
	CIFD-S-003F	3		
	CIFD-S-005F	5		
	CIFD-S-001M	1	Robot Cable	
	CIFD-S-002M	2		
	CIFD-S-003M	3		
	CIFD-S-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

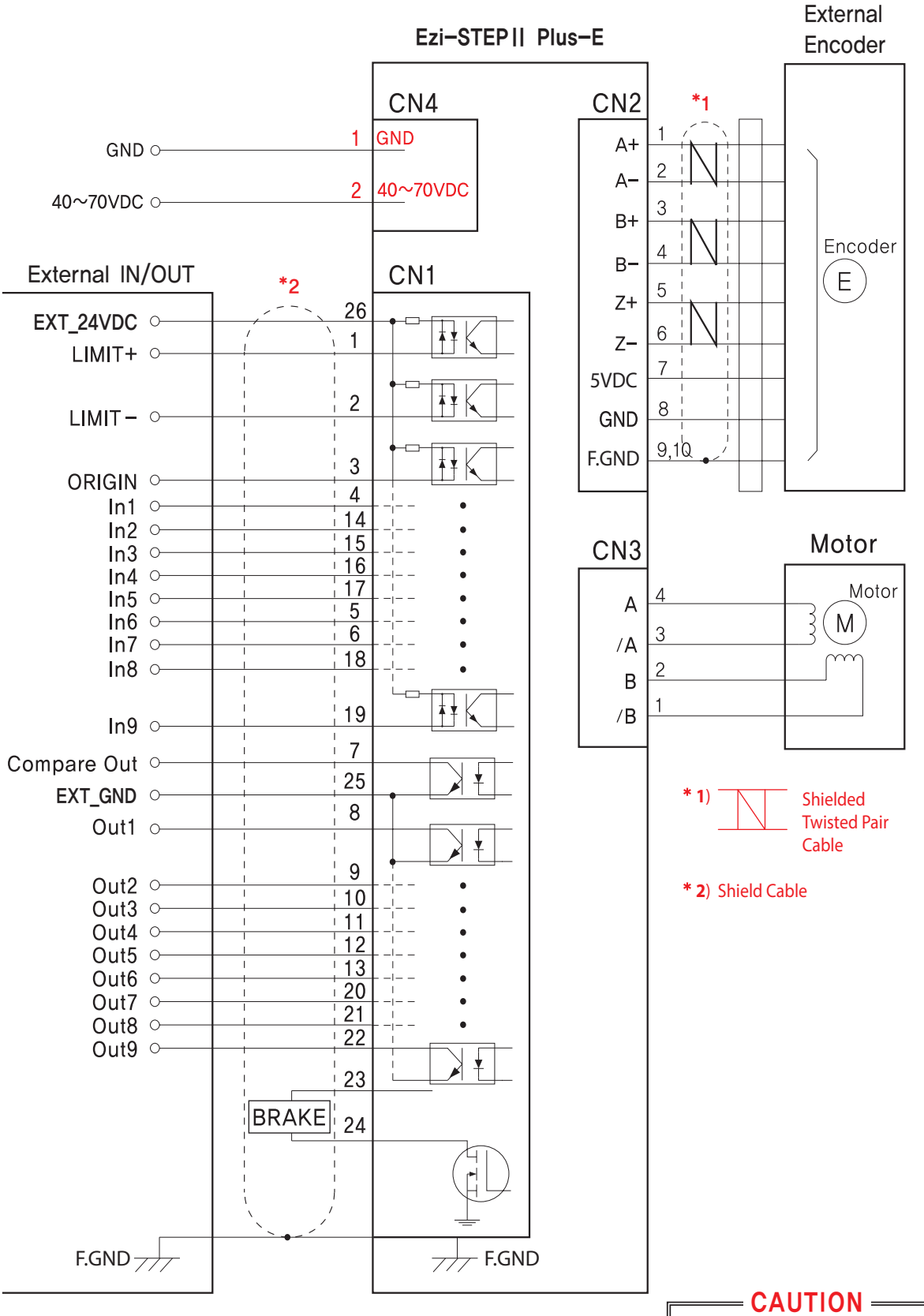


※ When connects I/O cable between controller and drive, please turn of the power of both controller and drive to prevent electric shock or to protect the drive from any damage.

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 [86mm motor drive]



※ When connects I/O cable between controller and drive, please turn of 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.


Plus-E
Ezi-STEP II mini
FASTECH
PWR
MOTOR
ENCODER
IN / OUT
SW1 SW2 LK1 LK2 FUNCTION

Ezi-STEP® II Plus-E MINI

Micro Stepping System

- Embedded Motion Controller
- Ethernet Interface
- Position Table
- Microstepping
- Software Damping
- Space Saving / Reduced Wiring by Compact Drive

FASTECH

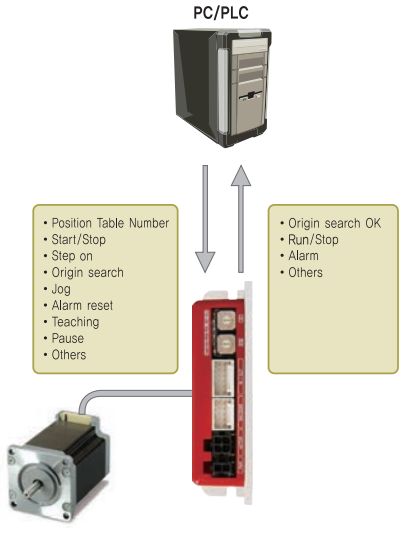
Fast, Accurate, Smooth Motion

Ezi-STEP® II Plus-E MINI

Micro Stepping System

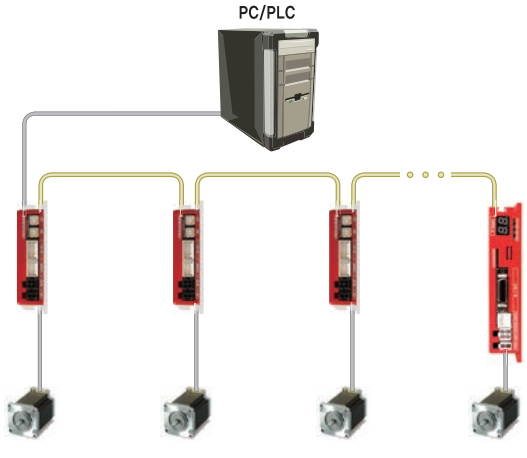
2 Position Table Function

Position Table can be used for motion control by digital input and output signals of host controller. You can operate the motor directly by sending the position table number, start/stop, origin search and other digital input values from a PC. The PC can monitor the origin search, moving/stop, step ready and other digital output signals from a drive. A maximum of 256 positioning points can be set from PC.



1 Network Based Motion Control

A maximum of 254 axis can be operated from a PC through Ethernet communications. And daisy-chain connection is available thru internally equipped Ethernet HUB. All of the Motion conditions are set through the network and saved in Flash ROM as a parameter. Motion Library(API) is provided for programming under Windows 7/8/10.

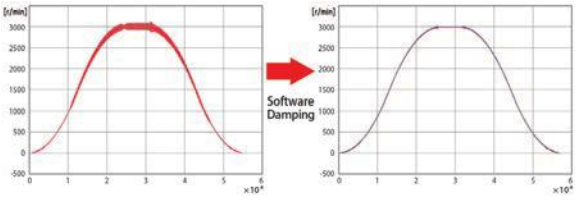


3 Microstep and Filtering

The high-performance MCU operates at step resolutions of 1.8° up to maximum 0.0072° (1/250 steps) and Ezi-STEP II adjusts PWM control signal in every 50μsec, which makes it possible for more precise current control, resulting in high-precision Microstep operation. In addition, Ezi-STEP II applies filtering control to enable smooth operation even at very low-speed.

4 Software Damping

Motor vibration is created by magnetic flux variations of the motor, lower current from the drive due to back-emf from the motor at high speeds and lowering of phase voltages from the drive.
Ezi-STEP II drive detects these problems and the MCU adjusts the phase of the current according to the pole position of the motor, drastically suppressing vibration.
This allows the smooth operation of the motor at high-speeds.



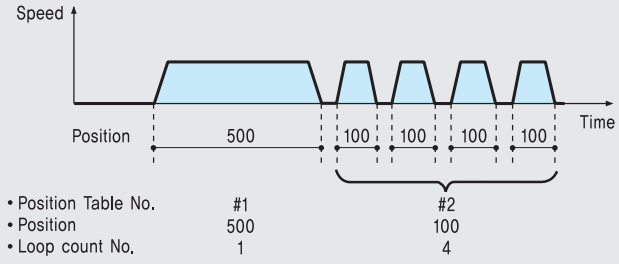
Software Damping OFF　　Software Damping ON

※ This is real measured speed that using 100,000 P/R encoder.

Motion Controller Features of Ezi-STEP II

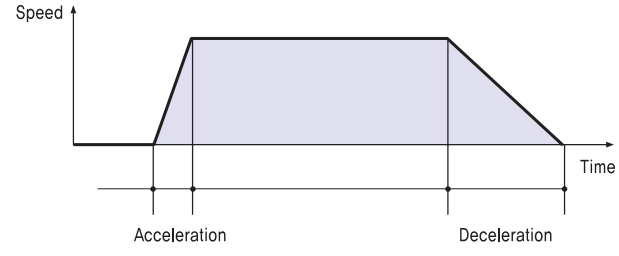
1. Loop Count

This function allows positioning repeatedly according to the Loop Count Number.



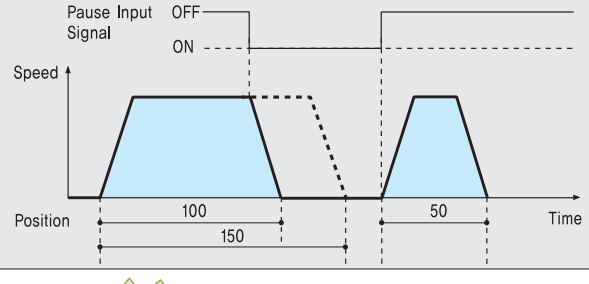
2. Acceleration/Deceleration

For quick acceleration and gradual deceleration, you can set each acceleration and deceleration time separately.



3. Pause

You can pause the motion upon the input of an external signal. When Pause signal change to OFF, the motor will restart to original target position.

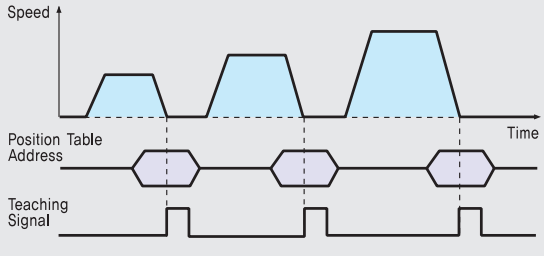


4. Alarm

The number of LED flashing time indicates which Alarm has occurred.

5. Teaching

Teaching signal is used to memorize current Position data into the selected Position Table item.

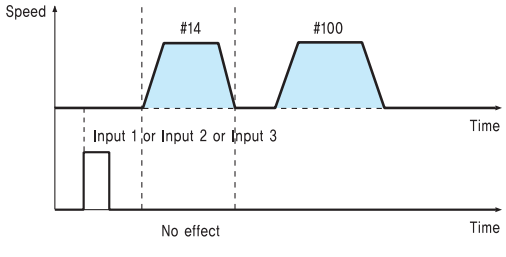


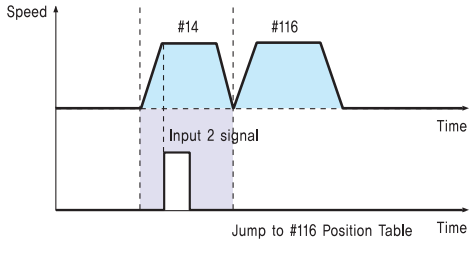
6. Jump

Within one Position Table, you can select various Position Table numbers that you want to jump.
With three external input signal during movement, the next jump Position Table number can be select.

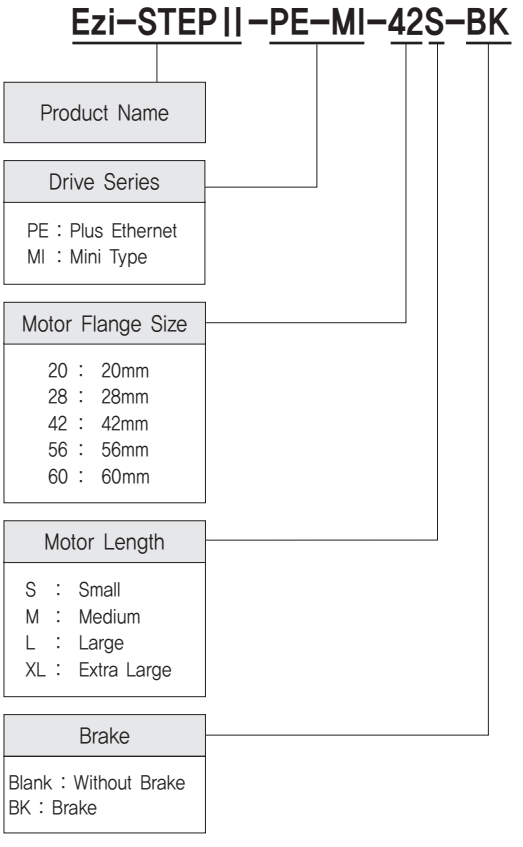
◆ Position Table #14

Position	– – –	Next	– – –	Input 1	Input 2	Input 3	– – –
10000		100		115	116	117	





Ezi-STEPII Plus-E MINI Part Numbering



Standard Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-STEP II-PE-MI-20M	BM-20M	EzT2-PE-MI-20M
Ezi-STEP II-PE-MI-20L	BM-20L	EzT2-PE-MI-20L
Ezi-STEP II-PE-MI-28S	BM-28S	EzT2-PE-MI-28S
Ezi-STEP II-PE-MI-28M	BM-28M	EzT2-PE-MI-28M
Ezi-STEP II-PE-MI-28L	BM-28L	EzT2-PE-MI-28L
Ezi-STEP II-PE-MI-42S	BM-42S	EzT2-PE-MI-42S
Ezi-STEP II-PE-MI-42M	BM-42M	EzT2-PE-MI-42M
Ezi-STEP II-PE-MI-42L	BM-42L	EzT2-PE-MI-42L
Ezi-STEP II-PE-MI-42XL	BM-42XL	EzT2-PE-MI-42XL
Ezi-STEP II-PE-MI-56S	BM-56S	EzT2-PE-MI-56S
Ezi-STEP II-PE-MI-56M	BM-56M	EzT2-PE-MI-56M
Ezi-STEP II-PE-MI-56L	BM-56L	EzT2-PE-MI-56L
Ezi-STEP II-PE-MI-60S	BM-60S	EzT2-PE-MI-60S
Ezi-STEP II-PE-MI-60M	BM-60M	EzT2-PE-MI-60M
Ezi-STEP II-PE-MI-60L	BM-60L	EzT2-PE-MI-60L

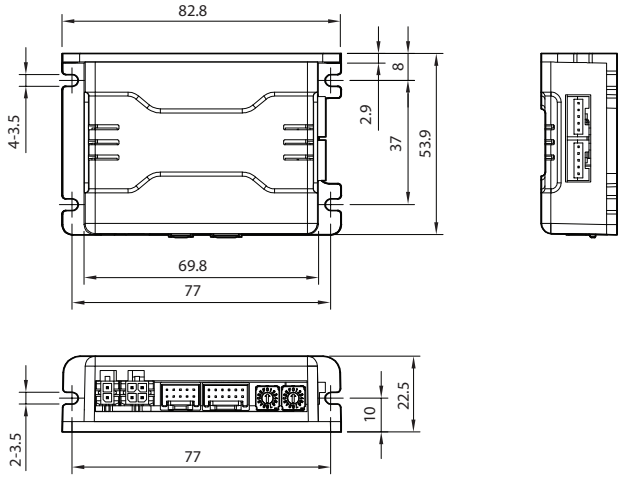
Combination with Brake

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-STEP II-PE-MI-42S-BK	BM-42S-BK	EzT2-PE-MI-42S
Ezi-STEP II-PE-MI-42M-BK	BM-42M-BK	EzT2-PE-MI-42M
Ezi-STEP II-PE-MI-42L-BK	BM-42L-BK	EzT2-PE-MI-42L
Ezi-STEP II-PE-MI-42XL-BK	BM-42XL-BK	EzT2-PE-MI-42XL
Ezi-STEP II-PE-MI-56S-BK	BM-56S-BK	EzT2-PE-MI-56S
Ezi-STEP II-PE-MI-56M-BK	BM-56M-BK	EzT2-PE-MI-56M
Ezi-STEP II-PE-MI-56L-BK	BM-56L-BK	EzT2-PE-MI-56L
Ezi-STEP II-PE-MI-60S-BK	BM-60S-BK	EzT2-PE-MI-60S
Ezi-STEP II-PE-MI-60M-BK	BM-60M-BK	EzT2-PE-MI-60M
Ezi-STEP II-PE-MI-60L-BK	BM-60L-BK	EzT2-PE-MI-60L

● Specifications of Drive

Motor Model		BM-20 series	BM-28 series	BM-42 series	BM-56 series	BM-60 series
Drive Model		EzT2-PE-MI-20 series	EzT2-PE-MI-28 series	EzT2-PE-MI-42 series	EzT2-PE-MI-56 series	EzT2-PE-MI-60 series
Input Voltage		DC24V±10%				
Control Method		Bipolar PWM drive with 32bit MCU				
Multi Axis Drive		Maximum 254 axis operating (Selectable IP: 1~254)				
Position Table		256 motion command steps				
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				
	Resolution	Configurable Resolution [P/R] 500 1,000 1,600 2,000 3,200 3,600 4,000 5,000 6,400 8,000 10,000 20,000 25,000 36,000 40,000 50,000 (Selectable by parameter)				
	Error Types	Over Current Error, Over Speed Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, ROM Error				
	LED Display	Power Status, Alarm Status, Run Status, STEP ON Status				
	Rotational Direction	CW/CCW (Set by parameter)				
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 3 programmable inputs (Photocoupler Input)				
	Output Signals	1 dedicated output (Compare Out), 1 programmable outputs (Photocoupler Output), 1 Brake output				
Communication Interface		· Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex · Dual port Ethernet switch embedded				
Position Control		· Incremental mode / Absolute mode Data Range: -134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min				
Return to Origin		Origin Sensor, ±Limit sensor, Z phase(with external encoder)				
GUI		User Interface Program within Windows				
Library		Motion Library (API) for windows 7/8/10				

● Dimensions of Drive [mm]



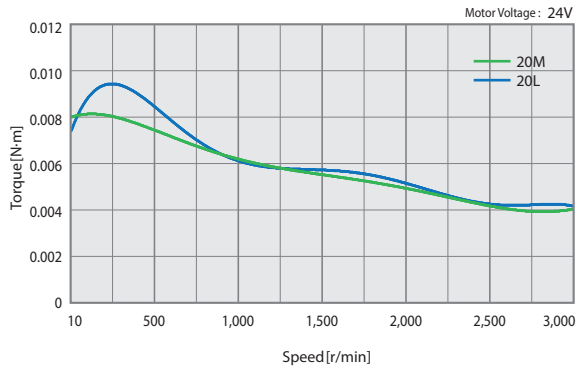
Specifications of Motor

MODEL			UNIT	BM-20 series 20M	BM-20 series 20L	BM-28 series 28S	BM-28 series 28M	BM-28 series 28L	BM-42 series 42S	BM-42 series 42M	BM-42 series 42L	BM-42 series 42XL
DRIVE METHOD			–	Bipolar								
NUMBER OF PHASES			–	2 Phase								
CURRENT per PHASE			A/Phase	0.5	0.5	0.95	0.95	0.95	1.2	1.2	1.2	1.2
MAXIMUM HOLDING TORQUE			N·m	0.016	0.025	0.069	0.098	0.118	0.32	0.44	0.5	0.65
ROTOR INERTIA			$g \cdot cm^2$	2.5	3.3	9.0	13	18	35	54	77	114
WEIGHTS			kg	0.053	0.078	0.115	0.174	0.202	0.238	0.303	0.374	0.508
LENGTH(L)			mm	28	38	32	45	50	34	40	48	60
PERMISSIBLE RADIAL LOAD	DISTANCE FROM END OF SHAFT	3mm	N	18	18	30	30	30	22	22	22	22
		8mm		30	30	38	38	38	26	26	26	26
		13mm		–	–	53	53	53	33	33	33	33
		18mm		–	–	–	–	–	46	46	46	46
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								

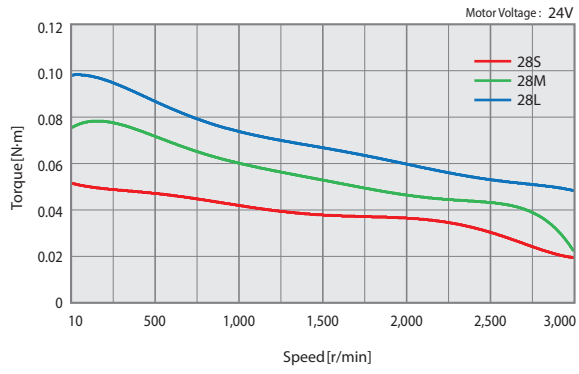
MODEL			UNIT	BM-56 series 56S	BM-56 series 56M	BM-56 series 56L	BM-60 series 60S	BM-60 series 60M	BM-60 series 60L
DRIVE METHOD			–	Bipolar					
NUMBER OF PHASES			–	2 Phase					
CURRENT per PHASE			A/Phase	3.0	3.0	3.0	4.0	4.0	4.0
MAXIMUM HOLDING TORQUE			N·m	0.64	1.0	1.5	0.88	1.28	2.4
ROTOR INERTIA			$g \cdot cm^2$	180	280	520	240	490	690
WEIGHTS			kg	0.548	0.726	1.159	0.616	0.793	1.349
LENGTH(L)			mm	46	55	80	47	56	85
PERMISSIBLE RADIAL LOAD	DISTANCE FROM END OF SHAFT	3mm	N	52	52	52	70	70	70
		8mm		65	65	65	87	87	87
		13mm		85	85	85	114	114	114
		18mm		123	123	123	165	165	165
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

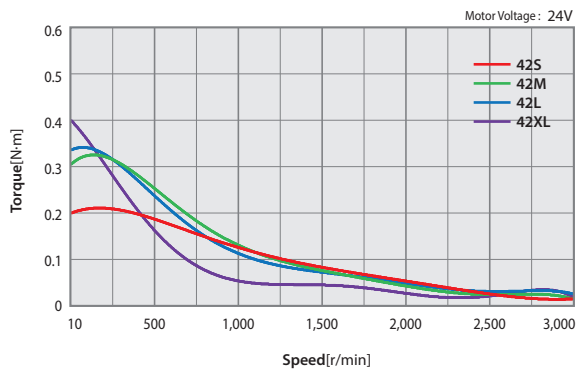
Ezi-STEP II-PE-MI-20 series



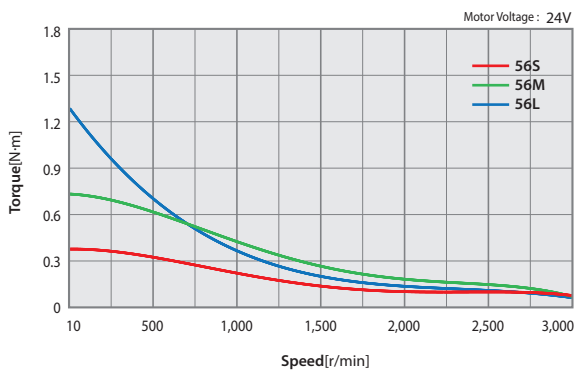
Ezi-STEP II-PE-MI-28 series



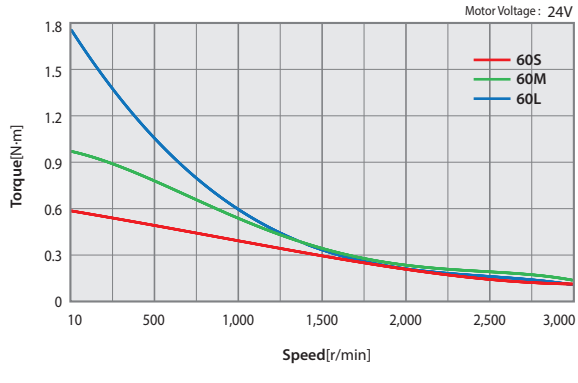
Ezi-STEP II-PE-MI-42 series



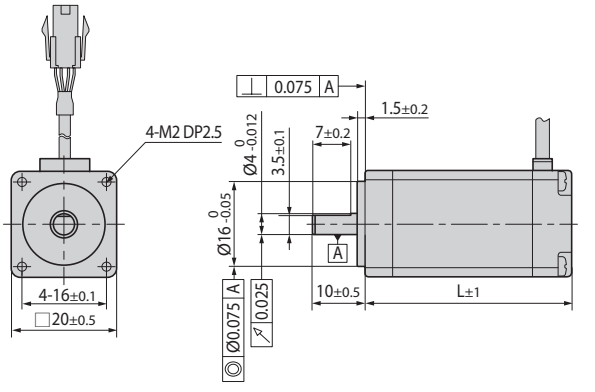
Ezi-STEP II-PE-MI-56 series



Ezi-STEP II-PE-MI-60 series

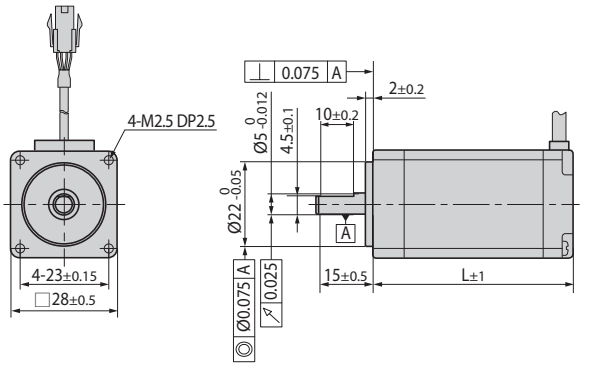


Dimensions of Motor [mm]



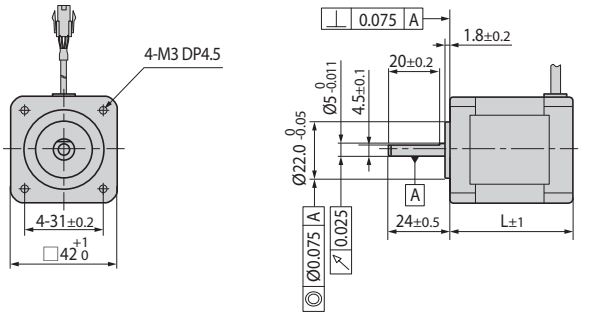
20mm

Model name	Length(L)
BM-20M	28
BM-20L	38



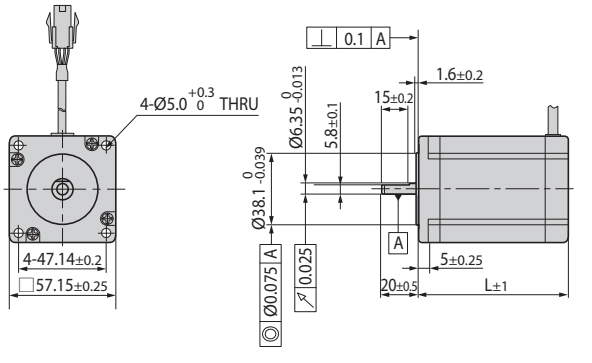
28mm

Model name	Length(L)
BM-28S	32
BM-28M	45
BM-28L	50



42mm

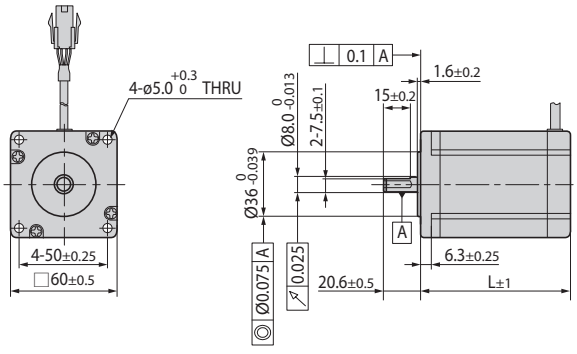
Model name	Length(L)
BM-42S	34
BM-42M	40
BM-42L	48
BM-42XL	60



56mm

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

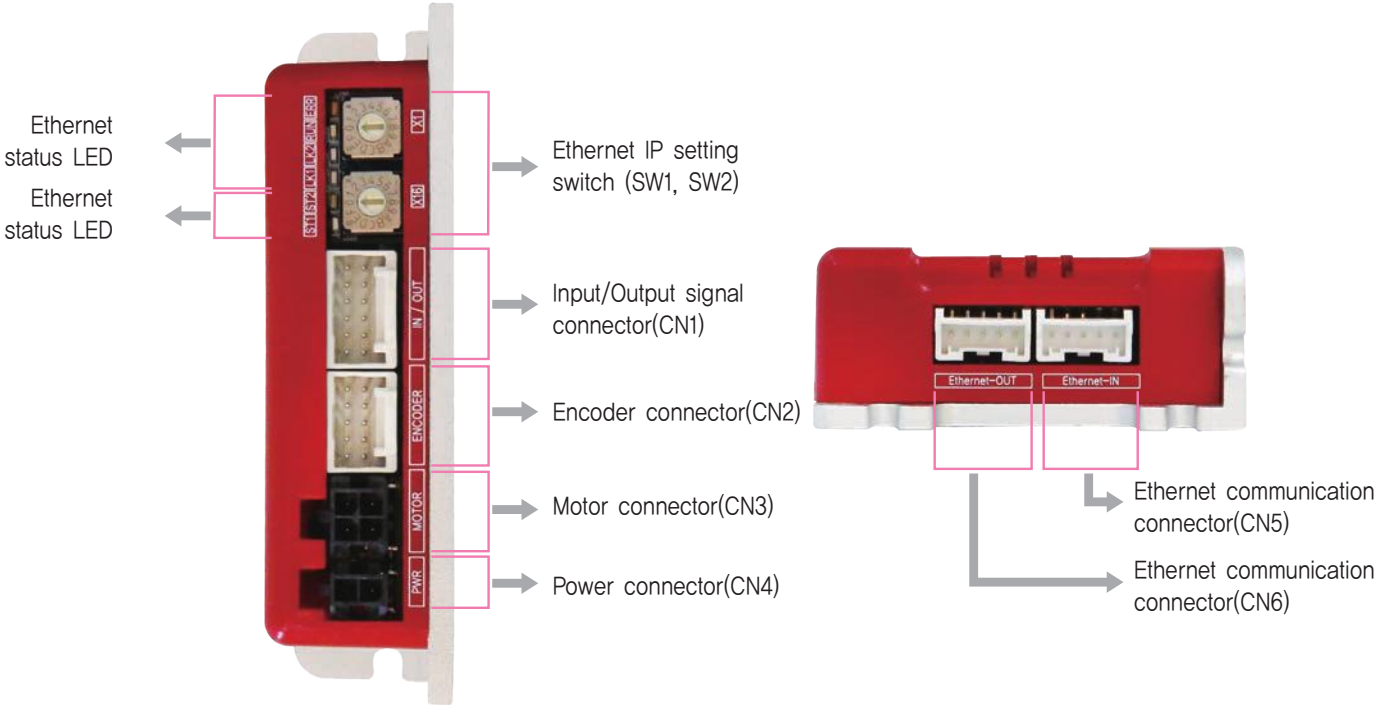
● Dimensions of Motor [mm]



60mm

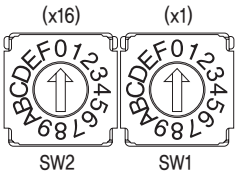
Model name	Length(L)
BM-60S	47
BM-60M	56
BM-60L	85

● Settings and Operation



1. Ethernet IP Setting Switch(SW1, SW2)

These switches set the 4th octet of Ethernet IP. The 1st octet,the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)



e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= 87
IP is to be set as 192.168.0.87

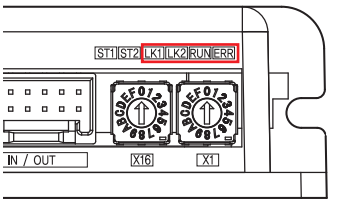
2. Ethernet Status LED

LED indicates communication status of Ethernet.

Name	Color	Status	Description
Error	Red	OFF	No Error
		ON	Local Error

Name	Color	Status	Description
LK1/ LK2	Green	OFF	Link not Established
		ON	Link Established

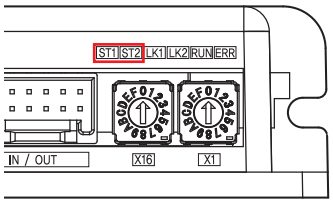
Name	Color	Status	Description
RUN	Orange	Blinking	Operating Normally



3. Drive Status LED

LED informs operation status of the drive.

LED Indication	LED Status	Description
ST1 : ▬ ▬ ▬ ▬ ST2 :	ST1 blinks, ST2 is OFF	STEP On
ST1 : ▬▬▬▬ ST2 :	ST1 is ON, ST2 is OFF	STEP Off
ST1 : ▬▬▬▬ ST2 : ▬▬▬▬	ST1 and ST2 are ON	In motion
ST1 : ST2 : ▬ ▬ ▬ ▬	ST1 is OFF, ST2 blinks repeatedly for a set number of times depending on the type of error.	Error



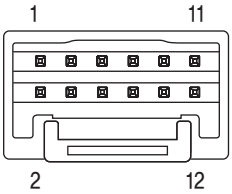
◆ List of error types by the number of ST2 LED blinking

No.	Error Type	Causes
1	Over Current Error	The current through power devices in drive exceeds 4.8A
2	Over Speed Error	The motor speed exceeds 3,000r/min
5	Over Temperature Error	Internal temperature of the drive exceeds 85℃
6	Over Regenerative Voltage Error	Back-EMF is higher than 48V
7	Motor Connect Error	There is a problem with the connection between the drive and the motor
12	ROM Error	Error occurs in parameter storage device(ROM)

Alarm LED flash
(e.g., Over Speed Error)

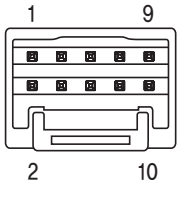
4. Input/Output Signal Connector(CN1)

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	Compare Out	Output
12	Digital Out1	Output



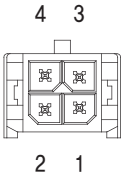
5. Encoder Connector(CN2)

No.	Function	I/O
1	A+	Input
2	A-	Input
3	B+	Input
4	B-	Input
5	Z+	Input
6	Z-	Input
7	DC5V	Output
8	GND	Output
9	F.GND	-----
10	F.GND	-----



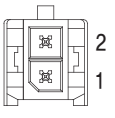
6. Motor Connector(CN3)

No.	Function	I/O
1	A Phase	Output
2	B Phase	Output
3	$\overline{A}$ Phase	Output
4	$\overline{B}$ Phase	Output



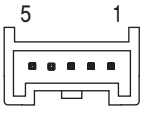
7. Power Connector(CN4)

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

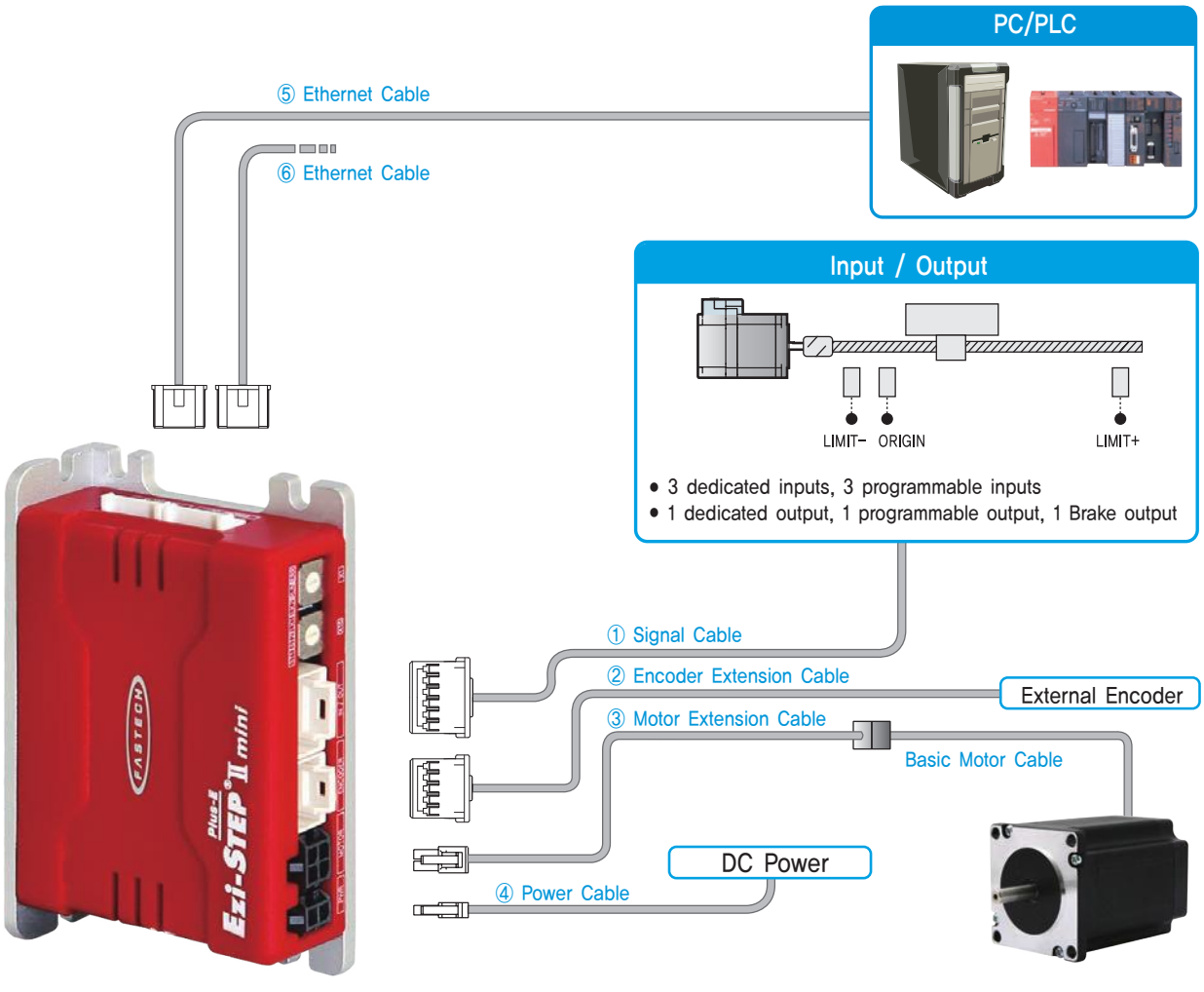


8. Ethernet Communication Connector(CN5, CN6)

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



System Configuration



Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold separately)
② Encoder Extension Cable	20m	
③ Motor Extension Cable	20m	
④ Power Cable	2m	
⑤/⑥ Ethernet Cable	100m	
Basic Motor Cable	0.3m (Basic length)	Basic cables are attached to motors.

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Ethernet (CN5, CN6)		Housing	PAP-05V-S	JST
		Terminal	SPHD-001T-P0.5	
Power (CN4)		Housing	43025-0200	MOLEX
		Terminal	43030-0001	
Motor	Drive Side (CN3)	Housing	43025-0400	MOLEX
		Terminal	43030-0001	
	Motor Side	Housing	5557-04R	MOLEX
		Terminal	5556T	
Encoder	Drive Side (CN2)	Housing	501646-1000	MOLEX
		Terminal	501648-1000(AWG 26~28)	
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-STEP II Plus-E MINI drive and other input/output devices.

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

These are the cables to connect Ezi-STEP II Plus-E MINI drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Encoder Cable Connection	CTPM-E-001F	1	Normal Cable	Maximum Length: 20m
	CTPM-E-002F	2		
	CTPM-E-003F	3		
	CTPM-E-005F	5		
	CTPM-E-001M	1	Robot Cable	
	CTPM-E-002M	2		
	CTPM-E-003M	3		
	CTPM-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-STEP II Plus-E MINI drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive – Basic Motor Cable Connection	CSMI-M-001F	1	Normal Cable	Maximum Length: 20m
	CSMI-M-002F	2		
	CSMI-M-003F	3		
	CSMI-M-005F	5		
	CSMI-M-001M	1	Robot Cable	
	CSMI-M-002M	2		
	CSMI-M-003M	3		
	CSMI-M-005M	5		

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

④ Drive Power Cable

These are the cables to connect Ezi-STEP II Plus-E MINI drive and the power.

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

⑤ Ethernet Cable (5 pin connector – RJ45)

These are the cables to connect Ezi-STEP II Plus-E MINI drive and Ezi-STEP II Plus-E with Ethernet network.

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

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

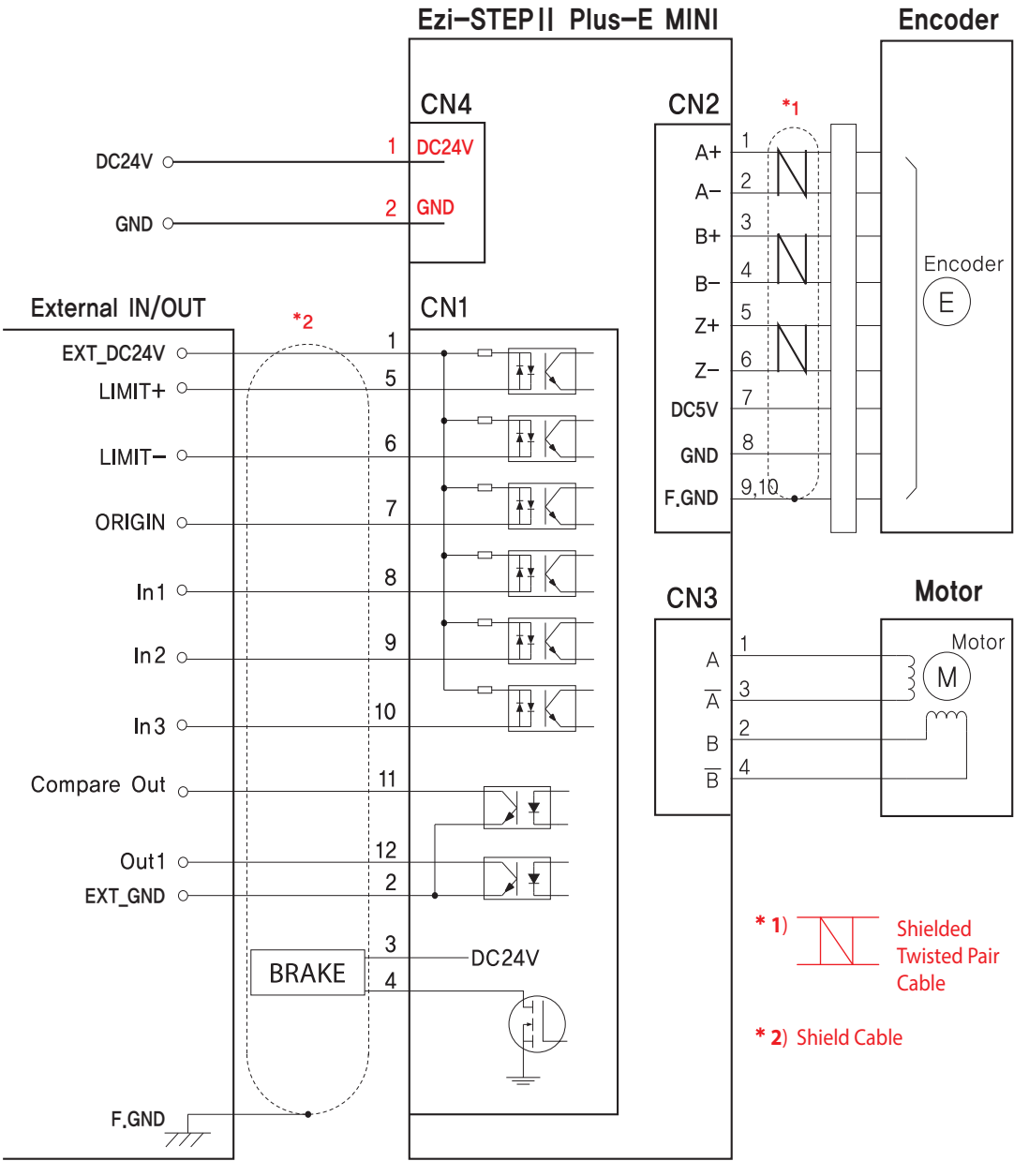
⑥ Ethernet Cable (5 pin connector – 5 pin connector)

These are the cables to connect between Ezi-STEP II Plus-E MINI drives with Ethernet network.

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

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

External Wiring Diagram



※ 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.


MITSUBISHI
YASKAWA
SERVOPACK
100V
CHARGE
Panasonic
MADHT1505
200V
RS1A03AA
MODE
WR
CHARGE
POWER
Ethernet-IN
Ethernet-OUT

Ezi-MotionLink® Plus-E

Network based Motion Controller Plug-in to Servo Drives

- Ethernet Type Motion Controller
- Compatible with Various Servo Drives
- Various Motion Functions
- Reduced Wiring

FASTECH

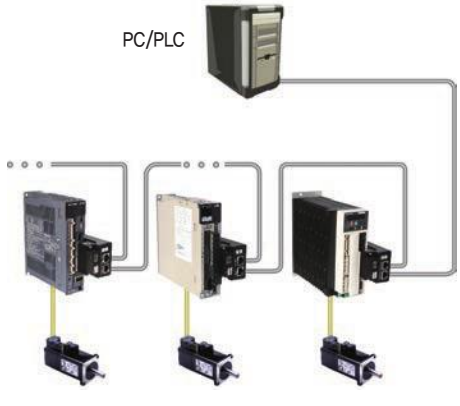
Fast, Accurate, Smooth Motion

Ezi-MotionLink® Plus-E

Network based Motion Controller Plug-in to Servo Drives

1 Network Based Motion Controller

A maximum of 254 axis can be operated from a PC through Ethernet communications. And daisy-chain connection is available thru internally equipped Ethernet HUB. All of the Motion conditions are set through the network and saved in Flash ROM as a parameter. Motion Library(API) is provided for programming under Windows 7/8/10.

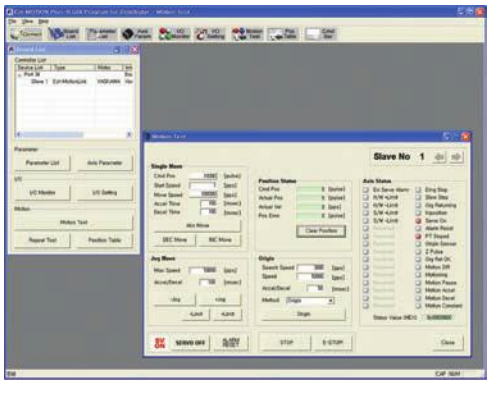


2 Flexible System Construction

Ezi-MOTIONLINK Plus-E can be directly connected to the servo drive through the attached connector, so you can easily install the product without additional wiring. In addition, since it is compatible with servo drives of various companies, the system can be built flexibly.

3 Various Motion Function

Ezi-MOTIONLINK Plus-E has various functions required for motion control system, and you can set up motions simply and conveniently by using the provided GUI (Graphical User Interface) software.



Ezi-MOTIONLINK Plus-E Part Numbering

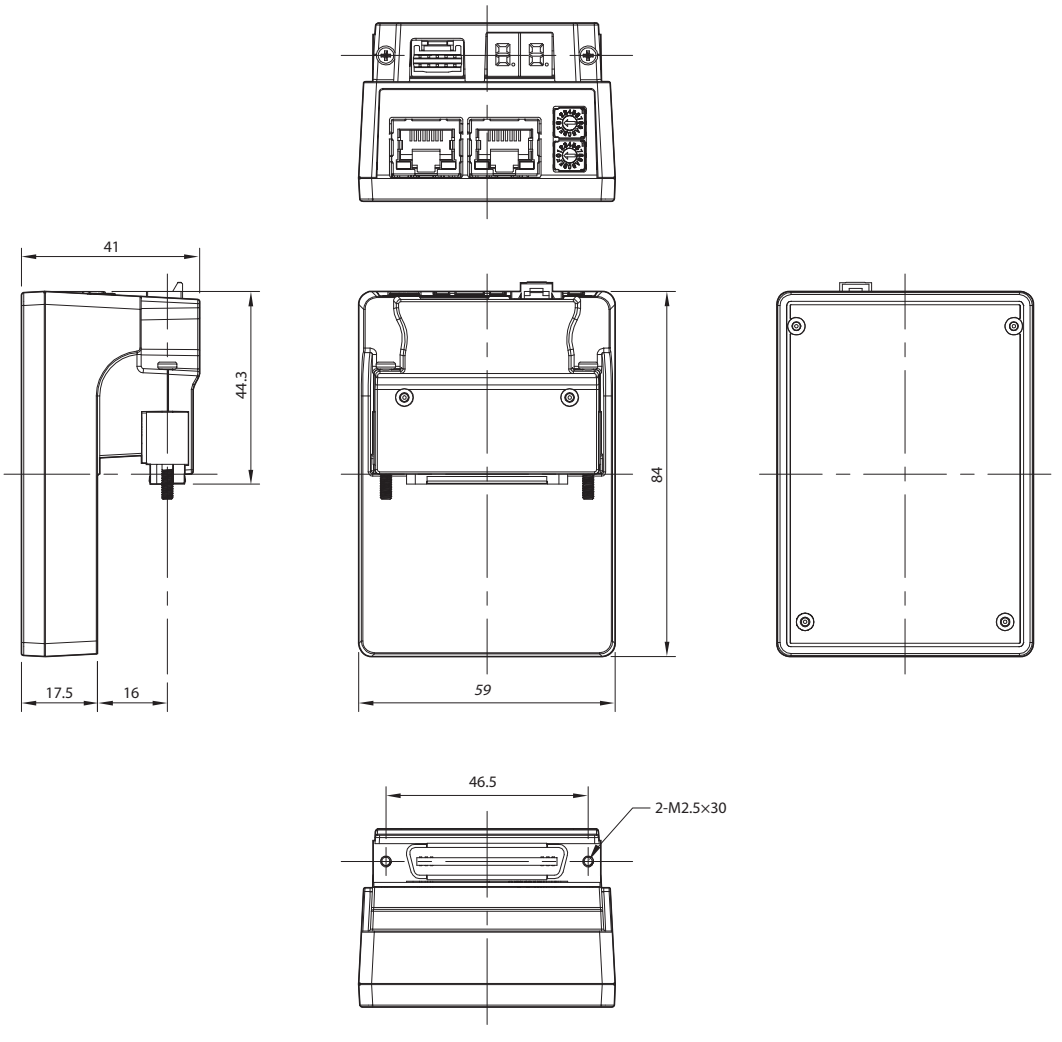
Ez-ML-PE-YAS

Product Name	
Network Type	PE : Plus Ethernet
Drive Series	YAS : Yaskawa Sigma 2, 3, 5, 7 MIT : Mitsubishi MR-J3, J4, J5 PAN : Panasonic Minas A, A3, A4, A5, A6 SAN : Sanyo Denki RSA : RS Automation CSD7 LSS : LS Mecapion L7S DEL : DELTA ASD-A2 DEL A3 : DELTA ASD-A3

Part Number

Part Number
Ez-ML-PE-YAS
Ez-ML-PE-MIT
Ez-ML-PE-PAN
Ez-ML-PE-SAN
Ez-ML-PE-RSA
Ez-ML-PE-LSS
Ez-ML-PE-DEL
Ez-ML-PE-DEL A3

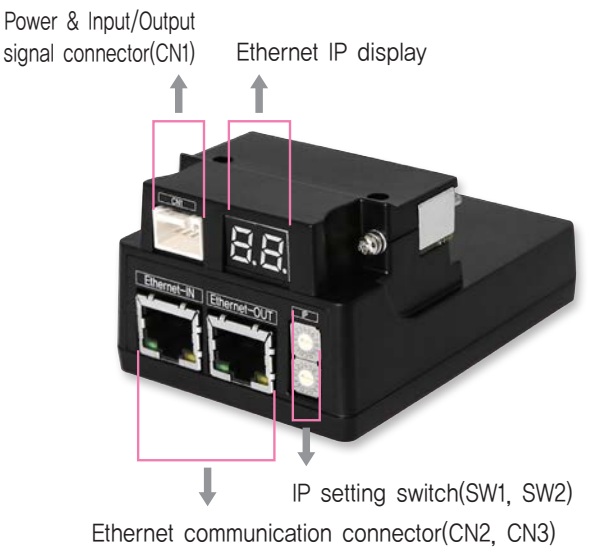
Dimensions of Controller [mm]

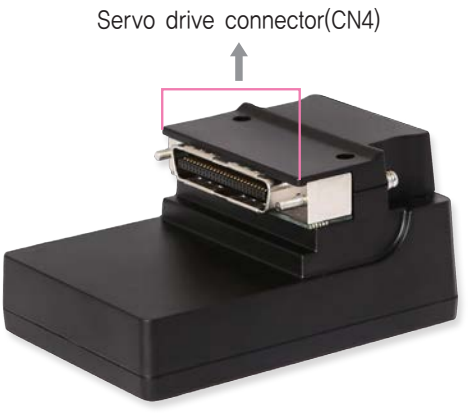


● Specifications of Controller

Input Voltage		DC24V±10%
Multi Axis Drive		Maximum 254 axis operating (Selectable IP: 1~254)
Current Consumption		Max. 500mA
Operating Condition	Ambient Temperature	· In Use: 0~55℃ · In Storage: -20~70℃
	Humidity	· In Use: 35~85% RH (Non-Condensing) · In Storage: 10~90% RH (Non-Condensing)
	Vib. Resist.	0.5g
Function	LED Display	IP address, Alarm status
	Rotational Direction	CW/CCW (Set by parameter)
	Data Range	-134,217,728 ~ +134,217,727 [pulse] (28bit)
	ACC/DEC Process	Symmetric / Asymmetric trapezoidal acceleration & deceleration
	Command Pulse Output Method	2 pulse mode (CW/CCW) or 1 pulse mode (Pulse/Dir) (Set by parameter)
	Max. Output Frequency	5MHz
	Encoder Max. Input Frequency	4MHz
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 1 programmable input (Photocoupler Input)
	Output Signals	1 programmable output (Photocoupler Output), 1 Brake output
Communication Interface		· Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex · Dual port Ethernet switch embedded
Position Control		· Incremental mode / Absolute mode Data Range: -134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min
Return to Origin		Origin Sensor, Z phase, ±Limit sensor
GUI		User Interface Program within Windows
Library		Motion Library (API) for windows 7/8/10

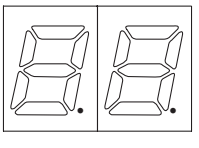
● Settings and Operation

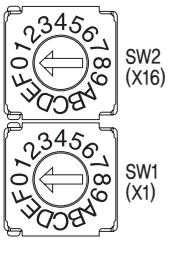




1. Ethernet IP Display and Setting Switch(SW1, SW2)

These switches set the 4th octet of Ethernet IP, and the value is shown in 7-segment LED display(Default setting is "192.168.0.xxx-" and xxx is set by switches). If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)

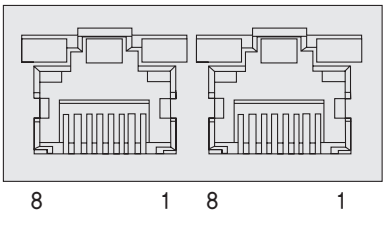




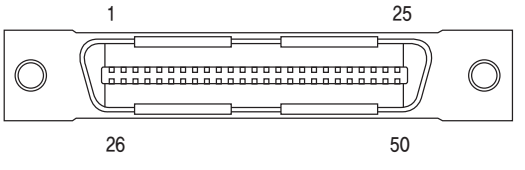
e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= 87
IP is to be set as 192.168.0.87

2. Ethernet Communication Connector(CN2, CN3)

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



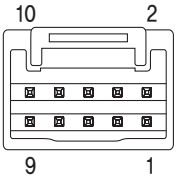
3. Servo Drive Connector(CN4)



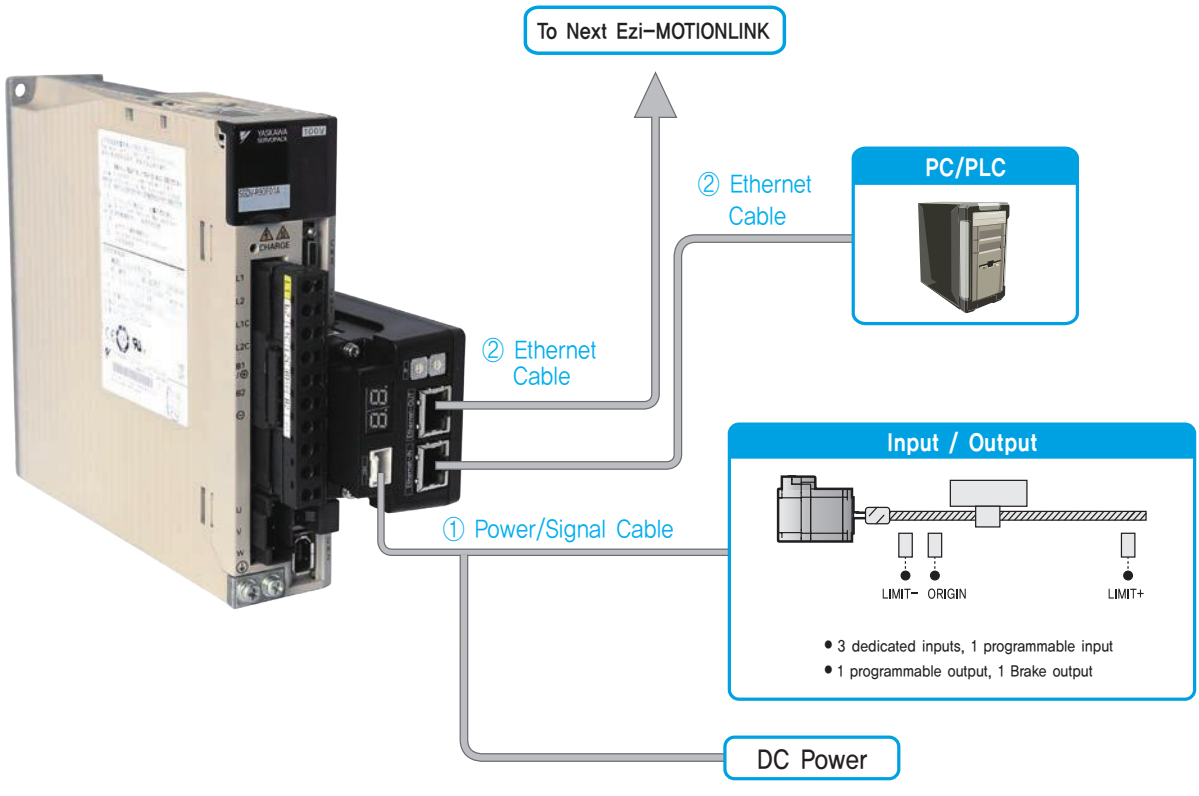
The pin map of servo drive connector differs depending on the servo drive type. (Please refer to the manual for details.)

4. Power & Input/Output Signal Connector(CN1)

No.	Function	I/O
1	DC24V	Input
2	GND	Input
3	EXT_DC24V	Output
4	EXT_GND	Output
5	LIMIT+	Input
6	LIMIT-	Input
7	ORIGIN	Input
8	Digital In1	Input
9	BRAKE	Output
10	Digital Out1	Output



System Configuration



1. Accessories

Connectors

These are connector specifications for controller cabling.

Purpose	Item	Part Number	Manufacturer
Power/Signal (CN1)	Housing	501646-1000	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 Power/Signal Cable

These are the cables to connect Ezi-MOTIONLINK Plus-E, power, and other input/output devices.

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

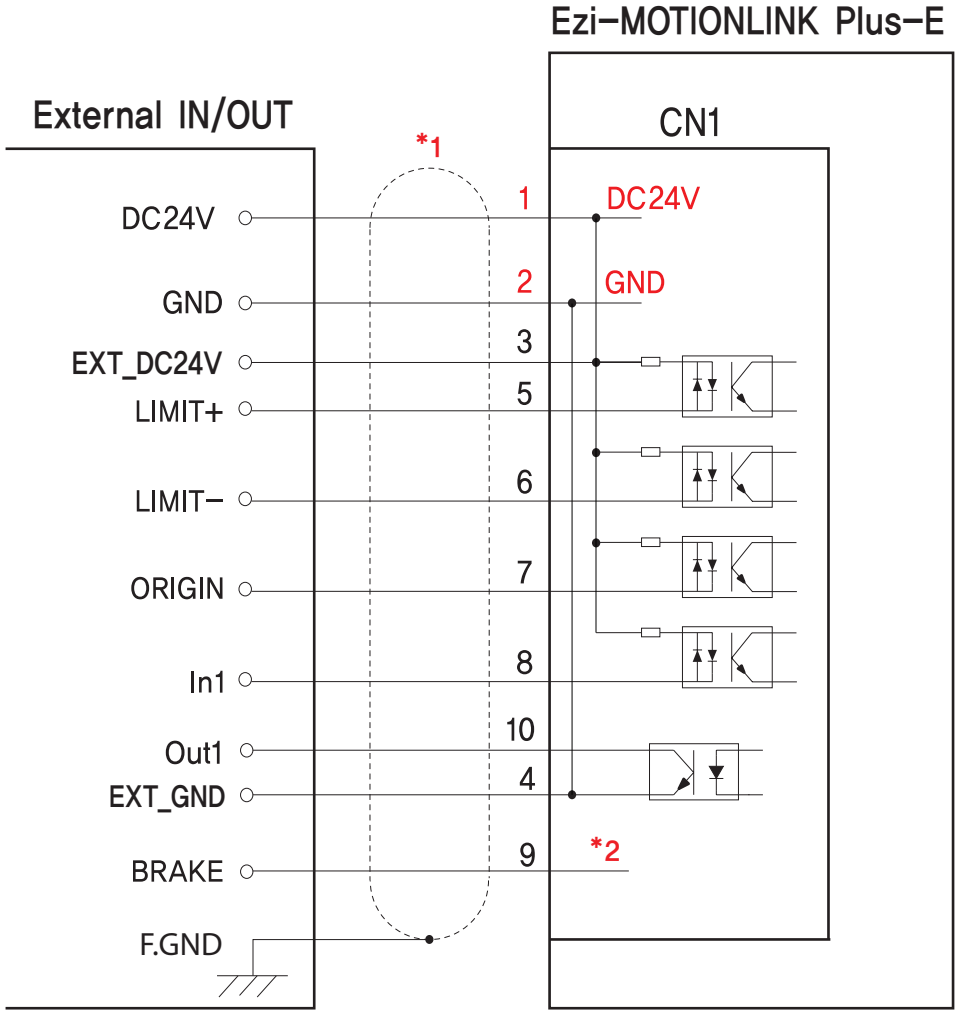
* If you need cables with length(in units of 1m) not listed on the table, please contact FASTECH for more information.

② Ethernet Cable

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

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

External Wiring Diagram



* 1) Shield Cable

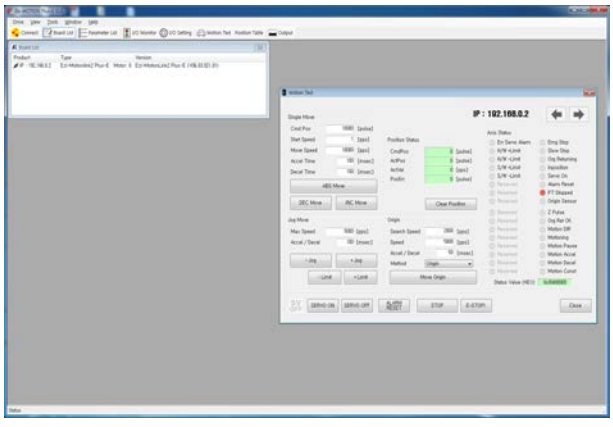
* 2) The brake terminal is an extension of the brake signal line of the servo drive. Therefor, when connecting the brake, refer to the user's manual of the servo drive.

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

CAUTION

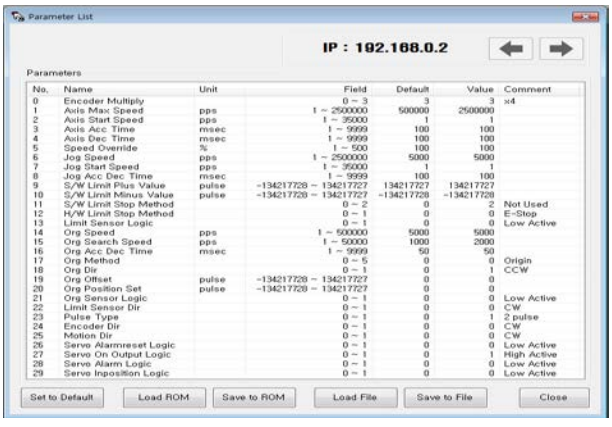
In order to use the products listed in this catalog safely and correctly, be sure to read the instruction manual before using the product.

● GUI(Graphic User Interface) Program



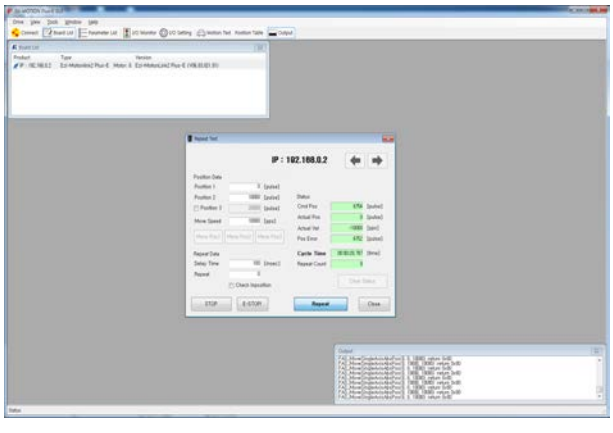
◆ Product List and Motion Test

The product list shows the products connected to the host controller.
You can test single position movements, jog movements, and origin search operations, and monitor the operation status on the motion test window.



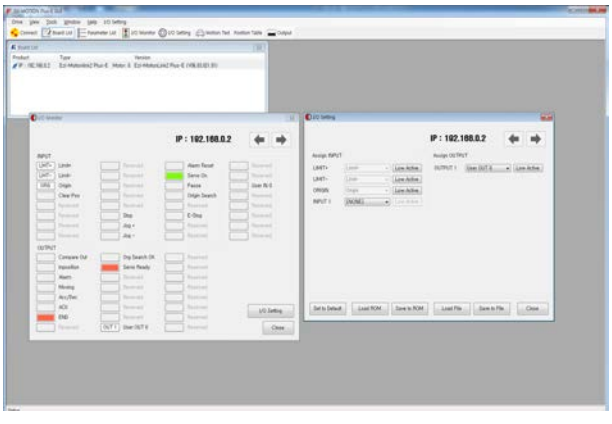
◆ Parameter List

All of the parameters are displayed and modified on this screen.



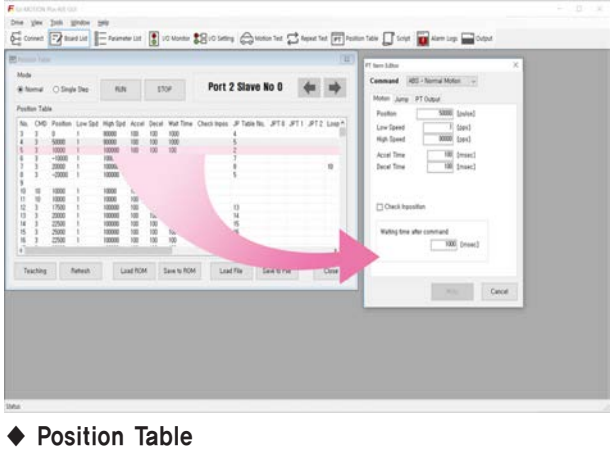
◆ Motion Repeat and Status Monitoring

You can set the target position value, speed, delay time and number of repe-titions for repeated motion test.
A motion library(API) is also displayed on the screen.



◆ I/O Monitoring and Setting

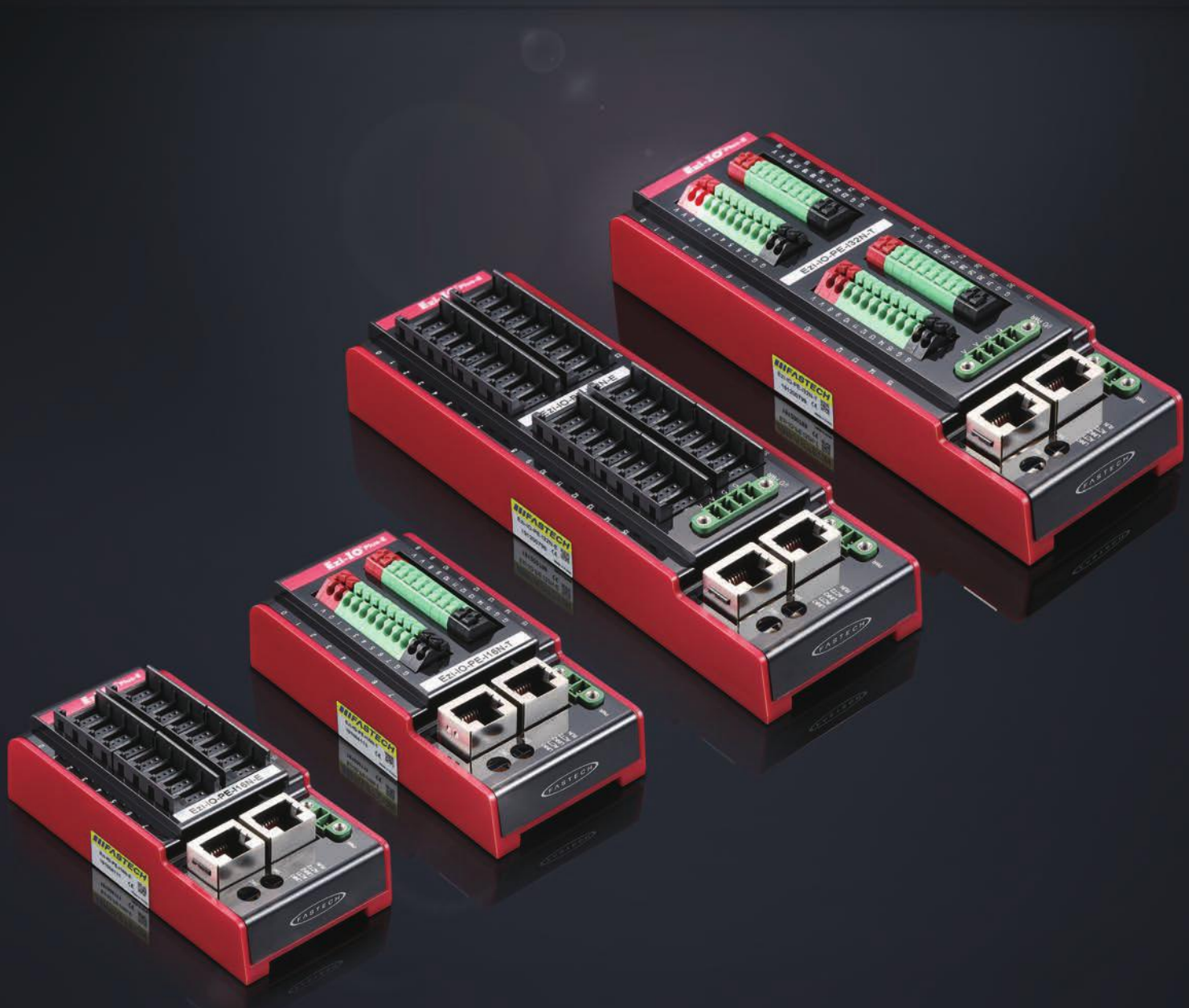
You can check the status of input/output signals related to the current operation status, and you can assign the signals to the desired input/output channels.



◆ Position Table

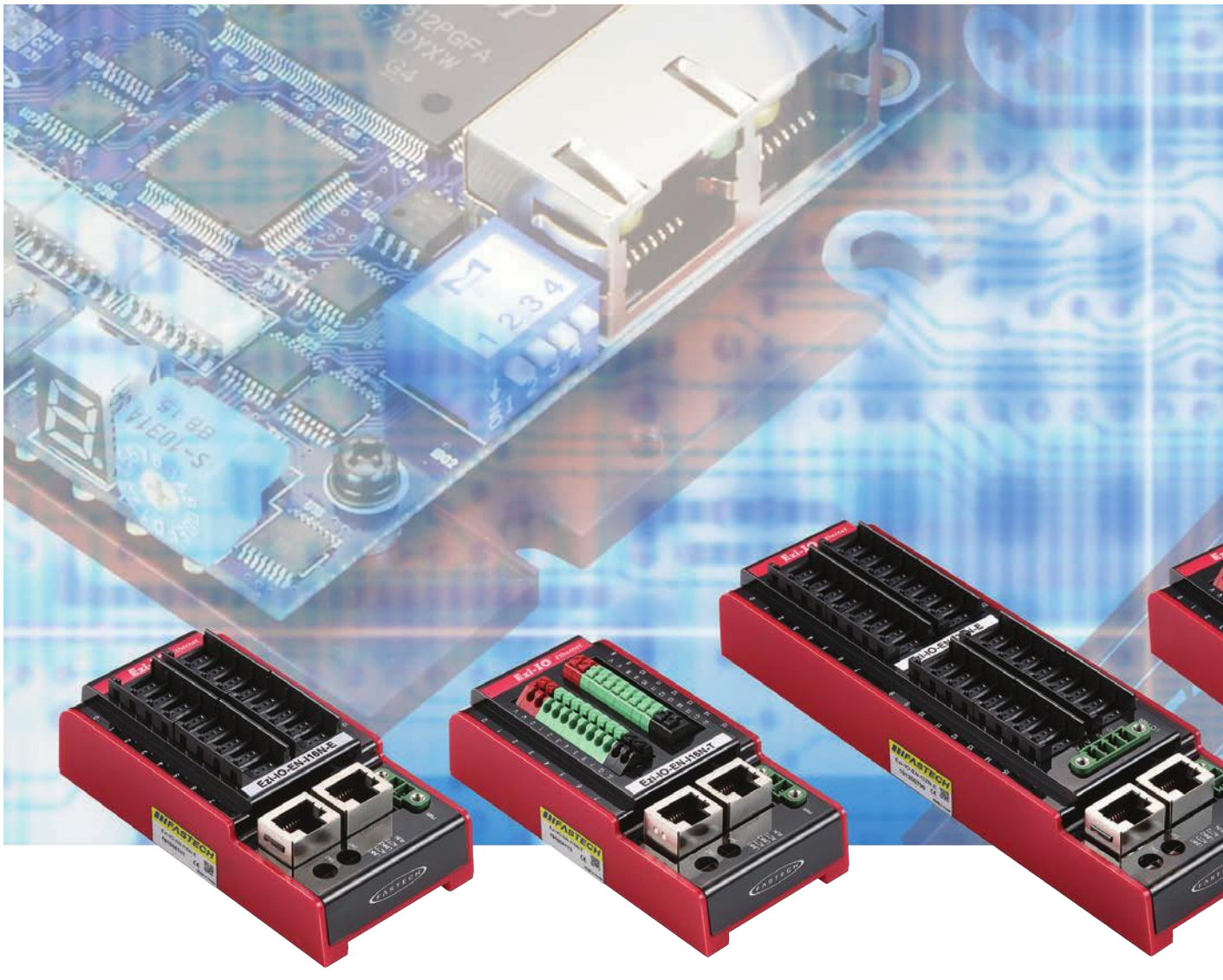
You can configure the data for the position table function or drive the motor with the position table.
The position table is a function that allows you to easily operate the motor with motion data stored in memory in advance.

※ GUI Program(Ezi-MOTIONLINK Plus-E) can be downloaded from website. (www.fastech-motions.com)
※ GUI Program(Ezi-MOTIONLINK Plus-E) supports Windows 7/8/10.
※ GUI Program(Ezi-MOTIONLINK Plus-E) is subject to change without prior notice for performance improvement.


EZIO-PE-H32H-T
EZIO-PE-H16H-T
EZIO-PE-H08H-E

Ezi-IO® Input/Output Module Ethernet DIO

- Ethernet Based Digital I/O Module
- Plus-E Series Communication Protocol Supported
- Simple and Easy Wiring

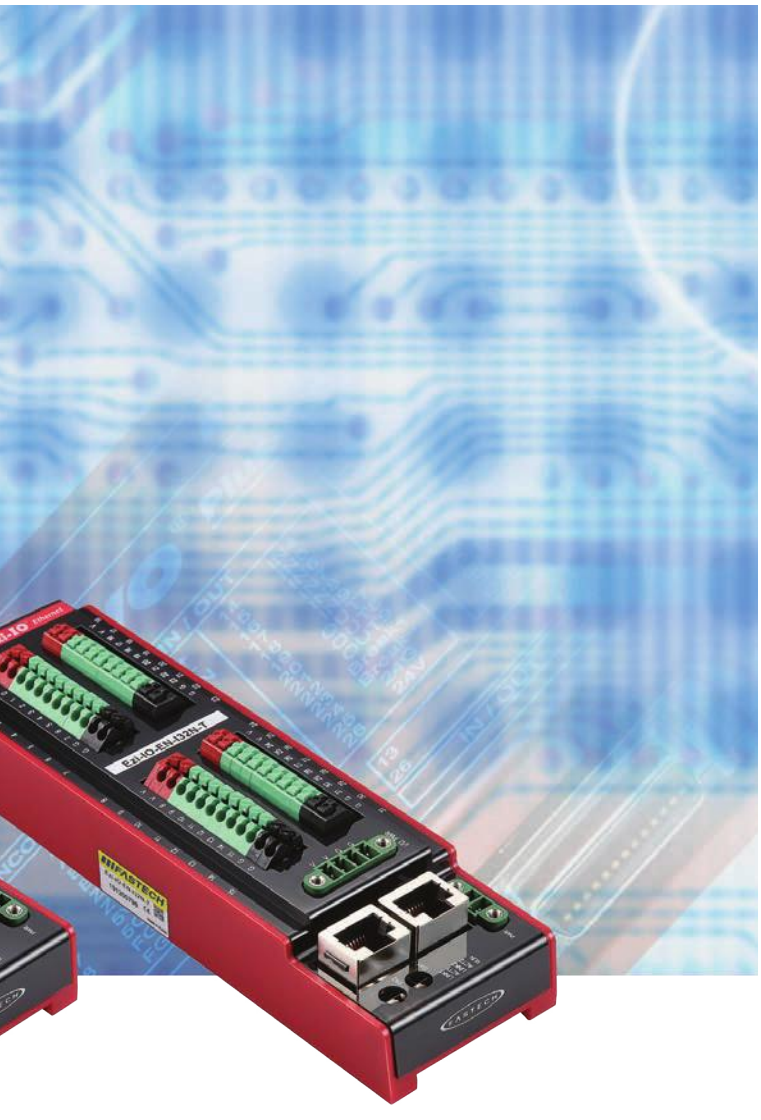


FASTECH

Fast, Accurate, Smooth Motion

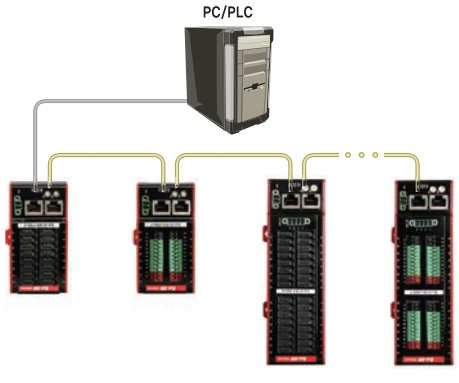
Ezi-IO® Ethernet DIO

Input/Output Module



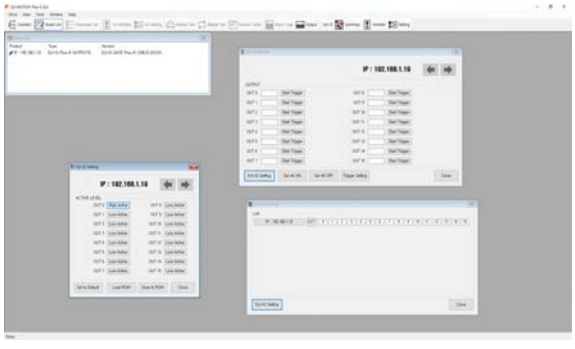
1 Ethernet Based Digital I/O Module

Ezi-IO Ethernet DIO is a digital I/O module controlled with Ethernet. Since it uses the same communication protocol as FASTECH's other Ethernet products, it can be applied very easily to the customers who have experiences using FASTECH's Ethernet products. Motion Library(API) is provided for programming under Windows 7/8/10.



2 GUI(Graphic User Interface) Program

You can easily monitor I/O status or set input signal level of Ezi-IO Ethernet DIO with GUI (Graphical User Interface) software provided by FASTECH.



3 Various I/O Module

Ezi-IO Ethernet DIO provides 16CH and 32CH modules. There are 16CH DC input module, 16CH transistor output module, and 8CH DC input/8CH transistor output mixed module for 16CH type products.
In addition, therer are 32CH DC input module, 32CH transistor output module, 16CH DC input/16CH transistor output mixed module for 32CH type products.
Also, Ezi-IO Ethernet DIO provides NPN/PNP compatible modules to support various I/O devices.

4 Advanced Functions for I/O Signal Processing

The input module can detect and count very fast signals by using the latch function and the latch count function. The output module can use the trigger output function to set the signal output conditions according to the purpose.

● Ezi-IO Ethernet DIO Part Numbering

Ezi-IO-EN-I16N-E

Product Name

Module Series

EN : Ethernet

I/O Connection Method

E : e-CON
T : Terminal Block

I/O Type*1

I16N	: 16CH DC Input, NPN
I16P	: 16CH DC Input, PNP
O16N	: 16CH Transistor Output, NPN
O16P	: 16CH Transistor Output, PNP
I8O8N	: 8CH DC Input / 8CH Transistor Output, NPN
I8O8P	: 8CH DC Input / 8CH Transistor Output, PNP
I32N	: 32CH DC Input, NPN
I32P	: 32CH DC Input, PNP
O32N	: 32CH Transistor Output, NPN
O32P	: 32CH Transistor Output, PNP
I16O16N	: 16CH DC Input / 16CH Transistor Output, NPN
I16O16P	: 16CH DC Input / 16CH Transistor Output, PNP

*1: NPN and PNP are classified as follows according to I/O type.

DC Input	NPN	Positive Common Type
	PNP	Negative Common Type
Transistor Output	NPN	Sink Output
	PNP	Source Output

● Ezi-IO Ethernet DIO Part Number

Part Number	Remarks
Ezi-IO-EN-I16N-E	16CH e-CON Type
Ezi-IO-EN-I16P-E	
Ezi-IO-EN-O16N-E	
Ezi-IO-EN-O16P-E	
Ezi-IO-EN-I8O8N-E	
Ezi-IO-EN-I8O8P-E	
Ezi-IO-EN-I16N-T	16CH Terminal Block Type
Ezi-IO-EN-I16P-T	
Ezi-IO-EN-O16N-T	
Ezi-IO-EN-O16P-T	
Ezi-IO-EN-I8O8N-T	
Ezi-IO-EN-I8O8P-T	

Part Number	Remarks
Ezi-IO-EN-I32N-E	32CH e-CON Type
Ezi-IO-EN-I32P-E	
Ezi-IO-EN-O32N-E	
Ezi-IO-EN-O32P-E	
Ezi-IO-EN-I16O16N-E	
Ezi-IO-EN-I16O16P-E	
Ezi-IO-EN-I32N-T	32CH Terminal Block Type
Ezi-IO-EN-I32P-T	
Ezi-IO-EN-O32N-T	
Ezi-IO-EN-O32P-T	
Ezi-IO-EN-I16O16N-T	
Ezi-IO-EN-I16O16P-T	

● Specifications of Module

Model			Ezi-IO-EN-I16□-■	Ezi-IO-EN-O16□-■	Ezi-IO-EN-I808□-■
Input Voltage			DC24V±10%		
Current Consumption			Max. 150mA (Except load 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	Input	Number of Input Channels	16CH	–	8CH
		Rated Input Voltage	DC24V		DC24V
		Rated Input Current	5mA/CH		5mA/CH
		Isolation Method	None		None
		Common Method	16CH/COM		8CH/COM
		Off→On Response Time	10μs or lower		10μs or lower
		On→Off Response Time	70μs or lower		70μs or lower
	Output	Number of Output Channels	–	16CH	8CH
		Rated Output Voltage		DC24V	DC24V
		Rated Output Current		0.2A/CH	0.2A/CH
		Isolation Method		None	None
		Common Method		16CH/COM	8CH/COM
		Off→On Response Time		4μs or lower	4μs or lower
		On→Off Response Time		140μs or lower	140μs or lower
LED Display			· Power Status (PWR) · Run Status (RUN) · Ethernet Status (Link, Activity) · I/O Status (0~15)		· Power Status (PWR) · Run Status (RUN) · Ethernet Status (Link, Activity) · I/O Status (0~7/0~7)
Communication Interface			· Ethernet UDP/TCP Communication · Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex		
GUI			User Interface Program within Windows		
Library			Motion Library (API) for windows 7/8/10		

* □: NPN / PNP Type
■: e-CON / Terminal Block Type

● Specifications of Module

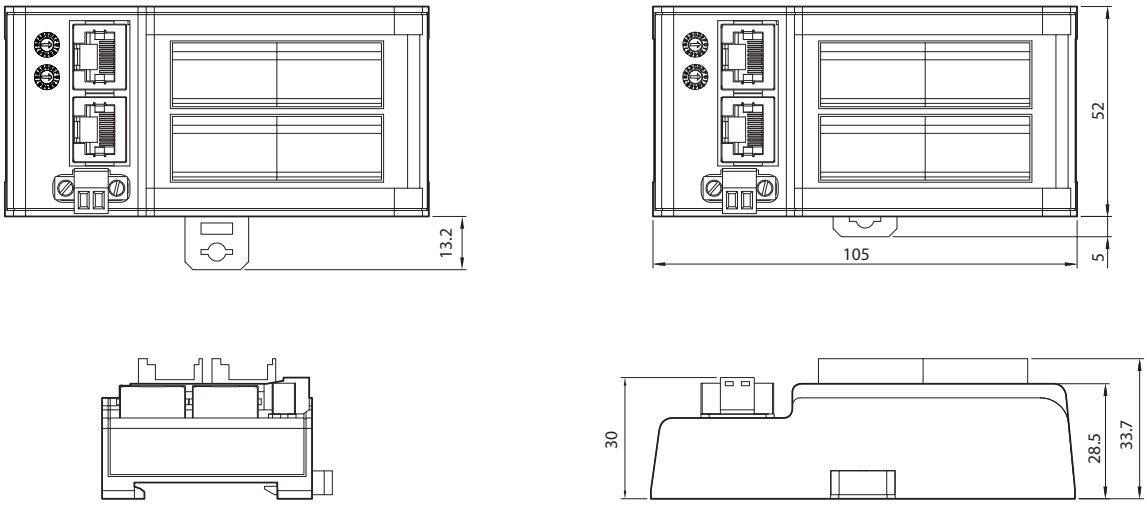
Model			Ezi-IO-EN-I32□-■	Ezi-IO-EN-O32□-■	Ezi-IO-EN-I16O16□-■
Input Voltage			DC24V±10%		
Current Consumption			· Control Power : Max. 140mA · I/O Power : Max. 110mA (Except Load Current)	· Control Power : Max. 200mA · I/O Power : Max. 70mA (Except Load Current)	· Control Power : Max. 170mA · I/O Power : Max. 90mA (Except Load 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	Input	Number of Input Channels	32CH	–	16CH
		Rated Input Voltage	DC24V		DC24V
		Rated Input Current	5mA/CH		5mA/CH
		Isolation Method	Photocoupler Isolation		Photocoupler Isolation
		Common Method	16CH/COM		16CH/COM
		Off→On Response Time	10μs or lower		10μs or lower
		On→Off Response Time	70μs or lower		70μs or lower
	Output	Number of Output Channels	–	32CH	16CH
		Rated Output Voltage		DC24V	DC24V
		Rated Output Current		0.2A/CH	0.2A/CH
		Isolation Method		Photocoupler Isolation	Photocoupler Isolation
		Common Method		16CH/COM	16CH/COM
		Off→On Response Time		4μs or lower	4μs or lower
		On→Off Response Time		140μs or lower	140μs or lower
LED Display			· Power Status (PWR) · Run Status (RUN) · Ethernet Status (Link, Activity) · I/O Status (0~31)		· Power Status (PWR) · Run Status (RUN) · Ethernet Status (Link, Activity) · I/O Status (0~15/0~15)
Communication Interface			· Ethernet UDP/TCP Communication · Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex		
GUI			User Interface Program within Windows		
Library			Motion Library (API) for windows 7/8/10		

* □: NPN / PNP Type
■: e-CON / Terminal Block Type

● Dimensions of Module [mm]

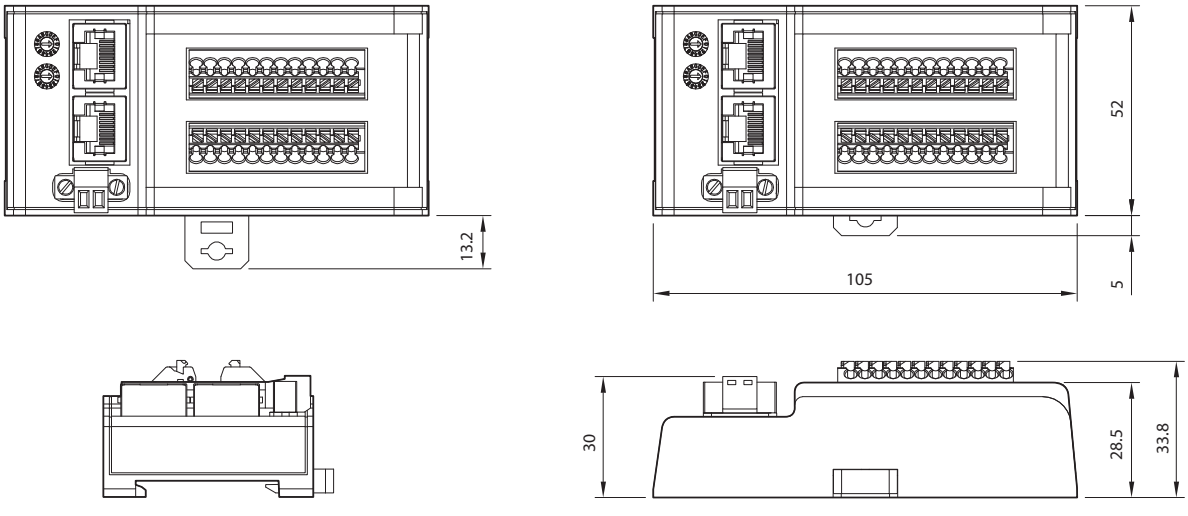
◆ 16CH e-CON Type

– Model : Ezi-IO-EN-I16□-E, Ezi-IO-EN-O16□-E, Ezi-IO-EN-I8O8□-E



◆ 16CH Terminal Block Type

– Model : Ezi-IO-EN-I16□-T, Ezi-IO-EN-O16□-T, Ezi-IO-EN-I8O8□-T

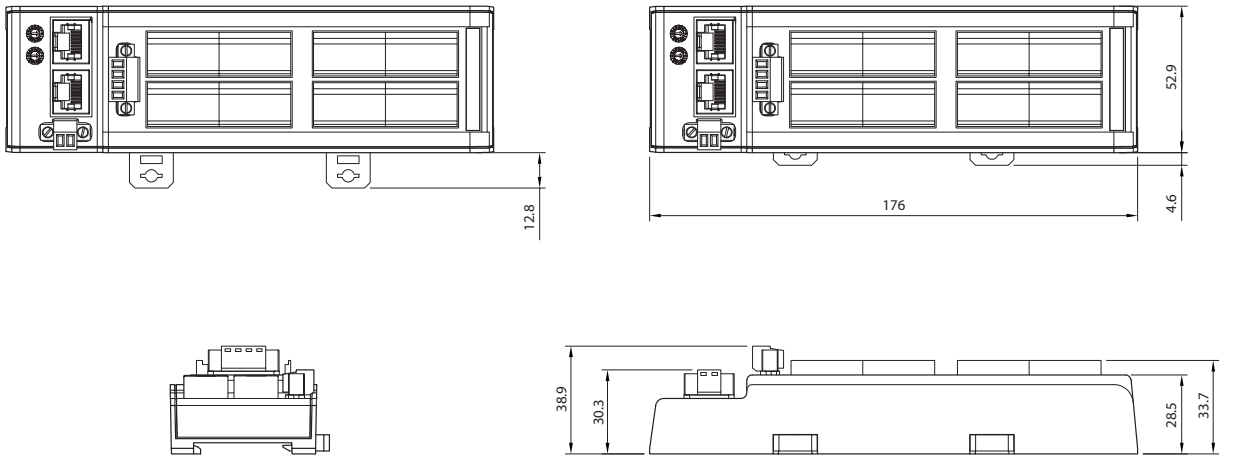


* □ : NPN / PNP Type
* Install the product on a din rail with a width of 35 mm.

● Dimensions of Module [mm]

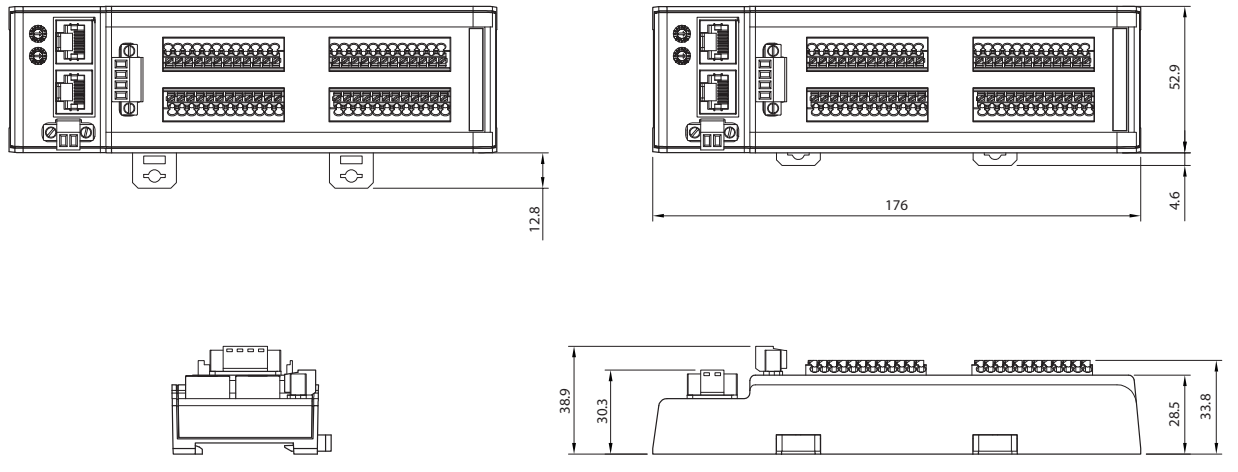
◆ 32CH e-CON Type

- Model : Ezi-IO-EN-I32□-E, Ezi-IO-EN-O32□-E, Ezi-IO-EN-I16O16□-E



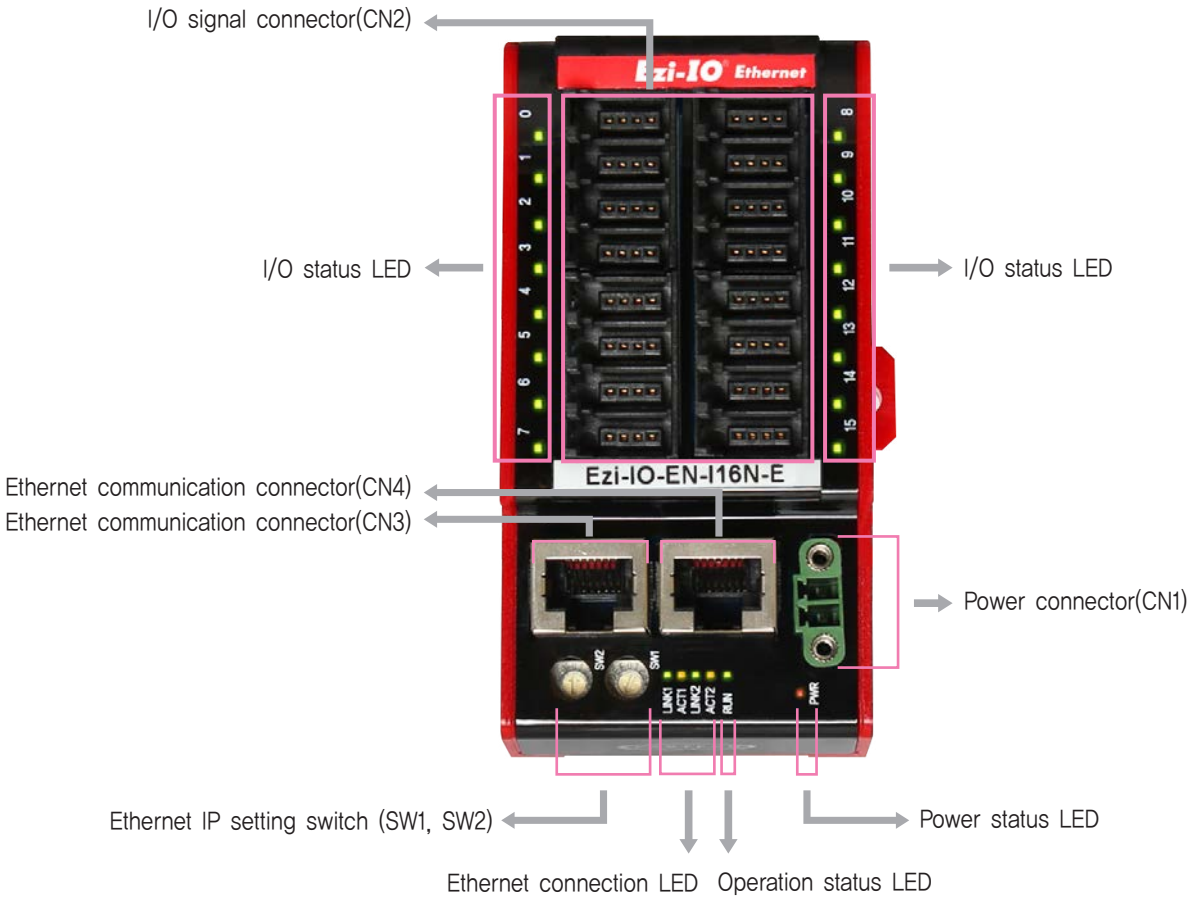
◆ 32CH Terminal Block Type

- Model : Ezi-IO-EN-I32□-T, Ezi-IO-EN-O32□-T, Ezi-IO-EN-I16O16□-T



* □ : NPN / PNP Type
* Install the product on a din rail with a width of 35 mm.

● Settings and Operation [16CH e-CON Type]



1. Status LED

● Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

● Operation Status LED

Name	Color	Status	Description
RUN	Green	OFF	Abnormal Operation
		Blinking	Normal Operation

● Ethernet Connection LED

Name	Color	Status	Description
LINK1/LINK2	Green	OFF	Link not Established
		ON	Link Established

• Ethernet Connection LED

Name	Color	Status	Description
ACT1/ACT2	Yellow	OFF	Stand-by
		Flickering	In Operation

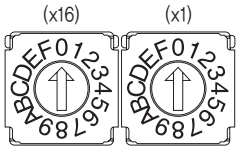
• I/O status LED

Name*	Color	Status	Description
0~15 0~7 / 0~7	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

* For Ezi-IO-EN-I808N-E and Ezi-IO-EN-I808P-E modules, the name is written as 0~7 / 0~7 .

2. Ethernet IP Setting Switch (SW1, SW2)

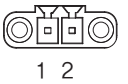
These switches set the 4th octet of Ethernet IP. The 1st octet, the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)



e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= 87
IP is to be set as 192.168.0.87

3. Power Connector (CN1)

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

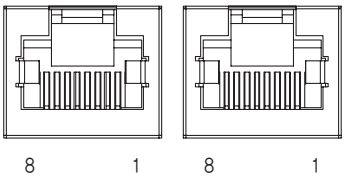


4. I/O Signal Connector (CN2)

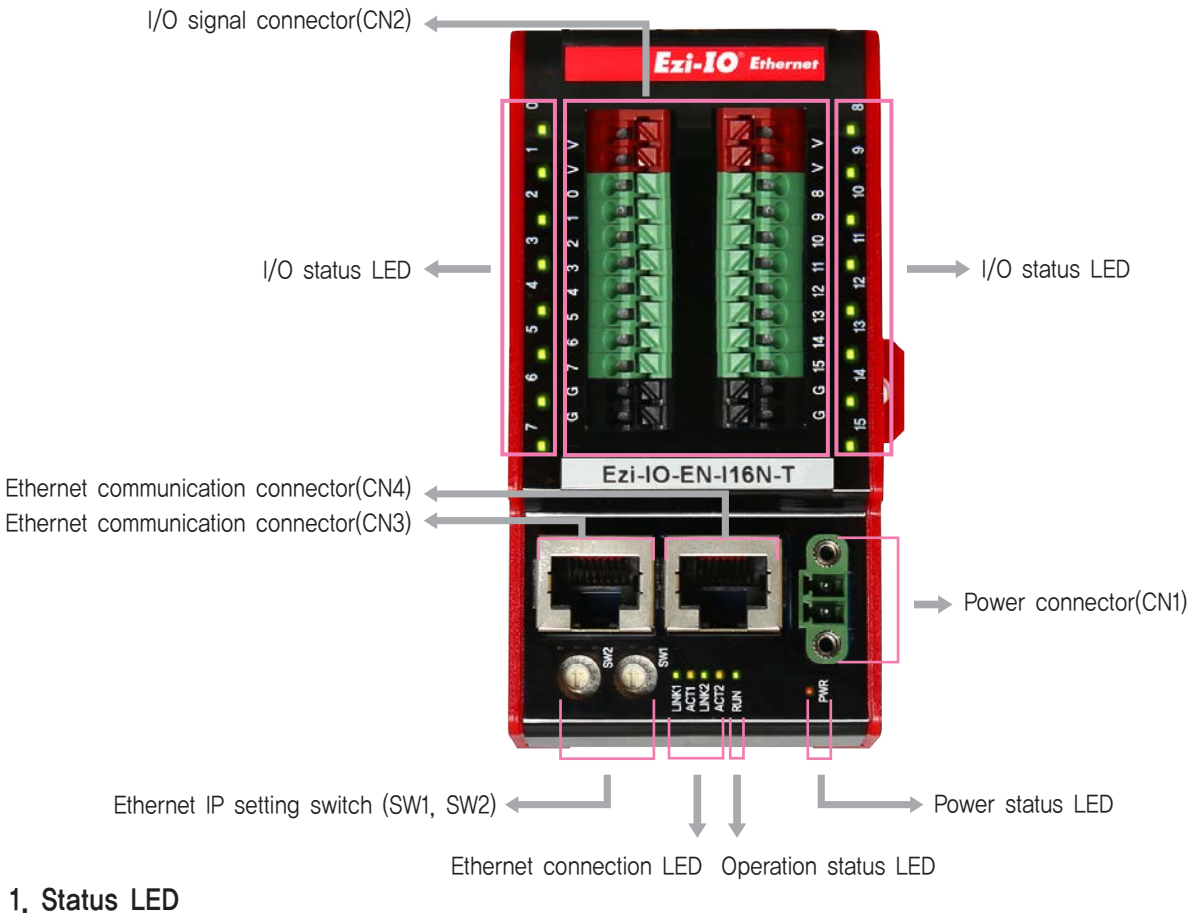
No.	Function	I/O
1	DC24V	Output
2	NC	----
3	GND	Output
4	SIGNAL	I/O

5. Ethernet Communication Connector (CN3, CN4)

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



● Settings and Operation [16CH Terminal Block Type]



1. Status LED

- Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

- Operation Status LED

Name	Color	Status	Description
RUN	Green	OFF	Abnormal Operation
		Blinking	Normal Operation

- Ethernet Connection LED

Name	Color	Status	Description
LINK1/LINK2	Green	OFF	Link not Established
		ON	Link Established

- Ethernet Connection LED

Name	Color	Status	Description
ACT1/ACT2	Yellow	OFF	Stand-by
		Flickering	In Operation

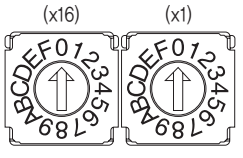
• I/O status LED

Name*	Color	Status	Description
0~15 0~7 / 0~7	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

* For Ezi-IO-EN-I808N-T and Ezi-IO-EN-I808P-T modules, the name is written as 0~7 / 0~7 .

2. Ethernet IP Setting Switch (SW1, SW2)

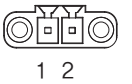
These switches set the 4th octet of Ethernet IP. The 1st octet, the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)



e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= **87**
IP is to be set as 192.168.0.**87**

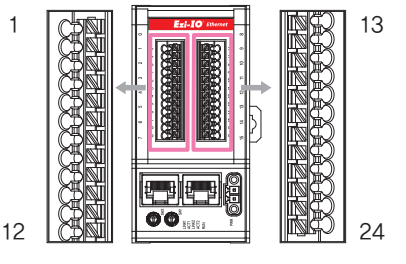
3. Power Connector (CN1)

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



4. I/O Signal Connector (CN2)

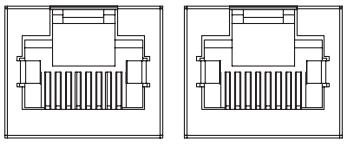
No.	Name*	Function	I/O
1	V	DC24V	Output
2	V	DC24V	Output
3	0	SIGNAL	I/O
4	1	SIGNAL	I/O
5	2	SIGNAL	I/O
6	3	SIGNAL	I/O
7	4	SIGNAL	I/O
8	5	SIGNAL	I/O
9	6	SIGNAL	I/O
10	7	SIGNAL	I/O
11	G	GND	Output
12	G	GND	Output
13	V	DC24V	Output
14	V	DC24V	Output
15	8(0)	SIGNAL	I/O
16	9(1)	SIGNAL	I/O
17	10(2)	SIGNAL	I/O
18	11(3)	SIGNAL	I/O
19	12(4)	SIGNAL	I/O
20	13(5)	SIGNAL	I/O
21	14(6)	SIGNAL	I/O
22	15(7)	SIGNAL	I/O
23	G	GND	Output
24	G	GND	Output



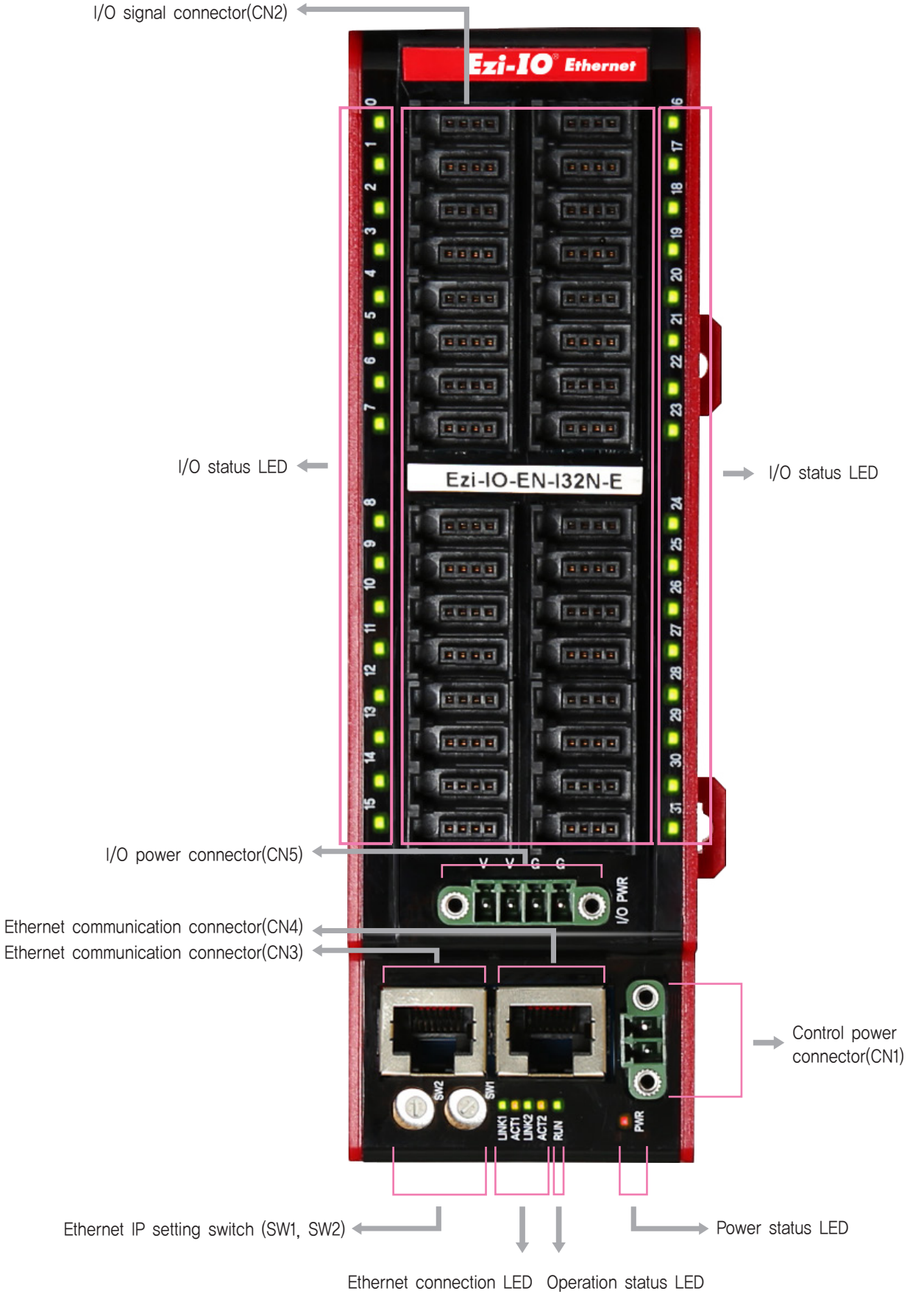
* For Ezi-IO-EN-I808N-T and Ezi-IO-EN-I808P-T modules, the name is written as 0~7 / 0~7 .

5. Ethernet Communication Connector (CN3, CN4)

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



● Settings and Operation [32CH e-CON Type]



1. Status LED

- Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

- Operation Status LED

Name	Color	Status	Description
RUN	Green	OFF	Abnormal Operation
		Blinking	Normal Operation

- Ethernet Connection LED

Name	Color	Status	Description
LINK1/LINK2	Green	OFF	Link not Established
		ON	Link Established

- Ethernet Connection LED

Name	Color	Status	Description
ACT1/ACT2	Yellow	OFF	Stand-by
		Flickering	In Operation

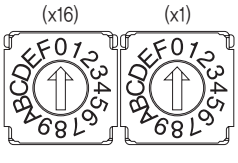
- I/O status LED

Name*	Color	Status	Description
0~31 0~15 / 0~15	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

* For Ezi-IO-PE-I16O16N-E and Ezi-IO-PE-I16O16P-E modules, the name is written as 0~15 / 0~15 .

2. Ethernet IP Setting Switch (SW1, SW2)

These switches set the 4th octet of Ethernet IP. The 1st octet, the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)



e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= **87**
IP is to be set as 192.168.0.**87**

3. Power Connector (CN1)

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

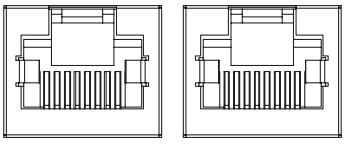
4. I/O Signal Connector (CN2)

No.	Function	I/O
1	EXT_DC24V	Output
2	NC	-----
3	EXT_GND	Output
4	SIGNAL	I/O

1 2 3 4

5. Ethernet Communication Connector (CN3, CN4)

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



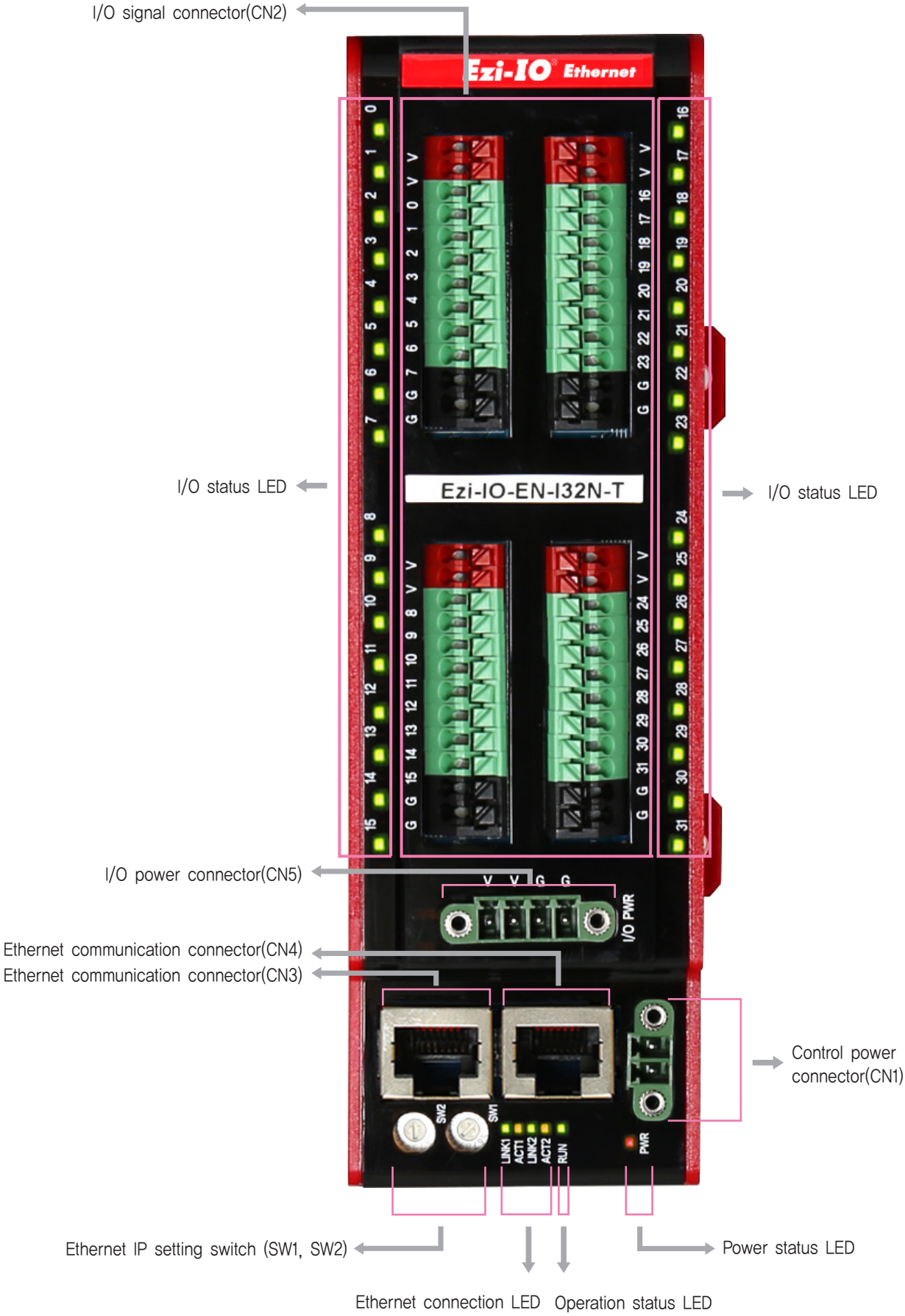
8 1 8 1

6. I/O Power Connector (CN5)

No.	Function	I/O
1	EXT_DC24V	Input
2	EXT_DC24V	Input
3	EXT_GND	Input
4	EXT_GND	Input

1 2 3 4

● Settings and Operation [32CH Terminal Block Type]



1. Status LED

• Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

• Operation Status LED

Name	Color	Status	Description
RUN	Green	OFF	Abnormal Operation
		Blinking	Normal Operation

• Ethernet Connection LED

Name	Color	Status	Description
LINK1/LINK2	Green	OFF	Link not Established
		ON	Link Established

• Ethernet Connection LED

Name	Color	Status	Description
ACT1/ACT2	Yellow	OFF	Stand-by
		Flickering	In Operation

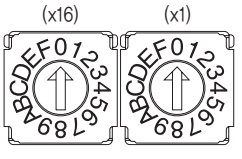
• I/O status LED

Name*	Color	Status	Description
0~31 0~15 / 0~15	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

* For Ezi-IO-PE-I16O16N-T and Ezi-IO-PE-I16O16P-T modules, the name is written as 0~15 / 0~15 .

2. Ethernet IP Setting Switch (SW1, SW2)

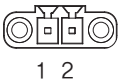
These switches set the 4th octet of Ethernet IP. The 1st octet, the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)



e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= 87
IP is to be set as 192.168.0.87

3. Power Connector (CN1)

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

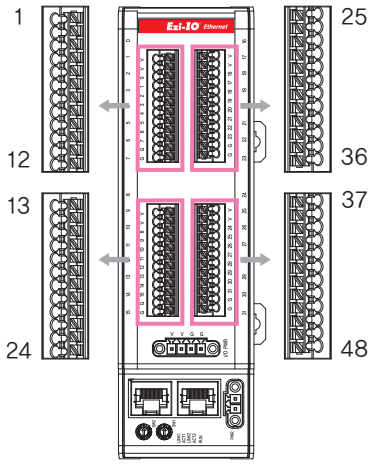


4. I/O Signal Connector (CN2)

No.	Name*	Function	I/O
1	V	EXT_DC24V	Output
2	V	EXT_DC24V	Output
3	0	SIGNAL	I/O
4	1	SIGNAL	I/O
5	2	SIGNAL	I/O
6	3	SIGNAL	I/O
7	4	SIGNAL	I/O
8	5	SIGNAL	I/O
9	6	SIGNAL	I/O
10	7	SIGNAL	I/O
11	G	EXT_GND	Output
12	G	EXT_GND	Output
13	V	EXT_DC24V	Output
14	V	EXT_DC24V	Output
15	8	SIGNAL	I/O
16	9	SIGNAL	I/O
17	10	SIGNAL	I/O
18	11	SIGNAL	I/O
19	12	SIGNAL	I/O
20	13	SIGNAL	I/O
21	14	SIGNAL	I/O
22	15	SIGNAL	I/O
23	G	EXT_GND	Output
24	G	EXT_GND	Output

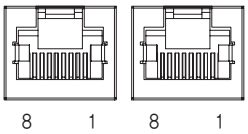
No.	Name*	Function	I/O
25	V	EXT_DC24V	Output
26	V	EXT_DC24V	Output
27	16(0)	SIGNAL	I/O
28	17(1)	SIGNAL	I/O
29	18(2)	SIGNAL	I/O
30	19(3)	SIGNAL	I/O
31	20(4)	SIGNAL	I/O
32	21(5)	SIGNAL	I/O
33	22(6)	SIGNAL	I/O
34	23(7)	SIGNAL	I/O
35	G	EXT_GND	Output
36	G	EXT_GND	Output
37	V	EXT_DC24V	Output
38	V	EXT_DC24V	Output
39	24(8)	SIGNAL	I/O
40	25(9)	SIGNAL	I/O
41	26(10)	SIGNAL	I/O
42	27(11)	SIGNAL	I/O
43	28(12)	SIGNAL	I/O
44	29(13)	SIGNAL	I/O
45	30(14)	SIGNAL	I/O
46	31(15)	SIGNAL	I/O
47	G	EXT_GND	Output
48	G	EXT_GND	Output

* For Ezi-IO-PE-I16O16N-T and Ezi-IO-PE-I16O16P-T modules, the name is written as 0~15 / 0~15 .



5. Ethernet Communication Connector (CN3, CN4)

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



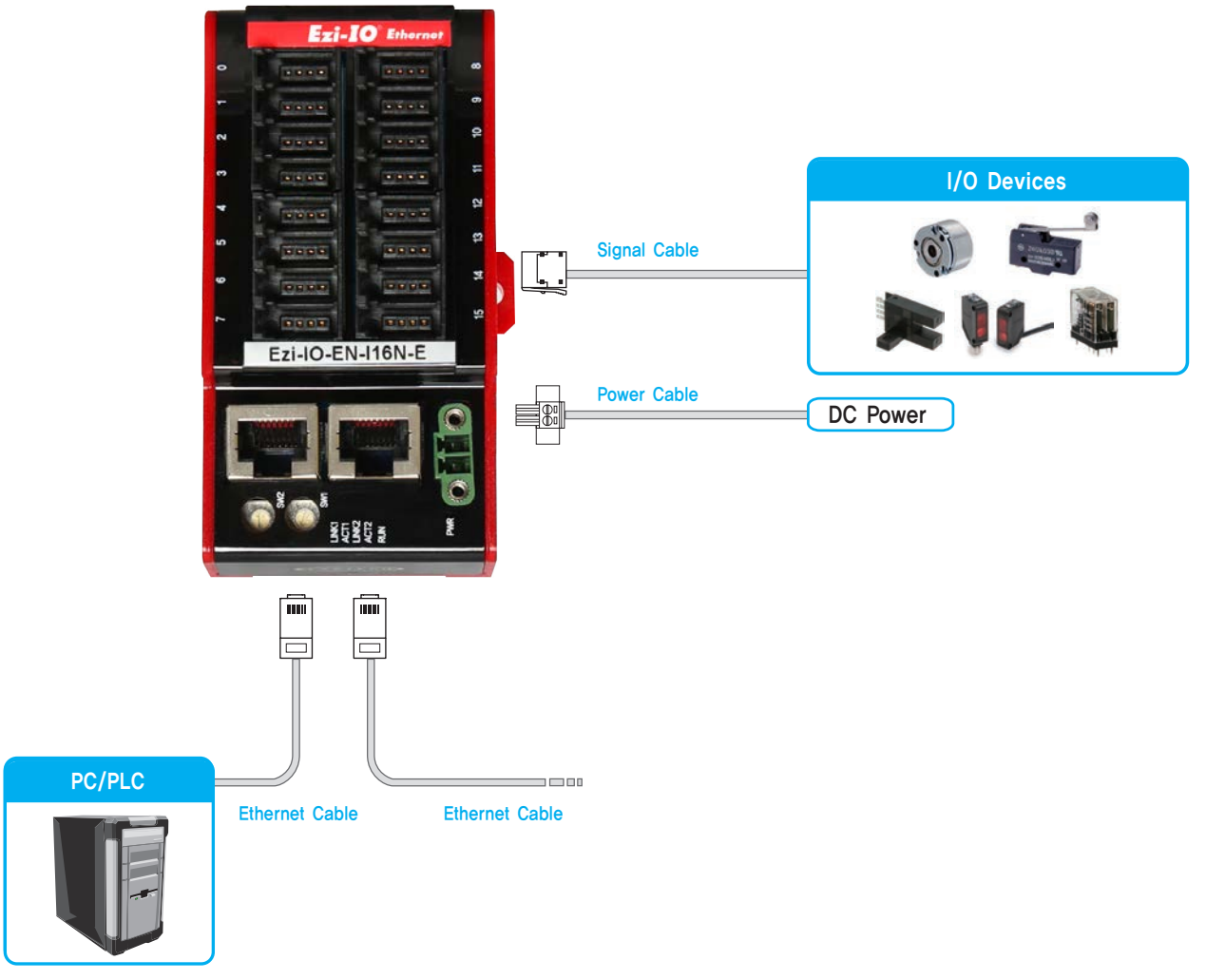
8 1 8 1

6. I/O Power Connector (CN5)

No.	Function	I/O
1	EXT_DC24V	Input
2	EXT_DC24V	Input
3	EXT_GND	Input
4	EXT_GND	Input

1 2 3 4

System Configuration [16CH e-CON Type]



1. Accessories

- Connectors

Purpose	Item	Part Number	Manufacturer
Power (CN1)	Terminal Block	MC421-38102	DECA
Signal (CN2)	e-CON Plug Connector	CNE-P04-YW	Autonics

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

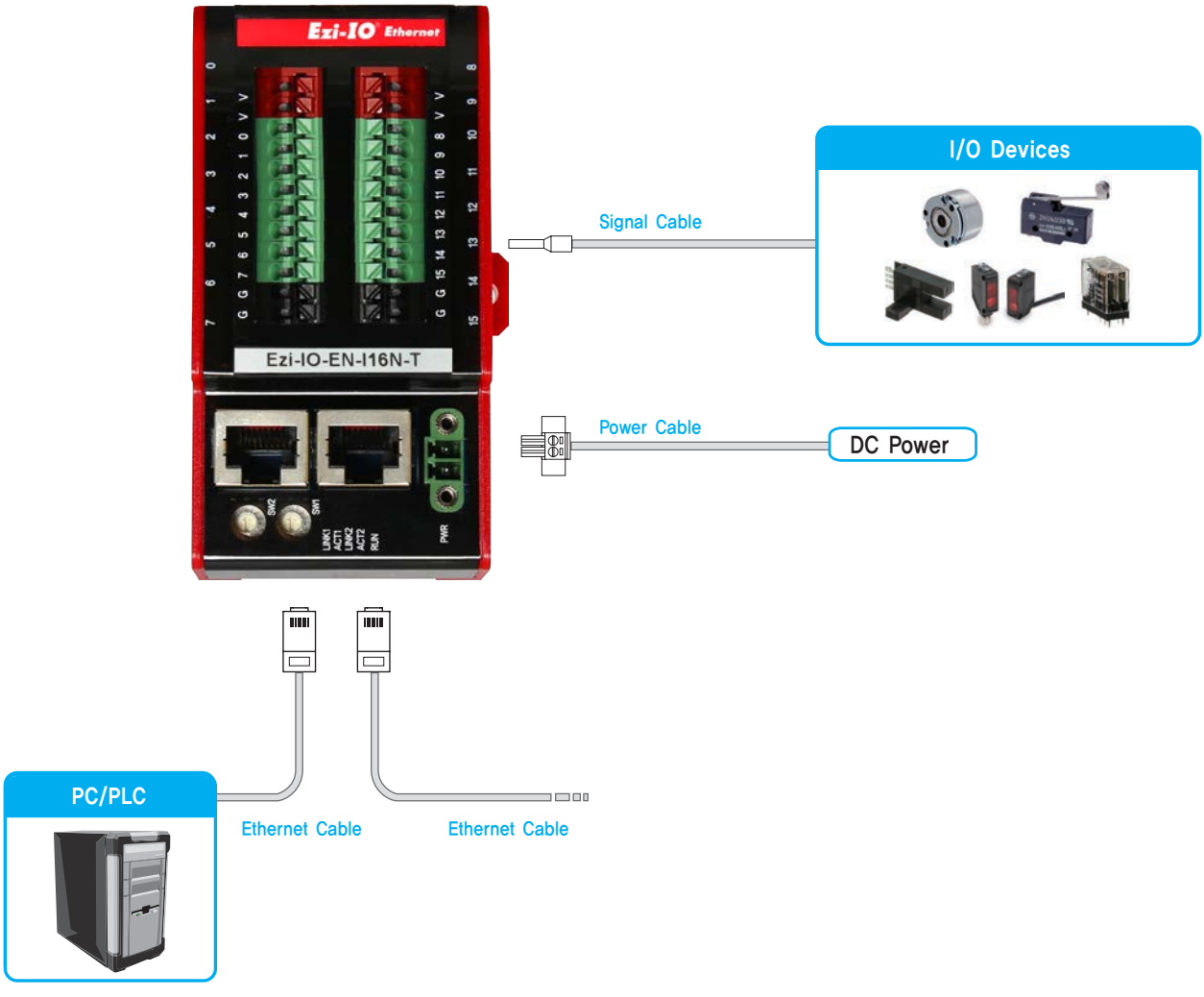
2. Options

- Ethernet Cable

Purpose	Part Number	Length [m]	Remarks
Ethernet Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

● System Configuration [16CH Terminal Block Type]



1. Accessories

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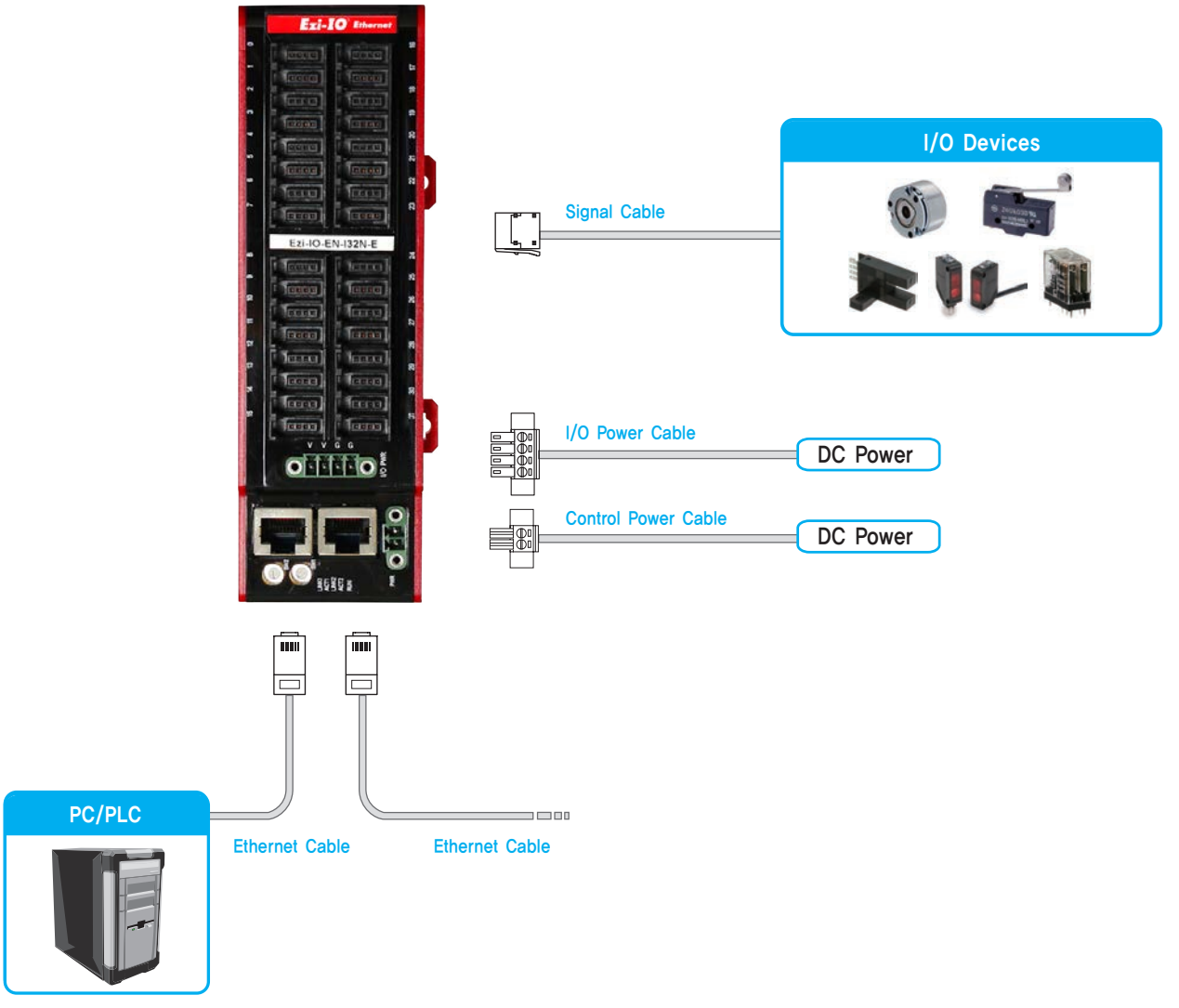

1. Accessories

● Connectors

Purpose	Item	Part Number	Manufacturer
Control Power(CN1)	Terminal Block	MC421-38102	DECA
I/O Power (CN5)	Terminal Block	MC421-38104	DECA
Signal (CN2)	e-CON Plug Connector	CNE-P04-YW	Autonics

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

2. Options

● Ethernet Cable

Purpose	Part Number	Length [m]	Remarks
Ethernet Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
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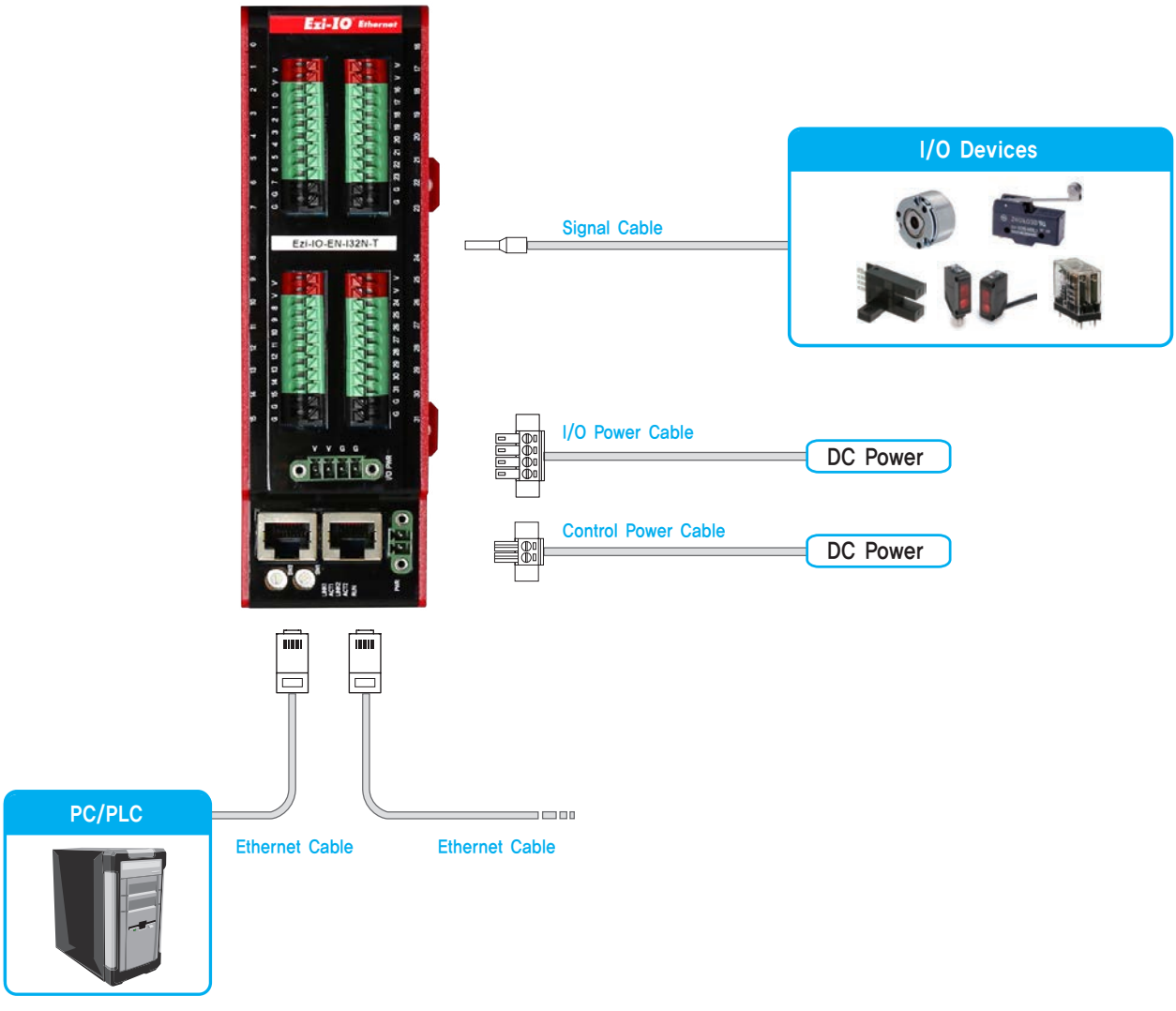

1. Accessories

● Connectors

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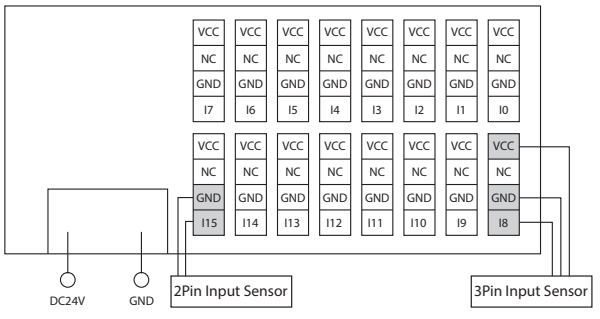
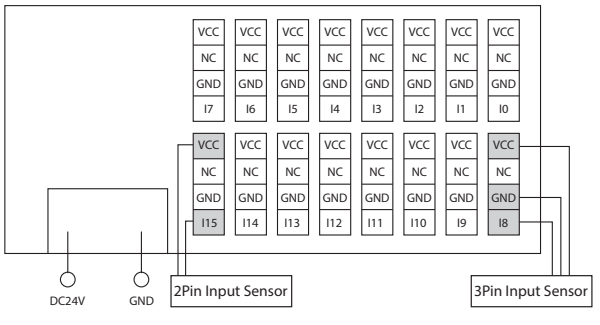
● External Wiring Diagram [16CH e-CON Type]

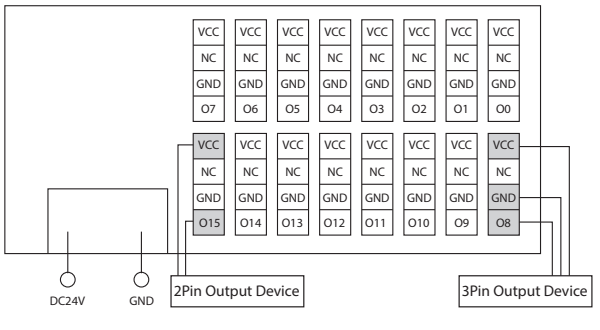
1 Ezi-IO-EN-I16N-E(NPN)



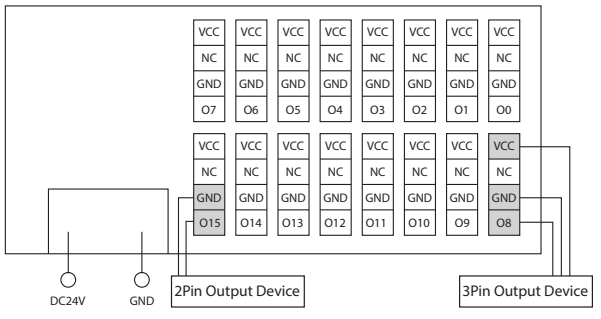
2 Ezi-IO-EN-I16P-E(PNP)



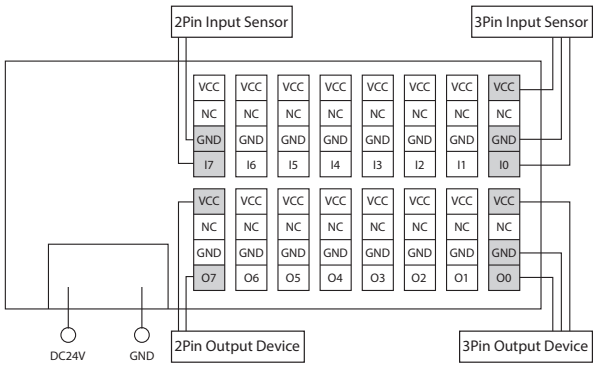
3 Ezi-IO-EN-O16N-E(NPN)



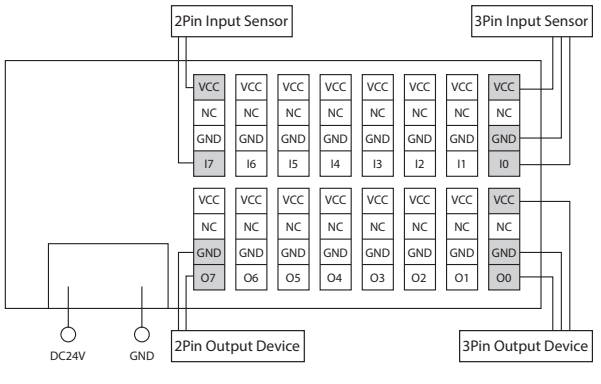
4 Ezi-IO-EN-O16P-E(PNP)



5 Ezi-IO-EN-I8O8N-E(NPN)



6 Ezi-IO-EN-I8O8P-E(PNP)



※ VCC is DC24V output.
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· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
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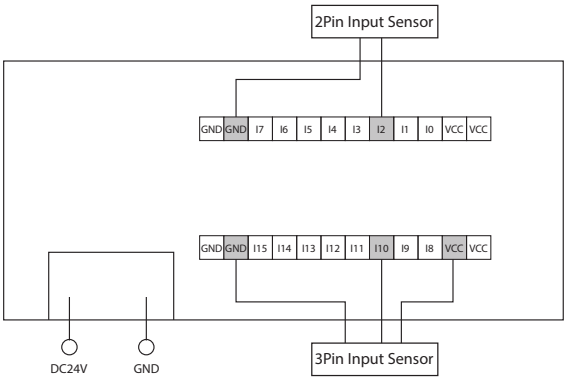
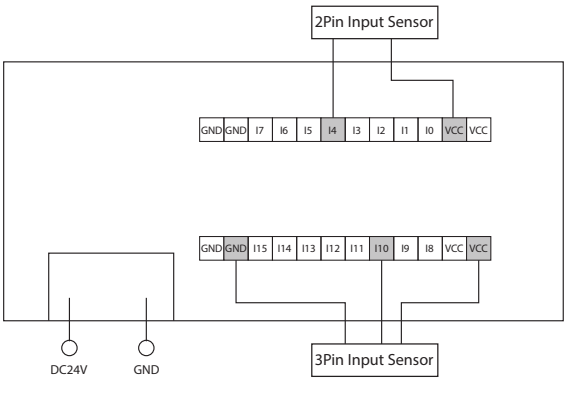
● External Wiring Diagram [16CH Terminal Block Type]

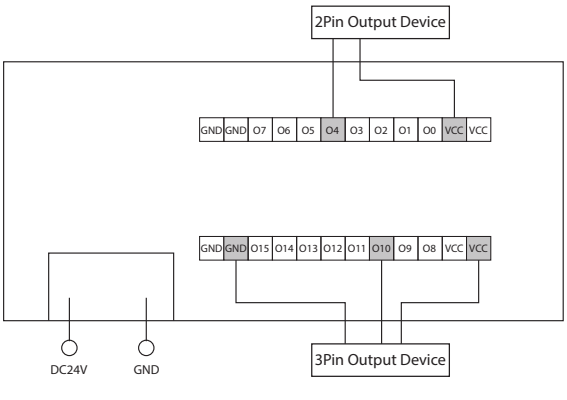
1 Ezi-IO-EN-I16N-T(NPN)



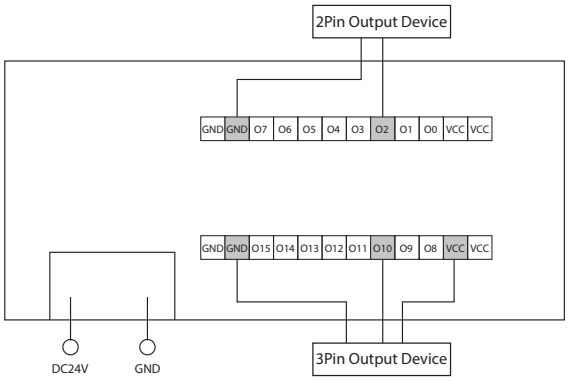
2 Ezi-IO-EN-I16P-T(PNP)



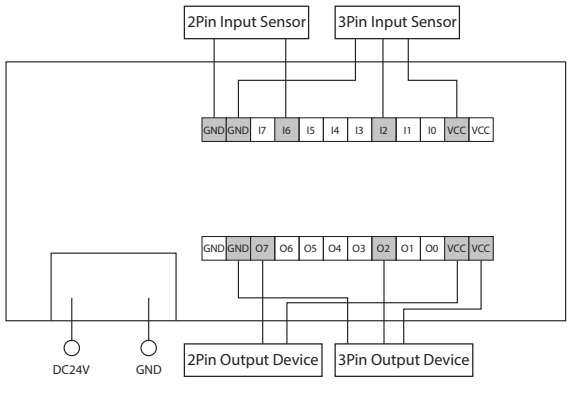
3 Ezi-IO-EN-O16N-T(NPN)



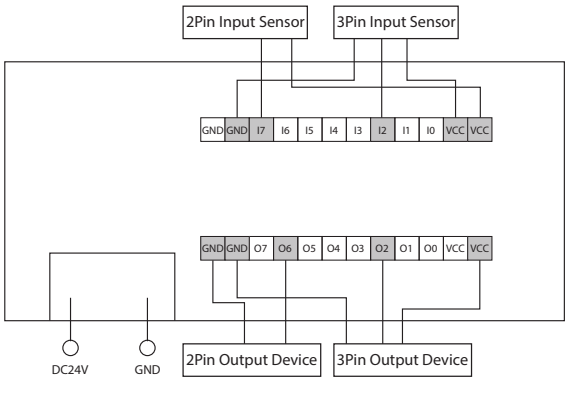
4 Ezi-IO-EN-O16P-T(PNP)



5 Ezi-IO-EN-I8O8N-T(NPN)



6 Ezi-IO-EN-I8O8P-T(PNP)



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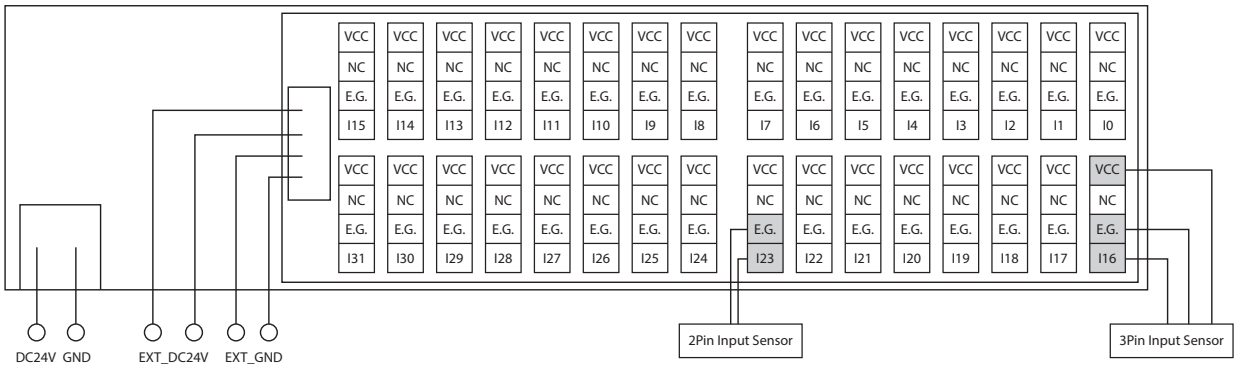
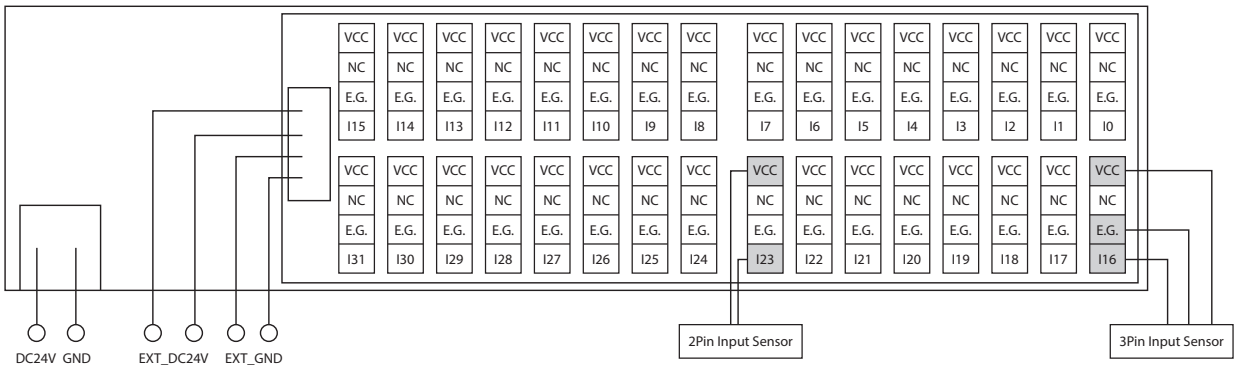
● External Wiring Diagram [32CH e-CON Type]

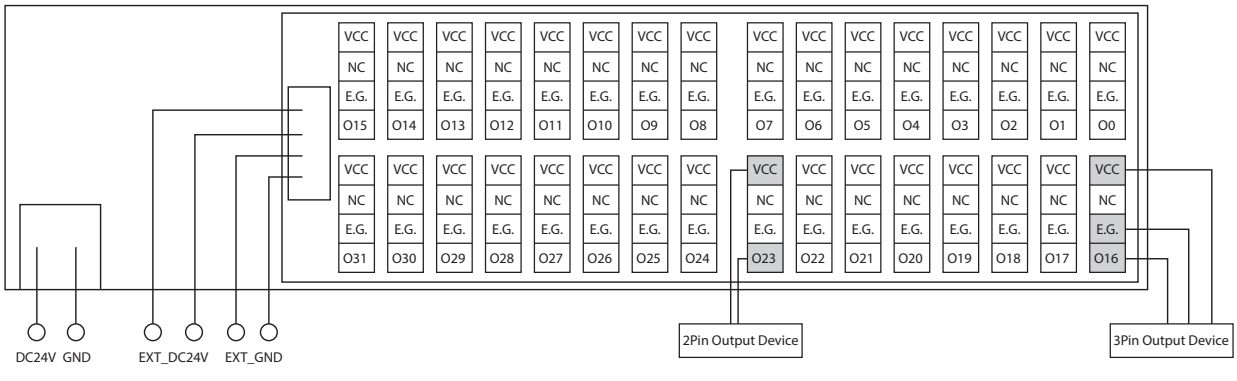
1 Ezi-IO-EN-I32N-E(NPN)



2 Ezi-IO-EN-I32P-E(PNP)



3 Ezi-IO-EN-O32N-E(NPN)



※ VCC and E.G are supplied from I/O Power Connector(CN5).
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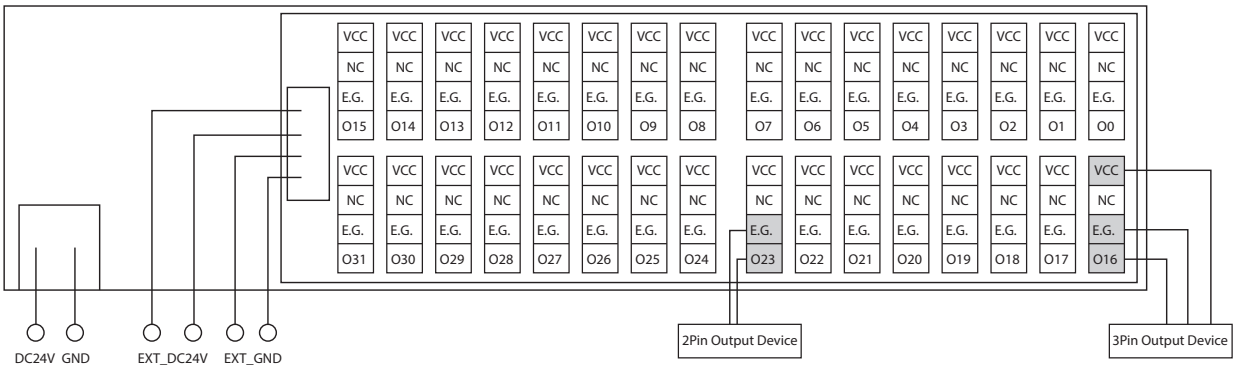
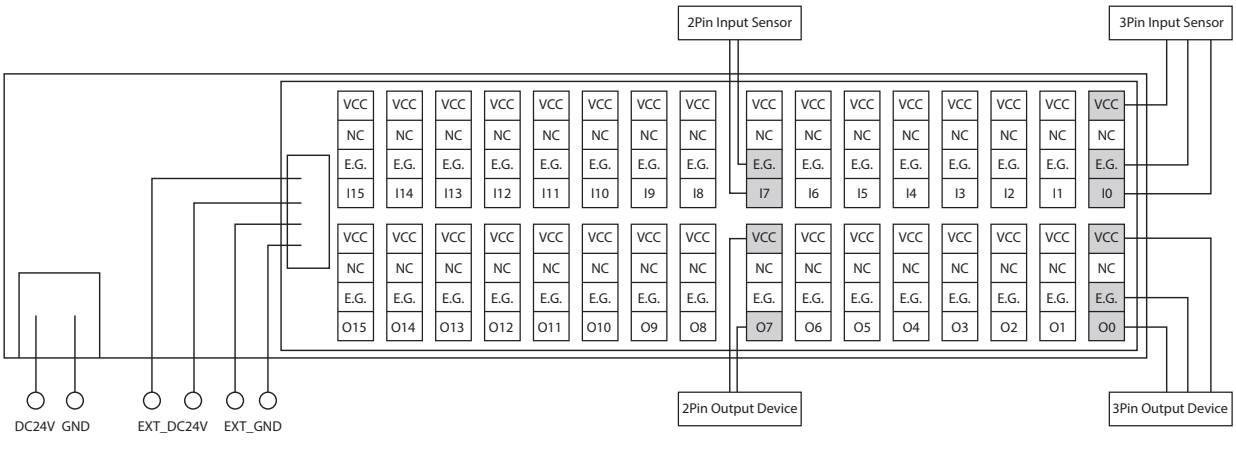
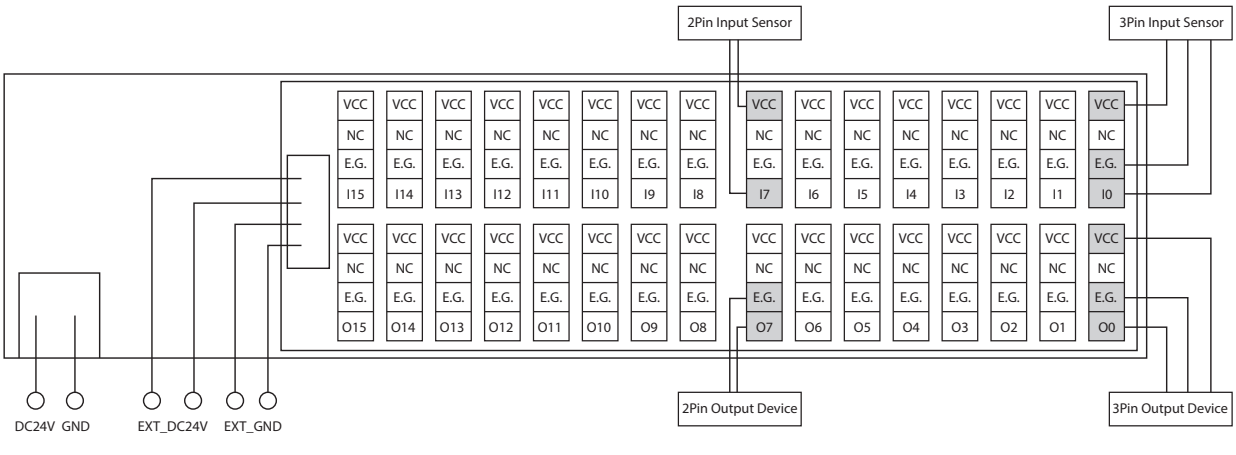


5 Ezi-IO-EN-I16O16N-E(NPN)



6 Ezi-IO-EN-I16O16P-E(PNP)



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● External Wiring Diagram [32CH Terminal Block Type]

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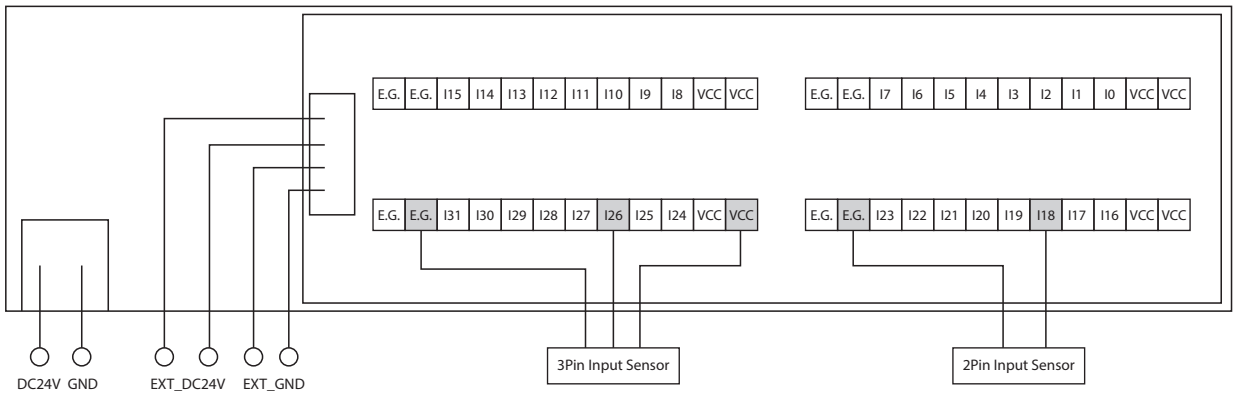
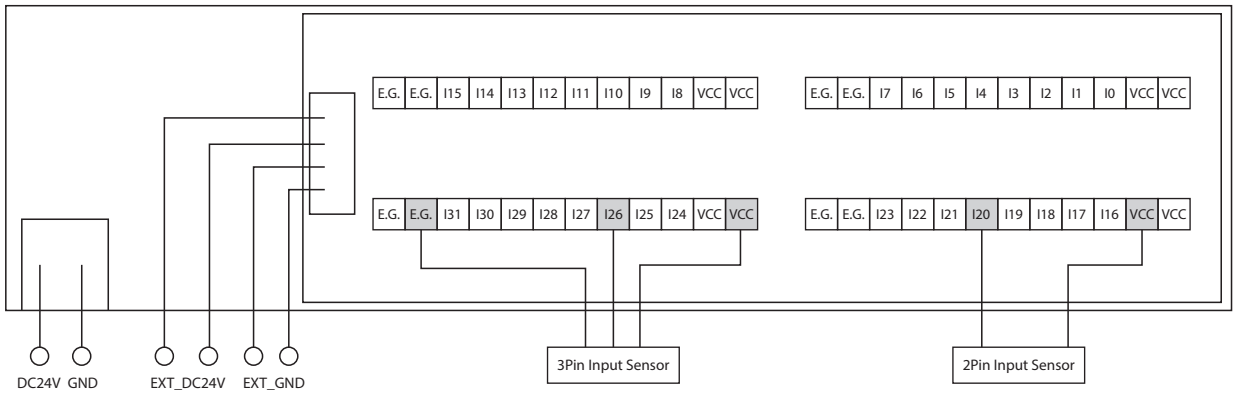


2 Ezi-IO-EN-I32P-T(PNP)



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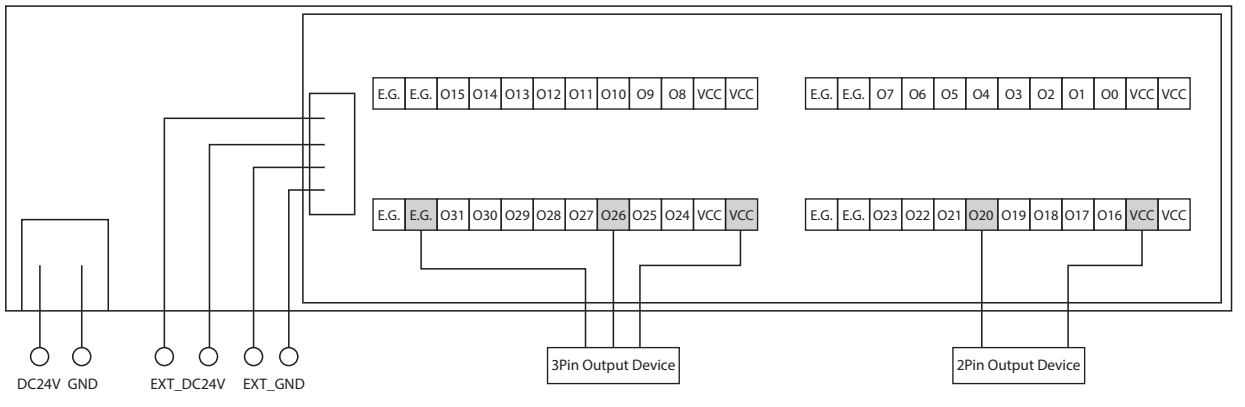

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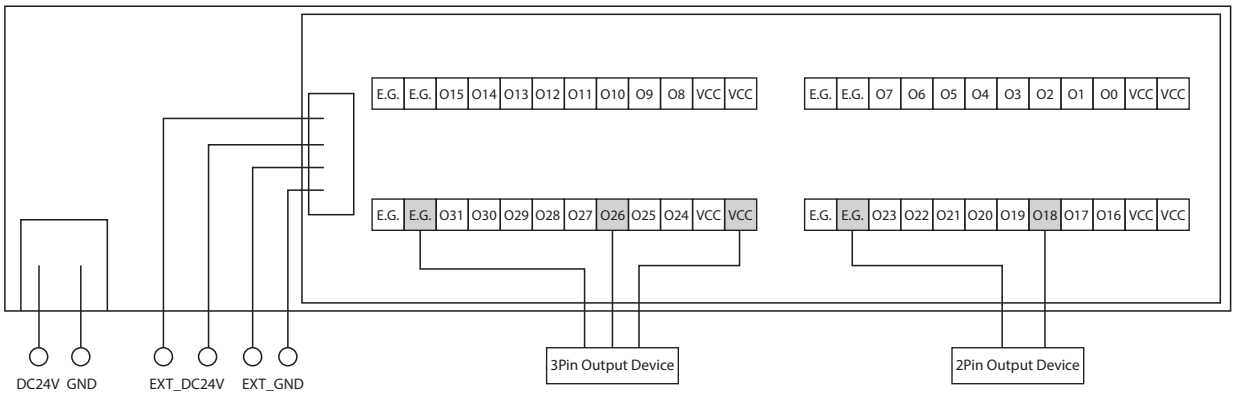

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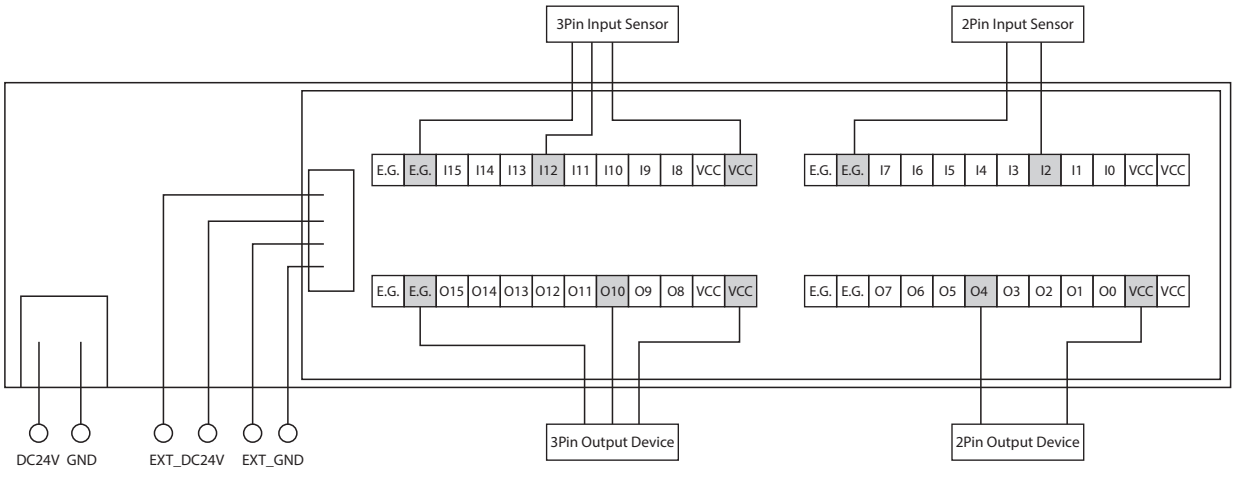

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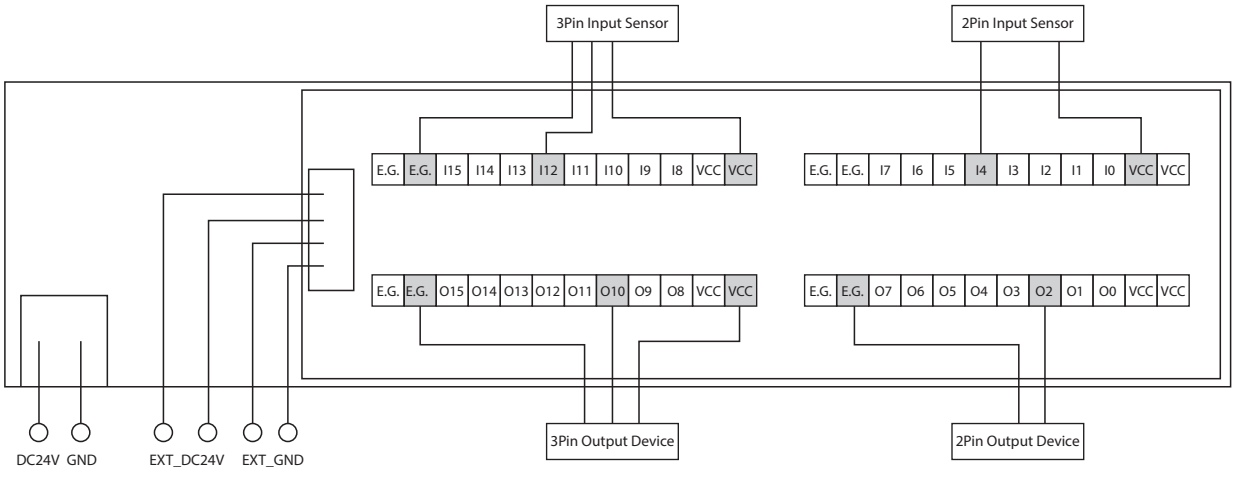

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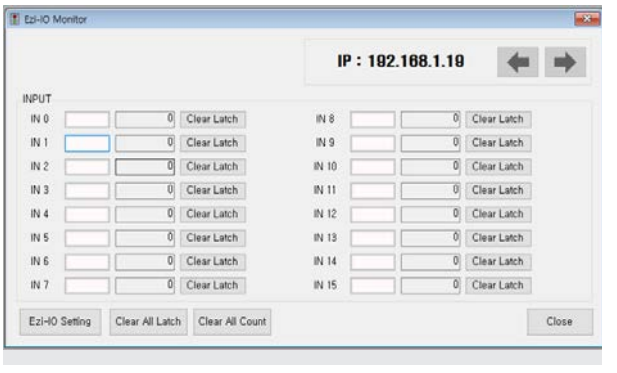
● GUI(Graphic User Interface) Program

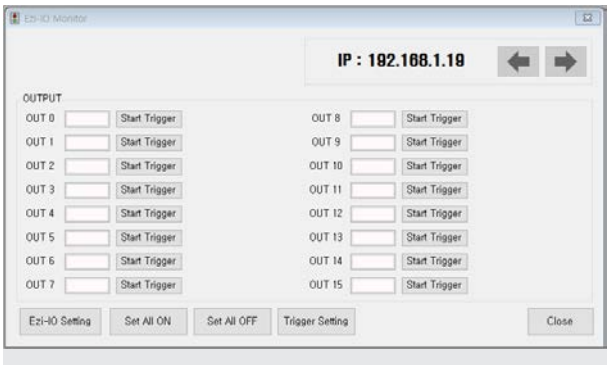
◆ Ezi-IO Ethernet DIO Summary

The operation status of the connected I/O modules can be monitored at once.



◆ Input Module Monitor

You can check the input status and latch status of each input channels.



◆ Output Module Monitor

You can check the output status and trigger status of each output channels.

◆ I/O Logic Setting

This function selects the level of the actual signal to recognize the I/O signal as [ON]. All changes can be saved and restored when needed.

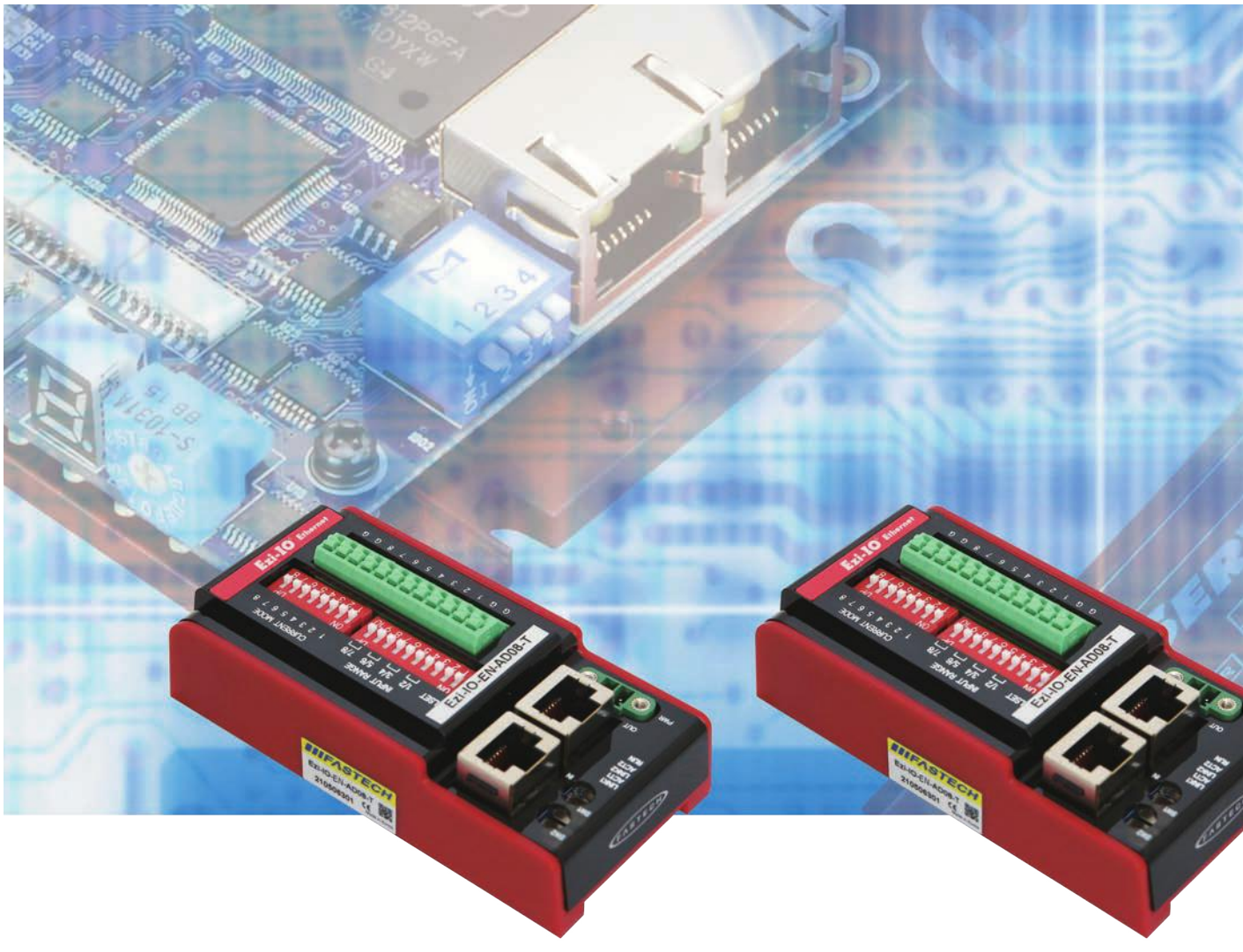
※ GUI Program(Ezi-MOTIONLINK Plus-E) can be downloaded from website. (www.fastech-motions.com)
※ GUI Program(Ezi-MOTIONLINK Plus-E) supports Windows 7/8/10.
※ GUI Program(Ezi-MOTIONLINK Plus-E) is subject to change without prior notice for performance improvement.


EZI-IO
EZI-IO-EN-A008-T
FASTECH

Ezi-IO® Ethernet AD

Input/Output Module

- Ethernet Based Analog Input Module
- Simple and Easy Wiring
- Input Mode and Range Configurable
- Moving Average Filtering



FASTECH

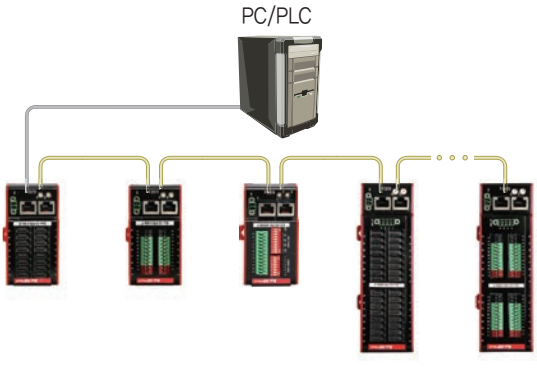
Fast, Accurate, Smooth Motion

Ezi-IO® Ethernet AD

Input/Output Module

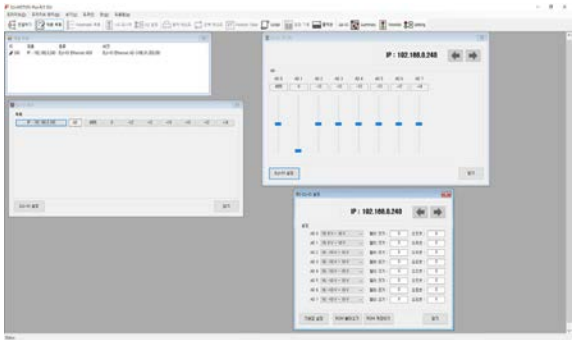
1 Ethernet Based Analog Input Module

Since Ezi-IO Ethernet AD uses the same communication protocol as FASTECH's other Ethernet products, it can be applied very easily to the customers who have experiences using FASTECH's Ethernet products. Motion Library(API) is provided for programming under Windows 7/8/10.



2 GUI and Library(API) Provided

FASTECH provides the libraries(API) and the graphic user interface(GUI) program for Windows 7/8/10, for the convenience of customers using PC to control the products.



3 Simple and Easy Wiring

Ezi-IO Ethernet AD uses a push-in type terminal block. The push-in type terminal block can be easily connected to various devices using ferrule terminals, making the wiring much simpler and easier.

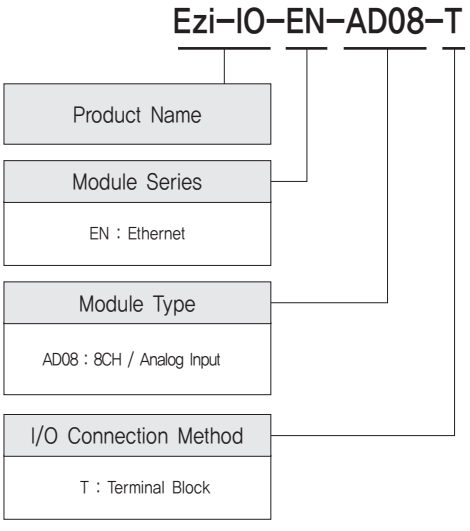
4 Easy Setup with Switches

The voltage or current input mode can be easily selected with the DIP switches, and the input signal range can be easily set in the voltage input mode.

5 Moving Average Filtering

Ezi-IO Ethernet AD provides the moving average filter to remove the noise mixed in the analog signal and suppress the fluctuation of the analog input value.
The range of the moving average filter can be set between 0~200ms.

Ezi-IO Ethernet AD Part Numbering



Ezi-IO Ethernet AD Part Number

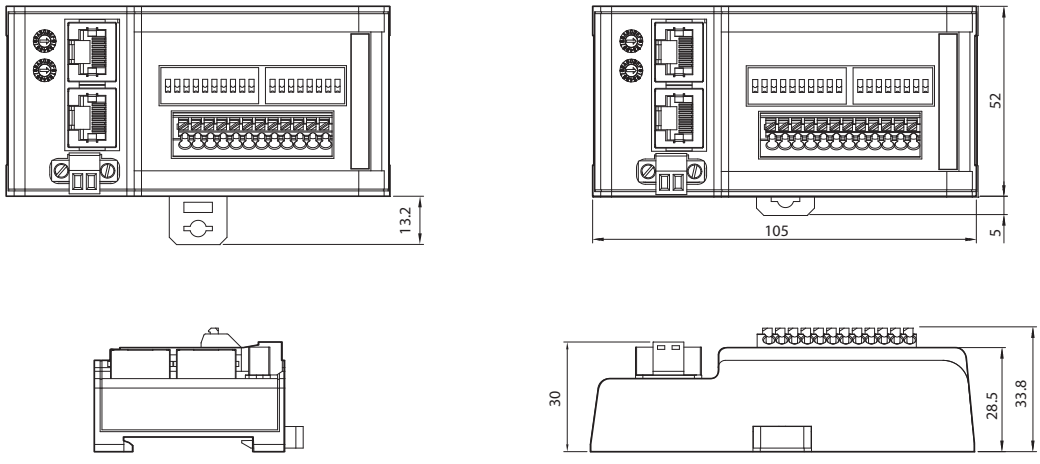
Part Number
Ezi-IO-EN-AD08-T

Specifications of Module

Model			Ezi-IO-EN-AD08-T	
Input Mode			Voltage Input	Current Input
Input Voltage			DC24V±10%	
Current Consumption			Max. 120mA	
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	Number of Input Channels		8CH	
	Max. Signal Input		±15V	±30mA
	Input Range		· -10~10V · -5~5V · -2.5~2.5V · 0~10V	· 0~20mA
	Input Range Setting Method		· Parameter (Separate Settings for each channel) · DIP Switch (Separate Settings for each channel)	
	Input Impedance		1MΩ	249Ω
	Max. Resolution		1/8,191 (Full Scale)	
	Accuracy	25℃	±0.3% (Full Scale)	±0.3% (Full Scale)
		0~50℃	±0.4% (Full Scale)	±0.6% (Full Scale)
	Analog Conversion Cycle		200μs/8CH	
	A/D Converted Data		· -10~10V : -4096~4095 · -5~5V : -4096~4095 · -2.5~2.5V : -4096~4095 · 0~10V : 0~8191	· 0~20mA : 0~8191
	Isolation Method		Digtal isolation between analog input and communication connection	
LED Display			· Power Status (PWR) · Run Status · Ethernet Status (Link, Activity)	
Communication Interface			· Ethernet UDP/TCP Communication · Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex	
GUI			User Interface Program within Windows	
Library			Motion Library (API) for windows 7/8/10	

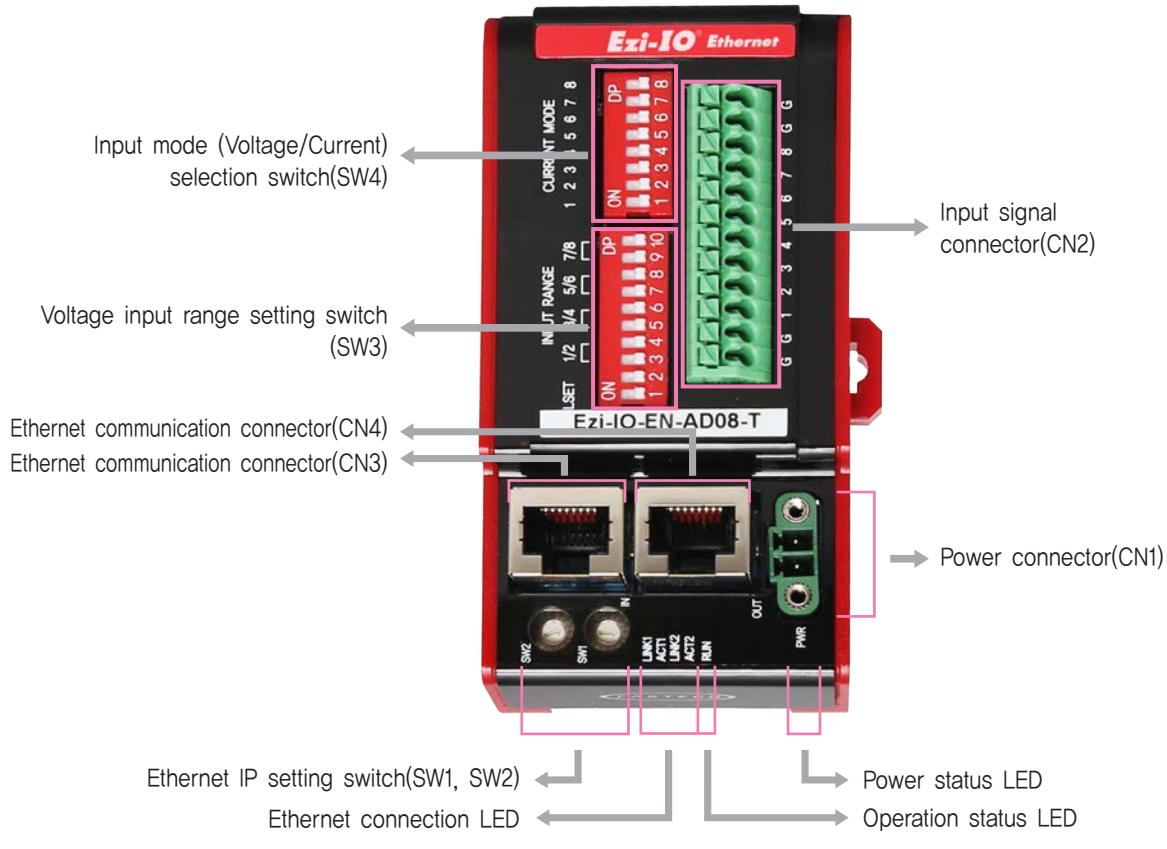
● Dimensions of Module [mm]

◆ Ezi-IO-EN-AD08-T

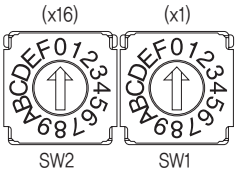


* Install the product on a din rail with a width of 35 mm.

● Settings and Operation [Ezi-IO-EN-AD08-T]



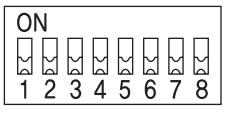
1. Ethernet IP Setting Switch (SW1, SW2)



These switches set the 4th octet of Ethernet IP. The 1st octet,the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)

e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= 87
IP is to be set as 192.168.0.87

2. Input Mode (Voltage/Current) Selection Switch (SW4)

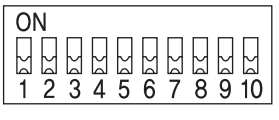


SW4 is a switch that selects voltage/current mode for each channel.
Refer to the following chart for how to use SW4.

Switch / Mode	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
	SW4.1	SW4.2	SW4.3	SW4.4	SW4.5	SW4.6	SW4.7	SW4.8
Voltage Input	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Current Input	ON	ON	ON	ON	ON	ON	ON	ON

* Select the input mode for each channel with the Input Mode Selection Switch (SW4) before supplying power to the module.

3. Voltage Input Range Setting Switch (SW3)



SW3 is a switch for setting the input range. You can set the range with the combination of the switches.

● Selecting Input Setting Method

You can select the input seting method with the LSET (SW3.1) switch as follows.

Switch / Mode	LSET	Description
	SW3.1	
DIP Switch	ON	Setting voltage input range with DIP switches (SW3.3~SW3.10)
Parameter	OFF	Setting voltage/current input range with parameters through Ethernet communication.

* If you use any channels in current input mode, the setting method has to be the parameter through Ethernet Communication (SW3.1=OFF).
* Set SW3.1 before supplying power to the module.
* SW3.2 is not used.

● Voltage Input Setting

When using the DIP Switch for setting (SW3.1 = ON), the voltage input is set as shown in the table below.

Switch / Input Range	CH1/CH2		CH3/CH4		CH5/CH6		CH7/CH8	
	SW3.3	SW3.4	SW3.5	SW3.6	SW3.7	SW3.8	SW3.9	SW3.10
–10~10V	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
–5~5V	OFF	ON	OFF	ON	OFF	ON	OFF	ON
–2.5~2.5V	ON	OFF	ON	OFF	ON	OFF	ON	OFF
0~10V	ON	ON	ON	ON	ON	ON	ON	ON

4. Status LED

• Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

• Operation Status LED

Name	Color	Status	Description
RUN	Green	OFF	Abnormal Operation
		Blinkig	Normal Operation

• Ethernet Connection LED

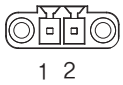
Name	Color	Status	Description
LINK1,2	Green	OFF	Link not Established
		ON	Link Established

• Ethernet Connection LED

Name	Color	Status	Description
ACT1/ACT2	Yellow	OFF	Stand-by
		Flickering	In Operation

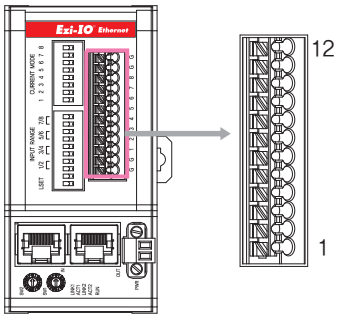
5. Power Connector (CN1)

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



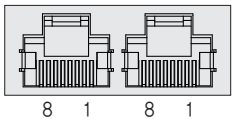
6. Input Signal Connector (CN2)

No.	Name	Function	I/O
1	G	Analog GND	Input
2	G	Analog GND	Input
3	1	Analog In 1	Input
4	2	Analog In 2	Input
5	3	Analog In 3	Input
6	4	Analog In 4	Input
7	5	Analog In 5	Input
8	6	Analog In 6	Input
9	7	Analog In 7	Input
10	8	Analog In 8	Input
11	G	Analog GND	Input
12	G	Analog GND	Input

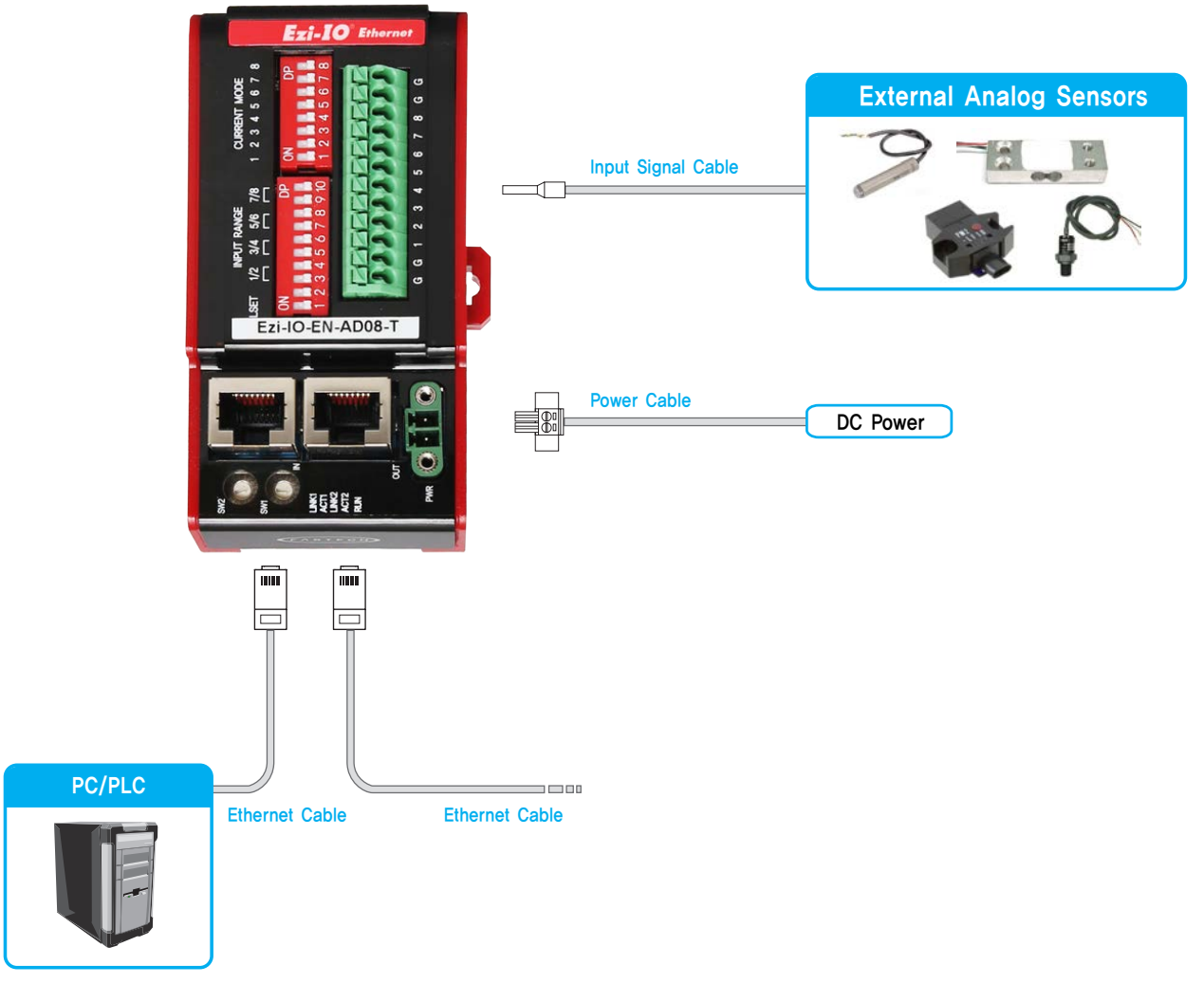


7. Ethernet Communication Connector (CN3, CN4)

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



System Configuration [Ezi-IO-EN-AD08-T]



1. Accessories

- Connectors

Purpose	Item	Part Number	Manufacturer
Power (CN1)	Terminal Block	MC421-38102	DECA

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

2. Options

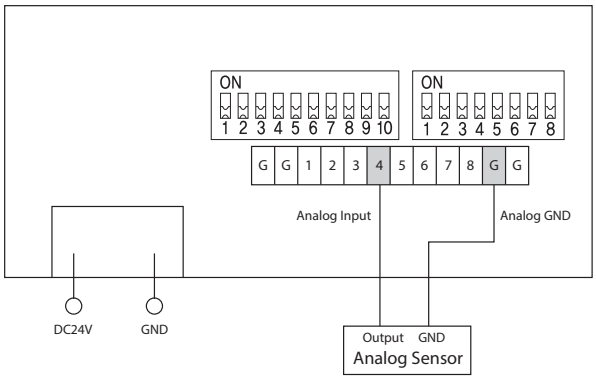
- Ethernet Cable

Purpose	Part Number	Length [m]	Remarks
Ethernet Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

External Wiring Diagram [Ezi-IO-EN-AD08-T]

1 Ezi-IO-EN-AD08-T

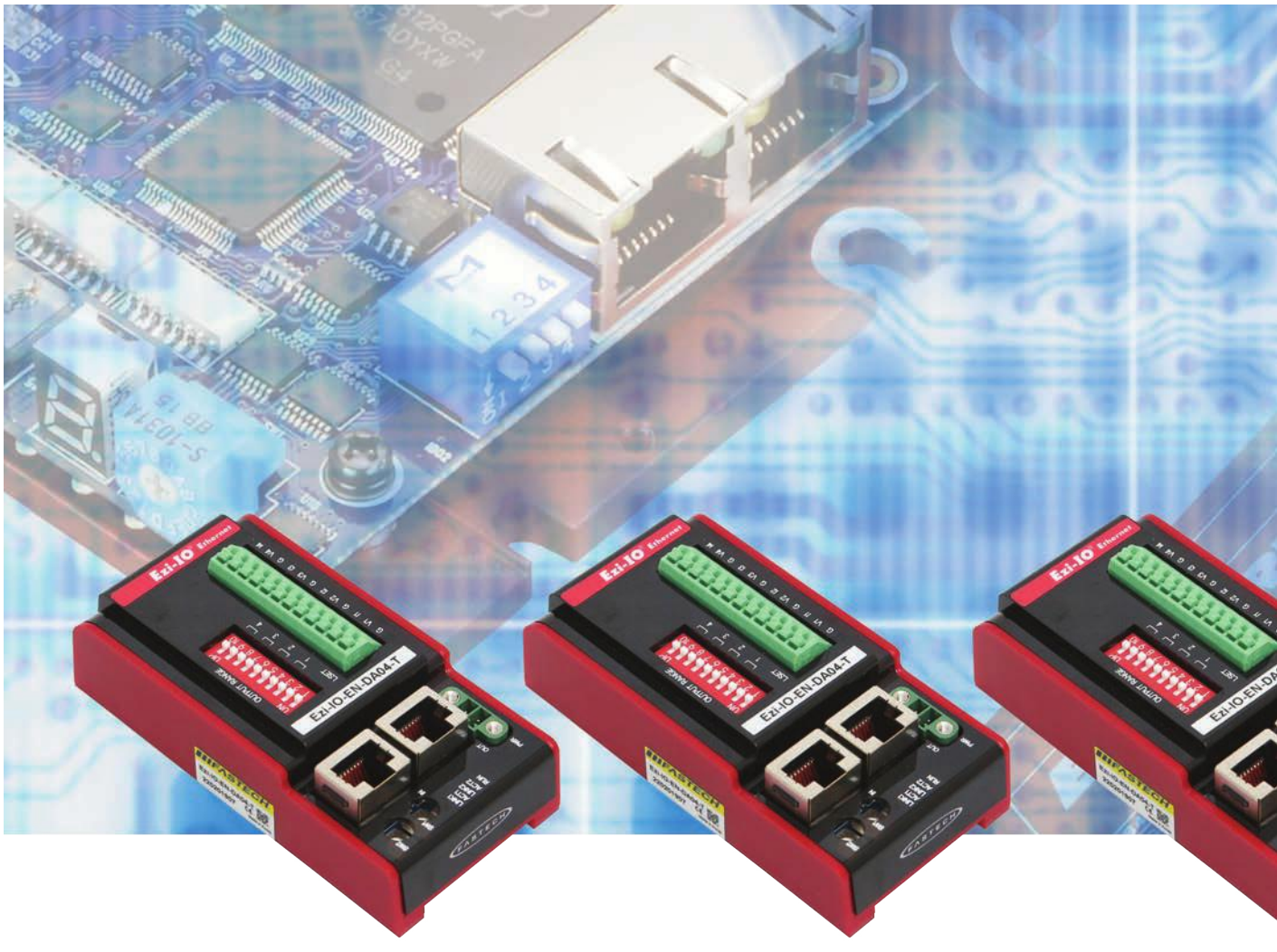



Ext-IO
ENIO-EN-DA64T
FASTECH

Ezi-IO® Ethernet DA

Input/Output Module

- Ethernet Based Analog Output Module
- Simple and Easy Wiring
- Output Range Configurable
- Calibration for Output Deviation



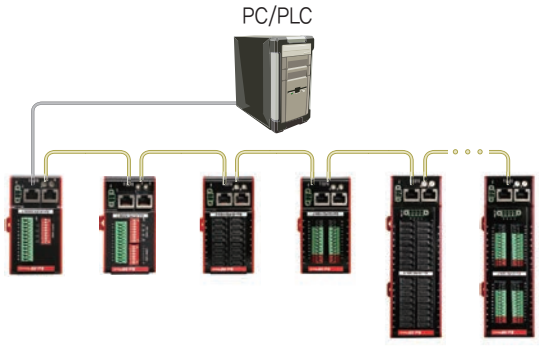
FASTECH
Fast, Accurate, Smooth Motion

Ezi-IO® Ethernet DA

Input/Output Module

1 Ethernet Based Analog Output Module

Since Ezi-IO Ethernet AD uses the same communication protocol as FASTECH's other Ethernet products, it can be applied very easily to the customers who have experiences using FASTECH's Ethernet products. Motion Library(API) is provided for programming under Windows 7/8/10.



2 GUI and Library(API) Provided

FASTECH provides the libraries(API) and the graphic user interface(GUI) program for Windows 7/8/10, for the convenience of customers using PC to control the products.

3 Simple and Easy Wiring

Ezi-IO Ethernet DA uses a push-in type terminal block. The push-in type terminal block can be easily connected to various devices using ferrule terminals, making the wiring much simpler and easier.

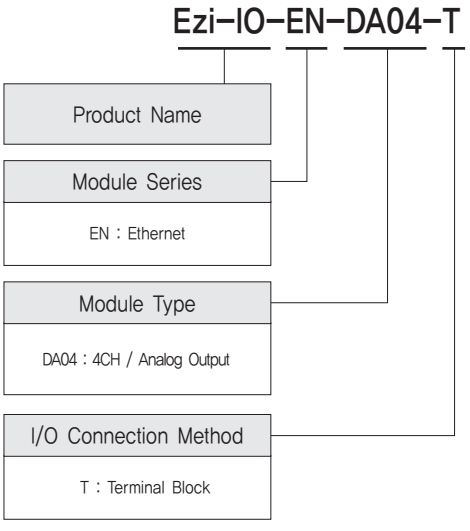
4 Easy Setup with Switches

The output signal range can be easily set with the DIP switches.

5 Calibration for Output Deviation

Ezi-IO Ethernet DA provides an output deviation calibration function as a countermeasure against deviations in the output signal due to the type of connection device, the characteristics of the cable, and the difference in the connection method.

● Ezi-IO Ethernet DA Part Numbering



● Ezi-IO Ethernet DA Part Number

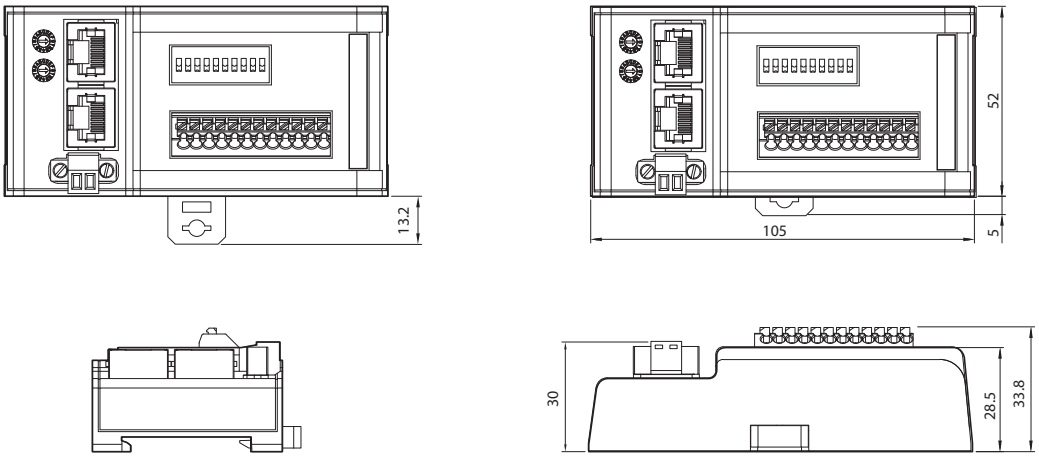
Part Number
Ezi-IO-EN-DA04-T

● Specifications of Module

Model			Ezi-IO-EN-DA04-T	
Output Mode			Voltage Output	Current Output
Input Voltage			DC24V±10%	
Current Consumption			Max. 180mA	
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	Number of Output Channels		4CH	
	Output Range		· 0~5V · 1~5V · 0~10V · -10~10V	· 0~20mA · 4~20mA
	Output Range Setting Method		· SDO Communications (Separate settings for CH1~4) · DIP Switch (Separate settings for CH1~4)	
	External Load Resistance		1kΩ or higher	400Ω or lower
	Max. Resolution		1/50,000 (Full Scale)	
	Accuracy	25℃	±0.3% (Full Scale)	
		0~50℃	±0.4% (Full Scale)	
	Analog Conversion Cycle		500μs/4CH	
	D/A Converted Data		· -25,000~25,000 (-10~10V output range) · 0~25,000 (Other output ranges except -10~10V)	0~25,000
	Isolation Method		Between analog output and communication connections : Digital isolation (Between channels : Non-isolated)	
LED Display			· Power Status (PWR) · Run Status · Ethernet Status (Link, Activity)	
Communication Interface			· Ethernet UDP/TCP Communication · Ethernet standard: 10BASE-T, 100BASE-TX · Full-Duplex	
GUI			User Interface Program within Windows	
Library			Motion Library (API) for windows 7/8/10	

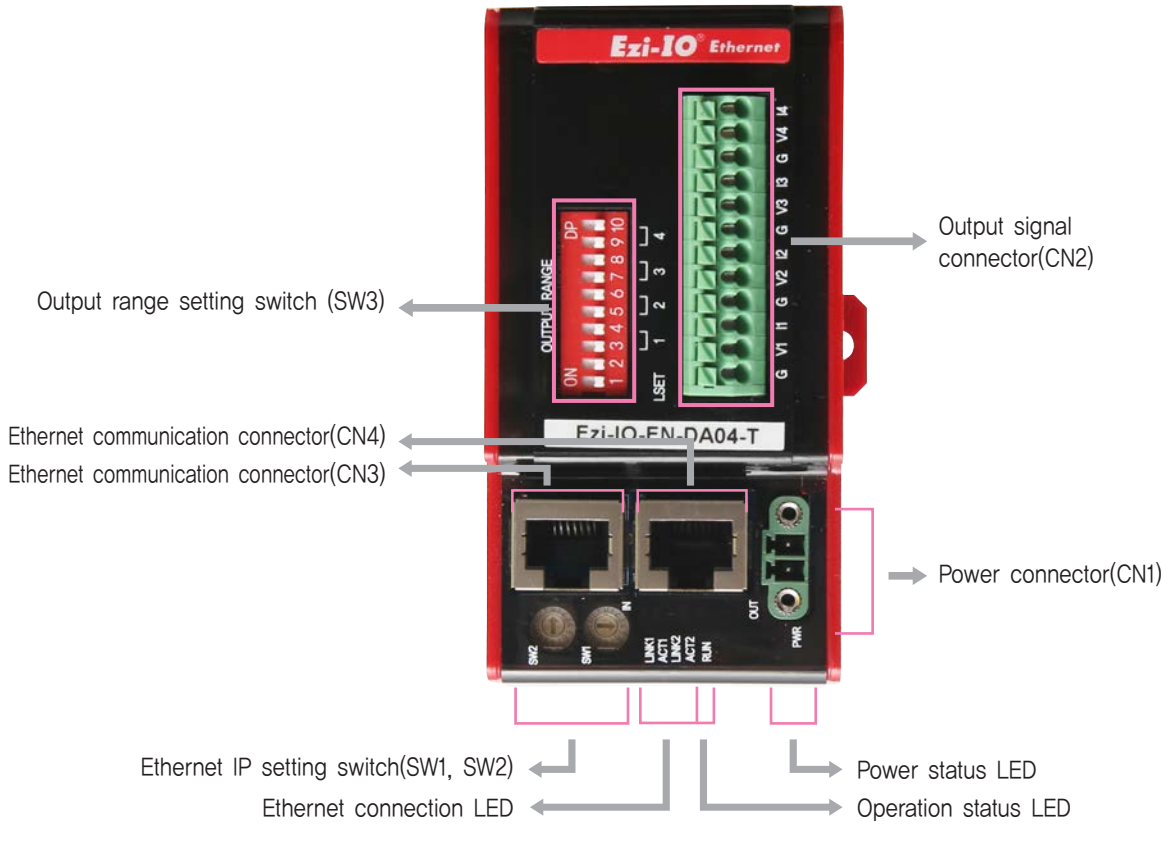
● Dimensions of Module [mm]

◆ Ezi-IO-EC-DA04-T

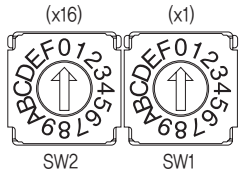


* Install the product on a din rail with a width of 35 mm.

● Settings and Operation [Ezi-IO-EN-DA04-T]



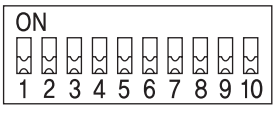
1. Ethernet IP Setting Switch (SW1, SW2)



These switches set the 4th octet of Ethernet IP. The 1st octet,the 2nd octet, and the 3rd octet are set by GUI. If the switches are set to 255(FF), DHCP function is activated, and IP is automatically set, ignoring the set value. (Please refer to the manual for details.)

e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= 87
IP is to be set as 192.168.0.87

2. Output Range Setting Switch (SW3)



SW3 is a switch for setting the output range. You can set the range with the combination of the switches.

● Selecting Input Setting Method

You can select the output setting method with the LSET (SW3.1) switch as follows.

Switch / Mode	LSET SW3.1	Description
DIP Switch	ON	Setting output range with DIP switches (SW3.3~SW3.10
Parameter	OFF	Setting output range with Ethernet communication

* Set SW3.1 before supplying power to the module
* SW3.2 is not used.

● Output Range Setting

When using the DIP Switch for setting (SW3.1 = ON), the output range is set as shown in the table below.

Switch / Output Range	CH1		CH2		CH3		CH4	
	SW3.3	SW3.4	SW3.5	SW3.6	SW3.7	SW3.8	SW3.9	SW3.10
0~5V	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
–10~10V	OFF	ON	OFF	ON	OFF	ON	OFF	ON
0~20mA	ON	OFF	ON	OFF	ON	OFF	ON	OFF
4~20mA	ON	ON	ON	ON	ON	ON	ON	ON

* Output range of 1~5V and 0~10V can only be set by parameters with Ethernet communication.

3. Status LED

● Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

● Operation Status LED

Name	Color	Status	Description
RUN	Green	OFF	Abnormal Operation
		Blinking	Normal Operation

● Ethernet Connection LED

Name	Color	Status	Description
LINK1,2	Green	OFF	Link not Established
		ON	Link Established

● Ethernet Connection LED

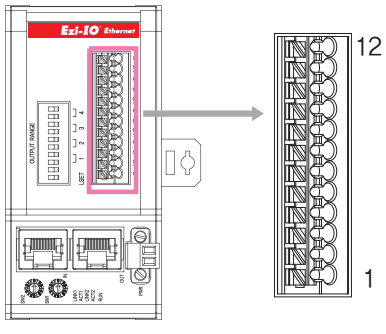
Name	Color	Status	Description
ACT1/ACT2	Yellow	OFF	Stand-by
		Flickering	In Operation

4. Power Connector (CN1)

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

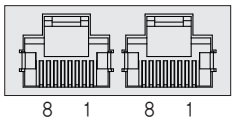
5. Output Signal Connector (CN2)

No.	Name	Function	I/O
1	G	Analog GND	Output
2	V1	Voltage Out 1	Output
3	I1	Current Out 1	Output
4	G	Analog GND	Output
5	V2	Voltage Out 2	Output
6	I2	Current Out 2	Output
7	G	Analog GND	Output
8	V3	Voltage Out 3	Output
9	I3	Current Out 3	Output
10	G	Analog GND	Output
11	V4	Voltage Out 4	Output
12	I4	Current Out 4	Output

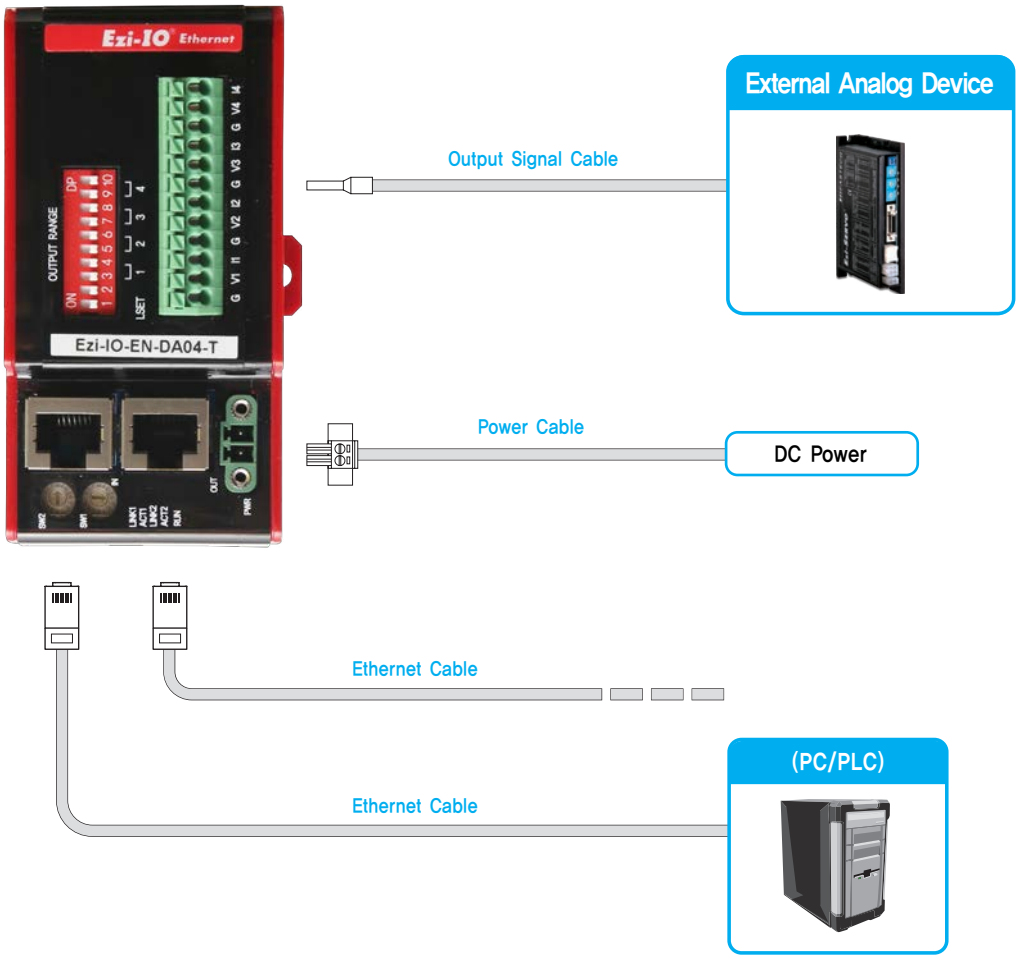


6. Ethernet Communication Connector (CN3, CN4)

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



● System Configuration [Ezi-IO-EN-DA04-T]



1. Accessories

- Connectors

Purpose	Item	Part Number	Manufacturer
Power (CN1)	Terminal Block	MC421-38102	DECA

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

2. Options

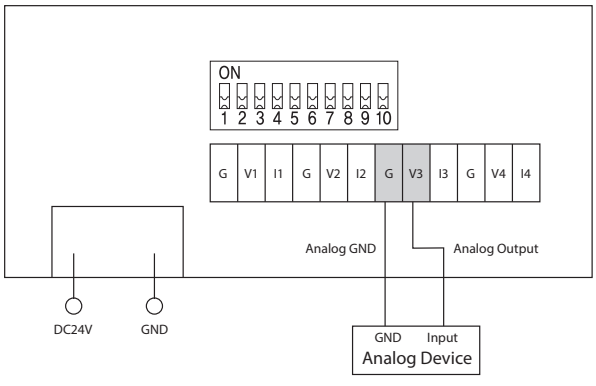
- Ethernet Cable

Purpose	Part Number	Length [m]	Remarks
Ethernet Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

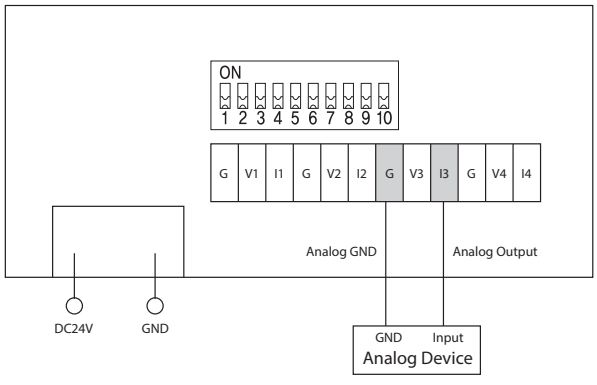
※ If you need cables with length(in units of 1m) not listed on the table or robot cables, please contact FASTECH for more information.

External Wiring Diagram [Ezi-IO-EN-DA04-T]

1 Voltage Output Mode



2 Current Output Mode



OPTION Brake

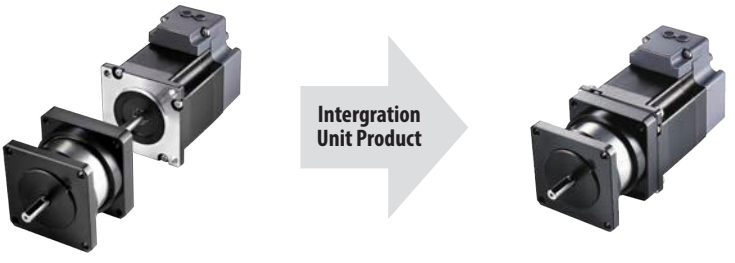
Overall Table of ***Brake***

Name of Product	Motor Brake Size			
	42mm	56mm	60mm	86mm
Ezi-SERVO II Plus-E				
Ezi-SERVO II Plus-E MINI				
Ezi-SERVO II Plus-E ALL				
Ezi-STEP II Plus-E				
Ezi-STEP II Plus-E MINI				

Features

Characteristic

Ezi-SERVO BK series, FASTECH's new unit product, maximizes User's operational convenience with integration between Ezi-SERVO series of stepping motor and non-excitation electromagnetic brake that has big friction of brake torque and rapid brake timing.



Advantage

◆ Apply non-excitation electromagnetic brake

Different from excitation type of brake that only generates braking-power by electromagnetic-power when power supplies at brake and loses brake power when power cut-off, Ezi-SERVO BK series adopts non-excitation electromagnetic brake that immediately generate friction of brake torque by inner spring's binding post-tensioning force once power cut off. So Ezi-SERVO BK series enables complete stopping of stepping motor and can forestall risks with brake's mechanical braking-power under emergency situation as like sudden blackout in machine operation.

◆ Automatic Braking during power cutoff or blackout

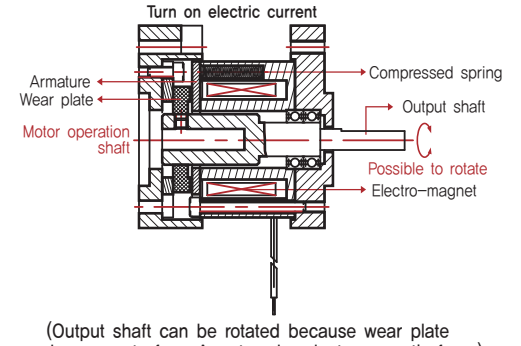
Ezi-SERVO BK series, Unit product, integrated between high performance of non-excitation electromagnetic brake and step motor that enables immediate braking to keep holding point and prevent falling under power cut off or blackout during operation so customer can be flexible in responding to sudden situation.

◆ Long Durability

Brake integrated into Ezi-SERVO BK series applies long durability of brake wear plate(Brake Lining) so it guarantees high durability and long life cycle.

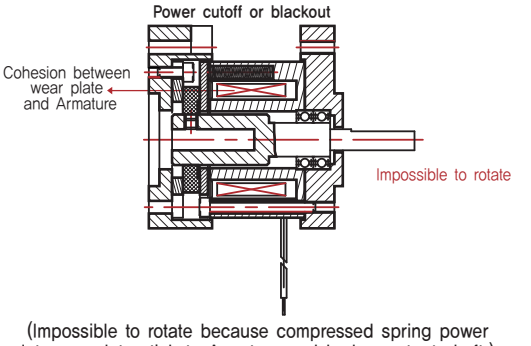
◆ Rapid Brake Timing

Ezi-SERVO BK series, non-excitation electromagneic brake, enables rapid braking because loaded spring closed brake can quicken rising of brake torque.



(Output shaft can be rotated because wear plate can be separate from Armature by electromagnetic force)

POWER OFF



(Impossible to rotate because compressed spring power let wear plate stick to Armature and brakes output shaft.)

● Allowable Overhung Load and Allowable Thrust Load of BK series

Motor Size	Allowable Overhung Load [N] Based on Center of Shaft				Allowable Thrust Load [N]
	3	8	13	18	
42mm	22	26	33	46	Must be lower than Unit's weight
56mm	52	65	85	123	
60mm	70	87	114	165	
86mm	270	300	350	400	

1. Drive Specification and Size

Please refer to the individual catalogue to check drive specification and size.

2. System Configuration and Setting/Operation

Please refer to the individual catalogue to check series' system configuration, Name and Function.

3. External Wiring Diagram

Please refer to the individual catalogue to check series' external wiring diagram.

● Part Numbering

◆ In Case of Ezi-SERVO series

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO-□-□-□-BK	EzM-□-□-BK	Not Changed

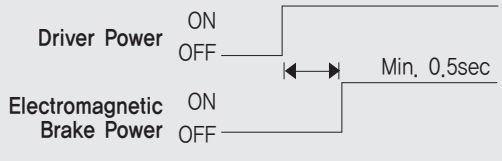
※ It can be added BK at the end of model name of each series. (The name of drive model is not changed.)

ex) The Part numbering method for in case of brake is adopted on 42mm of Ezi-SERVO ST series.

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO-ST-42S-A-BK	EzM-42S-A-BK	EzS-PD-42S-A

● Electromagnetic Brake Operation Timing Chart

Please release electromagnetic brake at least 0.5 sec later power input to the drive. If not, work can be falling



- Please use Cable at least thicker than AWG24(0.2m²) when connect electromagnetic brake and power.
- Electromagnetic Brake is non-polar so there is no polarity in Brake Cable
- Over input voltage can induce high temperature of electro-magnetic brake and motor so it can be main reason of failure
- Reversely too low input voltage will cause non-operation of electromagnetic brake.

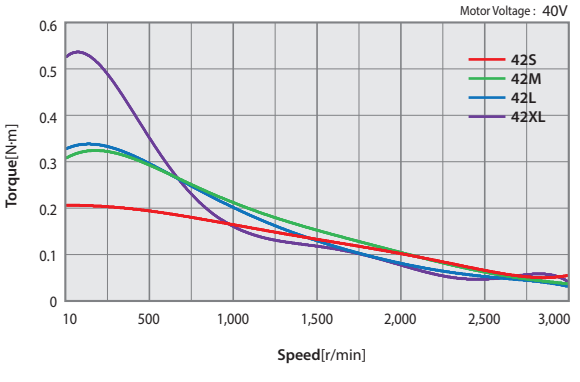
● Specifications of Brake [42mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL	Ezi-STEP II Plus-E
Ezi-STEP II Plus-E MINI			

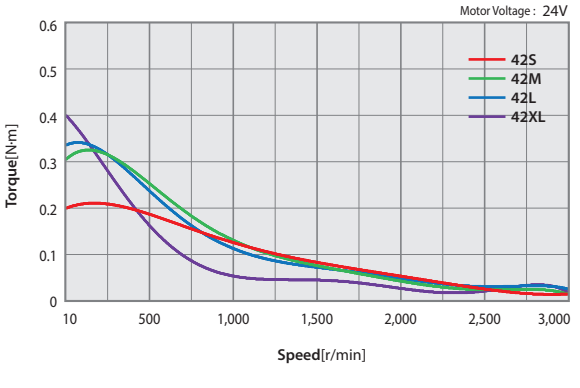
Model	Unit	42			
		42S	42M	42L	42XL
Electromagnetic Brake	Form	Non-Excitation Type			
Input Voltage	V	24VDC			
Rated Current	A	0.2			
Power Consumption	W	5			
Friction Torque	N·m	0.2			

※ Electromagnetic brake will not be using for braking but for holding position when power-off.

● Torque Charcteristics of Motor with Brake [42mm]



Applicable Model	
Ezi-SERVO II Plus-E	Ezi-STEP II Plus-E



Applicable Model	
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL
Ezi-STEP II Plus-E MINI	

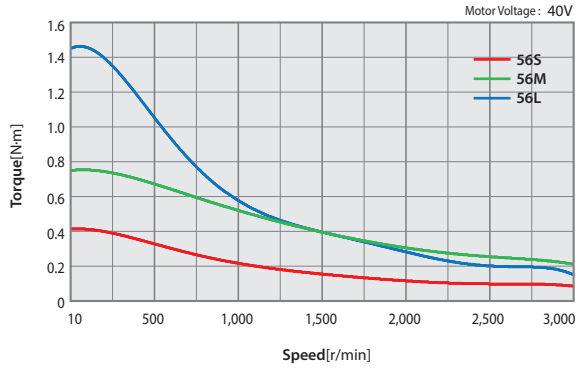
● Specifications of Brake [56mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL	Ezi-STEP II Plus-E
Ezi-STEP II Plus-E MINI			

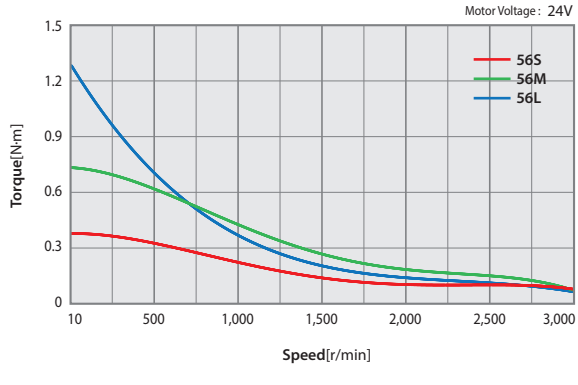
Model	Unit	56		
		56S	56M	56L
Electromagnetic Brake	Form	Non-Excitation Type		
Input Voltage	V	24VDC ±10%		
Rated Current	A	0.27		
Power Consumption	W	6.6		
Friction Torque	N·m	0.7		

※ Electromagnetic brake will not be using for braking but for holding position when power-off.

● Torque Charcteristics of Motor with Brake [56mm]



Applicable Model	
Ezi-SERVO II Plus-E	Ezi-STEP II Plus-E



Applicable Model	
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL
Ezi-STEP II Plus-E MINI	

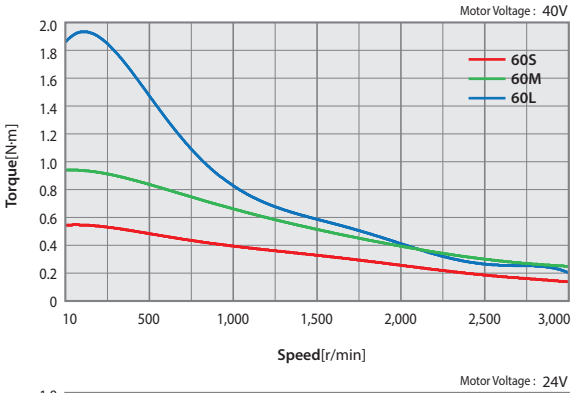
● Specifications of Brake [60mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL	Ezi-STEP II Plus-E
Ezi-STEP II Plus-E MINI			

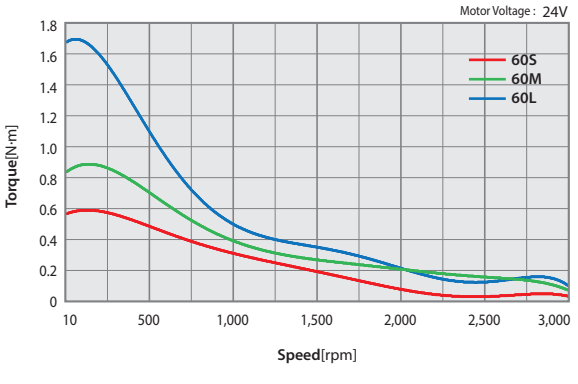
Model	Unit	60		
		60S	60M	60L
Electromagnetic Brake	Form	Non-Excitation Type		
Input Voltage	V	24VDC		
Rated Current	A	0.27		
Power Consumption	W	6.6		
Friction Torque	N·m	0.7		

※ Electromagnetic brake will not be using for braking but for holding position when power-off.

● Torque Charcteristics of Motor with Brake [60mm]



Applicable Model	
Ezi-SERVO II Plus-E	Ezi-STEP II Plus-E



Applicable Model	
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL
Ezi-STEP II Plus-E MINI	

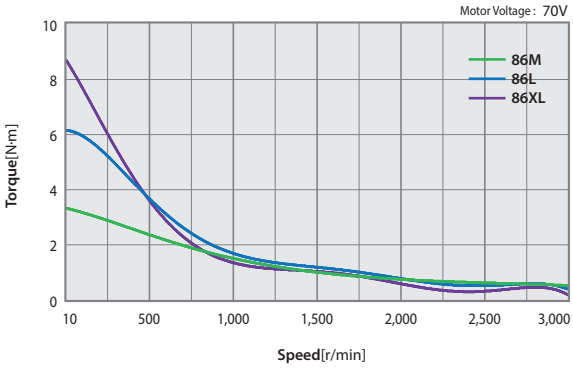
● Specifications of Brake [86mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E ALL	Ezi-STEP II Plus-E	

Model	Unit	86		
		86M	86L	86XL
Electromagnetic Brake	Form	Non-Excitation Type		
Input Voltage	V	24VDC		
Rated Current	A	0.54		
Power Consumption	W	13.0		
Friction Torque	N·m	4.0		

※ Electromagnetic brake will not be using for braking but for holding position when power-off.

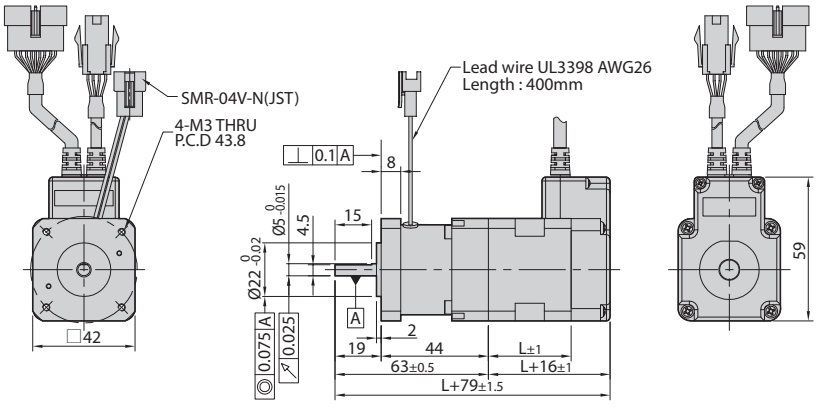
● Torque Charcteristics of Motor with Brake [86mm]



Applicable Model	
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E ALL
Ezi-STEP II Plus-E	

● Dimensions of Motor with Brake [42mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI		

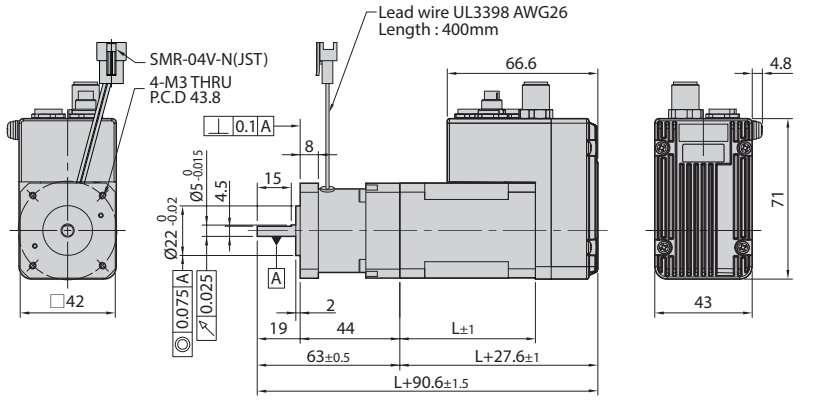


42mm

Model Name	Length(L)
EzM2-42S	34
EzM2-42M	40
EzM2-42L	48
EzM2-42XL	60

Applicable Model			
Ezi-SERVO II Plus-E ALL			

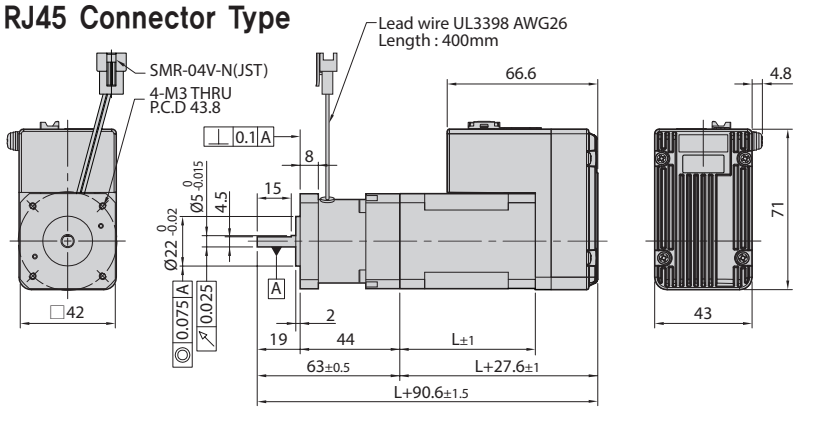
◆ M Connector Type



42mm

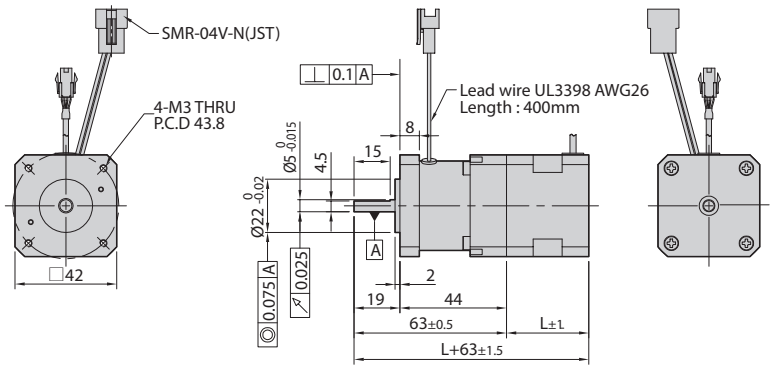
Model Name	Length(L)
42M	40
42L	48
42XL	60

◆ RJ45 Connector Type



● Dimensions of Motor with Brake [42mm]

Applicable Model			
Ezi-STEP II Plus-E	Ezi-STEP II Plus-E MINI		

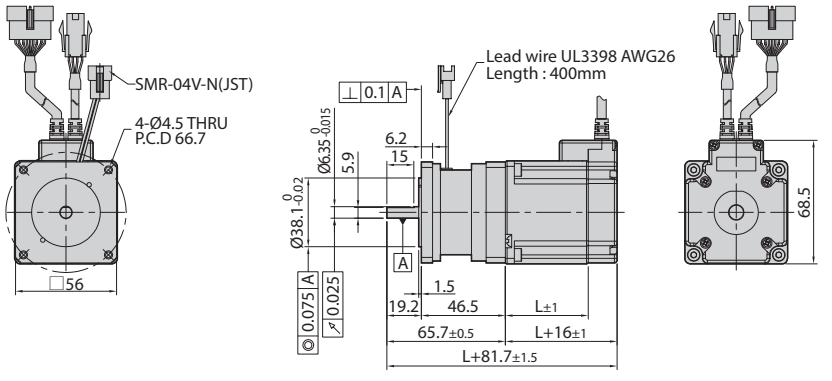


42mm

Model Name	Length(L)
BM-42S	34
BM-42M	40
BM-42L	48
BM-42XL	60

● Dimensions of Motor with Brake [56mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI		

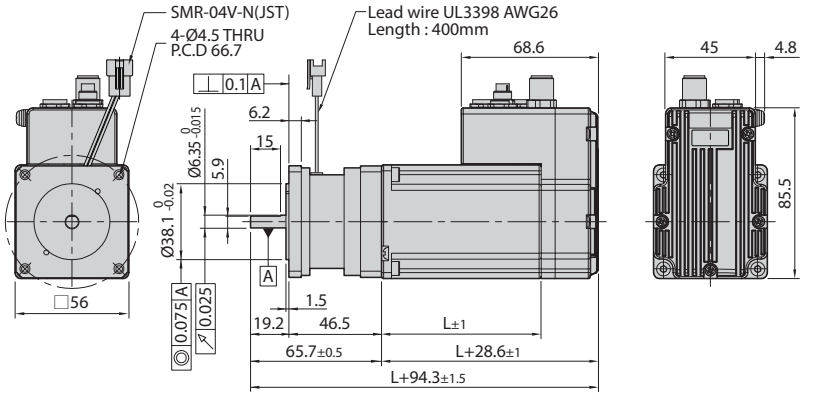


56mm

Model Name	Length(L)
EzM2-56S	46
EzM2-56M	55
EzM2-56L	80

Applicable Model			
Ezi-SERVO II Plus-E ALL			

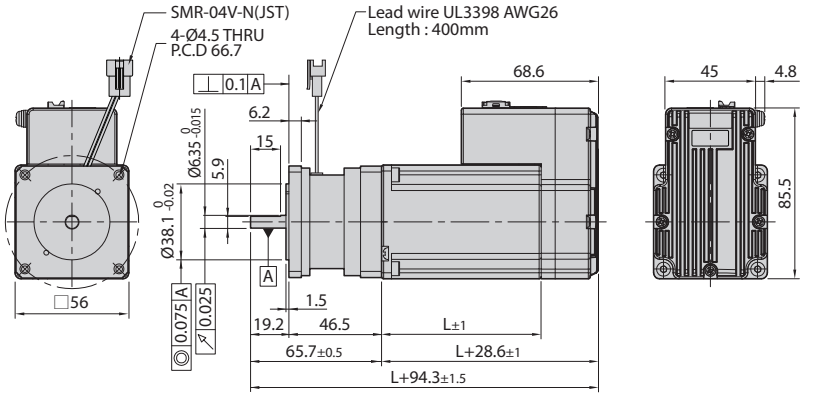
◆ M Connector Type



56mm

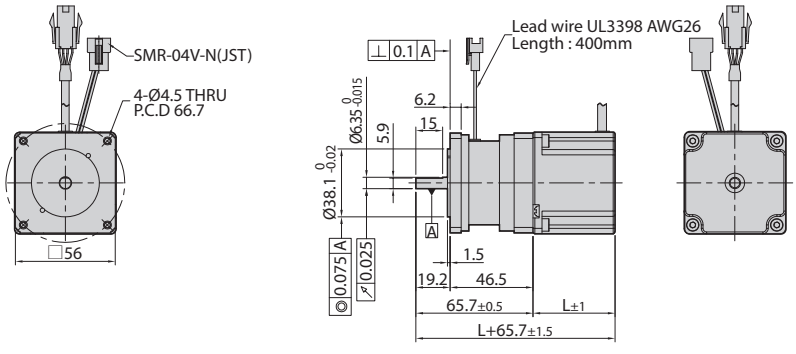
Model Name	Length(L)
56S	46
56M	55
56L	80

◆ RJ45 Connector Type



● Dimensions of Motor with Brake [56mm]

Applicable Model			
Ezi-STEP II Plus-E	Ezi-STEP II Plus-E MINI		

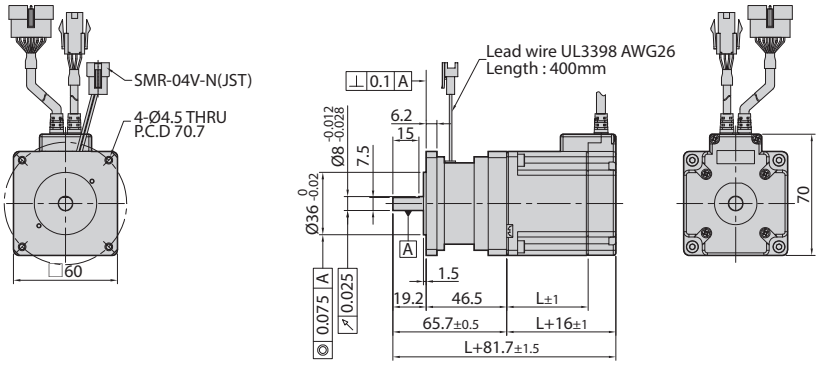


56mm

Model Name	Length(L)
BM-56S	46
BM-56M	55
BM-56L	80

● Dimensions of Motor with Brake [60mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI		

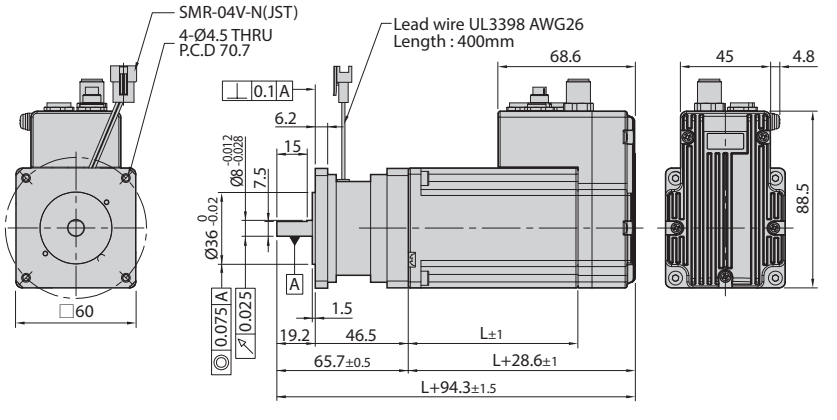


60mm

Model Name	Length(L)
EzM2-60S	47
EzM2-60M	56
EzM2-60L	85

Applicable Model			
Ezi-SERVO II Plus-E ALL			

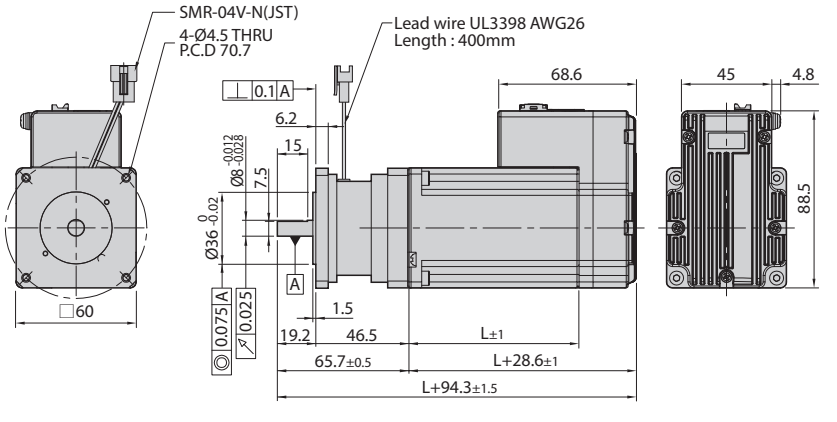
◆ M Connector Type



60mm

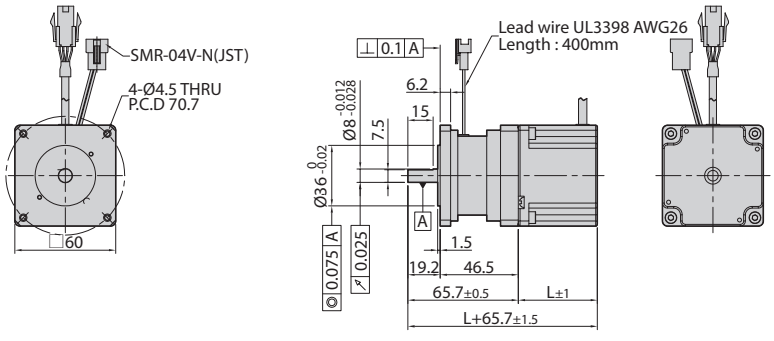
Model Name	Length(L)
60S	47
60M	56
60L	85

◆ RJ45 Connector Type



● Dimensions of Motor with Brake [60mm]

Applicable Model			
Ezi-STEP II Plus-E	Ezi-STEP II Plus-E MINI		

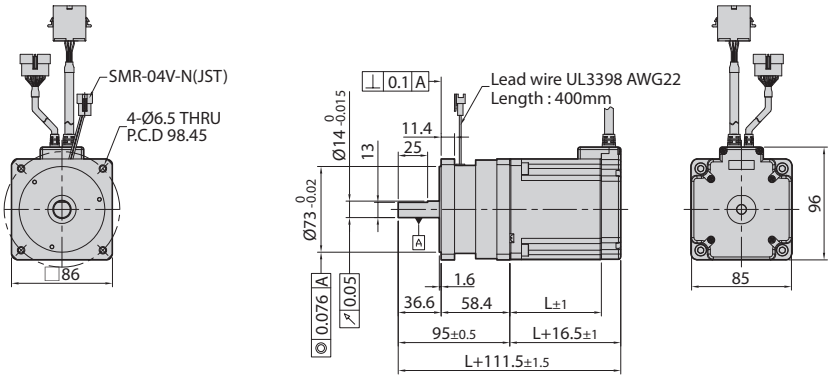


60mm

Model Name	Length(L)
BM-60S	47
BM-60M	56
BM-60L	85

● Dimensions of Motor with Brake [86mm]

Applicable Model			
Ezi-SERVO II Plus-E			

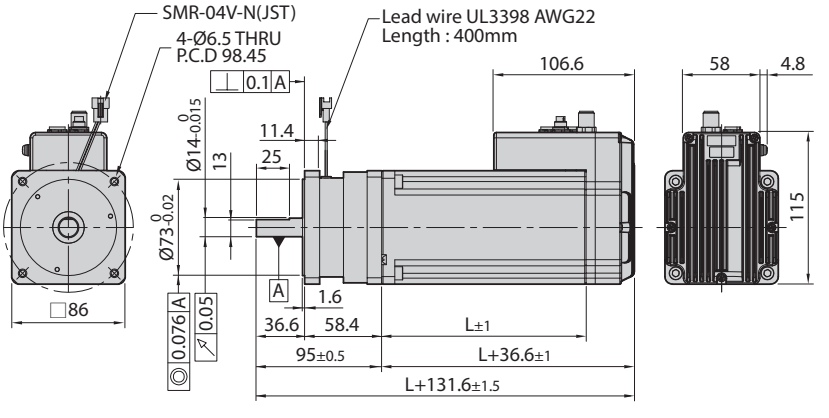


86mm

Model Name	Length(L)
EzM2-86M	78
EzM2-86L	117
EzM2-86XL	155

Applicable Model			
Ezi-SERVO II Plus-E ALL			

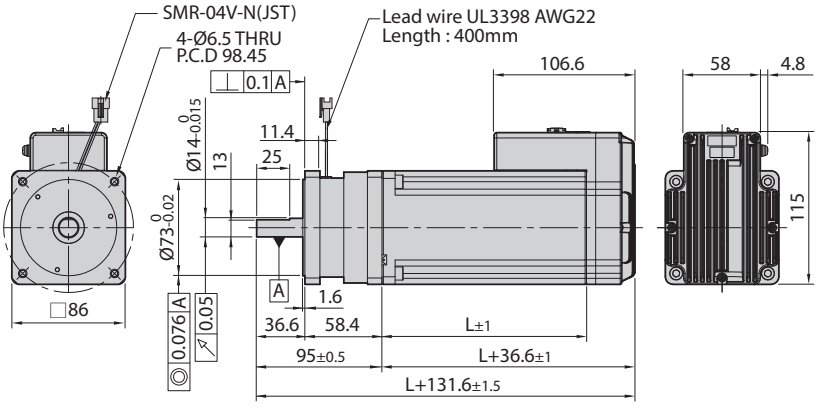
◆ M Connector Type



86mm

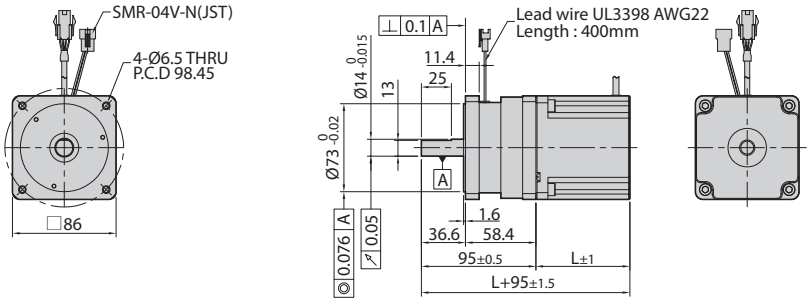
Model Name	Length(L)
86M	78
86L	117
86XL	155

◆ RJ45 Connector Type



● Dimensions of Motor with Brake [86mm]

Applicable Model			
Ezi-STEP II Plus-E			

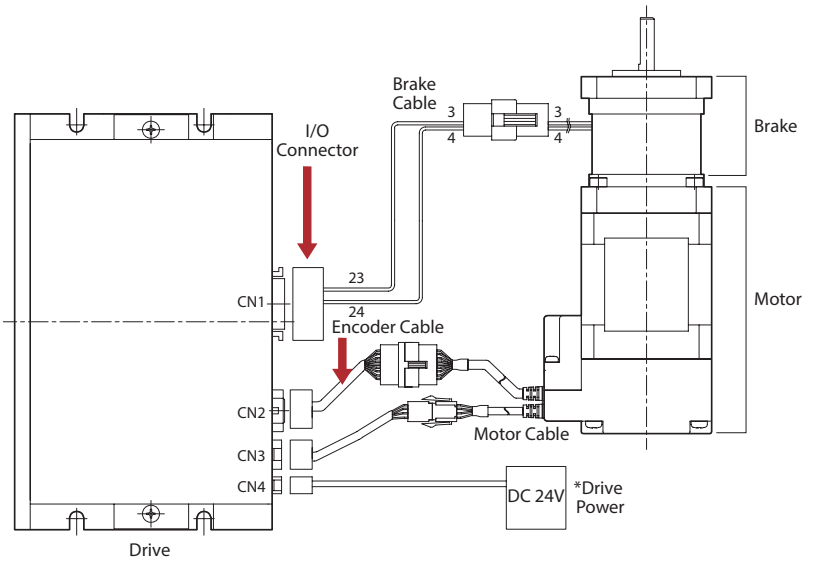


86mm

Model Name	Length(L)
BM-86M	78
BM-86L	117
BM-86XL	155

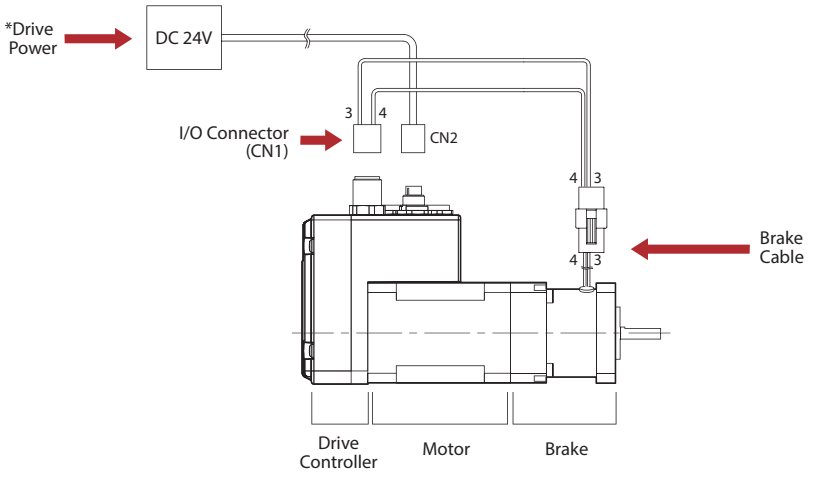
● Electrical Brake and Power Connection

Ezi-SERVOII Plus-E, Ezi-SERVOII Plus-E_ 86mm



* In case of Ezi-SERVOII Plus-E 86mm, the voltage of power supply is DC40~ 70V.

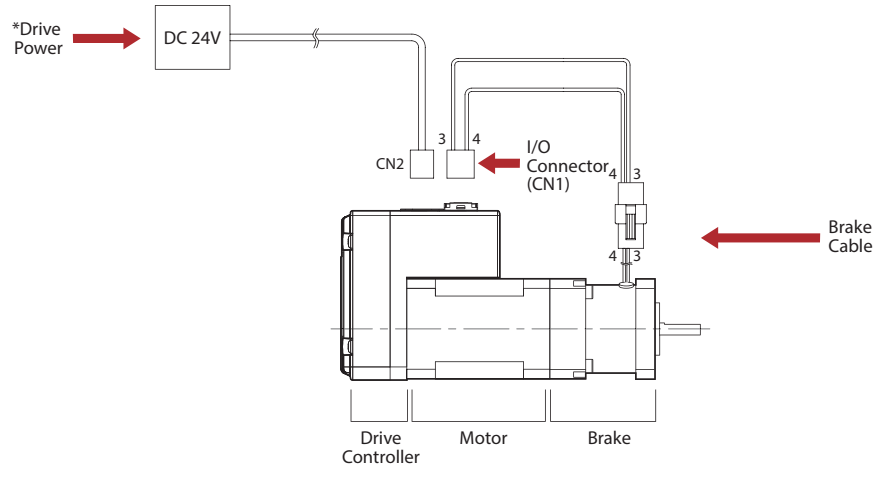
Ezi-SERVOII Plus-E ALL_ M Type



* In case of 86mm, the voltage of power supply is DC40~ 70V.

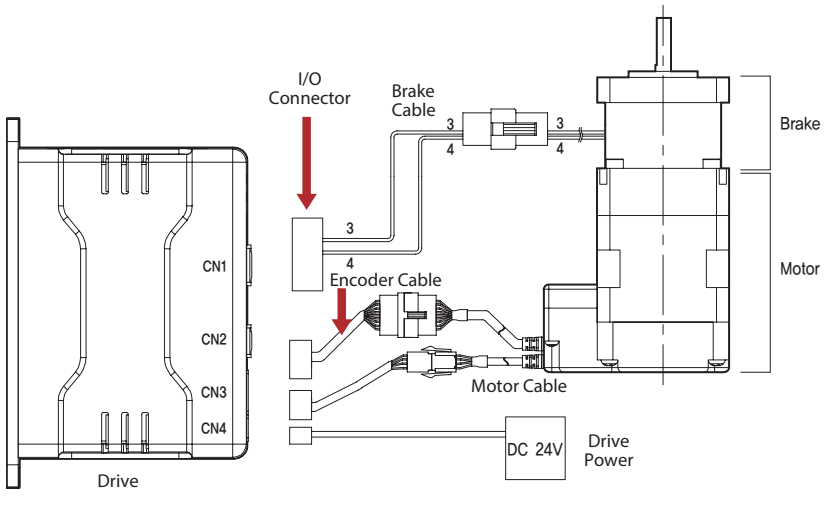
● Electrical Brake and Power Connection

Ezi-SERVO II Plus-E ALL_ R Type



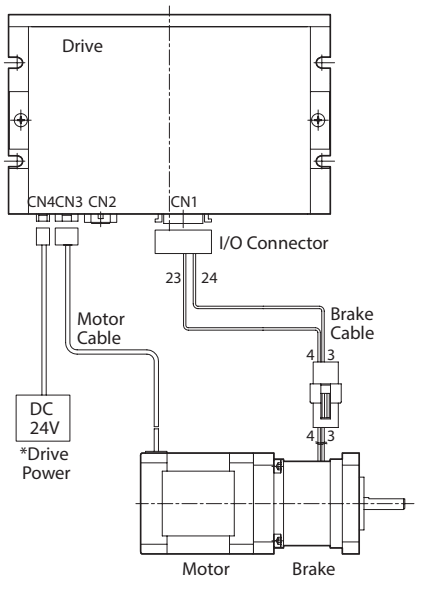
* In case of 86mm, the voltage of power supply is DC40~ 70V.

Ezi-SERVO II Plus-E MINI



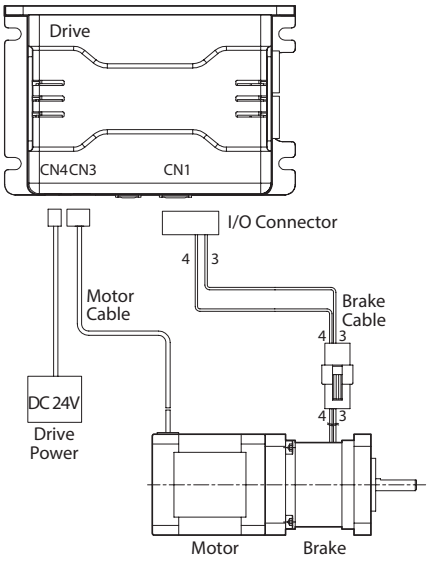
● Electrical Brake and Power Connection

Ezi-STEPII Plus-E, Ezi-STEPII Plus-E_ 86mm



* In case of 86mm, the voltage of power supply is DC40~ 70V.

Ezi-STEPII Plus-E MINI



OPTION Gearbox

Overall Table of ***Gearbox***

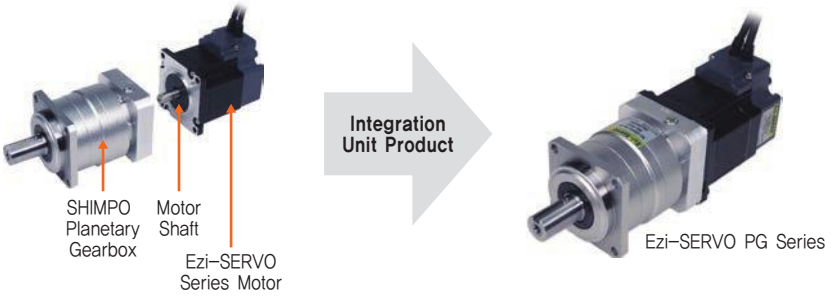
Name of Product	Gearbox frame size			
	42mm	60mm		86mm
	Motor frame size			
	42mm	56mm	60mm	86mm
Ezi-SERVO II Plus-E				
Ezi-SERVO II Plus-E MINI				
Ezi-SERVO II Plus-E ALL				

Features

Characteristic

◆ Adopt SHIMPO's high accuracy planetary gearbox

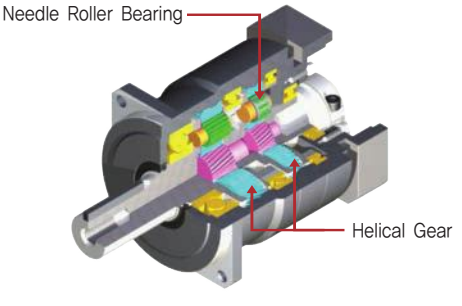
Ezi-SERVO PG series, FASTECH's new Planetary Geared Step Motor unit product maximizes User's operational convenience with integration between Closed Loop System, Ezi-SERVO and Helical Gear structure of SHIMPO's high accuracy planetary gearbox has 3 min less Backlash.



Advantage

◆ Vibration, Low Noise

Ezi-SERVO PG series, a High Precision of Helical Gear structured SHIMPO planetary gearbox developed for low vibration and extremely low noise of operation and both of single and double stage of gearboxes generates backlash less than 3 min so it would be the best solution for high accuracy of positioning.



◆ High Rigidity, High Torque

SHIMPO Planetary Gearbox, combined with Ezi-SERVO PG series, maximized allowable torque with using Needle Roller bearing and machined body to be internal gear so it enables compact design of gearbox and maximized durability.

◆ Long Life & Maintenance Free

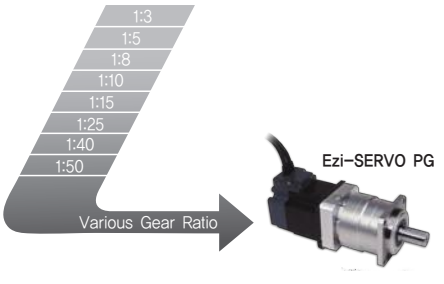
Ezi-SERVO PG Series is Maintenance-free product. No risk of grease leakage because of high viscosity of Anti-separation grease and it is maintenance free products because of lack of necessity for grease replacement.

◆ Resonance Minimization

Ezi-SERVO PG series by applying the planetary gearbox, gear ratio corres ponding to the overall operation speed of the stepper motor so low speed that occurs mainly in the resonance of a stepper motor can drive the motor to avoid the band itself and the system is very effective in reducing the vibration.

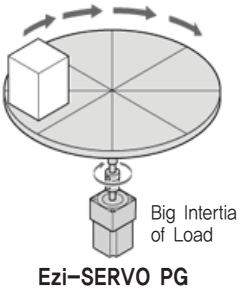
◆ Various Gear Ratio

Ezi-SERVO series, Unit product between a variety of gear ratio of gearbox with closed loop stepper motor, enables to generate various high torque as small capacity of stepper and also can respond under any load with flexibility



◆ Optimized Solution for Big Inertia of Rotation

Allowable load moment of inertia is proportional to the square of the gear ratio, Gearbox united Ezi-SERVO PG series enables fast positioning and smooth operation even under big intertia moment of load.



Ezi-SERVO PG

● Allowable Overhung Load and Allowable Thrust Load of PG series

Motor Size	Gear Ratio	Allowable Overhung Load [N] Based on Center of Shaft	Allowable Thrust Load [N]
42mm	1:03	240	270
	1:05	290	330
	1:08	340	410
	1:10	360	450
	1:15	410	540
	1:25	490	640
	1:40	570	640
	1:50	620	640
56, 60mm	1:03	430	310
	1:05	510	390
	1:08	600	480
	1:10	640	530
	1:15	740	630
	1:25	870	790
	1:40	1000	970
	1:50	1100	1100
86mm	1:03	810	930
	1:05	960	1200
	1:08	1100	1400
	1:10	1200	1600
	1:15	1400	1900
	1:25	1600	2200
	1:40	1900	2200
	1:50	2100	2200

1. Drive Specification and Size

Please refer to the individual catalogue(Ezi-SERVO ST, Ezi-SERVO Plus R, Ezi-SERVOII BT and Ezi-SERVO ALL) to check drive specification and size of Ezi-SERVO ST / Plus-R / BT / ALL of Ezi-SERVO PG Series

2. System Configuration and Setting/Operation

Please refer to the individual catalogue(Ezi-SERVO ST, Ezi-SERVO Plus R, Ezi-SERVOII BT and Ezi-SERVO ALL) to check Series' system configuration, Name and Function of Ezi-SERVO ST / Plus-R / BT / ALL of Ezi-SERVO PG Series.

3. External Wiring Diagram

Please refer to the individual catalogue(Ezi-SERVO ST, Ezi-SERVO Plus R, Ezi-SERVOII BT and Ezi-SERVO ALL) to check Series' external wiring diagram of Ezi-SERVO ST / Plus-R / BT / ALL of Ezi-SERVO PG Series.

● Part Numbering

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO-□-□-□-PN□	EzM-□-□-PN□	Not Changed

※ It can be added PN□ at the end of model name of each series.(The name of drive model is not changed)

ex) Numbering method when 1:10 reducer attached on 42mm of Ezi-SERVO ST series.

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO-ST-42S-A-PN10	EzM-42S-A-PN10	EzS-PD-42S-A

● How to Read Specifications

Model	Unit	42S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
① Maximum Holding Torque	N·m	0.57	0.95	1.52	1.90	2.76	4.60	7.36	9
② Rotor Inertia Moment	kg·m²	35×10^{-7}							
③ Backlash	arcmin	3				5			
④ Angle Transmission Error	arcmin	5				7			
⑤ Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
⑥ Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
⑦ Permissible Torque	N·m	6	9	9	6	6	9	9	9
⑧ Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
⑨ Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
⑩ Unit Weight	kg	0.89				0.99			

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.

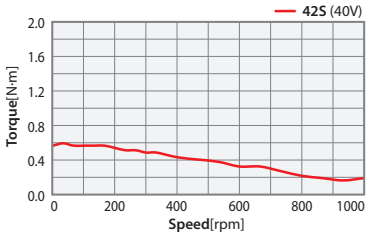
● Specifications of Motor with Gearbox [42S]

Applicable Model			
Ezi-SERVO II Plus-E			

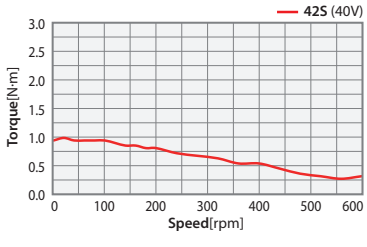
Model	Unit	42S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.57	0.95	1.52	1.90	2.76	4.60	7.36	9
Rotor Inertia Moment	kg·m²	35×10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	6	9	9	6	6	9	9	9
Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	0.89				0.99			

● Torque Graph with Gearbox

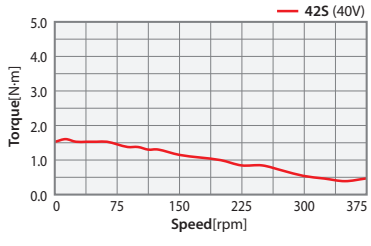
42S-PN3 Series



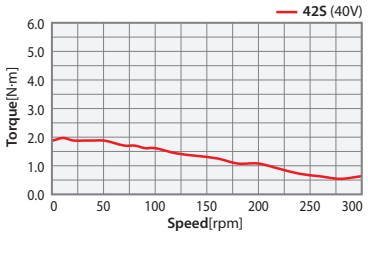
42S-PN5 Series



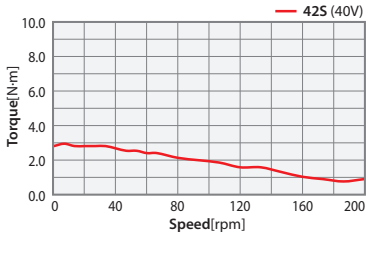
42S-PN8 Series



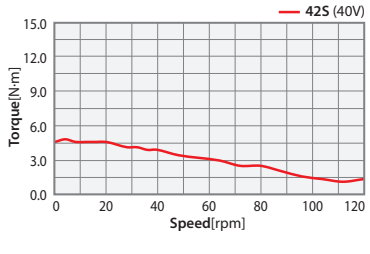
42S-PN10 Series



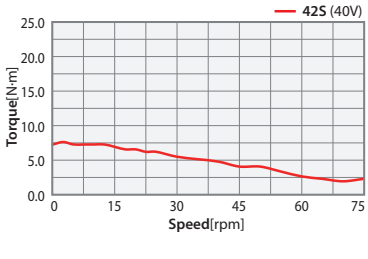
42S-PN15 Series



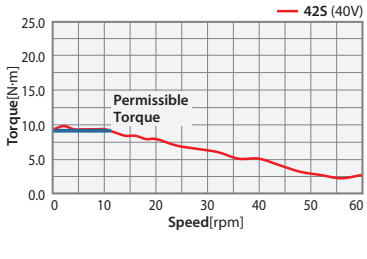
42S-PN25 Series



42S-PN40 Series



42S-PN50 Series



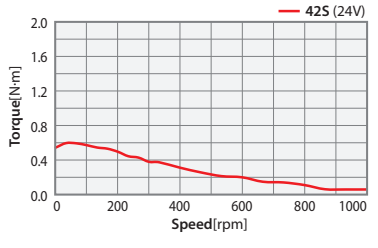
● Specifications of Motor with Gearbox [42S]

Applicable Model			
Ezi-SERVO II Plus-E MINI			

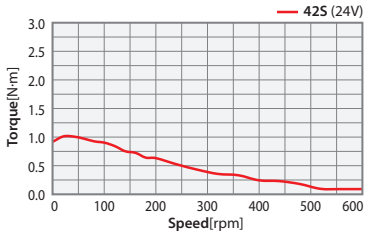
Model	Unit	42S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.55	0.92	1.47	1.84	2.67	4.46	7.13	9
Rotor Inertia Moment	kg·m²	35×10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	6	9	9	6	6	9	9	9
Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	0.89				0.99			

● Torque Graph with Gearbox

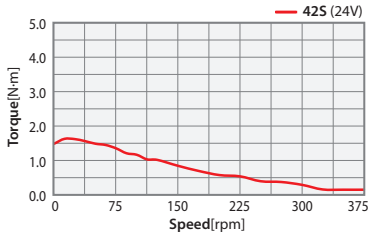
42S-PN3 Series



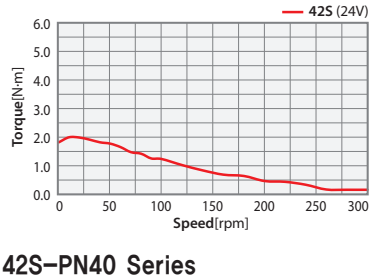
42S-PN5 Series



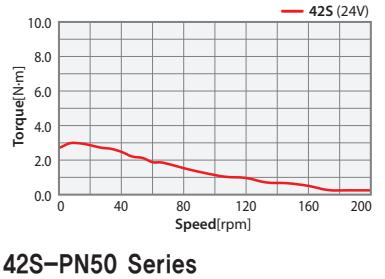
42S-PN8 Series



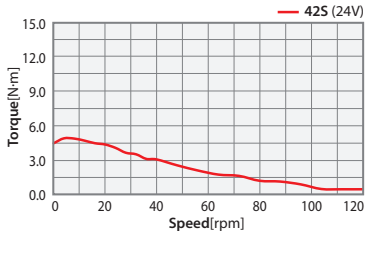
42S-PN10 Series



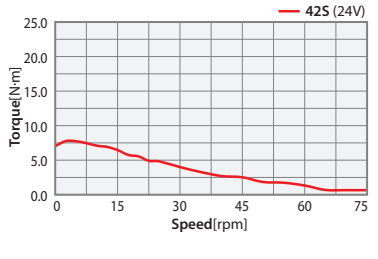
42S-PN15 Series



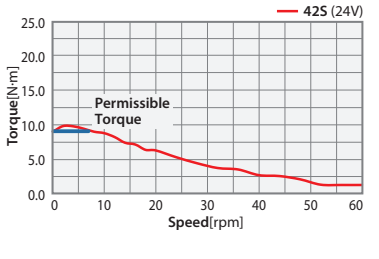
42S-PN25 Series



42S-PN40 Series



42S-PN50 Series



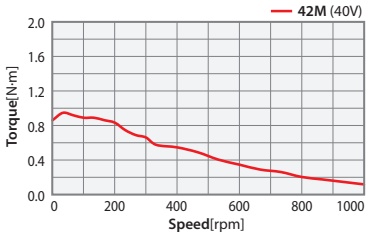
● Specifications of Motor with Gearbox [42M]

Applicable Model			
Ezi-SERVO II Plus-E			

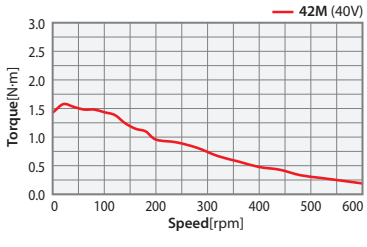
Model	Unit	42M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.85	1.42	2.28	2.85	4.14	6.9	9	9
Rotor Inertia Moment	kg·m²	54×10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	6	9	9	6	6	9	9	9
Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	0.96				1.06			

● Torque Graph with Gearbox

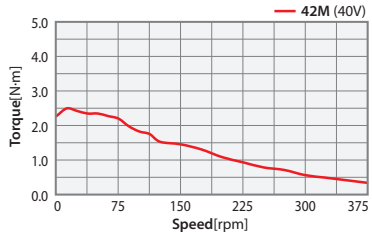
42M-PN3 Series



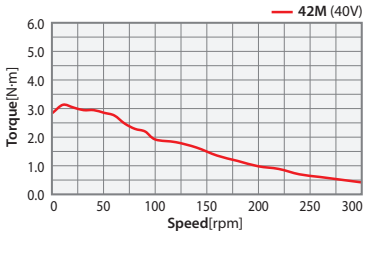
42M-PN5 Series



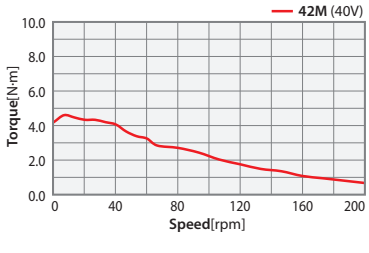
42M-PN8 Series



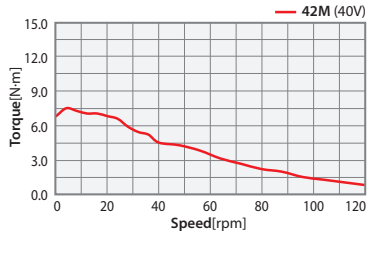
42M-PN10 Series



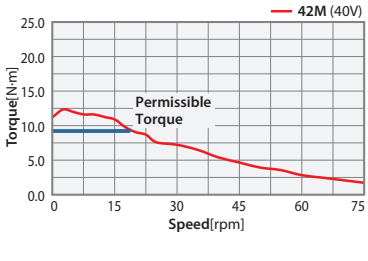
42M-PN15 Series



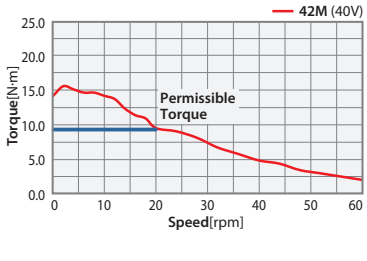
42M-PN25 Series



42M-PN40 Series



42M-PN50 Series



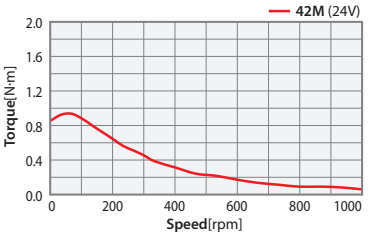
● Specifications of Motor with Gearbox [42M]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

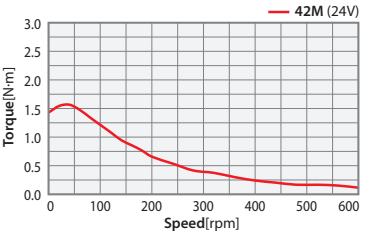
Model	Unit	42M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.85	1.42	2.28	2.85	4.14	6.9	9	9
Rotor Inertia Moment	kg·m^2	54×10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	6	9	9	6	6	9	9	9
Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	0.96				1.06			

● Torque Graph with Gearbox

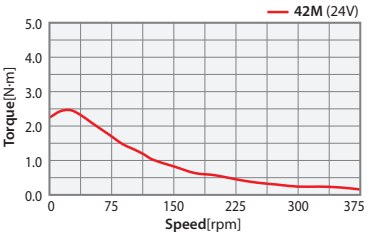
42M-PN3 Series



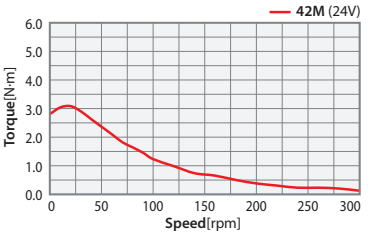
42M-PN5 Series



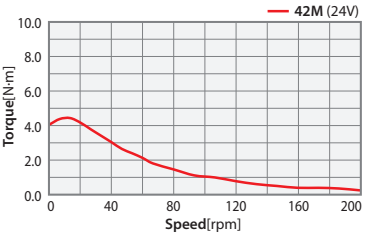
42M-PN8 Series



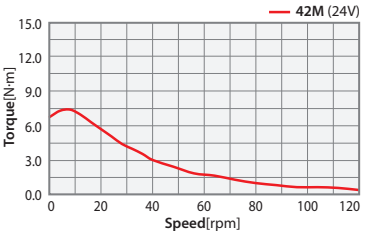
42M-PN10 Series



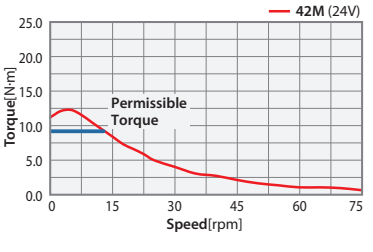
42M-PN15 Series



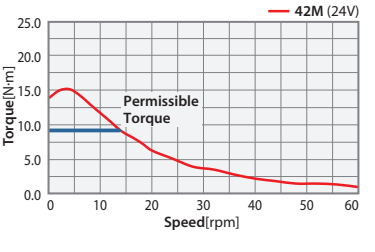
42M-PN25 Series



42M-PN40 Series



42M-PN50 Series



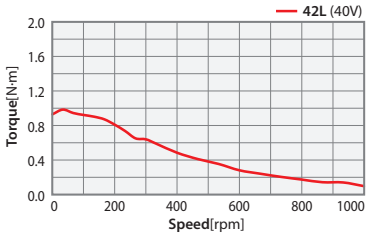
● Specifications of Motor with Gearbox [42L]

Applicable Model			
Ezi-SERVO II Plus-E			

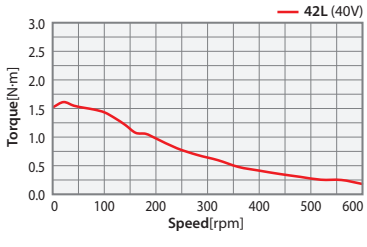
Model	Unit	42L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.92	1.54	2.47	3.09	4.49	7.49	9	9
Rotor Inertia Moment	kg·m²	77×10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	6	9	9	6	6	9	9	9
Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	1.02				1.12			

● Torque Graph with Gearbox

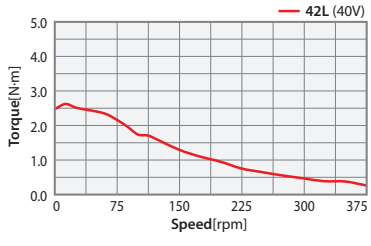
42L-PN3 Series



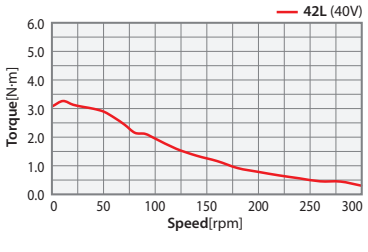
42L-PN5 Series



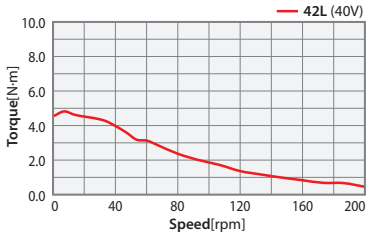
42L-PN8 Series



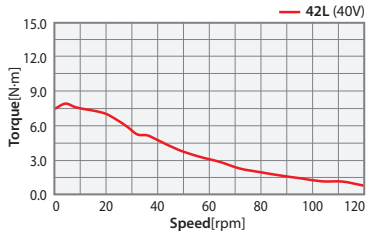
42L-PN10 Series



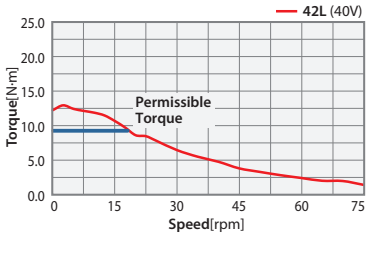
42L-PN15 Series



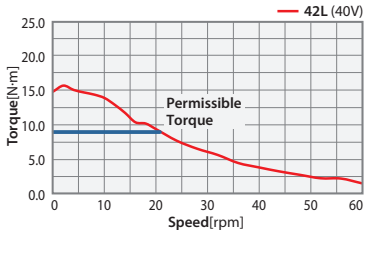
42L-PN25 Series



42L-PN40 Series



42L-PN50 Series



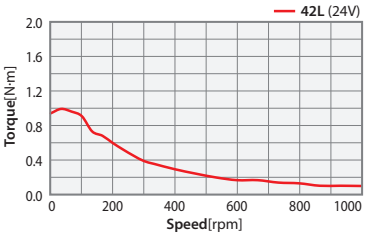
● Specifications of Motor with Gearbox [42L]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

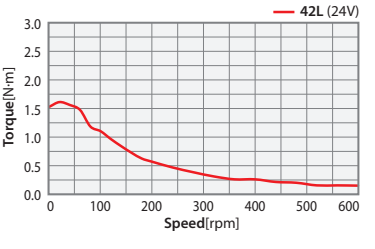
Model	Unit	42L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.93	1.55	2.48	3.1	4.51	7.52	9	9
Rotor Inertia Moment	kg·m^2	77×10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	6	9	9	6	6	9	9	9
Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	1.02				1.12			

● Torque Graph with Gearbox

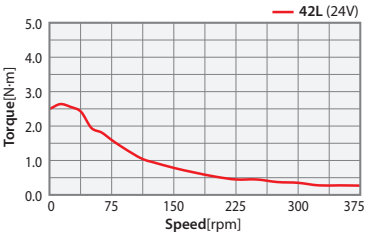
42L-PN3 Series



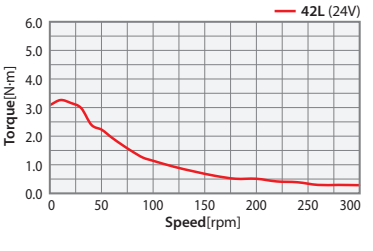
42L-PN5 Series



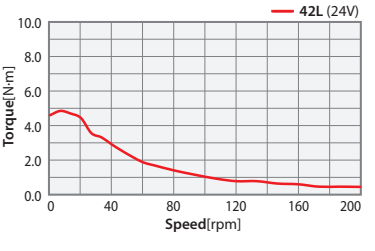
42L-PN8 Series



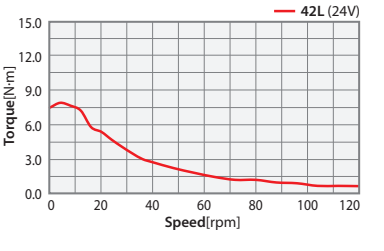
42L-PN10 Series



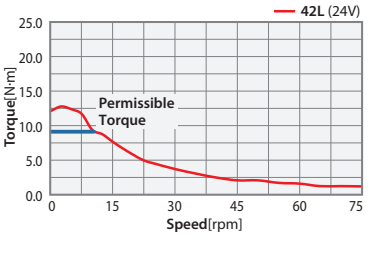
42L-PN15 Series



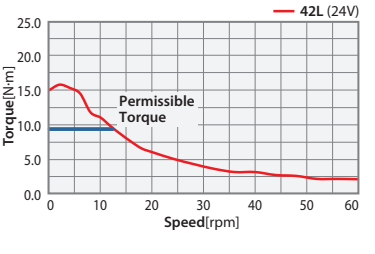
42L-PN25 Series



42L-PN40 Series



42L-PN50 Series



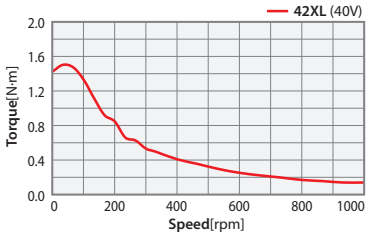
● Specifications of Motor with Gearbox [42XL]

Applicable Model			
Ezi-SERVO II Plus-E			

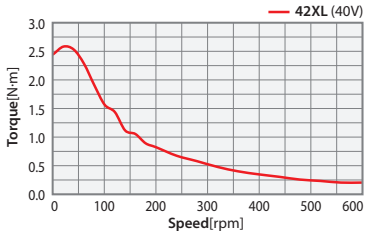
Model	Unit	42XL							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.45	2.42	3.87	4.84	6	9	9	9
Rotor Inertia Moment	kg·m²	114×10⁻⁷							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	6	9	9	6	6	9	9	9
Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	1.15				1.25			

● Torque Graph with Gearbox

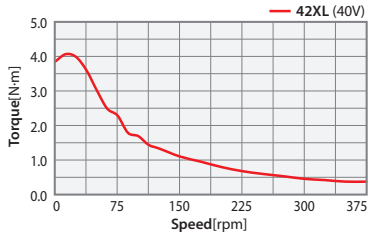
42XL-PN3 Series



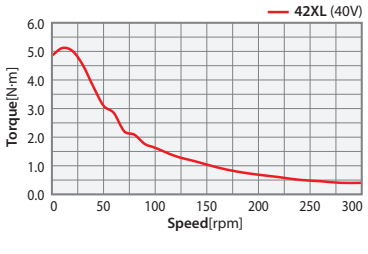
42XL-PN5 Series



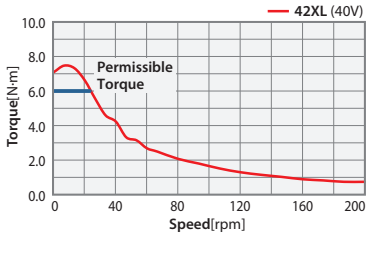
42XL-PN8 Series



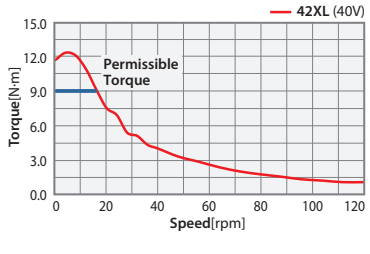
42XL-PN10 Series



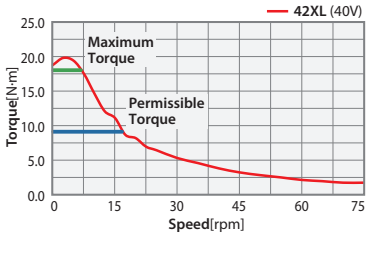
42XL-PN15 Series



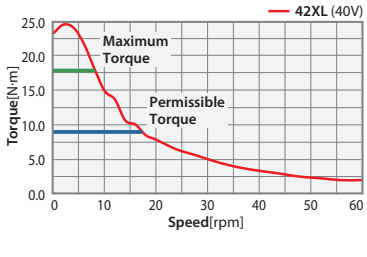
42XL-PN25 Series



42XL-PN40 Series



42XL-PN50 Series



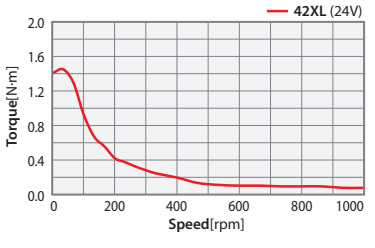
● Specifications of Motor with Gearbox [42XL]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

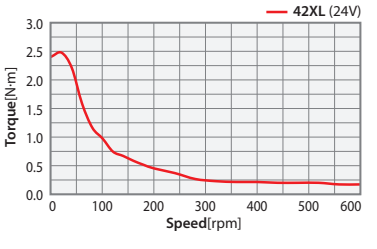
Model	Unit	42XL							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.42	2.38	3.8	4.76	6	9	9	9
Rotor Inertia Moment	kg·m^2	114×10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	6	9	9	6	6	9	9	9
Instantaneous Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	1.15				1.25			

● Torque Graph with Gearbox

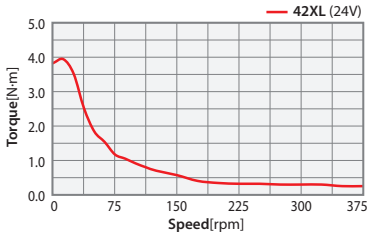
42XL-PN3 Series



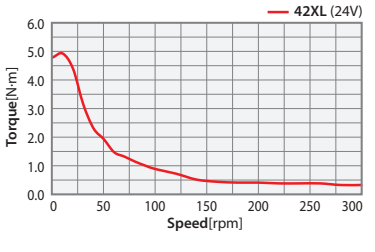
42XL-PN5 Series



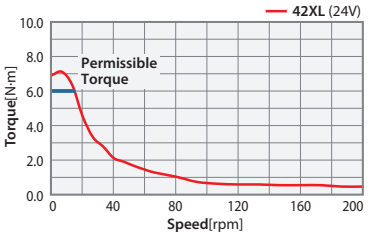
42XL-PN8 Series



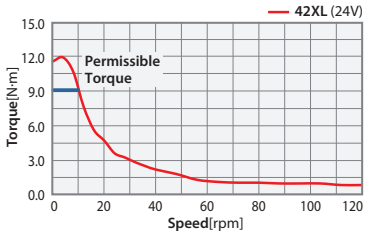
42XL-PN10 Series



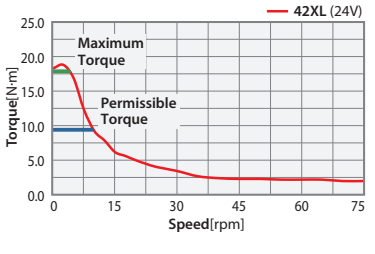
42XL-PN15 Series



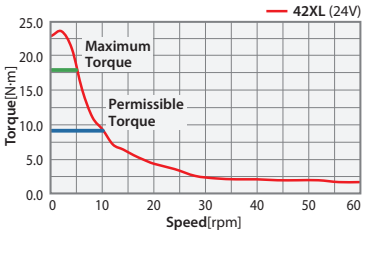
42XL-PN25 Series



42XL-PN40 Series



42XL-PN50 Series



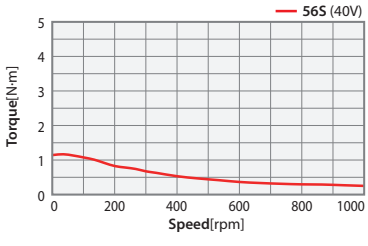
● Specifications of Motor with Gearbox [56S]

Applicable Model			
Ezi-SERVO II Plus-E			

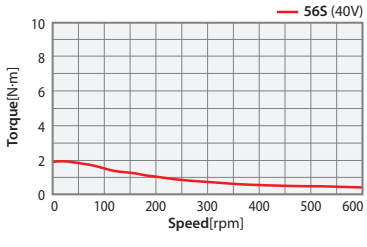
Model	Unit	56S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.1	1.9	3.0	3.8	5.5	9.3	14.9	18.6
Rotor Inertia Moment	kg·m²	180×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	1.94				2.14			

● Torque Graph with Gearbox

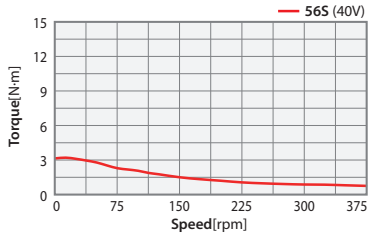
56S-PN3 Series



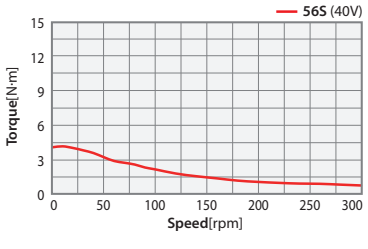
56S-PN5 Series



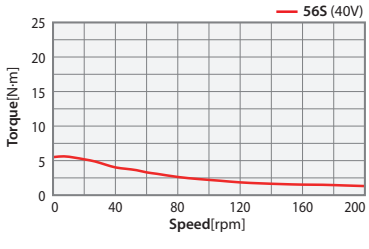
56S-PN8 Series



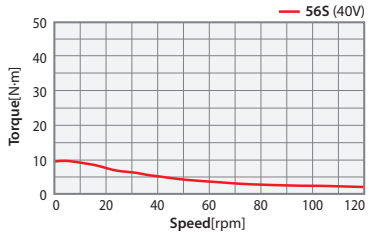
56S-PN10 Series



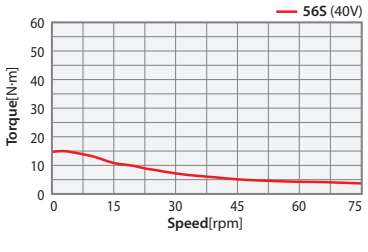
56S-PN15 Series



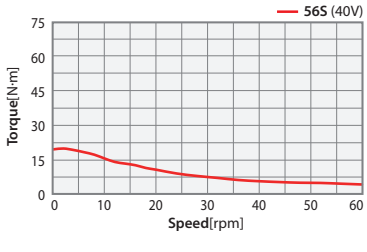
56S-PN25 Series



56S-PN40 Series



56S-PN50 Series



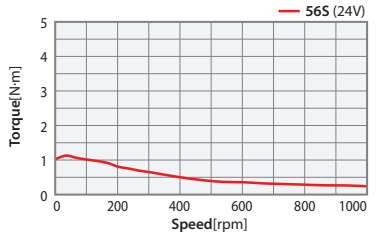
● Specifications of Motor with Gearbox [56S]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

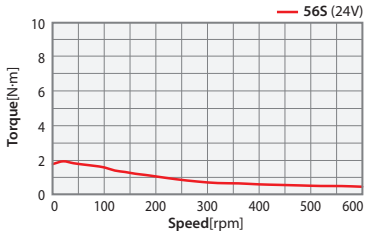
Model	Unit	56S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1	1.7	2.8	3.5	5.1	8.6	13.8	17.2
Rotor Inertia Moment	kg·m^2	180×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	1.9				2.1			

● Torque Graph with Gearbox

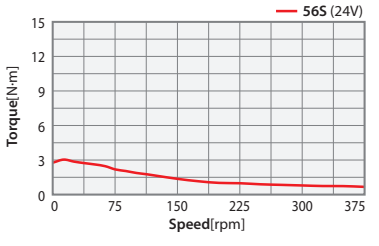
56S-PN3 Series



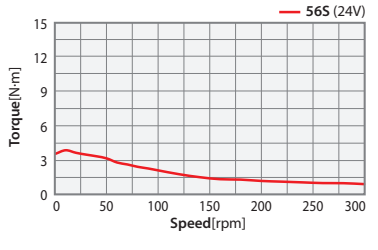
56S-PN5 Series



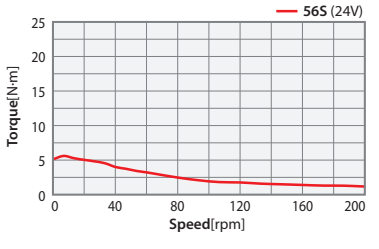
56S-PN8 Series



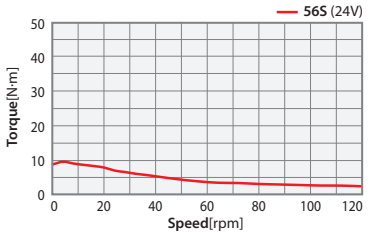
56S-PN10 Series



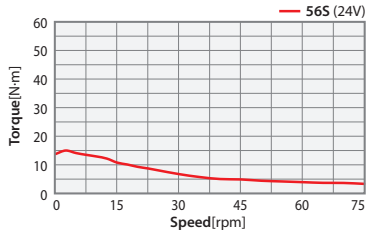
56S-PN15 Series



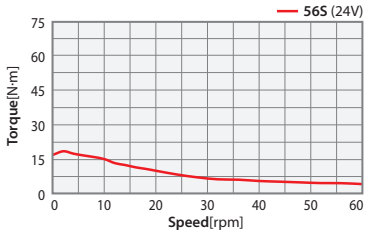
56S-PN25 Series



56S-PN40 Series



56S-PN50 Series



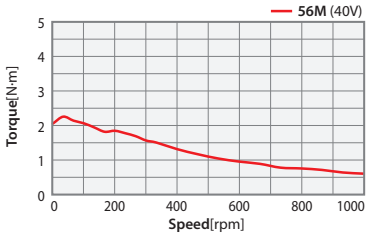
● Specifications of Motor with Gearbox [56M]

Applicable Model			
Ezi-SERVO II Plus-E			

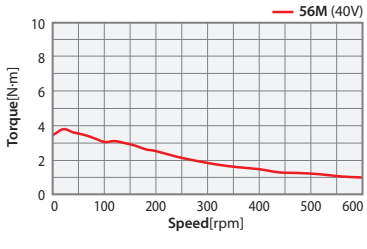
Model	Unit	56M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	2.0	3.4	5.4	6.8	9.9	16.6	27	27
Rotor Inertia Moment	kg·m²	280×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	2.15				2.35			

● Torque Graph with Gearbox

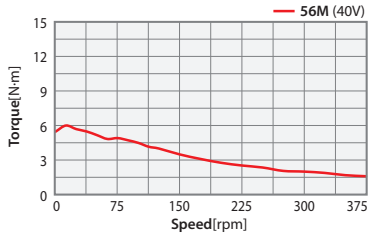
56M-PN3 Series



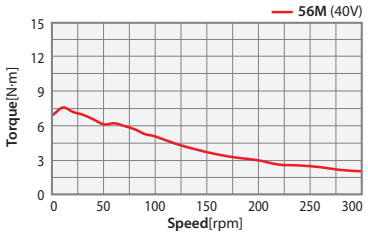
56M-PN5 Series



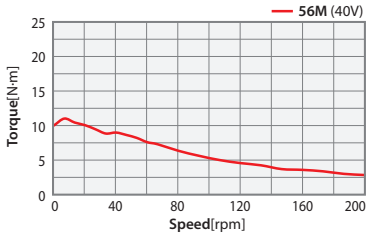
56M-PN8 Series



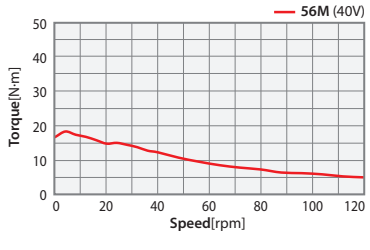
56M-PN10 Series



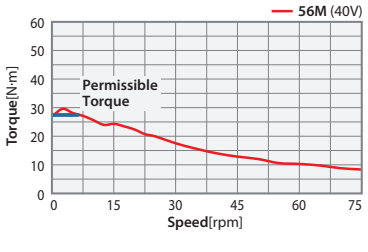
56M-PN15 Series



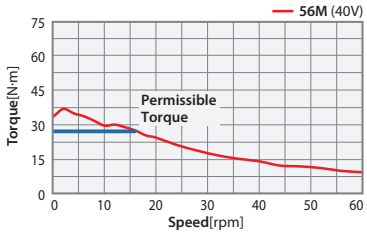
56M-PN25 Series



56M-PN40 Series



56M-PN50 Series



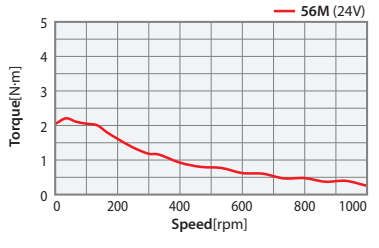
● Specifications of Motor with Gearbox [56M]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

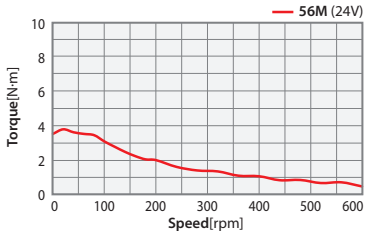
Model	Unit	56M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	2	3.4	5.5	6.9	10	16.7	27	27
Rotor Inertia Moment	kg·m^2	280×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:03	1:05	1:08	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	2.1				2.3			

● Torque Graph with Gearbox

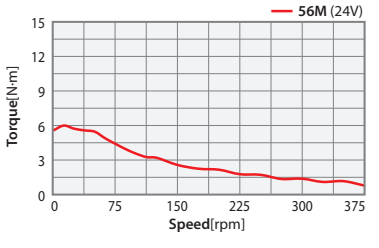
56M-PN3 Series



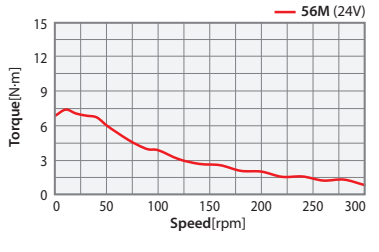
56M-PN5 Series



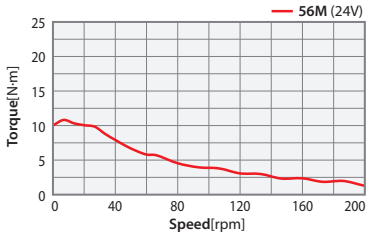
56M-PN8 Series



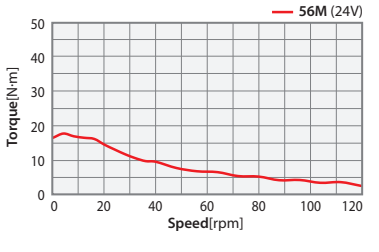
56M-PN10 Series



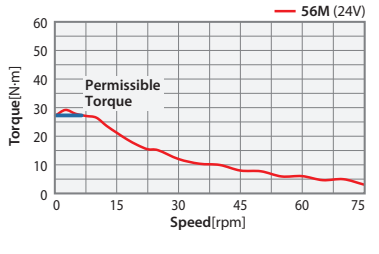
56M-PN15 Series



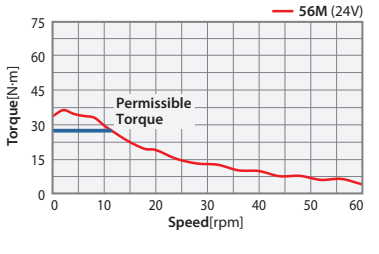
56M-PN25 Series



56M-PN40 Series



56M-PN50 Series



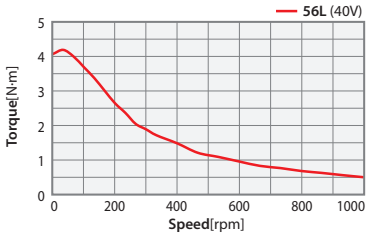
● Specifications of Motor with Gearbox [56L]

Applicable Model			
Ezi-SERVO II Plus-E			

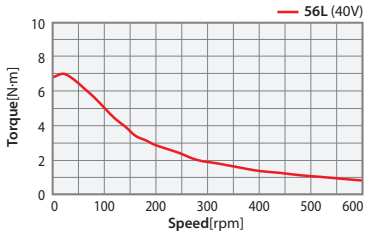
Model	Unit	56L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	4.0	6.8	10.8	13.6	18	27	27	27
Rotor Inertia Moment	kg·m²	520×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	2.52				2.72			

● Torque Graph with Gearbox

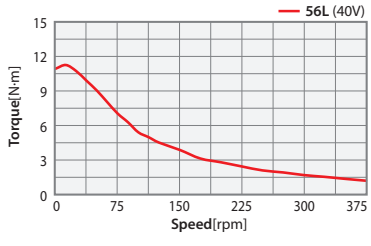
56L-PN3 Series



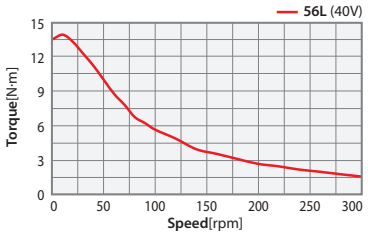
56L-PN5 Series



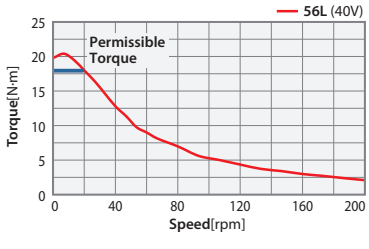
56L-PN8 Series



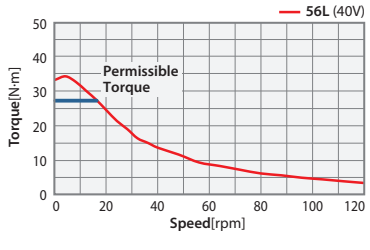
56L-PN10 Series



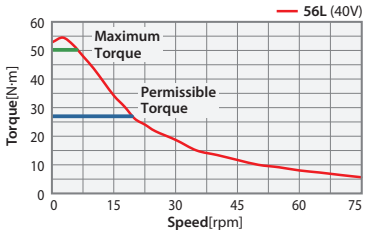
56L-PN15 Series



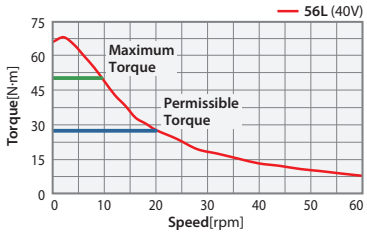
56L-PN25 Series



56L-PN40 Series



56L-PN50 Series



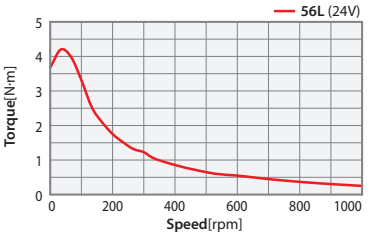
● Specifications of Motor with Gearbox [56L]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

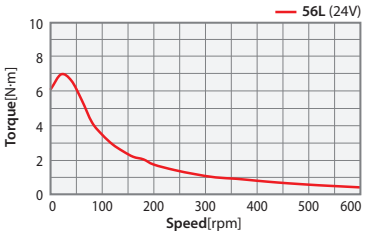
Model	Unit	56L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	3.6	6	9.7	12.1	18	27	27	27
Rotor Inertia Moment	kg·m^2	520×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	2.55				2.75			

● Torque Graph with Gearbox

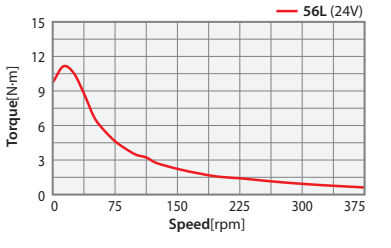
56L-PN3 Series



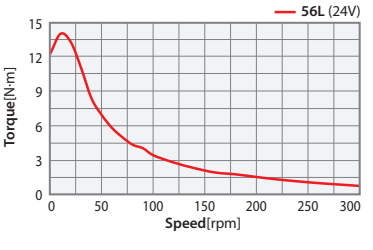
56L-PN5 Series



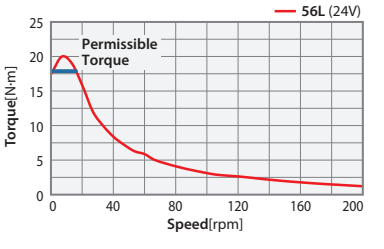
56L-PN8 Series



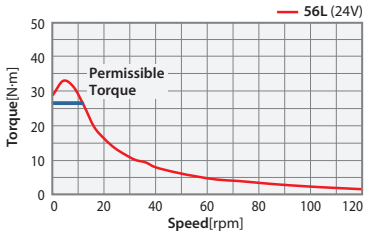
56L-PN10 Series



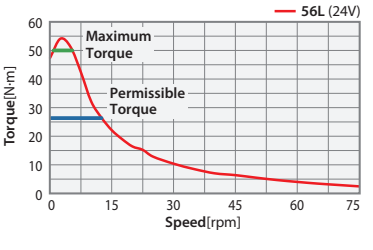
56L-PN15 Series



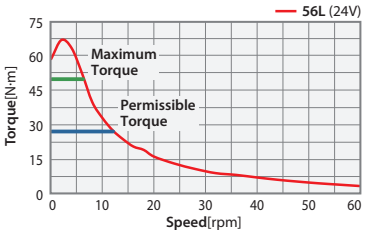
56L-PN25 Series



56L-PN40 Series



56L-PN50 Series



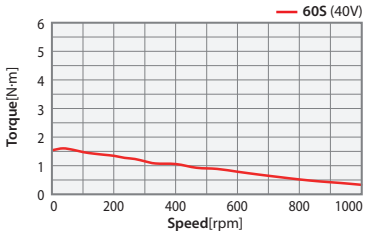
● Specifications of Motor with Gearbox [60S]

Applicable Model			
Ezi-SERVO II Plus-E			

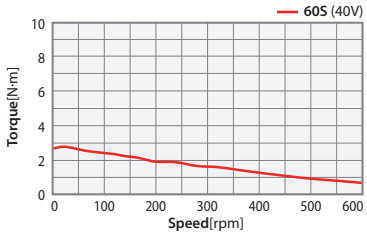
Model	Unit	60S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.5	2.5	4.0	5.1	7.4	12.3	19.8	24.7
Rotor Inertia Moment	kg·m²	240×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	2				2.2			

● Torque Graph with Gearbox

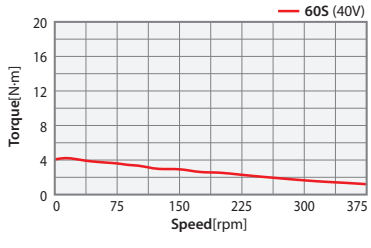
60S-PN3 Series



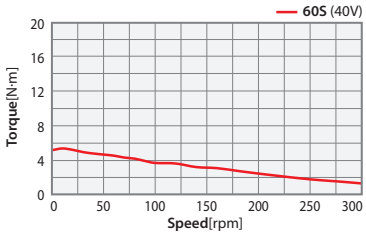
60S-PN5 Series



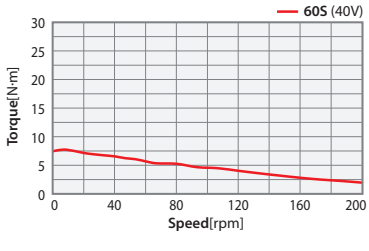
60S-PN8 Series



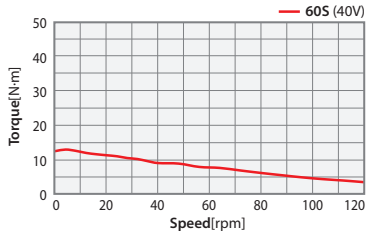
60S-PN10 Series



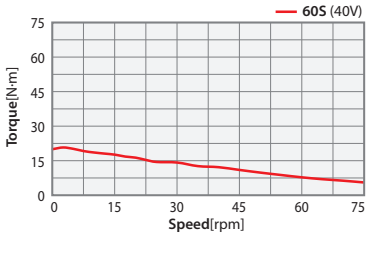
60S-PN15 Series



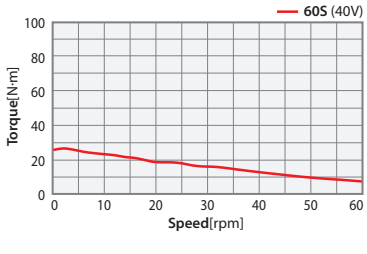
60S-PN25 Series



60S-PN40 Series



60S-PN50 Series



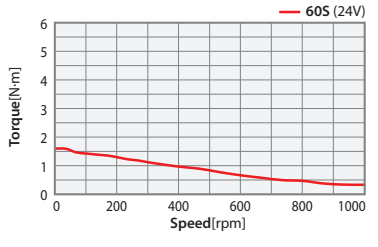
● Specifications of Motor with Gearbox [60S]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

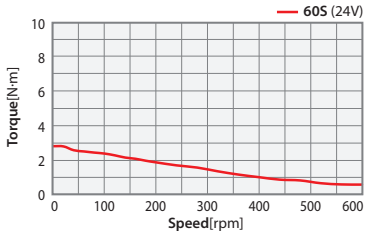
Model	Unit	60S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.6	2.7	4.4	5.5	8	13.4	21.4	26.8
Rotor Inertia Moment	kg·m^2	240×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	2				2.2			

● Torque Graph with Gearbox

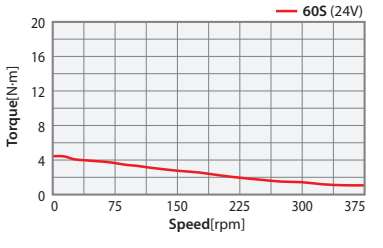
60S-PN3 Series



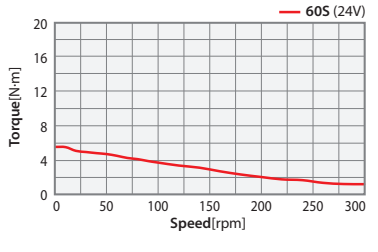
60S-PN5 Series



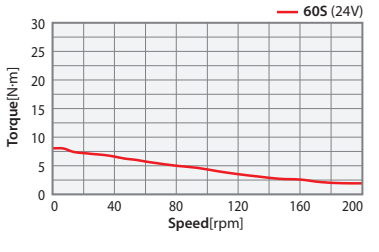
60S-PN8 Series



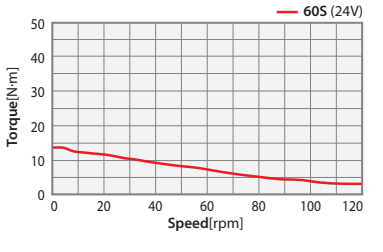
60S-PN10 Series



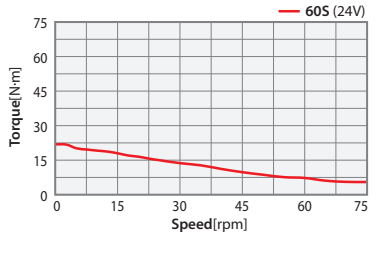
60S-PN15 Series



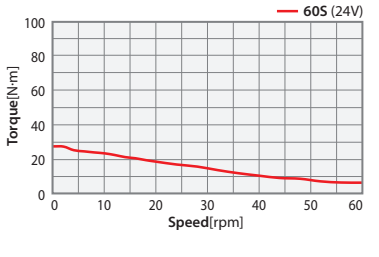
60S-PN25 Series



60S-PN40 Series



60S-PN50 Series



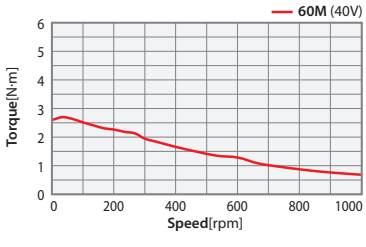
● Specifications of Motor with Gearbox [60M]

Applicable Model			
Ezi-SERVO II Plus-E			

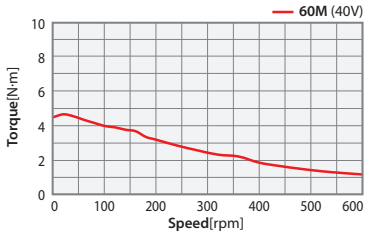
Model	Unit	60M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	2.6	4.4	7.0	8.8	12.8	21.4	27	27
Rotor Inertia Moment	kg·m²	490×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	2.3				2.5			

● Torque Graph with Gearbox

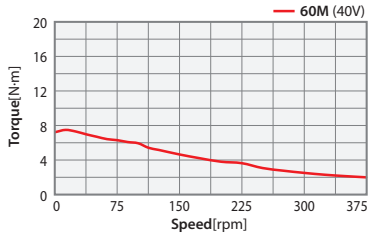
60M-PN3 Series



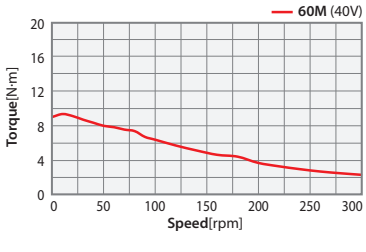
60M-PN5 Series



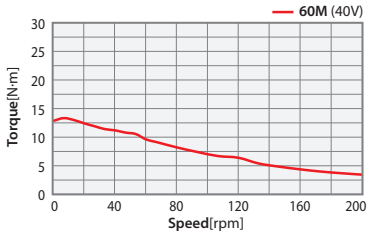
60M-PN8 Series



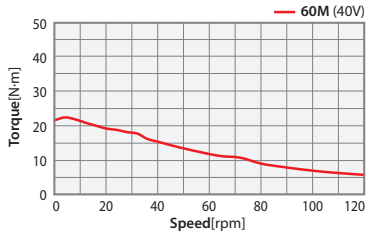
60M-PN10 Series



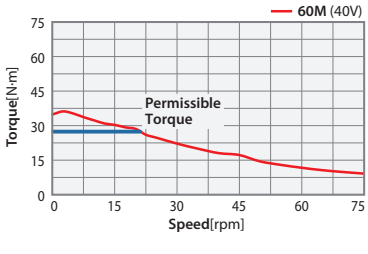
60M-PN15 Series



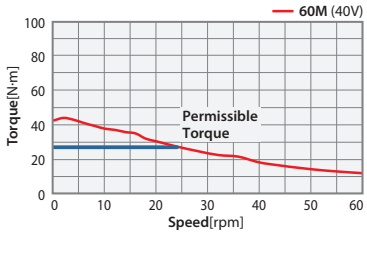
60M-PN25 Series



60M-PN40 Series



60M-PN50 Series



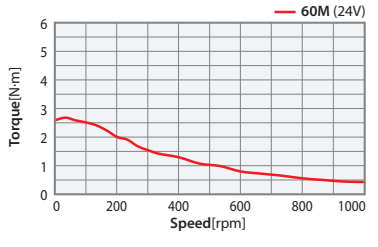
● Specifications of Motor with Gearbox [60M]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

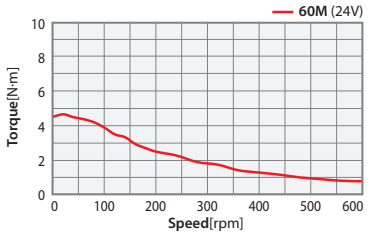
Model	Unit	60M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	2.6	4.4	7.0	8.8	12.8	21.4	27	27
Rotor Inertia Moment	kg·m^2	490×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	2.3				2.5			

● Torque Graph with Gearbox

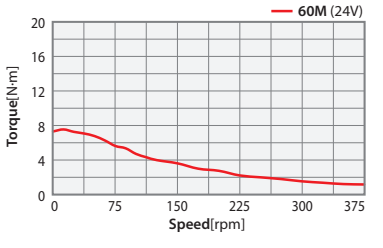
60M-PN3 Series



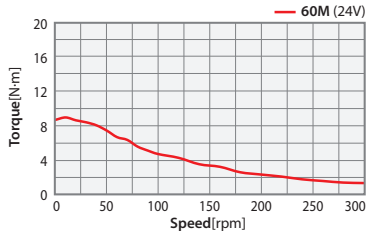
60M-PN5 Series



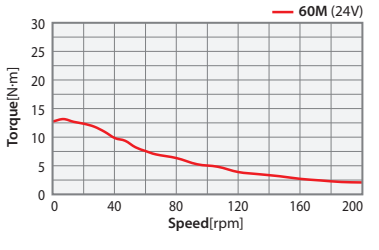
60M-PN8 Series



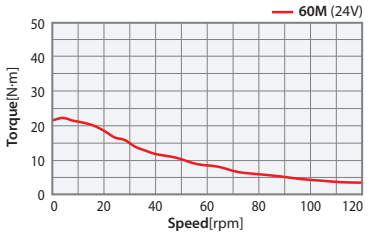
60M-PN10 Series



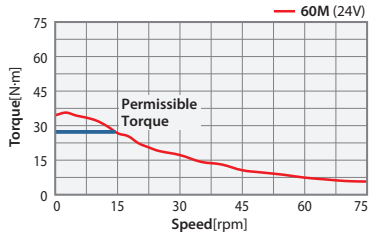
60M-PN15 Series



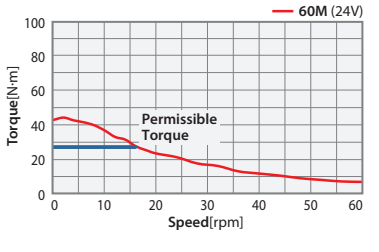
60M-PN25 Series



60M-PN40 Series



60M-PN50 Series



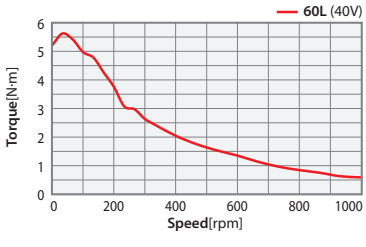
● Specifications of Motor with Gearbox [60L]

Applicable Model			
Ezi-SERVO II Plus-E			

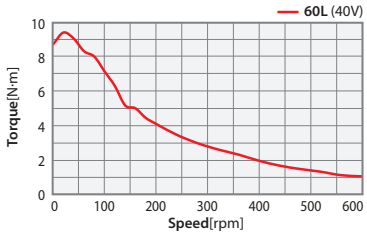
Model	Unit	60L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	5.2	8.7	13.9	18	18	27	27	27
Rotor Inertia Moment	kg·m²	690×10⁻⁷							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	3				3.2			

● Torque Graph with Gearbox

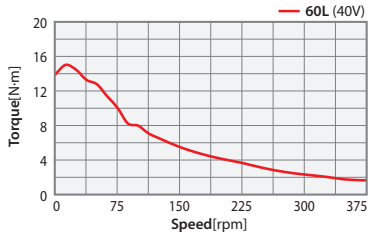
60L-PN3 Series



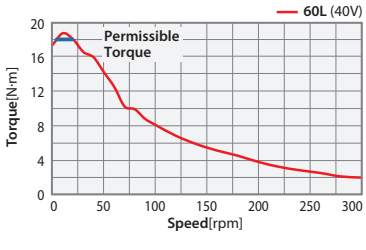
60L-PN5 Series



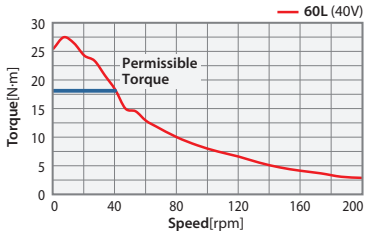
60L-PN8 Series



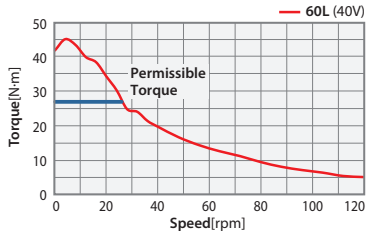
60L-PN10 Series



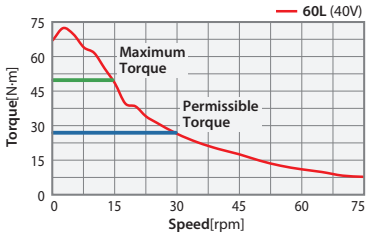
60L-PN15 Series



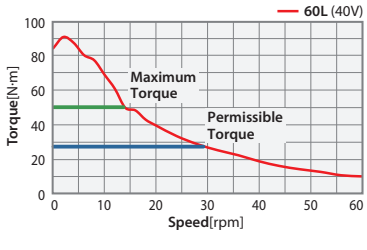
60L-PN25 Series



60L-PN40 Series



60L-PN50 Series



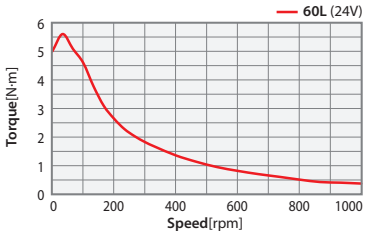
● Specifications of Motor with Gearbox [60L]

Applicable Model			
Ezi-SERVO II Plus-E MINI	Ezi-SERVO II Plus-E ALL		

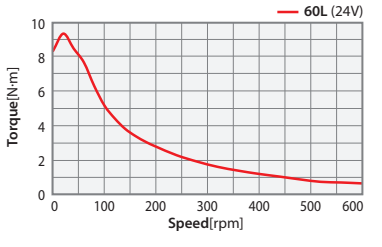
Model	Unit	60L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	4.9	8.3	13.2	16.6	18	27	27	27
Rotor Inertia Moment	kg·m^2	690×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	18	27	27	18	18	27	27	27
Instantaneous Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	3				3.2			

● Torque Graph with Gearbox

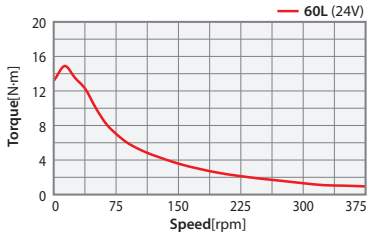
60L-PN3 Series



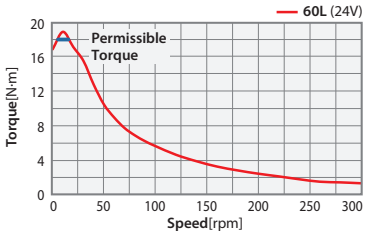
60L-PN5 Series



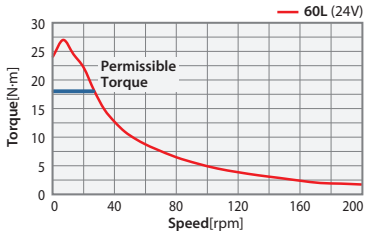
60L-PN8 Series



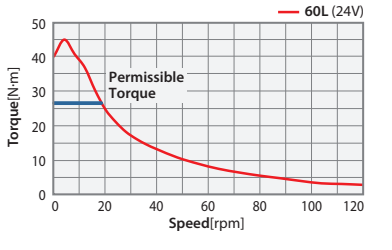
60L-PN10 Series



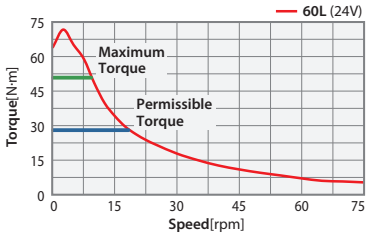
60L-PN15 Series



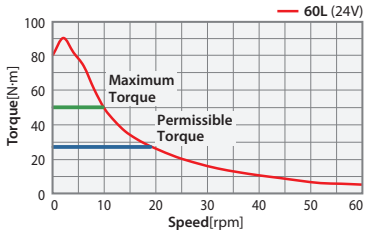
60L-PN25 Series



60L-PN40 Series



60L-PN50 Series



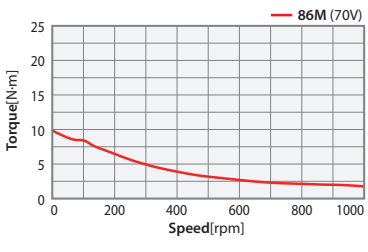
● Specifications of Motor with Gearbox [86M]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E ALL		

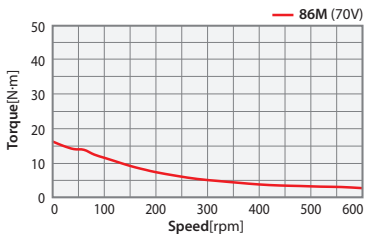
Model	Unit	86M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	9.6	16	25.7	32.1	46.6	75	75	75
Rotor Inertia Moment	kg·m²	1800×10⁻⁷							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	50	75	75	50	50	75	75	75
Instantaneous Maximum Torque	N·m	80	125	125	80	80	125	125	125
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	6				6.5			

● Torque Graph with Gearbox

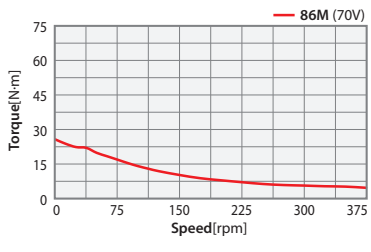
86M-PN3 Series



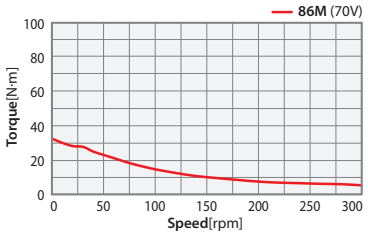
86M-PN5 Series



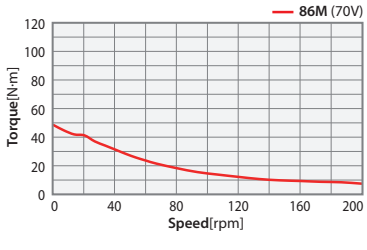
86M-PN8 Series



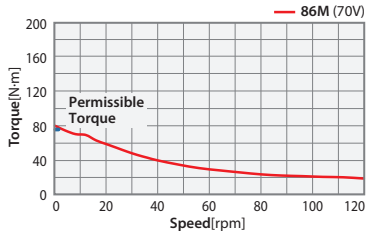
86M-PN10 Series



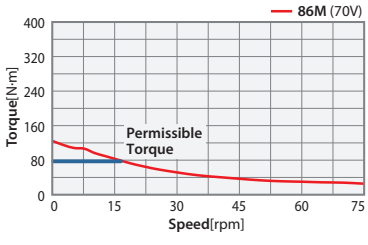
86M-PN15 Series



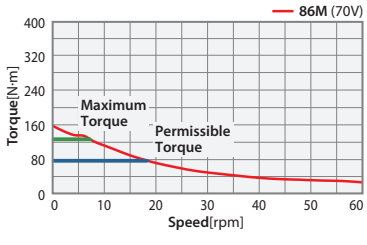
86M-PN25 Series



86M-PN40 Series



86M-PN50 Series



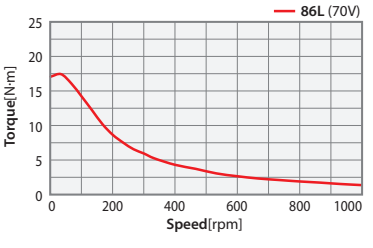
● Specifications of Motor with Gearbox [86L]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E ALL		

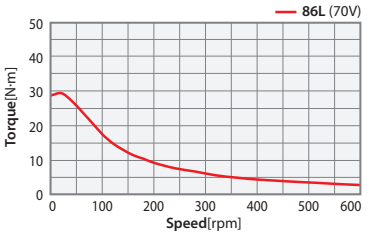
Model	Unit	86L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	17.1	28.5	45.6	50	50	75	75	75
Rotor Inertia Moment	kg·m^2	3600×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	50	75	75	50	50	75	75	75
Instantaneous Maximum Torque	N·m	80	125	125	80	80	125	125	125
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	7.5				8			

● Torque Graph with Gearbox

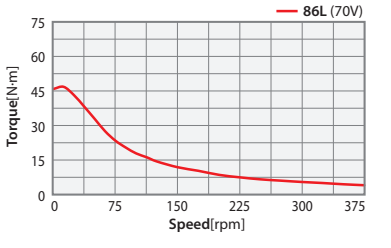
86L-PN3 Series



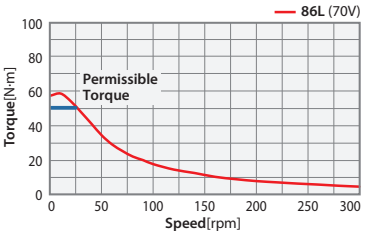
86L-PN5 Series



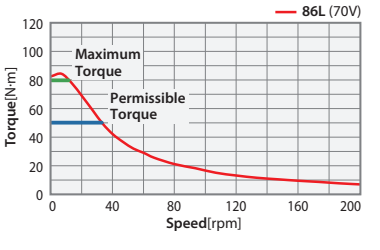
86L-PN8 Series



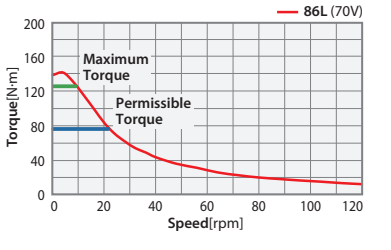
86L-PN10 Series



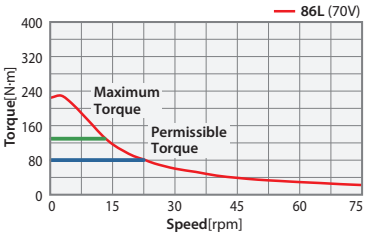
86L-PN15 Series



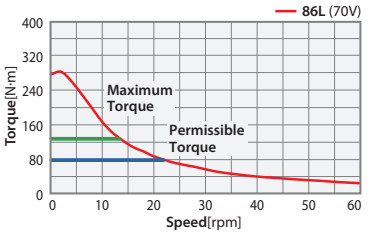
86L-PN25 Series



86L-PN40 Series



86L-PN50 Series



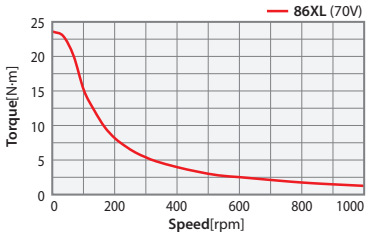
● Specifications of Motor with Gearbox [86XL]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E ALL		

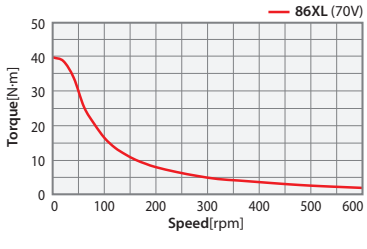
Model	Unit	86XL							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	23.6	39.4	63.0	50	50	75	75	75
Rotor Inertia Moment	kg·m^2	5400×10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Gear Ratio		1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 P/R Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
Permissible Torque	N·m	50	75	75	50	50	75	75	75
Instantaneous Maximum Torque	N·m	80	125	125	80	80	125	125	125
Permissible Speed Range	r/min	0~1000	0~600	0~375	0~300	0~200	0~120	0~75	0~60
Unit Weight	kg	9				9.5			

● Torque Graph with Gearbox

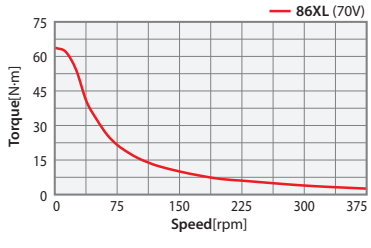
86XL-PN3 Series



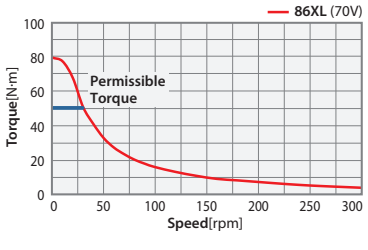
86XL-PN5 Series



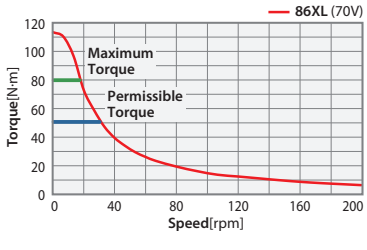
86XL-PN8 Series



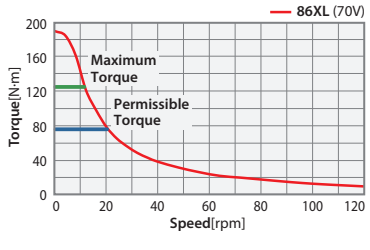
86XL-PN10 Series



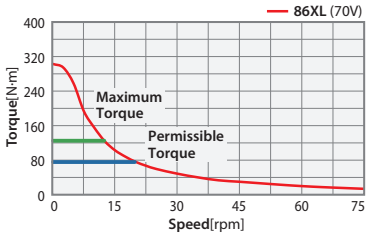
86XL-PN15 Series



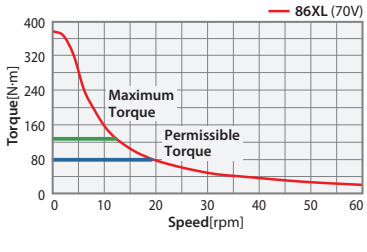
86XL-PN25 Series



86XL-PN40 Series



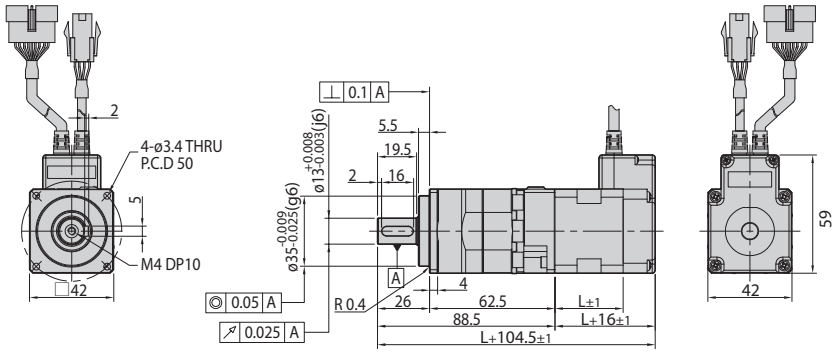
86XL-PN50 Series



● Dimensions of Motor with Gearbox [42mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI		

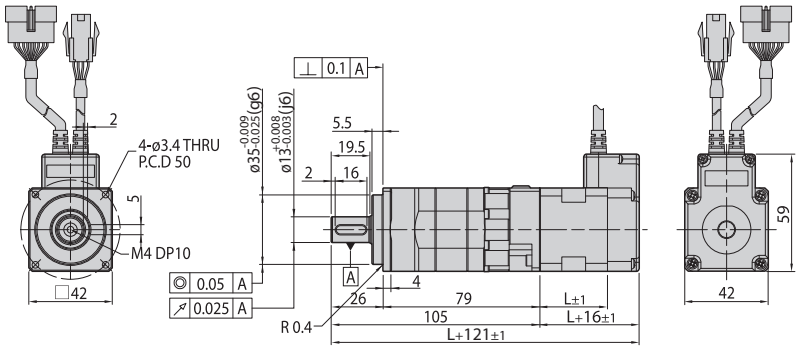
Gear Ratio 3, 5, 8, 10 : Single



42mm

Model name	Length(L)
EzM2-42S	34
EzM2-42M	40
EzM2-42L	48
EzM2-42XL	60

Gear Ratio 15, 25, 40, 50 : Double

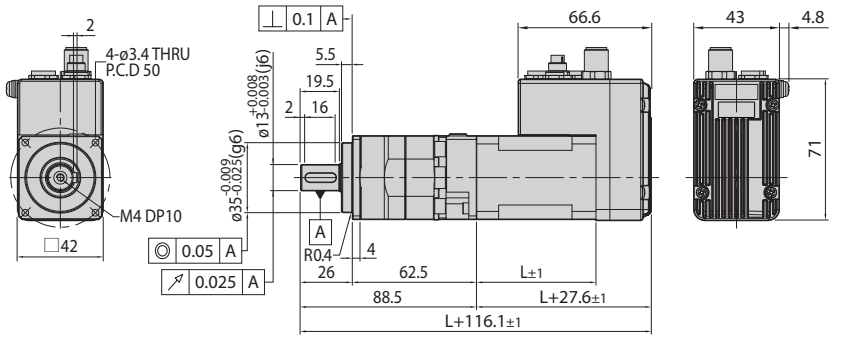


42mm

Model name	Length(L)
EzM2-42S	34
EzM2-42M	40
EzM2-42L	48
EzM2-42XL	60

Applicable Model			
Ezi-SERVO II Plus-E ALL			

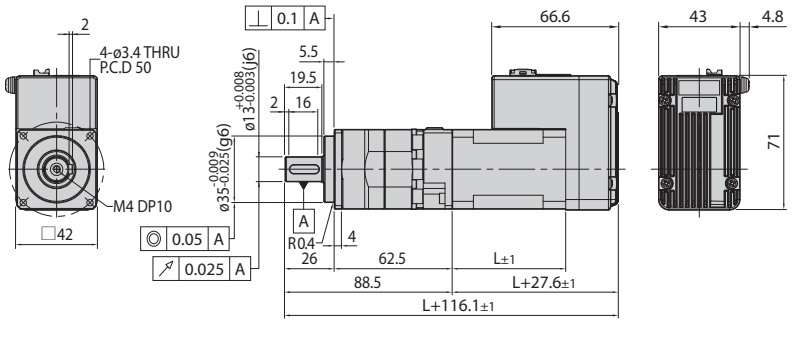
Gear Ratio 3, 5, 8, 10 : Single (M Connector Type)



42mm

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

Gear Ratio 3, 5, 8, 10 : Single (RJ45 Connector Type)



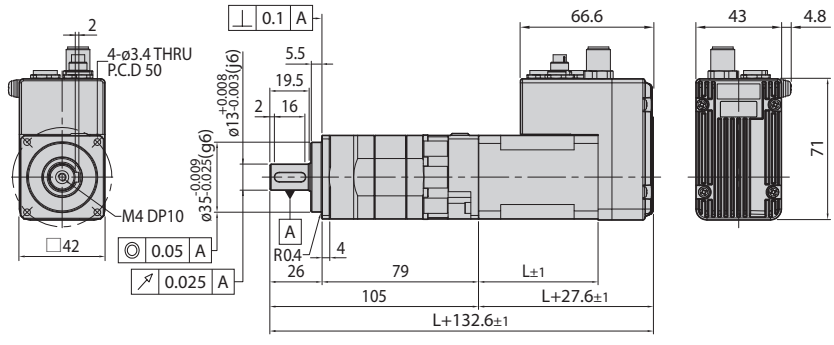
42mm

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

● Dimensions of Motor with Gearbox [42mm]

Applicable Model			
Ezi-SERVO II Plus-E ALL			

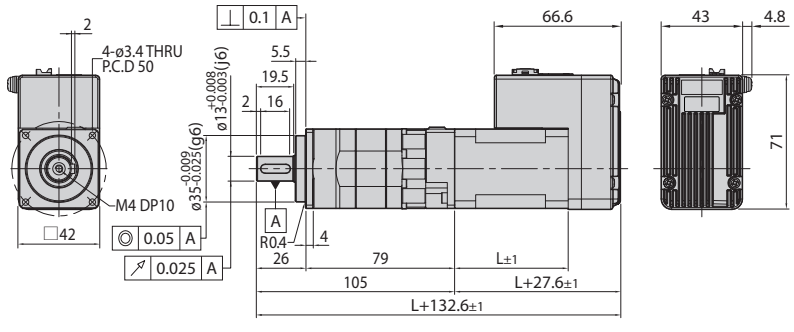
Gear Ratio 15, 25, 40, 50 : Double (M Connector Type)



42mm

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

Gear Ratio 15, 25, 40, 50 : Double (RJ45 Connector Type)



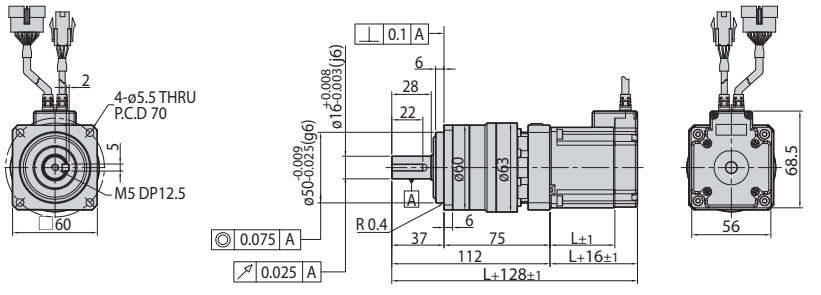
42mm

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

● Dimensions of Motor with Gearbox [56mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI		

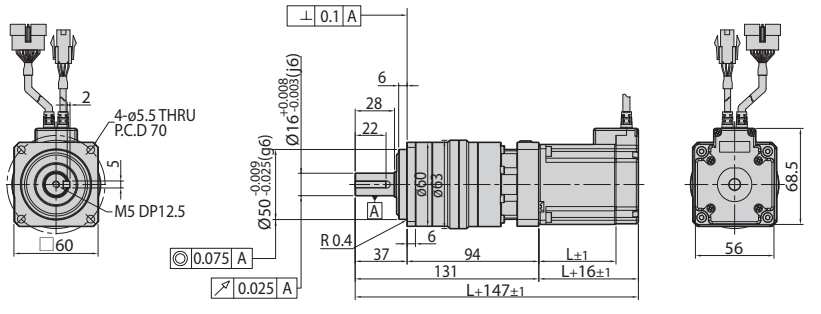
Gear Ratio 3, 5, 8, 10 : Single



56mm

Model name	Length(L)
EzM2-56S	46
EzM2-56M	55
EzM2-56L	80

Gear Ratio 15, 25, 40, 50 : Double

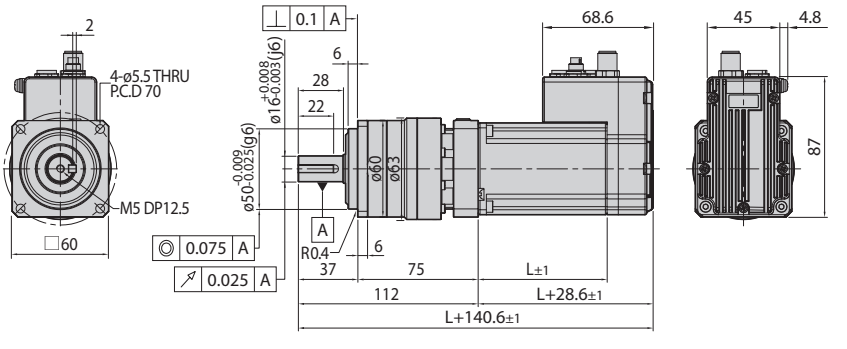


56mm

Model name	Length(L)
EzM2-56S	46
EzM2-56M	55
EzM2-56L	80

Applicable Model			
Ezi-SERVO II Plus-E ALL			

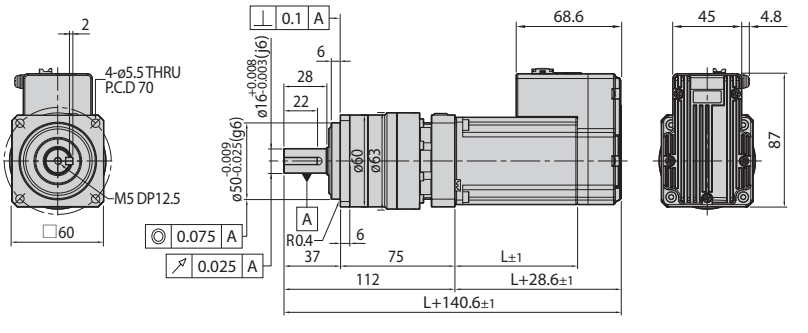
Gear Ratio 3, 5, 8, 10 : Single (M Connector Type)



56mm

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

Gear Ratio 3, 5, 8, 10 : Single (RJ45 Connector Type)



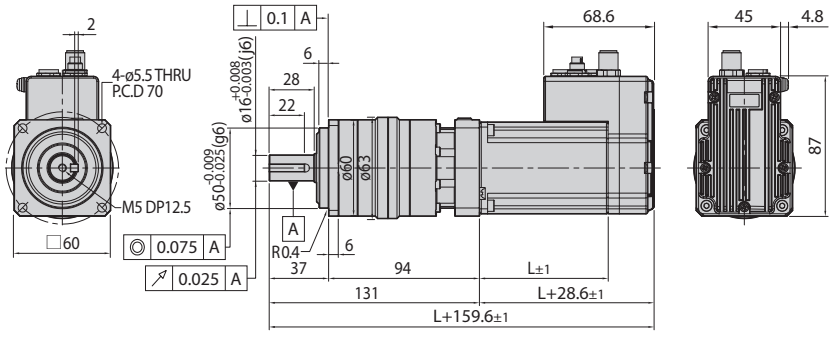
56mm

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

● Dimensions of Motor with Gearbox [56mm]

Applicable Model			
Ezi-SERVO II Plus-E ALL			

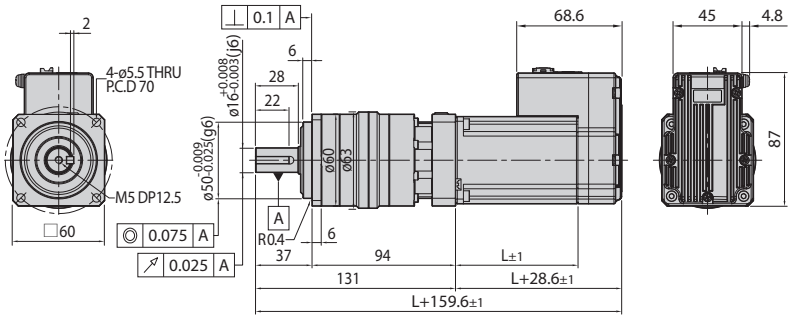
Gear Ratio 15, 25, 40, 50 : Double (M Connector Type)



56mm

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

Gear Ratio 15, 25, 40, 50 : Double (RJ45 Connector Type)



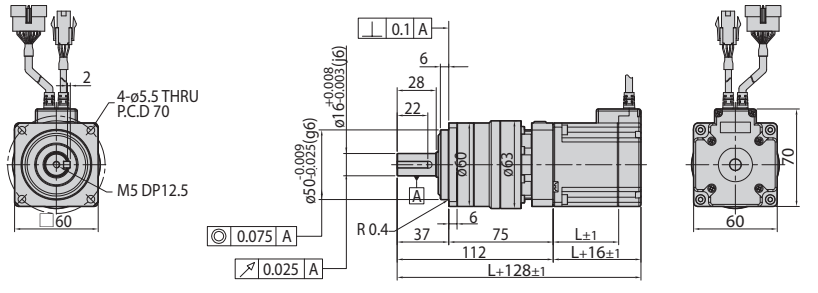
56mm

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

● Dimensions of Motor with Gearbox [60mm]

Applicable Model			
Ezi-SERVO II Plus-E	Ezi-SERVO II Plus-E MINI		

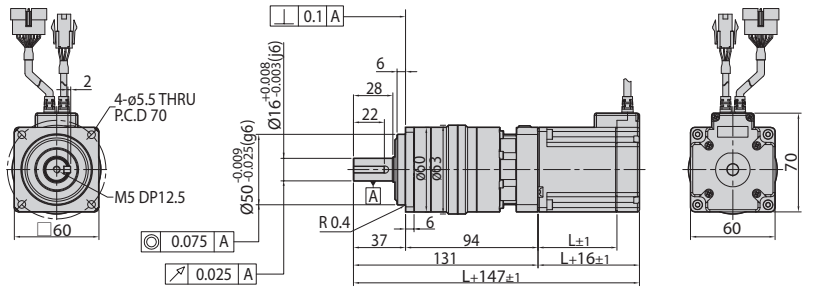
Gear Ratio 3, 5, 8, 10 : Single



60mm

Model name	Length(L)
EzM2-60S	47
EzM2-60M	56
EzM2-60L	85

Gear Ratio 15, 25, 40, 50 : Double

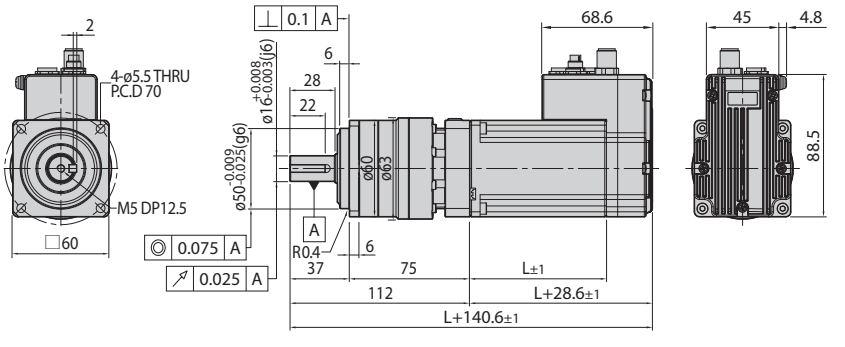


60mm

Model name	Length(L)
EzM2-60S	47
EzM2-60M	56
EzM2-60L	85

Applicable Model			
Ezi-SERVO II Plus-E ALL			

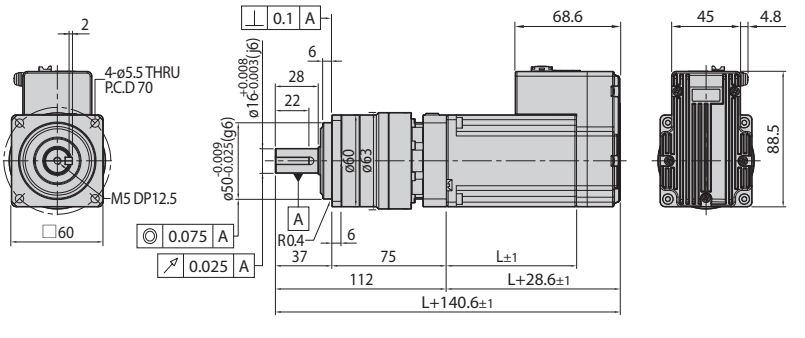
Gear Ratio 3, 5, 8, 10 : Single (M Connector Type)



60mm

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

Gear Ratio 3, 5, 8, 10 : Single (RJ45 Connector Type)



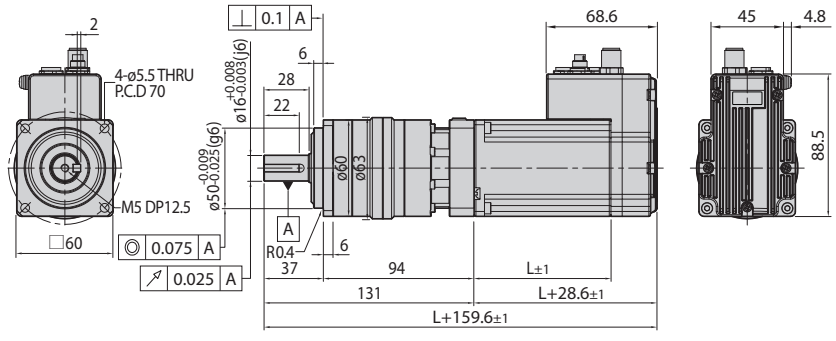
60mm

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

● Dimensions of Motor with Gearbox [60mm]

Applicable Model			
Ezi-SERVO II Plus-E ALL			

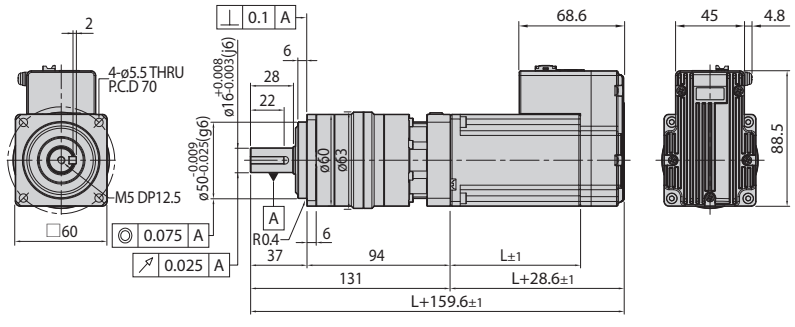
Gear Ratio 15, 25, 40, 50 : Double (M Connector Type)



60mm

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

Gear Ratio 15, 25, 40, 50 : Double (RJ45 Connector Type)



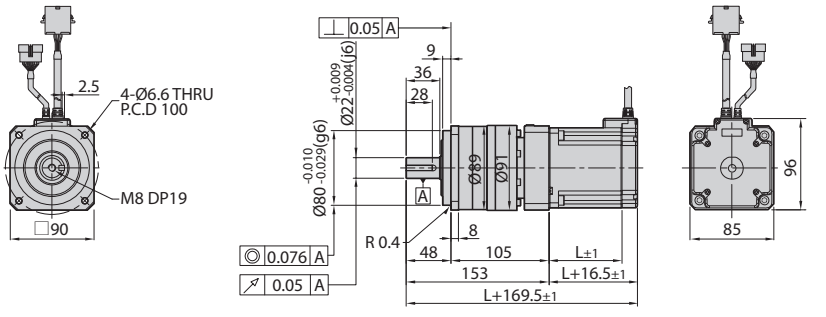
60mm

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

● Dimensions of Motor with Gearbox [86mm]

Applicable Model			
Ezi-SERVO II Plus-E			

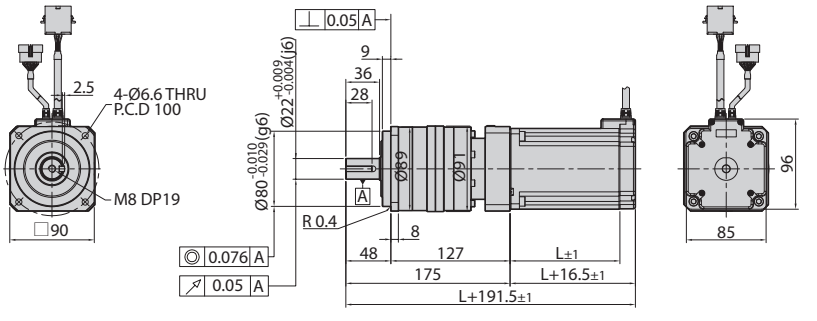
Gear Ratio 3, 5, 8, 10 : Single



86mm

Model name	Length(L)
EzM2-86M	78
EzM2-86L	117
EzM2-86XL	155

Gear Ratio 15, 25, 40, 50 : Double

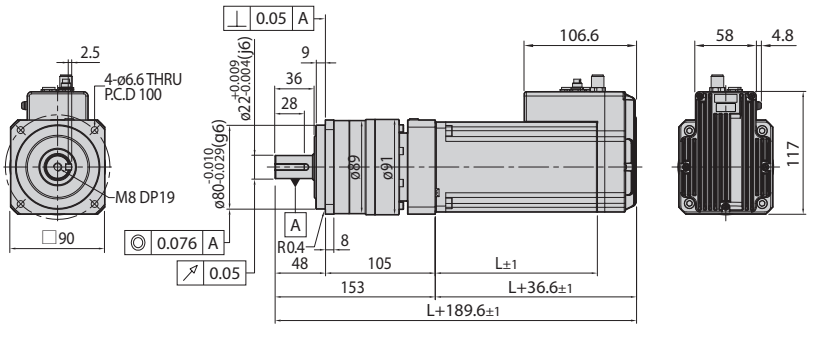


86mm

Model name	Length(L)
EzM2-86M	78
EzM2-86L	117
EzM2-86XL	155

Applicable Model			
Ezi-SERVO II Plus-E ALL			

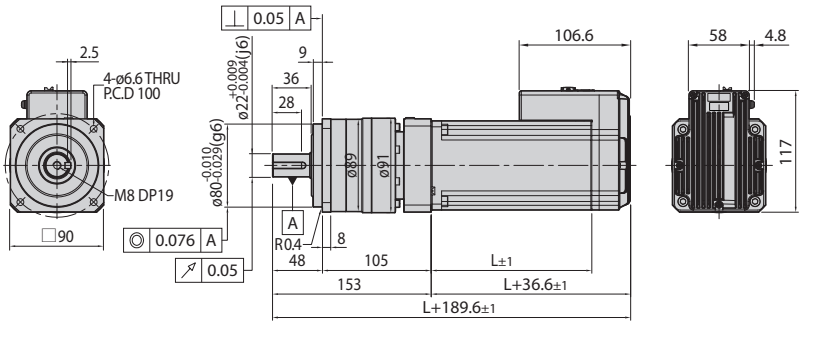
Gear Ratio 3, 5, 8, 10 : Single (M Connector Type)



86mm

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

Gear Ratio 3, 5, 8, 10 : Single (RJ45 Connector Type)



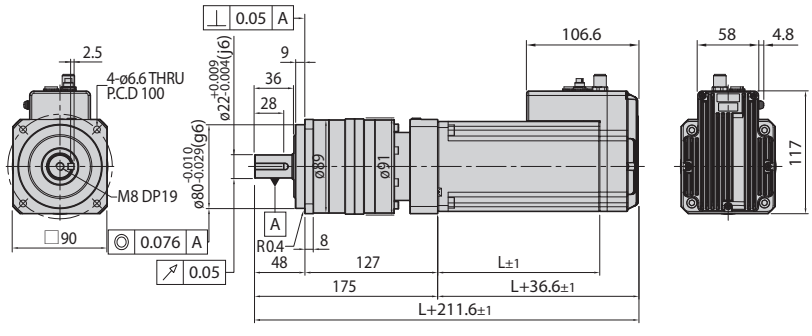
86mm

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

● Dimensions of Motor with Gearbox [86mm]

Applicable Model			
Ezi-SERVO II Plus-E ALL			

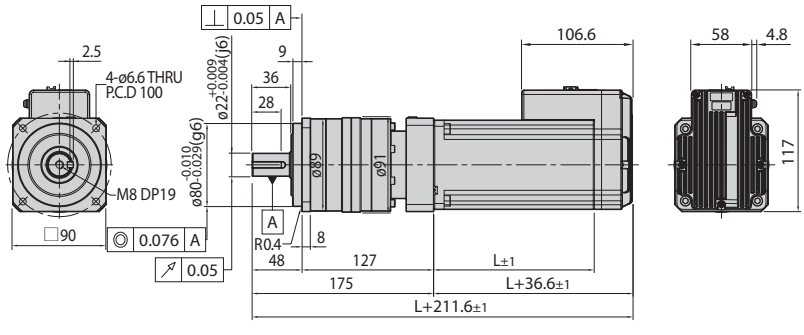
Gear Ratio 15, 25, 40, 50 : Double (M Connector Type)



86mm

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

Gear Ratio 15, 25, 40, 50 : Double (RJ45 Connector Type)



86mm

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

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