ENG

CC-Link IE TSN

General Catalog



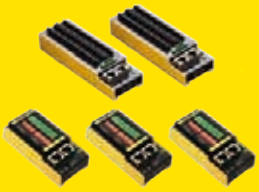
Ezi-SERVO® CC-Link IE TSN
Closed Loop Stepping System



Ezi-SERVO® CC-Link IE TSN 4X
Closed Loop Stepping System



Ezi-SERVO® CC-Link IE TSN ALL
Closed Loop Stepping System



Ezi-IO® CC-Link IE TSN
Network Input/Output

CC-Link IE TSN



Ezi-STEP® CC-Link IE TSN
Micro Stepping System



Ezi-ROBO® CC-Link IE TSN
Precise Actuator System



Ezi-SPEED® CC-Link IE TSN
BLDC Motor Speed Control System



Ezi-POS® CC-Link IE TSN
Servo Control System

FASTECH

Fast Accurate Smooth Motion

FASTECH Brand Introduction

Series	Feature
Ezi-SERVO® Closed Loop Stepping System	• Closed Loop Stepper System • Compatible with Industrial Networks (EtherCAT, CC-Link IE TSN, Ethernet, PROFINET & PROFIdrive) • Tuning Not Required, No Hunting • High Resolution Encoder(4,000 ~ 20,000 P/R), Fast Response • Low Heat Generation, High Torque • Drive Line-up (Industrial Network & Pulse Input Drive, Standard, Mini, Multi-axes & Motor+Drive Integrated type) • Motor Line-up (□20 mm ~ □86 mm, Incremental & Batteryless Absolute Encoder) • Options (Brake, Gearbox)
Ezi-STEP® Micro Stepping System	• Microstepper System • Compatible with Industrial Networks (EtherCAT, CC-Link IE TSN, Ethernet, PROFINET & PROFIdrive) • Software Damping (Resonance & Vibration Suppression) • High Torque • Drive Line-up (Industrial Network & Pulse Input Drive, Standard, Mini, Multi-axes & Motor+Drive Integrated type) • Motor Line-up (□20 mm ~ □86 mm) • Options (Brake)
Ezi-POS® Servo Control System	• Low-Voltage Servo Control System • Compatible with Industrial Networks (EtherCAT, CC-Link IE TSN, Ethernet, PROFINET & PROFIdrive) • DC Power Supply Input (12 ~ 48 V DC) • Auto-tuning • Torque-Off Function • Various Motor Options (BLDC Motor, Servo Motor, Linear Motor, VCM, etc) • Various Position Sensor Options (Incremental/Absolute Encoders)
Ezi-SPEED® BLDC Motor Speed Control System	• BLDC Motor Speed Control System • Compatible with Industrial Networks (EtherCAT, CC-Link IE TSN, Ethernet, PROFINET & PROFIdrive, Modbus-RTU, Modbus-TCP) • Power supply input (200 ~ 240 V AC, 12 ~ 48 V DC) • Compact · Light Weight · High Power · High Efficiency Brushless Motor • Wide Speed Range (50 ~ 4,000 r/min) • Stable Speed Regulation (±0.2 %) • BLDC Motor Line-up (30, 60, 120, 200, 400 W)
Ezi-ROBO® Precise Actuator System	• Precise Positioning Actuator System • Unit Solution Combining Ezi-SERVO + Actuator • Actuator Line-up (Compact Linear Actuator, Integrated guide-rail actuator, Vacuum Linear Rotary actuator, Hollow Rotary Table) • Compatible with Industrial Networks (EtherCAT, CC-Link IE TSN, Ethernet, PROFINET & PROFIdrive, Pulse Input)
Ezi-IO® Network Input/Output	• Remote Input/Output Modules - DIO(Digital Input/Output) Series - AD(Analog-to-Digital Converter) Series - DA(Digital-to-Analog Converter) Series - CNT(High Speed Pulse Counter) Series • Compatible with Industrial Networks (EtherCAT, CC-Link IE TSN, Ethernet, PROFINET) • Simple and Easy Wiring • DIN Rail Mounting

CC-Link IE TSN Supported Products Lineup



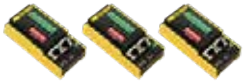
CC-Link IE TSN Compatible Products Lineup

Series	Product	Feature	Image
Ezi-SERVO Closed Loop Stepping System	Ezi-SERVO CC-Link IE TSN (Closed Loop Stepper System)	• CC-Link IE TSN-compatible Closed Loop Stepper System • CiA402 Drive Profile • Torque-Off Function • Tuning Not Required, No Hunting • High Resolution Encoder, Fast Response • Low Heat Generation, High Torque	P.5 
	Ezi-SERVO CC-Link IE TSN 4X (Compact Multi Axis Drive)	• CC-Link IE TSN-compatible Closed Loop Stepper System • CiA402 Drive Profile • Compact Multi-Axis Drive (Max. 4-Axis) • Space Saving, Reduced Wiring • Tuning Not Required, No Hunting • High Resolution Encoder, Fast Response • Low Heat Generation, High Torque	P.31 
	Ezi-SERVO CC-Link IE TSN ALL (Motor + Drive Integrated Type)	• CC-Link IE TSN-compatible Closed Loop Stepper System • CiA402 Drive Profile • Motor + Drive Integrated • Space Saving, Reduced Wiring • Tuning Not Required, No Hunting • High Resolution Encoder, Fast Response • Low Heat Generation, High Torque	P.55 
Ezi-STEP Micro Stepping System	Ezi-STEP CC-Link IE TSN (Micro Stepper System)	• CC-Link IE TSN-compatible Microstepper System • CiA402 Drive Profile • Torque-Off Function • Software Damping (Resonance & Vibration Suppression) • High Torque	P.73 
	Ezi-STEP CC-Link IE TSN 4X (Compact Multi Axis Drive)	• CC-Link IE TSN-compatible Microstepper System • CiA402 Drive Profile • Software Damping (Resonance & Vibration Suppression) • Compact Multi-Axis Drive (Max. 4-Axis) • Space Saving, Reduced Wiring	P.91 
	Ezi-STEP CC-Link IE TSN ALL (Motor + Drive Integrated Type)	• CC-Link IE TSN-compatible Microstepper System • CiA402 Drive Profile • Software Damping (Resonance & Vibration Suppression) • Motor + Drive Integrated • Space Saving, Reduced Wiring	P.107 

CC-Link IE TSN Compatible Products Lineup

Series	Product	Feature	Image
Ezi-POS Servo Control System	Ezi-POS CC-Link IE TSN G-Series (Low-Voltage Servo Control System)	• General-Purpose (G-Type) Motor Series • CC-Link IE TSN-compatible Low-Voltage Servo Control System • CiA402 Drive Profile • DC Power Supply Input (12 ~ 48 V DC) • Auto-Tuning • Torque-Off Function	P.121 
	Ezi-POS CC-Link IE TSN H-Series (Low-Voltage Servo Control System)	• High-Performance (H-Type) Motor Series • CC-Link IE TSN-compatible Low-Voltage Servo Control System • CiA402 Drive Profile • DC Power Supply Input (12 ~ 48 V DC) • Auto-Tuning • Torque-Off Function	P.147 
Ezi-SPEED BLDC Motor Speed Control System	Ezi-SPEED CC-Link IE TSN AC (BLDC Motor Speed Control System)	• CC-Link IE TSN-compatible BLDC Motor Speed Control System • AC Power Supply Input (200 ~ 240 V AC) • Compact · Light Weight · High Power · High Efficiency Brush-less Motor • Wide Speed Range (50 ~ 4,000 r/min) • Stable Speed Regulation (±0.2 %) • BLDC Motor Line-up (30, 60, 120, 200, 400 W)	P.175 
Ezi-ROBO Precise Actuator System	Ezi-ROBO VZR (Vacuum + Linear + Rotary Actuator)	• Slim Actuator with Hollow Shaft Motor & Ball Screw Spline • Vacuum(V) + Linear(Z) + Rotary(R), 3-in-1 Actuator • Repeatability (Z Axis : ±0.01 mm / R Axis : ±0.1°) • CiA402 Drive Profile • CC-Link IE TSN-compatible Closed Loop Stepper System • Tuning Not Required, No Hunting • Low Heat Generation, High Torque, High Resolution, Fast Response	P.211 
	Ezi-ROBO CLA (Compact Linear Actuator)	• Compact Linear Actuator with Hollow Shaft Motor & Ball Screw • Repeatability (±0.01 mm), Lost Motion (≤ 0.05 mm) • CiA402 Drive Profile • CC-Link IE TSN-compatible Closed Loop Stepper System • Tuning Not Required, No Hunting • Low Heat Generation, High Torque, High Resolution, Fast Response	P.227 
	Ezi-ROBO IGH (Integrated Guide-rail High-rigidity Actuator)	• Slider Type Electric Actuator with Stepper Motor & Ball Screw • Repeatability (±0.005 mm) • High Strength Steel Frame • CiA402 Drive Profile • CC-Link IE TSN-compatible Closed Loop Stepper System • Tuning Not Required, No Hunting • Low Heat Generation, High Torque, High Resolution, Fast Response	P.253 
	Ezi-ROBO IGS (Integrated Guide-rail Actuator)	• Slider Type Electric Actuator with Stepper Motor & Ball Screw • Repeatability (±0.005 mm) • CiA402 Drive Profile • CC-Link IE TSN-compatible Closed Loop Stepper System • Tuning Not Required, No Hunting • Low Heat Generation, High Torque, High Resolution, Fast Response	P.281 

CC-Link IE TSN Compatible Products Lineup

Series	Product	Feature	Image
Ezi-IO Network Input/Output	Ezi-IO CC-Link IE TSN DIO (Digital Input/Output Module)	• CC-Link IE TSN-compatible Digital I/O Module • Input Filter Function • Simple and Easy Wiring • DIN Rail Mounting	P.309 
	Ezi-IO CC-Link IE TSN AD (Analog Input Module)	• CC-Link IE TSN-compatible Analog Input Module • Configurable Input Mode and Input Range • Moving Average Filtering • Simple and Easy Wiring • DIN Rail Mounting	P.321 
	Ezi-IO CC-Link IE TSN DA (Analog Output Module)	• CC-Link IE TSN-compatible Analog Output Module • Configurable Output Range • Calibration for Output Deviation • Simple and Easy Wiring • DIN Rail Mounting	P.331 
	Ezi-IO CC-Link IE TSN CNT (High Speed Counter Module)	• CC-Link IE TSN-compatible High Speed Counter Module • Line Receiver and DC Input Type Provided • Comparison Output Function • Simple and Easy Wiring • DIN Rail Mounting	P.341 
OPTION	Brake	• Spring-Applied Electromagnetic Brake • Stable position holding when power is off • Reliable braking with long service life • Fast brake response	P.356 
	Gearbox	• High-Precision Planetary Gearbox • Low backlash for high positioning accuracy • High torque capability • Low vibration and noise for stable operation	P.370 

Ezi-SERVO® CC-Link IE TSN

Closed Loop Stepping System

- CC-Link IE TSN-compatible Closed Loop Stepper System
- CiA402 Drive Profile
- Torque-Off Function
- Tuning Not Required, No Hunting
- High Resolution Encoder, Fast Response
- Low Heat Generation, High Torque



FASTECH

Fast Accurate Smooth Motion

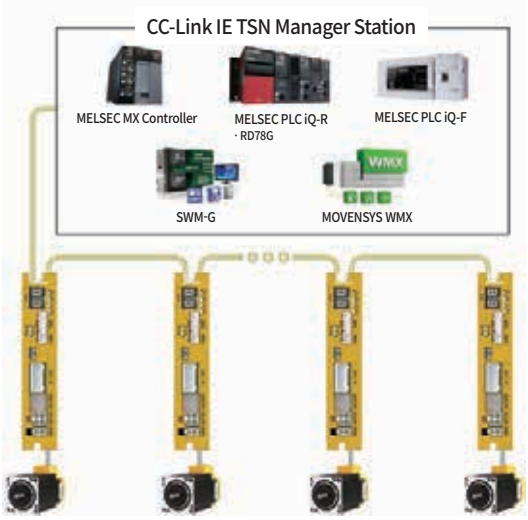
Ezi-SERVO® CC-LinkIE TSN

Closed Loop Stepping System



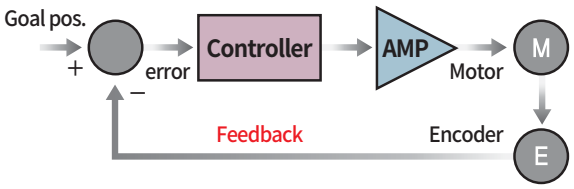
CC-Link IE TSN-compatible Motion Control

Ezi-SERVO CC-Link IE TSN is stepper motor control system using CC-Link IE TSN, high speed Ethernet (1 Gbps Full-Duplex) based industrial network.
Ezi-SERVO CC-Link IE TSN employs CiA402 drive profile and supports Profile Position Mode (PP Mode), Homing Mode (HM Mode) and Cyclic Synchronous Position Mode (CSP Mode).



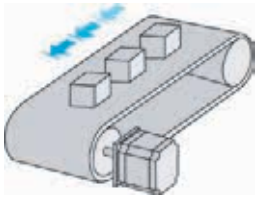
Closed-Loop System

Ezi-SERVO 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 to update the current position every 50 µs. It allows the Ezi-SERVO drive to compensate for the loss of position, ensuring accurate positioning. For example, due to a sudden load change, a conventional stepper motor and drive could lose a step but Ezi-SERVO automatically correct the position by encoder feedback.



Tuning Not Required

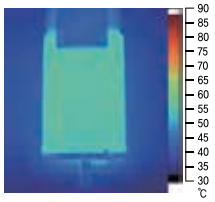
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed.
Ezi-SERVO employs the best characteristics of the stepper motor to eliminate the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



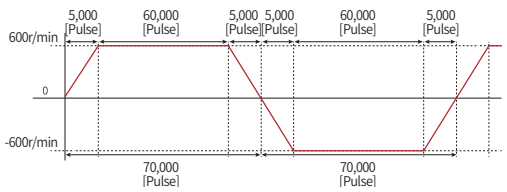
Low Heat Generation / Energy Savings

(Motor Current Control according to load)

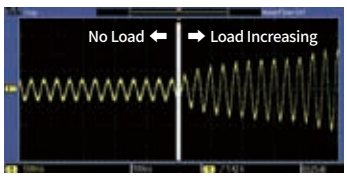
Ezi-SERVO automatically controls motor current according to load.
Ezi-SERVO reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

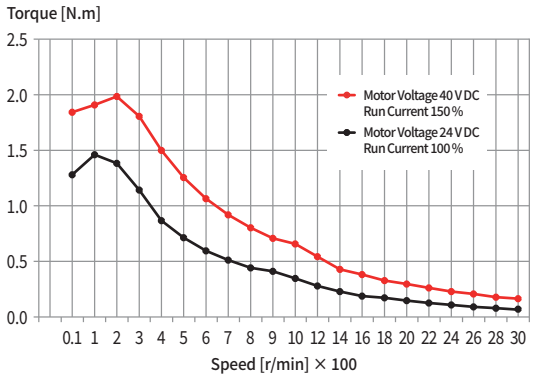


Motor Current
[Example of the Motor Current Control according to load]

High Torque

(Motor Voltage Increasing and Motor Current Setting)

Ezi-SERVO features an internal voltage boosting circuit that increases the motor supply voltage above the drive's input voltage. This elevated motor voltage enhances torque at high speeds and allows the run current to be set up to 150 %. As a result, torque is also improved at low speeds. Ezi-SERVO can achieve approximately 30 % torque improvement across the entire speed range.



※ Torque is improved by approximately 30 % at both low and high speeds.

Measured Condition: Drive = Ezi-SERVO-CT-56L

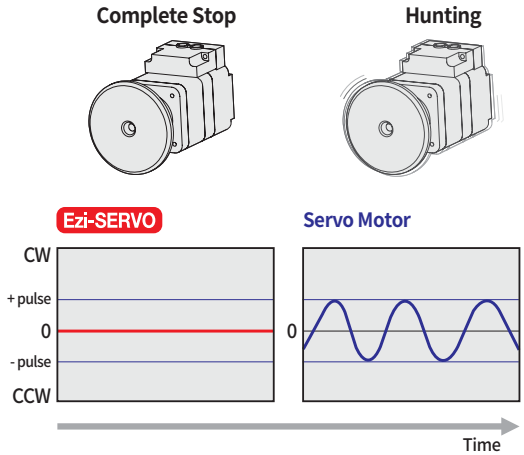
· Motor Voltage = 40 V DC

· Input Voltage = 24 V DC

No Hunting

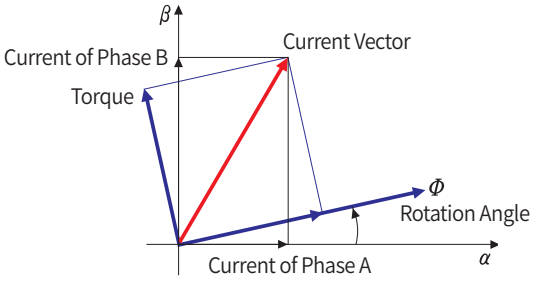
Ezi-SERVO utilizes the unique characteristics of stepper motors and locks itself into the desired target position, preventing vibration and eliminating Null Hunt which happens to the conventional servo systems.

This feature is especially useful in applications such as vision systems in which system oscillation and vibration could be a problem.



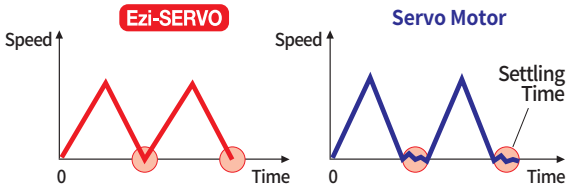
Smooth and Accurate Operation

Ezi-SERVO is a high-precision servo drive, using a high-resolution encoder with 20,000 pulse/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.



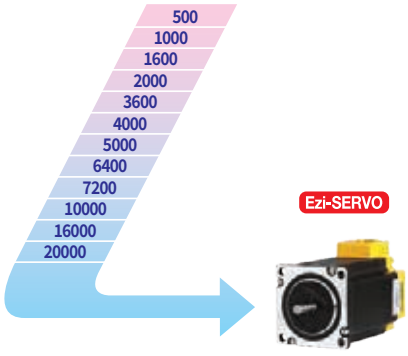
Fast Response

Similar to conventional stepper motors, Ezi-SERVO instantly synchronizes with command pulses providing fast positional response. Ezi-SERVO is the optimum 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.



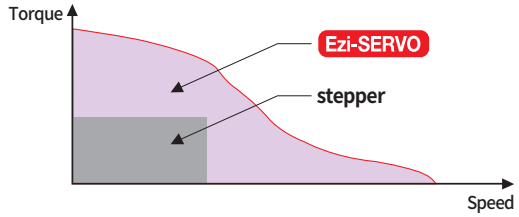
High Resolution

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



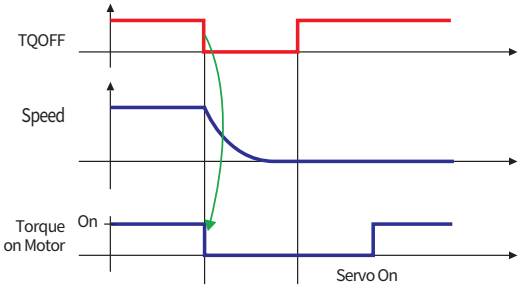
High Torque / Continuous Operation

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



Torque-Off Function

Ezi-SERVO CC-Link IE TSN has an input connector(TQOFF) that can cut off the motor power through an external hardware signal, regardless of CC-Link IE TSN communication. When the TQOFF signal is detected, the drive immediately becomes 'SERVO Off', and the motor stops.

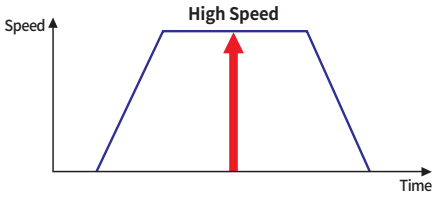


Caution

DO NOT use the Torque-Off function to stop or decelerate motors.

High Speed

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



Product Lineup Enhancement

Ezi-SERVO CC-Link IE TSN offers two motor types: Solid Shaft and Hollow Shaft. Solid Shaft motors are general-purpose motors suitable for a wide variety of industrial applications and are available in three configurations: standard, with a brake option, or with a gearbox option. Hollow Shaft motors feature a through-bore shaft for cable and air tube routing. This design saves wiring space, enables compact and lightweight machine designs, and increases design flexibility.

Motor Flange Size	Solid Shaft Motor			Hollow Shaft Motor (Inner Dia. mm)
	Standard	Brake Option	Gearhead Option	
20 mm	O	-	-	O (Ø3)
28 mm	O	-	-	O (Ø6)
35 mm	O	-	-	O (Ø8)
42 mm	O	O	O	O (Ø8)
56 mm	O	O	O	O (Ø12)
60 mm	O	O	O	-

[Applications of Hollow Shaft Motors]

Optical Instrument	Cable Feed-Through	Dispensing System
		

Advantages over Open-Loop Stepper Systems

1. Reliable positioning control positioning without loss of synchronism.
2. Excellent holding torque at standstill, and automatically recovering to the original position even after experiencing positioning error due to external forces, such as mechanical vibration or vertical positional holding.
3. Ezi-SERVO utilizes 100 % of the full range of rated motor torque, contrary to a conventional open-loop stepper drive that can use up to 50 % of the rated motor torque due to the loss of synchronism.
4. Capability to operate at high speed due to load-dependent current control, open-loop stepper drives use a constant current control at all speed ranges without considering load variations. (Max. Speed : 3,000 r/min)

Advantages over Servo Motor Controller

1. No gain tuning. (Automatic gain adjustment in response to a load change)
2. Maintains the stable holding position without oscillation after completion of positioning.
3. Fast positioning due to the independent control by on-board MCU.
4. Continuous operation during rapid short-stroke movement due to instantaneous positioning.

Ezi-SERVO CC-Link IE TSN Part Numbering

Ezi-SERVO-CT-□56L-A-BK-PN5

Product Name

Drive Series

CT : CC-Link IE TSN

Motor Type

Blank : Solid Shaft
HSP : Hollow Shaft

Motor Flange Size

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

Motor Length

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

Encoder Resolution

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

Brake

Blank : Without Brake
BK : Brake

Gear Ratio

Blank : Without Gearbox
PN3 : 1:3
PN5 : 1:5
PN8 : 1:8
PN10 : 1:10
PN15 : 1:15
PN25 : 1:25
PN40 : 1:40
PN50 : 1:50

Standard Combination : Solid Shaft Motor

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

※ When places an order for Stopper type 28 mm, 35 mm motor, please write “M” additionally after motor length of unit product number. (e.g., Ezi-SERVO-CT-28LM-D, Ezi-SERVO-CT-35LM-D)

Standard Combination : Hollow Shaft Motor

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO-CT-HSP20M-F	HSE-P20M-F	EzS2-CT-HSP20M-F
Ezi-SERVO-CT-HSP20L-F	HSE-P20L-F	EzS2-CT-HSP20L-F
Ezi-SERVO-CT-HSP28SM-D	HSE-P28SM-D	EzS2-CT-HSP28S-D
Ezi-SERVO-CT-HSP28MM-D	HSE-P28MM-D	EzS2-CT-HSP28M-D
Ezi-SERVO-CT-HSP35MM-D	HSE-P35MM-D	EzS2-CT-HSP35M-D
Ezi-SERVO-CT-HSP35LM-D	HSE-P35LM-D	EzS2-CT-HSP35L-D
Ezi-SERVO-CT-HSP42S-A	HSE-P42S-A	EzS2-CT-HSP42S-A
Ezi-SERVO-CT-HSP42S-B	HSE-P42S-B	EzS2-CT-HSP42S-B
Ezi-SERVO-CT-HSP42L-A	HSE-P42L-A	EzS2-CT-HSP42L-A
Ezi-SERVO-CT-HSP42L-B	HSE-P42L-B	EzS2-CT-HSP42L-B
Ezi-SERVO-CT-HSP56S-A	HSE-P56S-A	EzS2-CT-HSP56S-A
Ezi-SERVO-CT-HSP56S-B	HSE-P56S-B	EzS2-CT-HSP56S-B
Ezi-SERVO-CT-HSP56M-A	HSE-P56M-A	EzS2-CT-HSP56M-A
Ezi-SERVO-CT-HSP56M-B	HSE-P56M-B	EzS2-CT-HSP56M-B

Combination with Brake

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

Combination with Gearbox

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

Combination with Gearbox

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

Combination with Gearbox

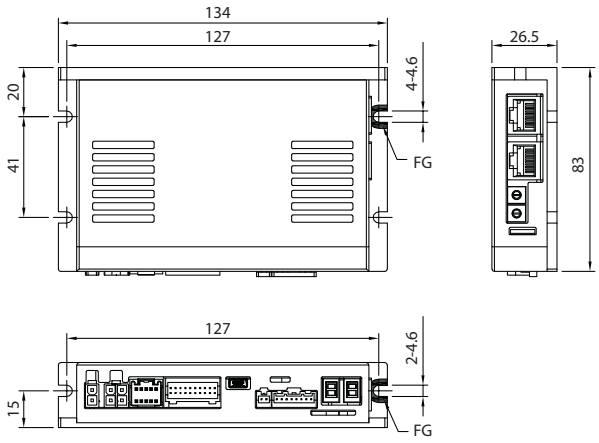
Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi-SERVO-CT-56L-A-PN3	EzM2-56L-A-PN3	EzS2-CT-56L-A	1:3
Ezi-SERVO-CT-56L-B-PN3	EzM2-56L-B-PN3	EzS2-CT-56L-B	
Ezi-SERVO-CT-56L-A-PN5	EzM2-56L-A-PN5	EzS2-CT-56L-A	1:5
Ezi-SERVO-CT-56L-B-PN5	EzM2-56L-B-PN5	EzS2-CT-56L-B	
Ezi-SERVO-CT-56L-A-PN8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

Specifications of Drive

Motor Model		EzM2-20 HSE-P20 series	EzM2-28 HSE-P28 series	EzM2-35 HSE-P35 series	EzM2-42 HSE-P42 series	EzM2-56 HSE-P56 series	EzM2-60 series
Drive Model		EzS2-CT-20 Series	EzS2-CT-28 Series	EzS2-CT-35 Series	EzS2-CT-42 Series	EzS2-CT-56 Series	EzS2-CT-60 Series
Input Voltage		24 V DC ± 10 %					
Control Method		Closed loop control with 32 bit MCU					
Current Consumption		Max. 500 mA (Except motor current)					
Operating Condition	Ambient Temperature	· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C					
	Humidity	· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)					
	Vib. Resist.	0.5 g					
Function	Rotation Speed	0 ~ 3,000 r/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 Type	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, Encoder Connection Error, Main Power Voltage Error, In-Position Error, ROM Error, Position Overflow Error, Torque-Off Circuit Error					
	LED Display	Power status, In-Position status, Servo On status, Alarm status					
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B					
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode(CSP), Profile Position Mode(PP), Homing Mode(HM)					
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)					
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 6 user inputs (photocoupler inputs), 2 Torque-Off signal inputs (TQOFF)					
	Output Signals	5 user outputs (photocoupler outputs), 1 brake signal output, 1 Torque-Off status output (TQMON)					

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

Dimensions of Drive [mm]



Specifications of Solid Shaft Motor

MODEL				EzM2-20 Series		EzM2-28 Series			EzM2-35 Series		EzM2-42 Series			
			UNIT	20M	20L	28S	28M	28L	35M	35L	42S	42M	42L	42XL
Drive method			-	Bipolar										
Number of phase			-	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·cm²	2.5	3.3	9.0	13	18	15	20	35	54	77	114
Motor Weight			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	3 mm	N	18	18	30	30	30	22	22	22	22	22	22
		8 mm		30	30	38	38	38	26	26	26	26	26	26
		13 mm		-	-	53	53	53	33	33	33	33	33	33
		18 mm		-	-	-	-	-	46	46	46	46	46	46
Permissible Axial Load			N	Must be less than the motor weight										
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)										
Insulation Class			-	Class B (130 °C)										
Operating Temperature			°C	0 ~ 55										

MODEL				EzM2-56 Series			EzM2-60 Series		
			UNIT	56S	56M	56L	60S	60M	60L
Drive method			-	Bipolar					
Number of phase			-	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·cm²	180	280	520	240	490	690
Motor Weight			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	3 mm	N	52	52	52	70	70	70
		8 mm		65	65	65	87	87	87
		13 mm		85	85	85	114	114	114
		18 mm		123	123	123	165	165	165
Permissible Axial Load			N	Must be less than the motor weight					
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)					
Insulation Class			-	Class B (130 °C)					
Operating Temperature			°C	0 ~ 55					

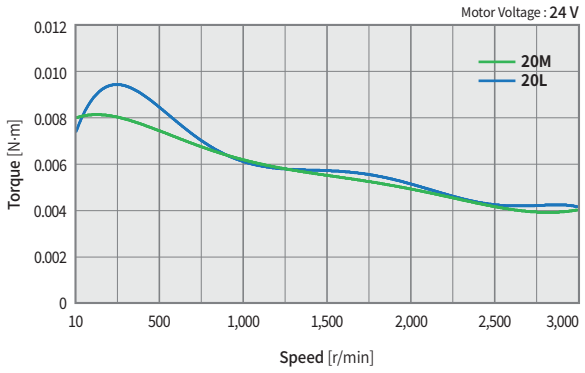
Specifications of Hollow Shaft Motor

MODEL			UNIT	HSE-P20 series		HSE-P28 series		HSE-P35 series	
				P20M	P20L	P28S	P28M	P35M	P35L
Drive method			-	Bipolar					
Number of phase			-	2 Phase					
Current per Phase			A/Phase	0.5	0.5	1.0	1.4	1.2	1.2
Maximum Holding Torque			N·m	0.014	0.02	0.053	0.14	0.18	0.34
Rotor Inertia			g·cm²	1.6	2.9	9	12	20	24
Motor Weight			kg	0.04	0.06	0.1	0.15	0.21	0.23
Length (L)			mm	28.7	39.8	32.2	45.2	37.3	45.3
Permissible Radial Load	Distance From End of Shaft	3 mm	N	18	18	38	38	22	22
		8 mm		30	30	53	53	26	26
		13 mm		-	-	-	-	33	33
		18 mm		-	-	-	-	46	46
Permissible Axial Load			N	Must be less than the motor weight					
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)					
Insulation Class			-	Class B (130 °C)					
Operating Temperature			°C	0 ~ 55					

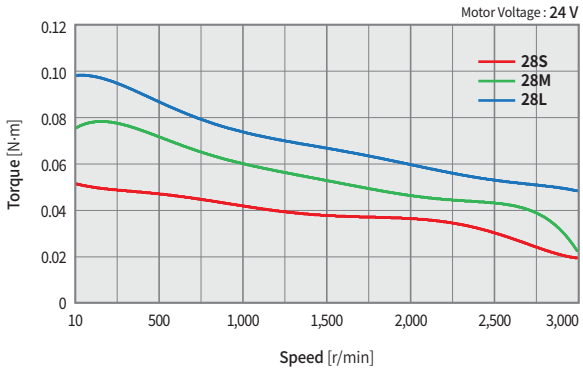
MODEL			UNIT	HSE-P42 series		HSE-P56 series	
				P42S	P42L	P56S	P56M
Drive method			-	Bipolar			
Number of phase			-	2 Phase			
Current per Phase			A/Phase	1.0	2.5	2.6	2.5
Maximum Holding Torque			N·m	0.31	0.56	1.0	1.5
Rotor Inertia			g·cm²	35	77	180	350
Motor Weight			kg	0.24	0.36	0.52	0.85
Length (L)			mm	34.4	48.4	45.7	64.7
Permissible Radial Load	Distance From End of Shaft	3 mm	N	22	22	52	52
		8 mm		26	26	65	65
		13 mm		33	33	85	85
		18 mm		46	46	123	123
Permissible Axial Load			N	Must be less than the motor weight			
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)			
Insulation Class			-	Class B (130 °C)			
Operating Temperature			°C	0 ~ 55			

Torque Characteristics of Solid Shaft Motor

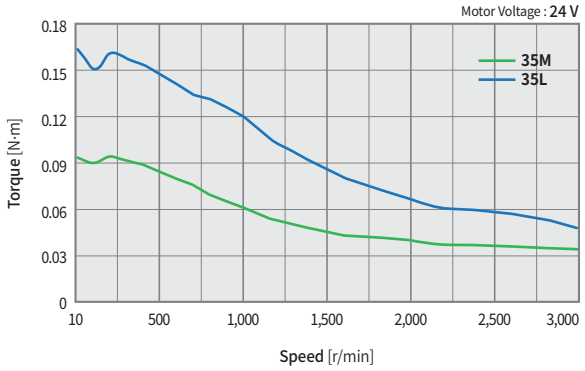
Ezi-SERVO-CT-20 Series



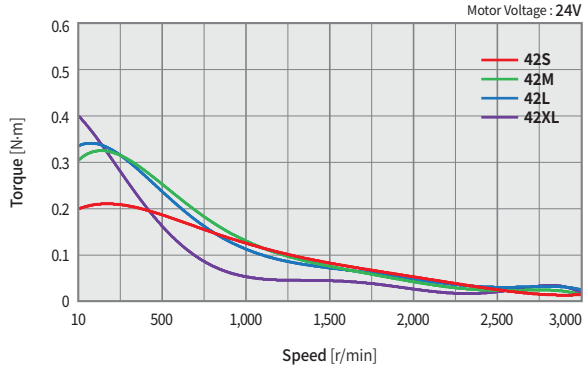
Ezi-SERVO-CT-28 Series



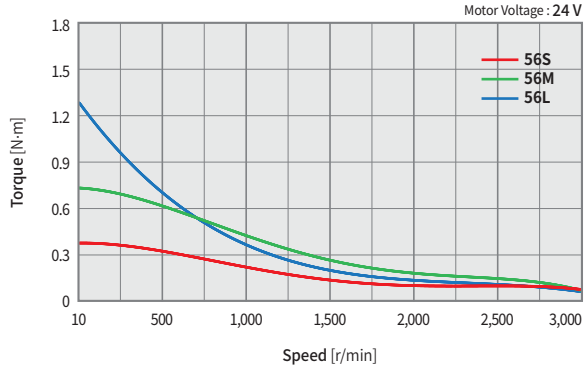
Ezi-SERVO-CT-35 Series



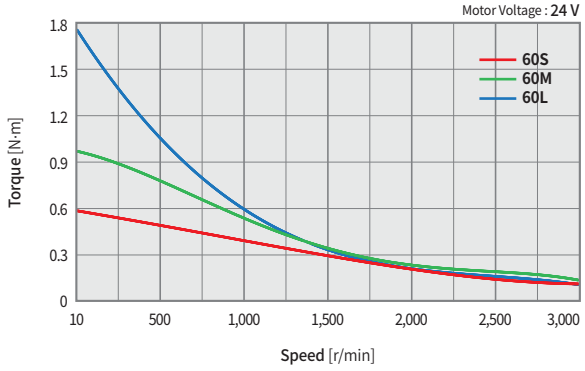
Ezi-SERVO-CT-42 Series



Ezi-SERVO-CT-56 Series

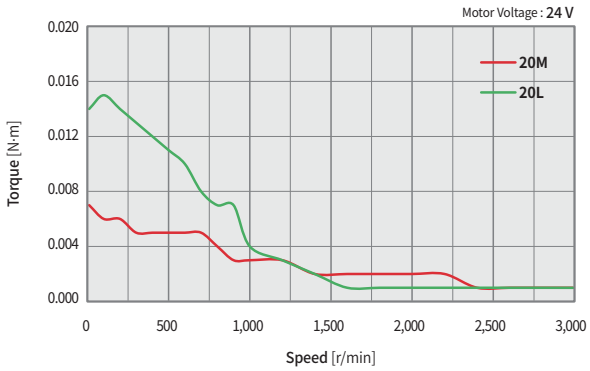


Ezi-SERVO-CT-60 Series

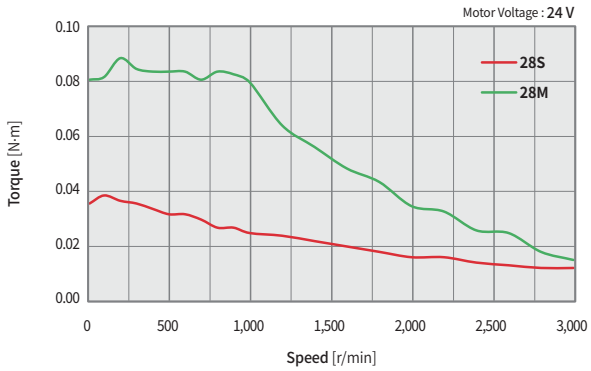


Torque Characteristics of Hollow Shaft Motor

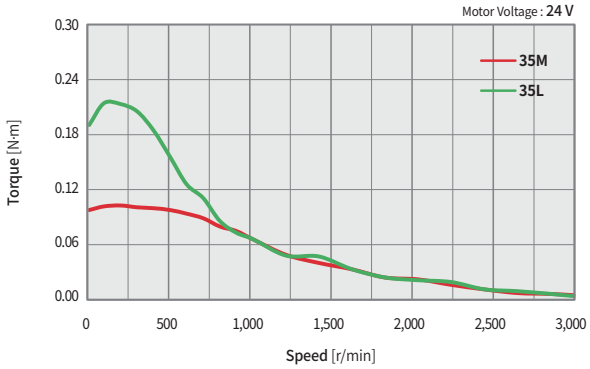
Ezi-SERVO-CT-HSP20 series



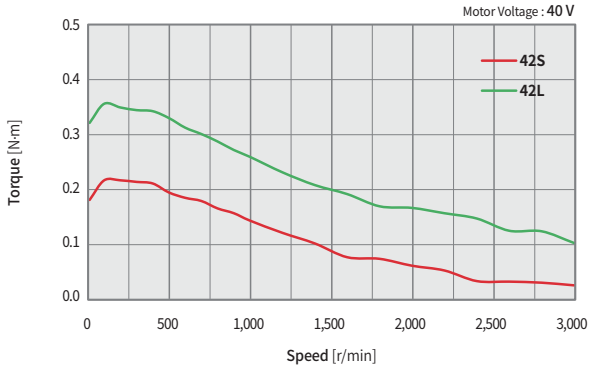
Ezi-SERVO-CT-HSP28series



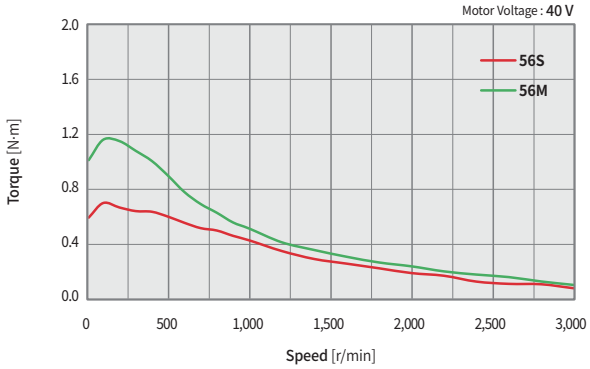
Ezi-SERVO-CT-HSP35 series



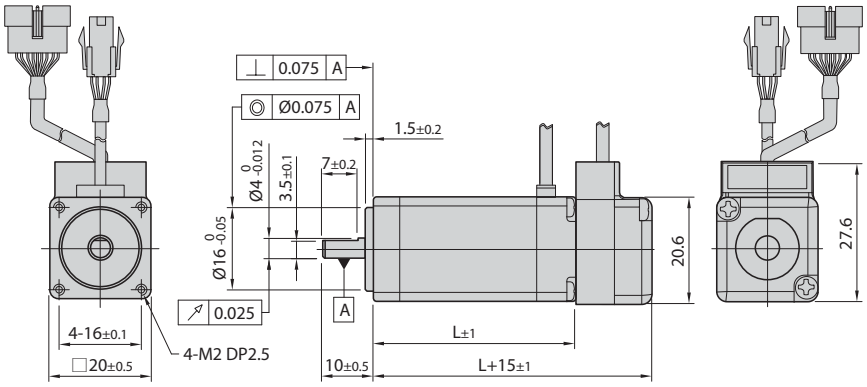
Ezi-SERVO-CT-HSP42 series



Ezi-SERVO-CT-HSP56 series

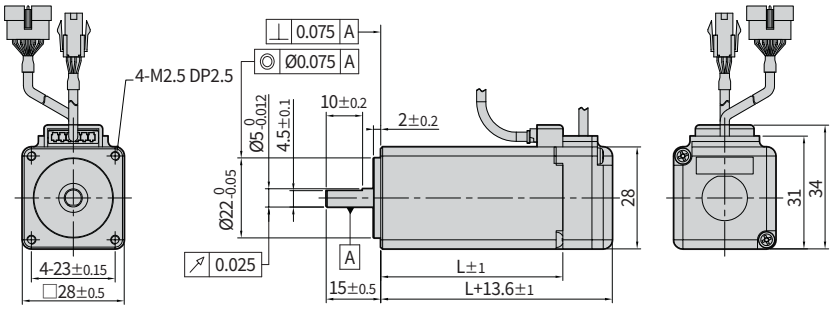


Dimensions of Solid Shaft Motor [mm]



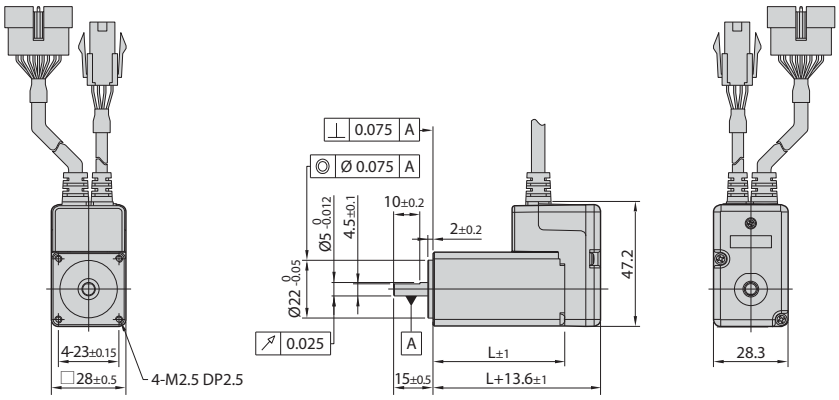
20 mm

Model name	Length (L)
EzM2-20M	27.3
EzM2-20L	37.6



28 mm

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

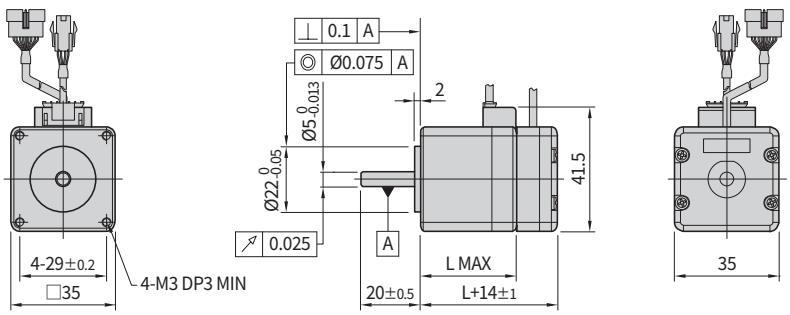


28 mm

(Stopper type)

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

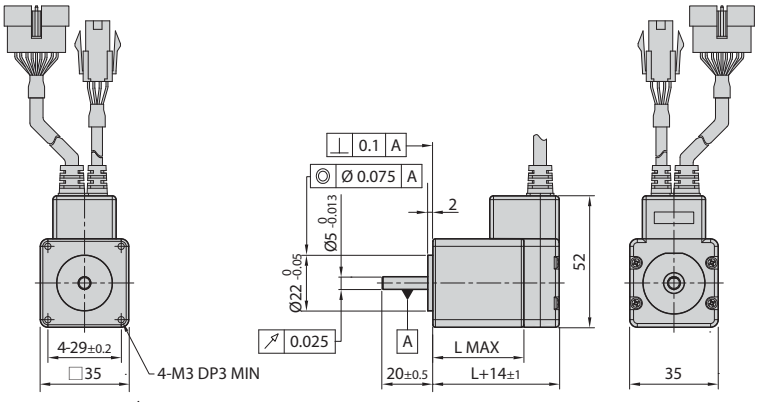
※ When ordering 28 mm Stopper type of motor, please add“M”after standard motor model number.



35 mm

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

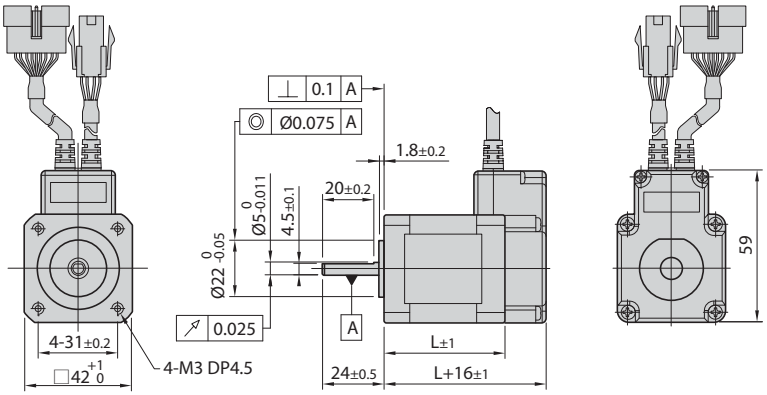
Dimensions of Solid Shaft Motor [mm]



35 mm
(Stopper type)

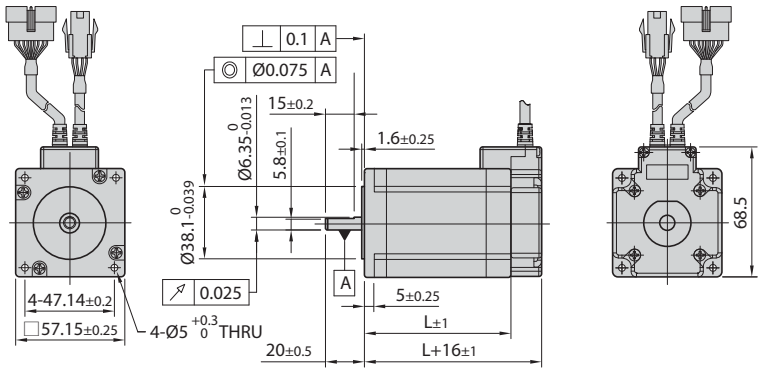
Model name	Length (L)
EzM2-35MM	32
EzM2-35LM	36

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



42 mm

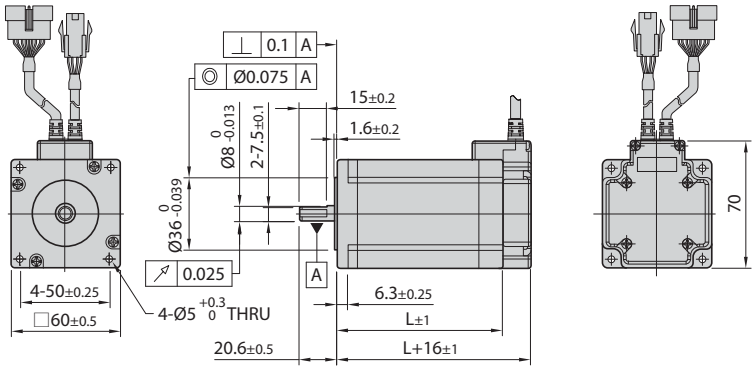
Model name	Length (L)
EzM2-42S	34
EzM2-42M	40
EzM2-42L	48
EzM2-42XL	60



56 mm

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

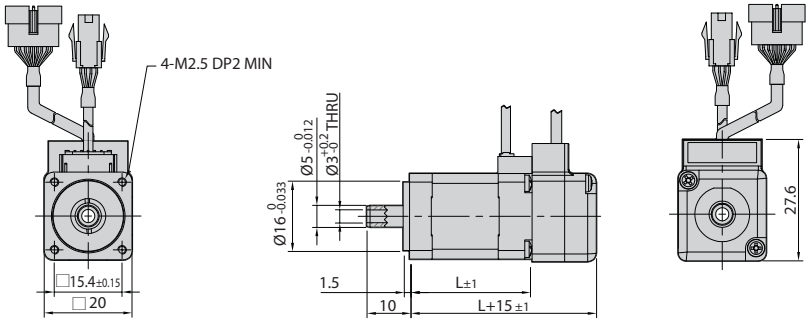
※ There are 2 kinds of size of front shaft diameter for EzM2-56 series as Ø 6.35 and Ø 8.0



60 mm

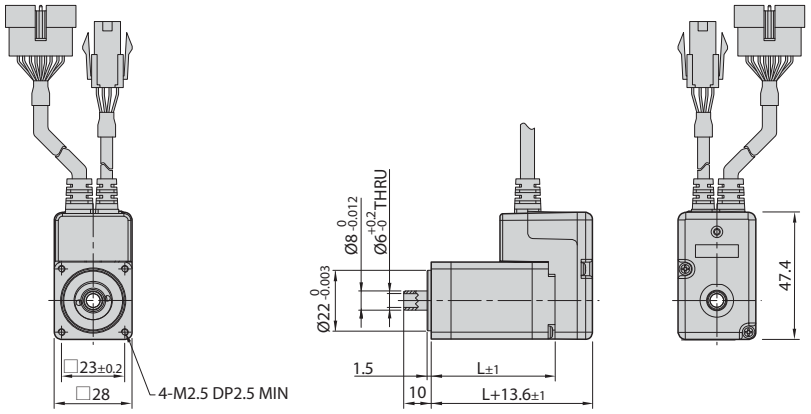
Model name	Length (L)
EzM2-60S	47
EzM2-60M	56
EzM2-60L	85

Dimensions of Hollow Shaft Motor [mm]



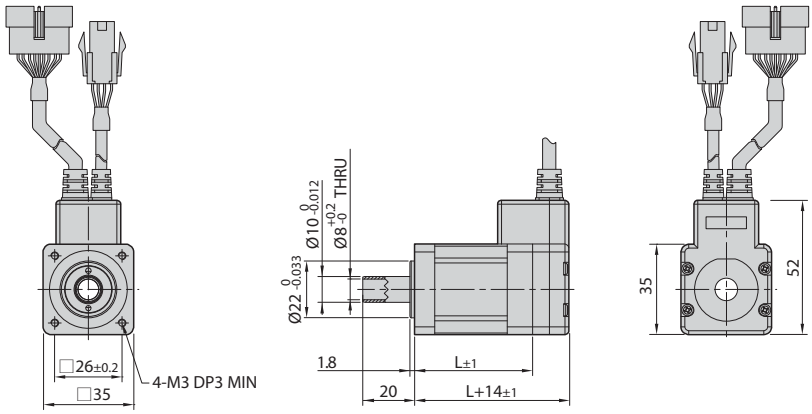
20 mm

Model name	Length (L)
HSE-P20M	28.7
HSE-P20L	39.2



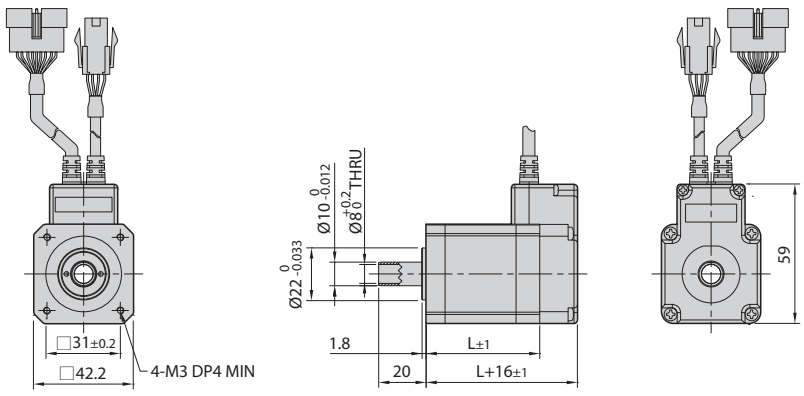
28 mm

Model name	Length (L)
HSE-P28SM	32.2
HSE-P28MM	45.2



35 mm

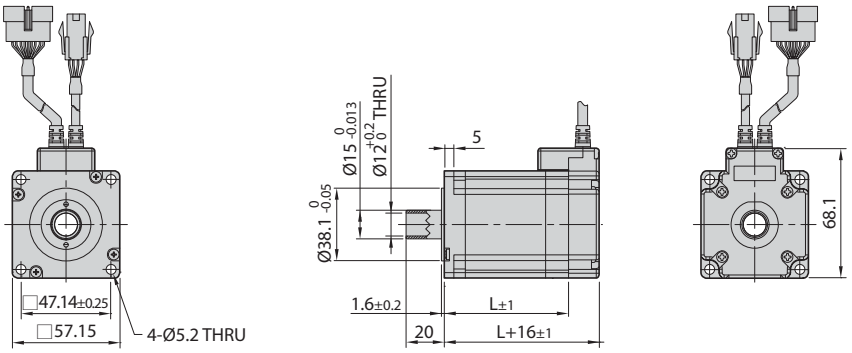
Model name	Length (L)
HSE-P35MM	37.3
HSE-P35LM	45.3



42 mm

Model name	Length (L)
HSE-P42S	34.4
HSE-P42L	48.4

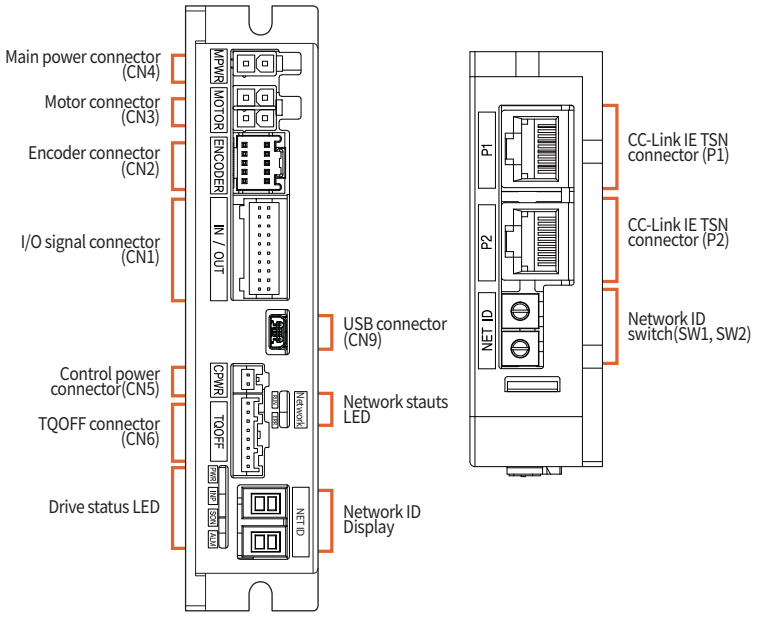
Dimensions of Hollow Shaft Motor [mm]



56 *mm*

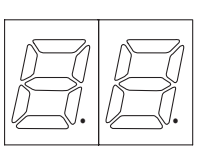
Model name	Length (L)
HSE-P56S	45.7
HSE-P56M	64.7

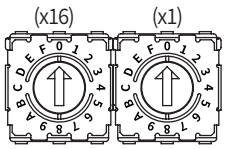
Settings and Operation



1. Network ID Display and Switch (SW1, SW2)

These switches are used to configure the fourth octet of the IP address. The value is displayed on the 7-segment LED in hexadecimal format. SW1 sets the X16 digit, and SW2 sets the X1 digit.
(For more details, please refer to the relevant user manual.)



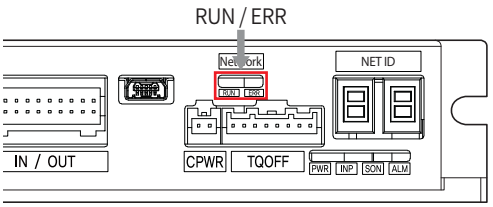


For example, if SW1 is set to 5 and SW2 is set to 7,
the value is calculated as follows:
(5 × 16) + (7 × 1) = 87
Accordingly, the IP address is set to 192.168.0.87.

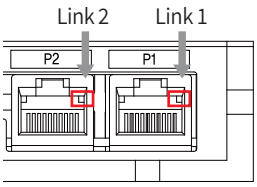
2. Network Status LED

These LEDs indicate the communication status of CC-Link IE TSN.
Link1/Link2 LEDs are located at the upper right corner of CC-Link IE TSN ports(P1, P2).

Indicator	Color	Status	Description
RUN	Green	OFF	Power off
		Single Flash	Not connected to master
		Double Flash	Pre-operational state
		Blinking	Safe-operational state
		Interval Off	Operational state



Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		Blinking	Drive error
		Single Flash	CC-Link IE TSN communication error
		Double Flash	IP address conflict error



Indicator	Color	Status	Description
LINK1/ LINK2	Green	OFF	Link inactive
		ON	Link active

3. Drive Status LED

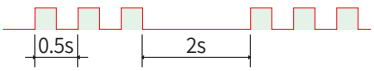
LED informs operation status of the drive.

Indicator	Color	Function	Description
PWR	Green	Power Input Indicator	Lights up when power is supplied.
INP	Yellow	Complete Positioning Motion	LED is turned on when positioning error reaches within the preset pulse after the positioning is complete.
SON	Orange	Servo On / Off Indicator	Lights up when Servo is on; turns off when Servo is off.
ALM	Red	Alarm Indicator	Blinks repeatedly when an error occurs.

List of error types by the number of 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 °C
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
9	E-009	Main Power Voltage Error	The Main Power Voltage Drops Below Approximately 18 V
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
16	E-016	Abnormal Safety State Error	Input states of TQOFF1 and TQOFF2 are different from each other.

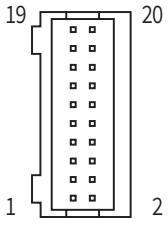
*1: Limit value depends on motor model. (Refer to the Manual)
*2: The default setting value is 180 °, and it can be changed by parameter. (Refer to the Manual)
*3: Voltage limit of Back-EMF depends on motor model. (Refer to the Manual)
*4: When an alarm occurs, error code is displayed on the 7-segment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



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

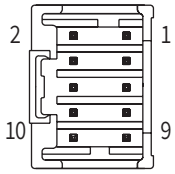
4. I/O Signal Connector (CN1)

No.	Function	I/O	No.	Function	I/O
1	LIMIT+	Input	11	Digital Out2	Output
2	LIMIT-	Input	12	Digital Out3	Output
3	ORIGIN	Input	13	Digital Out4	Output
4	Digital In1	Input	14	Digital Out5	Output
5	Digital In2	Input	15	BRAKE+	Output
6	Digital In3	Input	16	BRAKE-	Output
7	Digital In4	Input	17	EXT_GND	Input
8	Digital In5	Input	18	EXT_24 V DC	Input
9	Digital In6	Input	19	F.GND	----
10	Digital Out1	Output	20	F.GND	----



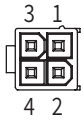
5. Encoder Connector (CN2)

No.	Function	I/O
1	A+	Input
2	A-	Input
3	B+	Input
4	B-	Input
5	Z+	Input
6	Z-	Input
7	5 V DC	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



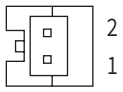
7. Main Power Connector (CN4)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input



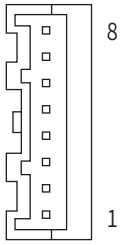
8. Control Power Connector (CN5)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input



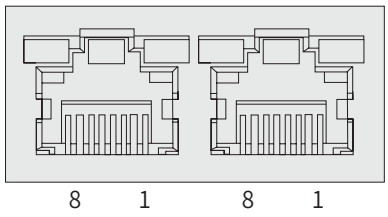
9. TQOFF Connector (CN6)

No.	Function	I/O
1	TQOFF1_P	Input
2	TQOFF1_N	Input
3	TQOFF2_P	Input
4	TQOFF2_N	Input
5	TQMON_P	Output
6	TQMON_N	Output
7	OVRTQ	Input
8	GND	Output

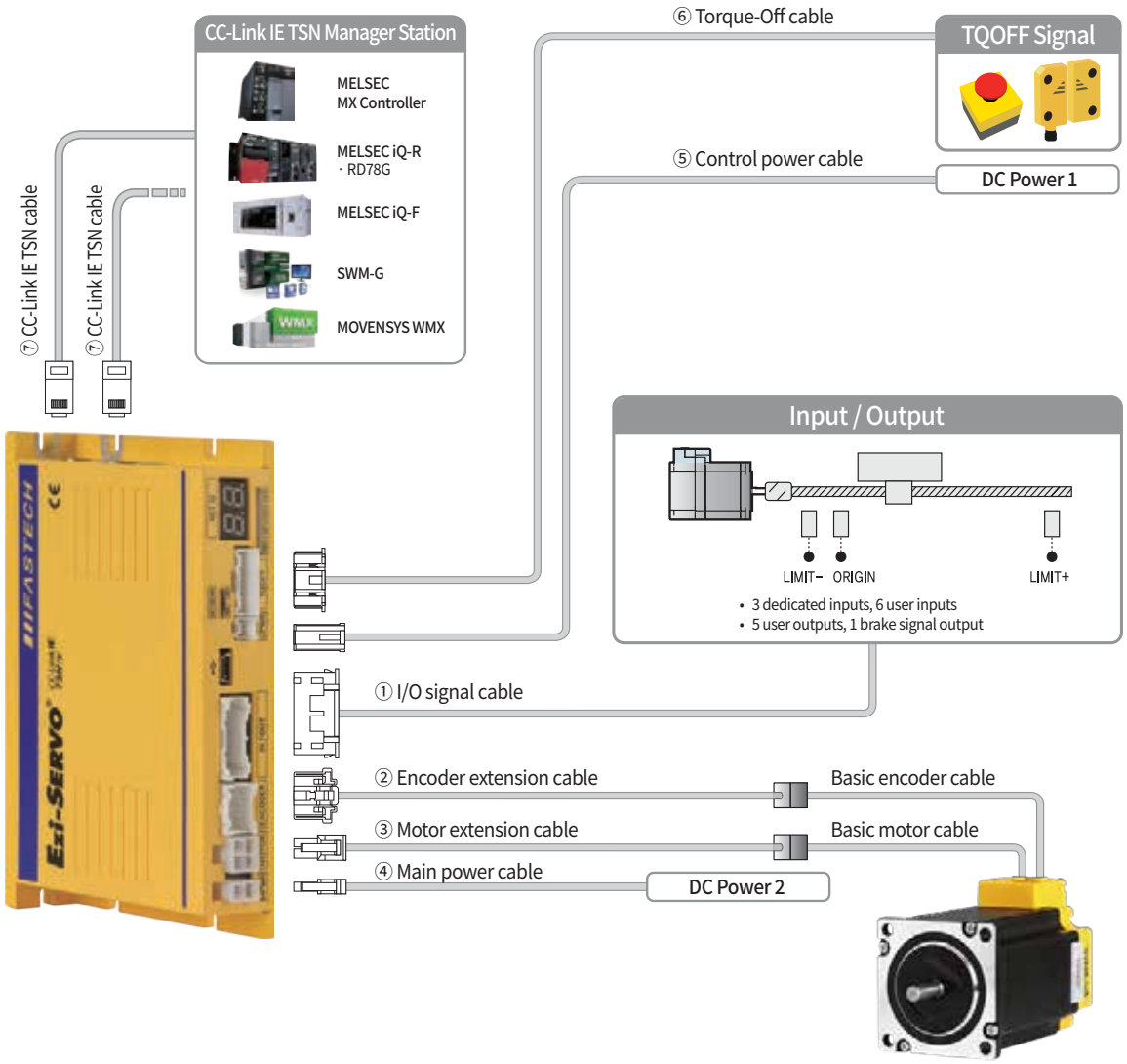


10. CC-Link IE TSN Connector (P1, P2)

No.	Function	No.	Function
1	DA+	6	DB-
2	DA-	7	DD+
3	DB+	8	DD-
4	DC+	Connector hood	F.GND
5	DC-		



System Configuration



Cable Type	Max. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Encoder Extension Cable	20 m	
③ Motor Extension Cable	20 m	
④ Main Power Cable	2 m	
⑤ Control Power Cable	2 m	
⑥ Torque-Off Cable	20 m	
⑦ CC-Link IE TSN Cable	100 m	
Basic Encoder Cable	0.3 m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3 m (Basic length)	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Main Power (CN4)		Housing	5557-02R	MOLEX
		Terminal	5556T	
Control Power (CN5)		Housing	PAP-02V-S	JST
		Terminal	SPHD-001T-P0.5	
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	
I/O Signal (CN1)		Housing	PADP-20V-1-S	JST
		Terminal	SPH-002T-P0.5L	
Torque-Off Signal (CN6)		Housing	PAP-08V-S	JST
		Terminal	SPHD-001T-P0.5 or SPHD-002T-P0.5	

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

2. Options

① I/O Signal Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN drive and other input / output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - I/O Device Connection	CSVS-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVS-S-002F	2		
	CSVS-S-003F	3		
	CSVS-S-005F	5		
	CSVS-S-001M	1	Flexible Cable	
	CSVS-S-002M	2		
	CSVS-S-003M	3		
	CSVS-S-005M	5		

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

② Encoder Extension Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Encoder Cable Connection	CSVO-E-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVO-E-002F	2		
	CSVO-E-003F	3		
	CSVO-E-005F	5		
	CSVO-E-001M	1	Flexible Cable	
	CSVO-E-002M	2		
	CSVO-E-003M	3		
	CSVO-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Motor Cable Connection	CSVO-M-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVO-M-002F	2		
	CSVO-M-003F	3		
	CSVO-M-005F	5		
	CSVO-M-001M	1	Flexible Cable	
	CSVO-M-002M	2		
	CSVO-M-003M	3		
	CSVO-M-005M	5		

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

④ Main Power Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN drive and the main power.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Power Connection	CSVO-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CSVO-P-002F	2		
	CSVO-P-001M	1	Flexible Cable	
	CSVO-P-002M	2		

⑤ Control Power Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN drive and the control power.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Control Power Connection	CMNB-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CMNB-P-002F	2		
	CMNB-P-001M	1	Flexible Cable	
	CMNB-P-002M	2		

⑥ Torque-Off Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN drive and sensors or switches for Torque-Off signal.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Torque-Off Signal Connection	CSVT-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVT-S-002F	2		
	CSVT-S-003F	3		
	CSVT-S-005F	5		
	CSVT-S-001M	1	Flexible Cable	
	CSVT-S-002M	2		
	CSVT-S-003M	3		
	CSVT-S-005M	5		

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

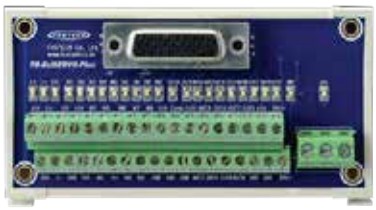
⑦ CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection	CGNR-EC-001F	1	• STP(Shielded Twisted Pair) Cable • Category 5e or higher • Max. Cable Length: 100 m • Fixed Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

[Option] TB-Plus Interface Board

This is an interface board to connect Ezi-SERVO CC-Link IE TSN drive and I/O signals more conveniently.

Purpose	Part Number	Product Image
Interface Board between Drive and I/O Signals	TB-Plus	

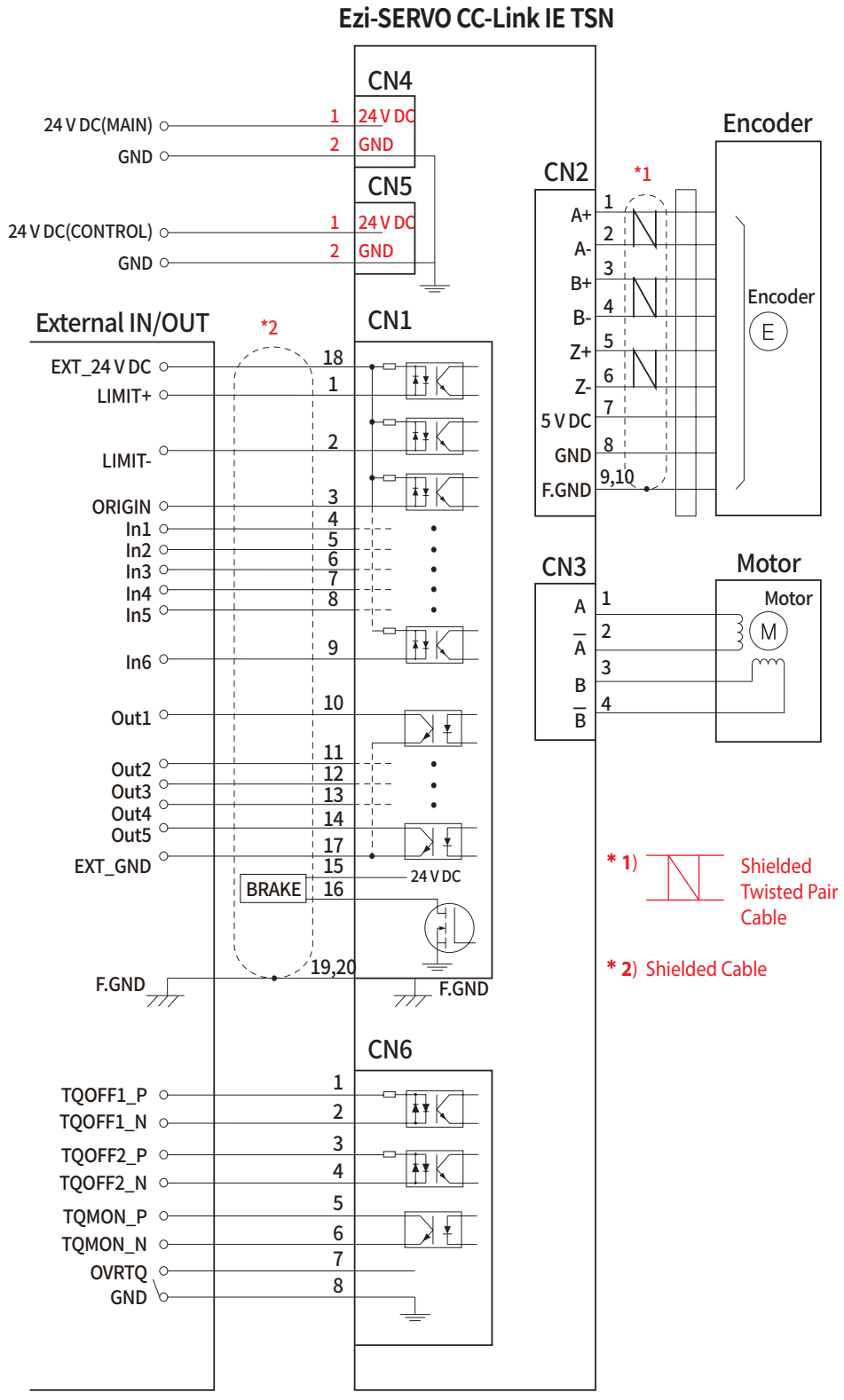
[Option] TB-Plus Interface Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN and TB-Plus interface board.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Interface(TB-Plus) Connection	CIFT-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CIFT-S-002F	2		
	CIFT-S-003F	3		
	CIFT-S-005F	5		
	CIFT-S-001M	1	Flexible Cable	
	CIFT-S-002M	2		
	CIFT-S-003M	3		
	CIFT-S-005M	5		

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

External Wiring Diagram



※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

MEMO

Ezi-SERVO® CC-Link IE TSN 4X

Closed Loop Stepping System

- CC-Link IE TSN-compatible Closed Loop Stepper System
- CiA402 Drive Profile
- Compact Multi-Axis Drive (Max. 4-Axis)
- Space Saving, Reduced Wiring
- Tuning Not Required, No Hunting
- High Resolution Encoder, Fast Response
- Low Heat Generation, High Torque



FASTECH

Fast Accurate Smooth Motion

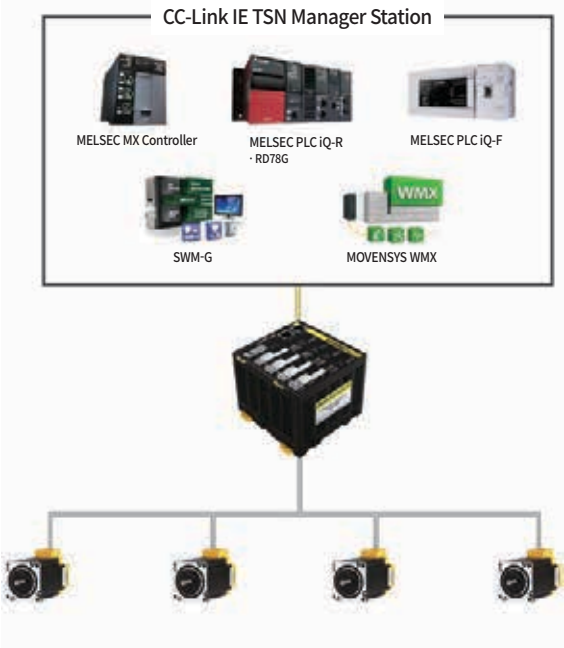
Ezi-SERVO® CC-LinkIE TSN 4X

Closed Loop Stepping System



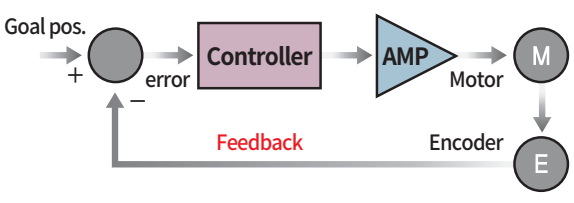
CC-Link IE TSN-compatible Motion Control

Ezi-SERVO CC-Link IE TSN 4X is stepper motor control system using CC-Link IE TSN, high speed Ethernet (1 Gbps Full-Duplex) based industrial network.
Ezi-SERVO CC-Link IE TSN 4X employs CiA402 drive profile and supports Profile Position Mode (PP Mode), Homing Mode (HM Mode) and Cyclic Synchronous Position Mode (CSP Mode).



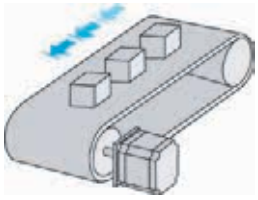
Closed-Loop System

Ezi-SERVO 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 to update the current position every 50 µs. It allows the Ezi-SERVO drive to compensate for the loss of position, ensuring accurate positioning. For example, due to a sudden load change, a conventional stepper motor and drive could lose a step but Ezi-SERVO automatically correct the position by encoder feedback.



Tuning Not Required

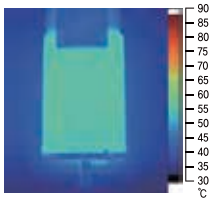
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed.
Ezi-SERVO employs the best characteristics of the stepper motor to eliminate the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



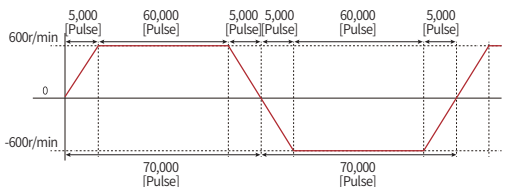
Low Heat Generation / Energy Savings

(Motor Current Control according to load)

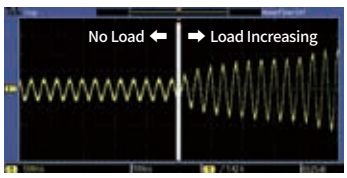
Ezi-SERVO automatically controls motor current according to load.
Ezi-SERVO reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

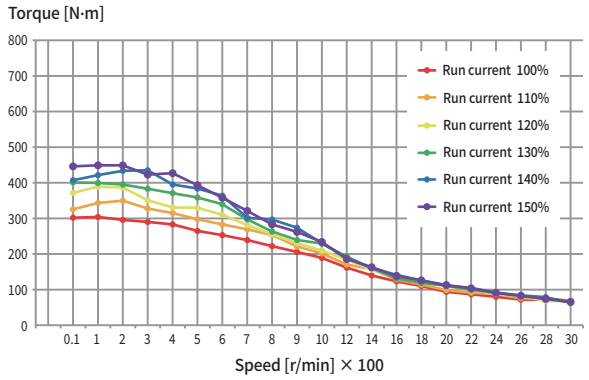


Motor Current
[Example of the Motor Current Control according to load]

High Torque

(Motor Voltage Increasing and Motor Current Setting)

Ezi-SERVO features an internal voltage boosting circuit that increases the motor supply voltage above the drive's input voltage. This elevated motor voltage enhances torque at high speeds and allows the run current to be set up to 150 %. As a result, torque is also improved at low speeds. Ezi-SERVO can achieve approximately 30 % torque improvement across the entire speed range.



※ Torque is improved by approximately 30 % at both low speeds.

Measurement Condition: Drive = Ezi-SERVOV-CT-4X-42L

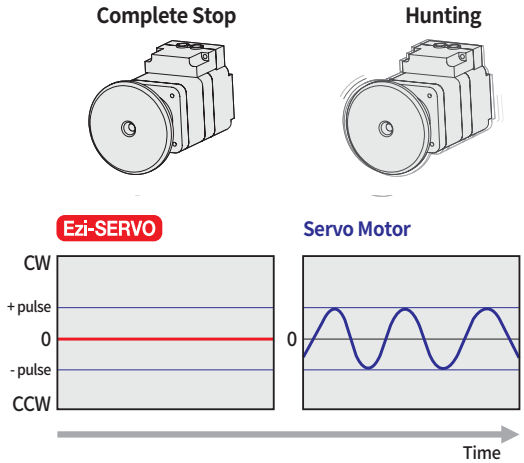
· Motor Voltage = 24 V DC

· Input Voltage = 24 V DC

No Hunting

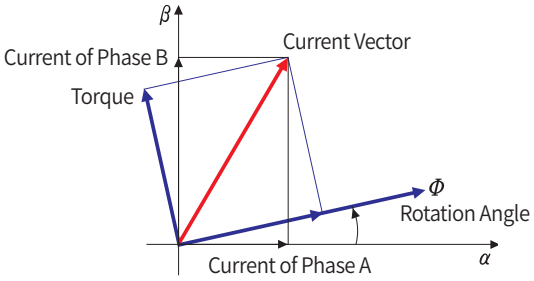
Ezi-SERVO utilizes the unique characteristics of stepper motors and locks itself into the desired target position, preventing vibration and eliminating Null Hunt which happens to the conventional servo systems.

This feature is especially useful in applications such as vision systems in which system oscillation and vibration could be a problem.



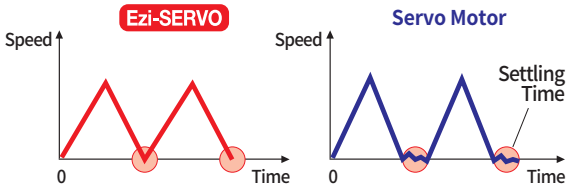
Smooth and Accurate Operation

Ezi-SERVO is a high-precision servo drive, using a high-resolution encoder with 20,000 pulse/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.



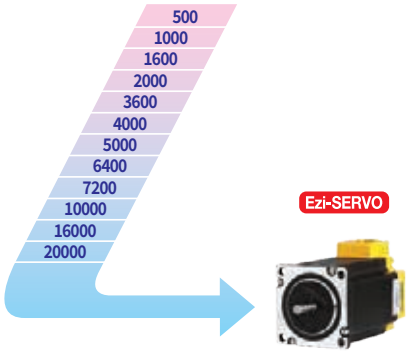
Fast Response

Similar to conventional stepper motors, Ezi-SERVO instantly synchronizes with command pulses providing fast positional response. Ezi-SERVO is the optimum 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.



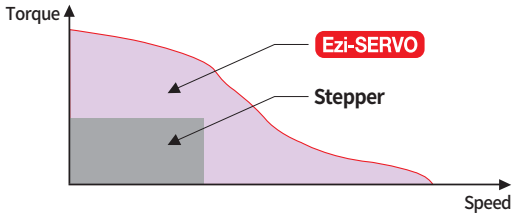
High Resolution

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



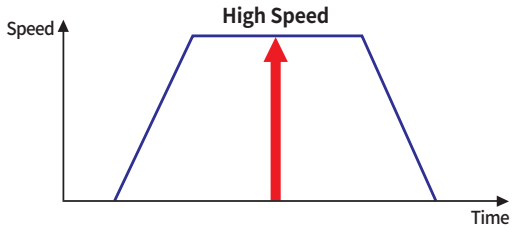
High Torque / Continuous Operation

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



High Speed

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



Product Lineup Enhancement

Ezi-SERVO CC-Link IE TSN 4X offers two motor types: Solid Shaft and Hollow Shaft. Solid Shaft motors are general-purpose motors suitable for a wide variety of industrial applications and are available in three configurations: standard, with a brake option, or with a gearbox option. Hollow Shaft motors feature a through-bore shaft for cable and air tube routing. This design saves wiring space, enables compact and lightweight machine designs, and increases design flexibility.

Motor Flange Size	Solid Shaft Motor			Hollow Shaft Motor (Inner Dia. mm)
	Standard	Brake Option	Gearhead Option	
20 mm	O	-	-	O (Ø3)
28 mm	O	-	-	O (Ø6)
35 mm	O	-	-	O (Ø8)
42 mm	O	O	O	O (Ø8)
56 mm	O	O	O	O (Ø12)
60 mm	O	O	O	-

[Applications of Hollow Shaft Motors]

Optical Instrument	Cable Feed-Through	Dispensing System
		

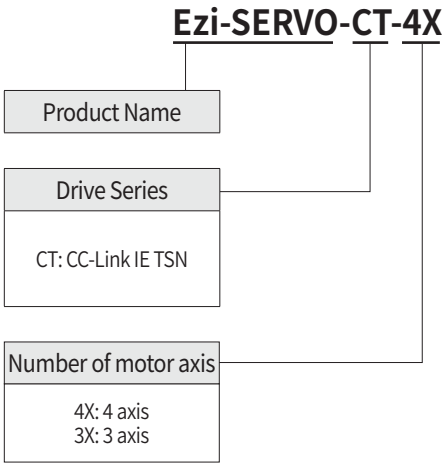
Advantages over Open-Loop Stepper Systems

1. Reliable Positioning Control Control without loss of synchronism.
2. Excellent holding torque at standstill, and automatically recovering to the original position even after experiencing positioning error due to external forces, such as mechanical vibration or vertical positional holding.
3. Ezi-SERVO utilizes 100 % of the full range of rated motor torque, contrary to a conventional open-loop stepper drive that can use up to 50 % of the rated motor torque due to the loss of synchronism.
4. Capability to operate at high speed due to load-dependent current control, open-loop stepper drives use a constant current control at all speed ranges without considering load variations. (Max. Speed : 3,000 r/min)

Advantages over Servo Motor Controller

1. No gain tuning. (Automatic gain adjustment in response to a load change)
2. Maintains the stable holding position without oscillation after completion of positioning.
3. Fast positioning due to the independent control by on-board MCU.
4. Continuous operation during rapid short-stroke movement due to instantaneous positioning.

Ezi-SERVO CC-Link IE TSN 4X Part Numbering



※ Ezi-SERVO CC-Link IE TSN 4X can connect up to 4 motors to one drive. Standard motors, motors with brake, and motors with gearbox can be connected, and different types of motors can be connected to each axis.

Standard Combination : Solid Shaft Motor

Motor Model Number
EzM2-20M-F
EzM2-20L-F
EzM2-28S-D
EzM2-28SM-D
EzM2-28M-D
EzM2-28MM-D
EzM2-28L-D
EzM2-28LM-D
EzM2-35M-D
EzM2-35MM-D
EzM2-35L-D
EzM2-35LM-D
EzM2-42S-A
EzM2-42S-B
EzM2-42M-A
EzM2-42M-B
EzM2-42L-A
EzM2-42L-B
EzM2-42XL-A
EzM2-42XL-B

Motor Model Number
EzM2-56S-A
EzM2-56S-B
EzM2-56M-A
EzM2-56M-B
EzM2-56L-A
EzM2-56L-B
EzM2-60S-A
EzM2-60S-B
EzM2-60M-A
EzM2-60M-B
EzM2-60L-A
EzM2-60L-B

※ When places an order for Stopper type 28 mm, 35 mm motor, please write “M” additionally after motor length of unit part number.
(e.g., Ezi-SERVO-CT-4X-28LM-D, Ezi-SERVO-CT-4X-35LM-D)

Combination with Brake

Motor Model Number
EzM2-42S-A-BK
EzM2-42S-B-BK
EzM2-42M-A-BK
EzM2-42M-B-BK
EzM2-42L-A-BK
EzM2-42L-B-BK
EzM2-42XL-A-BK
EzM2-42XL-B-BK
EzM2-56S-A-BK
EzM2-56S-B-BK
EzM2-56M-A-BK
EzM2-56M-B-BK
EzM2-56L-A-BK
EzM2-56L-B-BK
EzM2-60S-A-BK
EzM2-60S-B-BK
EzM2-60M-A-BK
EzM2-60M-B-BK
EzM2-60L-A-BK
EzM2-60L-B-BK

Standard Combination : Hollow Shaft Motor

Motor Model Number
HSE-P20M-F
HSE-P20L-F
HSE-P28SM-D
HSE-P28MM-D
HSE-P35MM-D
HSE-P35LM-D
HSE-P42S-A
HSE-P42S-B
HSE-P42L-A
HSE-P42L-B
HSE-P56S-A
HSE-P56S-B
HSE-P56M-A
HSE-P56M-B

Combination with Gearbox

Motor Model Number	Gear Ratio
EzM2-42S-A-PN3	1:3
EzM2-42S-B-PN3	
EzM2-42S-A-PN5	1:5
EzM2-42S-B-PN5	
EzM2-42S-A-PN8	1:8
EzM2-42S-B-PN8	
EzM2-42S-A-PN10	1:10
EzM2-42S-B-PN10	
EzM2-42S-A-PN15	1:15
EzM2-42S-B-PN15	
EzM2-42S-A-PN25	1:25
EzM2-42S-B-PN25	
EzM2-42S-A-PN40	1:40
EzM2-42S-B-PN40	
EzM2-42S-A-PN50	1:50
EzM2-42S-B-PN50	
EzM2-42M-A-PN3	1:3
EzM2-42M-B-PN3	
EzM2-42M-A-PN5	1:5
EzM2-42M-B-PN5	
EzM2-42M-A-PN8	1:8
EzM2-42M-B-PN8	
EzM2-42M-A-PN10	1:10
EzM2-42M-B-PN10	
EzM2-42M-A-PN15	1:15
EzM2-42M-B-PN15	
EzM2-42M-A-PN25	1:25
EzM2-42M-B-PN25	
EzM2-42M-A-PN40	1:40
EzM2-42M-B-PN40	
EzM2-42M-A-PN50	1:50
EzM2-42M-B-PN50	
EzM2-42L-A-PN3	1:3
EzM2-42L-B-PN3	
EzM2-42L-A-PN5	1:5
EzM2-42L-B-PN5	
EzM2-42L-A-PN8	1:8
EzM2-42L-B-PN8	
EzM2-42L-A-PN10	1:10
EzM2-42L-B-PN10	
EzM2-42L-A-PN15	1:15
EzM2-42L-B-PN15	
EzM2-42L-A-PN25	1:25
EzM2-42L-B-PN25	
EzM2-42L-A-PN40	1:40
EzM2-42L-B-PN40	
EzM2-42L-A-PN50	1:50
EzM2-42L-B-PN50	
EzM2-42XL-A-PN3	1:3
EzM2-42XL-B-PN3	
EzM2-42XL-A-PN5	1:5
EzM2-42XL-B-PN5	
EzM2-42XL-A-PN8	1:8
EzM2-42XL-B-PN8	
EzM2-42XL-A-PN10	1:10
EzM2-42XL-B-PN10	
EzM2-42XL-A-PN15	1:15
EzM2-42XL-B-PN15	
EzM2-42XL-A-PN25	1:25
EzM2-42XL-B-PN25	
EzM2-42XL-A-PN40	1:40
EzM2-42XL-B-PN40	
EzM2-42XL-A-PN50	1:50
EzM2-42XL-B-PN50	

Motor Model Number	Gear Ratio
EzM2-56S-A-PN3	1:3
EzM2-56S-B-PN3	
EzM2-56S-A-PN5	1:5
EzM2-56S-B-PN5	
EzM2-56S-A-PN8	1:8
EzM2-56S-B-PN8	
EzM2-56S-A-PN10	1:10
EzM2-56S-B-PN10	
EzM2-56S-A-PN15	1:15
EzM2-56S-B-PN15	
EzM2-56S-A-PN25	1:25
EzM2-56S-B-PN25	
EzM2-56S-A-PN40	1:40
EzM2-56S-B-PN40	
EzM2-56S-A-PN50	1:50
EzM2-56S-B-PN50	
EzM2-56M-A-PN3	1:3
EzM2-56M-B-PN3	
EzM2-56M-A-PN5	1:5
EzM2-56M-B-PN5	
EzM2-56M-A-PN8	1:8
EzM2-56M-B-PN8	
EzM2-56M-A-PN10	1:10
EzM2-56M-B-PN10	
EzM2-56M-A-PN15	1:15
EzM2-56M-B-PN15	
EzM2-56M-A-PN25	1:25
EzM2-56M-B-PN25	
EzM2-56M-A-PN40	1:40
EzM2-56M-B-PN40	
EzM2-56M-A-PN50	1:50
EzM2-56M-B-PN50	
EzM2-56L-A-PN3	1:3
EzM2-56L-B-PN3	
EzM2-56L-A-PN5	1:5
EzM2-56L-B-PN5	
EzM2-56L-A-PN8	1:8
EzM2-56L-B-PN8	
EzM2-56L-A-PN10	1:10
EzM2-56L-B-PN10	
EzM2-56L-A-PN15	1:15
EzM2-56L-B-PN15	
EzM2-56L-A-PN25	1:25
EzM2-56L-B-PN25	
EzM2-56L-A-PN40	1:40
EzM2-56L-B-PN40	
EzM2-56L-A-PN50	1:50
EzM2-56L-B-PN50	

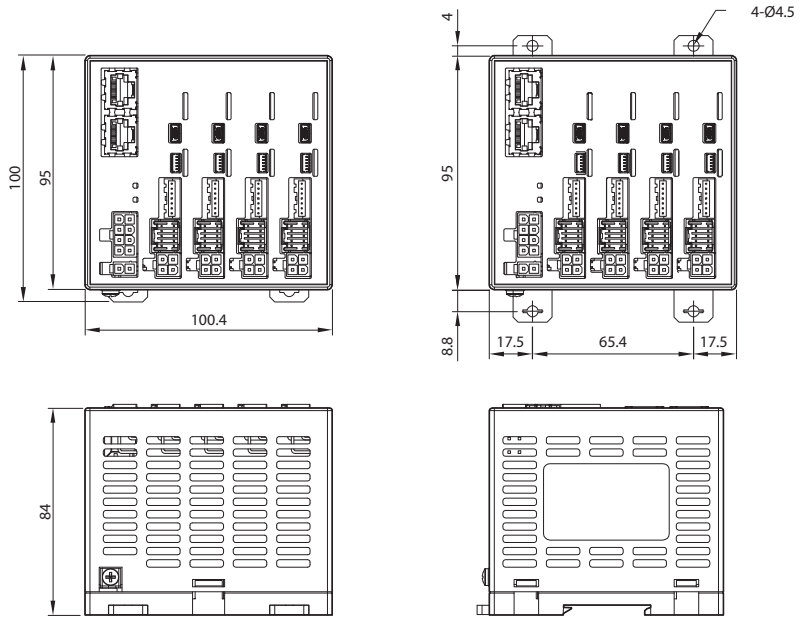
Motor Model Number	Gear Ratio
EzM2-60S-A-PN3	1:3
EzM2-60S-B-PN3	
EzM2-60S-A-PN5	1:5
EzM2-60S-B-PN5	
EzM2-60S-A-PN8	1:8
EzM2-60S-B-PN8	
EzM2-60S-A-PN10	1:10
EzM2-60S-B-PN10	
EzM2-60S-A-PN15	1:15
EzM2-60S-B-PN15	
EzM2-60S-A-PN25	1:25
EzM2-60S-B-PN25	
EzM2-60S-A-PN40	1:40
EzM2-60S-B-PN40	
EzM2-60S-A-PN50	1:50
EzM2-60S-B-PN50	
EzM2-60M-A-PN3	1:3
EzM2-60M-B-PN3	
EzM2-60M-A-PN5	1:5
EzM2-60M-B-PN5	
EzM2-60M-A-PN8	1:8
EzM2-60M-B-PN8	
EzM2-60M-A-PN10	1:10
EzM2-60M-B-PN10	
EzM2-60M-A-PN15	1:15
EzM2-60M-B-PN15	
EzM2-60M-A-PN25	1:25
EzM2-60M-B-PN25	
EzM2-60M-A-PN40	1:40
EzM2-60M-B-PN40	
EzM2-60M-A-PN50	1:50
EzM2-60M-B-PN50	
EzM2-60L-A-PN3	1:3
EzM2-60L-B-PN3	
EzM2-60L-A-PN5	1:5
EzM2-60L-B-PN5	
EzM2-60L-A-PN8	1:8
EzM2-60L-B-PN8	
EzM2-60L-A-PN10	1:10
EzM2-60L-B-PN10	
EzM2-60L-A-PN15	1:15
EzM2-60L-B-PN15	
EzM2-60L-A-PN25	1:25
EzM2-60L-B-PN25	
EzM2-60L-A-PN40	1:40
EzM2-60L-B-PN40	
EzM2-60L-A-PN50	1:50
EzM2-60L-B-PN50	

Specifications of Drive

Motor Model		EzM2-20 HSE-P20 series	EzM2-28 HSE-P28 series	EzM2-35 HSE-P35 series	EzM2-42 HSE-P42 series	EzM2-56 HSE-P56 series	EzM2-60 series
Drive Model		**EzS2-CT-4X, 3X series**					
Input Voltage		24 V DC ± 10 %					
Control Method		Closed loop control with 32bit MCU					
Current Consumption		Max. 500 mA/axis (Except motor current)					
Operating Condition	Ambient Temperature	· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C					
	Humidity	· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage : 10 ~ 90 % RH (Non-Condensing)					
	Vib. Resist.	0.5 g					
Function	Rotation Speed	0 ~ 3,000 r/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 Type	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, Encoder Connection Error, Main Power Voltage Error, In-Position Error, ROM Error, Position Overflow Error					
	LED Display	Power status, In-Position status, Servo On status, Alarm status					
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B					
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode(CSP), Profile Position Mode(PP), Homing Mode(HM)					
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)					
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN) for each axis					
	Output Signals	1 brake signal output for each axis					

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

Dimensions of Drive [mm]



※ Can be installed on DIN Rail. (35 mm)
※ Outer dimension of Ezi-SERVO CC-Link IE TSN 3X drive is the same as Ezi-SERVO CC-Link IE TSN 4X drive.

Specifications of Solid Shaft Motor

MODEL				EzM2-20 series		EzM2-28 series			EzM2-35 series		EzM2-42 series			
			UNIT	20M	20L	28S	28M	28L	35M	35L	42S	42M	42L	42XL
Drive method			-	Bipolar										
Number of phase			-	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·cm²	2.5	3.3	9.0	13	18	15	20	35	54	77	114
Motor Weight			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	3 mm	N	18	18	30	30	30	22	22	22	22	22	22
		8 mm		30	30	38	38	38	26	26	26	26	26	26
		13 mm		-	-	53	53	53	33	33	33	33	33	33
		18 mm		-	-	-	-	-	46	46	46	46	46	46
Permissible Axial Load			N	Must be less than the motor weight										
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)										
Insulation Class			-	Class B (130 °C)										
Operating Temperature			°C	0 ~ 55										

MODEL				EzM2-56 series			EzM2-60 series		
			UNIT	56S	56M	56L	60S	60M	60L
Drive method			-	Bipolar					
Number of phase			-	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·cm²	180	280	520	240	490	690
Motor Weight			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	3 mm	N	52	52	52	70	70	70
		8 mm		65	65	65	87	87	87
		13 mm		85	85	85	114	114	114
		18 mm		123	123	123	165	165	165
Permissible Axial Load			N	Must be less than the motor weight					
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)					
Insulation Class			-	Class B (130 °C)					
Operating Temperature			°C	0 ~ 55					

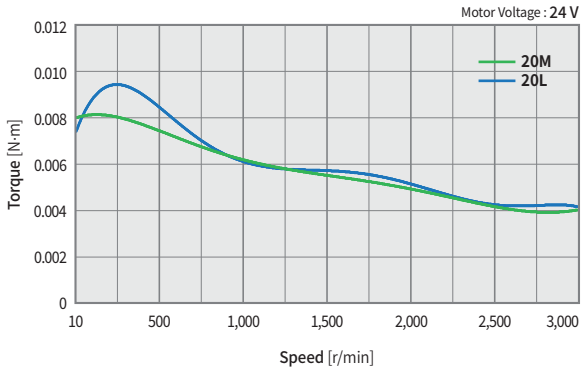
Specifications of Hollow Shaft Motor

MODEL			UNIT	HSE-P20 series		HSE-P28 series		HSE-P35 series	
				P20M	P20L	P28S	P28M	P35M	P35L
Drive method			-	Bipolar					
Number of phase			-	2 Phase					
Current per Phase			A/Phase	0.5	0.5	1.0	1.4	1.2	1.2
Maximum Holding Torque			N·m	0.014	0.02	0.053	0.14	0.18	0.34
Rotor Inertia			g·cm²	1.6	2.9	9	12	20	24
Motor Weight			kg	0.04	0.06	0.1	0.15	0.21	0.23
Length (L)			mm	28.7	39.8	32.2	45.2	37.3	45.3
Permissible Radial Load	Distance From End of Shaft	3 mm	N	18	18	38	38	22	22
		8 mm		30	30	53	53	26	26
		13 mm		-	-	-	-	33	33
		18 mm		-	-	-	-	46	46
Permissible Axial Load			N	Must be less than the motor weight					
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)					
Insulation Class			-	Class B (130 °C)					
Operating Temperature			°C	0 ~ 55					

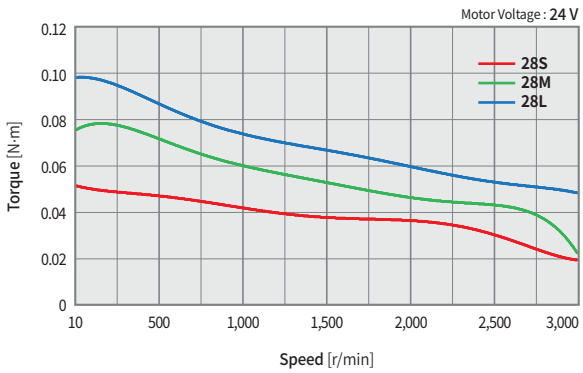
MODEL			UNIT	HSE-P42 series		HSE-P56 series	
				P42S	P42L	P56S	P56M
Drive method			-	Bipolar			
Number of phase			-	2 Phase			
Current per Phase			A/Phase	1.0	2.5	2.6	2.5
Maximum Holding Torque			N·m	0.31	0.56	1.0	1.5
Rotor Inertia			g·cm²	35	77	180	350
Motor Weight			kg	0.24	0.36	0.52	0.85
Length (L)			mm	34.4	48.4	45.7	64.7
Permissible Radial Load	Distance From End of Shaft	3 mm	N	22	22	52	52
		8 mm		26	26	65	65
		13 mm		33	33	85	85
		18 mm		46	46	123	123
Permissible Axial Load			N	Must be less than the motor weight			
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)			
Insulation Class			-	Class B (130 °C)			
Operating Temperature			°C	0 ~ 55			

Torque Characteristics of Solid Shaft Motor

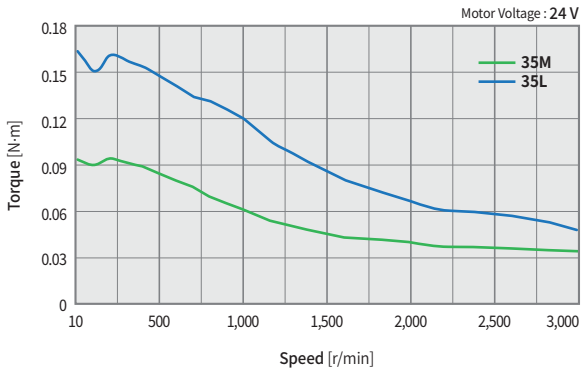
Ezi-SERVO-CT-4X-20 series



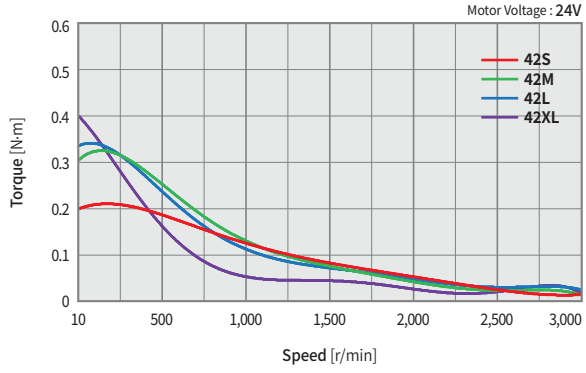
Ezi-SERVO-CT-4X-28 series



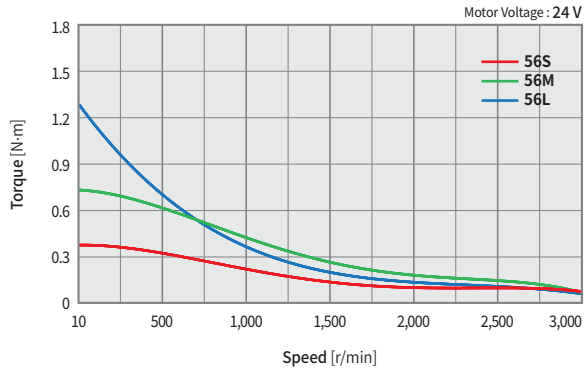
Ezi-SERVO-CT-4X-35 series



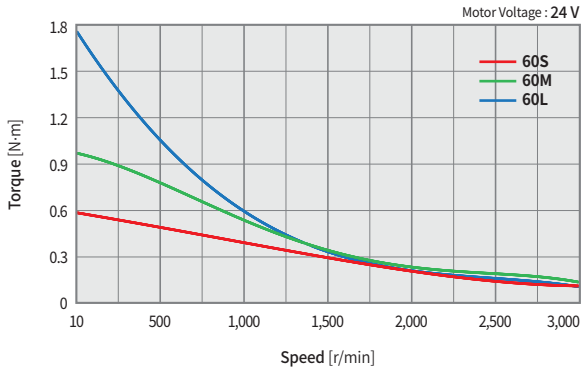
Ezi-SERVO-CT-4X-42 series



Ezi-SERVO-CT-4X-56 series

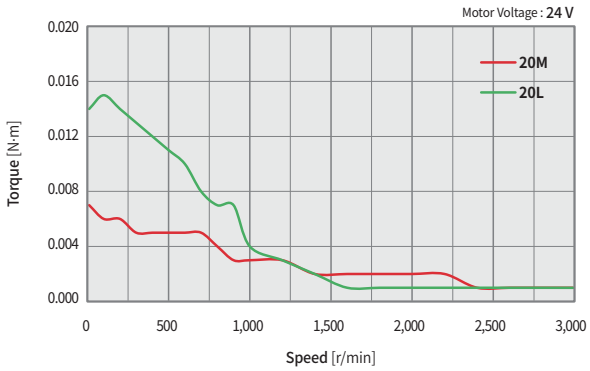


Ezi-SERVO-CT-4X-60 series

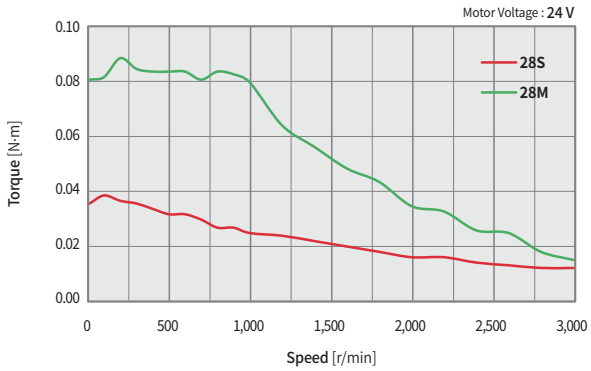


Torque Characteristics of Hollow Shaft Motor

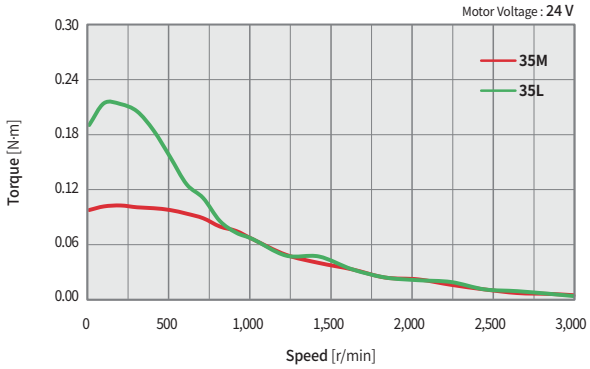
Ezi-SERVO-CT-4X-HSP20 series



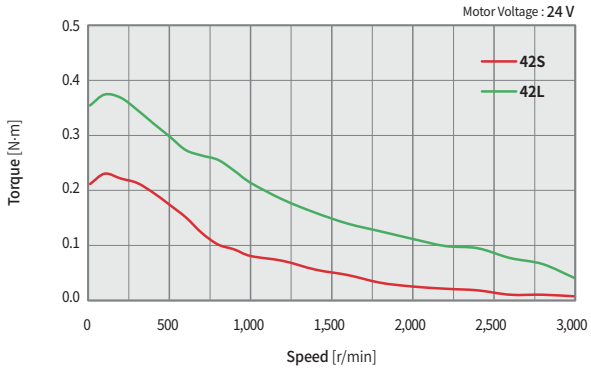
Ezi-SERVO-CT-4X-HSP28 series



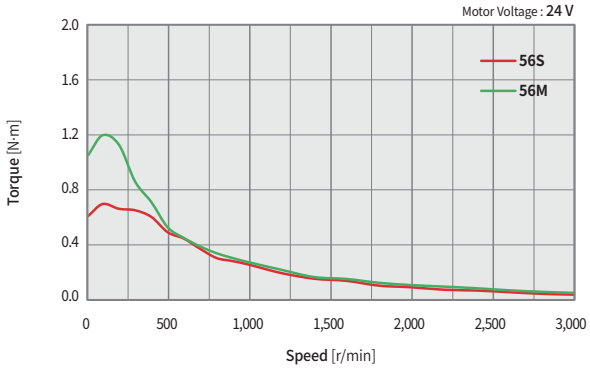
Ezi-SERVO-CT-4X-HSP35 series



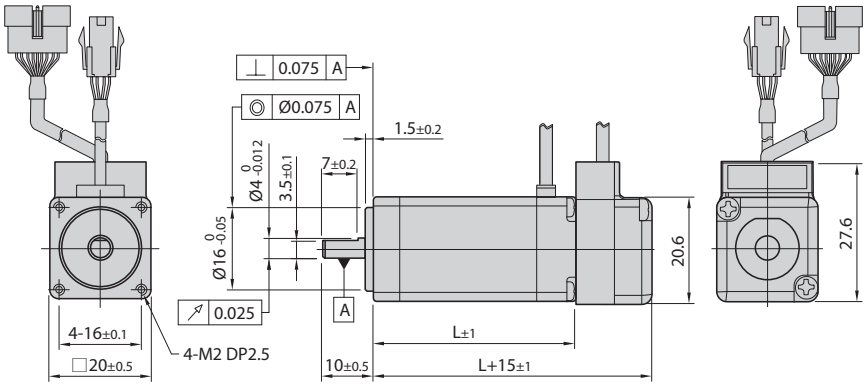
Ezi-SERVO-CT-4X-HSP42 series



Ezi-SERVO-CT-4X-HSP56 series

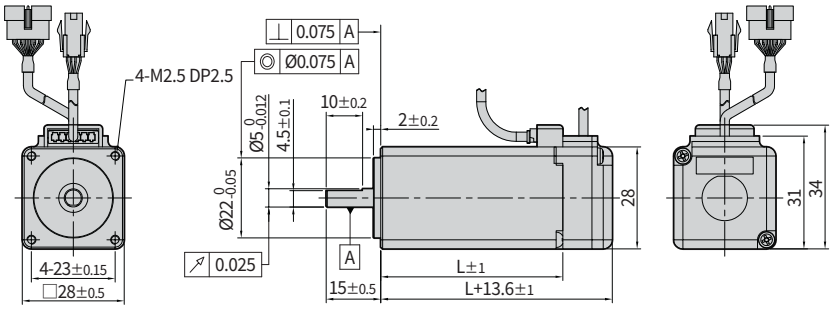


Dimensions of Solid Shaft Motor [mm]



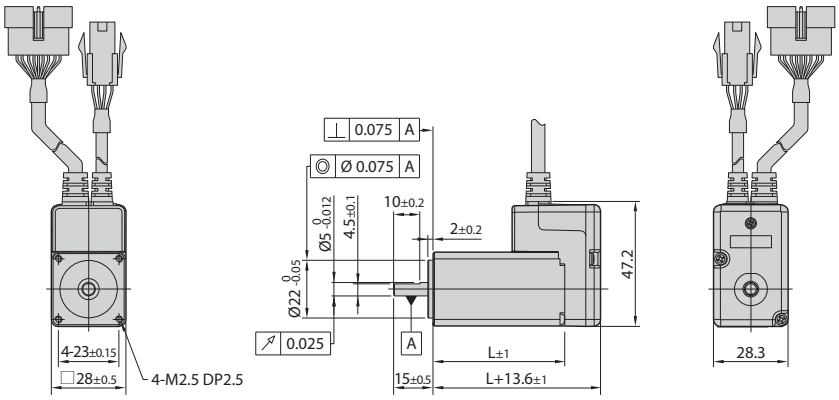
20 mm

Model name	Length (L)
EzM2-20M	27.3
EzM2-20L	37.6



28 mm

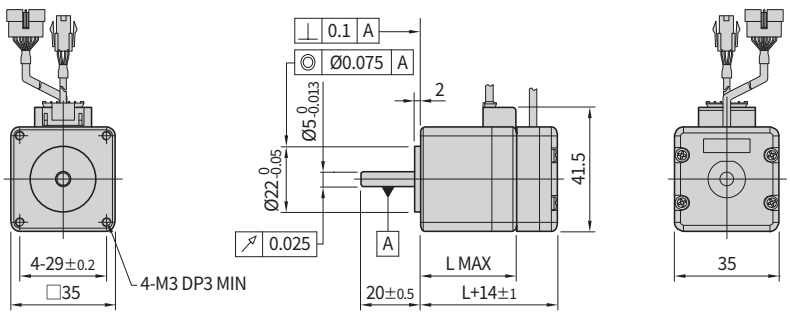
Model name	Length (L)
EzM2-28S	32
EzM2-28M	45
EzM2-28L	50



28 mm
(Stopper type)

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

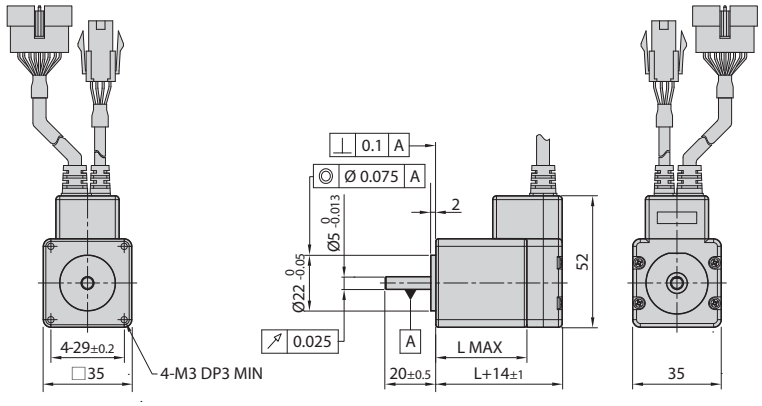
※ When ordering 28 mm Stopper type of motor, please add“M”after standard motor model number.



35 mm

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

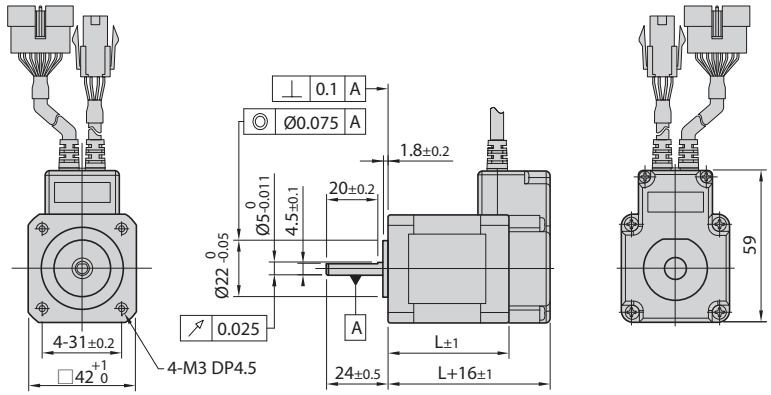
Dimensions of Solid Shaft Motor [mm]



35 mm
(Stopper type)

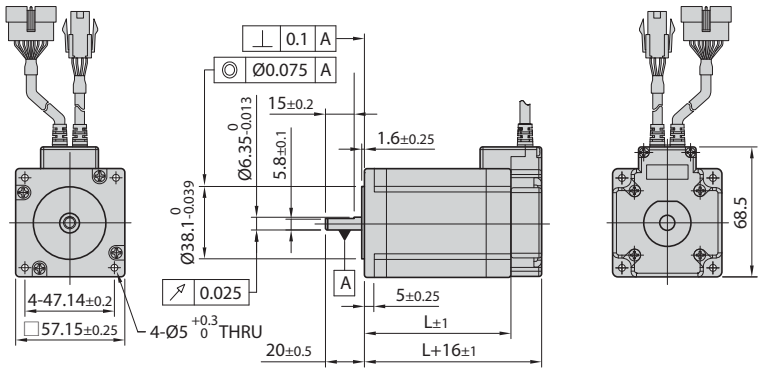
Model name	Length (L)
EzM2-35MM	32
EzM2-35LM	36

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



42 mm

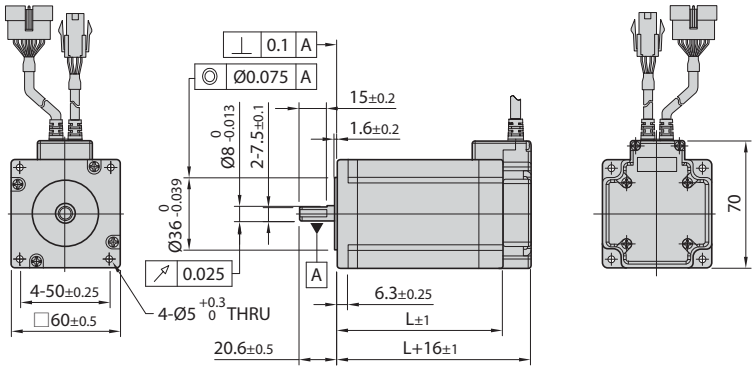
Model name	Length (L)
EzM2-42S	34
EzM2-42M	40
EzM2-42L	48
EzM2-42XL	60



56 mm

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

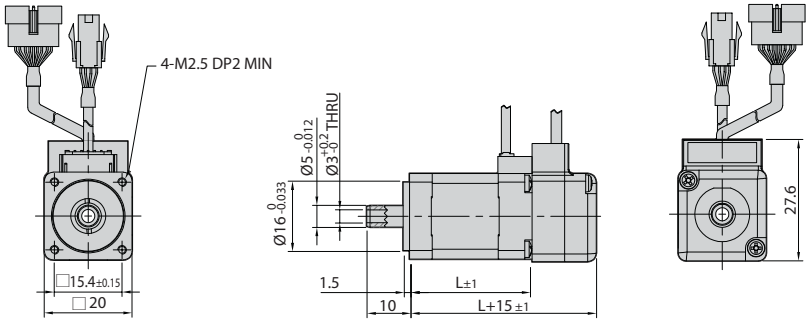
※ There are 2 kinds of size of front shaft diameter for EzM2-56 series as Ø 6.35 and Ø 8.0



60 mm

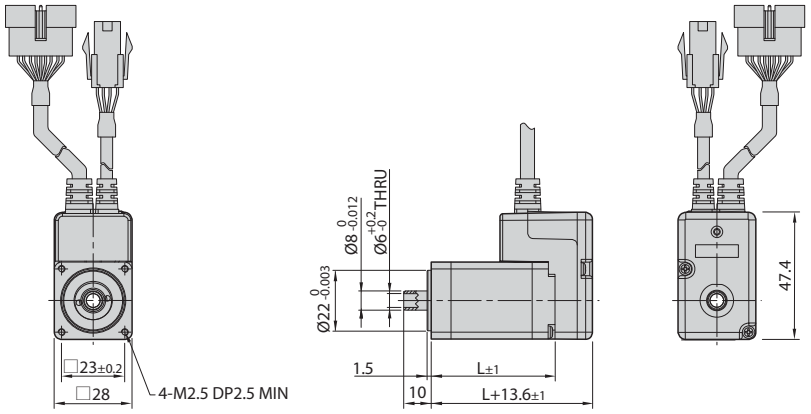
Model name	Length (L)
EzM2-60S	47
EzM2-60M	56
EzM2-60L	85

Dimensions of Hollow Shaft Motor [mm]



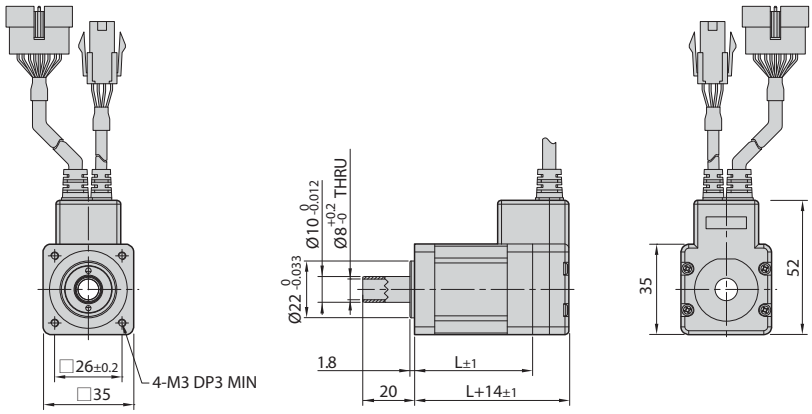
20 mm

Model name	Length (L)
HSE-P20M	28.7
HSE-P20L	39.2



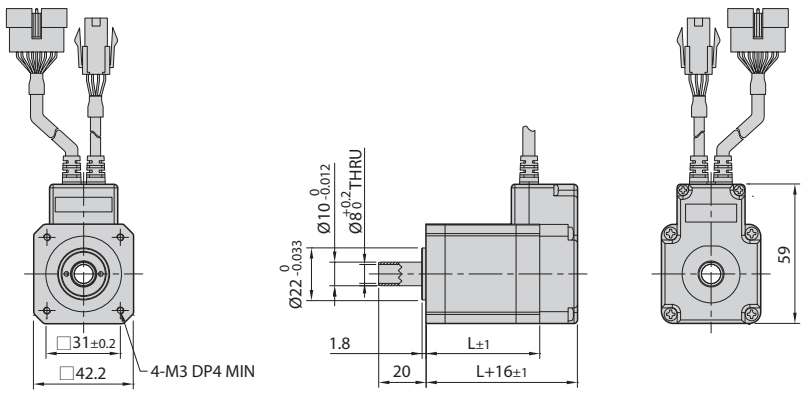
28 mm

Model name	Length (L)
HSE-P28SM	32.2
HSE-P28MM	45.2



35 mm

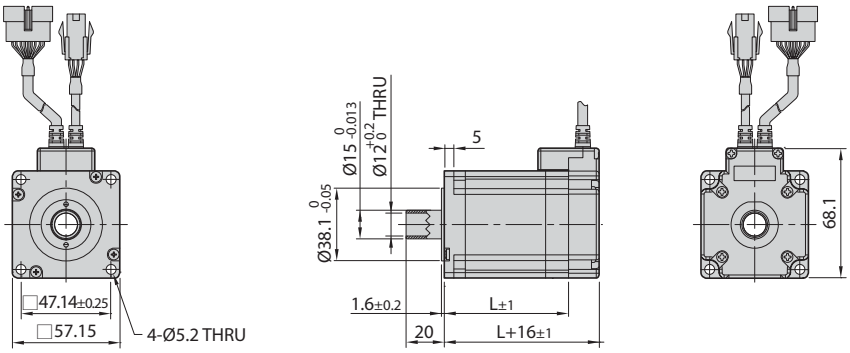
Model name	Length (L)
HSE-P35MM	37.3
HSE-P35LM	45.3



42 mm

Model name	Length (L)
HSE-P42S	34.4
HSE-P42L	48.4

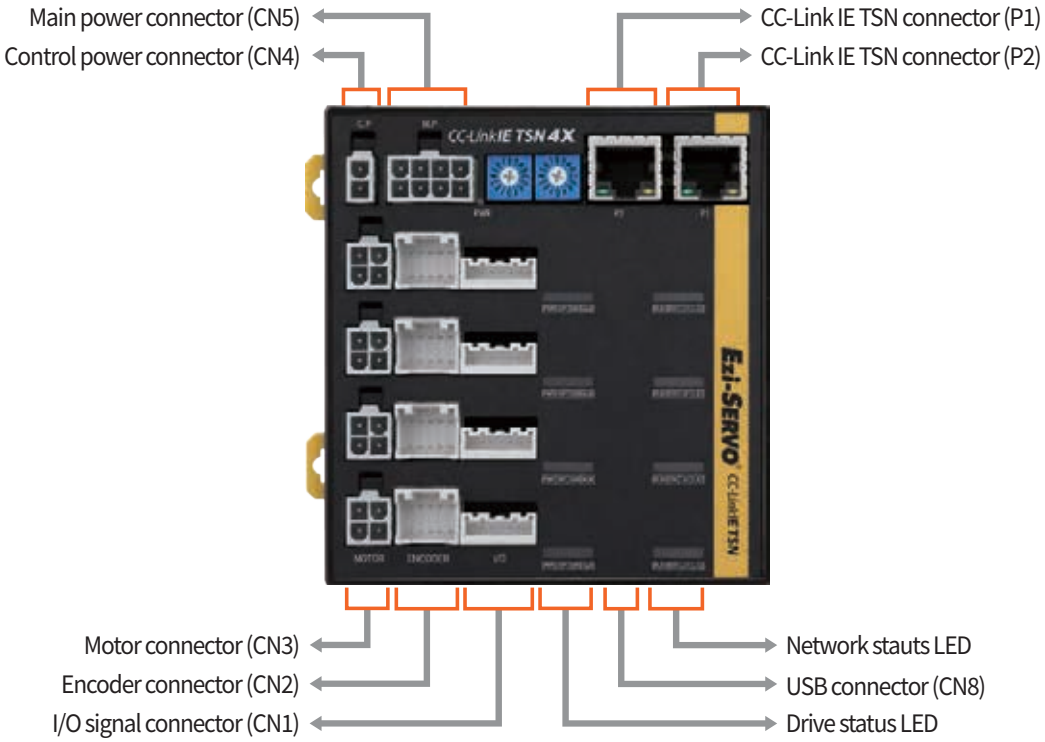
Dimensions of Hollow Shaft Motor [mm]

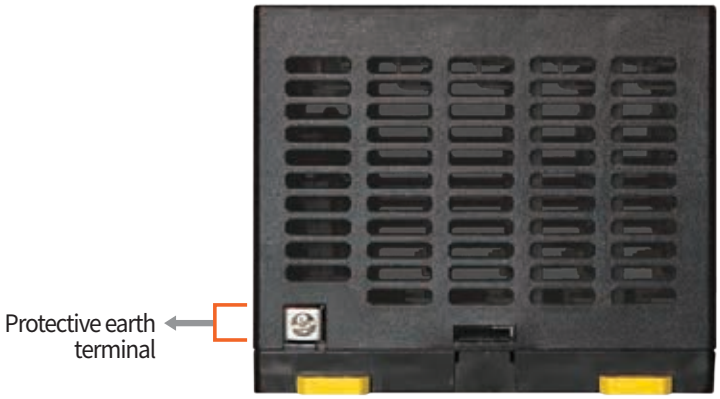


56 *mm*

Model name	Length (L)
HSE-P56S	45.7
HSE-P56M	64.7

Settings and Operation





※ Basic configuration of 3X drive is the same as 4X and only difference is number of axis.

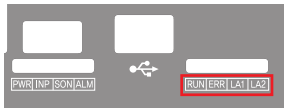
1. Network Status LED

LED indicates communication status of CC-Link IE TSN.

Indicator	Color	Status	Description
RUN	Green	OFF	Power off
		Single Flash	Not connected to master
		Double Flash	Pre-operational state
		Blinking	Safe-operational state
		Interval Off	Operational state

Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		Blinking	Drive error
		Single Flash	CC-Link IE TSN communication error
		Double Flash	IP address conflict error

Indicator	Color	Status	Description
LINK1/ LINK2	Green	OFF	Link inactive
		ON	Link active



2. Drive Status LED

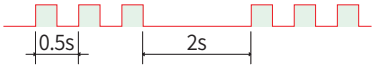
LED informs operation status of the drive.

Indicator	Color	Function	Description
PWR	Green	Power Input Indicator	Lights up when power is supplied.
INP	Yellow	Complete Positioning Motion	LED is turned on when Positioning error reaches within the preset pulse after the positioning is complete.
SON	Orange	Servo ON / OFF Indicator	Lights up when Servo is on; turns off when Servo is off.
ALM	Red	Alarm Indicator	Blinks repeatedly when an error occurs.

List of error types by the number of 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 3,000 r/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 °C
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
9	Main Power Voltage Error	Main supply voltage is approximately below 18 V
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

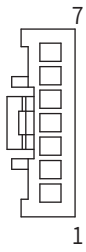
*1: Limit value depends on motor model. (Refer to the Manual)
*2: The default setting value is 180 °, and it can be changed by parameter. (Refer to the Manual)
*3: Voltage limit of Back-EMF depends on motor model. (Refer to the Manual)
※ Please refer to user Manual for the details of protection functions.



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

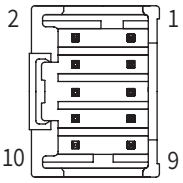
3. I/O Signal Connector (CN1)

No.	Function	I/O
1	EXT_24 V DC	Input
2	EXT_GND	Input
3	LIMIT+	Input
4	LIMIT-	Input
5	ORIGIN	Input
6	BRAKE+	Output
7	BRAKE-	Output



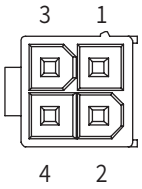
4. Encoder Connector (CN2)

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



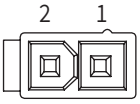
5. Motor Connector (CN3)

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



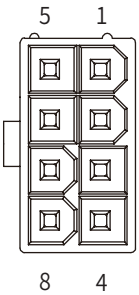
6. Control Power Connector (CN4)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input



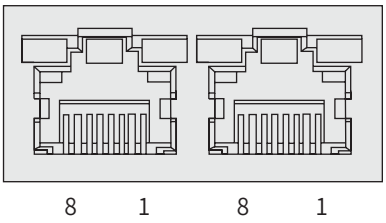
7. Main Power Connector (CN5)

No.	Function	I/O
1	24 V DC	Input
2	24 V DC	Input
3	24 V DC	Input
4	F.GND	----
5	GND	Input
6	GND	Input
7	GND	Input
8	F.GND	----

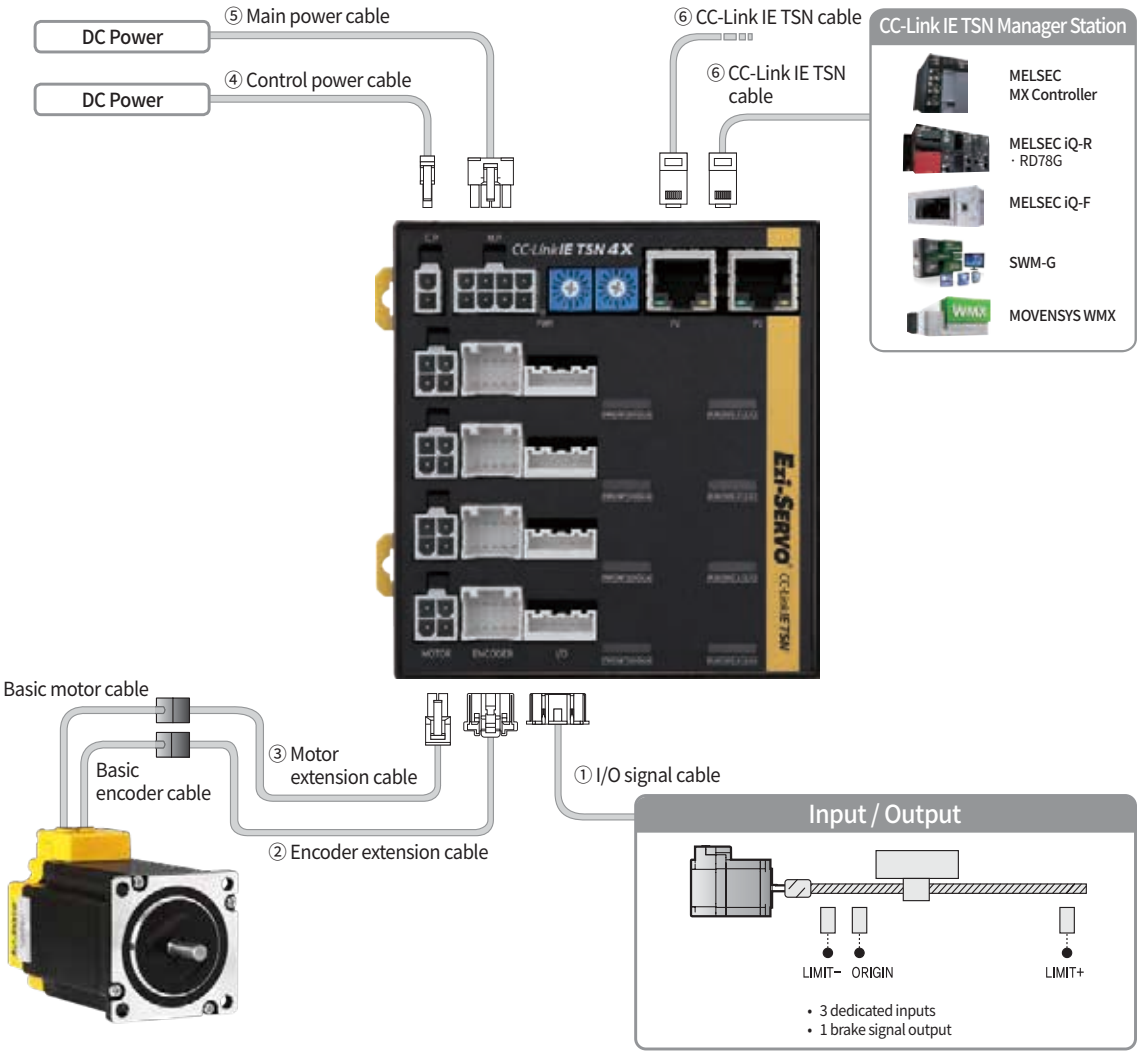


8. CC-Link IE TSN Connector (CN6, CN7)

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. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Encoder Extension Cable	20 m	
③ Motor Extension Cable	20 m	
④ Control Power Cable	2 m	
⑤ Main Power Cable	2 m	
⑥ CC-Link IE TSN Cable	100 m	
Basic Encoder Cable	0.3 m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3 m (Basic length)	

Basic configuration of 3X drive is the same as 4X and only difference is number of axis.

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Main Power (CN5)		Housing	5557-08R	MOLEX
		Terminal	5556T	
Control 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	
I/O Signal (CN1)		Housing	PAP-07V-S	JST
		Terminal	SPHD-001T-P0.5	

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

2. Options

① I/O Signal Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN 4X drive and other input / output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - I/O Device Connection	CECM-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CECM-S-002F	2		
	CECM-S-003F	3		
	CECM-S-005F	5		
	CECM-S-001M	1	Flexible Cable	
	CECM-S-002M	2		
	CECM-S-003M	3		
	CECM-S-005M	5		

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

② Encoder Extension Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN 4X drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Encoder Cable Connection	CSVO-E-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVO-E-002F	2		
	CSVO-E-003F	3		
	CSVO-E-005F	5		
	CSVO-E-001M	1	Flexible Cable	
	CSVO-E-002M	2		
	CSVO-E-003M	3		
	CSVO-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN 4X drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Motor Cable Connection	CSVO-M-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVO-M-002F	2		
	CSVO-M-003F	3		
	CSVO-M-005F	5		
	CSVO-M-001M	1	Flexible Cable	
	CSVO-M-002M	2		
	CSVO-M-003M	3		
	CSVO-M-005M	5		

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

④ Control Power Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN 4X drive and the control power.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Control Power Connection	CSVO-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CSVO-P-002F	2		
	CSVO-P-001M	1	Flexible Cable	
	CSVO-P-002M	2		

⑤ Main Power Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN 4X drive and the main power.

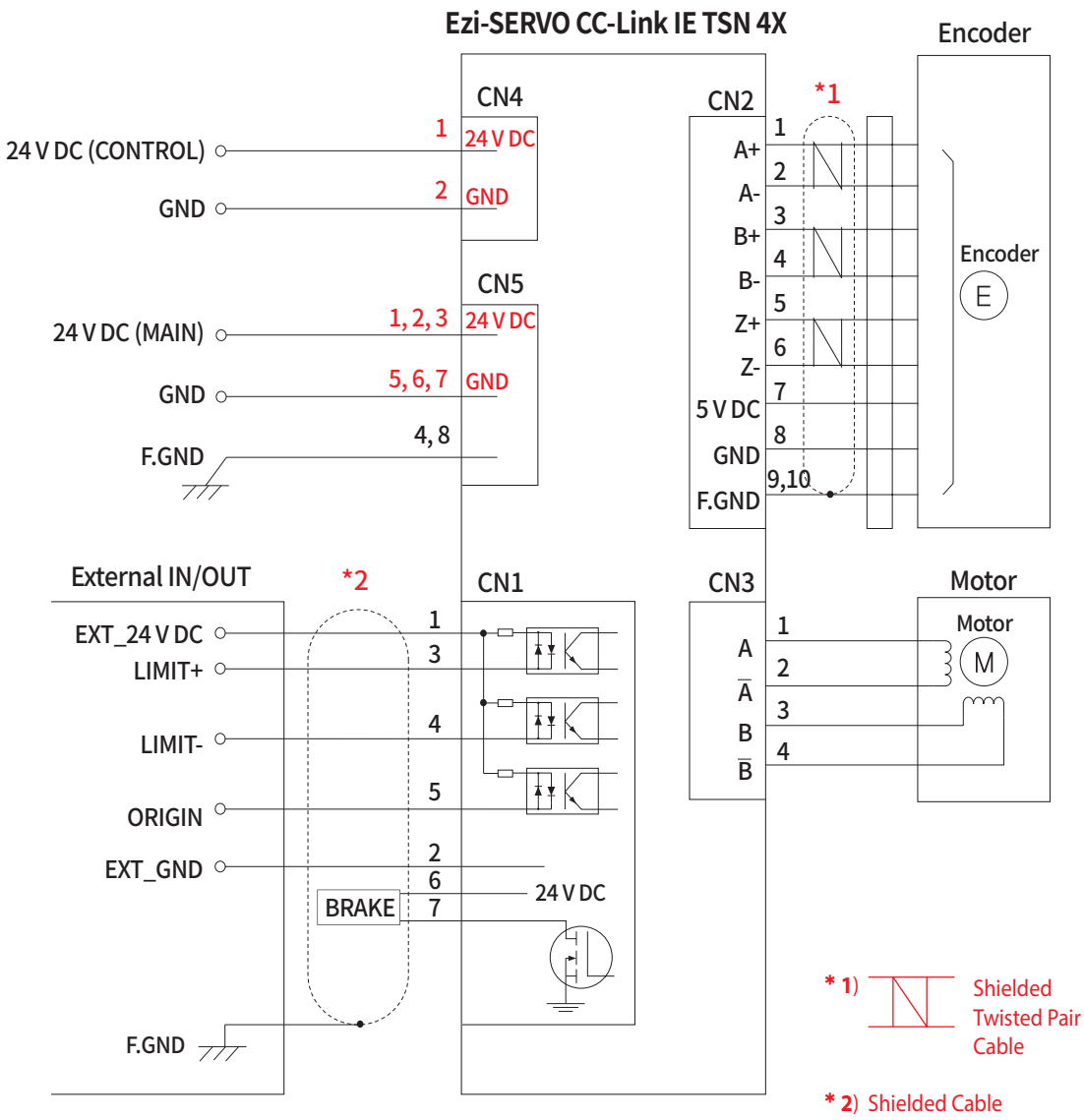
Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Main Power Cable Connection	CECM-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CECM-P-002F	2		
	CECM-P-001M	1	Flexible Cable	
	CECM-P-002M	2		

⑥ CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection	CGNR-CT-001F	1	• STP(Shielded Twisted Pair) Cable • Category 5e or higher • Max. Cable Length: 100 m • Fixed Cable
	CGNR-CT-002F	2	
	CGNR-CT-003F	3	
	CGNR-CT-005F	5	

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

External Wiring Diagram



※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

Ezi-SERVO®

Closed Loop Stepping System

CC-Link IE TSN ALL

- CC-Link IE TSN-compatible Closed Loop Stepper System
- CiA402 Drive Profile
- Motor + Drive Integrated
- Space Saving, Reduced Wiring
- Tuning Not Required, No Hunting
- High Resolution Encoder, Fast Response
- Low Heat Generation, High Torque



FASTECH

Fast Accurate Smooth Motion

Ezi-SERVO®

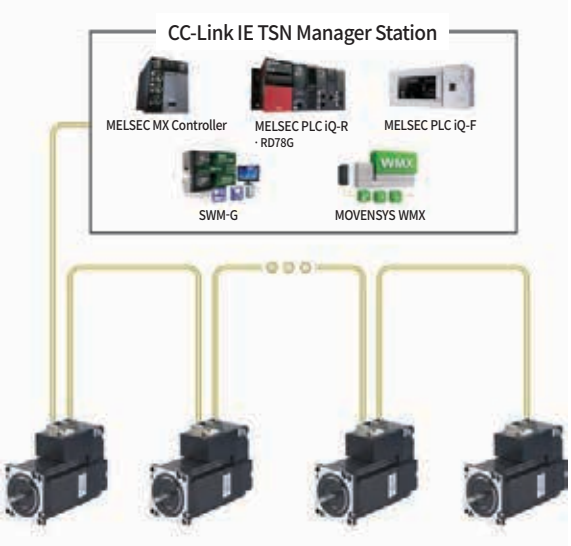
Closed Loop Stepping System

CC-LinkIE TSN ALL



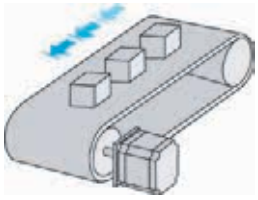
CC-Link IE TSN-compatible Motion Control

Ezi-SERVO CC-Link IE TSN ALL is stepper motor control system using CC-Link IE TSN, high speed Ethernet (1 Gbps Full-Duplex) based industrial network.
Ezi-SERVO CC-Link IE TSN ALL employs CiA402 drive profile and supports Profile Position Mode (PP Mode), Homing Mode (HM Mode) and Cyclic Synchronous Position Mode (CSP Mode).



Tuning Not Required

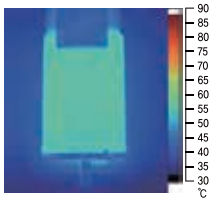
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed.
Ezi-SERVO employs the best characteristics of the stepper motor to eliminate the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



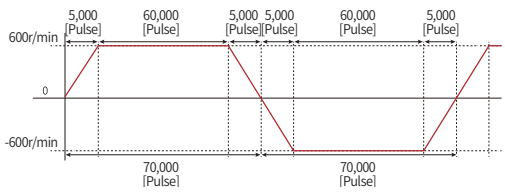
Low Heat Generation / Energy Savings

(Motor Current Control according to load)

Ezi-SERVO automatically controls motor current according to load.
Ezi-SERVO 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.



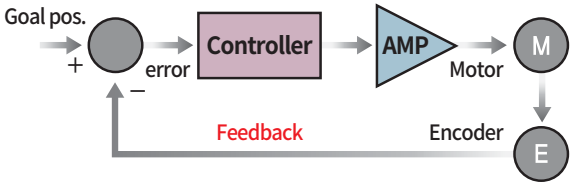
Motor temperature [Measured by Thermal Imaging Camera]

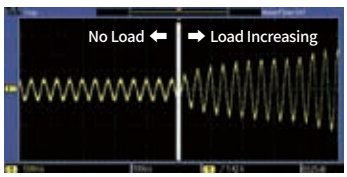


Condition to measure the motor temperature
[4 hours operation, Motor surface temperature saturation]

Closed-Loop System

Ezi-SERVO 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 to update the current position every 50 µs. It allows the Ezi-SERVO drive to compensate for the loss of position, ensuring accurate positioning. For example, due to a sudden load change, a conventional stepper motor and drive could lose a step but Ezi-SERVO automatically correct the position by encoder feedback.



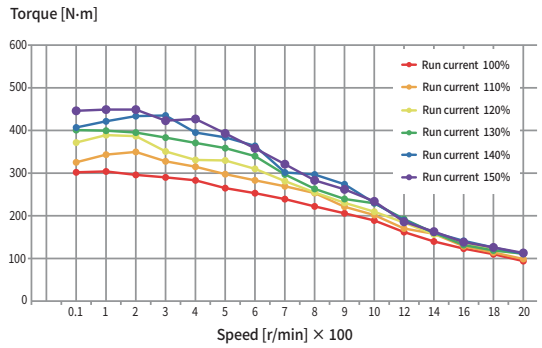


Motor Current
[Example of the Motor Current Control according to load]

High Torque

(Motor Current Setting)

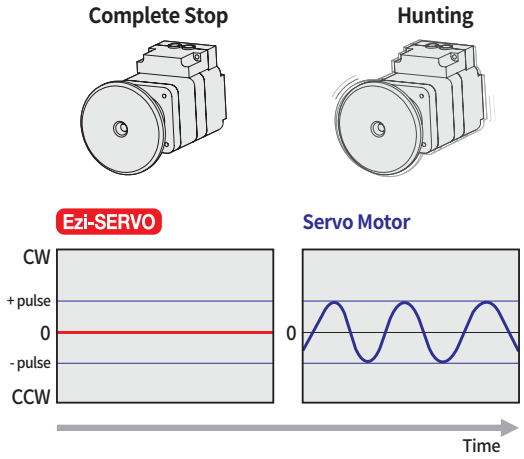
Ezi-SERVO features an internal voltage boosting circuit that increases the motor supply voltage above the drive's input voltage. This elevated motor voltage enhances torque at high speeds and allows the run current to be set up to 150 %. As a result, torque is also improved at low speeds. Ezi-SERVO can achieve approximately 30 % torque improvement across the entire speed range.



※ The torque at low speed is improved about 30 %
Measurement Conditions: Drive = Ezi-SERVO-CT-ALL-42L

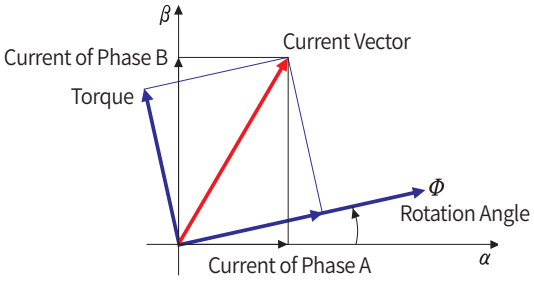
No Hunting

Ezi-SERVO utilizes the unique characteristics of stepper 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.



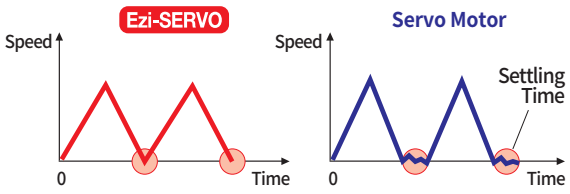
Smooth and Accurate Operation

Ezi-SERVO is a high-precision servo drive, using a high-resolution encoder with 20,000 pulse/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.



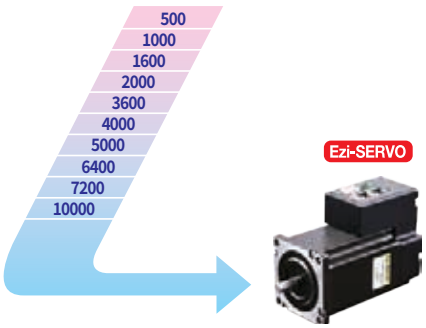
Fast Response

Similar to conventional stepper motors, Ezi-SERVO instantly synchronizes with command pulses providing fast positional response. Ezi-SERVO is the optimum 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.



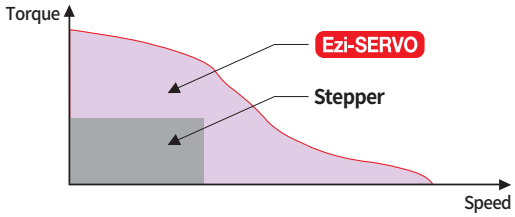
High Resolution

The unit of the position command can be divided precisely. (Max. 10,000 pulse/revolution)



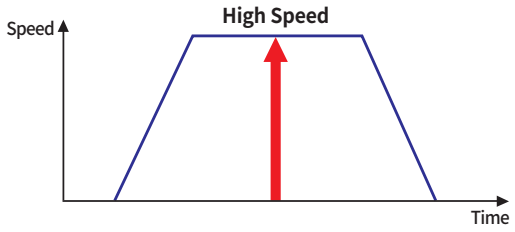
High Torque / Continuous Operation

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



High Speed

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



Advantages over Open-Loop Stepper Systems

1. Reliable Positioning Control Control without loss of synchronism.
2. Excellent holding torque at standstill, and automatically recovering to the original position even after experiencing positioning error due to external forces, such as mechanical vibration or vertical positional holding.
3. Ezi-SERVO utilizes 100 % of the full range of rated motor torque, contrary to a conventional open-loop stepper drive that can use up to 50 % of the rated motor torque due to the loss of synchronism.
4. Capability to operate at high speed due to load-dependent current control, open-loop stepper drives use a constant current control at all speed ranges without considering load variations. (Max. Speed : 2,000 r/min)

Advantages over Servo Motor Controller

1. No gain tuning. (Automatic gain adjustment in response to a load change)
2. Maintains the stable holding position without oscillation after completion of positioning.
3. Fast positioning due to the independent control by on-board MCU.
4. Continuous operation during rapid short-stroke movement due to instantaneous positioning.

Ezi-SERVO-CT-ALL Part Numbering

Ezi-SERVO-CT-ALL-56L-A-BK-PN5-R

Product Name

Drive Series

CT-ALL : CC-Link IE TSN ALL

Motor Flange Size

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

Motor Length

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

Encoder Resolution

A : 10,000 P/R

Brake

Blank : Without Brake
BK : Brake

Gear Ratio

Blank : Without Gearbox
PN3 : 1:3
PN5 : 1:5
PN8 : 1:8
PN10 : 1:10
PN15 : 1:15
PN25 : 1:25
PN40 : 1:40
PN50 : 1:50

Connector Type

R : RJ45 connector

Standard Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO-CT-ALL-42M-A-R	Motor & Drive Integrated Unit	
Ezi-SERVO-CT-ALL-42L-A-R		
Ezi-SERVO-CT-ALL-42XL-A-R		
Ezi-SERVO-CT-ALL-56S-A-R		
Ezi-SERVO-CT-ALL-56M-A-R		
Ezi-SERVO-CT-ALL-56L-A-R		
Ezi-SERVO-CT-ALL-60S-A-R		
Ezi-SERVO-CT-ALL-60M-A-R		
Ezi-SERVO-CT-ALL-60L-A-R		

Combination with Brake

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

Combination with Gearbox

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

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

Combination with Gearbox

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

Specifications of Drive

Model		Ezi-SERVO-CT-ALL-42 series	Ezi-SERVO-CT-ALL-56 series	Ezi-SERVO-CT-ALL-60 series
Input Voltage		24 V DC ± 10 %		
Control Method		Closed loop control with 32 bit MCU		
Current Consumption		Max. 500 mA (Except motor current)		
Operating Condition	Ambient Temperature	· In Use: 0 ~ 50 °C · In Storage : -20 ~ 70 °C		
	Humidity	· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)		
	Vib. Resist.	0.5 g		
Function	Rotation Speed	0 ~ 2,000 r/min *1		
	Resolution	Encoder Resolution [P/R]: 10,000 Configurable Resolution [P/R]: 500, 1,000, 1,600, 2,000, 3,600, 5,000, 6,400, 7,200, 10,000 (Selectable by parameter)		
	Error Type	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, Encoder Connection Error, Main Power Voltage Error, In-Position Error, ROM Error, Position Overflow Error, Torque Off Circuit Error		
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B		
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode, Profile Position Mode, Homing Mode		
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)		
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 3 user inputs (photocoupler inputs)		
	Output Signals	2 user outputs (photocoupler outputs), 1 brake signal output		

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

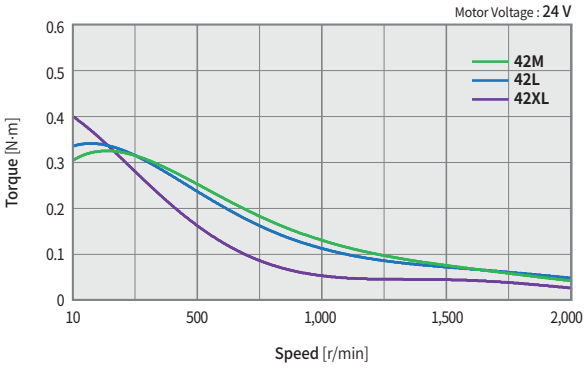
Specifications of Motor

MODEL				Ezi-SERVO-CT-ALL-42 series			Ezi-SERVO-CT-ALL-56 series		
			UNIT	42M	42L	42XL	56S	56M	56L
Drive method			-	Bipolar					
Number of phase			-	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·cm²	54	77	114	180	280	520
Motor Weight			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	3 mm	N	22	22	22	52	52	52
		8 mm		26	26	26	65	65	65
		13 mm		33	33	33	85	85	85
		18 mm		46	46	46	123	123	123
Permissible Axial Load			N	Must be less than the motor weight					
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)					
Insulation Class			-	Class B (130 °C)					
Operating Temperature			°C	0 ~ 55					

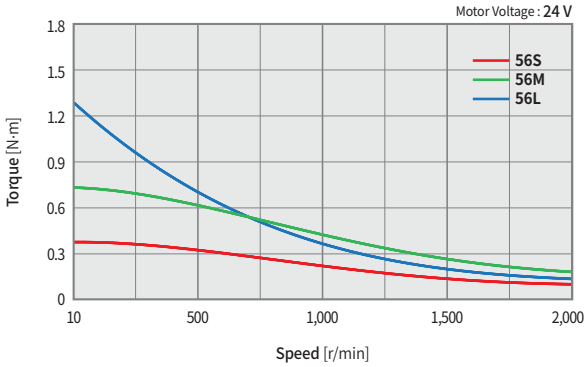
MODEL				Ezi-SERVO-CT-ALL-60 series		
			UNIT	60S	60M	60L
Drive method			-	Bipolar		
Number of phase			-	2 Phase		
Current per Phase			A/Phase	4.0	4.0	4.0
Maximum Holding Torque			N·m	0.88	1.28	2.4
Rotor Inertia			g·cm²	240	490	690
Motor Weight			kg	0.840	0.980	1.540
Length (L)			mm	47	56	85
Permissible Radial Load	Distance From End of Shaft	3 mm	N	70	70	70
		8 mm		87	87	87
		13 mm		114	114	114
		18 mm		165	165	165
Permissible Axial Load			N	Must be less than the motor weight		
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)		
Insulation Class			-	Class B (130 °C)		
Operating Temperature			°C	0 ~ 55		

Torque Characteristics of Motor

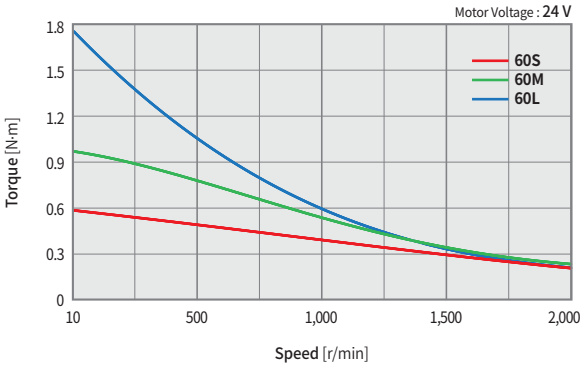
Ezi-SERVO-CT-ALL-42 series



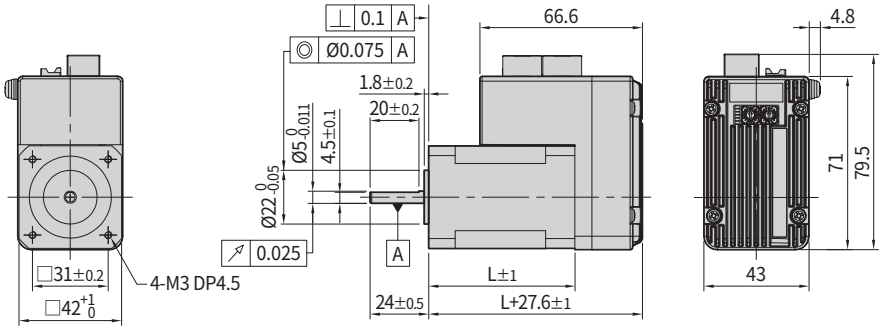
Ezi-SERVO-CT-ALL-56 series



Ezi-SERVO-CT-ALL-60 series

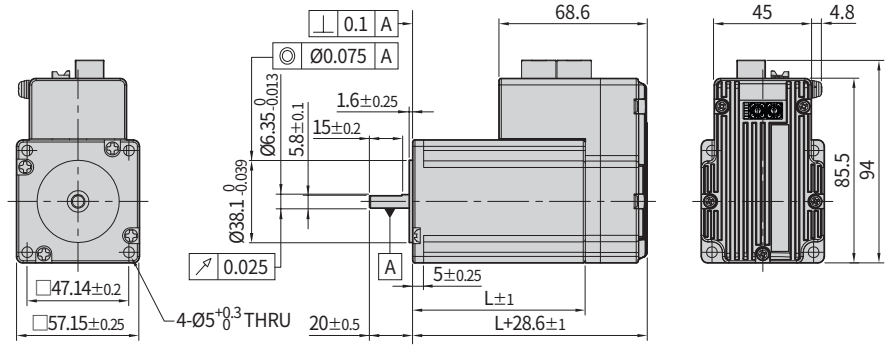


Dimensions of Motor [mm]



42 mm

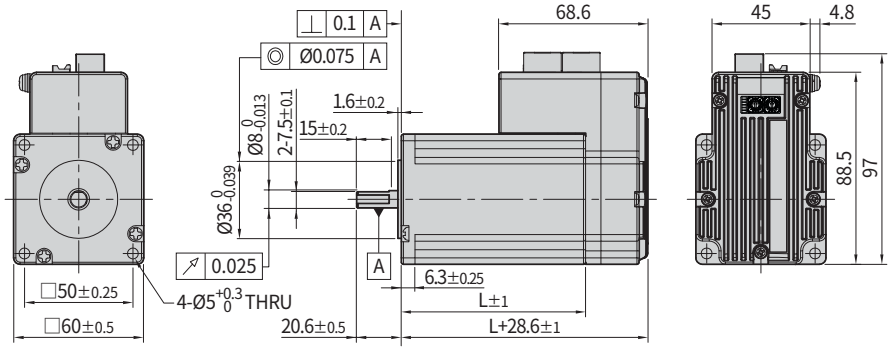
Model name	Length (L)
42M	40
42L	48
42XL	60



56 mm

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

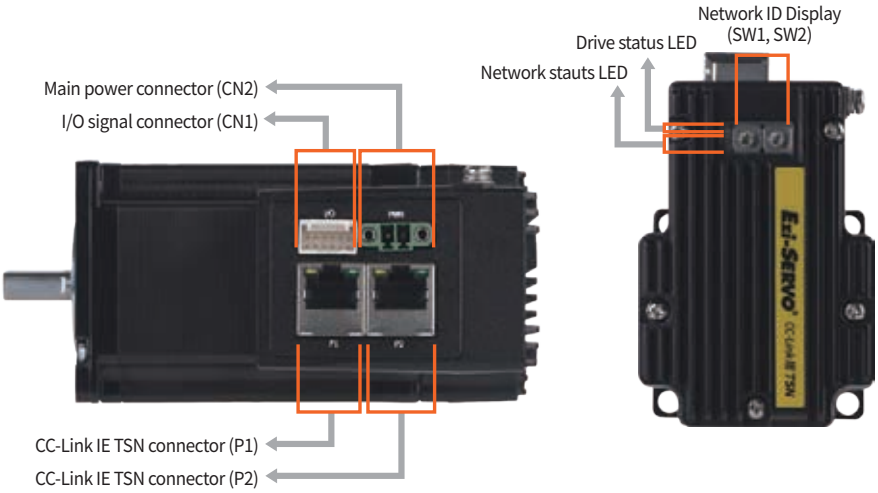
※ There are 2 kinds size of front shaft diameter for Ezi-SERVO-CT-ALL-56 type as Ø 6.35 and Ø 8.0.



60 mm

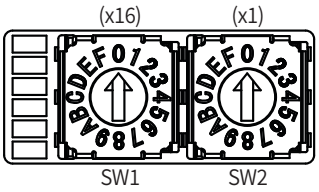
Model name	Length (L)
60S	47
60M	56
60L	85

Names and Functions of Each Part



1. Network ID Switch (SW1, SW2)

These switches are used to configure the fourth octet of the IP address. The value is displayed on the 7-segment LED in hexadecimal format. SW1 sets the X16 digit, and SW2 sets the X1 digit. (For more details, please refer to the relevant user manual.)



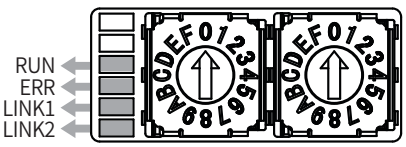
2. Network Status LED

Indicates the current communication status of the CC-Link IE TSN network.

Indicator	Color	Status	Description
RUN	Green	OFF	Power Off
		Single Flash	Not connected to master
		Double Flash	Pre-operational state
		Blinking	Safe-operational state
		Interval Off	Operational state

Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		Blinking	Drive error
		Single Flash	CC-Link IE TSN communication error
		Double Flash	IP Address conflict error

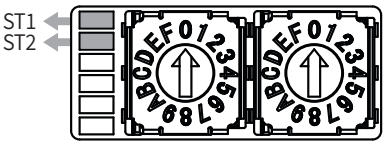
Indicator	Color	Status	Description
LINK1/ LINK2	Green	OFF	Link inactive
		ON	Link active



3. Drive Status LED

LED informs operation status of the drive.

LED Display	LED Status	Description
ST1 : ST2 :	ST1 blinks, and ST2 is off.	Servo Off state
ST1 : ST2 :	ST1 is on, and ST2 is off.	Servo On state
ST1 : ST2 :	Both ST1 and ST2 are on.	Operation
ST1 : ST2 :	ST1 and ST2 blink alternately.	Position error exceeding the set value has occurred while the motor is stopped.
ST1 : ST2 :	ST1 is off, and ST2 blinks repeatedly based on the specific error type.	Error state



List of error types by the number of ST2 LED blinking

No.	Error Code	Causes
1	Over Current Error	The current through power devices in drive exceeds the limit. *1
2	Over Speed Error	The motor speed exceeds 3,000 r/min
3	Position Tracking Error	Position error value is greater than the reference value while the motor is running *2
4	Over Load Error	Load exceeding the motor's maximum torque is applied for more than 5 seconds
5	Over Temperature Error	Internal temperature of the drive exceeds 85 °C
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	Position Error of More Than One Pulse Persists for Over 3 Seconds After Operation is Completed
12	ROM Error	Error occurs in parameter storage device(ROM)
14	Position Overflow Error	Position error value is greater than the reference value while the motor is stopped
15	Abnormal Safety State Error	Input states of TQOFF1 and TQOFF2 are different from each other. *2

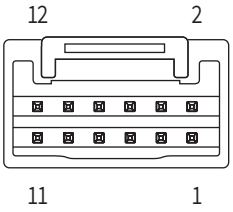
*1: Limit value depends on motor model. (Refer to the Manual)
*2: The default setting value is 180 °, and it can be changed by parameter. (Refer to the Manual)
*3: Voltage limit of Back-EMF depends on motor model. (Refer to the Manual)
※ Please refer to user Manual for the details of protection functions.



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

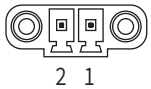
4. I/O Signal Connector (CN1)

No.	Function	I/O
1	EXT_24 V DC	Input
2	EXT_GND	Input
3	BRAKE+	Output
4	BRAKE-	Output
5	LIMIT+	Input
6	LIMIT-	Input
7	ORIGIN	Input
8	Digital In1	Input
9	Digital In2	Input
10	Digital In3	Input
11	Digital Out1	Output
12	Digital Out2	Output



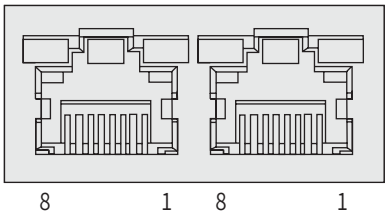
5. Main Power Connector (CN2)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input

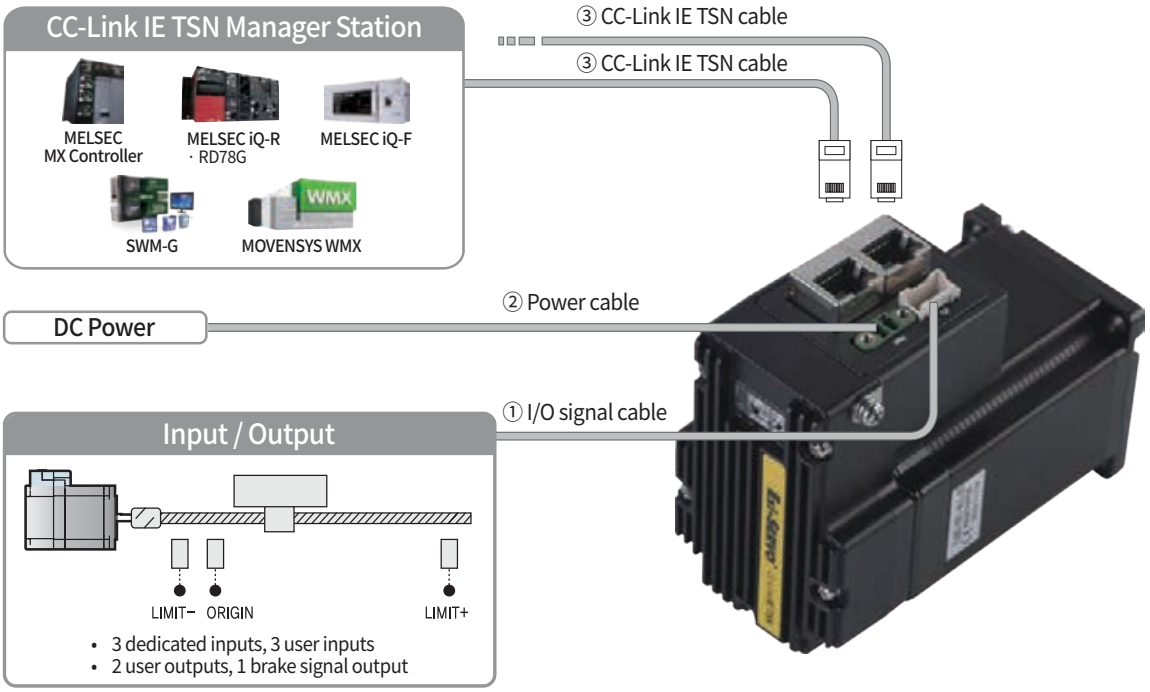


6. CC-Link IE TSN Connector (P1, P2)

No.	Function	No.	Function
1	DA+	6	DB-
2	DA-	7	DD+
3	DB+	8	DD-
4	DC+	Connector hood	F.GND
5	DC-		



System Configuration [R Type]



Cable Type	Max. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Power Cable	2 m	
③ CC-Link IE TSN Cable	100 m	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose	Item	Part Number	Manufacturer
Main Power (CN2)	Terminal Block	MC421-38102	DECA
I/O 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 I/O Signal Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN ALL drive and other input / output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - I/O Device Connection	CSNR-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSNR-S-002F	2		
	CSNR-S-003F	3		
	CSNR-S-005F	5		
	CSNR-S-001M	1	Flexible Cable	
	CSNR-S-002M	2		
	CSNR-S-003M	3		
	CSNR-S-005M	5		

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

② Drive Power Cable

These are the cables to connect Ezi-SERVO CC-Link IE TSN ALL drive and the main power.

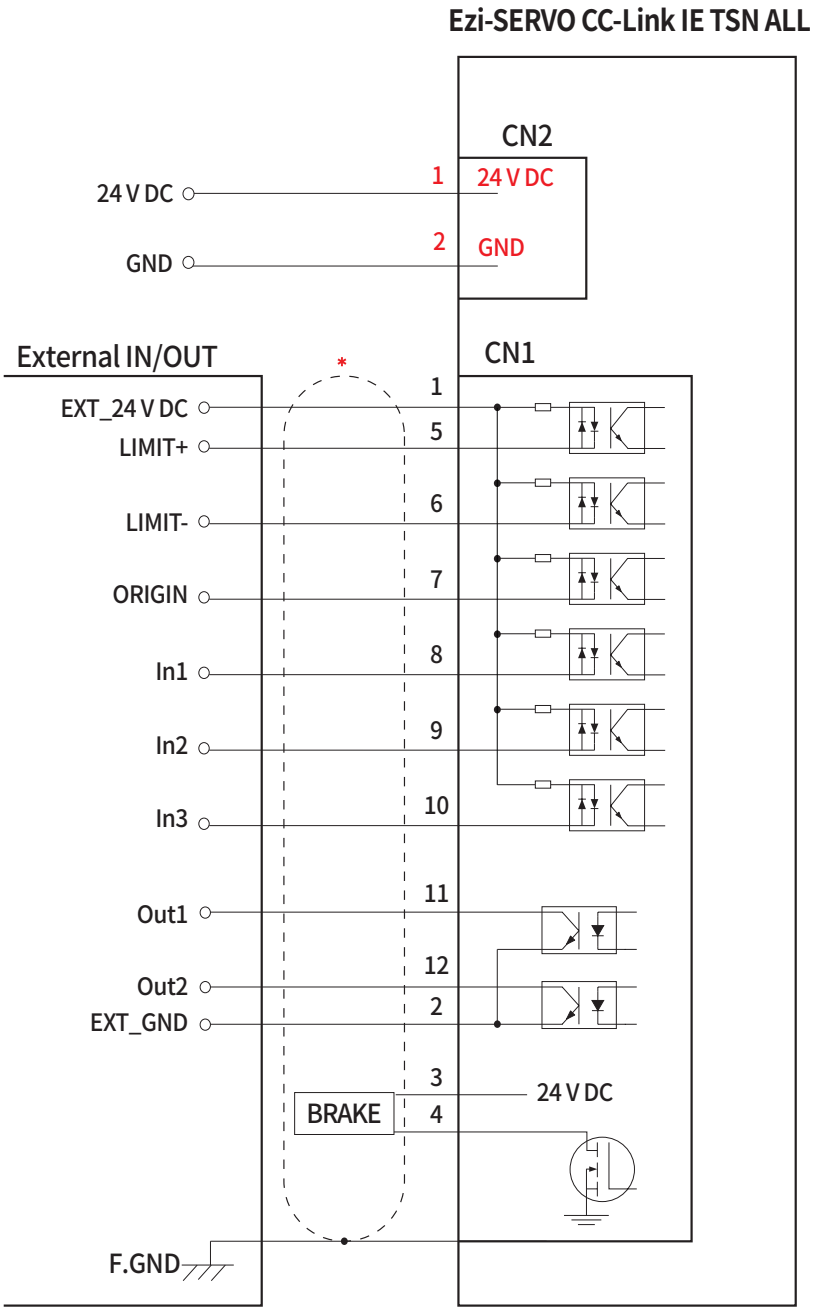
Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Power Connection	CSVA-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CSVA-P-002F	2		
	CSVA-P-001M	1	Flexible Cable	
	CSVA-P-002M	2		

③ CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Cable Type	Remarks
CC-Link IE TSN Connection	CGNR-EC-001F	1	Fixed Cable	• STP(Shielded Twisted Pair) Cable • Category 5e or higher • Max. Cable Length: 100 m
	CGNR-EC-002F	2		
	CGNR-EC-003F	3		
	CGNR-EC-005F	5		
	CGNR-EC-001M	1	Flexible Cable	
	CGNR-EC-002M	2		
	CGNR-EC-003M	3		
	CGNR-EC-005M	5		

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

External Wiring Diagram



* Shielded Cable

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

MEMO

Ezi-STEP® CC-Link IE TSN

Micro Stepping System

- CC-Link IE TSN-compatible Microstepper System
- CiA402 Drive Profile
- Torque-Off Function
- Software Damping (Resonance & Vibration Suppression)
- High Torque



FASTECH

Fast Accurate Smooth Motion

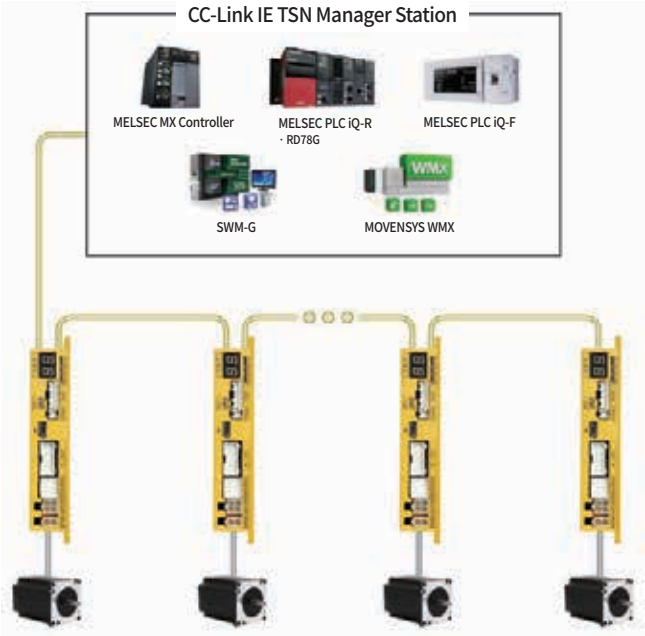
Ezi-STEP® CC-Link IE TSN

Micro Stepping System



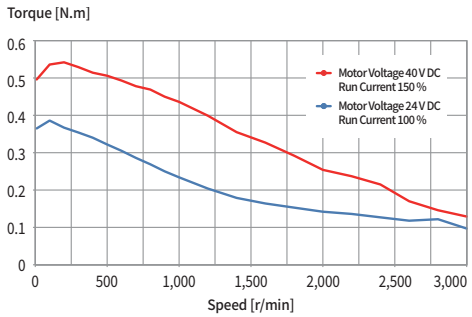
CC-Link IE TSN-compatible Motion Control

Ezi-STEP CC-Link TSN is stepper motor control system that supports CC-Link IE TSN, an industrial network based on high-speed Ethernet (1 Gbps, full-duplex communication). Ezi-STEP CC-Link IE TSN employs CiA402 drive profile and supports Cyclic Synchronous Position Mode (CSP Mode), Profile Position Mode (PP Mode) and Homing Mode (HM Mode).



High Torque

Ezi-STEP features an internal voltage boosting circuit that increases the motor supply voltage above the drive's input voltage. This elevated motor voltage enhances torque at high speeds and allows the run current to be set up to 150 %. As a result, torque is also improved at low speeds. Ezi-STEP can achieve approximately 30 % torque improvement across the entire speed range.



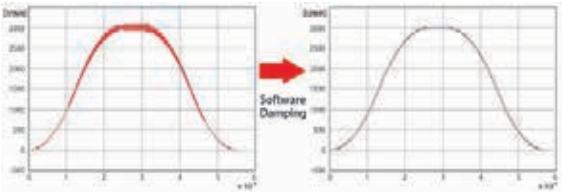
※Torque is improved by approximately 30% at both low and high speeds.
Measurement Condition: Drive = Ezi-STEP-CT-42L
· Motor Voltage = 40 V DC
· Input Voltage = 24 V DC

Microstep and Filtering

Ezi-STEP adopts a microstepping drive method, allowing the basic step angle of 1.8° to be subdivided up to 1/250 (0.0072°) for high-precision control. Unlike conventional drives, it performs PWM control every 50 µs, enabling enhanced current control for even more precise motion.
In addition, Ezi-STEP incorporates filtering control technology, ensuring smooth operation even at very low speeds.

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 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.

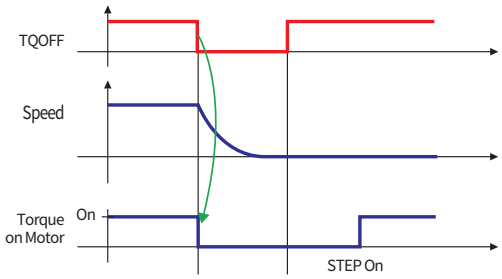


Software Damping OFF **Software Damping ON**

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

Torque-Off Function

Ezi-STEP CC-Link IE TSN has an input connector(TQOFF) that can cut off the motor power through an external hardware signal, regardless of CC-Link IE TSN communication.
When the TQOFF signal is detected, the drive immediately becomes 'STEP Off', and the motor stops.



CAUTION

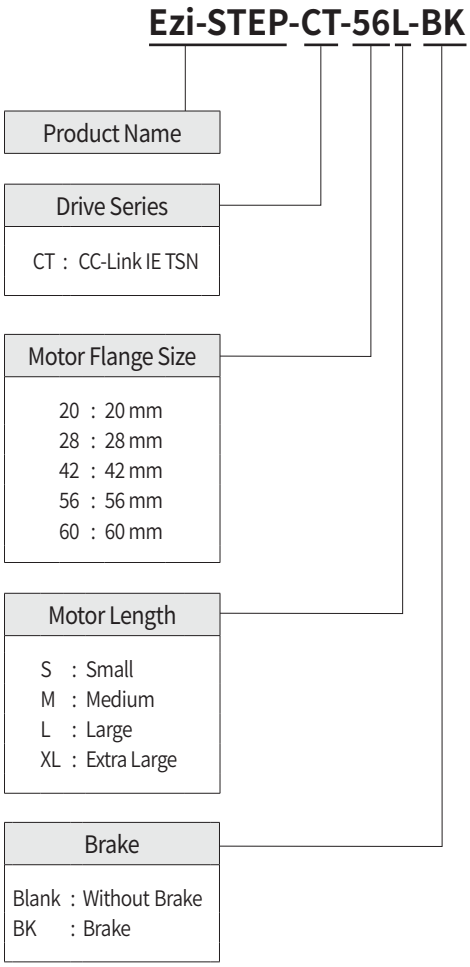
DO NOT use the Torque-Off function to stop or decelerate motors.

Improved high-speed operation performance

Depending on the speed of a stepper motor, Ezi-STEP 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-CT-42 Series
Ezi-STEP-CT-56 Series
Ezi-STEP-CT-60 Series

Ezi-STEP CC-Link IE TSN Part Numbering



Standard Combination

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

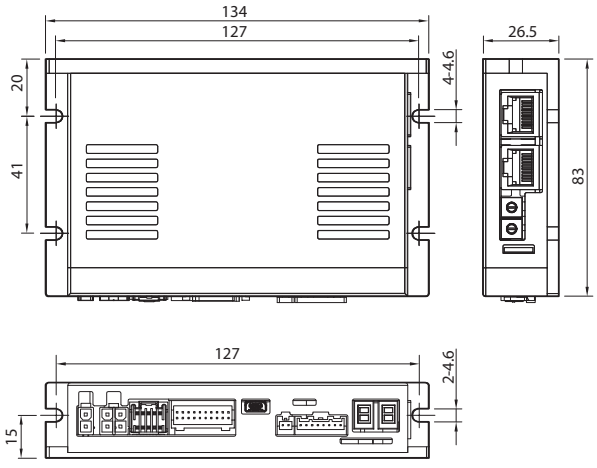
Combination with Brake

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

Specifications of Drive

Motor Model		BM-20 Series	BM-28 Series	BM-42 Series	BM-56 Series	BM-60 Series
Drive Model		EzT2-CT-20 Series	EzT2-CT-28 Series	EzT2-CT-42 Series	EzT2-CT-56 Series	EzT2-CT-60 Series
Input Voltage		24 V DC ± 10 %				
Control Method		Bipolar PWM drive with 32 bit MCU				
Current Consumption		Max. 500 mA (Except motor current)				
Operating Condition	Ambient Temperature	· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C				
	Humidity	· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)				
	Vib. Resist.	0.5 g				
Function	Rotation Speed	0 ~ 3,000 r/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 Type	Over Current Error, Over Speed Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, ROM Error, Torque-Off Circuit Error				
	LED Display	Power status, Alarm status, Run status, STEP On status				
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B				
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode(CSP), Profile Position Mode(PP), Homing Mode(HM)				
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)				
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 6 user inputs (photocoupler inputs), 2 Torque-Off signal inputs (TQOFF)				
	Output Signals	5 user outputs (photocoupler outputs), 1 brake signal output, 1 Torque-Off status output (TQMON)				

Dimensions of Drive [mm]



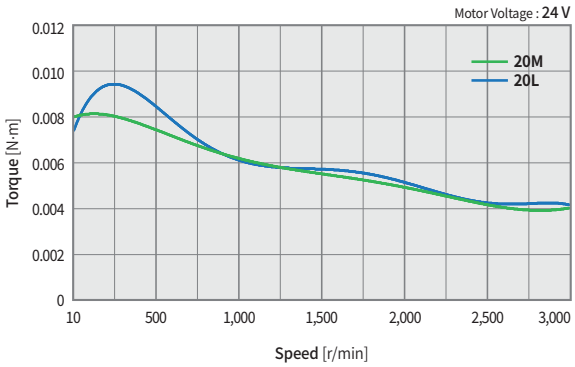
Specifications of Motor

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·cm²	2.5	3.3	9.0	13	18	35	54	77	114
Motor Weight			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	3 mm	N	18	18	30	30	30	22	22	22	22
		8 mm		30	30	38	38	38	26	26	26	26
		13 mm		-	-	53	53	53	33	33	33	33
		18 mm		-	-	-	-	-	46	46	46	46
Permissible Axial Load			N	Must be less than the motor weight								
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)								
Insulation Class			-	Class B (130 °C)								
Operating Temperature			°C	0 ~ 55								

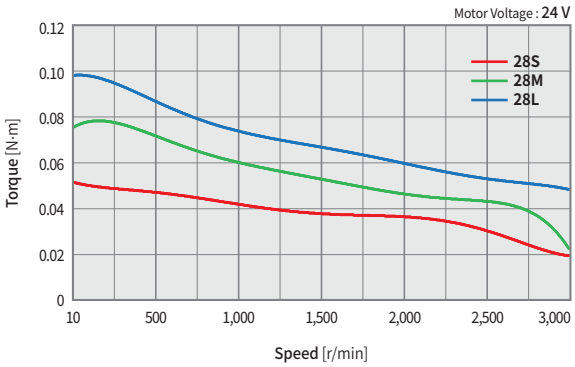
Model				BM-56 Series			BM-60 Series		
			UNIT	56S	56M	56L	60S	60M	60L
Drive Method			-	Bipolar					
Number Of Phases			-	2 Phase					
Current per Phase			A/Phase	3.0	3.0	3.0	4.0	4.0	4.0
Maximum Holding Torque			N·m	0.64	1.0	1.5	0.88	1.28	2.4
Rotor Inertia			g·cm²	180	280	520	240	490	690
Motor Weight			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	3 mm	N	52	52	52	70	70	70
		8 mm		65	65	65	87	87	87
		13 mm		85	85	85	114	114	114
		18 mm		123	123	123	165	165	165
Permissible Axial Load			N	Must be less than the motor weight					
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)					
Insulation Class			-	Class B (130 °C)					
Operating Temperature			°C	0 ~ 55					

Torque Characteristics of Motor

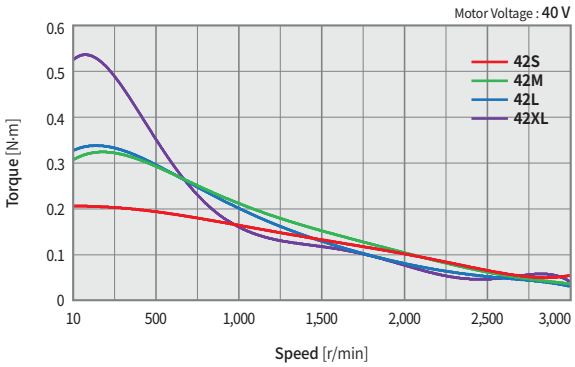
Ezi-STEP-CT-20 Series



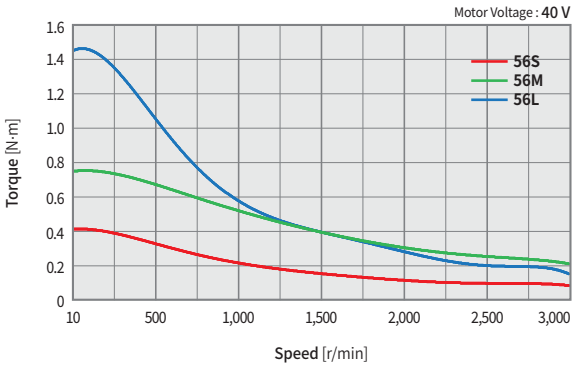
Ezi-STEP-CT-28 Series



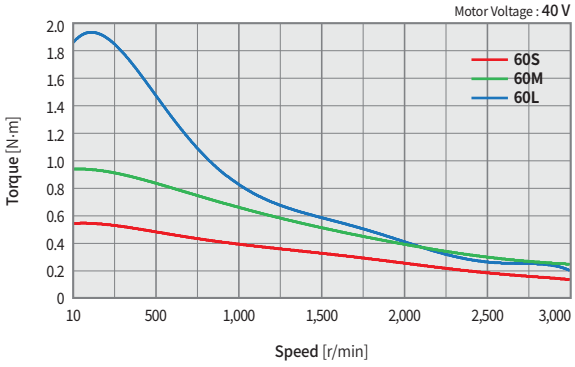
Ezi-STEP-CT-42 Series



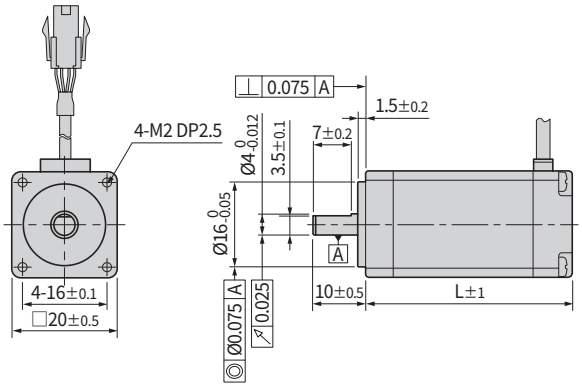
Ezi-STEP-CT-56 Series



Ezi-STEP-CT-60 Series

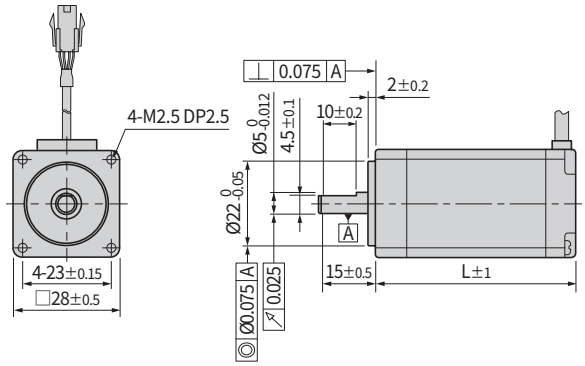


Dimensions of Motor [mm]



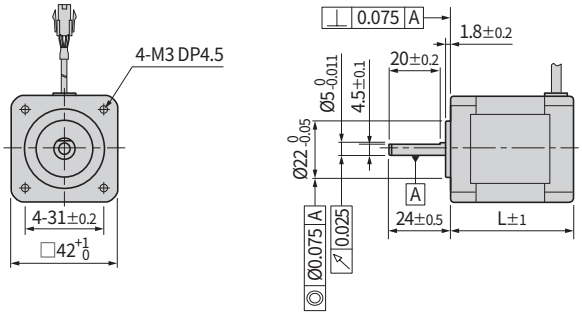
20 mm

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



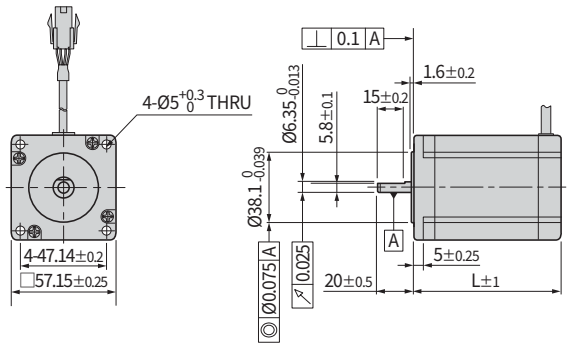
28 mm

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



42 mm

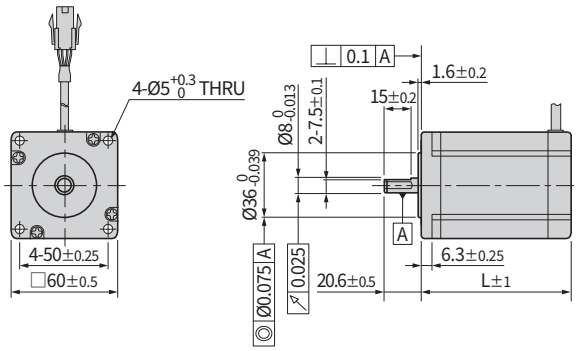
Model Name	Length(L)
BM-42S	34
BM-42M	40
BM-42L	48
BM-42XL	60



56 mm

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

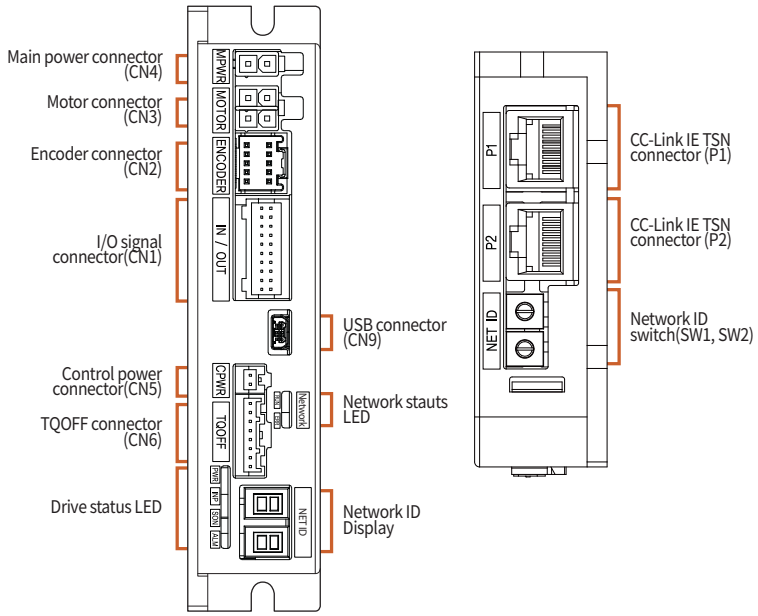
Dimensions of Motor [mm]



60 *mm*

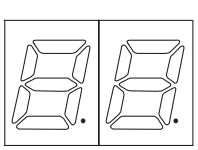
Model Name	Length(L)
BM-60S	467
BM-60M	56
BM-60L	85

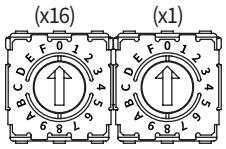
Settings and Operation



1. Network ID Display and Switch (SW1, SW2)

These switches are used to configure the fourth octet of the IP address. The value is displayed on the 7-segment LED in hexadecimal format. SW1 sets the X16 digit, and SW2 sets the X1 digit.
(For more details, please refer to the relevant user manual.)



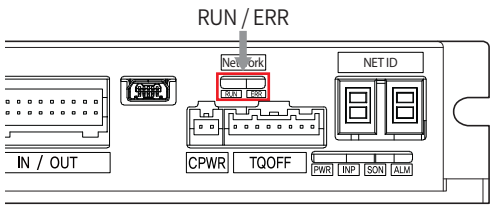


For example, if SW1 is set to 5 and SW2 is set to 7, the value is calculated as follows:
(5×16) + (7×1) = 87
Accordingly, the IP address is set to 192.168.0.87.

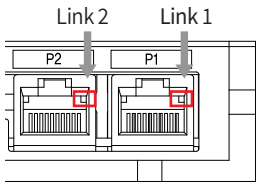
2. Network Status LED

These LEDs indicate the communication status of CC-Link IE TSN.
Link1/Link2 LEDs are located at the upper right corner of CC-Link IE TSN ports(P1, P2).

Indicator	Color	Status	Description
RUN	Green	OFF	Power off
		Single Flash	Not connected to master
		Double Flash	Pre-operational state
		Blinking	Safe-operational state
		Interval Off	Operational state



Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		Blinking	Drive error
		Single Flash	CC-Link IE TSN communication error
		Double Flash	IP address conflict error



Indicator	Color	Status	Description
LINK1/ LINK2	Green	OFF	Link inactive
		ON	Link active

3. Drive Status LED

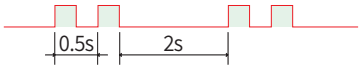
LED informs operation status of the drive.

Indicator	Color	Function	Description
PWR	Green	Power input Indicator	Lights up when power is supplied.
RUN	Yellow	Motor running Indicator	Lights up while the motor is running.
SON	Orange	STEP ON / OFF Indicator	Lights up when Step is On; turns off when Step is Off.
ALM	Red	Alarm Indicator	Blinks repeatedly 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 3,000 r/min
5	E-005	Over Temperature Error	Internal temperature of the drive exceeds 85 °C
6	E-006	Over Regenerative Voltage Error	Back-EMF is higher than limit value *2
7	E-007	Motor Connect 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)
16	E-016	Torque-Off Circuit Error	Input states of TQOFF1 and TQOFF2 are different from each other.

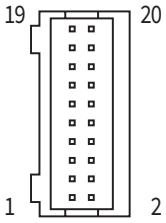
*1: Limit value depends on motor model. (Refer to the Manual)
*2: The default setting value is 180 °, and it can be changed by parameter. (Refer to the Manual)
*3: When an alarm occurs, error code is displayed on the 7-segment LED display instead of IP Address.
※ Please refer to user Manual for the details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



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

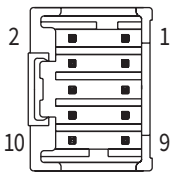
4. I/O Signal Connector (CN1)

No.	Function	I/O
1	LIMIT+	Input
2	LIMIT-	Input
3	ORIGIN	Input
4	Digital In1	Input
5	Digital In2	Input
6	Digital In3	Input
7	Digital In4	Input
8	Digital In5	Input
9	Digital In6	Input
10	Digital Out1	Output
11	Digital Out2	Output
12	Digital Out3	Output
13	Digital Out4	Output
14	Digital Out5	Output
15	BRAKE+	Output
16	BRAKE-	Output
17	EXT_GND	Input
18	EXT_24 V DC	Input
19	F.GND	----
20	F.GND	----



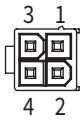
5. Encoder Connector(CN2)

No.	Function	I/O
1	A+	Input
2	A-	Input
3	B+	Input
4	B-	Input
5	Z+	Input
6	Z-	Input
7	5 V DC	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



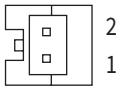
7. Main Power Connector(CN4)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input



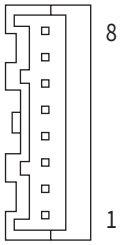
8. Control Power Connector(CN5)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input



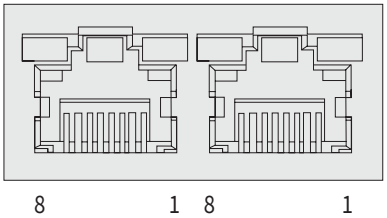
9. TQOFF Connector(CN6)

No.	Function	I/O
1	TQOFF1_P	Input
2	TQOFF1_N	Input
3	TQOFF2_P	Input
4	TQOFF2_N	Input
5	TQMON_P	Output
6	TQMON_N	Output
7	OVRTQ	Input
8	GND	Output

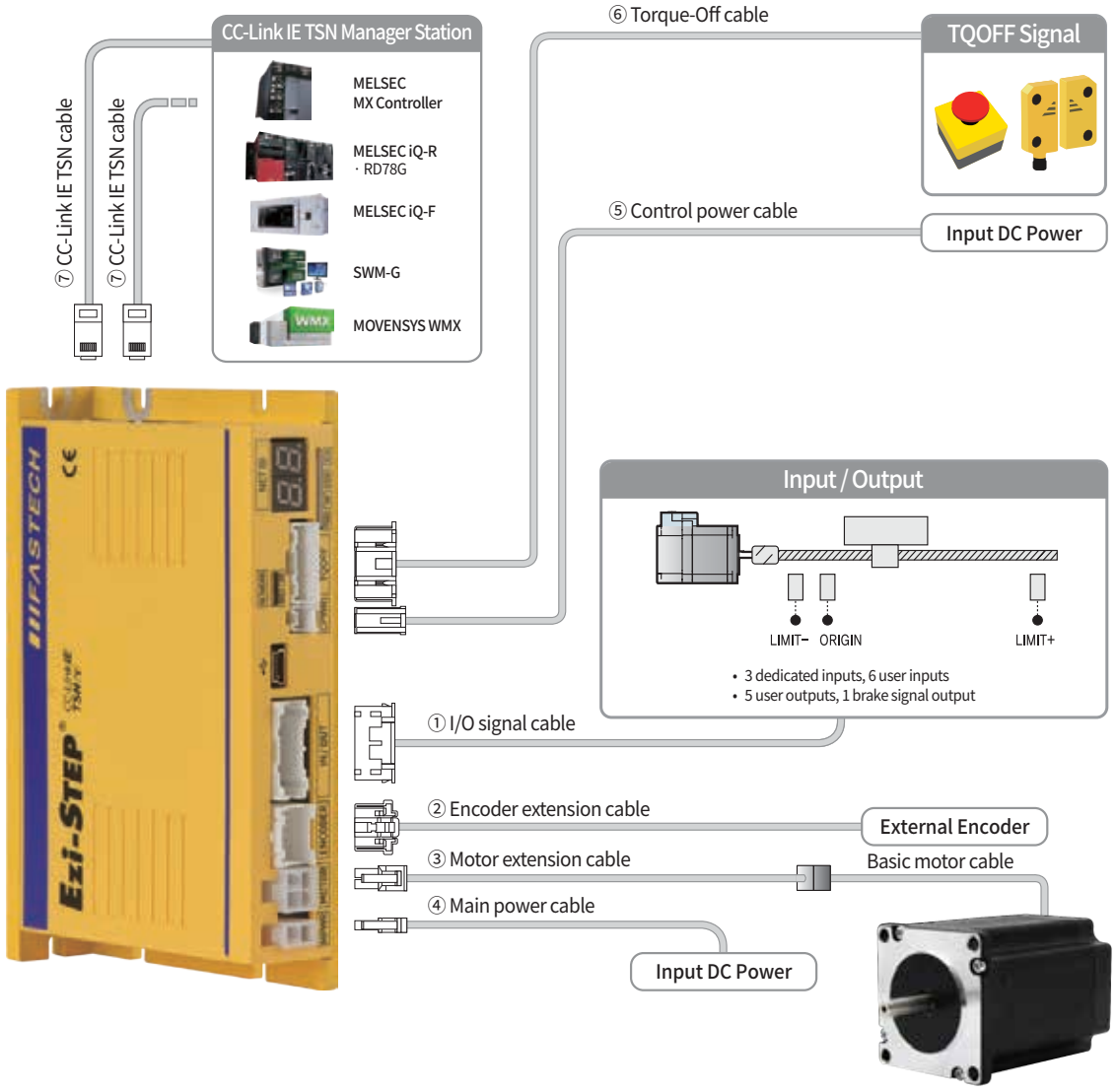


10. CC-Link IE TSN Connector(P1, P2)

No.	Function	No.	Function
1	DA+	6	DB-
2	DA-	7	DD+
3	DB+	8	DD-
4	DC+	Connector hood	F.GND
5	DC-		



System Configuration



Cable Type	Max. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Encoder Extension Cable	20 m	
③ Motor Extension Cable	20 m	
④ Main Power Cable	2 m	
⑤ Control Power Cable	2 m	
⑥ Torque-Off Cable	20 m	
⑦ CC-Link IE TSN Cable	100 m	
Motor Cable	0.3 m (Basic length)	Basic cables are attached to motors.

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
I/O Signal (CN1)		Housing	PADP-20V-1-S	JST
		Terminal	SPH-002T-P0.5L	
Encoder	Drive Side (CN2)	Housing	51353-1000	MOLEX
		Terminal	56134-9000	
	Encoder Side	Housing	SMP-09V-NC	JST
		Terminal	SHF-001T-0.8BS	
Motor	Drive Side (CN3)	Housing	5557-04R	MOLEX
		Terminal	5556T	
	Motor Side	Housing	5557-04R	MOLEX
		Terminal	5556T	
Main Power (CN4)		Housing	5557-02R	MOLEX
		Terminal	5556T	
Control Power (CN5)		Housing	PAP-02V-S	JST
		Terminal	SPHD-001T-P0.5	
Torque-Off Signal (CN6)		Housing	PAP-08V-S	JST
		Terminal	SPHD-001T-P0.5 or SPHD-002T-P0.5	

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

2. Options

① I/O Signal Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN drive and other input / output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - I/O Device Connection	CSVS-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVS-S-002F	2		
	CSVS-S-003F	3		
	CSVS-S-005F	5		
	CSVS-S-001M	1	Flexible Cable	
	CSVS-S-002M	2		
	CSVS-S-003M	3		
	CSVS-S-005M	5		

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

② Encoder Extension Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - External Encoder Connection	CTPR-E-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CTPR-E-002F	2		
	CTPR-E-003F	3		
	CTPR-E-005F	5		
	CTPR-E-001M	1	Flexible Cable	
	CTPR-E-002M	2		
	CTPR-E-003M	3		
	CTPR-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Motor Cable Connection	CSVO-M-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVO-M-002F	2		
	CSVO-M-003F	3		
	CSVO-M-005F	5		
	CSVO-M-001M	1	Flexible Cable	
	CSVO-M-002M	2		
	CSVO-M-003M	3		
	CSVO-M-005M	5		

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

④ Main Power Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN drive and the main power.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Power Connection	CSVO-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CSVO-P-002F	2		
	CSVO-P-001M	1	Flexible Cable	
	CSVO-P-002M	2		

⑤ Control Power Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN drive and the control power.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Control Power Connection	CMNB-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CMNB-P-002F	2		
	CMNB-P-001M	1	Flexible Cable	
	CMNB-P-002M	2		

⑥ Torque-Off Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN drive and sensors or switches for Torque-Off signal.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Torque-Off Signal Connection	CSVT-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVT-S-002F	2		
	CSVT-S-003F	3		
	CSVT-S-005F	5		
	CSVT-S-001M	1	Flexible Cable	
	CSVT-S-002M	2		
	CSVT-S-003M	3		
	CSVT-S-005M	5		

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

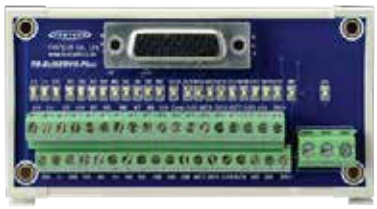
⑦ CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection	CGNR-EC-001F	1	• STP(Shielded Twisted Pair) cable • Category 5e higher • Max. Cable Length: 100 m • Fixed 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 CC-Link IE TSN drive and I/O signals more conveniently.

Purpose	Part Number	Product Image
Interface Board between Drive and I/O Signals	TB-Plus	

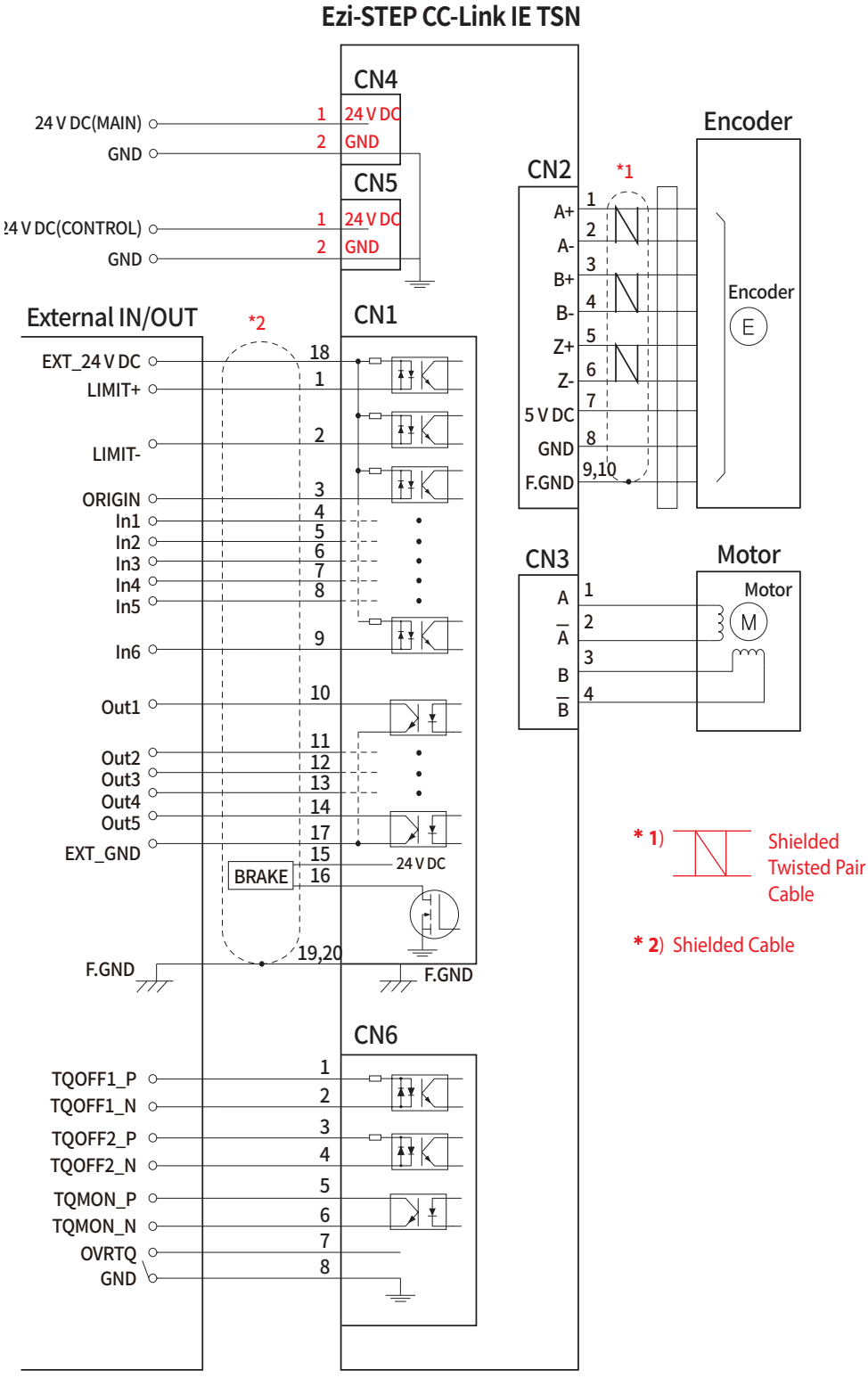
[Option] TB-Plus Interface Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN and TB-Plus interface board.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Interface(TB-Plus) Connection	CIFT-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CIFT-S-002F	2		
	CIFT-S-003F	3		
	CIFT-S-005F	5		
	CIFT-S-001M	1	Flexible Cable	
	CIFT-S-002M	2		
	CIFT-S-003M	3		
	CIFT-S-005M	5		

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

External Wiring Diagram



※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

Ezi-STEP®

Micro Stepping System

CC-Link IE TSN 4X

- CC-Link IE TSN-compatible Microstepper System
- CiA402 Drive Profile
- Software Damping (Resonance & Vibration Suppression)
- Compact Multi-Axis Drive (Max. 4-Axis)
- Space Saving, Reduced Wiring



FASTECH

Fast Accurate Smooth Motion

Ezi-STEP®

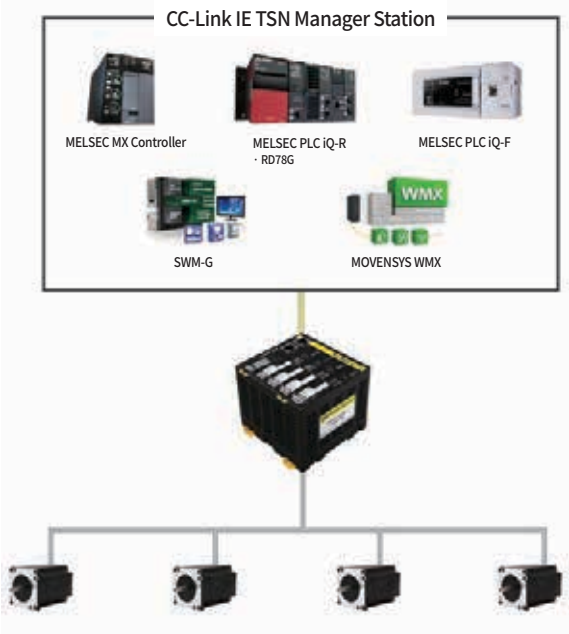
Micro Stepping System

CC-LinkIE TSN 4X



CC-Link IE TSN-compatible Motion Control

Ezi-STEP CC-Link IE TSN 4X is stepper motor control system that supports CC-Link IE TSN, an industrial network based on high-speed Ethernet (1 Gbps, full-duplex communication). Ezi-STEP CC-Link IE TSN 4X employs CiA402 drive profile and supports Cyclic Synchronous Position Mode (CSP Mode), Profile Position Mode (PP Mode) and Homing Mode (HM Mode).

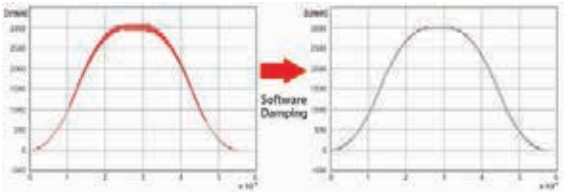


Microstep and Filtering

Ezi-STEP adopts a microstepping drive method, allowing the basic step angle of 1.8° to be subdivided up to 1/250 (0.0072°) for high-precision control. Unlike conventional drives, it performs PWM control every 50 µs, enabling enhanced current control for even more precise motion.
In addition, Ezi-STEP incorporates filtering control technology, ensuring smooth operation even at very low speeds.

Software Damping

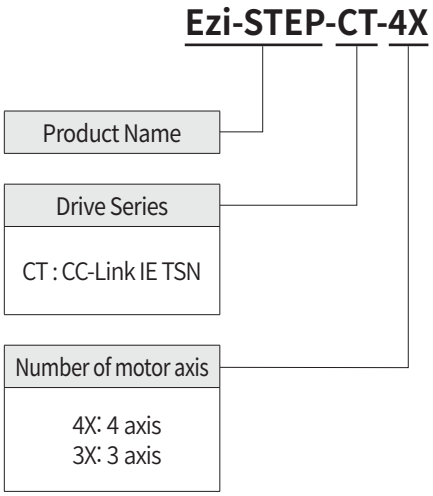
Motor vibration is created by magnetic flux variations of the motor, lower current from the drive due to back-emf from the motor at high speeds and lowering of phase voltages from the drive. Ezi-STEP drive detects these problems and the MCU adjusts the phase of the current according to the pole position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

Ezi-STEP CC-Link IE TSN 4X Part Numbering



※ Ezi-STEP CC-Link IE TSN 4X can connect up to 4 motors to one rive. Standard motors, motors with brake, and motors with gearbox can be connected, and diferent types of motors can be connected to each axis.

Standard Motor

Motor Model Number
BM-20M
BM-20L
BM-28S
BM-28M
BM-28L
BM-42S
BM-42M
BM-42L
BM-42XL
BM-56S
BM-56M
BM-56L
BM-60S
BM-60M
BM-60L

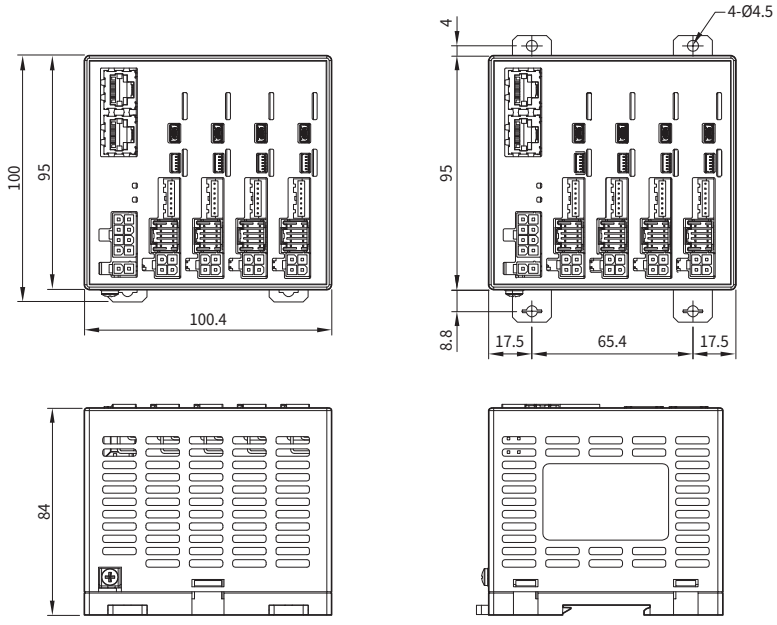
Combination with Brake

Motor Model Number
BM-42S-BK
BM-42M-BK
BM-42L-BK
BM-42XL-BK
BM-56S-BK
BM-56M-BK
BM-56L-BK
BM-60S-BK
BM-60M-BK
BM-60L-BK

Specifications of Drive

Motor Model		BM-20 series	BM-28 series	BM-42 series	BM-56 series	BM-60 series
Drive Model		EzT2-CT-4X, 3X series				
Input Voltage		24 V DC ± 10 %				
Control Method		Closed loop control with 32 bit MCU				
Current Consumption		Max. 500 mA/axis (Except motor current)				
Operating Condition	Ambient Temperature	· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C				
	Humidity	· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)				
	Vib. Resist.	0.5 g				
Function	Rotation Speed	0 ~ 3,000 r/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 Type	Over Current Error, Over Speed Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, Main Power Voltage Error, ROM Error				
	LED Display	Power status, Alarm status, Run status, Step On status				
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B				
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode(CSP), Profile Position Mode(PP), Homing Mode(HM)				
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)				
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN) for each axis				
	Output Signals	1 brake signal output for each axis				

Dimensions of Drive [mm]



※ Can be installed on DIN Rail. (35 mm)
※ Outer dimension of Ezi-STEP CC-Link IE TSN 3X drive is the same as Ezi-STEP CC-Link IE TSN 4X drive.

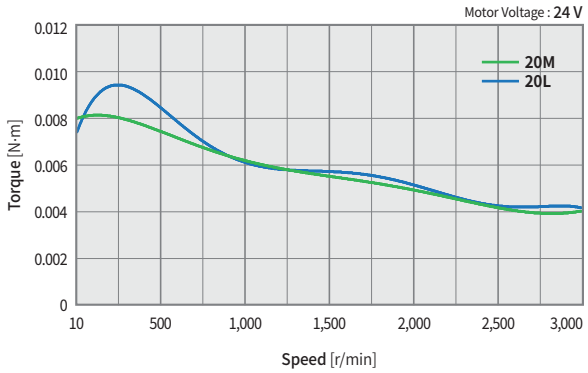
Specifications of Motor

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 phase			-	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·cm²	2.5	3.3	9.0	13	18	35	54	77	114
Motor Weight			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	3 mm	N	18	18	30	30	30	22	22	22	22
		8 mm		30	30	38	38	38	26	26	26	26
		13 mm		-	-	53	53	53	33	33	33	33
		18 mm		-	-	-	-	-	46	46	46	46
Permissible Axial Load			N	Must be less than the motor weight								
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)								
Insulation Class			-	Class B (130 °C)								
Operating Temperature			°C	0 ~ 55								

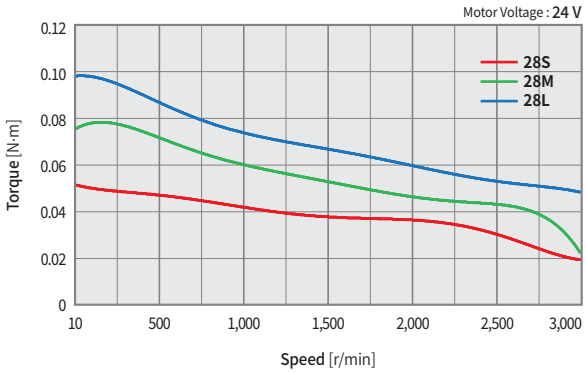
MODEL				BM-56 series			BM-60 series		
			UNIT	56S	56M	56L	60S	60M	60L
Drive method			-	Bipolar					
Number of phase			-	2 Phase					
Current per Phase			A/Phase	3.0	3.0	3.0	4.0	4.0	4.0
Maximum Holding Torque			N·m	0.64	1.0	1.5	0.88	1.28	2.4
Rotor Inertia			g·cm²	180	280	520	240	490	690
Motor Weight			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	3 mm	N	52	52	52	70	70	70
		8 mm		65	65	65	87	87	87
		13 mm		85	85	85	114	114	114
		18 mm		123	123	123	165	165	165
Permissible Axial Load			N	Must be less than the motor weight					
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)					
Insulation Class			-	Class B (130 °C)					
Operating Temperature			°C	0 ~ 55					

Torque Characteristics of Motor

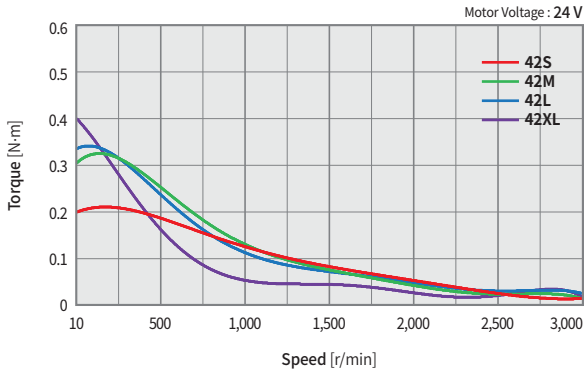
Ezi-STEP-CT-4X-20 series



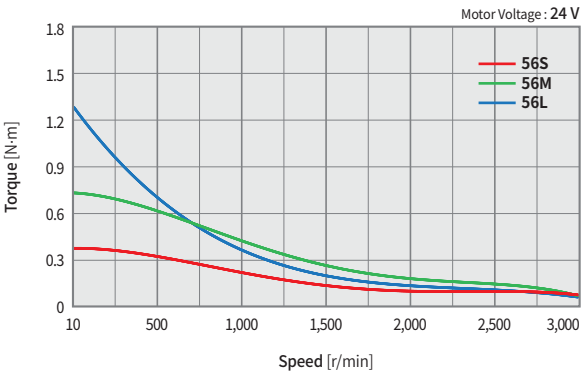
Ezi-STEP-CT-4X-28 series



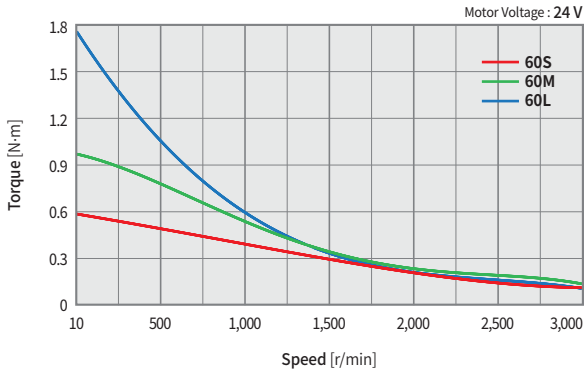
Ezi-STEP-CT-4X-42 series



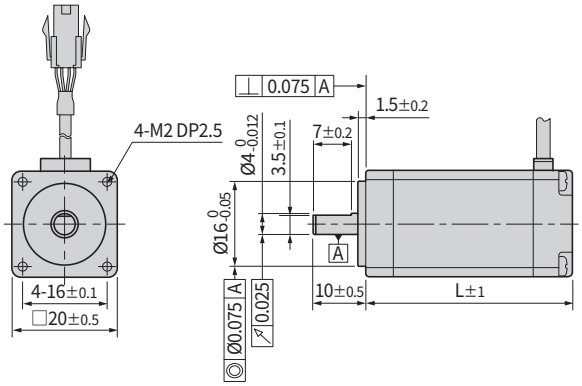
Ezi-STEP-CT-4X-56 series



Ezi-STEP-CT-4X-60 series

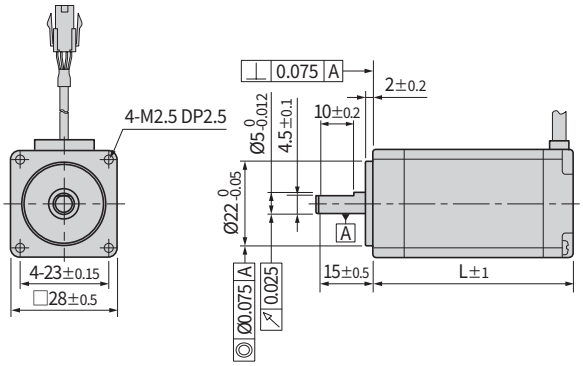


Dimensions of Motor [mm]



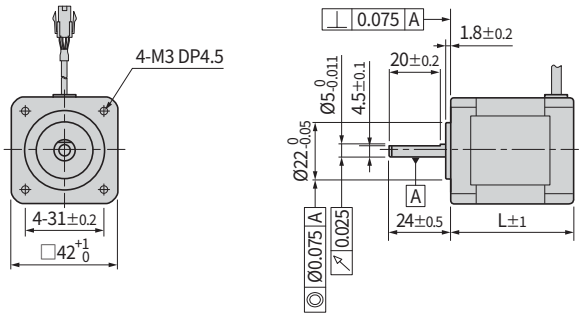
20 mm

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



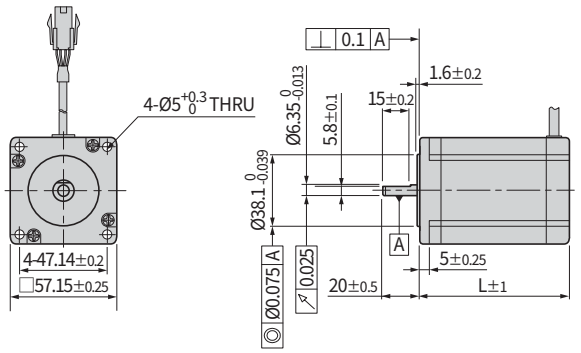
28 mm

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



42 mm

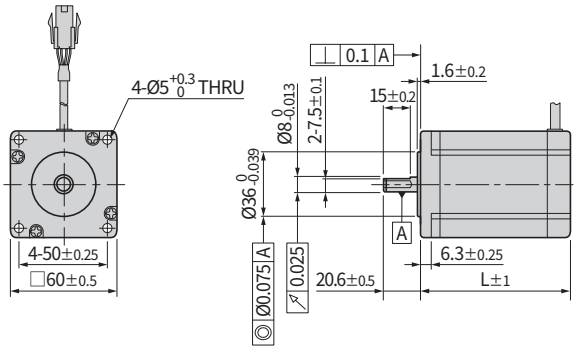
Model name	Length (L)
BM-42S	34
BM-42M	40
BM-42L	48
BM-42XL	60



56 mm

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

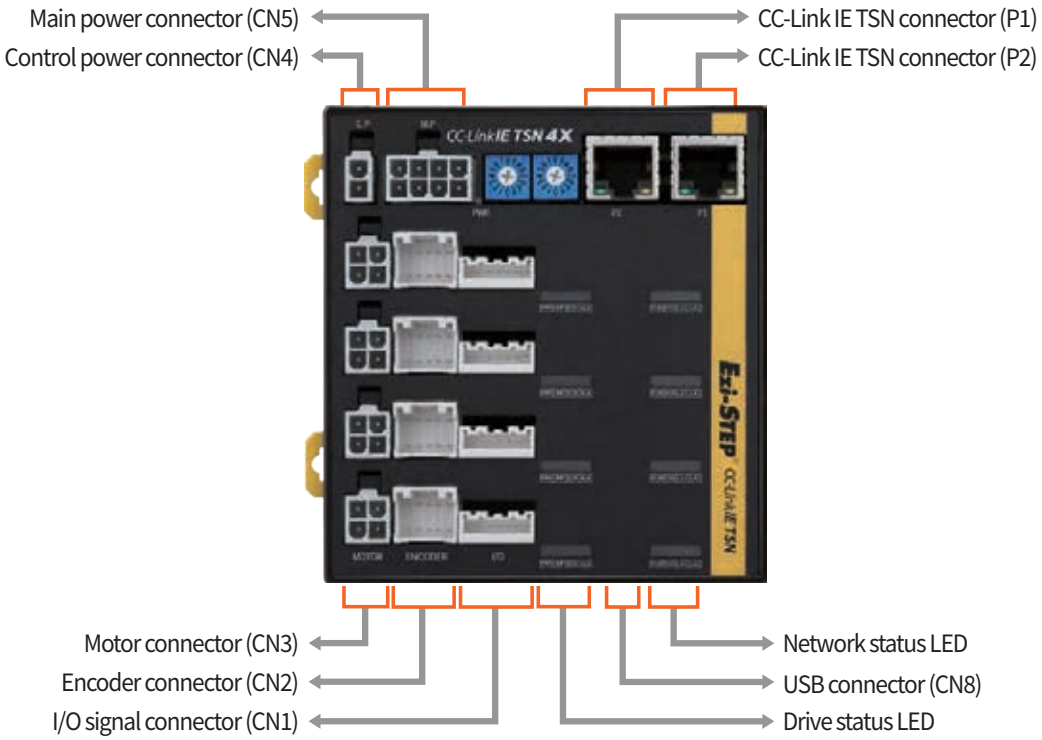
Dimensions of Motor [mm]

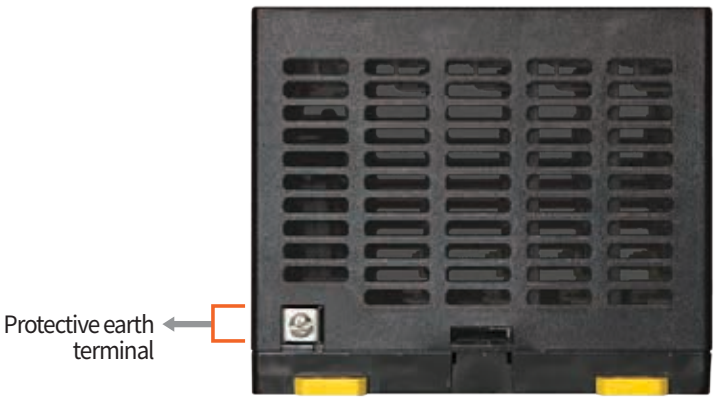


60 *mm*

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

Names and Functions of Each Part





※ Basic configuration of 3X drive is the same as 4X and only difference is number of axis.

1. Network Status LED

LED indicates communication status of CC-Link IE TSN.

Indicator	Color	Status	Description
RUN	Green	OFF	Power off
		Single Flash	Not connected to master
		Double Flash	Pre-operational state
		Blinking	Safe-operational state
		Interval Off	Operational state

Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		Blinking	Drive error
		Single Flash	CC-Link IE TSN communication error
		Double Flash	IP address conflict error

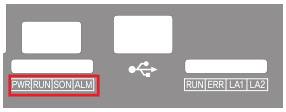
Indicator	Color	Status	Description
LINK1/ LINK2	Green	OFF	Link inactive
		ON	Link active



2. Drive Status LED

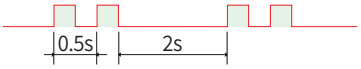
LED informs operation Status of the drive.

Indicator	Color	Function	Description
PWR	Green	Power Input Indicator	Lights up when power is supplied.
RUN	Yellow	Motor Running Indicator	Lights up while the motor is running.
SON	Orange	STEP ON / OFF Indicator	Lights up when Step is On; turns off when Step is Off.
ALM	Red	Alarm Indicator	Blinks repeatedly when an error occurs.



List of error types by the number of LED blinking

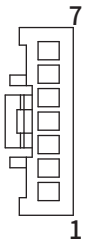
No.	Error Type	Causes
1	Over Current Error	The current through power devices in drive exceeds 4.8 A
2	Over Speed Error	The motor speed exceeds 3,000 r/min
5	Over Temperature Error	Internal temperature of the drive exceeds 85 °C
6	Over Regenerative Voltage Error	Back-EMF is higher than 48 V
7	Motor Connect Error	There is a problem with the connection between the drive and the motor
9	Main Power Voltage Error	Main supply voltage is approximately below 18 V
12	ROM Error	Error occurs in parameter storage device (ROM)



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

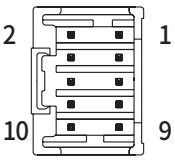
3. I/O Signal Connector (CN1)

No.	Function	I/O
1	EXT_24 V DC	Input
2	EXT_GND	Input
3	LIMIT+	Input
4	LIMIT-	Input
5	ORIGIN	Input
6	BRAKE+	Output
7	BRAKE-	Output



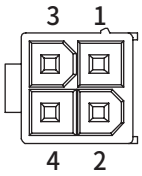
4. Encoder Connector (CN2)

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



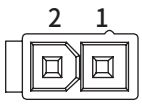
5. Motor Connector (CN3)

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



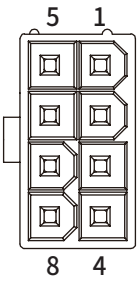
6. Control Power Connector (CN4)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input



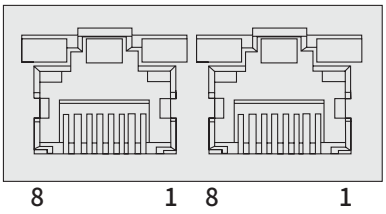
7. Main Power Connector (CN5)

No.	Function	I/O
1	24 V DC	Input
2	24 V DC	Input
3	24 V DC	Input
4	F.GND	----
5	GND	Input
6	GND	Input
7	GND	Input
8	F.GND	----

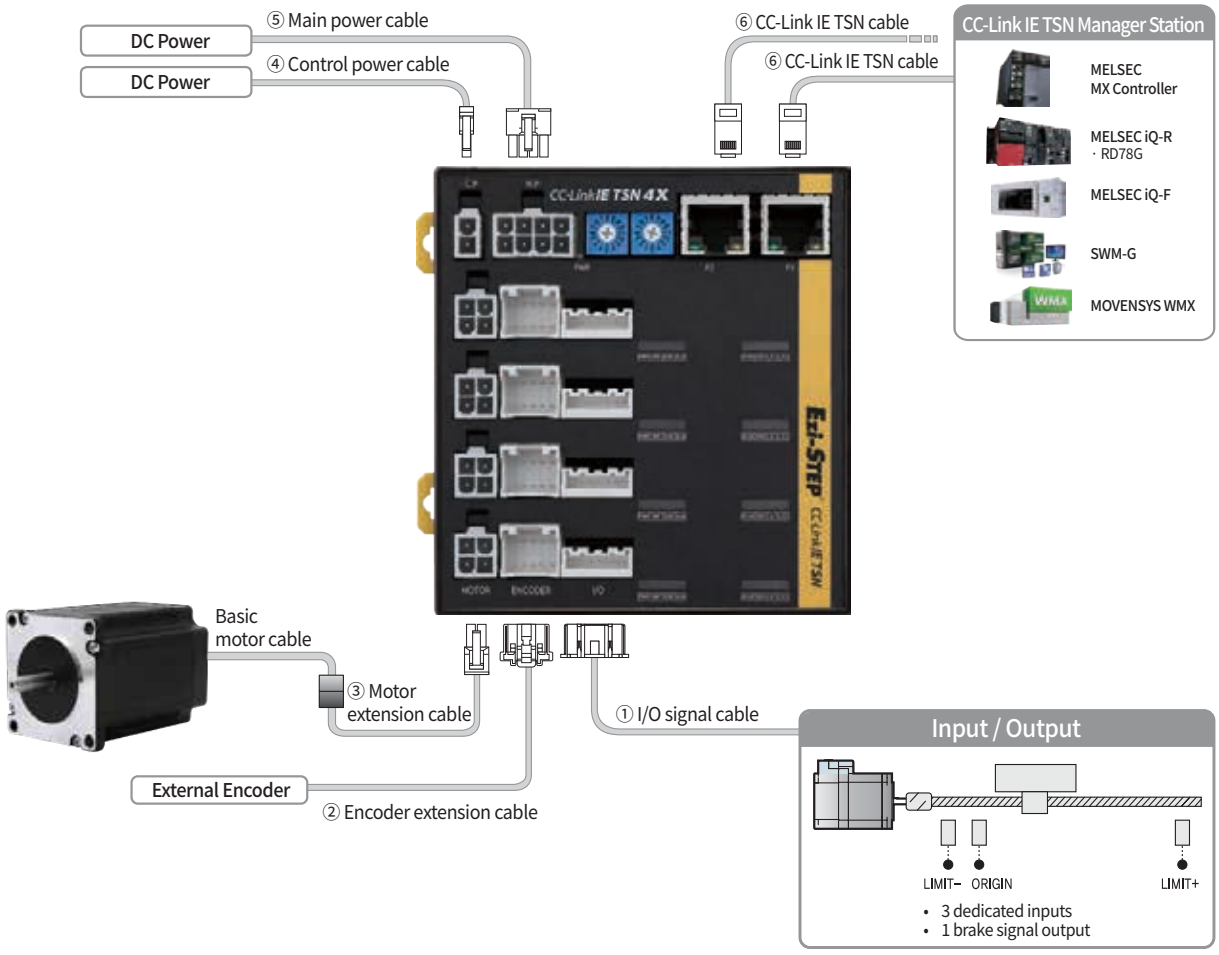


8. CC-Link IE TSN Connector (CN6, CN7)

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. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Encoder Extension Cable	20 m	
③ Motor Extension Cable	20 m	
④ Control Power Cable	2 m	
⑤ Main Power Cable	2 m	
⑥ CC-Link IE TSN Cable	100 m	
Basic Motor Cable	0.3 m (Basic length)	Basic cables are attached to motors.

Basic configuration of 3X drive is the same as 4X and only difference is number of axis.

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Main Power (CN5)		Housing	5557-08R	MOLEX
		Terminal	5556T	
Control 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	
I/O Signal (CN1)		Housing	PAP-07V-S	JST
		Terminal	SPHD-001T-P0.5	

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

2. Options

① I/O Signal Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN 4X drive and other input / output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - I/O Device Connection	CCTM-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CCTM-S-002F	2		
	CCTM-S-003F	3		
	CCTM-S-005F	5		
	CCTM-S-001M	1	Flexible Cable	
	CCTM-S-002M	2		
	CCTM-S-003M	3		
	CCTM-S-005M	5		

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

② Encoder Extension Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN 4X drive and the encoder.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Encoder Cable Connection	CTPR-E-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CTPR-E-002F	2		
	CTPR-E-003F	3		
	CTPR-E-005F	5		
	CTPR-E-001M	1	Flexible Cable	
	CTPR-E-002M	2		
	CTPR-E-003M	3		
	CTPR-E-005M	5		

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

③ Motor Extension Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN 4X drive and the motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Motor Cable Connection	CSVO-M-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSVO-M-002F	2		
	CSVO-M-003F	3		
	CSVO-M-005F	5		
	CSVO-M-001M	1	Flexible Cable	
	CSVO-M-002M	2		
	CSVO-M-003M	3		
	CSVO-M-005M	5		

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

④ Control Power Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN 4X drive and the control power.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Control Power Connection	CSVO-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CSVO-P-002F	2		
	CSVO-P-001M	1	Flexible Cable	
	CSVO-P-002M	2		

⑤ Main Power Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN 4X drive and the main power.

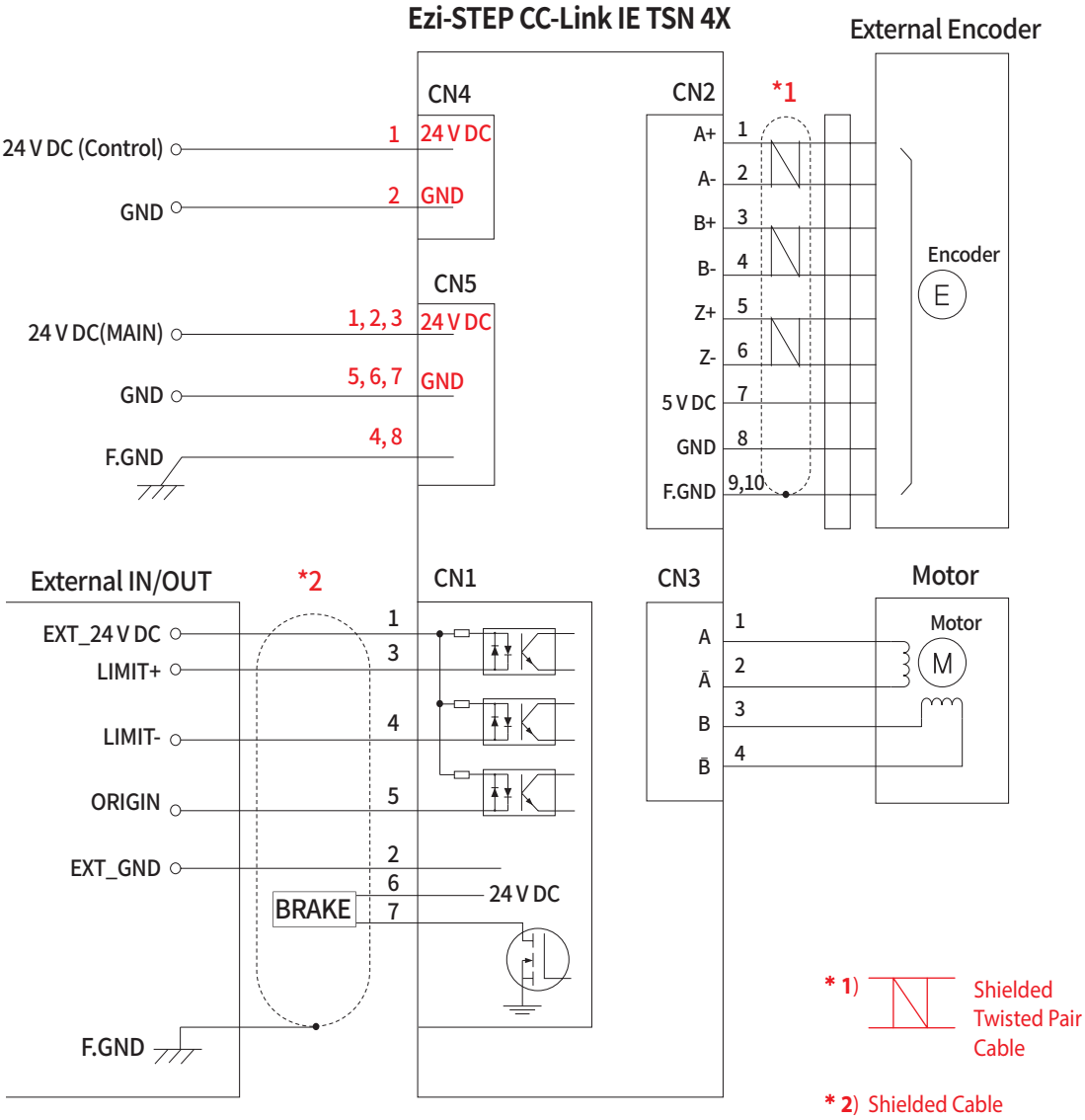
Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Main Power Cable Connection	CCTM-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CCTM-P-002F	2		
	CCTM-P-001M	1	Flexible Cable	
	CCTM-P-002M	2		

⑥ CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection	CGNR-EC-001F	1	• STP(Shielded Twisted Pair) Cable • Category 5e or higher • Max. Cable Length: 100 m • Fixed Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

External Wiring Diagram



※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

Ezi-STEP®

Micro Stepping System

CC-Link IE TSN ALL

- CC-Link IE TSN-compatible Microstepper System
- CiA402 Drive Profile
- Software Damping (Resonance & Vibration Suppression)
- Motor + Drive Integrated
- Space Saving, Reduced Wiring



FASTECH

Fast Accurate Smooth Motion

Ezi-STEP®

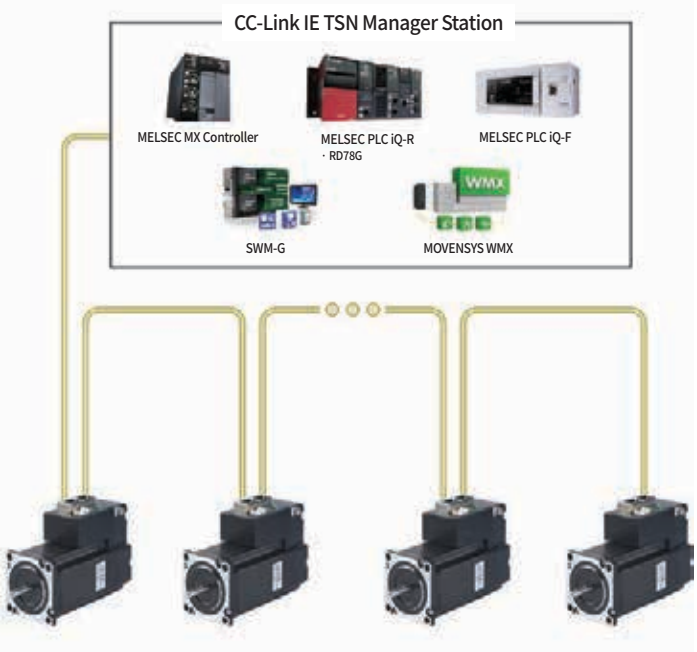
Micro Stepping System

CC-LinkIE TSN ALL



CC-Link IE TSN-compatible Motion Control

Ezi-STEP CC-Link IE TSN ALL is stepper motor control system that supports CC-Link IE TSN, an industrial network based on high-speed Ethernet (1 Gbps, full-duplex communication). Ezi-STEP CC-Link IE TSN ALL employs CiA402 drive profile and supports Cyclic Synchronous Position Mode (CSP Mode), Profile Position Mode (PP Mode) and Homing Mode (HM Mode).

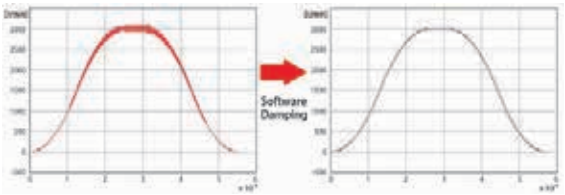


Microstep and Filtering

Ezi-STEP adopts a microstepping drive method, allowing the basic step angle of 1.8° to be subdivided up to 1/250 (0.0072°) for high-precision control. Unlike conventional drives, it performs PWM control every 50 µs, enabling enhanced current control for even more precise motion.
In addition, Ezi-STEP incorporates filtering control technology, ensuring smooth operation even at very low speeds.

Software Damping

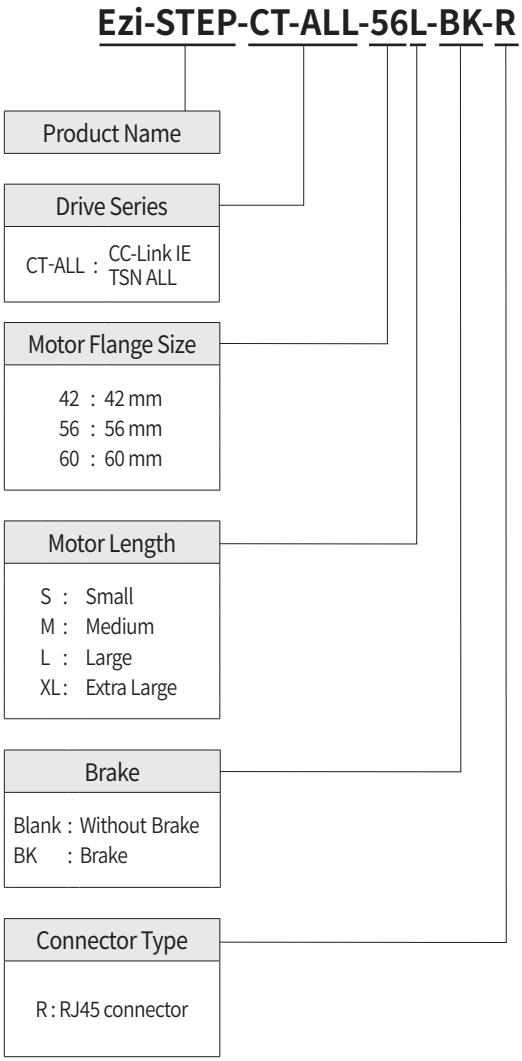
Motor vibration is created by magnetic flux ariations of the motor, lower current from the drive due to back-emf from the motor at high speeds and lowering of phase voltages from the drive. Ezi-STEP drive detects these problems and the MCU adjusts the phase of the current according to the pole position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

Ezi-STEP-CT-ALL Part Numbering



Standard Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-STEP-CT-ALL-42M-R	Integrated Motor and Drive Unit	
Ezi-STEP-CT-ALL-42L-R		
Ezi-STEP-CT-ALL-42XL-R		
Ezi-STEP-CT-ALL-56S-R		
Ezi-STEP-CT-ALL-56M-R		
Ezi-STEP-CT-ALL-56L-R		
Ezi-STEP-CT-ALL-60S-R		
Ezi-STEP-CT-ALL-60M-R		
Ezi-STEP-CT-ALL-60L-R		

Combination with Brake

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-STEP-CT-ALL-42M-BK-R	Integrated Motor and Drive Unit	
Ezi-STEP-CT-ALL-42L-BK-R		
Ezi-STEP-CT-ALL-42XL-BK-R		
Ezi-STEP-CT-ALL-56S-BK-R		
Ezi-STEP-CT-ALL-56M-BK-R		
Ezi-STEP-CT-ALL-56L-BK-R		
Ezi-STEP-CT-ALL-60S-BK-R		
Ezi-STEP-CT-ALL-60M-BK-R		
Ezi-STEP-CT-ALL-60L-BK-R		

Specifications of Drive

Model		Ezi-STEP-CT-ALL-42 series	Ezi-STEP-CT-ALL-56 series	Ezi-STEP-CT-ALL-60 series
Input Voltage		24 V DC ± 10 %		
Control Method		Bipolar PWM drive with 32 bit MCU		
Current Consumption		Max. 500 mA (Except motor current)		
Operating Condition	Ambient Temperature	· In Use: 0 ~ 50°C · In Storage: -20 ~ 70°C		
	Humidity	· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)		
	Vib. Resist.	0.5 g		
Function	Rotation Speed	0 ~ 3,000 r/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 Type	Over Current Error, Over Speed Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, ROM Error		
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B		
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode(CSP), Profile Position Mode(PP), Homing Mode(HM)		
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)		
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 3 user inputs (photocoupler inputs)		
	Output Signals	2 user outputs (photocoupler outputs), 1 brake signal output		

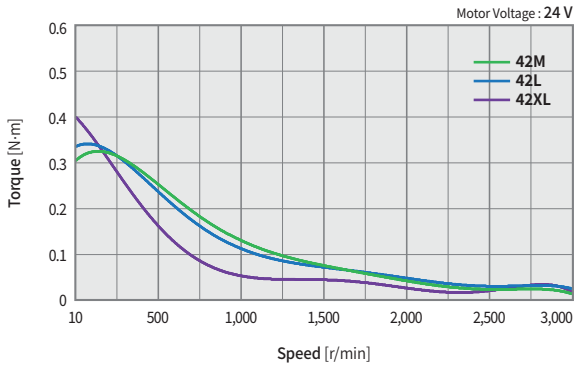
Specifications of Motor

Model			UNIT	Ezi-STEP-CT-ALL-42 Series			Ezi-STEP-CT-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·cm²	54	77	114	180	280	520
Motor Weight			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	3 mm	N	22	22	22	52	52	52
		8 mm		26	26	26	65	65	65
		13 mm		33	33	33	85	85	85
		18 mm		46	46	46	123	123	123
Permissible Axial Load			N	Must be less than the motor weight					
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)					
Insulation Class			-	Class B (130 °C)					
Operating Temperature			°C	0 ~ 55					

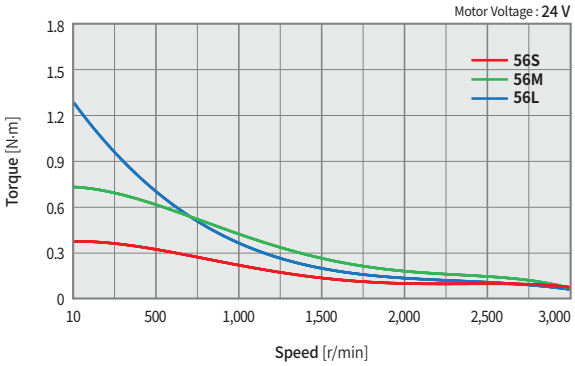
Model			UNIT	Ezi-STEP-CT-ALL-60 Series		
				60S	60M	60L
Drive Method			-	Bipolar		
Number Of Phases			-	2 Phase		
Current per Phase			A/Phase	4.0	4.0	4.0
Maximum Holding Torque			N·m	0.88	1.28	2.4
Rotor Inertia			g·cm²	240	490	690
Motor Weight			kg	0.840	0.980	1.540
Length(L)			mm	47	56	85
Permissible Radial Load	Distance From End Of Shaft	3 mm	N	70	70	70
		8 mm		87	87	87
		13 mm		114	114	114
		18 mm		165	165	165
Permissible Axial Load			N	Must be less than the motor weight		
Insulation Resistance			MΩ	Min. 100 (When measured with a 500 V DC insulation resistance meter)		
Insulation Class			-	Class B (130 °C)		
Operating Temperature			°C	0 ~ 55		

Torque Characteristics of Motor

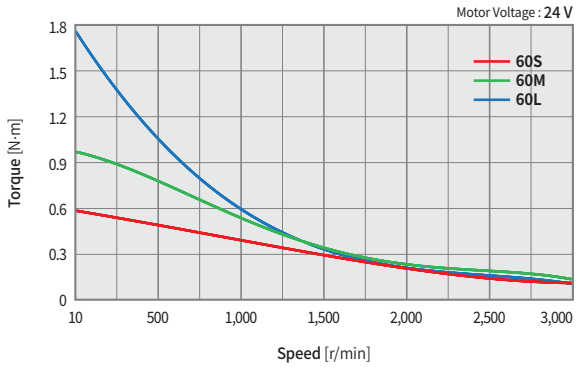
Ezi-STEP-CT-ALL-42 series



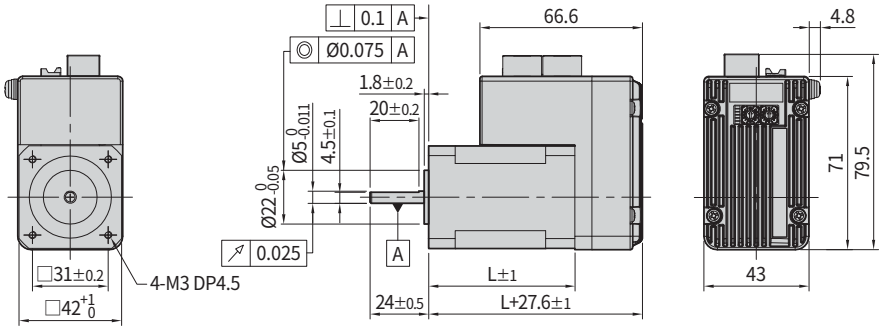
Ezi-STEP-CT-ALL-56 series



Ezi-STEP-CT-ALL-60 series

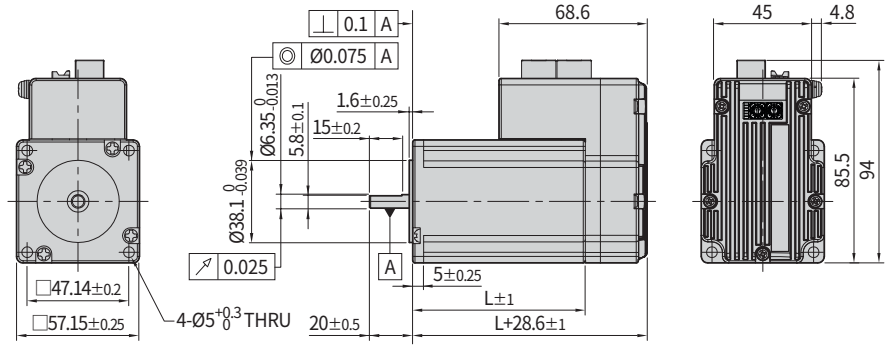


Dimensions of Motor [mm]



42 mm

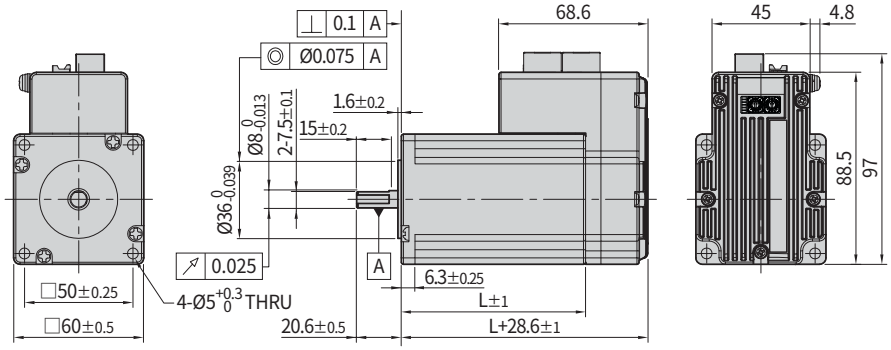
Model Name	Length(L)
42M	40
42L	48
42XL	60



56 mm

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

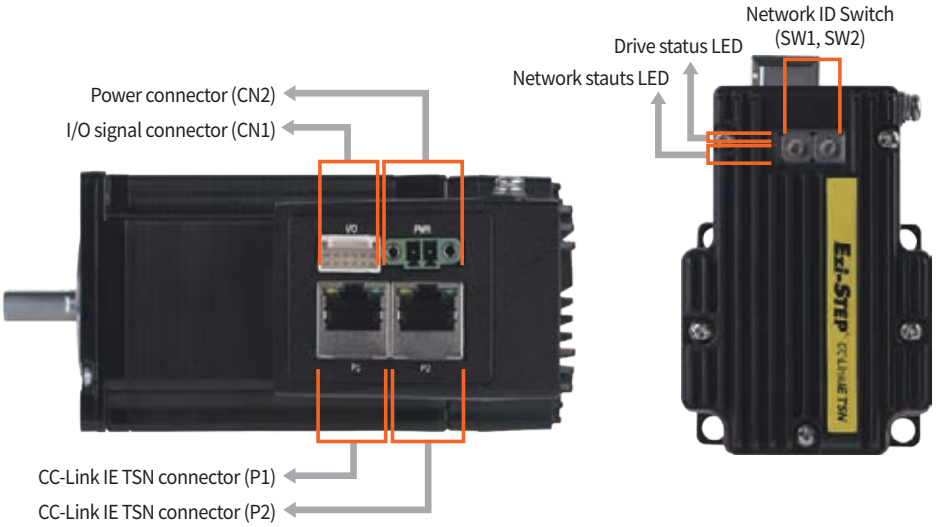
※ There are 2 kinds size of front shaft diameter for Ezi-STEP-CT-ALL-56 type as Ø 6.35 and Ø 8.0.



60 mm

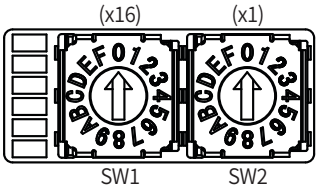
Model Name	Length(L)
60S	47
60M	56
60L	85

Settings and Operation



1. Network ID Switch

These switches are used to configure the fourth octet of the IP address.
SW1 sets the X16 digit, and SW2 sets the X1 digit.
(For more details, please refer to the relevant user manual.)



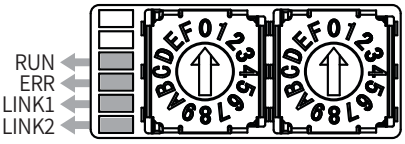
2. Network Status LED

LED indicates communication status of CC-Link IE TSN.

Indicator	Color	Status	Description
RUN	Green	OFF	Power off
		Single Flash	Not connected to master
		Double Flash	Pre-operational state
		Blinking	Safe-operational state
		Interval Off	Operational state

Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		Blinking	Drive error
		Single Flash	CC-Link IE TSN communication error
		Double Flash	IP address conflict error

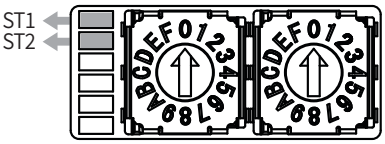
Indicator	Color	Status	Description
LINK1/ LINK2	Green	OFF	Link inactive
		ON	Link active



3. Drive Status LED

LED informs operation status of the drive.

LED Indicator	LED Status	Description
ST1 : ST2 :	ST1 blinks, ST2 is OFF.	STEP Off
ST1 : ST2 :	ST1 is ON, ST2 is OFF.	STEP On
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 the limit. *1
2	Over Speed Error	The motor speed exceeds 3,000 r/min
5	Over Temperature Error	Internal temperature of the drive exceeds 85 °C
6	Over Regenerative Voltage Error	Back-EMF is higher than limit value*2
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)

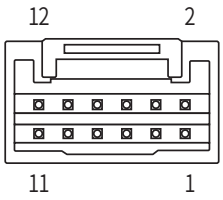
*1: Limit value depends on motor model. (Refer to the Manual)
*2: Voltage limit of Back-EMF depends on motor model. (Refer to the Manual)



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

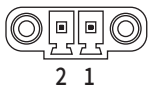
4. I/O Signal Connector (CN1)

No.	Function	I/O
1	EXT_24 V DC	Input
2	EXT_GND	Input
3	BRAKE+	Output
4	BRAKE-	Output
5	LIMIT+	Input
6	LIMIT-	Input
7	ORIGIN	Input
8	Digital In1	Input
9	Digital In2	Input
10	Digital In3	Input
11	Digital Out1	Output
12	Digital Out2	Output



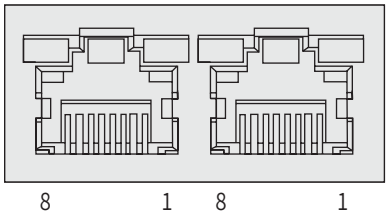
5. Power Connector (CN2)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input

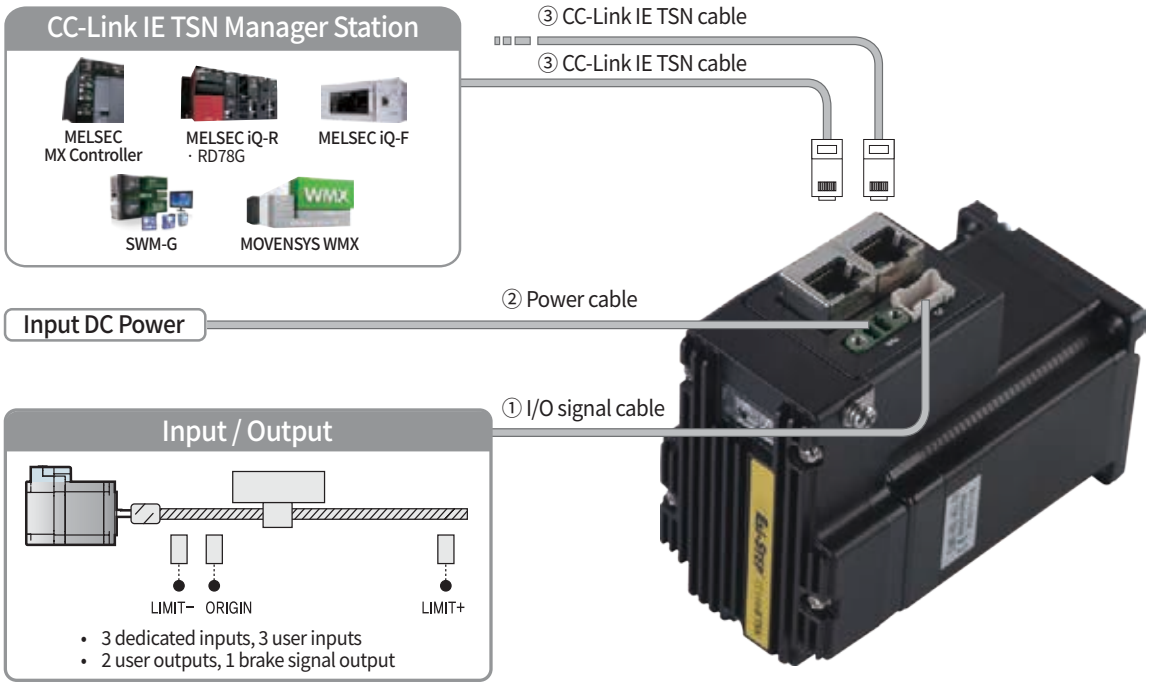


6. CC-Link IE TSN Connector (P1, P2)

No.	Function	No.	Function
1	DA+	6	DB-
2	DA-	7	DD+
3	DB+	8	DD-
4	DC+	Connector hood	F.GND
5	DC-		



System Configuration



Cable Type	Max. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Power Cable	2 m	
③ CC-Link IE TSN Cable	100 m	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose	Item	Part Number	Manufacturer
I/O Signal (CN1)	Terminal Block	MC421-38102	DECA
Power (CN2)	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 I/O Signal Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN ALL drive and other input/output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - I/O Device Connection	CSNR-S-001F	1	Fixed Cable	Max. Cable Length: 20 m
	CSNR-S-002F	2		
	CSNR-S-003F	3		
	CSNR-S-005F	5		
	CSNR-S-001M	1	Flexible Cable	
	CSNR-S-002M	2		
	CSNR-S-003M	3		
	CSNR-S-005M	5		

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

② Drive Power Cable

These are the cables to connect Ezi-STEP CC-Link IE TSN ALL drive and the power.

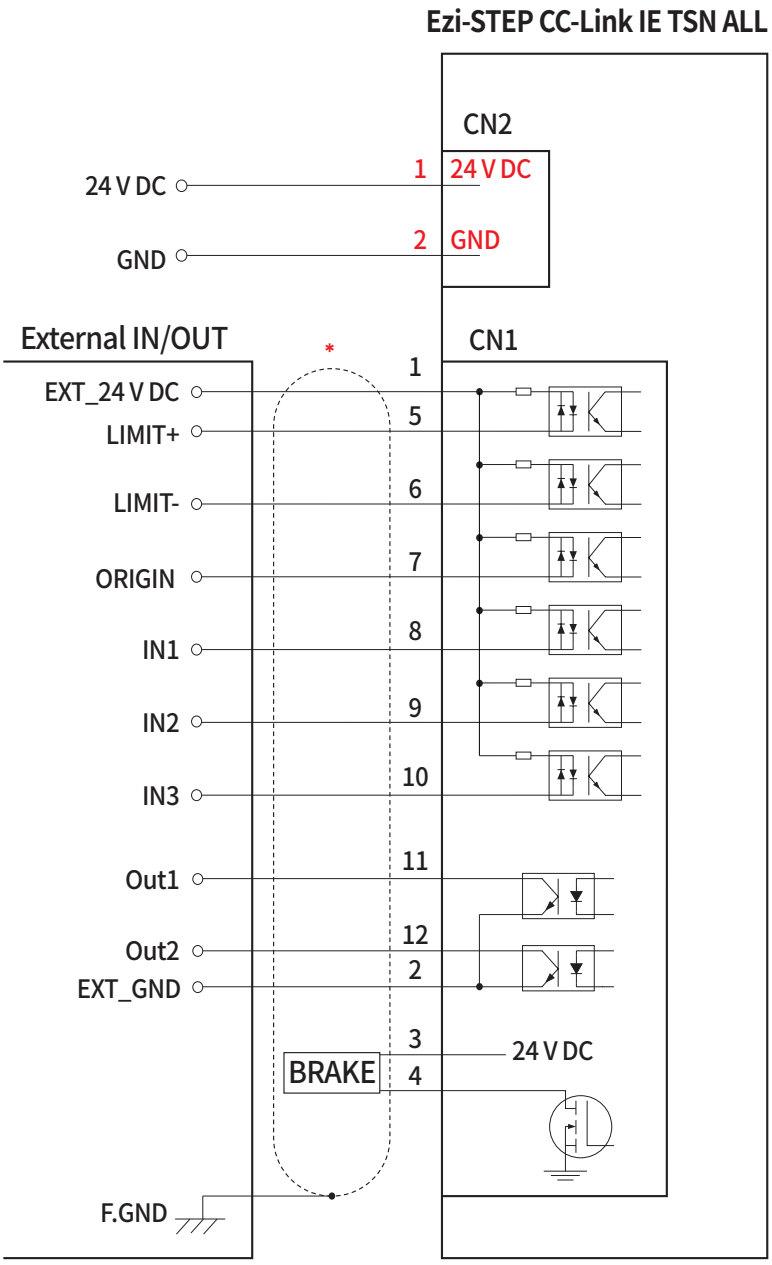
Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Power Connection	CSVA-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CSVA-P-002F	2		
	CSVA-P-001M	1	Flexible Cable	
	CSVA-P-002M	2		

③ CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Cable Type	Remarks
CC-Link IE TSN Connection	CGNR-EC-001F	1	Fixed Cable	• STP(Shielded Twisted Pair) Cable • Category 5e higher • Max. Cable Length: 100 m
	CGNR-EC-002F	2		
	CGNR-EC-003F	3		
	CGNR-EC-005F	5		
	CGNR-EC-001M	1	Flexible Cable	
	CGNR-EC-002M	2		
	CGNR-EC-003M	3		
	CGNR-EC-005M	5		

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

External Wiring Diagram



* Shielded Cable

※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

MEMO

Ezi-Pos® CC-Link IE TSN

Servo Control System G

- CC-Link IE TSN-compatible Low-Voltage Servo Control System
- CiA402 Drive Profile
- DC Power Supply Input (12 ~ 48 V DC)
- Auto-Tuning
- Torque-Off Function



FASTECH

Fast Accurate Smooth Motion

Ezi-Pos® CC-Link IE TSN

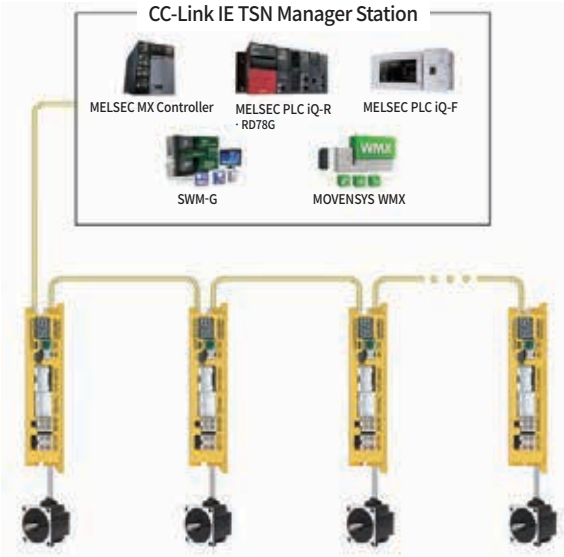
Servo Control System **G**



General-Purpose (G-Type) Motor Series

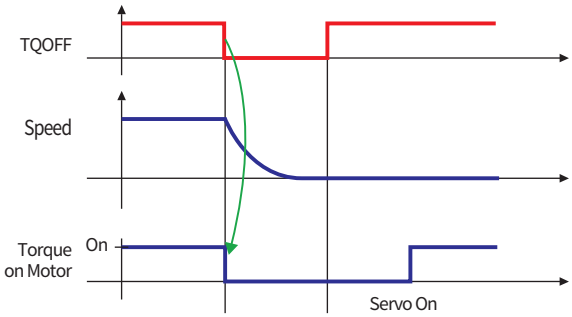
CC-Link IE TSN-compatible Motion Control

Ezi-POS CC-Link IE TSN is a servo control unit that supports CC-Link IE TSN, a high-speed Ethernet-based (1 Gbps, full-duplex) industrial network system. Ezi-POS CC-Link IE TSN employs CiA 402 drive profile and supports Cyclic Synchronous Position Mode, Profile Position Mode, and Homing Mode.



Torque-Off Function

Ezi-POS CC-Link IE TSN provides a hardware-based function to cut off power to the motor independently of CC-Link IE TSN communication. When the TQOFF input of the torque-off connector is detected, the drive immediately turns off the servo, and the motor stops.

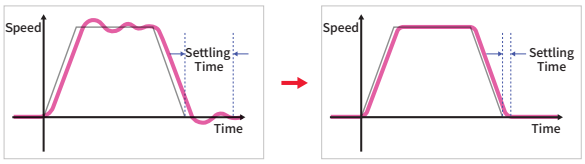


CAUTION

DO NOT use the Torque-Off function to stop or decelerate motors.

Auto-Tuning

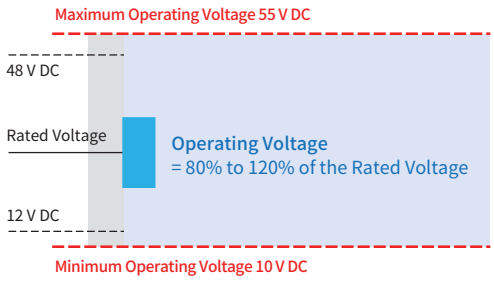
Ezi-POS CC-Link IE TSN offers a simple and user-friendly Auto-Tuning function. The drive automatically estimates the system's load inertia and adjusts the optimal gain values. By using the user software (GUI), Auto-Tuning can be completed with just a few button clicks. During the tuning process, each step can be monitored in real time, and the results can be tested immediately.



Before Auto-Tuning | After Auto-Tuning

Battery-compatible DC Power Input

Ezi-POS CC-Link IE TSN offers a low-voltage product lineup with a rated voltage of 12 to 48 V DC. It supports a wide operating voltage range (80 ~ 120 % of the rated voltage), features low power consumption, and enables high-efficiency motor control, making it ideal for battery-powered applications. The battery's charge status can also be continuously monitored by checking the drive's power voltage through the upper-level controller.



Ezi-POS CC-Link IE TSN Part Number

Ezi-POS-CT-A2A-G-GMX100AD-BK-P10

Series Name

Model Name
CT: CC-Link IE TSN

Drive Series
A : A Type

Drive Output
2 : 200 W

Encoder Input Type
A : Absolute Encoder

Motor Type
G : General Motor

Motor ID
GMX30AD : 30 W Motor
GMX50AD : 50 W Motor
GMX100AD : 100 W Motor
GMX200AD : 200 W Motor

* Encoder : 14-bit Single-Turn Absolute

Brake
No symbol : None
BK : Brake

Gearbox
No symbol : None
P: Parallel Shaft Gearbox
H: Hollow Shaft Flat Gearbox

Gear Ratio
No symbol : None
5 : 1:5
10 : 1:10
15 : 1:15
20 : 1:20
30 : 1:30
50 : 1:50
100 : 1:100
200 : 1:200

Standard Combination

Unit Part Number	Motor Part Number	Drive Part Number
Ezi-POS-CT-A2A-G-GMX30AD	EzPM-G-GMX30AD	EzPD-CT-A2A-G-GMX30AD
Ezi-POS-CT-A2A-G-GMX50AD	EzPM-G-GMX50AD	EzPD-CT-A2A-G-GMX50AD
Ezi-POS-CT-A2A-G-GMX100AD	EzPM-G-GMX100AD	EzPD-CT-A2A-G-GMX100AD
Ezi-POS-CT-A2A-G-GMX200AD	EzPM-G-GMX200AD	EzPD-CT-A2A-G-GMX200AD

Combination of Motor with Parallel Shaft Gearbox and Drive

Unit Part Number	Motor Part Number	Drive Part Number	Gear Ratio
Ezi-POS-CT-A2A-G-GMX30AD-P5	EzPM-G-GMX30AD-P5	EzPD-CT-A2A-G-GMX30AD	1:5
Ezi-POS-CT-A2A-G-GMX30AD-P10	EzPM-G-GMX30AD-P10		1:10
Ezi-POS-CT-A2A-G-GMX30AD-P15	EzPM-G-GMX30AD-P15		1:15
Ezi-POS-CT-A2A-G-GMX30AD-P20	EzPM-G-GMX30AD-P20		1:20
Ezi-POS-CT-A2A-G-GMX30AD-P30	EzPM-G-GMX30AD-P30		1:30
Ezi-POS-CT-A2A-G-GMX30AD-P50	EzPM-G-GMX30AD-P50		1:50
Ezi-POS-CT-A2A-G-GMX30AD-P100	EzPM-G-GMX30AD-P100		1:100
Ezi-POS-CT-A2A-G-GMX30AD-P200	EzPM-G-GMX30AD-P200		1:200
Ezi-POS-CT-A2A-G-GMX50AD-P5	EzPM-G-GMX50AD-P5	EzPD-CT-A2A-G-GMX50AD	1:5
Ezi-POS-CT-A2A-G-GMX50AD-P10	EzPM-G-GMX50AD-P10		1:10
Ezi-POS-CT-A2A-G-GMX50AD-P15	EzPM-G-GMX50AD-P15		1:15
Ezi-POS-CT-A2A-G-GMX50AD-P20	EzPM-G-GMX50AD-P20		1:20
Ezi-POS-CT-A2A-G-GMX50AD-P30	EzPM-G-GMX50AD-P30		1:30
Ezi-POS-CT-A2A-G-GMX50AD-P50	EzPM-G-GMX50AD-P50		1:50
Ezi-POS-CT-A2A-G-GMX50AD-P100	EzPM-G-GMX50AD-P100		1:100
Ezi-POS-CT-A2A-G-GMX50AD-P200	EzPM-G-GMX50AD-P200		1:200

Unit Part Number	Motor Part Number	Drive Part Number	Gear Ratio
Ezi-POS-CT-A2A-G-GMX100AD-P5	EzPM-G-GMX100AD-P5	EzPD-CT-A2A-G-GMX100AD	1:5
Ezi-POS-CT-A2A-G-GMX100AD-P10	EzPM-G-GMX100AD-P10		1:10
Ezi-POS-CT-A2A-G-GMX100AD-P15	EzPM-G-GMX100AD-P15		1:15
Ezi-POS-CT-A2A-G-GMX100AD-P20	EzPM-G-GMX100AD-P20		1:20
Ezi-POS-CT-A2A-G-GMX100AD-P30	EzPM-G-GMX100AD-P30		1:30
Ezi-POS-CT-A2A-G-GMX100AD-P50	EzPM-G-GMX100AD-P50		1:50
Ezi-POS-CT-A2A-G-GMX100AD-P100	EzPM-G-GMX100AD-P100		1:100
Ezi-POS-CT-A2A-G-GMX100AD-P200	EzPM-G-GMX100AD-P200		1:200
Ezi-POS-CT-A2A-G-GMX200AD-P5	EzPM-G-GMX200AD-P5	EzPD-CT-A2A-G-GMX200AD	1:5
Ezi-POS-CT-A2A-G-GMX200AD-P10	EzPM-G-GMX200AD-P10		1:10
Ezi-POS-CT-A2A-G-GMX200AD-P15	EzPM-G-GMX200AD-P15		1:15
Ezi-POS-CT-A2A-G-GMX200AD-P20	EzPM-G-GMX200AD-P20		1:20
Ezi-POS-CT-A2A-G-GMX200AD-P30	EzPM-G-GMX200AD-P30		1:30
Ezi-POS-CT-A2A-G-GMX200AD-P50	EzPM-G-GMX200AD-P50		1:50
Ezi-POS-CT-A2A-G-GMX200AD-P100	EzPM-G-GMX200AD-P100		1:100
Ezi-POS-CT-A2A-G-GMX200AD-P200	EzPM-G-GMX200AD-P200		1:200

Combination of Motor with Hollow Shaft Flat Gearbox and Drive

Unit Part Number	Motor Part Number	Drive Part Number	Gear Ratio
Ezi-POS-CT-A2A-G-GMX30AD-H5	EzPM-G-GMX30AD-H5	EzPD-CT-A2A-G-GMX30AD	1:5
Ezi-POS-CT-A2A-G-GMX30AD-H10	EzPM-G-GMX30AD-H10		1:10
Ezi-POS-CT-A2A-G-GMX30AD-H15	EzPM-G-GMX30AD-H15		1:15
Ezi-POS-CT-A2A-G-GMX30AD-H20	EzPM-G-GMX30AD-H20		1:20
Ezi-POS-CT-A2A-G-GMX30AD-H30	EzPM-G-GMX30AD-H30		1:30
Ezi-POS-CT-A2A-G-GMX30AD-H50	EzPM-G-GMX30AD-H50		1:50
Ezi-POS-CT-A2A-G-GMX30AD-H100	EzPM-G-GMX30AD-H100		1:100
Ezi-POS-CT-A2A-G-GMX30AD-H200	EzPM-G-GMX30AD-H200		1:200
Ezi-POS-CT-A2A-G-GMX50AD-H5	EzPM-G-GMX50AD-H5	EzPD-CT-A2A-G-GMX50AD	1:5
Ezi-POS-CT-A2A-G-GMX50AD-H10	EzPM-G-GMX50AD-H10		1:10
Ezi-POS-CT-A2A-G-GMX50AD-H15	EzPM-G-GMX50AD-H15		1:15
Ezi-POS-CT-A2A-G-GMX50AD-H20	EzPM-G-GMX50AD-H20		1:20
Ezi-POS-CT-A2A-G-GMX50AD-H30	EzPM-G-GMX50AD-H30		1:30
Ezi-POS-CT-A2A-G-GMX50AD-H50	EzPM-G-GMX50AD-H50		1:50
Ezi-POS-CT-A2A-G-GMX50AD-H100	EzPM-G-GMX50AD-H100		1:100
Ezi-POS-CT-A2A-G-GMX50AD-H200	EzPM-G-GMX50AD-H200		1:200

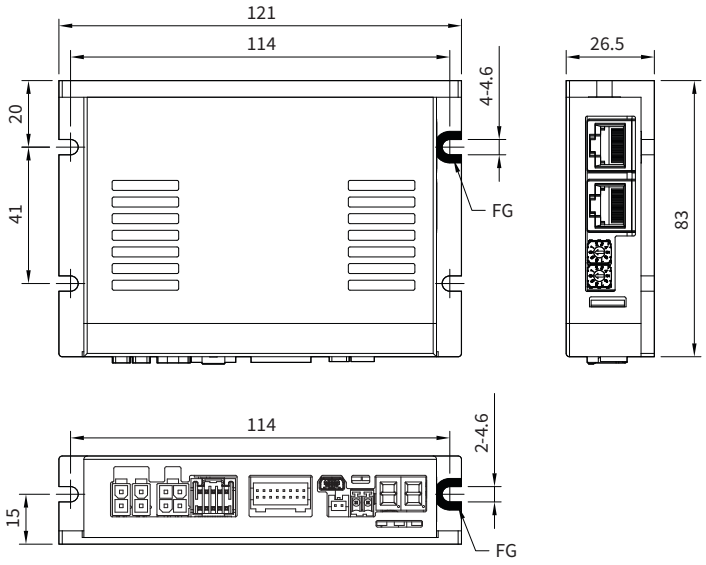
Unit Part Number	Motor Part Number	Drive Part Number	Gear Ratio
Ezi-POS-CT-A2A-G-GMX100AD-H5	EzPM-G-GMX100AD-H5	EzPD-CT-A2A-G-GMX100AD	1:5
Ezi-POS-CT-A2A-G-GMX100AD-H10	EzPM-G-GMX100AD-H10		1:10
Ezi-POS-CT-A2A-G-GMX100AD-H15	EzPM-G-GMX100AD-H15		1:15
Ezi-POS-CT-A2A-G-GMX100AD-H20	EzPM-G-GMX100AD-H20		1:20
Ezi-POS-CT-A2A-G-GMX100AD-H30	EzPM-G-GMX100AD-H30		1:30
Ezi-POS-CT-A2A-G-GMX100AD-H50	EzPM-G-GMX100AD-H50		1:50
Ezi-POS-CT-A2A-G-GMX100AD-H100	EzPM-G-GMX100AD-H100		1:100
Ezi-POS-CT-A2A-G-GMX100AD-H200	EzPM-G-GMX100AD-H200		1:200
Ezi-POS-CT-A2A-G-GMX200AD-H5	EzPM-G-GMX200AD-H5	EzPD-CT-A2A-G-GMX200AD	1:5
Ezi-POS-CT-A2A-G-GMX200AD-H10	EzPM-G-GMX200AD-H10		1:10
Ezi-POS-CT-A2A-G-GMX200AD-H15	EzPM-G-GMX200AD-H15		1:15
Ezi-POS-CT-A2A-G-GMX200AD-H20	EzPM-G-GMX200AD-H20		1:20
Ezi-POS-CT-A2A-G-GMX200AD-H30	EzPM-G-GMX200AD-H30		1:30
Ezi-POS-CT-A2A-G-GMX200AD-H50	EzPM-G-GMX200AD-H50		1:50
Ezi-POS-CT-A2A-G-GMX200AD-H100	EzPM-G-GMX200AD-H100		1:100

Specifications of Drive

Drive Part Number		EzPD-CT-A2A-G-GMX30AD EzPD-CT-A2A-G-GMX50AD EzPD-CT-A2A-G-GMX100AD	EzPD-CT-A2A-G-GMX200AD
Main Power Supply	Input Voltage	24 V DC ± 10 %	48 V DC ± 10 %
	Input Current	Maximum Rated Current 8.5 A (For motor-specific input current specifications, refer to the motor specification table.)	
Control Power (Optional)	Input Voltage	12 ~ 48 V DC ± 10 % (If the control power is not connected or its voltage is lower than the main power supply, the main power supply will be used instead.)	
	Current Consumption	4 W or lower	
Condition	Temperature	Operation: 0 ~ 45 °C Storage: -25 ~ 70 °C	
	Humidity	Operation: 85 % RH or less (no condensation) Storage: 85 % RH or less (no condensation)	
	Vibration Resistance	0.5 g	
	Protection Rating	IP20	
Functions	PWM Frequency	25 kHz	
	Current Control Cycle	40 µs	
	Speed/Position Control Cycle	400 µs	
	Speed Control Range	0 ~ 4,000 r/min	
	Encoder Interface	Absolute Encoder	
	Error Types	Overcurrent, Overspeed, Position Tracking Error, Overload, Overheating, Regenerative Overvoltage, Motor Connection Error, Encoder Connection Error, Main Power Undervoltage, In-Position Error, System Error, ROM Error, Motor Parameter Error, Main Power Overvoltage, Excessive Position Error, Emergency Stop Circuit Error	
	LED Indicators	Power status, Servo On status, and Alarm status	
	Brake Control	Output connector for brake control	
	Regenerative Resistor Control	Output connector for regenerative resistor control	
I/O Signals	Inputs	Dedicated Inputs: 3 points (LIMIT+, LIMIT-, ORIGIN), Photocoupler Input User Inputs: 2 points, Photocoupler Input	
	Outputs	User Outputs: 3 points, Photocoupler Output	
	Torque-Off	Dedicated Inputs: 2 points (TQOFF1, TQOFF2), Photocoupler Input	
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B	
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode(CSP), Profile Position Mode(PP), Homing Mode(HM)	
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)	

Dimensions of Drive [mm]

EzPD-CT-A2A-G-GMX30AD
EzPD-CT-A2A-G-GMX50AD
EzPD-CT-A2A-G-GMX100AD
EzPD-CT-A2A-G-GMX200AD

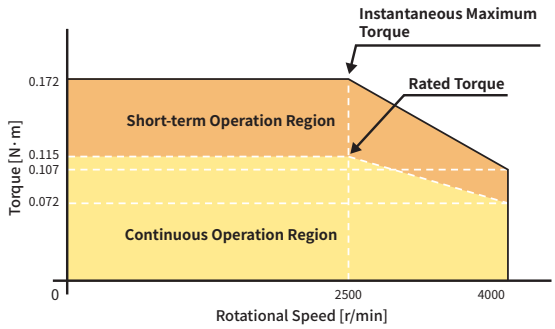


Specifications of Motor

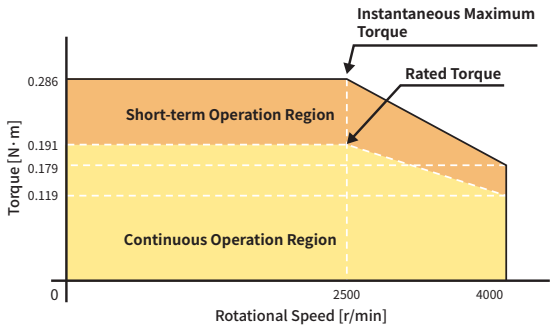
Motor Part Number				EzPM-G-GMX30AD	EzPM-G-GMX50AD	EzPM-G-GMX100AD	EzPM-G-GMX200AD
Motor Type				3-phase BLDC motor			
Rated Output (Continuous)			W	30	50	100	200
Rated Voltage			V	DC 24			DC 48
Main Power Rated Input Current			A	1.9	2.8	5.5	5.4
Main Power Maximum Input Current			A	2.9	4.2	7.1	6.0
Rated Torque			N·m	0.115	0.191	0.382	0.637
Rated Phase Current			Arms	1.787	2.976	5.366	6.196
Maximum Instantaneous Torque			N·m	0.172	0.286	0.497	0.732
Maximum Instantaneous Phase Current			Arms	2.615	4.336	6.870	7.011
Rated Rotational Speed			r/min	2500			3000
Maximum Rotational Speed			r/min	4000			
Encoder				Absolute Encoder (14-bit/rev)			
Motor Permissible Load Inertia Moment			10^{-4}kg· m^2	1.7	4.7	12.2	13.2
Rotor Inertia			10^{-4}kg· m^2	0.086	0.234	0.61	0.66
Motor Weight			kg	0.6	0.9	1.4	2.3
Permissible Radial Load	Distance from Output Shaft End	10 mm	N	70	120	160	197
		20 mm		100	140	170	220
Permissible Axial Load			N	Lower than 50 % or less of the motor's weight			
Insulation Resistance			MΩ	Minimum 100 MΩ (measured with 500 V DC insulation resistance tester)			
Insulation Class				EN Standard, Class E (120 °C)			
Operating Temperature and Humidity				0 ~ 50 °C, 85 % RH or lower(no condensation)			
Storage Temperature and Humidity				-25 ~ 70 °C, 85 % RH or lower(no condensation)			

Standard Motor Torque

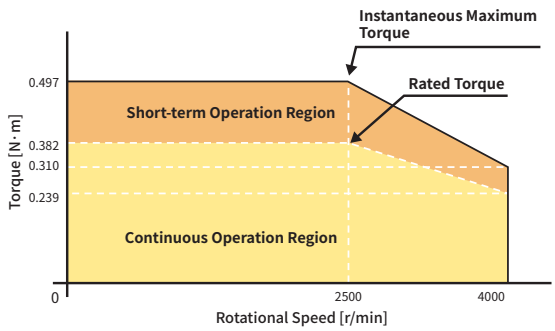
EzPM-G-GMX30AD



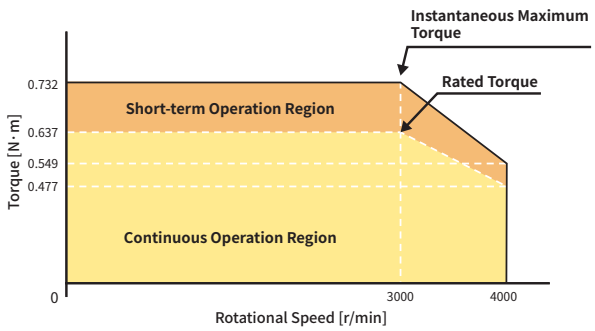
EzPM-G-GMX50AD



EzPM-G-GMX100AD

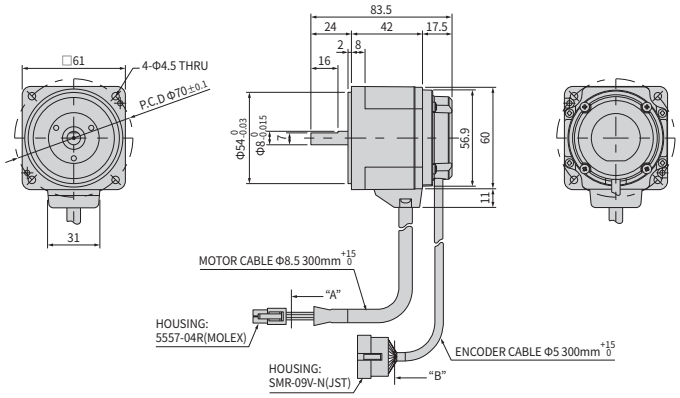


EzPM-G-GMX200AD

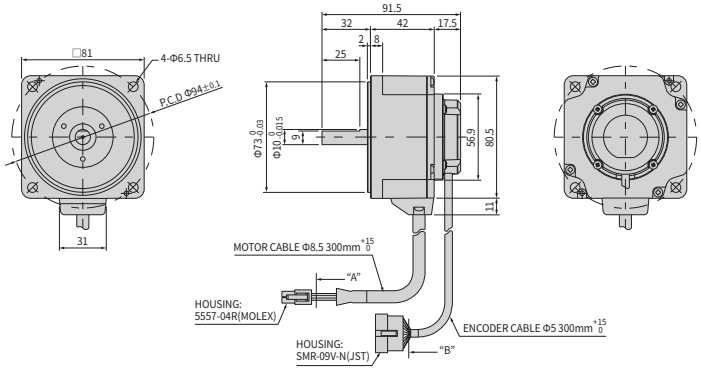


Dimensions of Motor [mm]

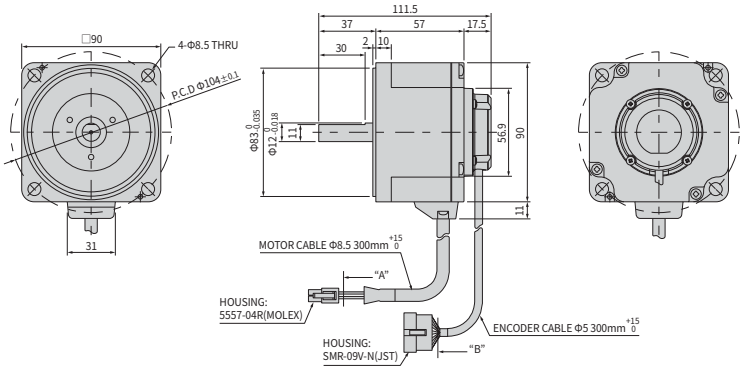
EzPM-G-GMX30AD



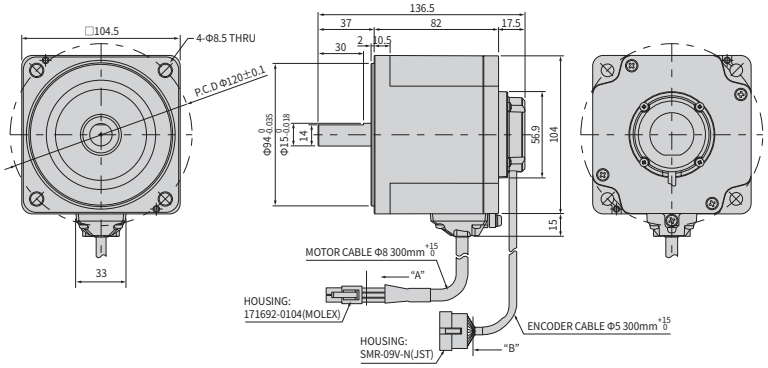
EzPM-G-GMX50AD



EzPM-G-GMX100AD



EzPM-G-GMX200AD



Parallel Shaft Gearbox Type Motor Specifications

EzPM-G-GMX30AD-P□

Unit Part Number	Motor Part Number	□ Gear Ratio	Back lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Output Shaft End		Permissible Axial Load[N]
				0~2500 r/min	4000 r/min			10 mm	20 mm	
Ezi-POS-CT-A2A-G-GMX30AD-P5	EzPM-G-GMX30AD-P5	5	Max. 1	0.52	0.32	800	1.0	100	150	40
Ezi-POS-CT-A2A-G-GMX30AD-P10	EzPM-G-GMX30AD-P10	10		1.03	0.64	400		150	200	
Ezi-POS-CT-A2A-G-GMX30AD-P15	EzPM-G-GMX30AD-P15	15		1.55	0.97	266.7				
Ezi-POS-CT-A2A-G-GMX30AD-P20	EzPM-G-GMX30AD-P20	20		2.06	1.29	200				
Ezi-POS-CT-A2A-G-GMX30AD-P30	EzPM-G-GMX30AD-P30	30		2.96	1.85	133.3		200	300	
Ezi-POS-CT-A2A-G-GMX30AD-P50	EzPM-G-GMX30AD-P50	50		4.93	3.08	80				
Ezi-POS-CT-A2A-G-GMX30AD-P100	EzPM-G-GMX30AD-P100	100		6.0	6.0	40				
Ezi-POS-CT-A2A-G-GMX30AD-P200	EzPM-G-GMX30AD-P200	200		6.0	6.0	20				

EzPM-G-GMX50AD-P□

Unit Part Number	Motor Part Number	□ Gear Ratio	Back lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Output Shaft End		Permissible Axial Load[N]
				0~2500 r/min	4000 r/min			10 mm	20 mm	
Ezi-POS-CT-A2A-G-GMX50AD-P5	EzPM-G-GMX50AD-P5	5	Max. 1	0.86	0.54	800	1.8	200	250	100
Ezi-POS-CT-A2A-G-GMX50AD-P10	EzPM-G-GMX50AD-P10	10		1.72	1.07	400		300	350	
Ezi-POS-CT-A2A-G-GMX50AD-P15	EzPM-G-GMX50AD-P15	15		2.58	1.61	266.7				
Ezi-POS-CT-A2A-G-GMX50AD-P20	EzPM-G-GMX50AD-P20	20		3.44	2.15	200				
Ezi-POS-CT-A2A-G-GMX50AD-P30	EzPM-G-GMX50AD-P30	30		4.93	3.08	133.3		450	550	
Ezi-POS-CT-A2A-G-GMX50AD-P50	EzPM-G-GMX50AD-P50	50		8.21	5.13	80				
Ezi-POS-CT-A2A-G-GMX50AD-P100	EzPM-G-GMX50AD-P100	100		16.0	10.27	40				
Ezi-POS-CT-A2A-G-GMX50AD-P200	EzPM-G-GMX50AD-P200	200		16.0	16.0	20				

※ The motor model name refers to the combination of motor and gearbox.
※ The motor weight indicates the total weight of the motor combined with the gearbox.
※ Specifications and characteristics not listed above are identical to those of the standard motor.

Parallel Shaft Gearbox Type Motor Specifications

EzPM-G-GMX100AD-P□

Unit Part Number	Motor Part Number	□ Gear Ratio	Back lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Output Shaft End		Permissible Axial Load[N]
				0~2500 r/min	4000 r/min			10 mm	20 mm	
Ezi-POS-CT-A2A-G-GMX100AD-P5	EzPM-G-GMX100AD-P5	5	Max. 1	1.72	1.07	800	2.7	300	400	150
Ezi-POS-CT-A2A-G-GMX100AD-P10	EzPM-G-GMX100AD-P10	10		3.44	2.15	400		400	500	
Ezi-POS-CT-A2A-G-GMX100AD-P15	EzPM-G-GMX100AD-P15	15		5.16	3.22	266.7				
Ezi-POS-CT-A2A-G-GMX100AD-P20	EzPM-G-GMX100AD-P20	20		6.88	4.30	200				
Ezi-POS-CT-A2A-G-GMX100AD-P30	EzPM-G-GMX100AD-P30	30		9.85	6.16	133.3		500	650	
Ezi-POS-CT-A2A-G-GMX100AD-P50	EzPM-G-GMX100AD-P50	50		16.42	10.27	80				
Ezi-POS-CT-A2A-G-GMX100AD-P100	EzPM-G-GMX100AD-P100	100		30.0	20.53	40				
Ezi-POS-CT-A2A-G-GMX100AD-P200	EzPM-G-GMX100AD-P200	200		30.0	30.0	20				

EzPM-G-GMX200AD-P□

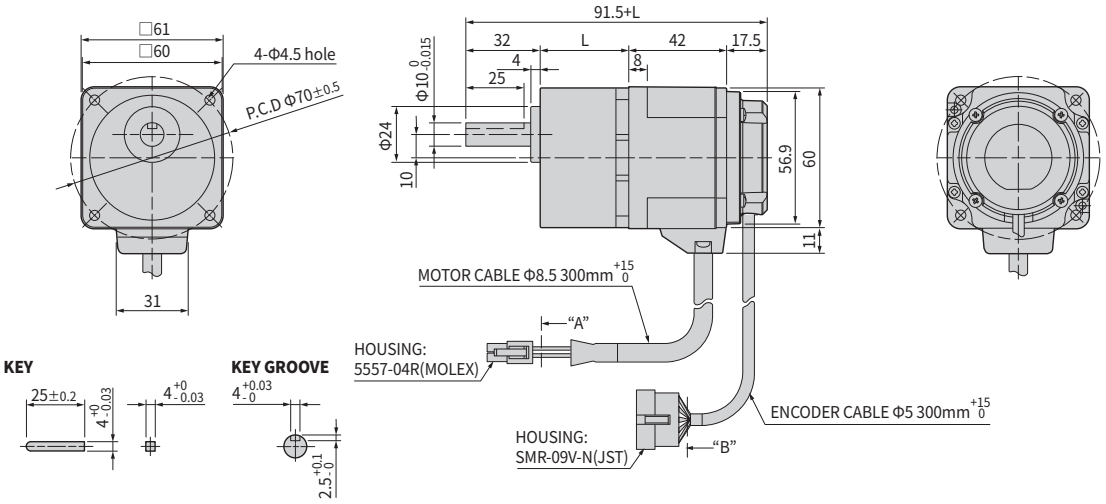
Unit Part Number	Motor Part Number	□ Gear Ratio	Back lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Output Shaft End		Permissible Axial Load[N]
				0~3000 r/min	4000 r/min			10 mm	20 mm	
Ezi-POS-CT-A2A-G-GMX200AD-P5	EzPM-G-GMX200AD-P5	5	Max. 1	2.86	2.15	800	5.3	550	800	200
Ezi-POS-CT-A2A-G-GMX200AD-P10	EzPM-G-GMX200AD-P10	10		5.73	4.30	400				
Ezi-POS-CT-A2A-G-GMX200AD-P15	EzPM-G-GMX200AD-P15	15		8.59	6.45	266.7				
Ezi-POS-CT-A2A-G-GMX200AD-P20	EzPM-G-GMX200AD-P20	20		11.46	8.59	200				
Ezi-POS-CT-A2A-G-GMX200AD-P30	EzPM-G-GMX200AD-P30	30		16.42	12.32	133.3		1000	1250	300
Ezi-POS-CT-A2A-G-GMX200AD-P50	EzPM-G-GMX200AD-P50	50		27.37	20.53	80				
Ezi-POS-CT-A2A-G-GMX200AD-P100	EzPM-G-GMX200AD-P100	100		51.57	38.67	40		1400	1700	400
Ezi-POS-CT-A2A-G-GMX200AD-P200	EzPM-G-GMX200AD-P200	200		70.0	70.0	20				

※ The motor model name refers to the combination of motor and gearbox.
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※ Specifications and characteristics not listed above are identical to those of the standard motor.

Parallel Shaft Gearbox Type Motor Specifications [mm]

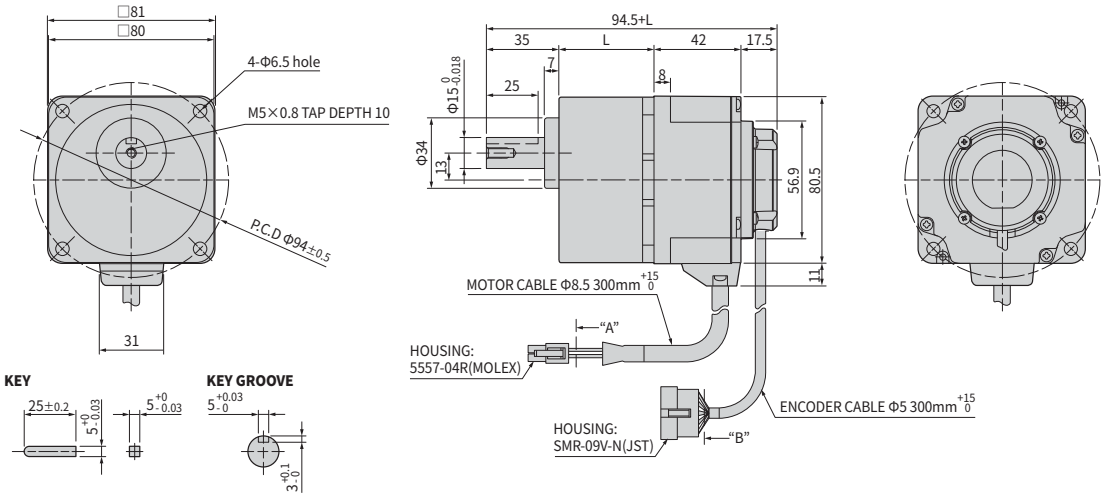
EzPM-G-GMX30AD-P□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2A-G-GMX30AD-P□	EzPM-G-GMX30AD-P□	5, 10, 15, 20	M4X50	34
		30, 50, 100	M4X55	38
		200	M4X60	43



EzPM-G-GMX50AD-P□

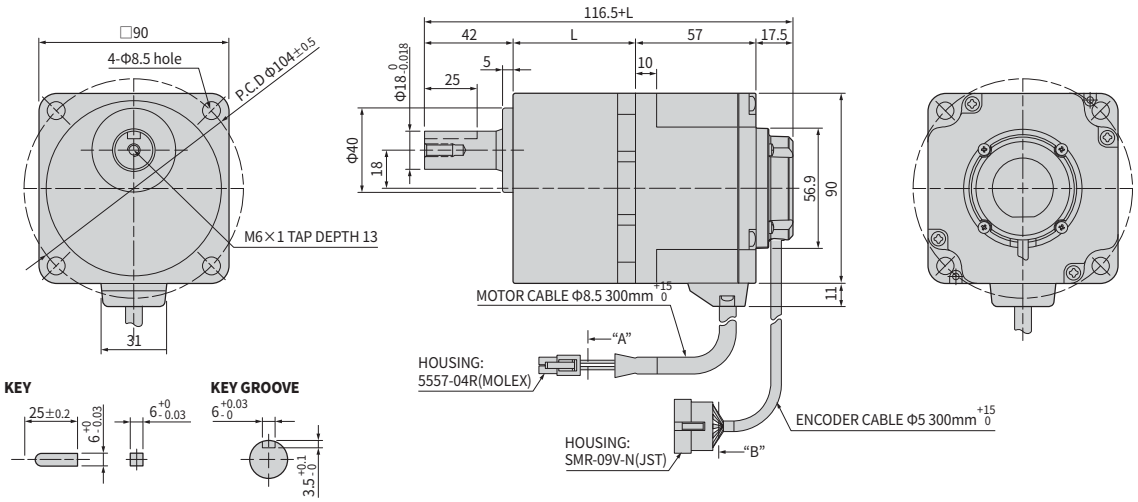
Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2A-G-GMX50AD-P□	EzPM-G-GMX50AD-P□	5, 10, 15, 20	M6X65	41
		30, 50, 100	M6X70	46
		200	M6X75	51



Parallel Shaft Gearbox Type Motor Specifications [mm]

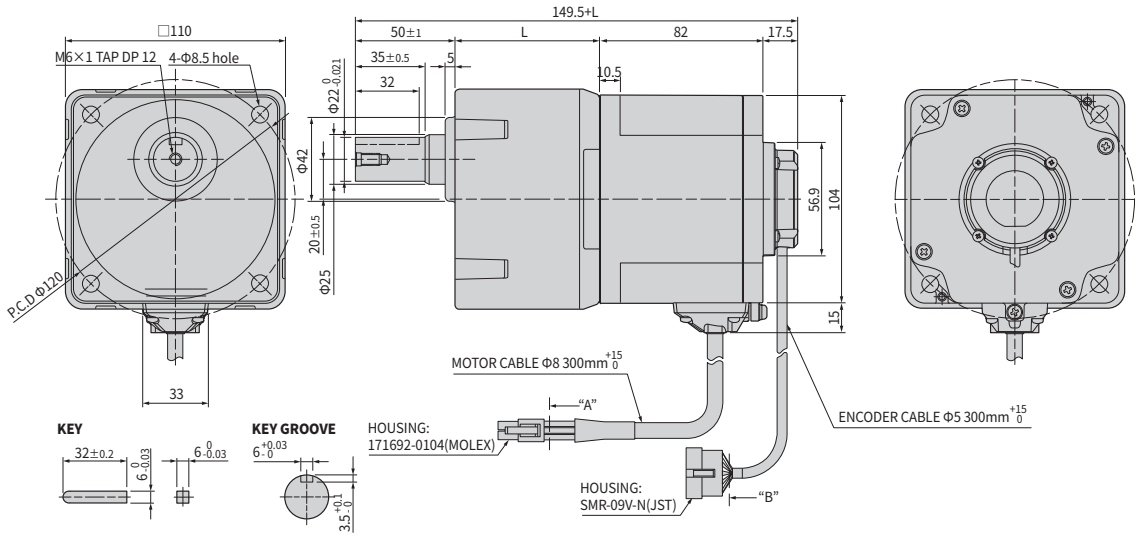
EzPM-G-GMX100AD-P□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2A-G-GMX100AD-P□	EzPM-G-GMX100AD-P□	5, 10, 15, 20	M8X75	45
		30, 50, 100	M8X90	58
		200	M8X95	64



EzPM-G-GMX200AD-P□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2A-G-GMX200AD-P□	EzPM-G-GMX200AD-P□	5, 10, 15, 20	M8X95	60
		30, 50	M8X110	72
		100, 200	M8X120	86



Hollow Shaft Flat Gearbox Type Motor Specifications

EzPM-G-GMX30AD-H□

Unit Part Number	Motor Part Number	□ Gear Ratio	Back lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Mounting Surface		Permissible Axial Load[N]
				0~2500 r/min	4000 r/min			10 mm	20 mm	
Ezi-POS-CT-A2A-G-GMX30AD-H5	EzPM-G-GMX30AD-H5	5	Max. 1	0.46	0.29	800	1.3	450	370	200
Ezi-POS-CT-A2A-G-GMX30AD-H10	EzPM-G-GMX30AD-H10	10		0.97	0.61	400				
Ezi-POS-CT-A2A-G-GMX30AD-H15	EzPM-G-GMX30AD-H15	15		1.46	0.91	266.7		500	400	
Ezi-POS-CT-A2A-G-GMX30AD-H20	EzPM-G-GMX30AD-H20	20		1.95	1.22	200				
Ezi-POS-CT-A2A-G-GMX30AD-H30	EzPM-G-GMX30AD-H30	30		2.92	1.83	133.3				
Ezi-POS-CT-A2A-G-GMX30AD-H50	EzPM-G-GMX30AD-H50	50		4.87	3.04	80				
Ezi-POS-CT-A2A-G-GMX30AD-H100	EzPM-G-GMX30AD-H100	100		9.74	6.09	40				
Ezi-POS-CT-A2A-G-GMX30AD-H200	EzPM-G-GMX30AD-H200	200		17.0	12.18	20				

EzPM-G-GMX50AD-H□

Unit Part Number	Motor Part Number	□ Gear Ratio	Back lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Mounting Surface		Permissible Axial Load[N]
				0~2500 r/min	4000 r/min			10 mm	20 mm	
Ezi-POS-CT-A2A-G-GMX50AD-H5	EzPM-G-GMX50AD-H5	5	Max. 1	0.81	0.51	800	2.4	800	660	400
Ezi-POS-CT-A2A-G-GMX50AD-H10	EzPM-G-GMX50AD-H10	10		1.62	1.01	400				
Ezi-POS-CT-A2A-G-GMX50AD-H15	EzPM-G-GMX50AD-H15	15		2.44	1.52	266.7		1200	1000	
Ezi-POS-CT-A2A-G-GMX50AD-H20	EzPM-G-GMX50AD-H20	20		3.25	2.03	200				
Ezi-POS-CT-A2A-G-GMX50AD-H30	EzPM-G-GMX50AD-H30	30		4.87	3.04	133.3				
Ezi-POS-CT-A2A-G-GMX50AD-H50	EzPM-G-GMX50AD-H50	50		8.12	5.07	80				
Ezi-POS-CT-A2A-G-GMX50AD-H100	EzPM-G-GMX50AD-H100	100		16.23	10.15	40				
Ezi-POS-CT-A2A-G-GMX50AD-H200	EzPM-G-GMX50AD-H200	200		32.47	20.29	20				

※ The motor model name refers to the combination of motor and gearbox.
※ The motor weight indicates the total weight of the motor combined with the gearbox.
※ Specifications and characteristics not listed above are identical to those of the standard motor.

Hollow Shaft Flat Gearbox Type Motor Specifications

EzPM-G-GMX100AD-H□

Unit Part Number	Motor Part Number	□ Gear Ratio	Back lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Mounting Surface		Permissible Axial Load[N]
				0~2500 r/min	4000 r/min			10 mm	20 mm	
Ezi-POS-CT-A2A-G-GMX100AD-H5	EzPM-G-GMX100AD-H5	5	Max. 1	1.62	1.01	800	3.5	900	770	500
Ezi-POS-CT-A2A-G-GMX100AD-H10	EzPM-G-GMX100AD-H10	10		3.25	2.03	400				
Ezi-POS-CT-A2A-G-GMX100AD-H15	EzPM-G-GMX100AD-H15	15		4.87	3.04	266.7		1300	1110	
Ezi-POS-CT-A2A-G-GMX100AD-H20	EzPM-G-GMX100AD-H20	20		6.49	4.06	200				
Ezi-POS-CT-A2A-G-GMX100AD-H30	EzPM-G-GMX100AD-H30	30		9.74	6.09	133.3				
Ezi-POS-CT-A2A-G-GMX100AD-H50	EzPM-G-GMX100AD-H50	50		16.23	10.15	80		1500	1280	
Ezi-POS-CT-A2A-G-GMX100AD-H100	EzPM-G-GMX100AD-H100	100		32.47	20.29	40				
Ezi-POS-CT-A2A-G-GMX100AD-H200	EzPM-G-GMX100AD-H200	200		64.94	40.58	20				

EzPM-G-GMX200AD-H□

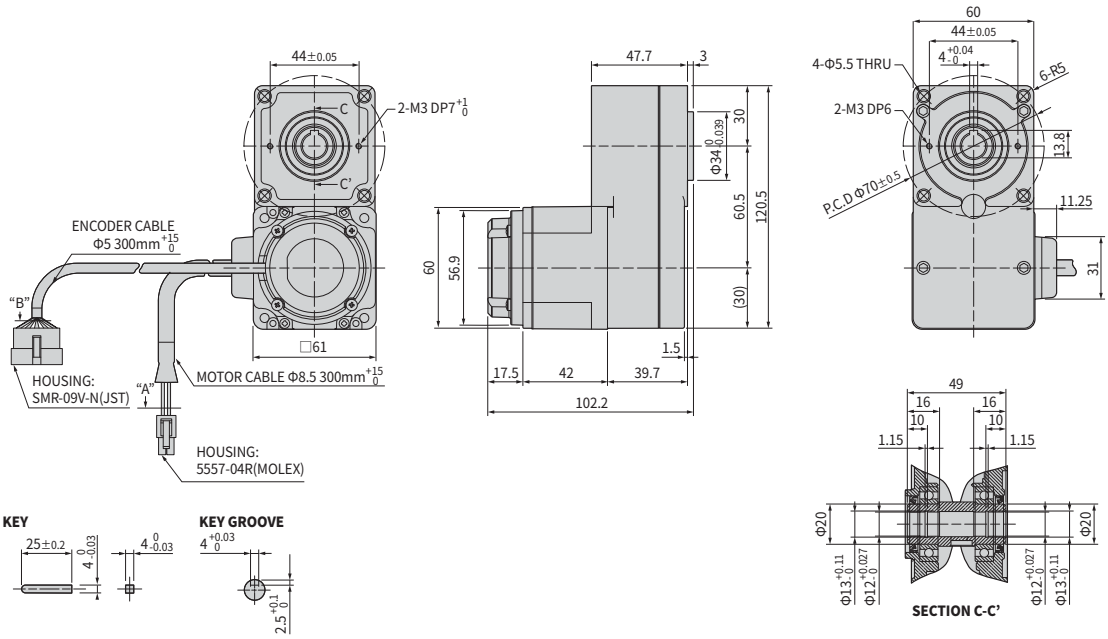
Unit Part Number	Motor Part Number	□ Gear Ratio	Back lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Mounting Surface		Permissible Axial Load[N]
				0~3000 r/min	4000 r/min			10 mm	20 mm	
Ezi-POS-CT-A2A-G-GMX200AD-H5	EzPM-G-GMX200AD-H5	5	Max. 1	2.71	2.03	800	7.1	1230	1070	800
Ezi-POS-CT-A2A-G-GMX200AD-H10	EzPM-G-GMX200AD-H10	10		5.41	4.06	400				
Ezi-POS-CT-A2A-G-GMX200AD-H15	EzPM-G-GMX200AD-H15	15		8.12	6.09	266.7		1680	1470	
Ezi-POS-CT-A2A-G-GMX200AD-H20	EzPM-G-GMX200AD-H20	20		10.82	8.12	200				
Ezi-POS-CT-A2A-G-GMX200AD-H30	EzPM-G-GMX200AD-H30	30		16.23	12.18	133.3				
Ezi-POS-CT-A2A-G-GMX200AD-H50	EzPM-G-GMX200AD-H50	50		27.06	20.29	80		2040	1780	
Ezi-POS-CT-A2A-G-GMX200AD-H100	EzPM-G-GMX200AD-H100	100		54.11	40.58	40				

※ The motor model name refers to the combination of motor and gearbox.
※ The motor weight indicates the total weight of the motor combined with the gearbox.
※ Specifications and characteristics not listed above are identical to those of the standard motor.

Hollow Shaft Flat Gearbox Type Motor Specifications[mm]

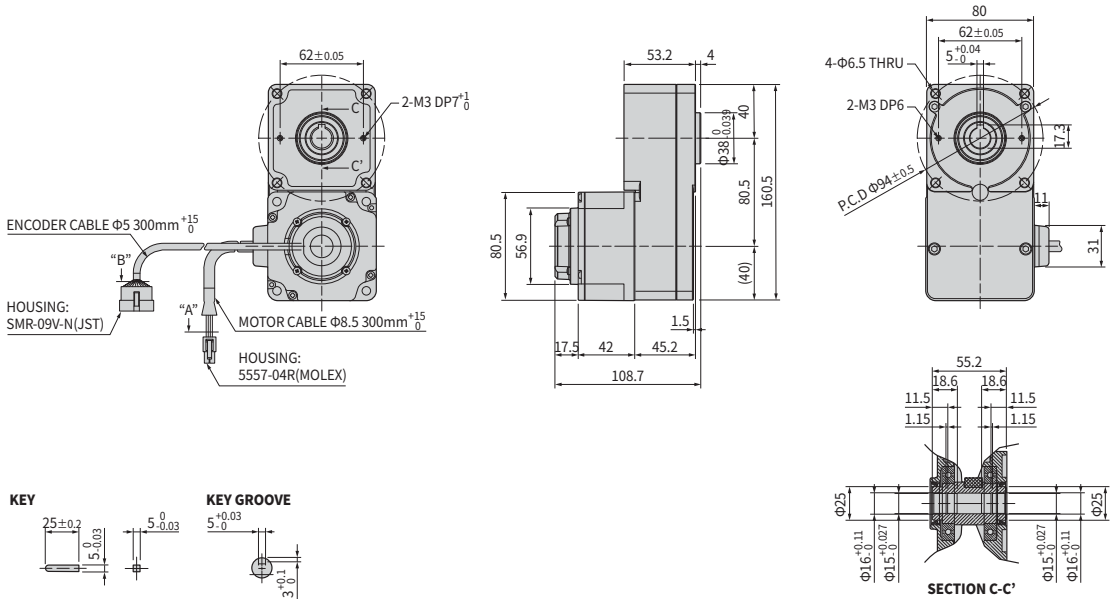
EzPM-G-GMX30AD-H□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications
Ezi-POS-CT-A2A-G-GMX30AD-H□	EzPM-G-GMX30AD-H□	5, 10, 15, 20, 30, 50, 100, 200	M5X65



EzPM-G-GMX50AD-H□

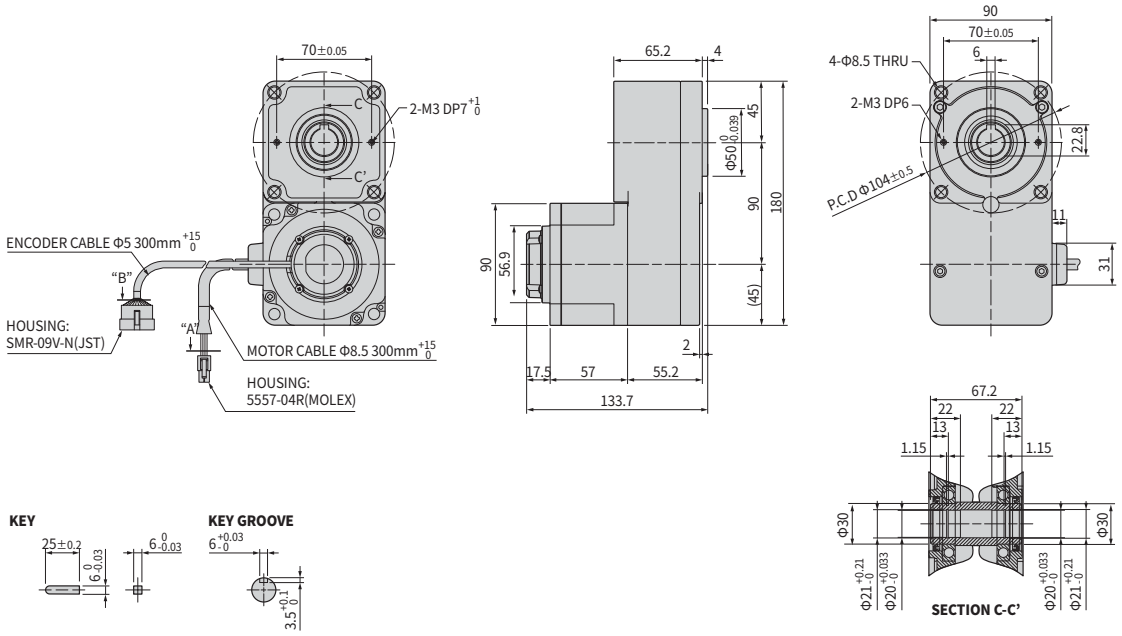
Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications
Ezi-POS-CT-A2A-G-GMX50AD-H□	EzPM-G-GMX50AD-H□	5, 10, 15, 20, 30, 50, 100, 200	M6X70



Hollow Shaft Flat Gearbox Type Motor Specifications[mm]

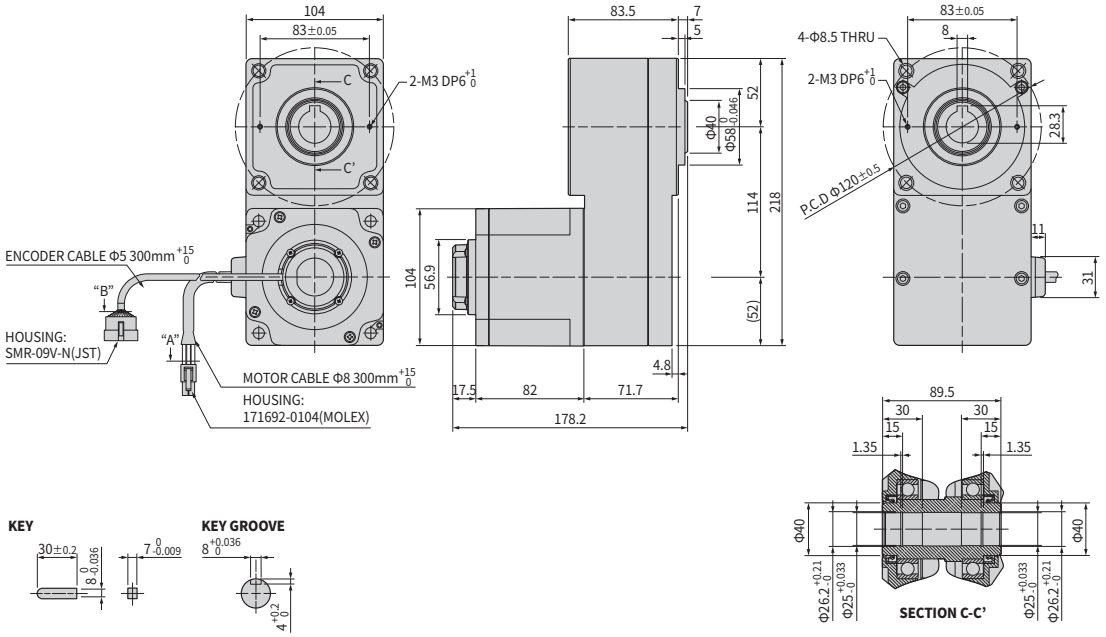
EzPM-G-GMX100AD-H□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications
Ezi-POS-CT-A2A-G-GMX100AD-H□	EzPM-G-GMX100AD-H□	5, 10, 15, 20, 30, 50, 100, 200	M8X90



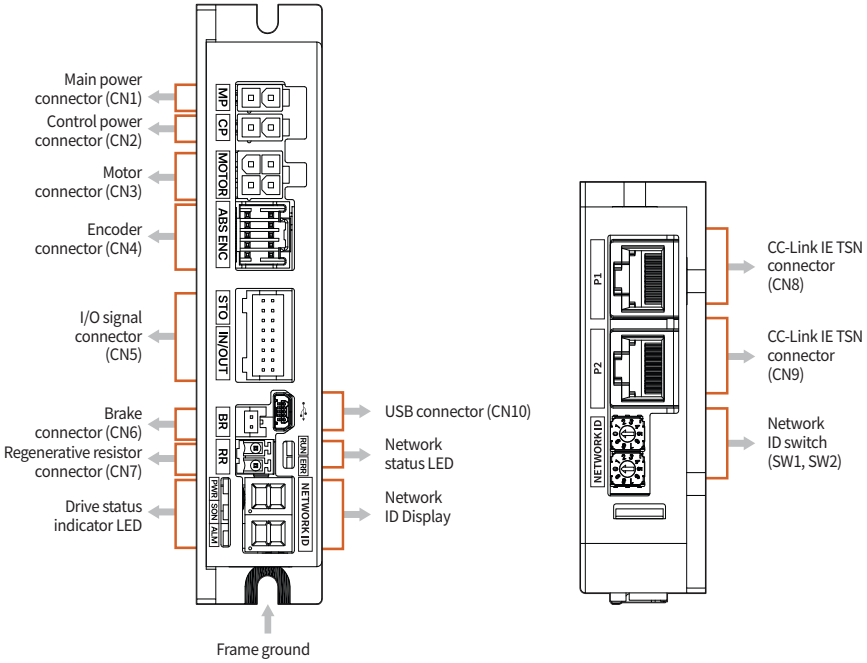
EzPM-G-GMX200AD-H□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications
Ezi-POS-CT-A2A-G-GMX200AD-H□	EzPM-G-GMX200AD-H□	5, 10, 15, 20, 30, 50, 100	M8X100



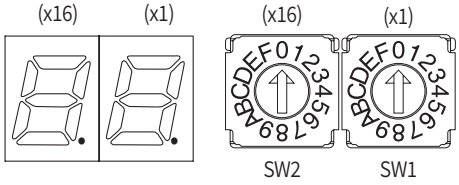
Settings and Operation

EzPD-CT-A2A-G-GMX30AD
EzPD-CT-A2A-G-GMX50AD
EzPD-CT-A2A-G-GMX100AD
EzPD-CT-A2A-G-GMX200AD



1. Network ID Display and Switches(SW1, SW2)

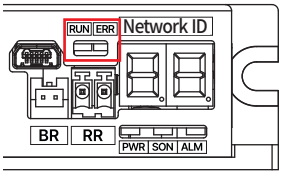
These switches are used to configure the fourth octet of the IP address. The value is displayed on the 7-segment LED in hexadecimal format. SW1 sets the X16 digit, and SW2 sets the X1 digit.
(For more details, please refer to the relevant user manual.)



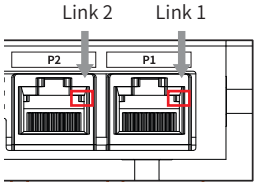
2. Network Status LED

These LEDs indicate the communication status of CC-Link IE TSN.
Link1/Link2 LEDs are located at the upper right corner of CC-Link IE TSN ports(P1, P2).

Indicator	Color	Status	Description
RUN	Green	OFF	Power off
		Single Flash	Not connected to master
		Double Flash	Pre-operational state
		Blinking	Safe-operational state
		Interval Off	Operational state



Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		Blinking	Drive error
		Single Flash	CC-Link IE TSN communication error
		Double Flash	IP address conflict error



Indicator	Color	Status	Description
Link1/ Link2	Green	OFF	Link inactive
		ON	Link active

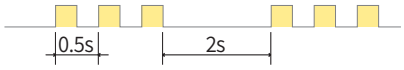
3. Drive Status LED

Indicator	Color	Function	Description
PWR	Green	Power Input Indicator	Lights up when power is supplied and the drive is operating normally. (During initialization or firmware update, the indicator blinks.)
SON	Orange	Servo ON / OFF Indicator	Lights up when Servo is on; turns off when Servo is off.
ALM	Red	Alarm Indicator	Blinks repeatedly when an error occurs.

List of error types by the number of LED blinking

No.	Error Code	Error Type	Cause
1	E-001	Overcurrent Error	Excessive current flowed through the motor drive components *1
2	E-002	Overspeed Error	Motor drive speed exceeds the allowable limit *1
3	E-003	Position Tracking Error	Position error (difference between command and actual position) exceeds the set value during operation *2
4	E-004	Overload Error	Load exceeding the motor's continuous maximum torque applied for a certain period *1
5	E-005	Overtemperature Error	Internal temperature of the drive exceeds 85 °C
6	E-006	Regenerative Overvoltage	Internal motor drive voltage exceeds the limit due to increased back EMF or regenerative operation *1
7	E-007	Motor Connection Error	Abnormal connection between the drive and the motor
8	E-008	Encoder Connection Error	Abnormal connection between the drive and the encoder
9	E-009	Main Power Undervoltage Error	Main power voltage is below the minimum allowable value *1
10	E-010	In-position Error	Position error exceeding the set value continues for more than 3 seconds after operation completion *2
11	E-011	System Error	Internal system error in the drive
12	E-012	ROM Error	Error in the parameter storage device (ROM)
13	E-013	Motor Parameter Error	Motor parameters are unset or exceed the normal range
14	E-014	Main Power Overvoltage Error	Main power voltage exceeds the allowable limit *1
15	E-015	Excessive Position Error	Excessive position error occurs after the motor has completed its operation *2
16	E-016	Emergency Stop Circuit Error	TQOFF1 and TQOFF2 input states do not match

*1: Each threshold or setting is fixed and varies depending on the motor.
*2: Each threshold or setting is predefined but can be modified via parameters.
※ When an alarm occurs, the 7-segment display will show the error code instead of "Network ID."
※ For more details, please refer to the respective user manual.



Alarm LED Blink
(e.g., Position Tracking Error)

4. Main Power / Control Power Connectors (CN1, CN2)

(CN1)

No.	Function	I/O
1	DC_MAIN	Inputs
2	GND	Inputs



(CN2)

No.	Function	I/O
1	DC_CON	Inputs
2	GND	Inputs

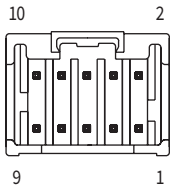
5. Motor Connector (CN3)

No.	Function	I/O
1	F.GND	----
2	U Phase	Outputs
3	W Phase	Outputs
4	V Phase	Outputs



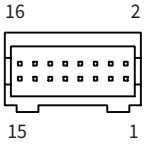
6. Encoder Connector (CN4)

No.	Function	I/O
1	SL+	Inputs
2	SL-	Inputs
3	MA+	Inputs
4	MA-	Inputs
5	CS	Outputs
6	MON	Inputs
7	5 V DC	Outputs
8	GND	Outputs
9	F.GND	----
10	F.GND	----



7. I/O Connector (CN5)

No.	Function	I/O
1	LIMIT+	Inputs
2	LIMIT-	Inputs
3	ORIGIN	Inputs
4	Digital In1	Inputs
5	Digital In2	Inputs
6	Digital Out1	Outputs
7	Digital Out2	Outputs
8	Digital Out3	Outputs
9	OUT_COM	Inputs
10	IN_COM	Inputs
11	TQOFF1_P	Inputs
12	TQOFF1_N	Inputs
13	TQOFF2_P	Inputs
14	TQOFF2_N	Inputs
15	OVRTQ	Inputs
16	GND	Outputs



8. Brake Connector (CN6)

No.	Function	I/O
1	BRAKE+	Outputs
2	BRAKE-	Outputs



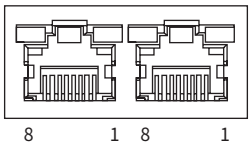
9. Regenerative Resistor Connector (CN7)

No.	Function	I/O
1	RR+	Outputs
2	RR-	Outputs

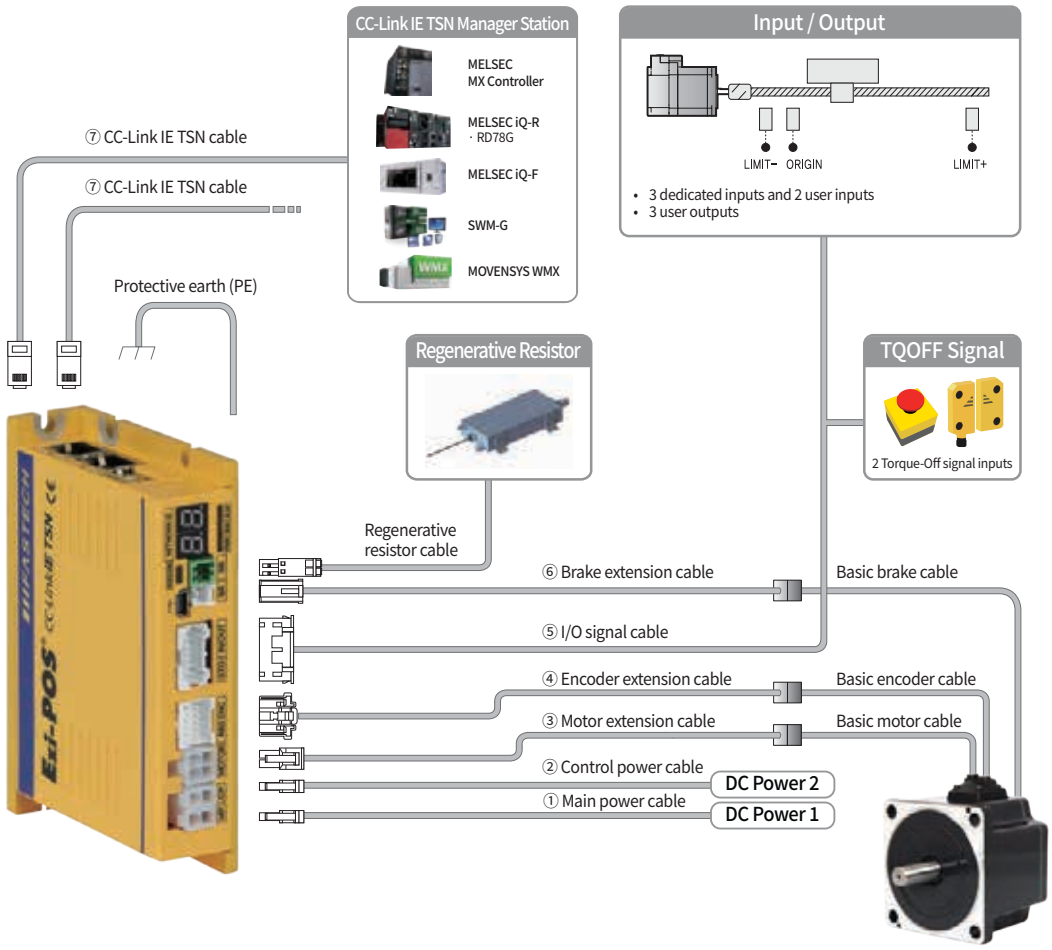


10. CC-Link IE TSN Connector (CN8, CN9)

No.	Function	No.	I/O
1	DA+	6	DB-
2	DA-	7	DD+
3	DB+	8	DD-
4	DC+	Connector Hood	F.GND
5	DC-		



System Configuration



Cable Type	Max. Cable Length	Remarks
① Main Power Cable	2 m	Options (Sold separately)
② Control Power Cable	2 m	
③ Motor Extension Cable	5 m	
④ Encoder Extension Cable	5 m	
⑤ I/O Signal Cable	5 m	
⑥ Brake Extension Cable	5 m	
Regenerative Resistor Cable	2 m	Not for Sale
⑦ CC-Link IE TSN Cable	100 m	Options (Sold separately)
Basic Encoder Cable	0.3 m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3 m (Basic length)	

1. Accessories

① Drive Connector

Purpose	Item	Model Name		Manufacturer
		EzPD-CT-A2A-G-GMX30AD EzPD-CT-A2A-G-GMX50AD EzPD-CT-A2A-G-GMX100AD	EzPD-CT-A2A-G-GMX200AD	
Main Power(CN1)	Housing	5557-02R		MOLEX
	Terminal	5556T	5556T3	
Control Power(CN2)	Housing	5557-02R		MOLEX
	Terminal	5556T		
Motor(CN3)	Housing	5557-04R		MOLEX
	Terminal	5556T	5556T3	
Encoder(CN4)	Housing	51353-1000		MOLEX
	Terminal	56134-9000		
I/O Signal(CN5)	Housing	PADP-16V-1-S		JST
	Terminal	SPH-002T-P0.5L		
Brake(CN6)	Housing	PAP-02V-S		JST
	Terminal	SPHD-002T-P0.5		
Regenerative Resistor(CN7)	Terminal Block	ESC250V-02P		DINKLE

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

② Motor Connector

Purpose	Item	Model Name		Manufacturer
		EzPM-G-GMX30AD EzPM-G-GMX50AD EzPM-G-GMX100AD	EzPM-G-GMX200AD	
Motor	Housing	5559-04P	105411-0104	MOLEX
	Terminal	5558T	76823-0321	
Encoder	Housing	SMP-09V-NC		JST
	Terminal	SHF-001T-0.8BS		
Brake	Housing	PALR-02VF		JST
	Terminal	SPAL-001T-P0.5		

※ The above connectors are provided with the product. When using other components, please ensure they meet the required specifications.

2. Options

① Main Power Supply Cable

This cable is used to connect the Ezi-POS CC-Link IE TSN drive to the main power supply.

Purpose	Drive	Model Name	Length [m]	Cable Type	Remarks
Drive-to-Main Power Connection	EzPD-CT-A2A-G-GMX30AD EzPD-CT-A2A-G-GMX50AD EzPD-CT-A2A-G-GMX100AD	CPA2S-P1-001F	1	Fixed Type	Max. Cable Length: 2 m
		CPA2S-P1-002F	2		
		CPA2S-P1-001M	1	Flexible Type	
		CPA2S-P1-002M	2		
	EzPD-CT-A2A-G-GMX200AD	CPA2S-P2-001F	1	Fixed Type	
		CPA2S-P2-002F	2		
		CPA2S-P2-001M	1	Flexible Type	
		CPA2S-P2-002M	2		

② Control Power Cable

This cable is used to connect the Ezi-POS CC-Link IE TSN drive to the control power supply.

Purpose	Drive	Length [m]	Cable Type	Remarks
Drive-to-Control Power Connection	CSVO-P-001F	1	Fixed Type	Max. Cable Length: 2 m
	CSVO-P-002F	2		
	CSVO-P-001M	1	Flexible Type	
	CSVO-P-002M	2		

③ Motor Extension Cable

This extension cable is used to connect the Ezi-POS CC-Link IE TSN drive to the motor.

Purpose	Drive	Model Name	Length [m]	Cable Type	Remarks
Drive-to-Motor Basic Cable Connection	EzPD-CT-A2A-G-GMX30AD EzPD-CT-A2A-G-GMX50AD EzPD-CT-A2A-G-GMX100AD	CPA2S-M1-001F	1	Fixed Type	Max. Cable Length: 5 m
		CPA2S-M1-002F	2		
		CPA2S-M1-003F	3		
		CPA2S-M1-005F	5		
		CPA2S-M1-001M	1	Flexible Type	
		CPA2S-M1-002M	2		
		CPA2S-M1-003M	3		
		CPA2S-M1-005M	5		
	EzPD-CT-A2A-G-GMX200AD	CPA2S-M2-001F	1	Fixed Type	
		CPA2S-M2-002F	2		
		CPA2S-M2-003F	3		
		CPA2S-M2-005F	5		
		CPA2S-M2-001M	1	Flexible Type	
		CPA2S-M2-002M	2		
		CPA2S-M2-003M	3		
		CPA2S-M2-005M	5		

④ Encoder Extension Cable

This extension cable is used to connect the Ezi-POS CC-Link IE TSN drive to the encoder.

Purpose	Model Name	Length [m]	Cable Type	Remarks
Drive-to-Encoder Basic Cable Connection	CSVO-E-001F	1	Fixed Type	Max. Cable Length: 5 m
	CSVO-E-002F	2		
	CSVO-E-003F	3		
	CSVO-E-005F	5		
	CSVO-E-001M	1	Flexible Type	
	CSVO-E-002M	2		
	CSVO-E-003M	3		
	CSVO-E-005M	5		

* For cable lengths other than those listed in the table (in 1-meter increments), please contact FASTECH separately.

⑤ I/O Signal Cable

This cable is used to connect the Ezi-POS CC-Link IE TSN drive to input / output devices.

Purpose	Model Name	Length [m]	Cable Type	Remarks
Drive-to-I/O Device Connection	CPA2S-IO-001F	1	Fixed Type	Max. Cable Length: 5 m
	CPA2S-IO-002F	2		
	CPA2S-IO-003F	3		
	CPA2S-IO-005F	5		
	CPA2S-IO-001M	1	Flexible Type	
	CPA2S-IO-002M	2		
	CPA2S-IO-003M	3		
	CPA2S-IO-005M	5		

* For cable lengths other than those listed in the table (in 1-meter increments), please contact FASTECH separately.

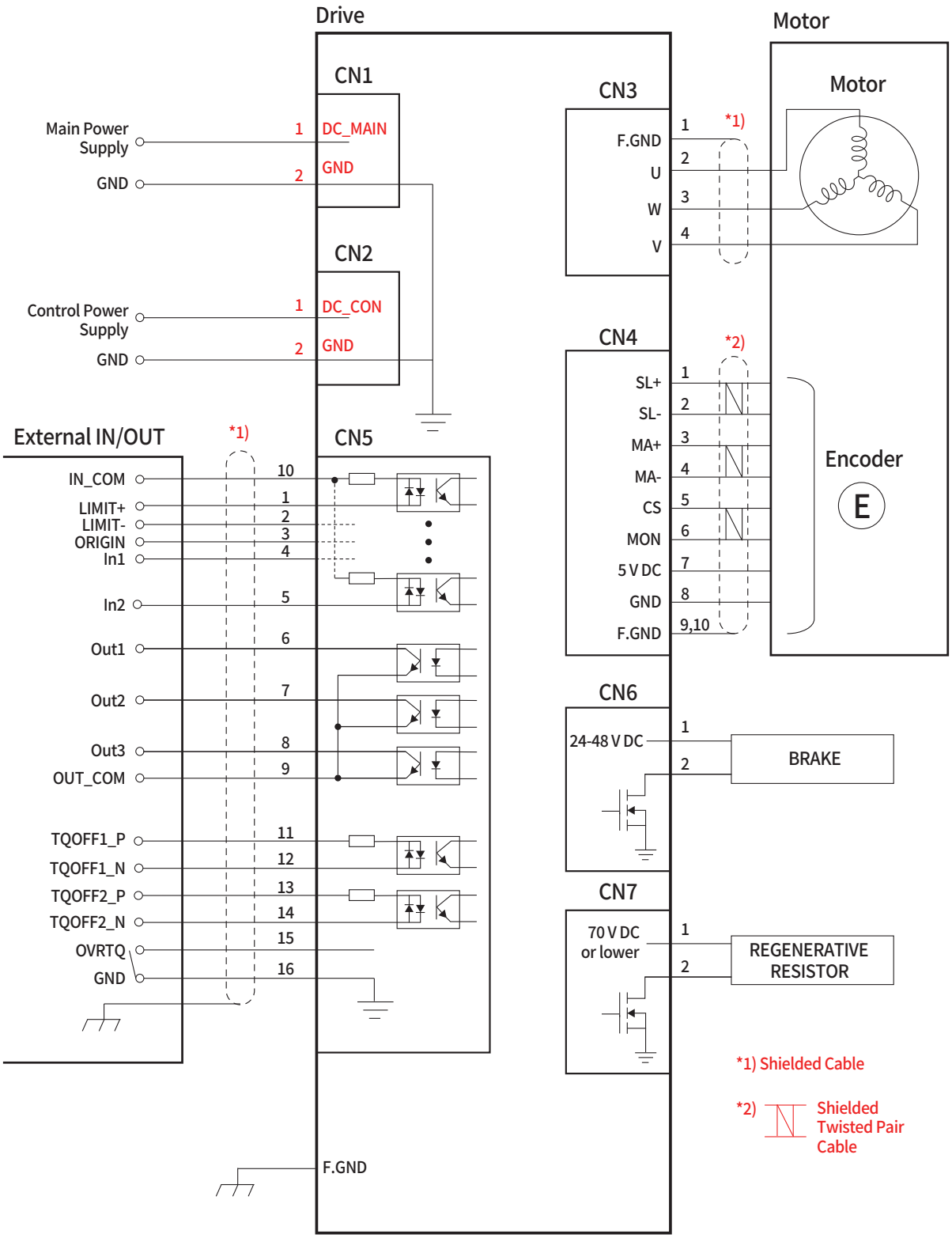
⑥ Brake Extension Cable

Purpose	Model Name	Length [m]	Cable Type	Remarks
Drive-to-Brake Basic Cable Connection	CPA2S-B-001F	1	Fixed Type	Max. Cable Length: 5 m
	CPA2S-B-002F	2		
	CPA2S-B-003F	3		
	CPA2S-B-005F	5		
	CPA2S-B-001M	1	Flexible Type	
	CPA2S-B-002M	2		
	CPA2S-B-003M	3		
	CPA2S-B-005M	5		

⑦ CC-Link IE TSN Cable

Purpose	Model Name	Length [m]	Remarks
Drive-to-Brake Basic Cable Connection	CPA2S-B-001F	1	Max. Cable Length: 5 m
	CPA2S-B-002F	2	
	CPA2S-B-003F	3	
	CPA2S-B-005F	5	

External Wiring Diagram



※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

MEMO

Ezi-POS® CC-Link IE TSN H

Servo Control System

- CC-Link IE TSN-compatible Low-Voltage Servo Control System
- CiA402 Drive Profile
- DC Power Supply Input (12 ~ 48 V DC)
- Auto-Tuning
- Torque-Off Function



FASTECH

Fast Accurate Smooth Motion

Ezi-Pos® CC-Link IE TSN

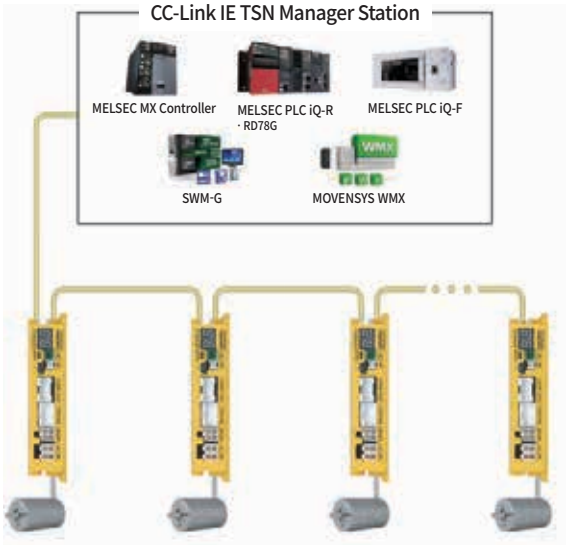
Servo Control System **H**



High-Performance (H-Type) Motor Series

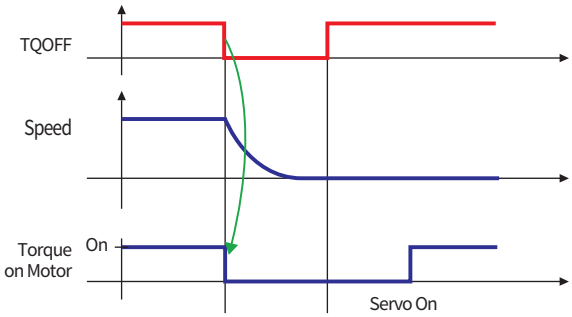
CC-Link IE TSN-compatible Motion Control

Ezi-POS CC-Link IE TSN is a servo control unit that supports CC-Link IE TSN, a high-speed Ethernet-based (1 Gbps, full-duplex) industrial network system. Ezi-POS CC-Link IE TSN employs CiA 402 drive profile and supports Cyclic Synchronous Position Mode, Profile Position Mode, and Homing Mode.



Torque-Off Function

Ezi-POS CC-Link IE TSN provides a hardware-based function to cut off power to the motor independently of CC-Link IE TSN communication. When the TQOFF input of the torque-off connector is detected, the drive immediately turns off the servo, and the motor stops.

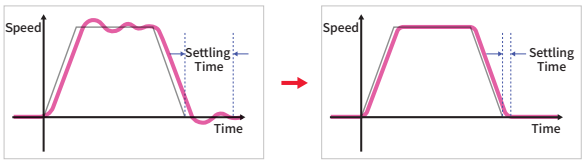


CAUTION

DO NOT use the Torque-Off function to stop or decelerate motors.

Auto-Tuning

Ezi-POS CC-Link IE TSN offers a simple and user-friendly Auto-Tuning function. The drive automatically estimates the system's load inertia and adjusts the optimal gain values. By using the user software (GUI), Auto-Tuning can be completed with just a few button clicks. During the tuning process, each step can be monitored in real time, and the results can be tested immediately.

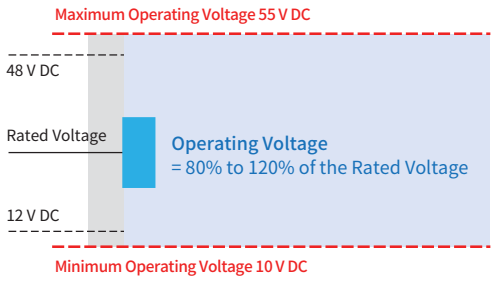


Before Auto-Tuning

After Auto-Tuning

Battery-compatible DC Power Input

Ezi-POS CC-Link IE TSN offers a low-voltage product lineup with a rated voltage of 12 to 48 V DC. It supports a wide operating voltage range (80 ~ 120 % of the rated voltage), features low power consumption, and enables high-efficiency motor control, making it ideal for battery-powered applications. The battery's charge status can also be continuously monitored by checking the drive's power voltage through the upper-level controller.



Ezi-POS CC-Link IE TSN Part Number

Ezi-POS-CT-A2A-H-MXIT5F18AB-P66

Series Name

Model Name

CT: CC-Link IE TSN

Drive Series

A : A Type

Drive Output

2 : 200 W

Encoder Input Type

A : Absolute Encoder
E : Incremental Encoder

Motor Type

H : High Performance Motor

Motor ID

MXIN3D3AB : 30 W Motor
MXIT4F7AB : 70 W Motor
MXIT4F13AB: 130 W Motor
MXIT5F18AB: 180 W Motor
* Encoder: 12-bit Single-Turn Absolute

MXIN3D3EE: 30 W Motor
MXIT4F7EE : 70 W Motor
MXIT4F13EE : 130 W Motor
MXIT5F18EE : 180 W Motor
* Encoder : 32,768 P/R Incremental

Gear Ratio

No symbol : None
P4 : 1:4
P5 : 1:5
P15 : 1:15
P18 : 1:18
P19 : 1:19
P43 : 1:43
P66 : 1:66

Standard Combination

Unit Part Number	Motor Part Number	Drive Part Number
Ezi-POS-CT-A2A-H-MXIN3D3AB	EzPM-H-MXIN3D3AB	EzPD-CT-A2A-H-MXIN3D3AB
Ezi-POS-CT-A2A-H-MXIT4F7AB	EzPM-H-MXIT4F7AB	EzPD-CT-A2A-H-MXIT4F7AB
Ezi-POS-CT-A2A-H-MXIT4F13AB	EzPM-H-MXIT4F13AB	EzPD-CT-A2A-H-MXIT4F13AB
Ezi-POS-CT-A2A-H-MXIT5F18AB	EzPM-H-MXIT5F18AB	EzPD-CT-A2A-H-MXIT5F18AB
Ezi-POS-CT-A2E-H-MXIN3D3EE	EzPM-H-MXIN3D3EE	EzPD-CT-A2E-H-MXIN3D3EE
Ezi-POS-CT-A2E-H-MXIT4F7EE	EzPM-H-MXIT4F7EE	EzPD-CT-A2E-H-MXIT4F7EE
Ezi-POS-CT-A2E-H-MXIT4F13EE	EzPM-H-MXIT4F13EE	EzPD-CT-A2E-H-MXIT4F13EE
Ezi-POS-CT-A2E-H-MXIT5F18EE	EzPM-H-MXIT5F18EE	EzPD-CT-A2E-H-MXIT5F18EE

Combination of Motor with Parallel Shaft Gearbox and Drive

Unit Part Number	Motor Part Number	Drive Part Number	Gear Ratio
Ezi-POS-CT-A2A-H-MXIN3D3AB-P5	EzPM-H-MXIN3D3AB-P5	EzPD-CT-A2A-H-MXIN3D3AB	1:5
Ezi-POS-CT-A2A-H-MXIN3D3AB-P18	EzPM-H-MXIN3D3AB-P18		1:18
Ezi-POS-CT-A2A-H-MXIN3D3AB-P66	EzPM-H-MXIN3D3AB-P66		1:66
Ezi-POS-CT-A2A-H-MXIT4F7AB-P4	EzPM-H-MXIT4F7AB-P4	EzPD-CT-A2A-H-MXIT4F7AB	1:4
Ezi-POS-CT-A2A-H-MXIT4F7AB-P15	EzPM-H-MXIT4F7AB-P15		1:15
Ezi-POS-CT-A2A-H-MXIT4F7AB-P43	EzPM-H-MXIT4F7AB-P43		1:43
Ezi-POS-CT-A2A-H-MXIT4F13AB-P4	EzPM-H-MXIT4F13AB-P4	EzPD-CT-A2A-H-MXIT4F13AB	1:4
Ezi-POS-CT-A2A-H-MXIT4F13AB-P15	EzPM-H-MXIT4F13AB-P15		1:15
Ezi-POS-CT-A2A-H-MXIT4F13AB-P43	EzPM-H-MXIT4F13AB-P43		1:43
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Ezi-POS-CT-A2A-H-MXIT5F18AB-P19	EzPM-H-MXIT5F18AB-P19		1:19
Ezi-POS-CT-A2A-H-MXIT5F18AB-P43	EzPM-H-MXIT5F18AB-P43		1:43

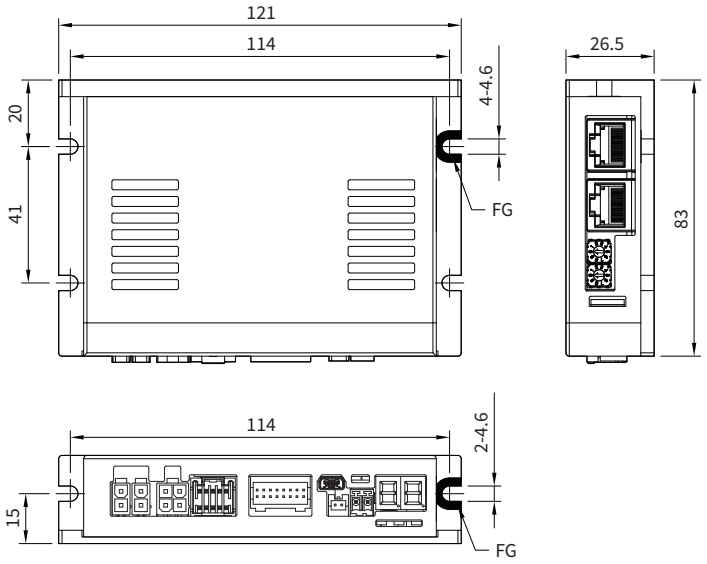
Unit Part Number	Motor Part Number	Drive Part Number	Gear Ratio
Ezi-POS-CT-A2A-H-MXIN3D3AB-P5	EzPM-H-MXIN3D3EE-P5	EzPD-CT-A2E-H-MXIN3D3EE	1:5
Ezi-POS-CT-A2A-H-MXIN3D3AB-P18	EzPM-H-MXIN3D3EE-P18		1:18
Ezi-POS-CT-A2A-H-MXIN3D3AB-P66	EzPM-H-MXIN3D3EE-P66		1:66
Ezi-POS-CT-A2E-H-MXIT4F7EE-P4	EzPM-H-MXIT4F7EE-P4	EzPD-CT-A2E-H-MXIT4F7EE	1:4
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Specifications of Drive

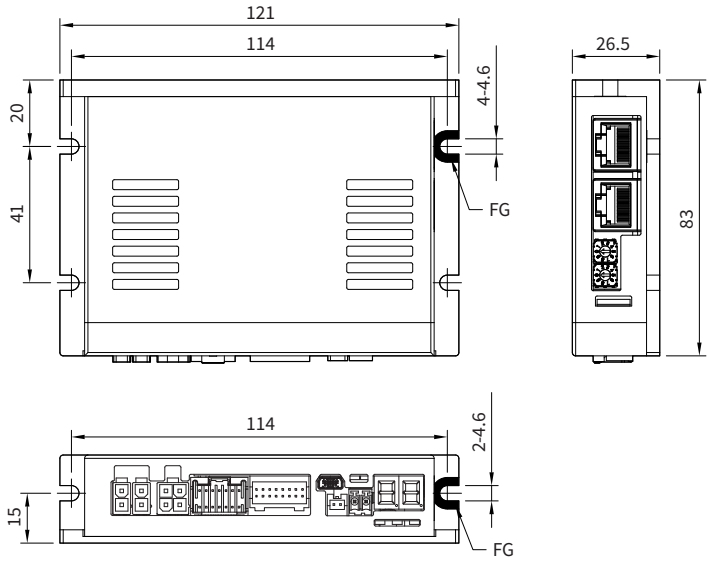
Drive Part Number		EzPD-CT-A2A-H -MXIN3D3AB	EzPD-CT-A2A-H -MXIT4F7AB EzPD-CT-A2A-H -MXIT4F13AB EzPD-CT-A2A-H -MXIT5F18AB	EzPD-CT-A2E-H -MXIN3D3EE	EzPD-CT-A2E-H -MXIT4F7EE EzPD-CT-A2E-H -MXIT4F13EE EzPD-CT-A2E-H -MXIT5F18EE
Main Power Supply	Input Voltage	24 V DC ± 10 %	48 V DC ± 10 %	24 V DC ± 10 %	48 V DC ± 10 %
	Input Current	Maximum Rated Current 8.5 A (For motor-specific input current specifications, refer to the motor specification table.)			
Control Power (Optional)	Input Voltage	12 ~ 48 V DC ± 10 % (If the control power is not connected or its voltage is lower than the main power supply, the main power supply will be used instead.)			
	Current Consumption	4 W or lower			
Condition	Temperature	Operation: 0 ~ 45 °C Storage: -25 ~ 70 °C			
	Humidity	Operation: 85 % RH or less (no condensation) Storage: 85 % RH or less (no condensation)			
	Vibration Resistance	0.5 g			
	Protection Rating	IP20			
Functions	PWM Frequency	25 kHz			
	Current Control Cycle	40 µs			
	Speed/Position Control Cycle	400 µs			
	Speed Control Range	0 ~ 8,000 r/min			
	Encoder Interface	Absolute Encoder		Incremental Encoder	
	Error Types	Overcurrent, Overspeed, Position Tracking Error, Overload, Overheating, Regenerative Overvoltage, Motor Connection Error, Encoder Connection Error, Main Power Undervoltage, In-Position Error, System Error, ROM Error, Motor Parameter Error, Main Power Overvoltage, Excessive Position Error, Emergency Stop Circuit Error		
	LED Indicators	Power status, Servo On status, and Alarm status			
	Brake Control	Output connector for brake control			
	Regenerative Resistor Control	Output connector for regenerative resistor control			
I/O Signals	Inputs	Dedicated Inputs: 3 points (LIMIT+, LIMIT-, ORIGIN), Photocoupler Input User Inputs: 2 points, Photocoupler Input			
	Outputs	User Outputs: 3 points, Photocoupler Output			
	Torque-Off	Dedicated Inputs: 2 points (TQOFF1, TQOFF2), Photocoupler Input			
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B			
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode(CSP), Profile Position Mode(PP), Homing Mode(HM)			
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)			

Dimensions of Drive [mm]

EzPD-CT-A2A-H-MXIN3D3AB
EzPD-CT-A2A-H-MXIT4F7AB
EzPD-CT-A2A-H-MXIT4F13AB
EzPD-CT-A2A-H-MXIT5F18AB



EzPD-CT-A2E-H-MXIN3D3EE
EzPD-CT-A2E-H-MXIT4F7EE
EzPD-CT-A2E-H-MXIT4F13EE
EzPD-CT-A2E-H-MXIT5F18EE

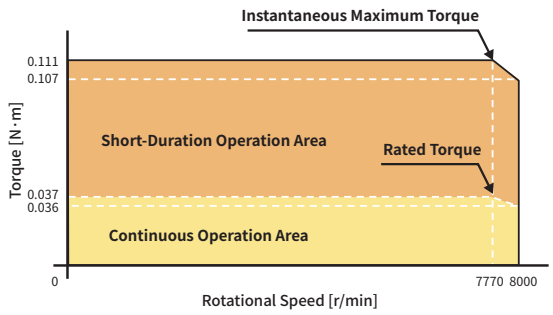


Specifications of Motor

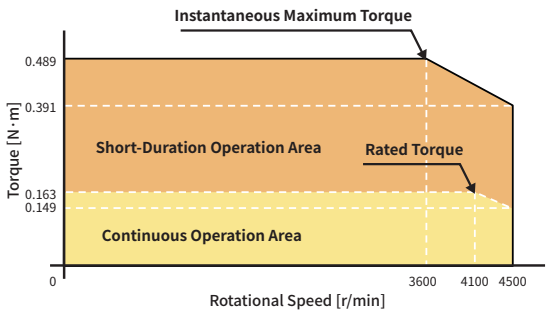
Motor Part Number			EzPM-H-MXIN3D3AB EzPM-H-MXIN3D3EE	EzPM-H-MXIT4F7AB EzPM-H-MXIT4F7EE	EzPM-H-MXIT4F13AB EzPM-H-MXIT4F13EE	EzPM-H-MXIT5F18AB EzPM-H-MXIT5F18EE
Motor Type			3-phase BLDC motor			
Rated Output (Continuous)		W	30	70	130	180
Rated Voltage		V	DC 24	DC 48		
Main Power Rated Input Current		A	1.6	1.8	3.2	4.2
Main Power Maximum Input Current		A	5.5	5.5	7.2	8.3
Rated Torque		N·m	0.037	0.163	0.317	0.386
Rated Phase Current		Arms	1.250	1.454	2.657	3.407
Maximum Instantaneous Torque		N·m	0.111	0.489	0.730	0.773
Maximum Instantaneous Phase Current		Arms	3.690	4.354	6.104	6.809
Rated Rotational Speed		r/min	7770	4100	3910	4450
Maximum Rotational Speed		r/min	8000	4500	4200	4600
Encoder			EzPM-H-MX□AB: Absolute Encoder (12-bit/rev)			
			EzPM-H-MX□EE: Incremental Encoder (32,768 P/R)			
Motor Permissible Load Inertia Moment		10–4kg· m²	0.14	0.46	1.56	3.4
Rotor Inertia		10–4kg· m²	0.0073	0.023	0.078	0.17
Motor Weight		kg	0.19	0.30	0.65	0.86
Permissible Radial Load	Distance from Output Shaft End 5mm	N	25	26	29.9	110
Permissible Axial Load		N	5	7	7	12
Operating Temperature and Humidity			-40 ~ 80 °C, 20 ~ 80 % RH (no condensation)			
Storage Temperature and Humidity			-40 ~ 100 °C, 20 ~ 80 % RH (no condensation)			

Standard Motor Torque

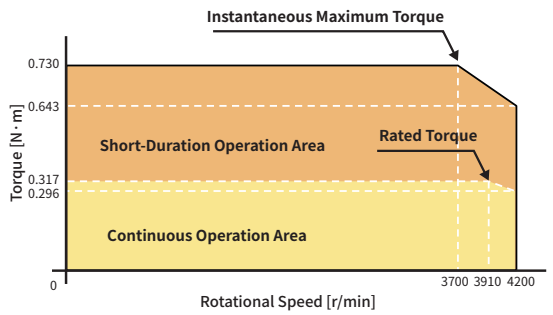
EzPM-H-MXIN3D3AB, EzPM-H-MXIN3D3EE



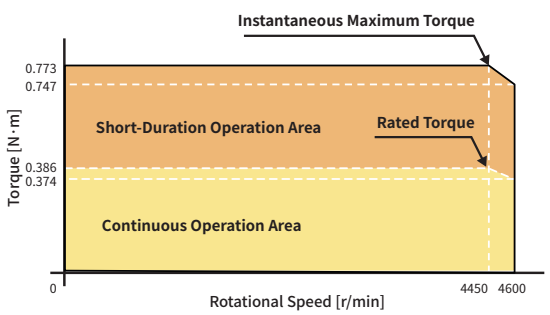
EzPM-H-MXIT4F7AB, EzPM-H-MXIT4F7EE



EzPM-H-MXIT4F13AB, EzPM-H-MXIT4F13EE

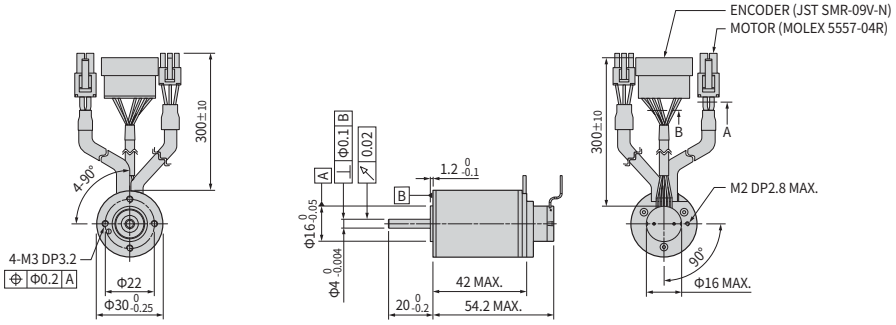


EzPM-H-MXIT5F18AB, EzPM-H-MXIT5F18EE

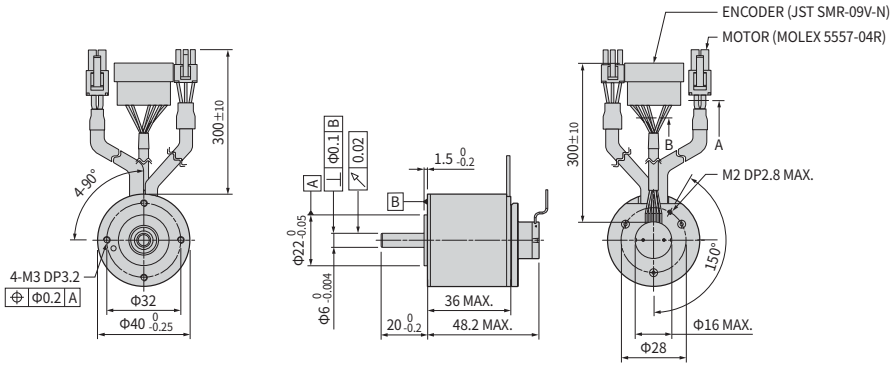


Dimensions of Motor [mm]

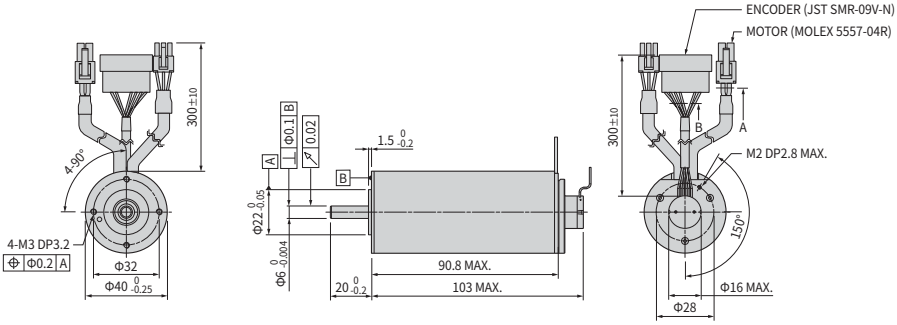
EzPM-H-MXIN3D3AB



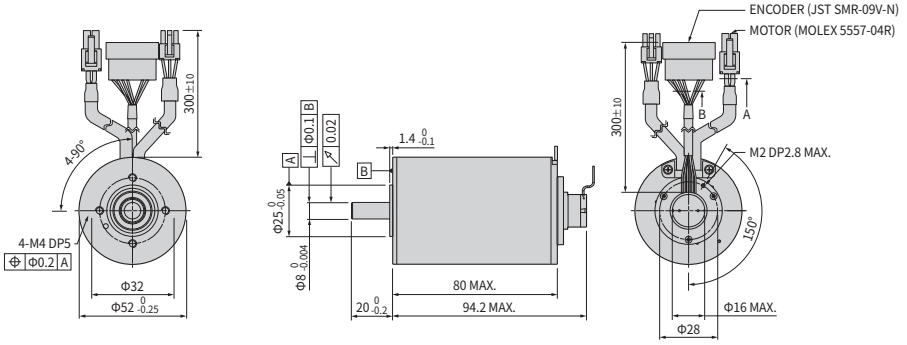
EzPM-H-MXIT4F7AB



EzPM-H-MXIT4F13AB

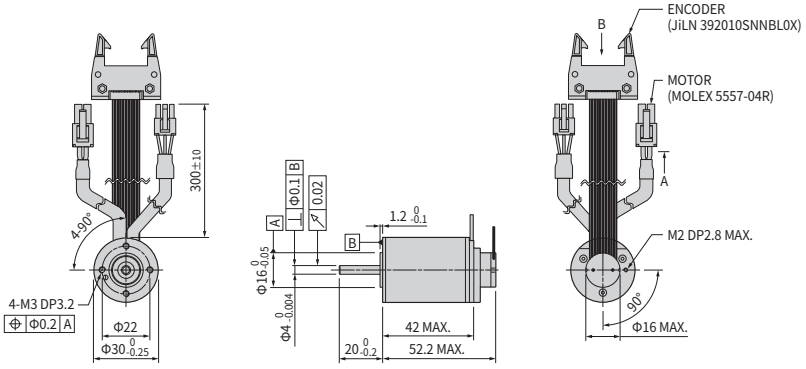


EzPM-H-MXIT5F18AB

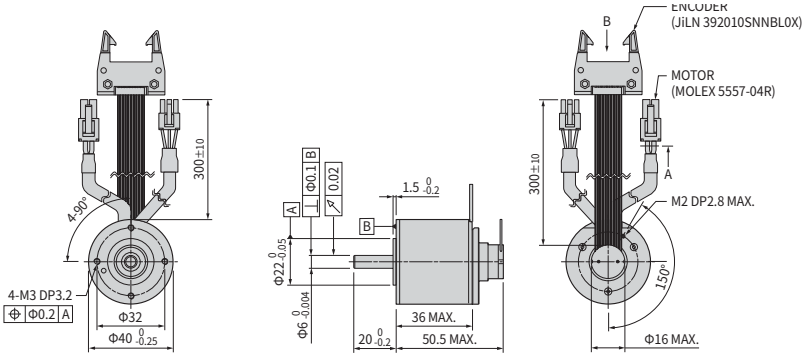


Dimensions of Motor [mm]

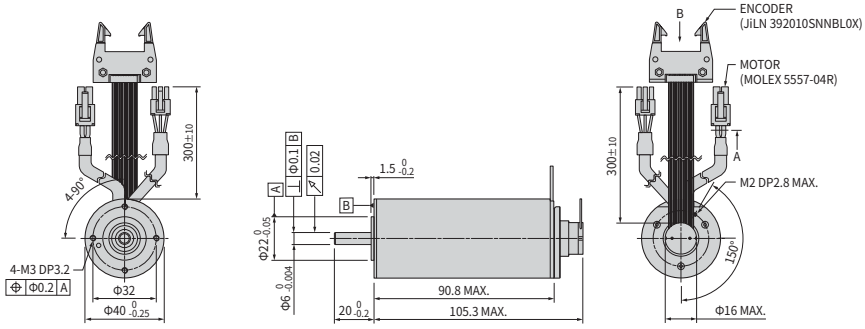
EzPM-H-MXIN3D3EE



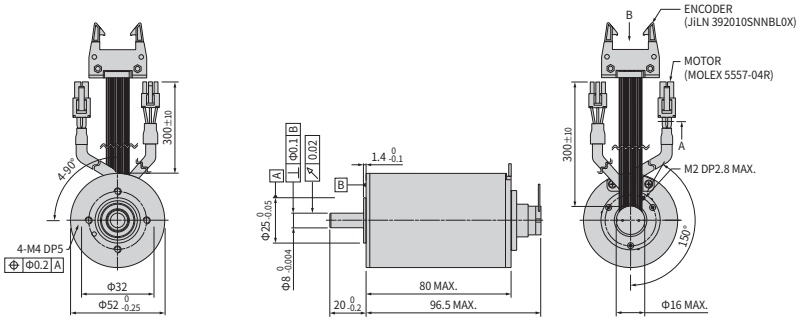
EzPM-H-MXIT4F7EE



EzPM-H-MXIT4F13EE



EzPM-H-MXIT5F18EE



Parallel Shaft Gearbox Type Motor Specifications

EzPM-H-MXIN3D3AB-P□
EzPM-H-MXIN3D3EE-P□

Unit Part Number	Motor Part Number	□ Gear Ratio	Absolute Gear Ratio	Back-lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Output Shaft End	Permissi-ble Axial Load[N]
					0~7770 r/min	8000 r/min			10 mm	
Ezi-POS-CT-A2A-H-MXIN3D3AB-P5	EzPM-H-MXIN3D3AB-P5	5	24/5	0.7	0.142	0.138	1666.7	0.30	90	120
Ezi-POS-CT-A2E-H-MXIN3D3EE-P5	EzPM-H-MXIN3D3EE-P5									
Ezi-POS-CT-A2A-H-MXIN3D3AB-P18	EzPM-H-MXIN3D3AB-P18	18	624/35	0.8	0.500	0.488	444.4	0.34	140	
Ezi-POS-CT-A2E-H-MXIN3D3EE-P18	EzPM-H-MXIN3D3EE-P18									
Ezi-POS-CT-A2A-H-MXIN3D3AB-P66	EzPM-H-MXIN3D3AB-P66	66	16224 /245	1.0	1.701	1.663	121.2	0.37	200	
Ezi-POS-CT-A2E-H-MXIN3D3EE-P66	EzPM-H-MXIN3D3EE-P66									

EzPM-H-MXIT4F7AB-P□
EzPM-H-MXIT4F7EE-P□

Unit Part Number	Motor Part Number	□ Gear Ratio	Absolute Gear Ratio	Back-lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Output Shaft End	Permissi-ble Axial Load[N]
					0~4100 r/min	4500 r/min			12 mm	
Ezi-POS-CT-A2A-H-MXIT4F7AB-P4	EzPM-H-MXIT4F7AB-P4	4	13/3	0.6	0.631	0.577	1046.5	0.56	120	150
Ezi-POS-CT-A2E-H-MXIT4F7EE-P4	EzPM-H-MXIT4F7EE-P4									
Ezi-POS-CT-A2A-H-MXIT4F7AB-P15	EzPM-H-MXIT4F7AB-P15	15	91/6	0.8	1.980	1.810	300	0.65	240	
Ezi-POS-CT-A2E-H-MXIT4F7EE-P15	EzPM-H-MXIT4F7EE-P15									
Ezi-POS-CT-A2A-H-MXIT4F7AB-P43	EzPM-H-MXIT4F7AB-P43	43	343/8	1.0	5.046	4.613	104.7	0.74	360	
Ezi-POS-CT-A2E-H-MXIT4F7EE-P43	EzPM-H-MXIT4F7EE-P43									

※ The □ gear ratio indicated in the unit and motor model names is a rounded nominal value. The absolute gear ratio represents the exact value.
※ The motor model name refers to the combination of motor and gearbox.
※ The motor weight indicates the total weight of the motor combined with the gearbox.
※ Specifications and characteristics not listed above are identical to those of the standard motor.

Parallel Shaft Gearbox Type Motor Specifications

EzPM-H-MXIT4F13AB-P□
EzPM-H-MXIT4F13EE-P□

Unit Part Number	Motor Part Number	□ Gear Ratio	Absolute Gear Ratio	Back-lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Output Shaft End	Permissi-ble Axial Load[N]
					0~3910 r/min	4200 r/min			12 mm	
Ezi-POS-CT-A2A-H-MXIT4F13AB -P4	EzPM-H-MXIT4F13AB-P4	4	13/3	0.6	1.227	1.146	976.7	0.90	120	150
Ezi-POS-CT-A2E-H-MXIT4F13EE -P4	EzPM-H-MXIT4F13EE-P4									
Ezi-POS-CT-A2A-H-MXIT4F13AB -P15	EzPM-H-MXIT4F13AB-P15	15	91/6	0.8	3.852	3.597	280	1.00	240	
Ezi-POS-CT-A2E-H-MXIT4F13EE -P15	EzPM-H-MXIT4F13EE-P15									
Ezi-POS-CT-A2A-H-MXIT4F13AB -P43	EzPM-H-MXIT4F13AB-P43	43	343/8	1.0	9.814	9.164	97.7	1.09	360	
Ezi-POS-CT-A2E-H-MXIT4F13EE -P43	EzPM-H-MXIT4F13EE-P43									

EzPM-H-MXIT5F18AB-P□
EzPM-H-MXIT5F18EE-P□

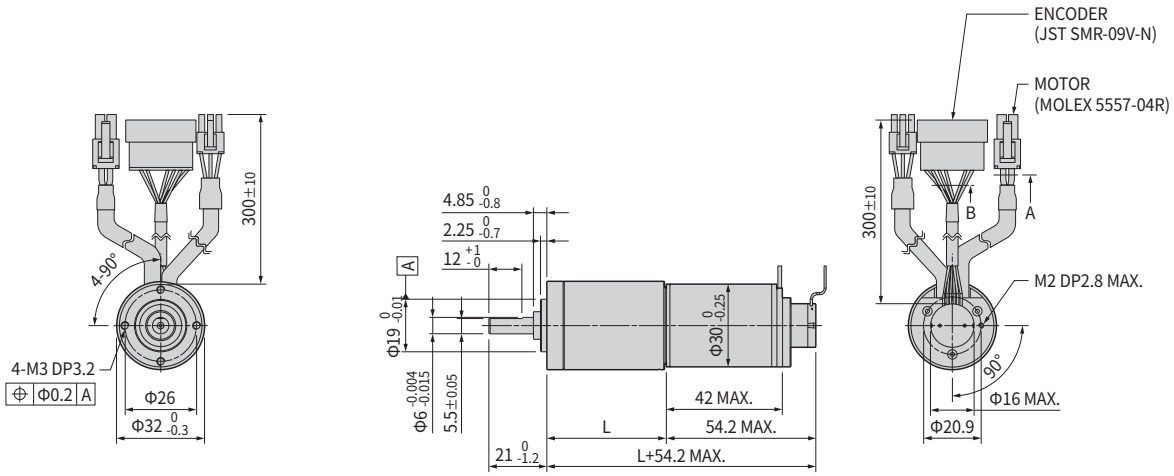
Unit Part Number	Motor Part Number	□ Gear Ratio	Absolute Gear Ratio	Back-lash [°]	Rated Torque[Nm]		Max. Speed [r/min]	Motor Weight [kg]	Permissible Radial Load[N] Distance from Output Shaft End	Permissi-ble Axial Load[N]
					0~4450 r/min	4600 r/min			12 mm	
Ezi-POS-CT-A2A-H-MXIT5F18AB -P4	EzPM-H-MXIT5F18AB-P4	4	13/3	0.6	1.510	1.436	1069.8	1.31	420	200
Ezi-POS-CT-A2E-H-MXIT5F18EE -P4	EzPM-H-MXIT5F18EE-P4									
Ezi-POS-CT-A2A-H-MXIT5F18AB -P19	EzPM-H-MXIT5F18AB-P19	19	169/9	0.8	6.087	5.898	242.1	1.47	630	
Ezi-POS-CT-A2E-H-MXIT5F18EE -P19	EzPM-H-MXIT5F18EE-P19									
Ezi-POS-CT-A2A-H-MXIT5F18AB -P43	EzPM-H-MXIT5F18AB-P43	43	343/8	1.0	12.45	12.06	107.0	1.62	900	
Ezi-POS-CT-A2E-H-MXIT5F18EE -P43	EzPM-H-MXIT5F18EE-P43									

※ The □ gear ratio indicated in the unit and motor model names is a rounded nominal value. The absolute gear ratio represents the exact value.
※ The motor model name refers to the combination of motor and gearbox.
※ The motor weight indicates the total weight of the motor combined with the gearbox.
※ Specifications and characteristics not listed above are identical to those of the standard motor.

Parallel Shaft Gearbox Type Motor Specifications [mm]

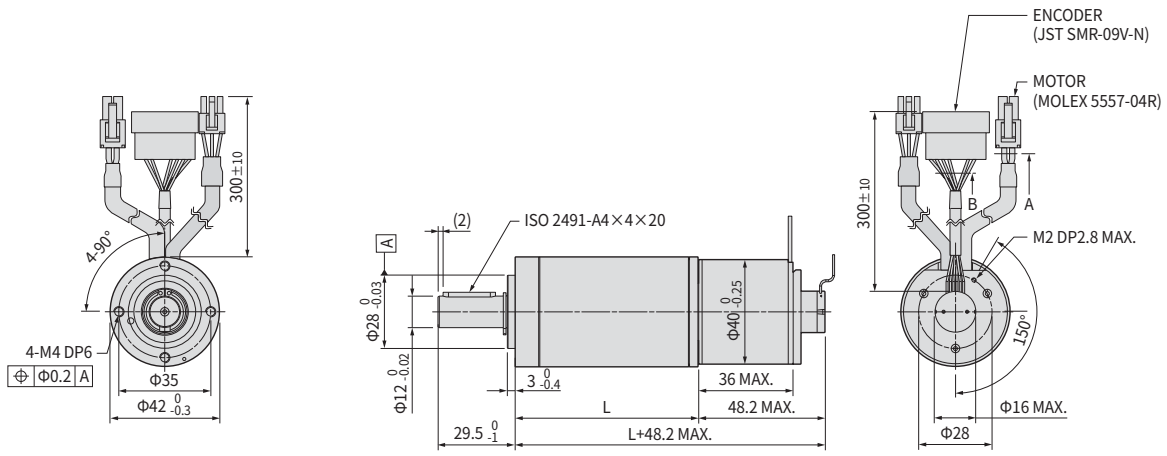
EzPM-H-MXIN3D3AB-P□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2A-H-MXIN3D3AB-P□	EzPM-H-MXIN3D3AB-P□	5	M3	26.8
		18		36.7
		66		43.4



EzPM-H-MXIT4F7AB-P□

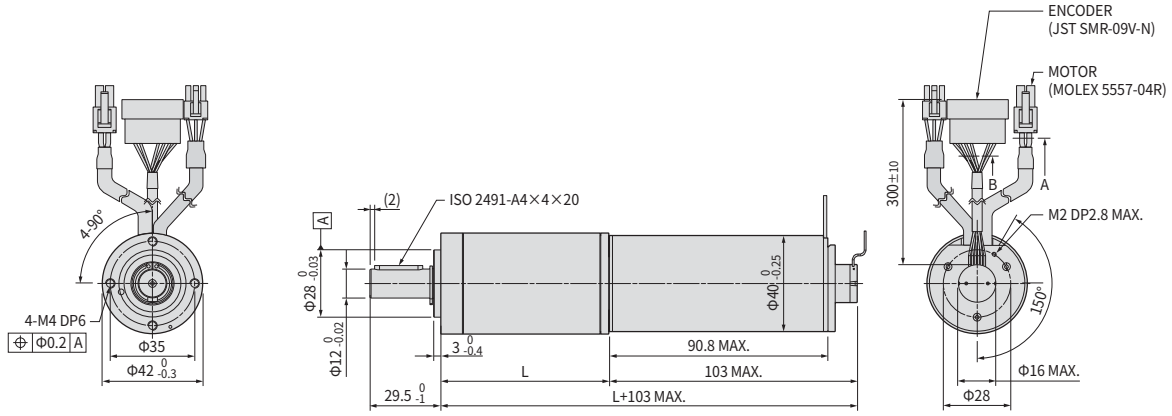
Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2A-H-MXIT4F7AB-P□	EzPM-H-MXIT4F7AB-P□	4	M4	41.6
		15		51.6
		43		70.1



Parallel Shaft Gearbox Type Motor Specifications [mm]

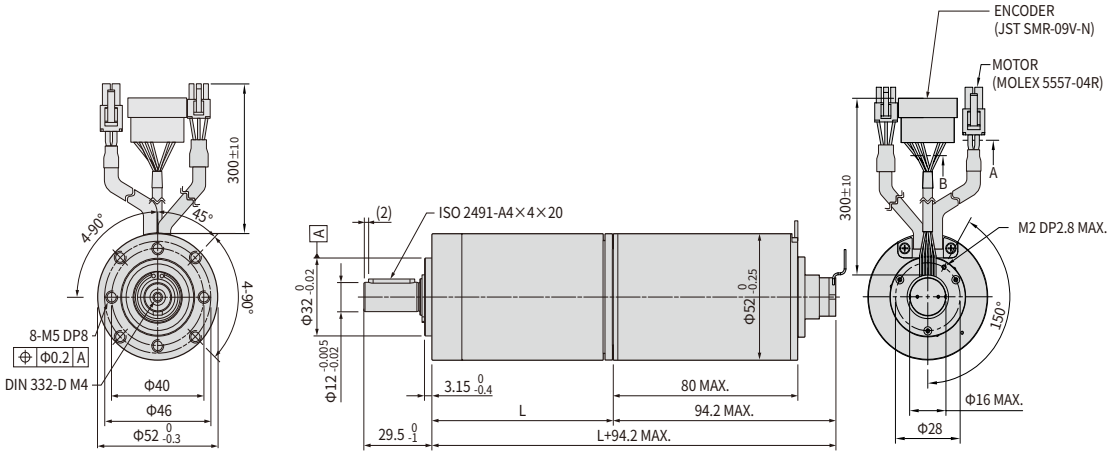
EzPM-H-MXIT4F13AB-P□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2A-H-MXIT4F13AB-P□	EzPM-H-MXIT4F13AB-P□	4	M4	41.6
		15		51.6
		43		70.1



EzPM-H-MXIT5F18AB-P□

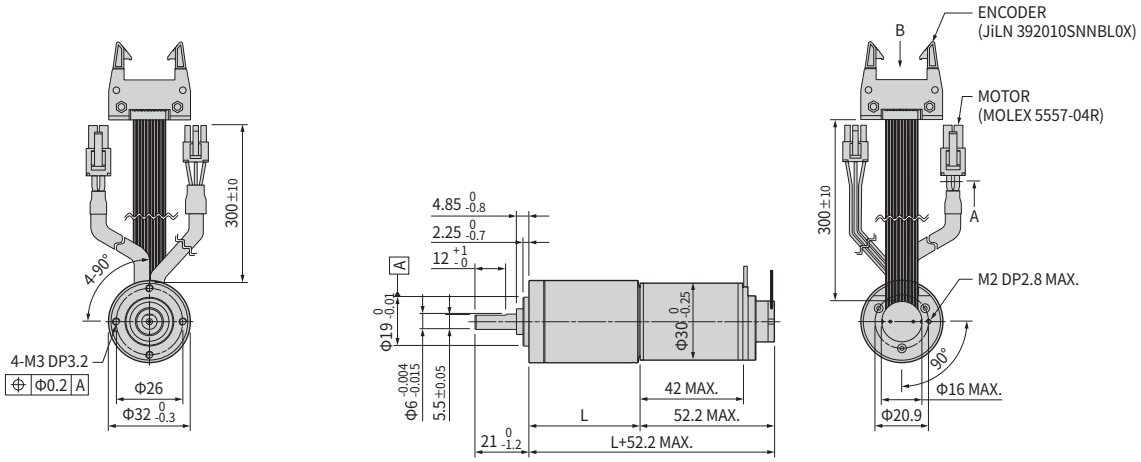
Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2A-H-MXIT5F18AB-P□	EzPM-H-MXIT5F18AB-P□	4	M5	49.1
		19		65.1
		43		78.6



Parallel Shaft Gearbox Type Motor Specifications [mm]

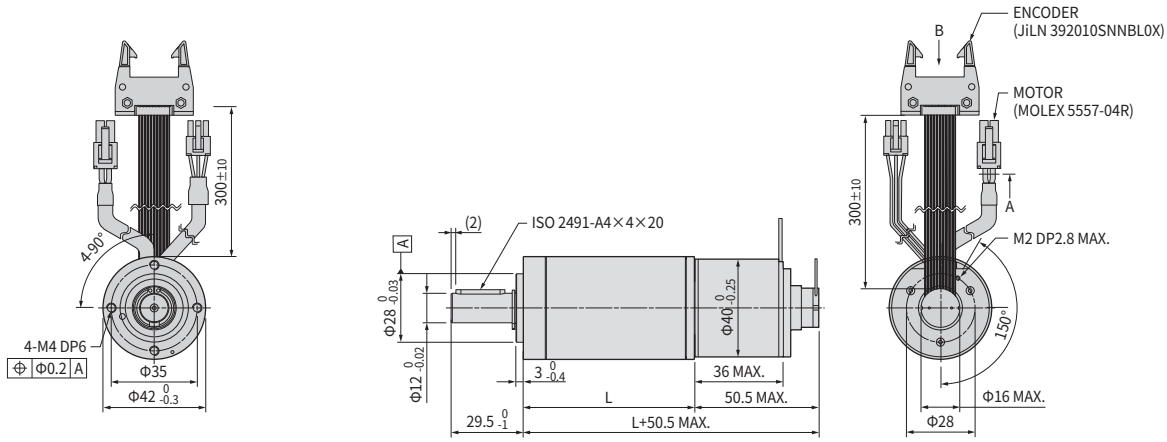
EzPM-H-MXIN3D3EE-P□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2E-H-MXIN3D3EE-P□	EzPM-H-MXIN3D3EE-P□	5	M3	26.8
		18		36.7
		66		43.4



EzPM-H-MXIT4F7EE-P□

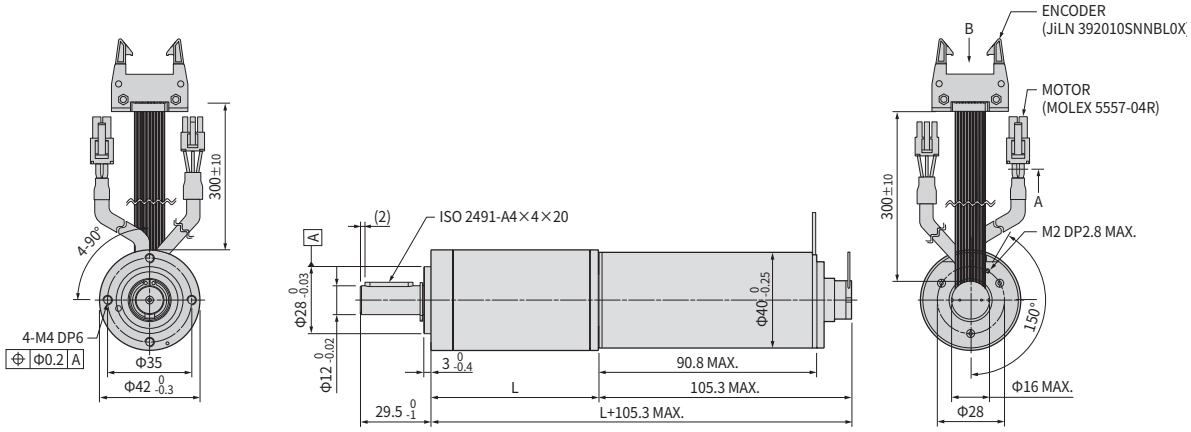
Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2E-H-MXIT4F7EE-P□	EzPM-H-MXIT4F7EE-P□	4	M4	41.6
		15		51.6
		43		70.1



Parallel Shaft Gearbox Type Motor Specifications [mm]

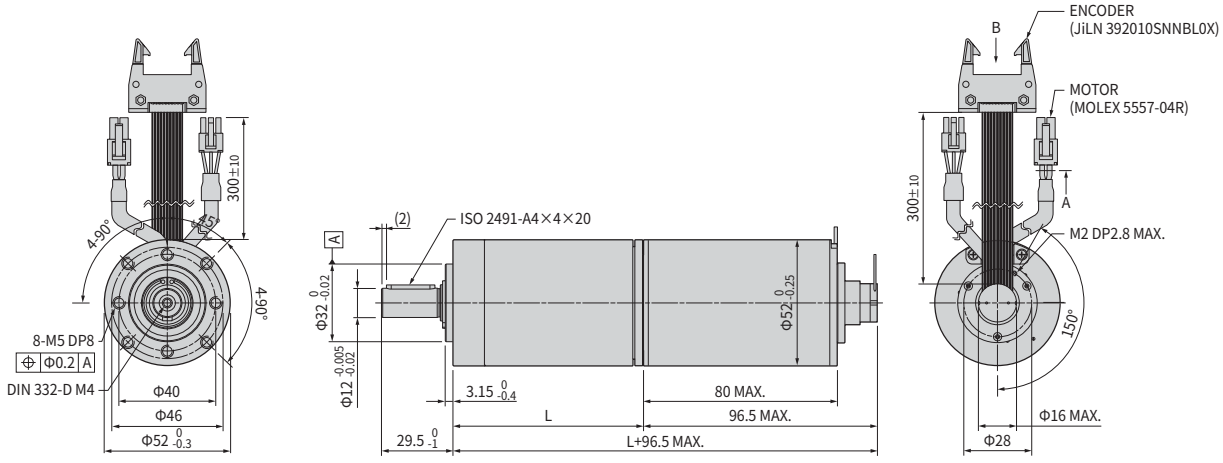
EzPM-H-MXIT4F13EE-P□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2E-H-MXIT4F13EE-P□	EzPM-H-MXIT4F13EE-P□	4	M4	41.6
		15		51.6
		43		70.1



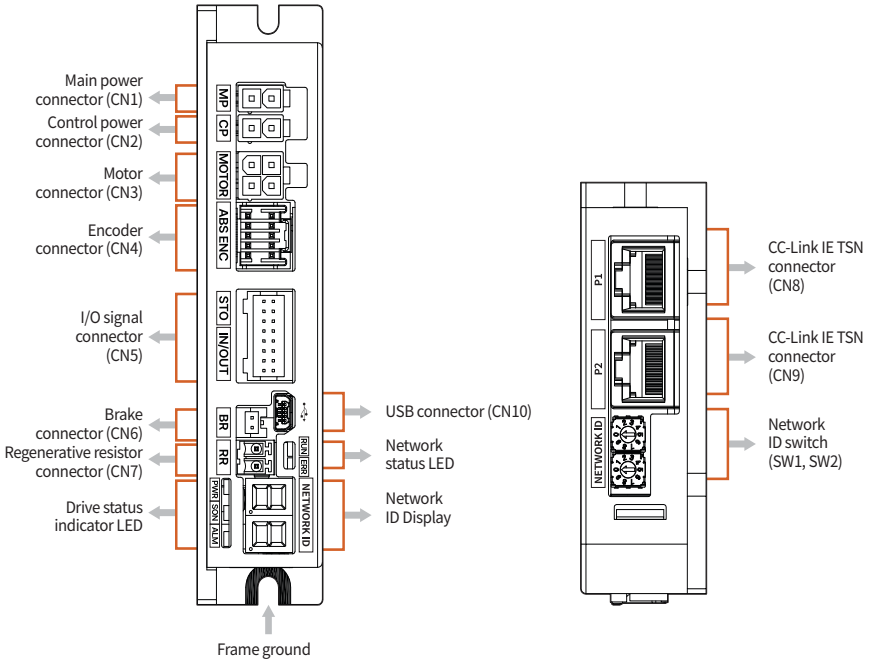
EzPM-H-MXIT5F18EE-P□

Unit Part Number	Applied Motor Part Number	□Gear Ratio	Applicable Bolt Specifications	L[mm]
Ezi-POS-CT-A2E-H-MXIT5F18EE-P□	EzPM-H-MXIT5F18EE-P□	4	M5	49.1
		19		65.1
		43		78.6

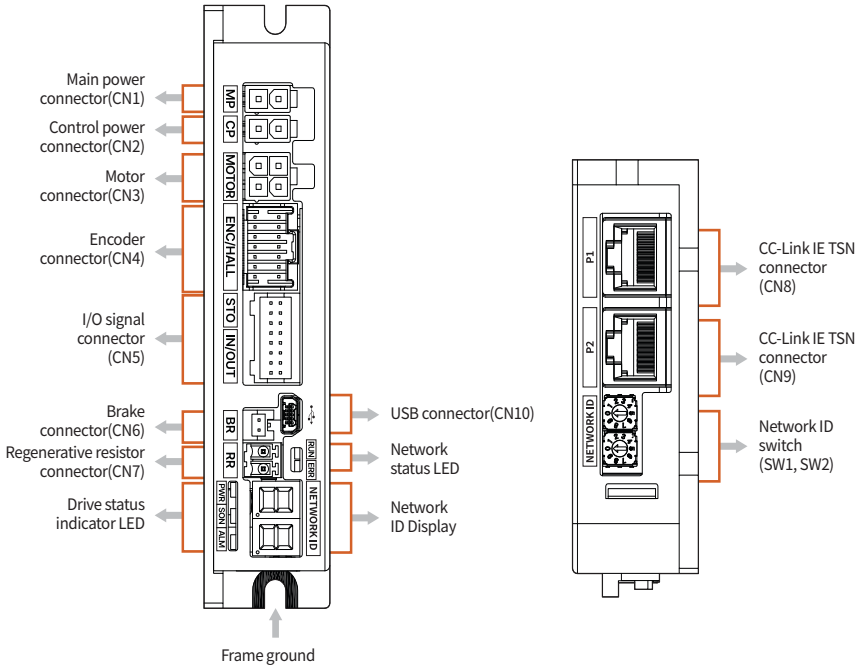


Settings and Operation

EzPD-CT-A2A-H-MXIN3D3AB
EzPD-CT-A2A-H-MXIT4F7AB
EzPD-CT-A2A-H-MXIT4F13AB
EzPD-CT-A2A-H-MXIT5F18AB

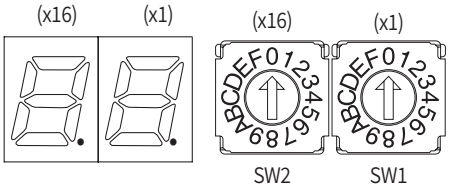


EzPD-CT-A2E-H-MXIN3D3EE
EzPD-CT-A2E-H-MXIT4F7EE
EzPD-CT-A2E-H-MXIT4F13EE
EzPD-CT-A2E-H-MXIT5F18EE



1. Network ID Display and Switches(SW1, SW2)

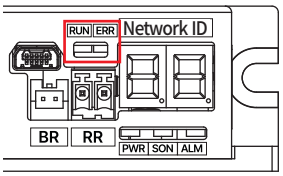
These switches are used to configure the fourth octet of the IP address. The value is displayed on the 7-segment LED in hexadecimal format. SW1 sets the X16 digit, and SW2 sets the X1 digit.
(For more details, please refer to the relevant user manual.)



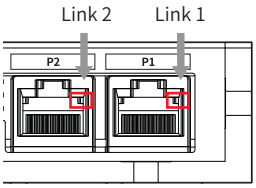
2. Network Status LED

These LEDs indicate the communication status of CC-Link IE TSN.
Link1/Link2 LEDs are located at the upper right corner of CC-Link IE TSN ports(P1, P2).

Indicator	Color	Status	Description
RUN	Green	OFF	Power off
		Single Flash	Not connected to master
		Double Flash	Pre-operational state
		Blinking	Safe-operational state
		Interval Off	Operational state



Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		Blinking	Drive error
		Single Flash	CC-Link IE TSN communication error
		Double Flash	IP address conflict error



Indicator	Color	Status	Description
Link1/ Link2	Green	OFF	Link inactive
		ON	Link active

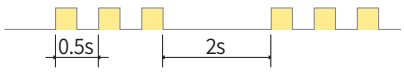
3. Drive Status LED

Indicator	Color	Function	Description
PWR	Green	Power Input Indicator	Lights up when power is supplied and the drive is operating normally. (During initialization or firmware update, the indicator blinks.)
SON	Orange	Servo ON / OFF Indicator	Lights up when Servo is on; turns off when Servo is off.
ALM	Red	Alarm Indicator	Blinks repeatedly when an error occurs.

List of error types by the number of LED blinking

NO.	Error Code	Error Type	Cause
1	E-001	Overcurrent Error	Excessive current flowed through the motor drive components *1
2	E-002	Overspeed Error	Motor drive speed exceeds the allowable limit *1
3	E-003	Position Tracking Error	Position error (difference between command and actual position) exceeds the set value during operation *2
4	E-004	Overload Error	Load exceeding the motor's continuous maximum torque applied for a certain period *1
5	E-005	Overtemperature Error	Internal temperature of the drive exceeds 85 °C
6	E-006	Regenerative Overvoltage	Internal motor drive voltage exceeds the limit due to increased back EMF or regenerative operation *1
7	E-007	Motor Connection Error	Abnormal connection between the drive and the motor
8	E-008	Encoder Connection Error	Abnormal connection between the drive and the encoder (or when using a Hall sensor, if there is an issue with the Hall sensor connection)
9	E-009	Main Power Undervoltage Error	Main power voltage is below the minimum allowable value *1
10	E-010	In-position Error	Position error exceeding the set value continues for more than 3 seconds after operation completion *2
11	E-011	System Error	Internal system error in the drive
12	E-012	ROM Error	Error in the parameter storage device (ROM)
13	E-013	Motor Parameter Error	Motor parameters are unset or exceed the normal range
14	E-014	Main Power Overvoltage Error	Main power voltage exceeds the allowable limit *1
15	E-015	Excessive Position Error	Excessive position error occurs after the motor has completed its operation *2
16	E-016	Emergency Stop Circuit Error	TQOFF1 and TQOFF2 input states do not match

*1: Each threshold or setting is fixed and varies depending on the motor.
*2: Each threshold or setting is predefined but can be modified via parameters.
※ When an alarm occurs, the 7-segment display will show the error code instead of "Network ID"
※ For more details, please refer to the respective user manual



Alarm LED Blink
(e.g., Position Tracking Error)

4. Main Power / Control Power Connectors(CN1, CN2)

(CN1)

No.	Function	I/O
1	DC_MAIN	Inputs
2	GND	Inputs



(CN2)

No.	Function	I/O
1	DC_CON	Inputs
2	GND	Inputs

5. Motor Connector (CN3)

No.	Function	I/O
1	F.GND	----
2	U Phase	Outputs
3	W Phase	Outputs
4	V Phase	Outputs

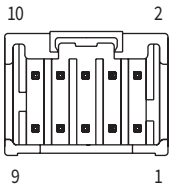


6. Encoder Connector (CN4)

EzPD-CT-A2A-H-□

No.	Function	I/O
1	SL+	Inputs
2	SL-	Inputs
3	MA+	Inputs
4	MA-	Inputs
5	CS	Outputs
6	MON	Inputs
7	5 V DC	Outputs
8	GND	Outputs
9	F.GND	----
10	F.GND	----

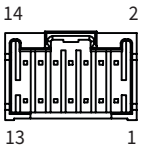
※ □ indicates the motor ID in the unit model name.



EzPD-CT-A2E-H-□

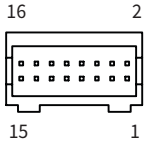
No.	Function	I/O
1	HALL_U	Inputs
2	HALL_V	Inputs
3	HALL_W	Inputs
4	GND	Outputs
5	A+	Inputs
6	A-	Inputs
7	B+	Inputs
8	B-	Inputs
9	Z+	Inputs
10	Z-	Inputs
11	5 V DC	Outputs
12	GND	Outputs
13	F.GND	----
14	F.GND	----

※ □ indicates the motor ID in the unit model name.



7. I/O Connector (CN5)

No.	Function	I/O
1	LIMIT+	Inputs
2	LIMIT-	Inputs
3	ORIGIN	Inputs
4	Digital In1	Inputs
5	Digital In2	Inputs
6	Digital Out1	Outputs
7	Digital Out2	Outputs
8	Digital Out3	Outputs
9	OUT_COM	Inputs
10	IN_COM	Inputs
11	TQOFF1_P	Inputs
12	TQOFF1_N	Inputs
13	TQOFF2_P	Inputs
14	TQOFF2_N	Inputs
15	OVRTQ	Inputs
16	GND	Outputs



8. Brake Connector (CN6)

No.	Function	I/O
1	BRAKE+	Outputs
2	BRAKE-	Outputs



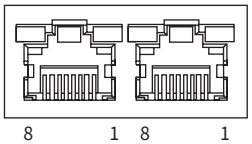
9. Regenerative Resistor Connector (CN7)

No.	Function	I/O
1	RR+	Outputs
2	RR-	Outputs



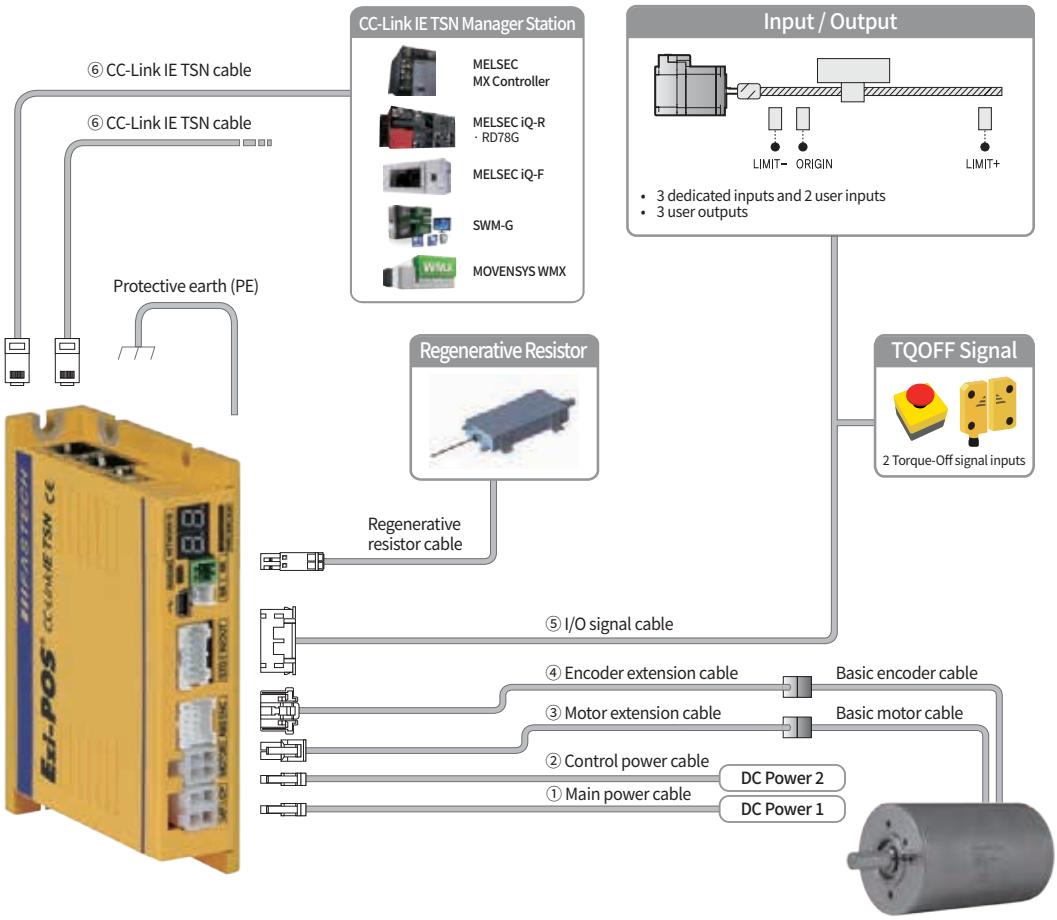
10. CC-Link IE TSN Connector (CN8, CN9)

No.	Function	No.	I/O
1	DA+	6	DB-
2	DA-	7	DD+
3	DB+	8	DD-
4	DC+	Connector Hood	F.GND
5	DC-		



System Configuration

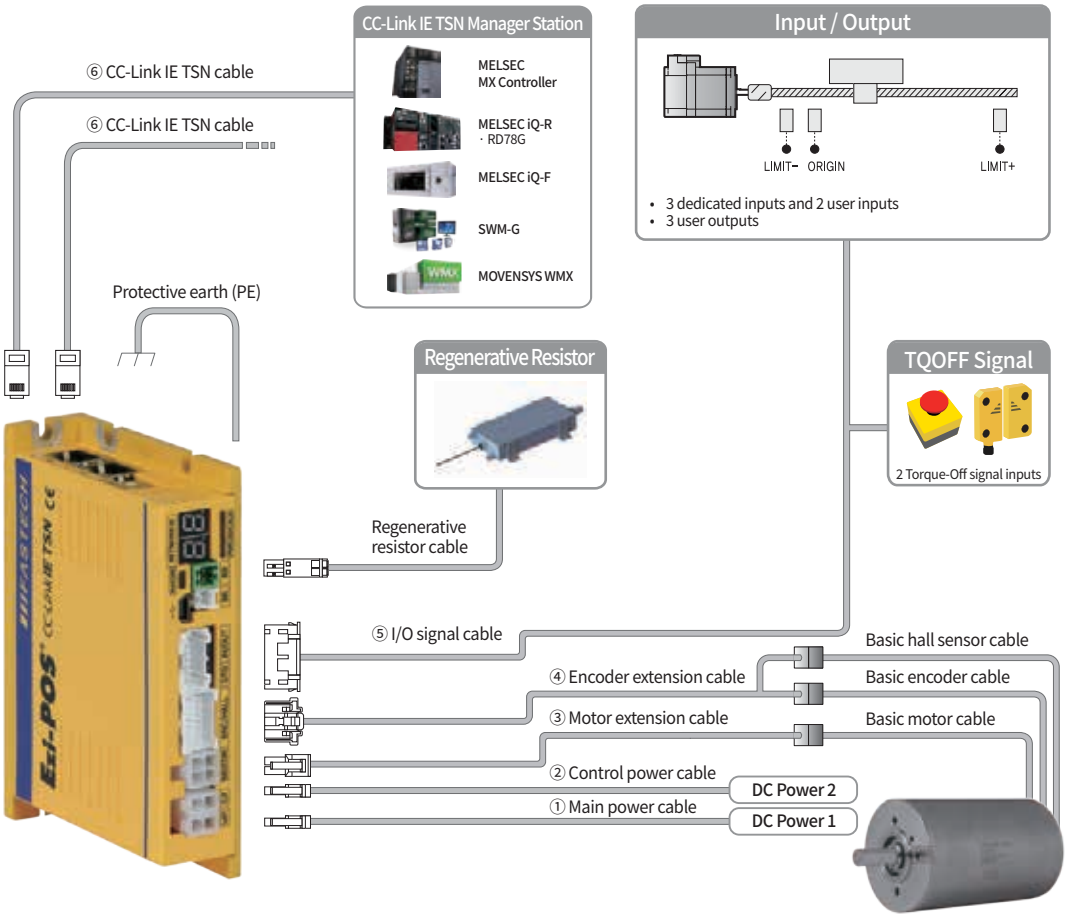
EzPD-CT-A2A-H-□



Cable Type	Max. Cable Length	Remarks
① Main Power Cable	2 m	Options (Sold separately)
② Control Power Cable	2 m	
③ Motor Extension Cable	5 m	
④ Encoder Extension Cable	5 m	
⑤ I/O Signal Cable	5 m	
⑥ CC-Link IE TSN Cable	100 m	
Regenerative Resistor Cable	2 m	Not for Sale
Basic Encoder Cable	0.3 m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3 m (Basic length)	
Basic Hall Sensor Cable	0.3 m (Basic length)	Basic cables are attached to motors. EzPD-CT-A2A-H-□ drive does not support Hall sensor input.

System Configuration

EzPD-CT-A2E-H-□



Cable Type	Max. Cable Length	Remarks
① Main Power Cable	2 m	Options (Sold separately)
② Control Power Cable	2 m	
③ Motor Extension Cable	5 m	
④ Encoder Extension Cable	5 m	
⑤ I/O Signal Cable	5 m	
⑥ CC-Link IE TSN Cable	100 m	
Regenerative Resistor Cable	2 m	Not for Sale
Basic Encoder Cable	0.3 m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3 m (Basic length)	
Basic Hall Sensor Cable	0.3 m (Basic length)	

1. Accessories

Ezi-POS-CT-A2A-H-MXIN3D3AB
Ezi-POS-CT-A2A-H-MXIT4F7AB
Ezi-POS-CT-A2A-H-MXIT4F13AB
Ezi-POS-CT-A2A-H-MXIT5F18AB

① Drive Connector

Purpose	Item	Model Name		Manufacturer
		EzPD-CT-A2A-H-MXIN3D3AB EzPD-CT-A2A-H-MXIT4F7AB	EzPD-CT-A2A-H-MXIT4F13AB EzPD-CT-A2A-H-MXIT5F18AB	
Main Power(CN1)	Housing	5557-02R		MOLEX
	Terminal	5556T	5556T3	
Control Power(CN2)	Housing	5557-02R		MOLEX
	Terminal	5556T		
Motor(CN3)	Housing	5557-04R		MOLEX
	Terminal	5556T	5556T3	
Encoder(CN4)	Housing	51353-1000		MOLEX
	Terminal	56134-9000		
I/O Signal(CN5)	Housing	PADP-16V-1-S		JST
	Terminal	SPH-002T-P0.5L		
Brake(CN6)	Housing	PAP-02V-S		JST
	Terminal	SPHD-002T-P0.5		
Regenerative Resistor(CN7)	Terminal Block	ESC250V-02P		DINKLE

※ The above connectors are provided with the product. When using other components, please ensure they meet the required specifications.

② Motor Connector

Purpose	Item	Model Name		Manufacturer
		EzPM-H-MXIN3D3AB EzPM-H-MXIT4F7AB	EzPM-H-MXIT4F13AB EzPM-H-MXIT5F18AB	
Motor	Housing	5559-04P		MOLEX
	Terminal	5558T	5558T3	
Encoder	Housing	SMP-09V-NC		JST
	Terminal	SHF-001T-0.8BS		

※ The above connectors are provided with the product. When using other components, please ensure they meet the required specifications.

Ezi-POS-CT-A2E-H-MXIN3D3EE
Ezi-POS-CT-A2E-H-MXIT4F7EE
Ezi-POS-CT-A2E-H-MXIT4F13EE
Ezi-POS-CT-A2E-H-MXIT5F18EE

① Drive Connector

Purpose	Item	Model Name		Manufacturer
		EzPD-CT-A2E-H-MXIN3D3EE EzPD-CT-A2E-H-MXIT4F7EE	EzPD-CT-A2E-H-MXIT4F13EE EzPD-CT-A2E-H-MXIT5F18EE	
Main Power(CN1)	Housing	5557-02R		MOLEX
	Terminal	5556T	5556T3	
Control Power(CN2)	Housing	5557-02R		MOLEX
	Terminal	5556T		
Motor(CN3)	Housing	5557-04R		MOLEX
	Terminal	5556T	5556T3	
Encoder(CN4)	Housing	51353-1400		MOLEX
	Terminal	56134-9000		
I/O Signal(CN5)	Housing	PADP-16V-1-S		JST
	Terminal	SPH-002T-P0.5L		
Brake(CN6)	Housing	PAP-02V-S		JST
	Terminal	SPHD-002T-P0.5		
Regenerative Resistor(CN7)	Terminal Block	ESC250V-02P		DINKLE

※ The above connectors are provided with the product. When using other components, please ensure they meet the required specifications.

② Motor Connector

Purpose		Item	Model Name		Manufacturer
			EzPM-H-MXIN3D3EE EzPM-H-MXIT4F7EE	EzPM-H-MXIT4F13EE EzPM-H-MXIT5F18EE	
Motor		Housing	5559-04P		MOLEX
		Terminal	5558T	5558T3	
Encoder	Hall Sensor	Housing	43020-0600		MOLEX
		Terminal	43031-0004		
	Encoder	Housing	HIF3C-10D-2.54C		HIROSE
		Terminal	HIF3-2226SCFA		

※ The above connectors are provided with the product. When using other components, please ensure they meet the required specifications.

2. Options (Sold separately)

① Main Power Supply Cable

This cable is used to connect the Ezi-POS CC-Link IE TSN drive to the main power supply.

Purpose	Drive	Model Name	Length [m]	Cable Type	Remarks
Drive-to-Main Power Connection	EzPD-CT-A2A-H-MXIN3D3AB EzPD-CT-A2A-H-MXIT4F7AB EzPD-CT-A2E-H-MXIN3D3EE EzPD-CT-A2E-H-MXIT4F7EE	CPA2S-P1-001F	1	Fixed Type	Max. Cable Length: 2 m
		CPA2S-P1-002F	2		
		CPA2S-P1-001M	1	Flexible Type	
		CPA2S-P1-002M	2		
	EzPD-CT-A2A-H-MXIT4F13AB EzPD-CT-A2A-H-MXIT5F18AB EzPD-CT-A2E-H-MXIT4F13EE EzPD-CT-A2E-H-MXIT5F18EE	CPA2S-P2-001F	1	Fixed Type	
		CPA2S-P2-002F	2		
		CPA2S-P2-001M	1	Flexible Type	
		CPA2S-P2-002M	2		

② Control Power Cable

This cable is used to connect the Ezi-POS CC-Link IE TSN drive to the control power supply.

Purpose	Model Name	Length [m]	Cable Type	Remarks
Drive-to-Control Power Connection	CSVO-P-001F	1	Fixed Type	Max. Cable Length: 2 m
	CSVO-P-002F	2		
	CSVO-P-001M	1	Flexible Type	
	CSVO-P-002M	2		

③ Motor Extension Cable

This extension cable is used to connect the Ezi-POS CC-Link IE TSN drive to the motor.

Purpose	Drive	Model Name	Length [m]	Cable Type	Remarks
Drive-to-Motor Basic Cable Connection	EzPD-CT-A2A-H-MXIN3D3AB EzPD-CT-A2A-H-MXIT4F7AB EzPD-CT-A2E-H-MXIN3D3EE EzPD-CT-A2E-H-MXIT4F7EE	CPA2S-M1-001F	1	Fixed Type	Max. Cable Length: 5 m
		CPA2S-M1-002F	2		
		CPA2S-M1-003F	3		
		CPA2S-M1-005F	5		
		CPA2S-M1-001M	1	Flexible Type	
		CPA2S-M1-002M	2		
		CPA2S-M1-003M	3		
		CPA2S-M1-005M	5		
	EzPD-CT-A2A-H-MXIT4F13AB EzPD-CT-A2A-H-MXIT5F18AB EzPD-CT-A2E-H-MXIT4F13EE EzPD-CT-A2E-H-MXIT5F18EE	CPA2M-M2-001F	1	Fixed Type	
		CPA2M-M2-002F	2		
		CPA2M-M2-003F	3		
		CPA2M-M2-005F	5		
		CPA2M-M2-001M	1	Flexible Type	
		CPA2M-M2-002M	2		
		CPA2M-M2-003M	3		
		CPA2M-M2-005M	5		

④ Encoder Extension Cable

This extension cable is used to connect the Ezi-POS CC-Link IE TSN drive to the encoder.

Purpose	Drive	Model Name	Length [m]	Cable Type	Remarks
Drive-to-Encoder Basic Cable Connection	EzPD-CT-A2A-H-MXIN3D3AB EzPD-CT-A2A-H-MXIT4F7AB EzPD-CT-A2A-H-MXIT4F13AB EzPD-CT-A2A-H-MXIT5F18AB	CSVO-E-001F	1	Fixed Type	Max. Cable Length: 5 m
		CSVO-E-002F	2		
		CSVO-E-003F	3		
		CSVO-E-005F	5		
		CSVO-E-001M	1	Flexible Type	
		CSVO-E-002M	2		
		CSVO-E-003M	3		
		CSVO-E-005M	5		
	EzPD-CT-A2E-H-MXIN3D3EE EzPD-CT-A2E-H-MXIT4F7EE EzPD-CT-A2E-H-MXIT4F13EE EzPD-CT-A2E-H-MXIT5F18EE	CPA2M-E-001F	1	Fixed Type	
		CPA2M-E-002F	2		
		CPA2M-E-003F	3		
		CPA2M-E-005F	5		
		CPA2M-E-001M	1	Flexible Type	
		CPA2M-E-002M	2		
		CPA2M-E-003M	3		
		CPA2M-E-005M	5		

* For cable lengths other than those listed in the table (in 1-meter increments), please contact FASTECH separately.

⑤ I/O Signal Cable

This cable is used to connect the Ezi-POS CC-Link IE TSN drive to input/output devices.

Purpose	Model Name	Length [m]	Cable Type	Remarks
Drive-to-I/O Device Connection	CPA2S-IO-001F	1	Fixed Type	Max. Cable Length: 5 m
	CPA2S-IO-002F	2		
	CPA2S-IO-003F	3		
	CPA2S-IO-005F	5		
	CPA2S-IO-001M	1	Flexible Type	
	CPA2S-IO-002M	2		
	CPA2S-IO-003M	3		
	CPA2S-IO-005M	5		

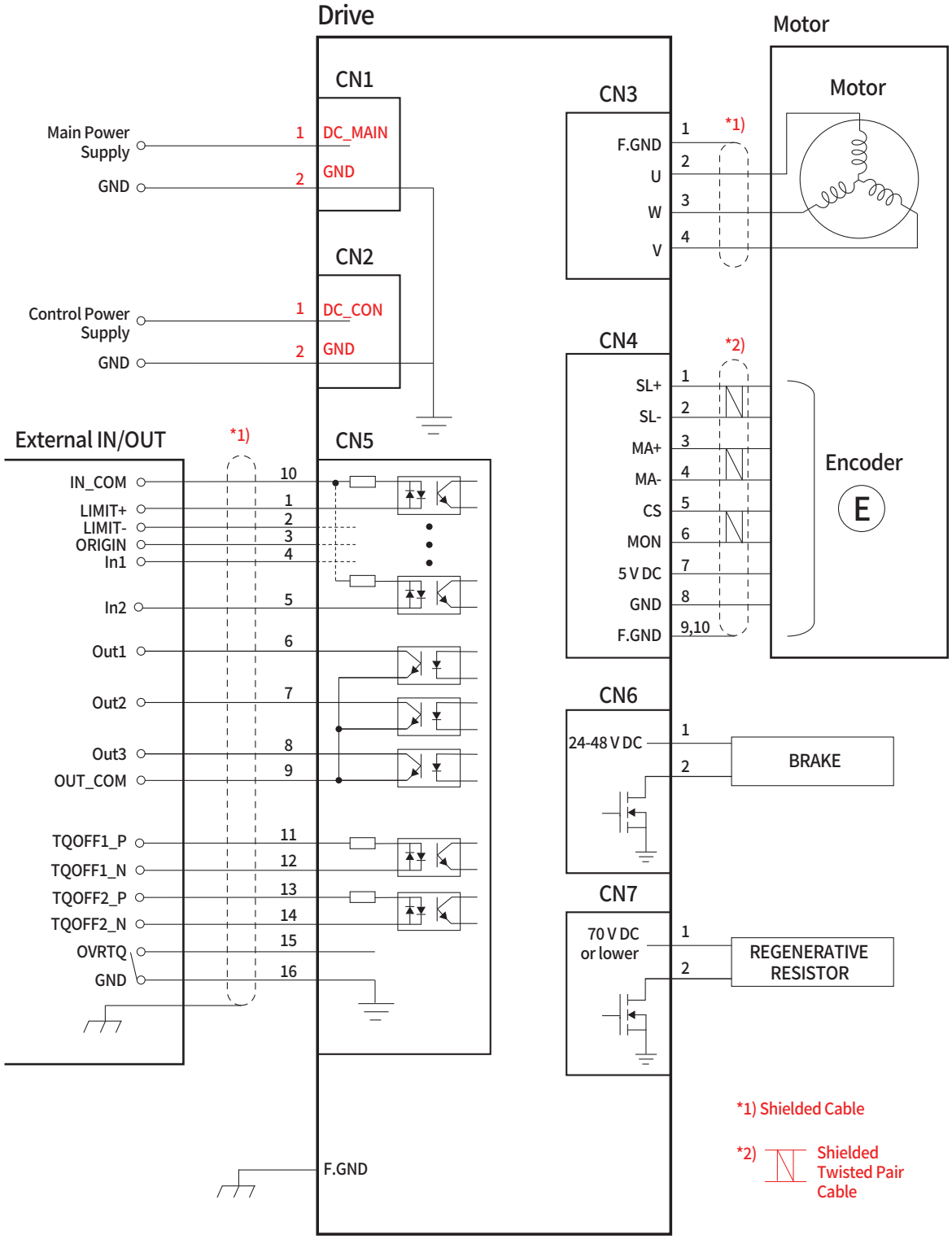
* For cable lengths other than those listed in the table (in 1-meter increments), please contact FASTECH separately.

⑥ CC-Link IE TSN Cable

Purpose	Model Name	Length [m]	Remarks
Drive-to-Brake Basic Cable Connection	CPA2S-B-001F	1	Max. Cable Length: 5 m
	CPA2S-B-002F	2	
	CPA2S-B-003F	3	
	CPA2S-B-005F	5	

External Wiring Diagram

EzPD-CT-A2A-H-□



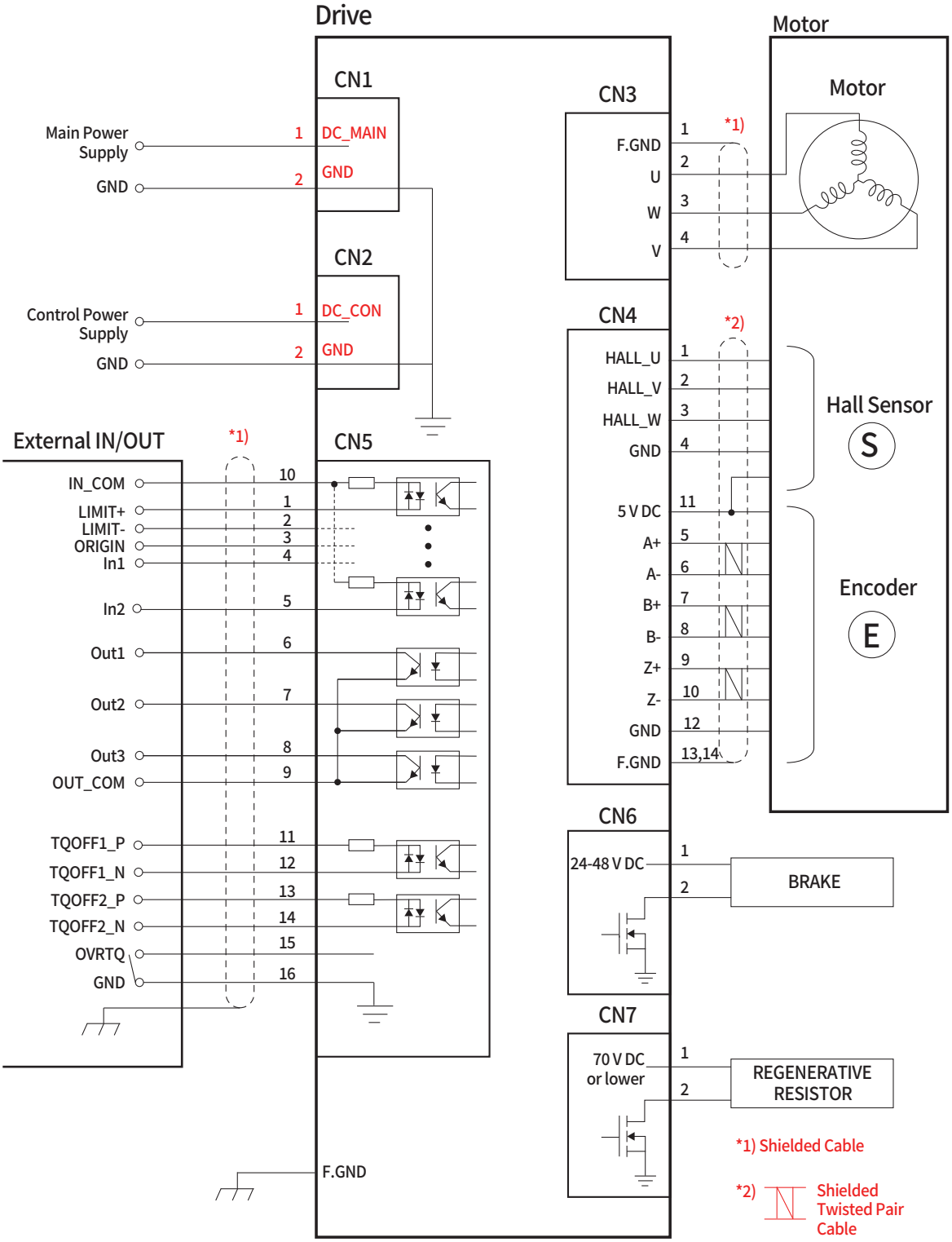
※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

External Wiring Diagram

EzPD-CT-A2E-H-□



※ When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

CAUTION

To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

Ezi-SPEED® CC-Link IE TSN

BLDC Motor Speed Control System

- CC-Link IE TSN-compatible BLDC Motor Speed Control System
- AC Power Supply Input (200 ~ 240 V AC)
- Compact · Light Weight · High Power · High Efficiency Brushless Motor
- Wide Speed Range (50 ~ 4,000 r/min)
- Stable Speed Regulation (±0.2 %)
- BLDC Motor Line-up (30, 60, 120, 200, 400 W)



FASTECH

Fast Accurate Smooth Motion

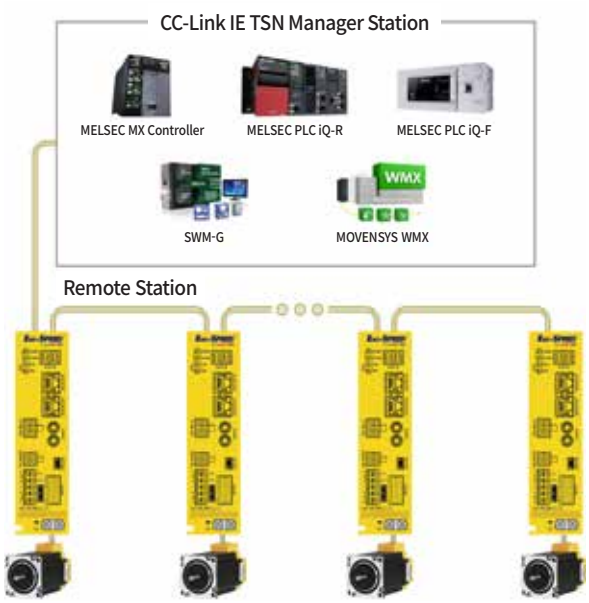
Ezi-SPEED® CC-Link IE TSN

BLDC Motor Speed Control System



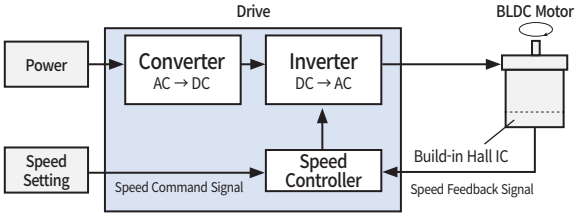
CC-Link IE TSN-compatible Speed Control

Ezi-SPEED CC-Link IE TSN is BLDC motor speed control system that supports CC-Link IE TSN, an industrial network based on high speed Ethernet (1Gbps, full-duplex communication).
Ezi-SPEED CC-Link IE TSN is a CC-Link IE TSN remote module that supports Velocity Mode that receives speed profile commands through communication and Memory Map Mode which is based on operational data.



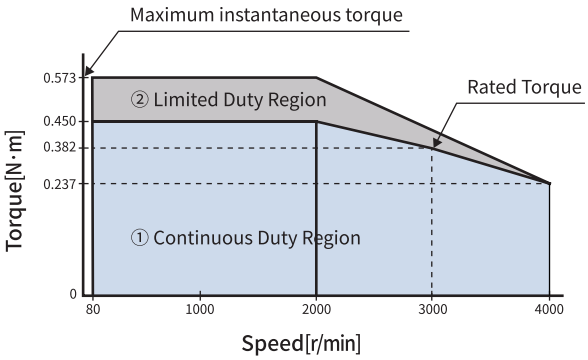
BLDC Motor Unit

A conventional DC motor rotates using brushes and a commutator, requiring regular maintenance. In contrast, a BLDC (Brushless DC) motor operates without mechanical contacts, utilizing a semiconductor-based drive circuit, resulting in a longer lifespan and reduced maintenance requirements. Embedded permanent magnets in the rotor enhance efficiency, while automatic motor current control ensures consistent torque characteristics across all speed ranges. Additionally, utilizing Hall IC for feedback control allows precise speed regulation from low to high speed.



< Control Block Diagram >

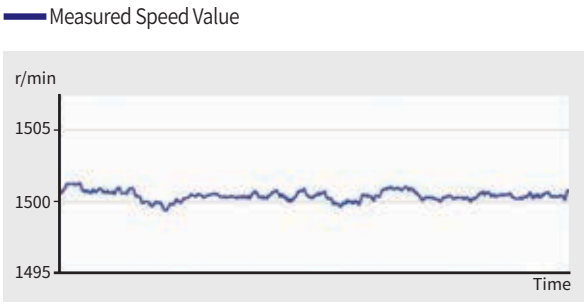
The BLDC motor can operate continuously with a constant torque from low speeds to its rated rotational speed. Within the rated torque range, it maintains a stable rotational speed even when the load varies.
BLDC motors have two operating regions: continuous duty region (①) and limited duty region (②). The limited duty region is used for acceleration torque when starting an inertial load. However, operating in this region more than 40s activates the built-in overload protection function, which automatically prevents overheating of the motor and drive.



< Example of Torque Characteristics According to Speed of BLDC Motor >

High Precision Speed Control (Speed Regulation ±2%)

Ezi-SPEED compares the setting speed with the speed feedback signals from the motor at all time, and adjusts the motor current using vector control algorithm. So, even if the load changes, stable rotation is maintained from low speed to high speed. Inverter-controlled AC induction motor does not perform feedback control, so the speed will be reduced significantly when load increases.
Ezi-SPEED is recommended for applications that require stable speed.



Ezi-SPEED 120 W



Inverter + AC Induction Motor 100 W

- Load Factor: 95 %
- Setting Speed : 1,500 r/min
- Resolution of External Encoder for Measuring Velocity Ripple : 32,000 P/R

Wide Speed Control Range (Speed Ratio: 1:80)

Ezi-SPEED has wide speed control range compared to AC induction motor with inverter. Because torque is not restricted at low speed, Ezi-SPEED is recommended for application that requires stable torque over from low to high speed.

Product	Speed Control Range [r/min]	Speed Ratio
Ezi-SPEED	50 ~ 4,000	1:80
Inverter + AC Induction Motor	200 ~ 2,400	1:12

- Speed range of Inverter + AC Induction Motor varies depending on model type.

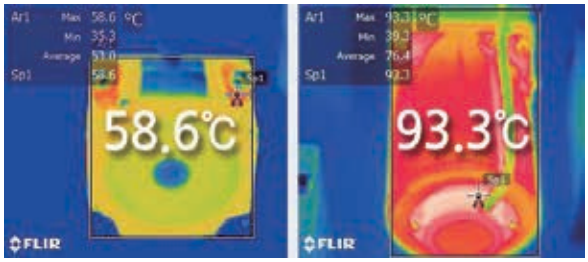
Compact / Light Weight / High Power / High Efficiency

Unlike AC induction motors, BLDC motors use permanent magnets in the rotor so that it could prevent secondary loss from rotor.
Therefore, BLDC motors has higher efficiency than inverter-controlled AC induction motor so that customers can save energy.



Ezi-SPEED 60 W AC Induction Motor 60 W

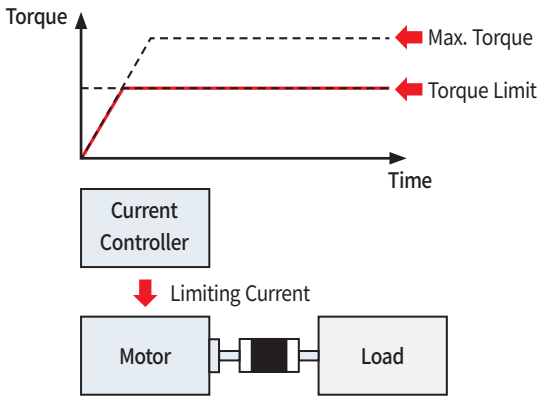
Comparison of motor temperature after 4 hours continuous operation when load factor is 100 % and Setting speed is 1,500 r/min.



Ezi-SPEED 60 W AC Induction Motor 60 W

Torque Limit Function

Ezi-SPEED can control the torque limit by limiting the current flowing through the motor. Torque limit function can be used to prevent excessive force.



Operation by External I/O

By connecting the PLC controller's I/O unit or I/O switches to the external input/output terminals, operations such as run/stop control, rotation direction change, and multi-speed operation can be performed. In addition, a potentiometer can be connected externally to adjust the speed via analog input.

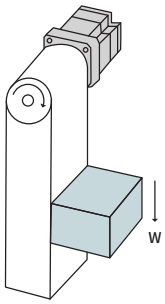


Protection Function

- Ezi-SPEED is equipped with protective functions to detect abnormal conditions such as overload and overvoltage. When a fault is detected, operation is stopped and an alarm is generated.
- Ezi-SPEED provides regenerative resistor connection terminals, helping to prevent potential issues that may occur when driving loads with short deceleration times or large inertia.

Brake-Equipped Motor Available

When using a motor equipped with an electromagnetic brake, it can be utilized for position holding at standstill and for stopping during vertical operation.
(As regenerative energy is generated during vertical operation, the use of an optional regenerative resistor is recommended.)



Separate Control Circuit Power Supply Support for Enhanced Safety

When a 24 V DC power supply is connected to the control power terminal, the drive status can be monitored via the network even when the motor power supply (220 V AC) is turned off.
(Even when only the 220 V AC motor power supply is connected without a separate control power supply, both the motor power and control power are internally supplied to ensure normal operation.)

Ezi-SPEED Part Numbering

Ezi-SPEED-CT-60-H-30-CD-R5-P-B

Product Name

Drive Series
CT: CC-Link IE TSN

Motor Flange Size
60 : 61×61 mm
80 : 81×81 mm
90 : 90×90 mm
104 : 104.5×104.5 mm

Parallel Shaft Gearbox Size
60 : 60×60 mm
80 : 80×80 mm
90 : 90×90 mm
104 : 110×110 mm

Hollow Shaft Flat Gearbox Size
60 : 60×120.5 mm
80 : 80×160.5 mm
90 : 90×180 mm
104 : 104×218 mm

Shaft Figuration
S : Straight
(For single use, D-cut shaft)
H : High Strength
(For gearbox engagement, Pinion shaft)

Output Power
30 : 30 W
60 : 60 W
120 : 120 W
200 : 200 W
400 : 400 W

Power Supply Voltage
CD : Single-Phase / Three-Phase 200 ~ 240 V AC, 24 V DC

Gear Ratio
Blank -Without Gearbox
R5 - 1:5
R10 - 1:10
R15 - 1:15
R20 - 1:20
R30 - 1:30
R50 - 1:50
R100 - 1:100
R200 - 1:200

Gear Ratio
Blank - Without Gearbox
P - Parallel Gearbox
H - Hollow Shaft Flat Gearbox

Brake
Blank: Without Brake
B: Brake

Standard Combination

Output Power	Unit Part Number	Motor Model Number	Drive Model Number
30 W	Ezi-SPEED-CT-60-S-30-CD-☐	ESM-60-S-30-☐	ESD-CT-CD-30
60 W	Ezi-SPEED-CT-80-S-60-CD-☐	ESM-80-S-60-☐	ESD-CT-CD-60
120 W	Ezi-SPEED-CT-90-S-120-CD-☐	ESM-90-S-120-☐	ESD-CT-CD-120
200 W	Ezi-SPEED-CT-104-S-200-CD-☐	ESM-104-S-200-☐	ESD-CT-CD-200
400 W	Ezi-SPEED-CT-104-S-400-CD-☐	ESM-104-S-400-☐	ESD-CT-CD-400

※ ☐ : No symbol indicates a motor without a brake; “B” indicates a motor with a brake.

Combination with Gearbox

Output Power	Unit Part Number	Motor Model Number	Drive Model Number	Gearbox Model Number	Gear Ratio
30 W	Ezi-SPEED-CT-60-H-30-CD-R5-P-□	ESM-60-H-30-□	ESD-CT-CD-30	ESG-60-H-R5-P	1:5
	Ezi-SPEED-CT-60-H-30-CD-R5-H-□			ESG-60-H-R5-H	
	Ezi-SPEED-CT-60-H-30-CD-R10-P-□			ESG-60-H-R10-P	1:10
	Ezi-SPEED-CT-60-H-30-CD-R10-H-□			ESG-60-H-R10-H	
	Ezi-SPEED-CT-60-H-30-CD-R15-P-□			ESG-60-H-R15-P	1:15
	Ezi-SPEED-CT-60-H-30-CD-R15-H-□			ESG-60-H-R15-H	
	Ezi-SPEED-CT-60-H-30-CD-R20-P-□			ESG-60-H-R20-P	1:20
	Ezi-SPEED-CT-60-H-30-CD-R20-H-□			ESG-60-H-R20-H	
	Ezi-SPEED-CT-60-H-30-CD-R30-P-□			ESG-60-H-R30-P	1:30
	Ezi-SPEED-CT-60-H-30-CD-R30-H-□			ESG-60-H-R30-H	
	Ezi-SPEED-CT-60-H-30-CD-R50-P-□			ESG-60-H-R50-P	1:50
	Ezi-SPEED-CT-60-H-30-CD-R50-H-□			ESG-60-H-R50-H	
	Ezi-SPEED-CT-60-H-30-CD-R100-P-□			ESG-60-H-R100-P	1:100
	Ezi-SPEED-CT-60-H-30-CD-R100-H-□			ESG-60-H-R100-H	
	Ezi-SPEED-CT-60-H-30-CD-R200-P-□			ESG-60-H-R200-P	1:200
	Ezi-SPEED-CT-60-H-30-CD-R200-H-□			ESG-60-H-R200-H	
60 W	Ezi-SPEED-CT-80-H-60-CD-R5-P-□	ESM-80-H-60-□	ESD-CT-CD-60	ESG-80-H-R5-P	1:5
	Ezi-SPEED-CT-80-H-60-CD-R5-H-□			ESG-80-H-R5-H	
	Ezi-SPEED-CT-80-H-60-CD-R10-P-□			ESG-80-H-R10-P	1:10
	Ezi-SPEED-CT-80-H-60-CD-R10-H-□			ESG-80-H-R10-H	
	Ezi-SPEED-CT-80-H-60-CD-R15-P-□			ESG-80-H-R15-P	1:15
	Ezi-SPEED-CT-80-H-60-CD-R15-H-□			ESG-80-H-R15-H	
	Ezi-SPEED-CT-80-H-60-CD-R20-P-□			ESG-80-H-R20-P	1:20
	Ezi-SPEED-CT-80-H-60-CD-R20-H-□			ESG-80-H-R20-H	
	Ezi-SPEED-CT-80-H-60-CD-R30-P-□			ESG-80-H-R30-P	1:30
	Ezi-SPEED-CT-80-H-60-CD-R30-H-□			ESG-80-H-R30-H	
	Ezi-SPEED-CT-80-H-60-CD-R50-P-□			ESG-80-H-R50-P	1:50
	Ezi-SPEED-CT-80-H-60-CD-R50-H-□			ESG-80-H-R50-H	
	Ezi-SPEED-CT-80-H-60-CD-R100-P-□			ESG-80-H-R100-P	1:100
	Ezi-SPEED-CT-80-H-60-CD-R100-H-□			ESG-80-H-R100-H	
	Ezi-SPEED-CT-80-H-60-CD-R200-P-□			ESG-80-H-R200-P	1:200
	Ezi-SPEED-CT-80-H-60-CD-R200-H-□			ESG-80-H-R200-H	
120 W	Ezi-SPEED-CT-90-H-120-CD-R5-P-□	ESM-90-H-120	ESD-CT-CD-120	ESG-90-H-R5-P	1:5
	Ezi-SPEED-CT-90-H-120-CD-R5-H-□			ESG-90-H-R5-H	
	Ezi-SPEED-CT-90-H-120-CD-R10-P-□			ESG-90-H-R10-P	1:10
	Ezi-SPEED-CT-90-H-120-CD-R10-H-□			ESG-90-H-R10-H	
	Ezi-SPEED-CT-90-H-120-CD-R15-P-□			ESG-90-H-R15-P	1:15
	Ezi-SPEED-CT-90-H-120-CD-R15-H-□			ESG-90-H-R15-H	
	Ezi-SPEED-CT-90-H-120-CD-R20-P-□			ESG-90-H-R20-P	1:20
	Ezi-SPEED-CT-90-H-120-CD-R20-H-□			ESG-90-H-R20-H	
	Ezi-SPEED-CT-90-H-120-CD-R30-P-□			ESG-90-H-R30-P	1:30
	Ezi-SPEED-CT-90-H-120-CD-R30-H-□			ESG-90-H-R30-H	
	Ezi-SPEED-CT-90-H-120-CD-R50-P-□			ESG-90-H-R50-P	1:50
	Ezi-SPEED-CT-90-H-120-CD-R50-H-□			ESG-90-H-R50-H	
	Ezi-SPEED-CT-90-H-120-CD-R100-P-□			ESG-90-H-R100-P	1:100
	Ezi-SPEED-CT-90-H-120-CD-R100-H-□			ESG-90-H-R100-H	
	Ezi-SPEED-CT-90-H-120-CD-R200-P-□			ESG-90-H-R200-P	1:200
	Ezi-SPEED-CT-90-H-120-CD-R200-H-□			ESG-90-H-R200-H	

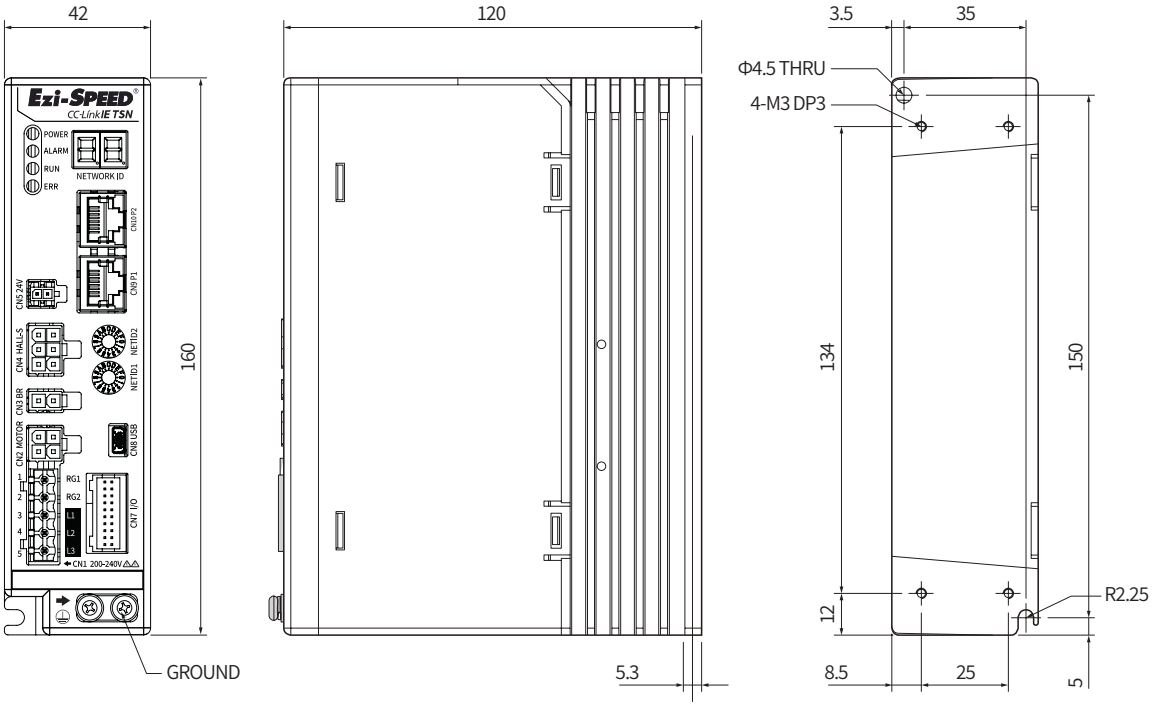
Output Power	Unit Part Number	Motor Model Number	Drive Model Number	Gearbox Model Number	Gear Ratio
200 W	Ezi-SPEED-CT-104-H-200-CD-R5-P-□	ESM-104-H-200-□	ESD-CT-CD-200	ESG-104-H-R5-P	1:5
	Ezi-SPEED-CT-104-H-200-CD-R5-H-□			ESG-104-H-R5-H	
	Ezi-SPEED-CT-104-H-200-CD-R10-P-□			ESG-104-H-R10-P	1:10
	Ezi-SPEED-CT-104-H-200-CD-R10-H-□			ESG-104-H-R10-H	
	Ezi-SPEED-CT-104-H-200-CD-R15-P-□			ESG-104-H-R15-P	1:15
	Ezi-SPEED-CT-104-H-200-CD-R15-H-□			ESG-104-H-R15-H	
	Ezi-SPEED-CT-104-H-200-CD-R20-P-□			ESG-104-H-R20-P	1:20
	Ezi-SPEED-CT-104-H-200-CD-R20-H-□			ESG-104-H-R20-H	
	Ezi-SPEED-CT-104-H-200-CD-R30-P-□			ESG-104-H-R30-P	1:30
	Ezi-SPEED-CT-104-H-200-CD-R30-H-□			ESG-104-H-R30-H	
	Ezi-SPEED-CT-104-H-200-CD-R50-P-□			ESG-104-H-R50-P	1:50
	Ezi-SPEED-CT-104-H-200-CD-R50-H-□			ESG-104-H-R50-H	
	Ezi-SPEED-CT-104-H-200-CD-R100-P-□			ESG-104-H-R100-P	1:100
	Ezi-SPEED-CT-104-H-200-CD-R100-H-□			ESG-104-H-R100-H	
	Ezi-SPEED-CT-104-H-200-CD-R200-P-□			ESG-104-H-R200-P	1:200
400 W	Ezi-SPEED-CT-104-H-400-CD-R5-P-□	ESM-104-H-400-□	ESD-CT-CD-400	ESG-104-H-R5-P	1:5
	Ezi-SPEED-CT-104-H-400-CD-R5-H-□			ESG-104-H-R5-H	
	Ezi-SPEED-CT-104-H-400-CD-R10-P-□			ESG-104-H-R10-P	1:10
	Ezi-SPEED-CT-104-H-400-CD-R10-H-□			ESG-104-H-R10-H	
	Ezi-SPEED-CT-104-H-400-CD-R15-P-□			ESG-104-H-R15-P	1:15
	Ezi-SPEED-CT-104-H-400-CD-R15-H-□			ESG-104-H-R15-H	
	Ezi-SPEED-CT-104-H-400-CD-R20-P-□			ESG-104-H-R20-P	1:20
	Ezi-SPEED-CT-104-H-400-CD-R20-H-□			ESG-104-H-R20-H	
	Ezi-SPEED-CT-104-H-400-CD-R30-P-□			ESG-104-H-R30-P	1:30
	Ezi-SPEED-CT-104-H-400-CD-R30-H-□			ESG-104-H-R30-H	
	Ezi-SPEED-CT-104-H-400-CD-R50-P-□			ESG-104-H-R50-P	1:50
	Ezi-SPEED-CT-104-H-400-CD-R50-H-□			ESG-104-H-R50-H	
	Ezi-SPEED-CT-104-H-400-CD-R100-P-□			ESG-104-H-R100-P	1:100
	Ezi-SPEED-CT-104-H-400-CD-R100-H-□			ESG-104-H-R100-H	
	Ezi-SPEED-CT-104-H-400-CD-R200-P-□			ESG-104-H-R200-P	1:200

※ □ : No symbol indicates a motor without a brake; “B” indicates a motor with a brake.

Specifications of Drive

Drive Model		Ezi-SPEED-CT-CD-30	Ezi-SPEED-CT-CD-60	Ezi-SPEED-CT-CD-120	Ezi-SPEED-CT-CD-200	Ezi-SPEED-CT-CD-400
Main Power	Input Voltage	Single-phase 200 ~ 240 V AC / Three-phase 200 ~ 240 V AC ± 10 %				
	Input Current	Maximum rated current: 8.5 A (For input current specifications by motor model, refer to the motor specification table.)				
	Frequency(AC)	50 / 60 Hz ±5 %				
Control Power (option)	Input Voltage	24 V DC ± 10 % (Even when only the main power supply is connected and no control power supply is applied, internal power is automatically supplied to ensure normal operation.)				
	Power Consumption	4W or lower				
Environment	Temperature	Operation: 0 ~ 40 °C Storage: -25 ~ 70 °C				
	Humidity	Operation: under 85 % RH (No condensation) Storage: under 85 % RH (No condensation)				
	Vibration Resistance	0.5 g				
	Altitude	Operation: 1,000 m or less, above sea level Transportation / Storage: Up to 3,000 m above sea level				
	Protection Class	IP20				
Function	Speed Range	50 ~ 4,000 r/min				
	Rated Speed	3,000 r/min				
	Speed Fluctuation Rate	±0.2 % or less / Conditions : 0~Rated Torque, Rated Speed, Rated Voltage, Ambient Temperature				
	LED Display	POWER, ALARM, RUN, ERROR				
	Brake Control	Brake output connector				
	Regenerative Control	Regenerative resistor output connector				
I/O Signal	Digital Input	7 programmable inputs				
	Digital Output	2 programmable outputs				

Dimensions of Drive [mm]



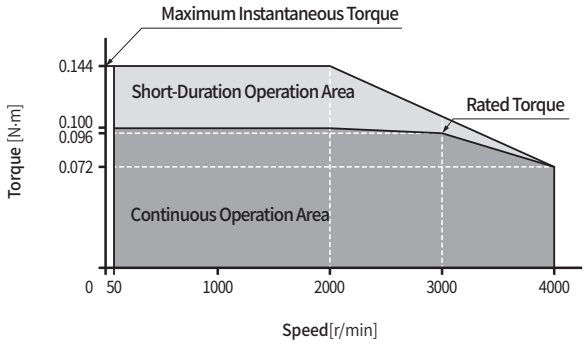
Specifications of Motor

Model			Unit	ESM-60-S-30-□	ESM-80-S-60-□	ESM-90-S-120-□	ESM-104-S-200-□	ESM-104-S-400-□
Rated Output Power (Continuous)			W	30	60	120	200	400
Power input	Voltage		V	Single-phase 200 ~ 240 V / Three-phase 200 ~ 240 V (±10 %)				
	Frequency		Hz	50 / 60				
	Rated input current		A	Single-phase: 0.8 Three-phase: 0.5	Single-phase : 1.0 Three-phase: 0.7	Single-phase : 2.0 Three-phase: 1.2	Single-phase : 2.5 Three-phase: 1.8	Single-phase: 4.0 Three-phase: 3.0
	Maximum input current		A	Single-phase: 1.6 Three-phase: 1.0	Single-phase: 2.0 Three-phase: 1.4	Single-phase: 4.0 Three-phase: 2.4	Single-phase: 5.0 Three-phase: 3.6	Single-phase: 7.8 Three-phase: 5.5
Rated Torque			N·m	0.096	0.192	0.382	0.637	1.272
Maximum Instantaneous Torque			N·m	0.144	0.287	0.573	1.15	1.91
Rated Speed			r/min	3,000				
Speed Control Range			r/min	50 ~ 4,000				
Permissible Load Inertia Moment			10^{-4} kg·m^2	0.5	1.8	5.8	5.8	8.75
Inertia Moment			10^{-4} kg·m^2	0.086	0.234	0.61	0.61	0.66
Motor Weight			kg	0.5	0.8	1.3	2.4	2.4
Length			mm	62	74	94	156	156
Permissible Radial Load	Distance from End of Shaft	10 mm	N	70	120	160	197	197
		20 mm		100	140	170	220	220
Permissible Axial Load			N	Lower than 50 % or less of the motor's weight				
Insulation Resistance			MΩ	100 MΩ or more (At 500 V DC between the motor coil and case)				
Insulation Class			-	EN: class B (130 ℃)				
Protection Class			-	IP65 (excluding output shaft section)				
Brake	Operating method		-	Non-excitation-actuated electromagnetic brake, automatically controlled by the drive				
	Braking Torque		N·m	0.24		1	2	

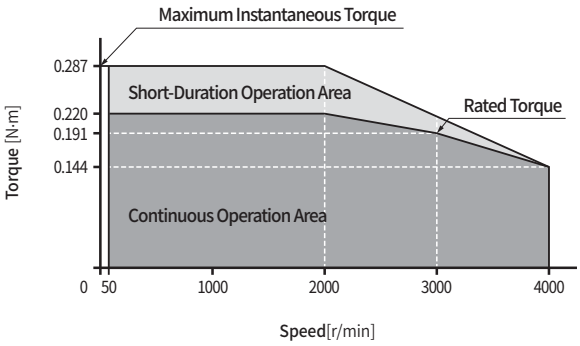
※ Motor axis is D-cut type.
※ □: Brake Option - No symbol indicates no brake; "B" indicates a motor with a brake.

Torque Characteristics of Motor

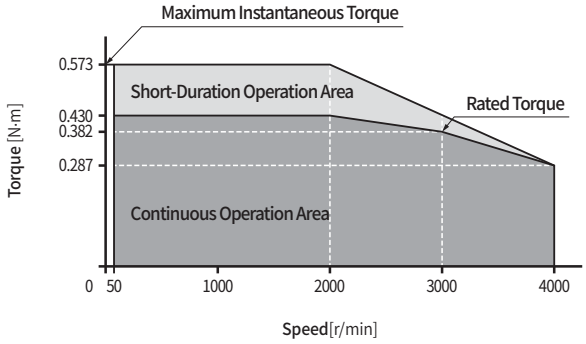
Ezi-SPEED-30 W



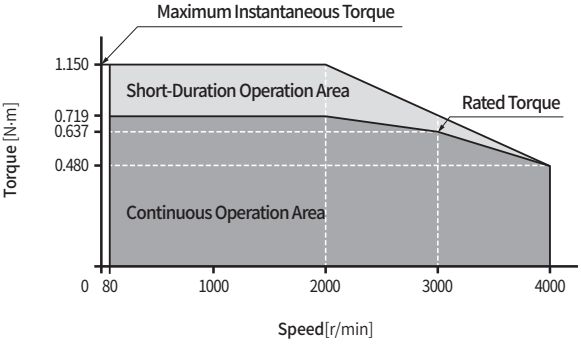
Ezi-SPEED-60 W



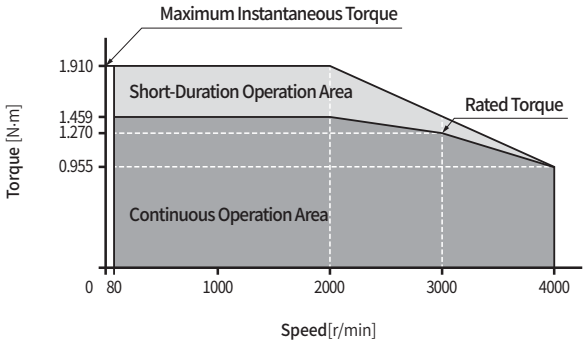
Ezi-SPEED-120 W



Ezi-SPEED-200 W



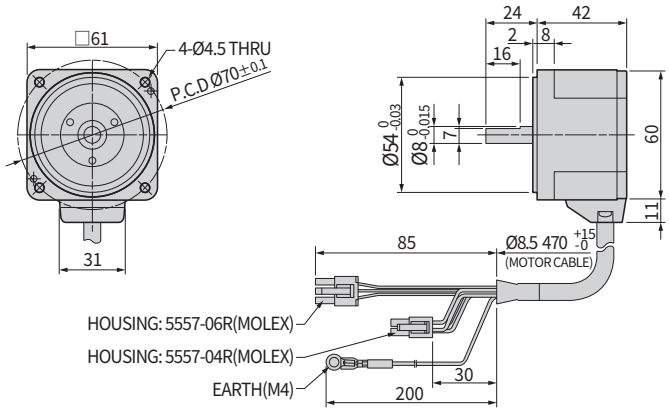
Ezi-SPEED-400 W



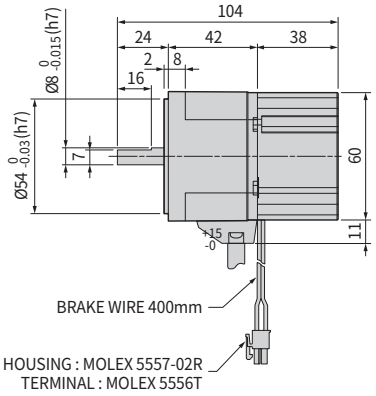
Dimensions of Motor [mm]

30 W

Without Brake
ESM-60-S-30

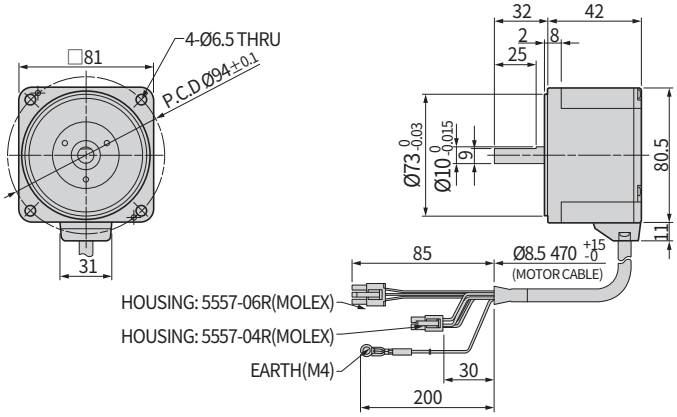


With Brake
ESM-60-S-30-B

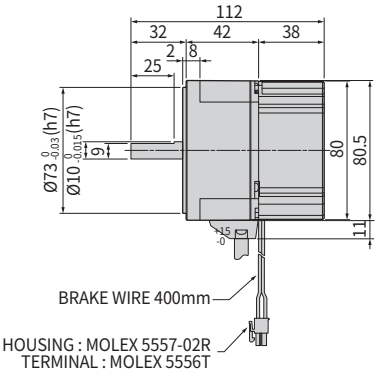


60 W

Without Brake
ESM-80-S-60

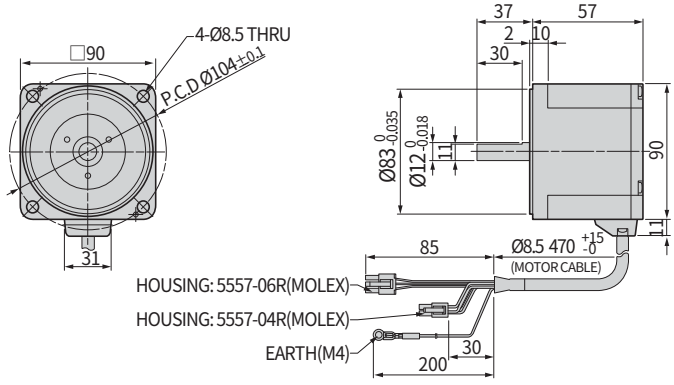


With Brake
ESM-80-S-60-B

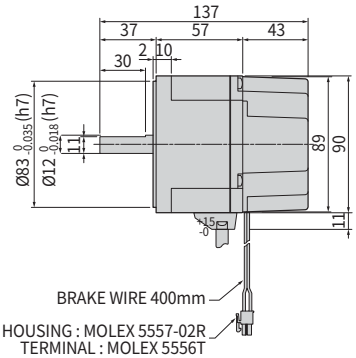


120 W

Without Brake
ESM-90-S-120



With Brake
ESM-90-S-120-B



Dimensions of Motor [mm]

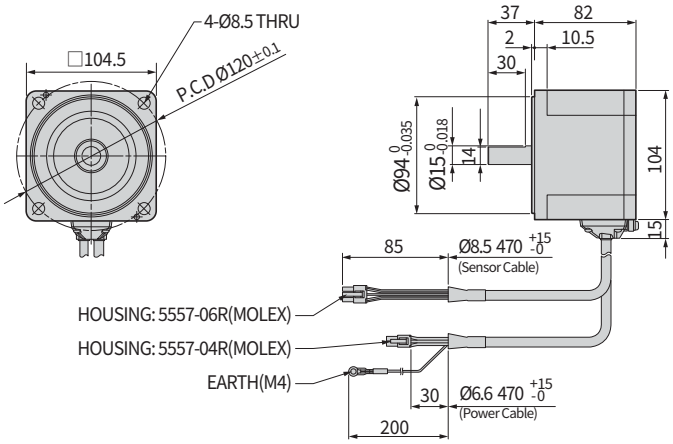
200 W
400 W

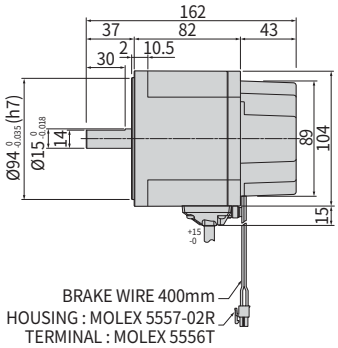
Without Brake

ESM-104-S-200
ESM-104-S-400

With Brake

ESM-104-S-200-B
ESM-104-S-400-B





Parallel Shaft Gearbox Type Motor Specifications

30 W

Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-60-H-30-CD-R5-P-□	5	0.45	0.36	10 ~ 800	0.9	100	150	40
Ezi-SPEED-CT-60-H-30-CD-R10-P-□	10	0.9	0.72	5 ~ 400		150	200	
Ezi-SPEED-CT-60-H-30-CD-R15-P-□	15	1.4	1.08	3.3 ~ 266.7				
Ezi-SPEED-CT-60-H-30-CD-R20-P-□	20	1.8	1.4	2.5 ~ 200				
Ezi-SPEED-CT-60-H-30-CD-R30-P-□	30	2.6	2.1	1.7 ~ 133.3		200	300	
Ezi-SPEED-CT-60-H-30-CD-R50-P-□	50	4.3	3.4	1 ~ 80				
Ezi-SPEED-CT-60-H-30-CD-R100-P-□	100	6	5.4	0.5 ~ 40				
Ezi-SPEED-CT-60-H-30-CD-R200-P-□	200	6	5.4	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; “B” indicates a motor with a brake

60 W

Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-80-H-60-CD-R5-P-□	5	0.9	0.68	10 ~ 800	1.6	200	250	100
Ezi-SPEED-CT-80-H-60-CD-R10-P-□	10	1.8	1.4	5 ~ 400		300	350	
Ezi-SPEED-CT-80-H-60-CD-R15-P-□	15	2.7	2	3.3 ~ 266.7				
Ezi-SPEED-CT-80-H-60-CD-R20-P-□	20	3.6	2.7	2.5 ~ 200				
Ezi-SPEED-CT-80-H-60-CD-R30-P-□	30	5.2	3.9	1.7 ~ 133.3		450	550	
Ezi-SPEED-CT-80-H-60-CD-R50-P-□	50	8.6	6.5	1 ~ 80				
Ezi-SPEED-CT-80-H-60-CD-R100-P-□	100	16	12.9	0.5 ~ 40				
Ezi-SPEED-CT-80-H-60-CD-R200-P-□	200	16	14	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; “B” indicates a motor with a brake

Parallel Shaft Gearbox Type Motor Specifications

120 W

Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-90-H-120-CD-R5-P-□	5	2.2	1.4	10 ~ 800	2.7	300	400	150
Ezi-SPEED-CT-90-H-120-CD-R10-P-□	10	4.4	2.7	5 ~ 400		400	500	
Ezi-SPEED-CT-90-H-120-CD-R15-P-□	15	6.6	4.1	3.3 ~ 266.7				
Ezi-SPEED-CT-90-H-120-CD-R20-P-□	20	8.8	5.4	2.5 ~ 200				
Ezi-SPEED-CT-90-H-120-CD-R30-P-□	30	12.6	7.7	1.7 ~ 133.3		500	650	
Ezi-SPEED-CT-90-H-120-CD-R50-P-□	50	21.1	12.9	1 ~ 80				
Ezi-SPEED-CT-90-H-120-CD-R100-P-□	100	30	25.8	0.5 ~ 40				
Ezi-SPEED-CT-90-H-120-CD-R200-P-□	200	30	27	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; “B” indicates a motor with a brake

200 W

Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-104-H-200-CD-R5-P-□	5	2.9	2	10 ~ 800	4.2	550	800	200
Ezi-SPEED-CT-104-H-200-CD-R10-P-□	10	5.9	4.1	5 ~ 400				
Ezi-SPEED-CT-104-H-200-CD-R15-P-□	15	8.8	6.1	3.3 ~ 266.7				
Ezi-SPEED-CT-104-H-200-CD-R20-P-□	20	11.7	8.1	2.5 ~ 200				
Ezi-SPEED-CT-104-H-200-CD-R30-P-□	30	16.8	11.6	1.7 ~ 133.3		1,000	1,250	300
Ezi-SPEED-CT-104-H-200-CD-R50-P-□	50	28	19.4	1 ~ 80				
Ezi-SPEED-CT-104-H-200-CD-R100-P-□	100	52.7	36.5	0.5 ~ 40		1,400	1,700	400
Ezi-SPEED-CT-104-H-200-CD-R200-P-□	200	70	63	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; “B” indicates a motor with a brake

Parallel Shaft Gearbox Type Motor Specifications

400 W

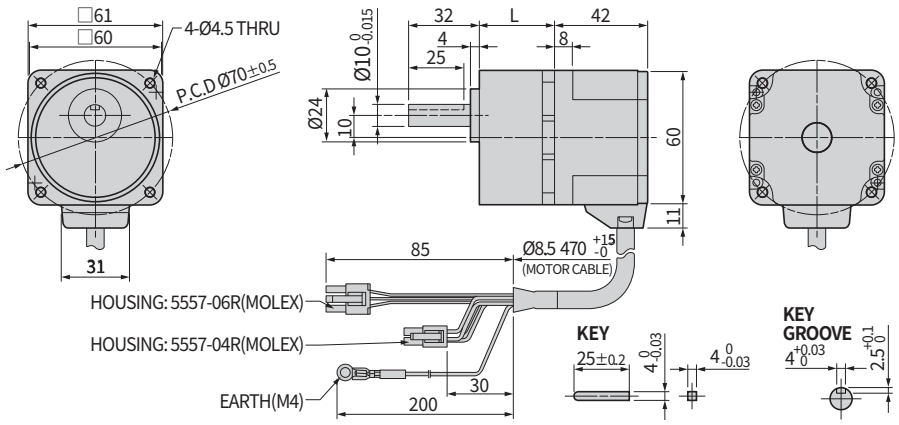
Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-104-H-400-CD-R5-P-□	5	5.9	4.3	10 ~ 800	4.2	550	800	200
Ezi-SPEED-CT-104-H-400-CD-R10-P-□	10	11.7	8.6	5 ~ 400				
Ezi-SPEED-CT-104-H-400-CD-R15-P-□	15	17.6	12.8	3.3 ~ 266.7				
Ezi-SPEED-CT-104-H-400-CD-R20-P-□	20	23.4	17.1	2.5 ~ 200				
Ezi-SPEED-CT-104-H-400-CD-R30-P-□	30	33.5	24.5	1.7 ~ 133.3		1,000	1,250	300
Ezi-SPEED-CT-104-H-400-CD-R50-P-□	50	55.9	40.9	1 ~ 80				
Ezi-SPEED-CT-104-H-400-CD-R100-P-□	100	70	63	0.5 ~ 40		1,400	1,700	400
Ezi-SPEED-CT-104-H-400-CD-R200-P-□	200	70	63	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; “B” indicates a motor with a brake

Parallel Shaft Gearbox Type Dimensions of Motor [mm]

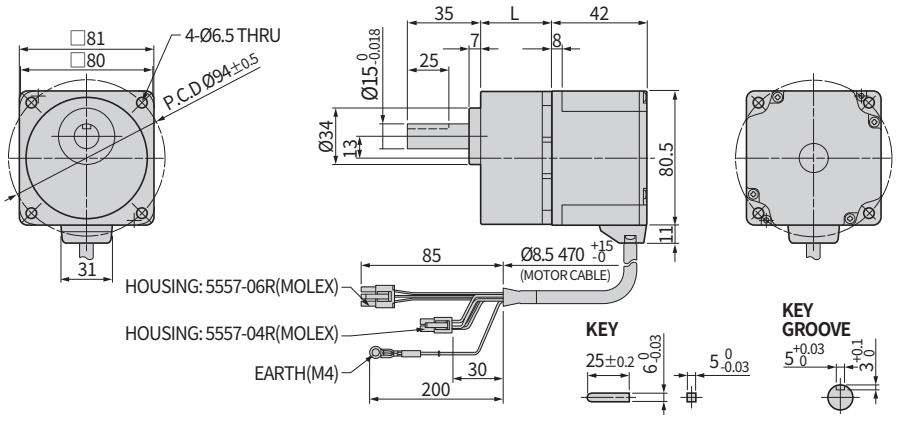
30 W

Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt	L [mm]
Ezi-SPEED-CT-60-H-30-CD-R□-P	ESG-60-H-R□-P	5, 10, 15, 20	M4×50	34
		30, 50, 100	M4×55	38
		200	M4×60	43



60 W

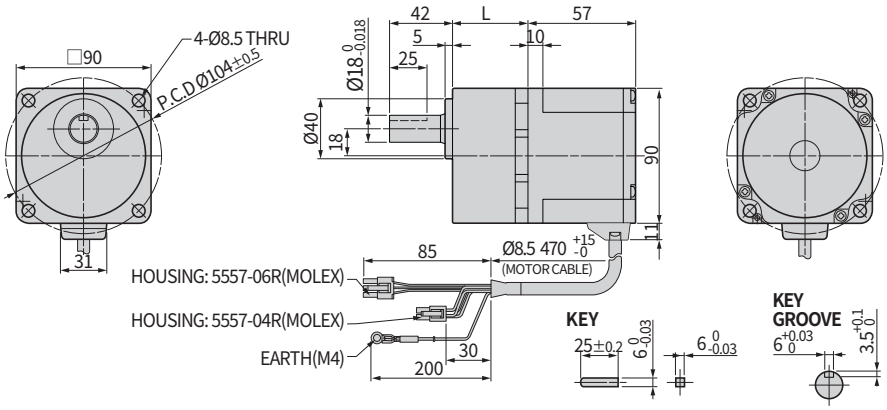
Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt	L [mm]
Ezi-SPEED-CT-80-H-60-CD-R□-P	ESG-80-H-R□-P	5, 10, 15, 20	M4×65	41
		30, 50, 100	M4×70	46
		200	M4×75	51



Parallel Shaft Gearbox Type Dimensions of Motor [mm]

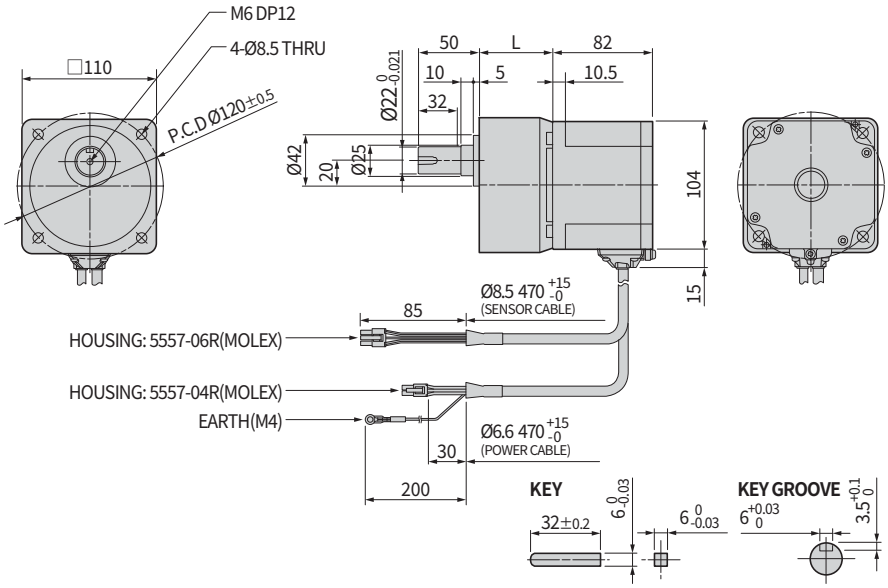
120 W

Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt	L [mm]
Ezi-SPEED-CT-90-H-120-CD-R□-P	ESG-90-H-R□-P	5, 10, 15, 20	M8×75	45
		30, 50, 100	M8×90	58
		200	M8×95	64



200 W

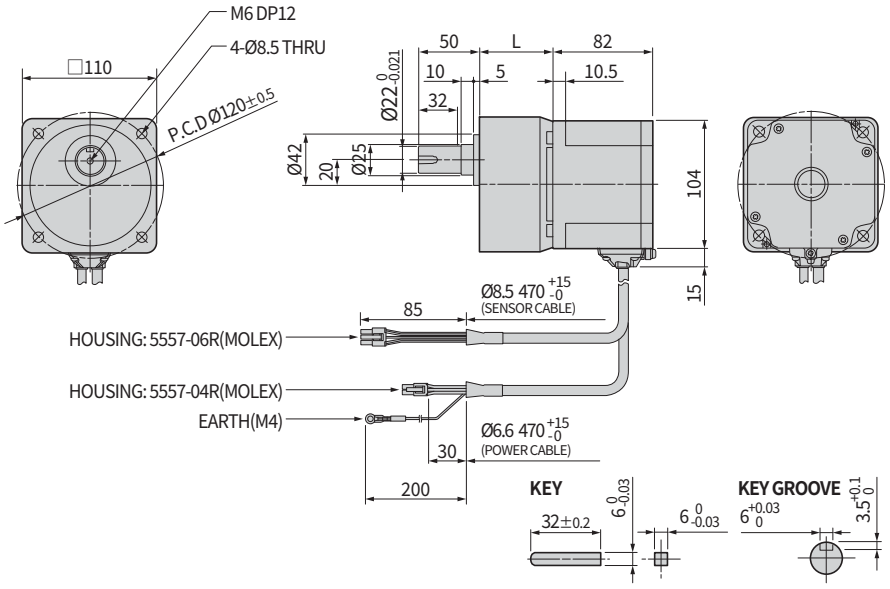
Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt	L [mm]
Ezi-SPEED-CT-104-H-200-CD-R□-P	ESG-104-H-R□-P	5, 10, 15, 20	M8×95	60
		30, 50	M8×110	72
		100, 200	M8×120	86



Parallel Shaft Gearbox Type Dimensions of Motor [mm]

400 W

Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt	L [mm]
Ezi-SPEED-CT-104-H-400-CD-R□-P	ESG-104-H-R□-P	5, 10, 15, 20	M8×95	60
		30, 50	M8×110	72
		100, 200	M8×120	86



Hollow Shaft Flat Gearbox Type Motor Specifications

30 W

Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-60-H-30-CD-R5-H-□	5	0.4	0.3	10 ~ 800	1.2	450	370	200
Ezi-SPEED-CT-60-H-30-CD-R15-H-□	10	0.85	0.64	5 ~ 400				
Ezi-SPEED-CT-60-H-30-CD-R15-H-□	15	1.3	0.96	3.3 ~ 266.7		500	400	
Ezi-SPEED-CT-60-H-30-CD-R20-H-□	20	1.7	1.3	2.5 ~ 200				
Ezi-SPEED-CT-60-H-30-CD-R30-H-□	30	2.6	1.9	1.7 ~ 133.3				
Ezi-SPEED-CT-60-H-30-CD-R50-H-□	50	4.3	3.2	1 ~ 80				
Ezi-SPEED-CT-60-H-30-CD-R100-H-□	100	8.5	6.4	0.5 ~ 40				
Ezi-SPEED-CT-60-H-30-CD-R200-H-□	200	17	12.8	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; “B” indicates a motor with a brake

60 W

Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-80-H-60-CD-R5-H-□	5	0.85	0.64	10 ~ 800	2.2	800	660	400
Ezi-SPEED-CT-80-H-60-CD-R10-H-□	10	1.7	1.3	5 ~ 400				
Ezi-SPEED-CT-80-H-60-CD-R15-H-□	15	2.6	1.9	3.3 ~ 266.7		1,200	1,000	
Ezi-SPEED-CT-80-H-60-CD-R20-H-□	20	3.4	2.6	2.5 ~ 200				
Ezi-SPEED-CT-80-H-60-CD-R30-H-□	30	5.1	3.8	1.7 ~ 133.3				
Ezi-SPEED-CT-80-H-60-CD-R50-H-□	50	8.5	6.4	1 ~ 80				
Ezi-SPEED-CT-80-H-60-CD-R100-H-□	100	17	12.8	0.5 ~ 40				
Ezi-SPEED-CT-80-H-60-CD-R200-H-□	200	34	25.5	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; “B” indicates a motor with a brake

Hollow Shaft Flat Gearbox Type Motor Specifications

120 W

Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-90-H-120-CD-R5-H-□	5	2.1	1.3	10 ~ 800	3.3	900	770	500
Ezi-SPEED-CT-90-H-120-CD-R10-H-□	10	4.2	2.6	5 ~ 400				
Ezi-SPEED-CT-90-H-120-CD-R15-H-□	15	6.2	3.8	3.3 ~ 266.7		1,300	1,000	
Ezi-SPEED-CT-90-H-120-CD-R20-H-□	20	8.3	5.1	2.5 ~ 200				
Ezi-SPEED-CT-90-H-120-CD-R30-H-□	30	12.5	7.7	1.7 ~ 133.3		1,500	1,280	
Ezi-SPEED-CT-90-H-120-CD-R50-H-□	50	21	12.8	1 ~ 80				
Ezi-SPEED-CT-90-H-120-CD-R100-H-□	100	42	25.5	0.5 ~ 40				
Ezi-SPEED-CT-90-H-120-CD-R200-H-□	200	68	51	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; "B" indicates a motor with a brake

200 W

Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-104-H-200-CD-R5-H-□	5	2.8	1.9	10 ~ 800	4.2	1,230	1,070	800
Ezi-SPEED-CT-104-H-200-CD-R10-H-□	10	5.5	3.8	5 ~ 400				
Ezi-SPEED-CT-104-H-200-CD-R15-H -□	15	8.3	5.7	3.3 ~ 266.7		1,680	1,470	
Ezi-SPEED-CT-104-H-200-CD-R20-H -□	20	11.1	7.7	2.5 ~ 200				
Ezi-SPEED-CT-104-H-200-CD-R30-H-□	30	16.6	11.5	1.7 ~ 133.3		2,040	1,780	
Ezi-SPEED-CT-104-H-200-CD-R50-H-□	50	27.6	19.1	1 ~ 80				
Ezi-SPEED-CT-104-H-200-CD-R100-H-□	100	55.3	38.3	0.25 ~ 20				

□: Brake Option - No symbol indicates no brake; "B" indicates a motor with a brake

Hollow Shaft Flat Gearbox Type Motor Specifications

400 W

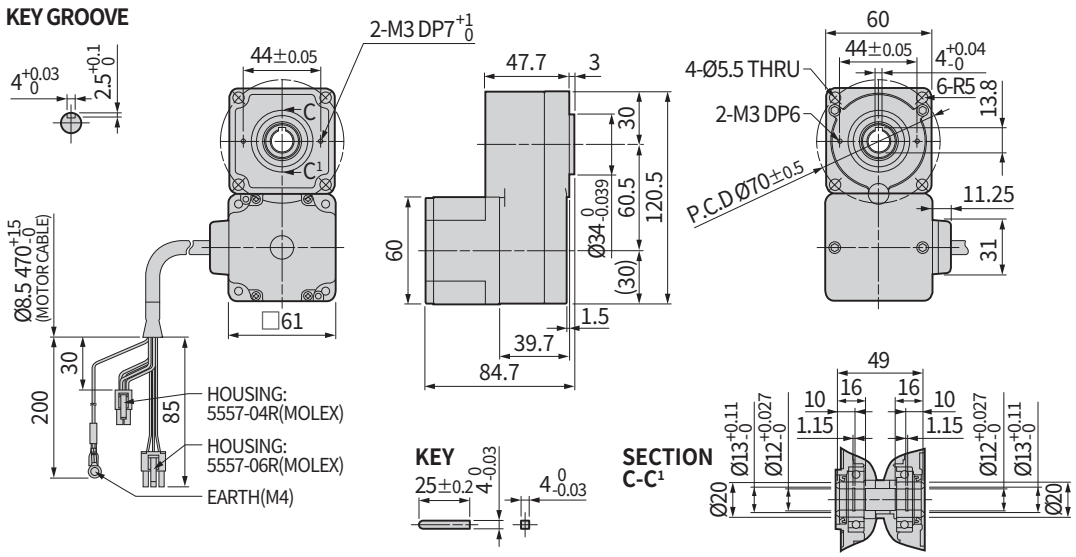
Unit Part Number	Gear Ratio	Permissible Torque [N·m]		Permissible Speed Range [r/min]	Motor Weight [kg]	Permissible Radial Load [N]		Permissible Axial Load [N]
		50 ~ 3,000 [r/min]	4,000 [r/min]			Distance from Output Shaft End [mm]		
						10	20	
Ezi-SPEED-CT-104-H-400-CD-R5-H -□	5	5.5	4.0	10 ~ 800	4.2	1,230	1,070	800
Ezi-SPEED-CT-104-H-400-CD-R10-H -□	10	11.1	8.1	5 ~ 400				
Ezi-SPEED-CT-104-H-400-CD-R15-H-□	15	16.6	12.1	3.3 ~ 266.7		1,680	1,470	
Ezi-SPEED-CT-104-H-400-CD-R20-H -□	20	22.1	16.2	2.5 ~ 200				
Ezi-SPEED-CT-104-H-400-CD-R30-H-□	30	33.2	24.2	1.7 ~ 133.3		2,040	1,780	
Ezi-SPEED-CT-104-H-400-CD-R50-H -□	50	55.3	40.4	1 ~ 80				
Ezi-SPEED-CT-104-H-400-CD-R100-H-□	100	110	80.8	0.5 ~ 40				

□: Brake Option - No symbol indicates no brake; “B” indicates a motor with a brake

Hollow Shaft Flat Gearbox Type Dimensions of Motor [mm]

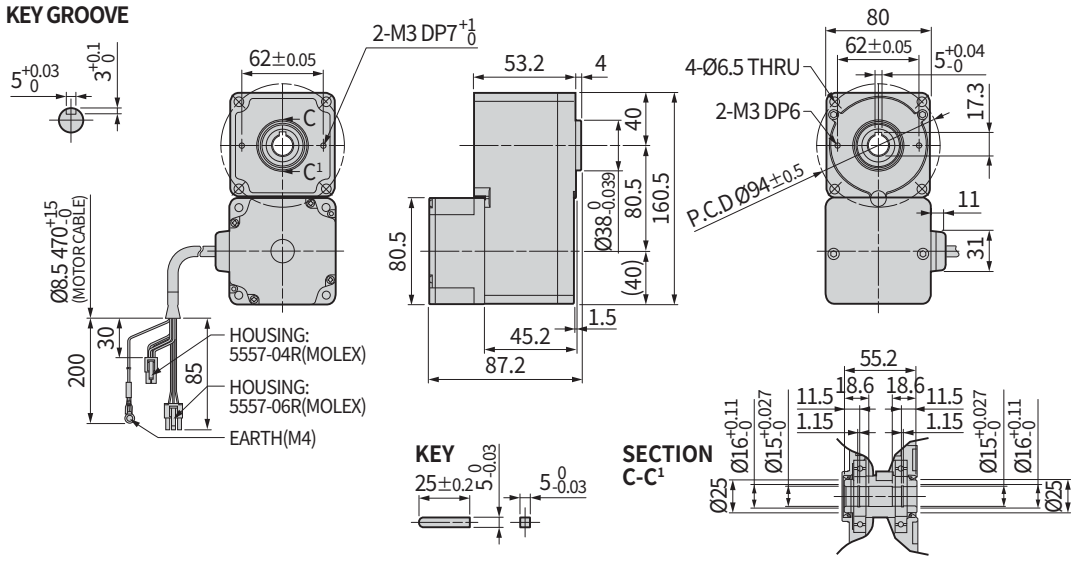
30 W

Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt
Ezi-SPEED-CT-60-H-30-CD-R□-H	ESG-60-H-R□-H	5, 10, 15, 20, 30, 50, 100, 200	M5×65



60 W

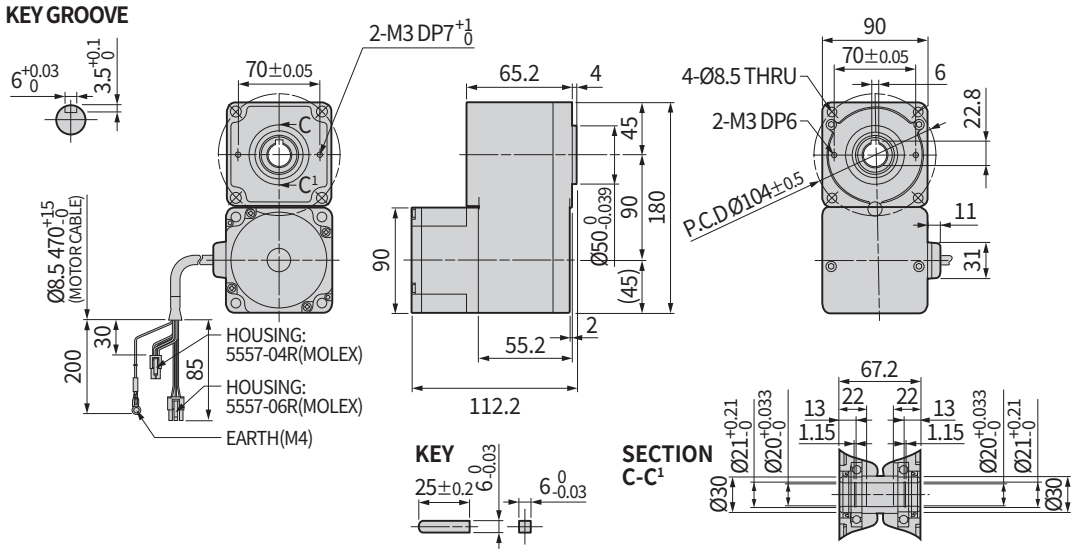
Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt
Ezi-SPEED-CT-80-H-60-CD-R□-H	ESG-80-H-R□-H	5, 10, 15, 20, 30, 50, 100, 200	M6×70



Hollow Shaft Flat Gearbox Type Dimensions of Motor [mm]

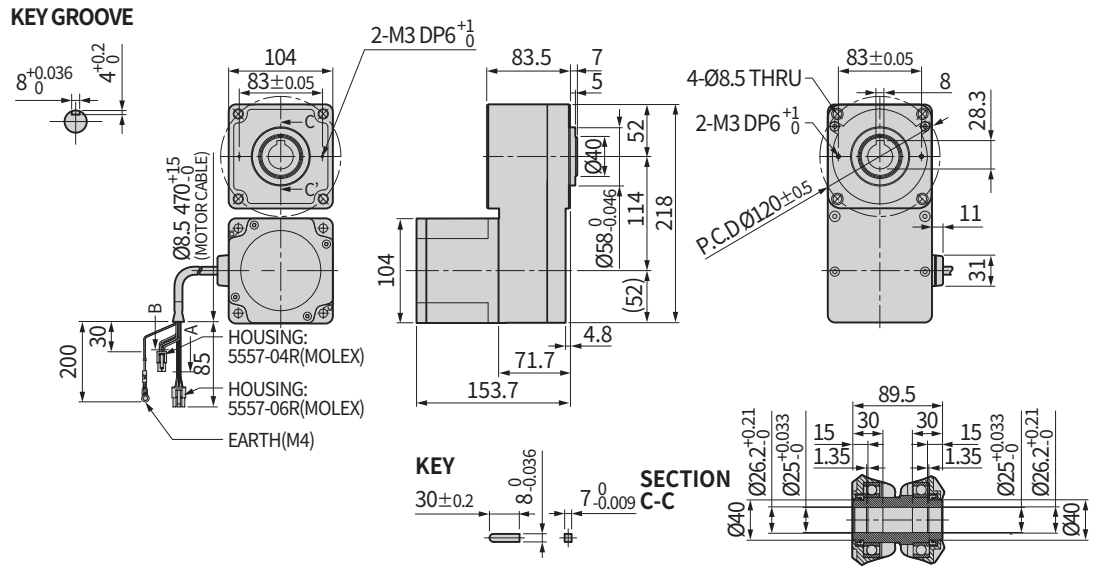
120 W

Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt
Ezi-SPEED-CT-90-H-120-CD-R□-H	ESG-90-H-R□-H	5, 10, 15, 20, 30, 50, 100, 200	M8×90



200 W

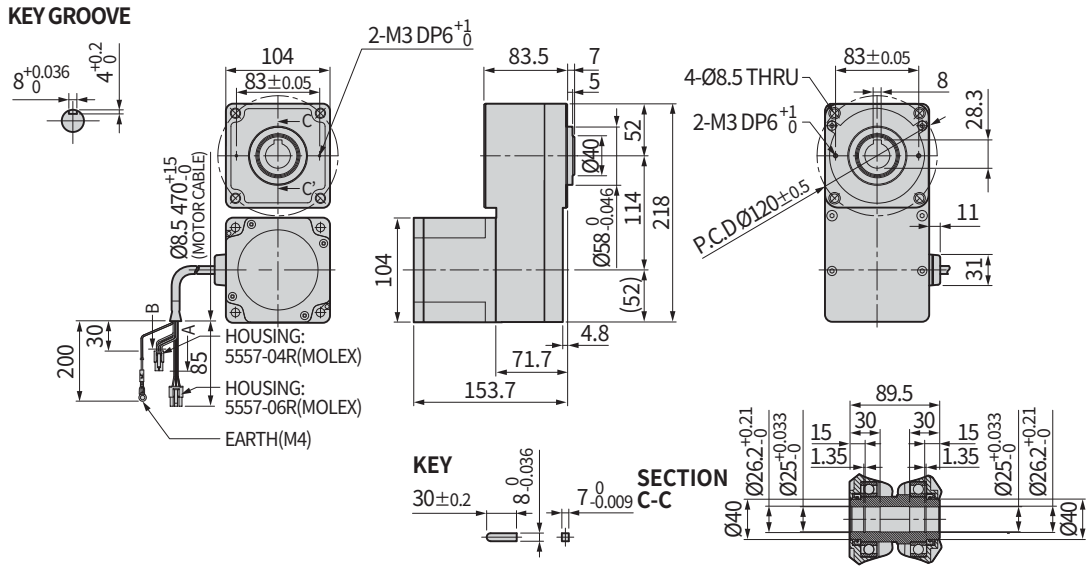
Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt
Ezi-SPEED-CT-104-H-200-CD-R□-H	ESG-104-H-R□-H	5, 10, 15, 20, 30, 50, 100	M8×90



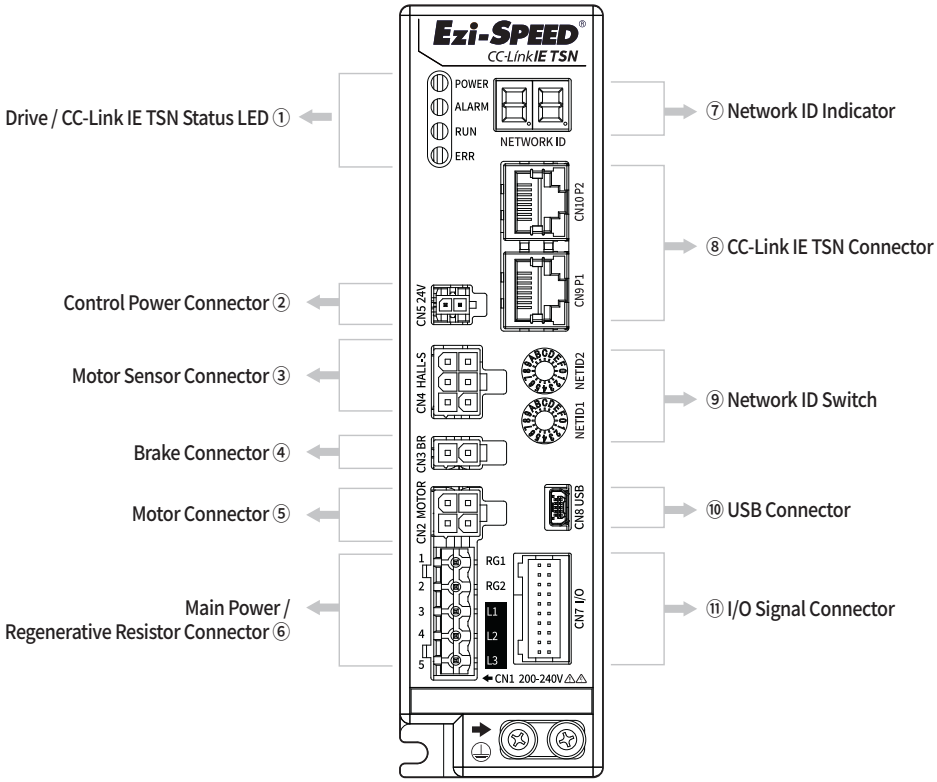
Hollow Shaft Flat Gearbox Type Dimensions of Motor [mm]

400 W

Unit Part Number	Gearbox Part Number	□Gear Ratio	Mounting Bolt
Ezi-SPEED-CT-104-H-400-CD-R□-H	ESG-104-H-R□-H	5, 10, 15, 20, 30, 50, 100	M8×90



Settings and Operation



1. Name and Function of Parts

No.	Name	Function
①	Drive / CC-Link IE TSN Status LED	Indicates the drive and CC-Link IE TSN communication status.
②	Control Power Connector (CN5)	Connect a 24 V DC power supply for control power.
③	Motor Sensor Connector (CN4)	Connects the motor sensor.
④	Brake Connector	When using a motor equipped with a brake, connect the brake connector.
⑤	Motor Connector (CN2)	Connects the motor power.
⑥	Main Power / Regenerative Resistor Connector (CN1)	Connects the main power supply and the regenerative resistor.
⑦	Network ID Indicator	During normal operation, the 7-segment LED displays the node address. When an alarm occurs, it displays the error code.
⑧	CC-Link IE TSN Connector (CN9, CN10)	Connects to a manager station (PLC) or another remote station.
⑨	Network ID Switch (SW1, SW2)	Sets the node address.
⑩	USB Connector (CN8)	Cannot be used.
⑪	I/O Signal Connector (CN7)	Connects input / output signals.

2. Network Status LED

(1) Drive Status Indicator LED

Item	Color	Function	Description
POWER	Green	Power Status	Lights up when power is applied.
ALARM	Red	Alarm Status	Flashes when an error occurs.

List of Error Types by the Number of LED Blinking

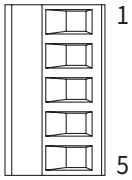
No.		Error Type	Causes
1		Overcurrent	Excessive current has flown through the drive.
2		Overspeed	The rotation speed of the motor output shaft exceeds approx. 120 % of maximum speed.
5		Overtemperature	When the internal temperature of the drive exceeds the allowable temperature.
6		Overvoltage	When the back electromotive force of the motor increases and the motor driving voltage inside the drive exceeds the allowable rated voltage.
8		Hall sensor Error	There is a problem with the connection between the drive and the motor sensor.
9		Undervoltage	When the input power voltage is lower than allowable minimum voltage.
10		Initial Operation Inhibition	Power is applied while the FWD or REV input is on. The error will operate only if the 'No Operation at Initial Run' parameter is set to 1.
11		System error	There is a problem in the internal circuit board.
12		ROM error	The stored data is damaged or the read / write of the EEPROM is failed.
15		External stop error	When EXT-ERROR input is executed in direct IO (operates when EXT-ERROR input is set in direct IO).
Lights up	49	Drive Alarm Occurrence	When other alarms occur in the drive.
	50	Drive Internal Communication Error	When a timeout error occurs in the internal communication.
	52		When a CRC error occurs in the internal communication.
	53		When a command is not executed properly in the internal communication.
	71	Network Initialization Error	When an error occurs during the initialization process of communication hardware due to incorrect values written in the EEPROM.
	76	Drive Internal Communication Failure	When internal communication of the drive cannot be started
	100	ROM Error	When parameters are not properly saved in ROM
	101		When the checksum of the ROM does not match
	102		When an error occurs during the process of reading data from FRAM
	110		When an error occurs during the process of reading data from ROM
	121		When an error occurs during the process of writing data to ROM (1)
	122		When an error occurs during the process of writing data to ROM (2)
	123		When an error occurs during the process of writing data to ROM (3)
	124		When an error occurs during the process of writing data to ROM (4)
	200	ROM Data Out of Range	When the parameter values stored in ROM exceed the allowable range
	500	CC-Link IE TSN Communication Error	When a communication error occurs during CC-Link IE TSN communication

(2) CC-Link IE TSN Indicator LED

Item	Color	Status	Description
RUN	Green	OFF	Power OFF
		ON	Normal Operation Status
ERR	Red	OFF	No Error or Power OFF
		Blinking	Drive Error
		Single Flash	CC-Link IE TSN Communication Error
		Double Flash	IP Address Conflict Error
LINK1, LINK2	Green	OFF	Link Inactive
		ON	Link Active

3. Power / Regenerative Resistor Connector (CN1)

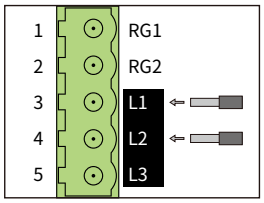
No.	Function
1	Regenerative Resistor Connection (RG1)
2	Regenerative Resistor Connection (RG2)
3	Power Input (L1)
4	Power Input (L2)
5	Power Input (L3)



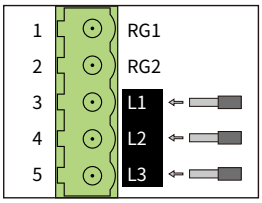
* Use RG1, RG2 terminals when connecting a regenerative resistor.
* regenerative resistor can be used when the deceleration time is short or the load with large inertia is applied.
* Please refer to the manual for details of regenerative resistor specifications.

Connection Method

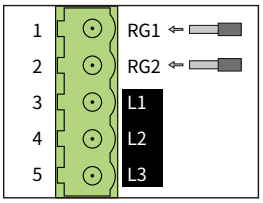
Single-Phase: 200 - 240 V



Three-Phase: 200 - 240 V



Regenerative Resistor

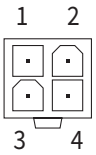


Wire Specifications

AWG18 ~ 14 (0.75 ~ 2.0 mm^2)

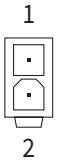
4. Motor Connector (CN2)

No.	Function	I/O
1	-	-
2	BLDC_U	Output
3	BLDC_W	Output
4	BLDC_V	Output



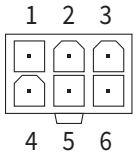
5. Brake Connector (CN3)

No.	Function	I/O
1	BRAKE+	Output
2	BRAKE-	Output



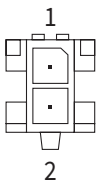
6. Motor sensor Connector (CN4)

No.	Function	I/O
1	5 V DC	Output
2	GND	Common
3	GND	Common
4	HALL_U	Input
5	HALL_V	Input
6	HALL_W	Input



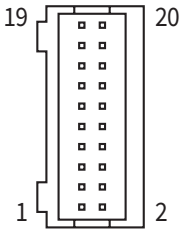
7. Control power Connector (CN5)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input



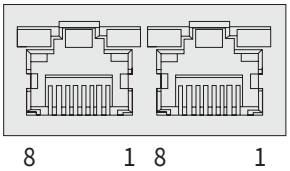
9. I/O Signal Connector (CN7)

No.	Function	I/O
1	HCOM	Input
2	IN0	Input
3	IN1	Input
4	IN2	Input
5	IN3	Input
6	IN4	Input
7	IN5	Input
8	IN6	Input
9	LCOM	Common
10	OUT0+	Output
11	OUT0-	Output
12	OUT1+	Output
13	OUT1-	Output
14	VH	Input
15	VM	Input
16	VL	Input
17	-	-
18	-	-
19	-	-
20	-	-

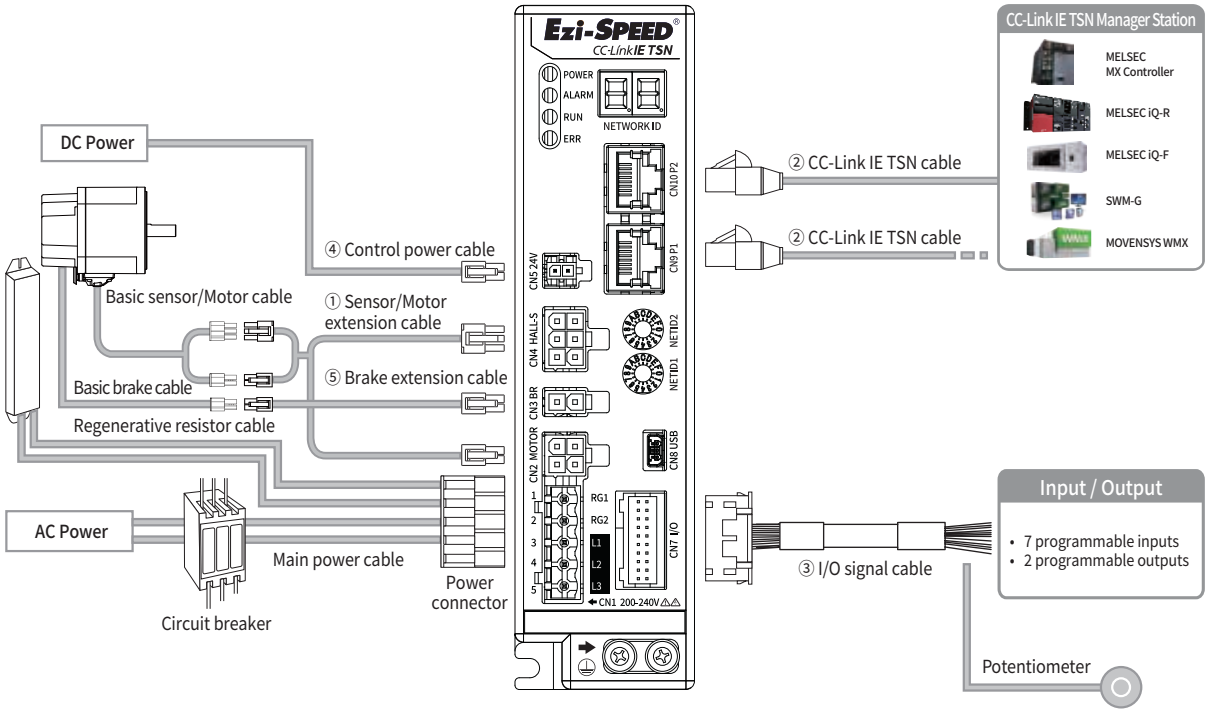


10. CC-Link IE TSN Connector (CN9, CN10)

No.	Function	Description
1	TD+	Transmission Data+
2	TD-	Transmission Data-
3	RD+	Reception Data+
4	N.C.	Not connected
5	N.C.	Not connected
6	RD-	Reception Data-
7	N.C.	Not connected
8	N.C.	Not connected
Frame	FG	Frame Ground



System Configuration [30, 60, 120 W]



Cable Type	Max. Cable Length	Remarks
① Sensor / Motor Extension Cable	10 m	Options (Sold separately)
② CC-Link IE TSN Cable	100 m	
③ I/O Signal Cable	20 m	
④ Control Power Cable	2 m	
⑤ Brake Extension Cable	10 m	
Basic Sensor / Motor Cable	0.3 m	Basic cables are attached to motors.
Main Power Cable	3 m	This cable is not provided by FASTECH.

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Main Power (CN1)		Terminal Block	CPF5.08-05P	STELVIO
Motor (CN2)	Drive Side (CN2)	Housing	5557-04R	MOLEX
		Terminal	5556T	
	Motor Side	Housing	5559-04P	MOLEX
		Terminal	5558T	
Brake (CN3)	Drive Side (CN3)	Housing	5557-02R	MOLEX
		Terminal	5556T	
	Brake Side	Housing	5559-02P	MOLEX
		Terminal	5558T	
Sensor (CN4)	Drive Side (CN4)	Housing	5557-06R	MOLEX
		Terminal	5556T	
	Sensor Side	Housing	5559-06P	MOLEX
		Terminal	5558T	
Control Power (CN5)	Drive Side (CN5)	Housing	43025-0200	MOLEX
		Terminal	43030-0001	
I/O Signal (CN7)		Housing	PADP-20V-1S	JST
		Terminal	SPH-002T-P0.5L	

※ The above connector is supplied with the product. When using other components, please ensure that they meet the required specifications.

2. Optional

① Sensor / Motor Extension Cable

These are the cables to connect the drive for 30 W, 60 W and 120 W to a sensor and a motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
1	CSPD-A-001F	1	Fixed Cable	Max. Cable Length: 10 m
2	CSPD-A-002F	2		
3	CSPD-A-003F	3		
5	CSPD-A-005F	5		
7	CSPD-A-007F	7		
10	CSPD-A-010F	10		

② CC-Link IE TSN Communication Cable

Purpose	Part Number	Length [m]	Cable Type	Remarks
CC-Link IE TSN Communication	CGNR-EC-001F	1	Fixed Cable	• STP (Shielded Twisted Pair) cable • Category 5e or higher • Max. Cable Length: 100 m
	CGNR-EC-002F	2		
	CGNR-EC-003F	3		
	CGNR-EC-005F	5		

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

③ I/O Signal Cable

These are the cables to connect the drive and other input / output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - I/O Device Connection	CSPD-IO-0R6F	0.6	Fixed Cable	Max. Cable Length: 10 m
	CSPD-IO-001F	1		
	CSPD-IO-002F	2		
	CSPD-IO-003F	3		
	CSPD-IO-005F	5		
	CSPD-IO-007F	7		
	CSPD-IO-010F	10		
	CSPD-IO-015F	15		
	CSPD-IO-020F	20		

④ Control Power Cable

Used for connecting 24 V DC.

Purpose	Part Number	Length [m]	Cable Type	Remarks
24 V DC Connection	CSMI-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CSMI-P-002F	2		

⑤ Brake Extension Cable

Used for connecting brake.

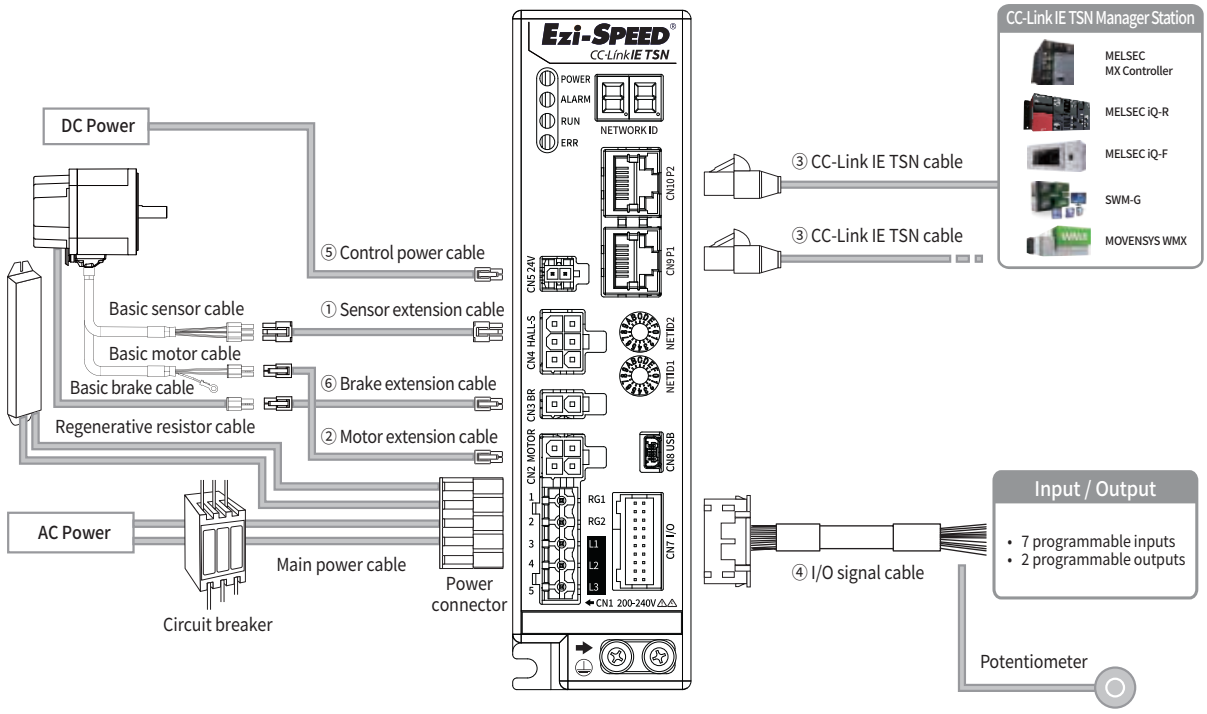
Purpose	Part Number	Length [m]	Cable Type	Remarks
Brake connection	CSPD-B-001F	1	Fixed Cable	Max. Cable Length: 10 m
	CSPD-B-002F	2		
	CSPD-B-003F	3		
	CSPD-B-005F	5		
	CSPD-B-007F	7		
	CSPD-B-010F	10		

⑥ Regenerative Resistor

It is used to prevent overvoltage alarms when driving a load with a short deceleration time or a large inertia.

Purpose	Part Number	Specifications		Product Image
Regenerative Resistor	BRM-A100W-400J	Resistance	400 Ω	
		Capacity	100 W	
		Cable Length	30 cm	

System Configuration [200, 400 W]



Cable Type	Max. Cable Length	Remarks
① Sensor Extension Cable	10 m	Options
② Motor Extension Cable	10 m	
③ CC-Link IE TSN Cable	100 m	
④ I/O Signal Cable	20 m	
⑤ Control Power Cable	2 m	
⑥ Brake Extension Cable	10 m	
Basic Sensor Cable	0.3 m	Basic cables are attached to motors.
Basic Motor Cable	0.3 m	
Main Power Cable	3 m	This cable is not provided by FASTECH.

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose		Item	Part Number	Manufacturer
Main Power (CN1)		Terminal Block	CPF5.08-05P	STELVIO
Motor (CN2)	Drive Side (CN2)	Housing	5557-04R	MOLEX
		Terminal	5556T	
	Motor Side	Housing	5559-04P	MOLEX
		Terminal	5558T	
Brake (CN3)	Drive Side (CN3)	Housing	5557-02R	MOLEX
		Terminal	5556T	
	Brake Side	Housing	5559-02P	MOLEX
		Terminal	5558T	
Sensor (CN4)	Drive Side (CN4)	Housing	5557-06R	MOLEX
		Terminal	5556T	
	Sensor Side	Housing	5559-06P	MOLEX
		Terminal	5558T	
Control Power (CN5)	Drive Side (CN5)	Housing	43025-0200	MOLEX
		Terminal	43030-0001	
I/O Signal (CN7)		Housing	PADP-20V-1S	JST
		Terminal	SPH-002T-P0.5L	

※ The above connector is supplied with the product. When using other components, please ensure that they meet the required specifications.

2. Optional

① Sensor Extension Cable

These are the cables to connect the drive for 200 W and 400 W to a sensor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Sensor Connection	CSPD-S-001F	1	Fixed Cable	Max. Cable Length: 10m
	CSPD-S-002F	2		
	CSPD-S-003F	3		
	CSPD-S-005F	5		
	CSPD-S-007F	7		
	CSPD-S-010F	10		

② Motor Extension Cable

These are the cables to connect the drive for 200 W and 400 W to a motor.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Basic Motor Connection	CSPD-M-001F	1	Fixed Cable	Max. Cable Length: 10m
	CSPD-M-002F	2		
	CSPD-M-003F	3		
	CSPD-M-005F	5		
	CSPD-M-007F	7		
	CSPD-M-010F	10		

③ CC-Link IE TSN Communication Cable

Purpose	Part Number	Length [m]	Cable Type	Remarks
CC-Link IE TSN Communication	CGNR-EC-001F	1	Fixed Cable	• STP (Shielded Twisted Pair) cable • Category 5e or higher • Max. Cable Length: 10 m
	CGNR-EC-002F	2		
	CGNR-EC-003F	3		
	CGNR-EC-005F	5		

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

④ I/O Signal Cable

These are the cables to connect the drive and other input/output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - I/O Device Connection	CSPD-IO-0R6F	0.6	Fixed Cable	Max. Cable Length: 20m
	CSPD-IO-001F	1		
	CSPD-IO-002F	2		
	CSPD-IO-003F	3		
	CSPD-IO-005F	5		
	CSPD-IO-007F	7		
	CSPD-IO-010F	10		
	CSPD-IO-015F	15		
	CSPD-IO-020F	20		

⑤ Control Power Cable

Used for connecting drive and control power (24V DC).

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive and control power connection	CSMI-P-001F	1	Fixed Cable	Max. Cable Length: 2 m
	CSMI-P-002F	2		

⑥ Brake Extension Cable

Used for connectiong brake.

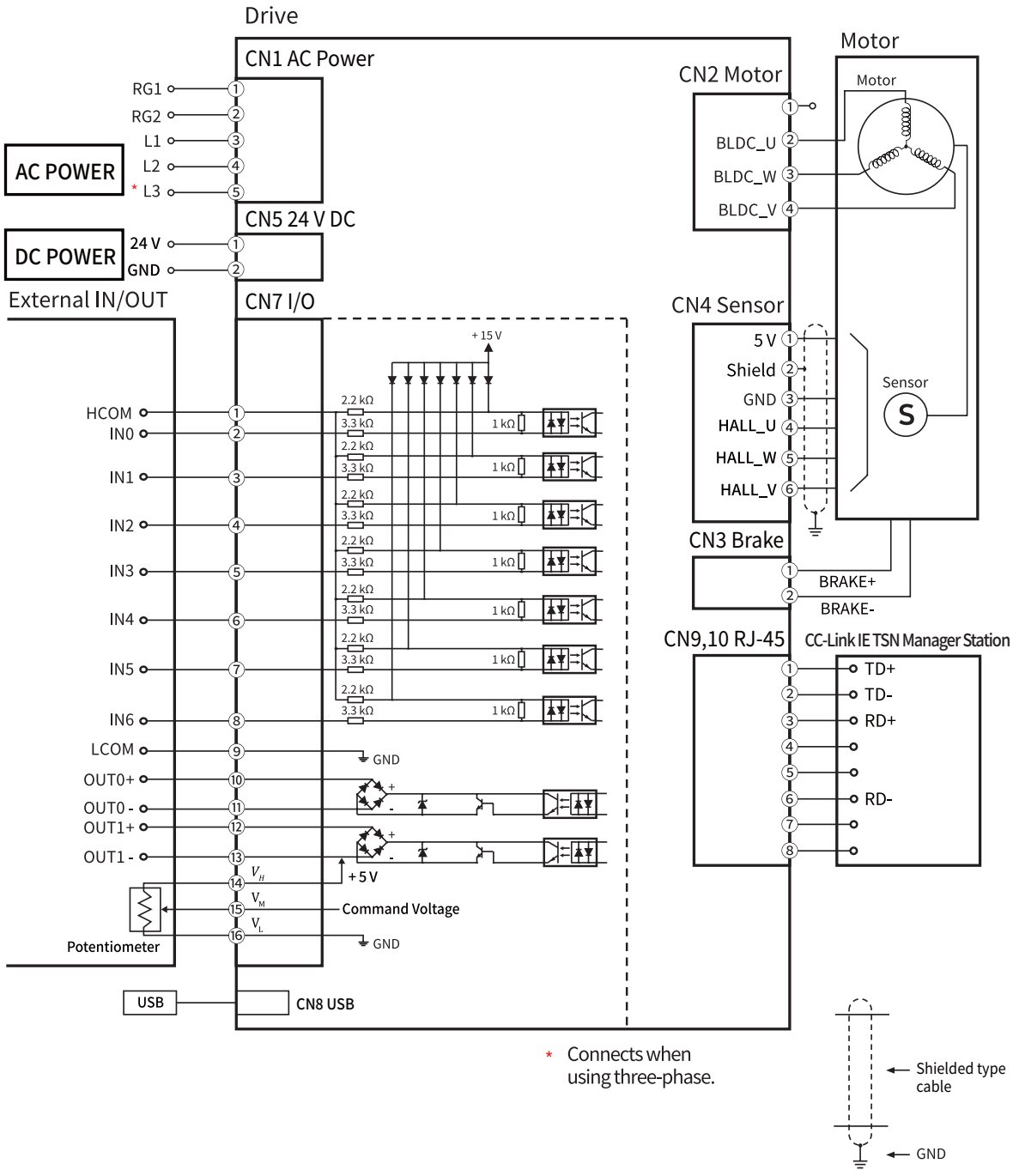
Purpose	Part Number	Length [m]	Cable Type	Remarks
Brake connection cable	CSPD-B-001F	1	Fixed Cable	Max. Cable Length: 10 m
	CSPD-B-002F	2		
	CSPD-B-003F	3		
	CSPD-B-005F	5		
	CSPD-B-007F	7		
	CSPD-B-010F	10		

⑦ Regenerative Resistor

It is used to prevent overvoltage alarms when driving a load with a short deceleration time or a large inertia.

Purpose	Part Number	Specifications		Product Image
Regenerative Resistor	BRM-A100W-400J	Resistance	400 Ω	
		Capacity	100 W	
		Cable Length	30 cm	

External Wiring Diagram



To ensure the safe and proper use of the products listed in this catalog, please be sure to read the user manual thoroughly before use.

When connecting the I/O cable between the drive and the master controller, be sure to turn off the power to both the master controller and the drive. Failure to do so may result in electric shock or product damage.

Ezi-ROBO®

Precise Actuator System

CC-Link IE TSN

VZR

- Slim Actuator with Hollow Shaft Motor & Ball Screw Spline
- Vacuum(V) + Linear(Z) + Rotary(R), 3-in-1 Actuator
- Repeatability (Z Axis : ±0.01 mm / R Axis : ±0.1°)
- CiA402 Drive Profile
- CC-Link IE TSN-compatible Closed Loop Stepper System
- Tuning Not Required, No Hunting
- Low Heat Generation, High Torque, High Resolution, Fast Response



FASTECH

Fast Accurate Smooth Motion

Ezi-ROBO®

Precise Actuator System

CC-LinkIE TSN

VZR

*VZR : Vacuum, Z-axis Linear, Rotation



Multi-functional Slim Actuator

Ezi-ROBO VZR is a hybrid product that integrates a precision ball screw spline※and a hollow shaft motor. Without using connecting components such as belt pulleys, the ball screw nut and ball spline nut are directly coupled to the motor shaft, resulting in a simple structure and a slim size that are highly effective in space saving.

※ Ball Screw Spline: A composite part where the ball screw and ball spline are machined on the same shaft.



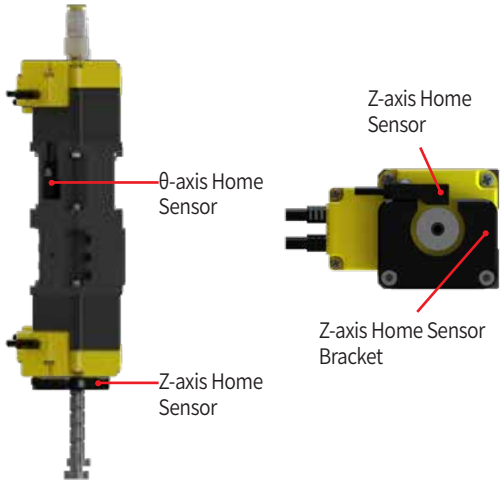
Example) VZR-28 type

Model name	Motor size [Z-axis, θ-axis]	Applicable tube outer diameter
VZR-28	28 mm	Φ6
VZR-42	42 mm	Φ6

Simple Homing

The Ezi-ROBO VZR comes with a home sensor set by default to simplify home return operations. This set includes all the components needed for home return.

ex) VZR-42 type

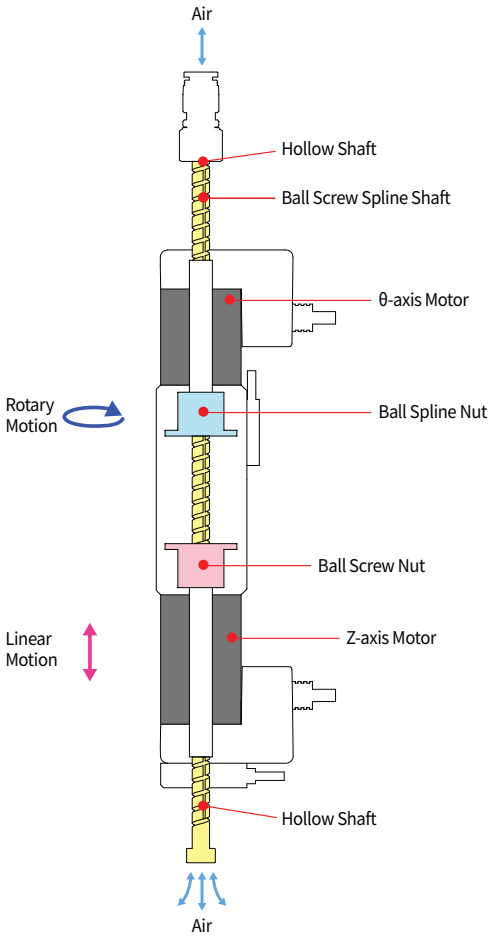


Please ensure that the axis is within a safe range before executing homing. We recommend executing homing for the θ-axis first, followed by the Z-axis. For more details, please refer to the relevant user manual.

Three Functions in One Product

The Ezi-ROBO VZR integrates three functions: vacuum (V), Z-axis linear motion (Z) and rotational motion (R) in a single product.

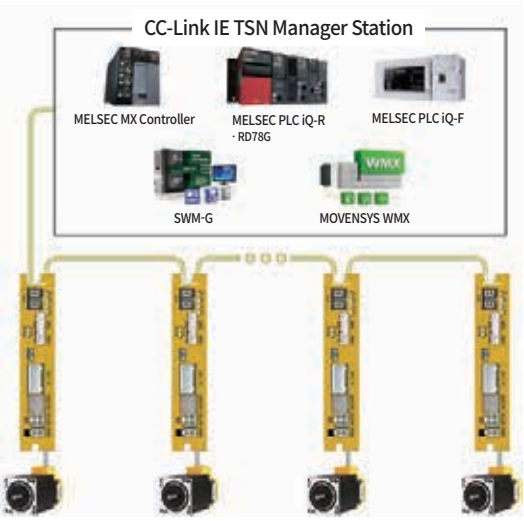
Function Name	Function Description
Vacuum (V)	• The hollow shaft can be used for various applications such as chip mounters and test tube inspection devices.
Z-axis Linear Motion (Z)	• When the Z-axis motor rotates, the ball screw nut rotates, causing the shaft to move linearly. • The θ-axis motor remains stationary, with the ball spline nut acting as a rotation prevention device for the shaft. • With the combination of both motors' operations, the shaft moves linearly without rotating.
Rotational Motion (R)	• Both the Z-axis motor and θ-axis motor rotate simultaneously, causing the ball screw nut and ball spline nut to rotate as well. • With the combination of both motors' operations, the shaft rotates in place without moving linearly.



Ezi-ROBO VZR Product Structure

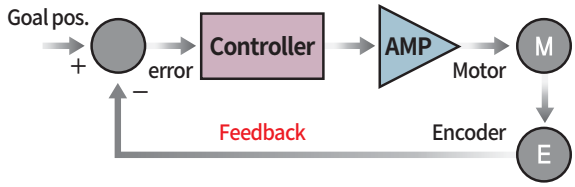
CC-Link IE TSN-compatible Motion Control

Ezi-SERVO CC-Link IE TSN is stepper motor control system that supports CC-Link IE TSN, an industrial network based on high-speed Ethernet (1 Gbps, full-duplex communication).
Ezi-SERVO CC-Link IE TSN employs CiA402 drive profile and supports Profile Position Mode (PP Mode), Homing Mode (HM Mode) and Cyclic Synchronous Position Mode (CSP Mode).



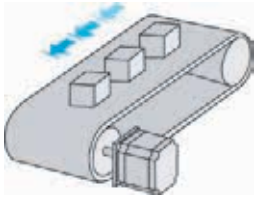
Closed-Loop System

Ezi-SERVO 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 to update the current position every 50 µs. It allows the Ezi-SERVO drive to compensate for the loss of position, ensuring accurate positioning. For example, due to a sudden load change, a conventional stepper motor and drive could lose a step but Ezi-SERVO automatically correct the position by encoder feedback.



Tuning Not Required

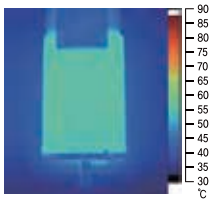
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuningrequire manual tuning after the system is installed.Ezi-SERVO employs the best characteristics of the stepper motor to eliminate the need of tedious gain tuning required for conventional closed-loop servo systems. Ezi- SERVO 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.



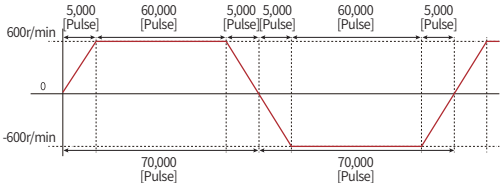
Low Heat Generation / Energy Savings

(Motor Current Control according to load)

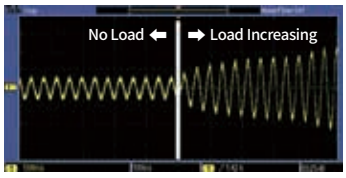
Ezi-SERVO automatically controls motor current according to load. Ezi-SERVO reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

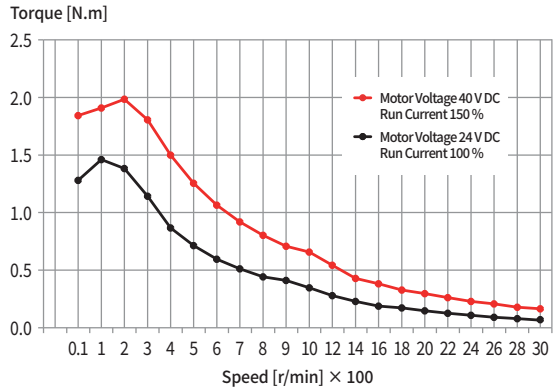


Motor Current
[Example of the Motor Current Control according to load]

High Torque

(Motor Voltage Increasing and Motor Current Setting)

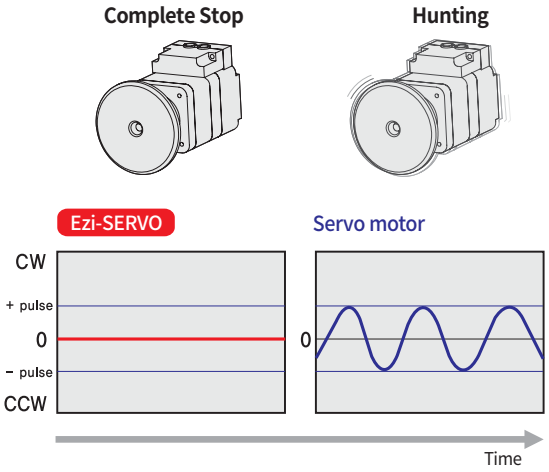
Ezi-SERVO features an internal voltage boosting circuit that increases the motor supply voltage above the drive's input voltage. This elevated motor voltage enhances torque at high speeds and allows the run current to be set up to 150 %. As a result, torque is also improved at low speeds. Ezi-SERVO can achieve approximately 30 % torque improvement across the entire speed range.



※ The torque at low speed and high speed is improved about 30 %.
Measured Condition: Drive = Ezi-SERVO-CT-56L
· Motor Voltage = 40 V DC
· Input Voltage = 24 V DC

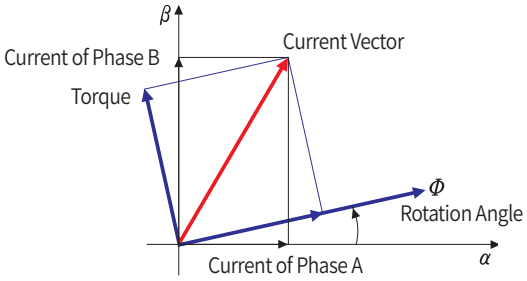
No Hunting

Ezi-SERVO utilizes the unique characteristics of stepper 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.



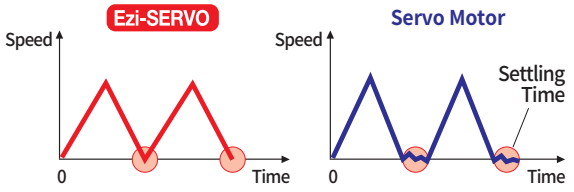
Smooth and Accurate Operation

Ezi-SERVO is a high-precision servo drive, using a high-resolution encoder with 20,000 pulse/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.



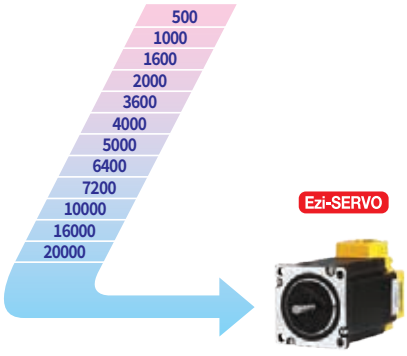
Fast Response

Similar to conventional stepper motors, Ezi-SERVO instantly synchronizes with command pulses providing fast positional response. Ezi-SERVO is the optimum 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.



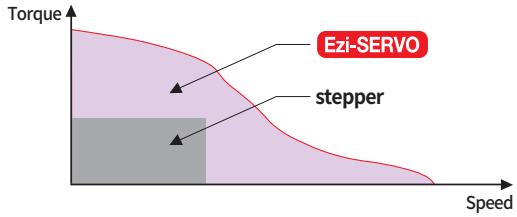
High Resolution

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



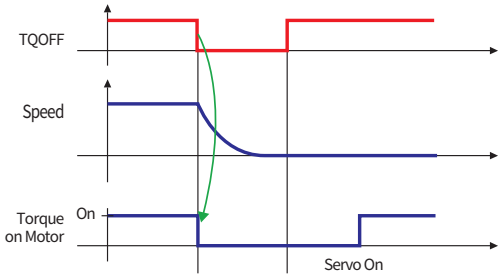
High Torque / Continuous Operation

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



Torque-Off Function

Ezi-SERVO CC-Link IE TSN has an input connector (TQOFF) that can Servo OFF through an external signal, regardless of CC-Link IE TSN communication, to stop and protect the motor in an emergency. When the TQOFF signal is detected, the drive immediately turns off the servo, and the motor stops.

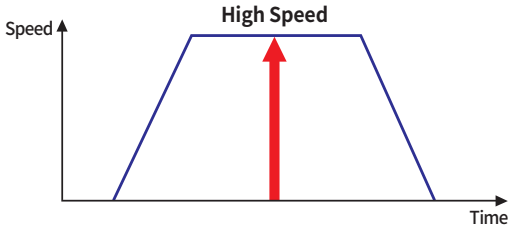


CAUTION

DO NOT use the Torque-Off function to stop or decelerate motors.

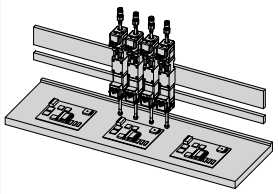
High Speed

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

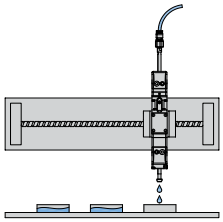


Examples

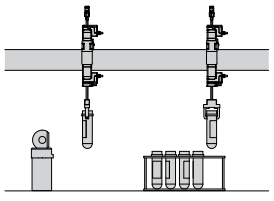
Chip Mounter



Dispenser



Test Tube Inspection Device



Ezi-ROBO VZR Part Numbering

Ezi-ROBO-VZR-28-50-P 6-28-D-N-CT

- **Series**
- **Model Type**
- **Installation Dimensions**
  - 28 : 28 mm
  - 42 : 42 mm
- **Stroke**
  - 50 : 50 mm
- **Ball screw grade**
  - P : Precision
- **Lead**
  - 06 : 6 mm
  - 10 : 10 mm
- **Motor Size**
  - 28 : 28 mm
  - 42 : 42 mm
- **Encoder Resolution**
  - B : 20,000 P/R
  - D : 16,000 P/R
- **Home Sensor**
  - P : PNP Type
  - N : NPN Type
- **Drive Series**
  - CT : CC-Link IE TSN

Applicable Product Series

Product	Specifications
Ezi-SERVO CC-Link IE TSN	CC-Link IE TSN Compatible, Built-in Torque-Off Function



Ezi-SERVO CC-Link IE TSN

Actuator and Drive Combination

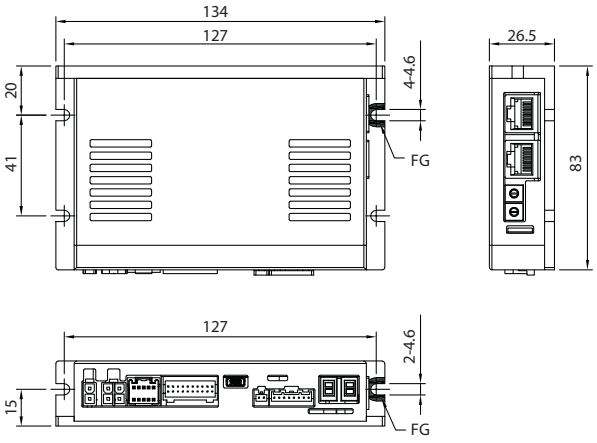
Unit Part Number	Motor Model Number	Drive Model Number
Ezi-ROBO-VZR-28-50-P6-28-D-N-CT	HSE-RBP28MM-D	EzS2-CT-28M-D
Ezi-ROBO-VZR-28-50-P6-28-D-P-CT	HSE-RBP28MM-D	EzS2-CT-28M-D
Ezi-ROBO-VZR-42-50-P10-42-B-N-CT	HSE-RBP42L-B	EzS2-CT-42L-B
Ezi-ROBO-VZR-42-50-P10-42-B-P-CT	HSE-RBP42L-B	EzS2-CT-42L-B

Specifications of Drive

Motor Model		HSE-RBP28 series	HSE-RBP42 series
Drive Model		EzS2-CT-28 series	EzS2-CT-42 series
Input Voltage		24 V DC ± 10 %	
Control Method		Closed loop control with 32 bit MCU	
Current Consumption		Max. 500 mA/axis (Except motor current)	
Operating Condition	Ambient Temperature	· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C	
	Humidity	· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)	
	Vib. Resist.	0.5 g	
Function	Rotation Speed	0 ~ 3,000 r/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 Type	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, Encoder Connection Error, Main Power Voltage Error, In-Position Error, ROM Error, Position Overflow Error, Torque Off Circuit Error	
	LED Display	Power status, In-Position status, Servo On status, Alarm status	
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B	
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode, Profile Position Mode, Homing Mode	
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)	
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 6 user inputs (photocoupler inputs), 2 Torque-Off signal inputs (TQOFF)	
	Output Signals	5 user outputs (photocoupler outputs), 1 brake signal output, 1 Torque-Off status output (TQMON)	

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

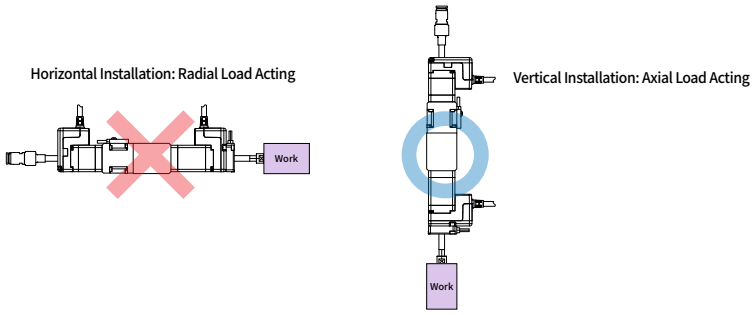
Dimensions of Drive [mm]



How to Read Specifications

Model			Ezi-ROBO-VZR-28-50-P6-28-D-□
① Lead		[mm]	6
② Ball screw grade			Precision
③ Repeatability	Z-axis	[mm]	±0.01
	θ-axis	[deg]	±0.1
④ Maximum speed	Z-axis	[mm/s]	72
	θ-axis	[rev/s]	3
⑤ Maximum acceleration	Z-axis	[m/s²]	0.6
	θ-axis	[rad/s²]	120 π
⑥ Permissible load*1		[kg]	0.5
⑦ Reference thrust force		[N]	7
⑧ Permissible moment		[kg · m²]	0.15×10^{-4}
⑨ Stroke		[mm]	50
⑩ Weight		[kg]	0.87
⑪ Operating temperature		[°C]	0 ~ 50(non-condensing)

*1: Radial loads cannot be applied to the Ezi-ROBO VZR. Always install the actuator in a vertical position.



Description of Specification Items

No.	Item	Description
①	Lead	The distance that the ball screw travels in the linear direction when the motor rotates once.
②	Ball screw grade	It indicates accuracy grade of the ball screw.
③	Repeatability	This value indicates the amount of error that occurs when the same position is commanded repeatedly in the same direction. (The accuracy is the value when the temperature and load are constant.)
④	Maximum speed	This is the maximum speed at which the load can be reciprocated.
⑤	Maximum acceleration	This is the maximum acceleration at which the load can be reciprocated.
⑥	Permissible load	This is the maximum weight of the load that can be reciprocated.
⑦	Reference thrust force	This refers to the maximum force that can push the load during constant speed operation.
⑧	Permissible moment	This is the maximum value of the permissible load moment of inertia. Load moment of inertia refers to the inertia of the load that resists changes in rotational motion.
⑨	Stroke	This is the maximum distance that the load can be reciprocated.
⑩	Weight	This is the weight of the product excluding the drive and cable.
⑪	Operating temperature	This is the temperature range within which the product can operate normally.

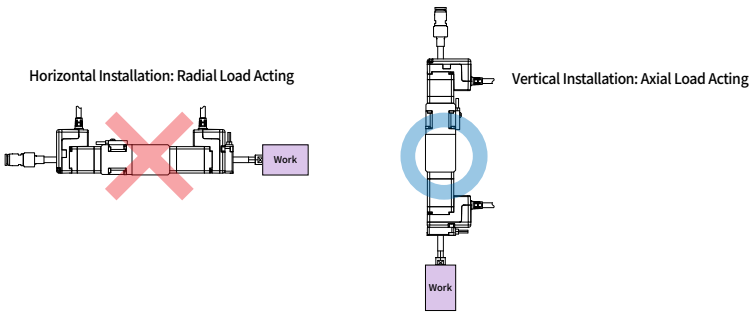
Specifications [VZR-28 Type]

Model			Ezi-ROBO-VZR-28-50-P6-28-D-N-□ Ezi-ROBO-VZR-28-50-P6-28-D-P-□
Lead		[mm]	6
Ball screw grade			Precision
Repeatability	Z-axis	[mm]	±0.01
	θ-axis	[deg]	±0.1
Maximum speed	Z-axis	[mm/s]	72
	θ-axis	[rev/s]	3
Maximum acceleration	Z-axis	[m/s²]	0.6
	θ-axis	[rad/s²]	120 π
Permissible load*1		[kg]	0.5
Reference thrust force		[N]	7
Permissible moment		[kg · m²]	$0.15x10^{-4}$
Stroke		[mm]	50
Weight		[kg]	0.87
Operating temperature		[°C]	0 ~ 50(non-condensing)

Specifications [VZR-42 Type]

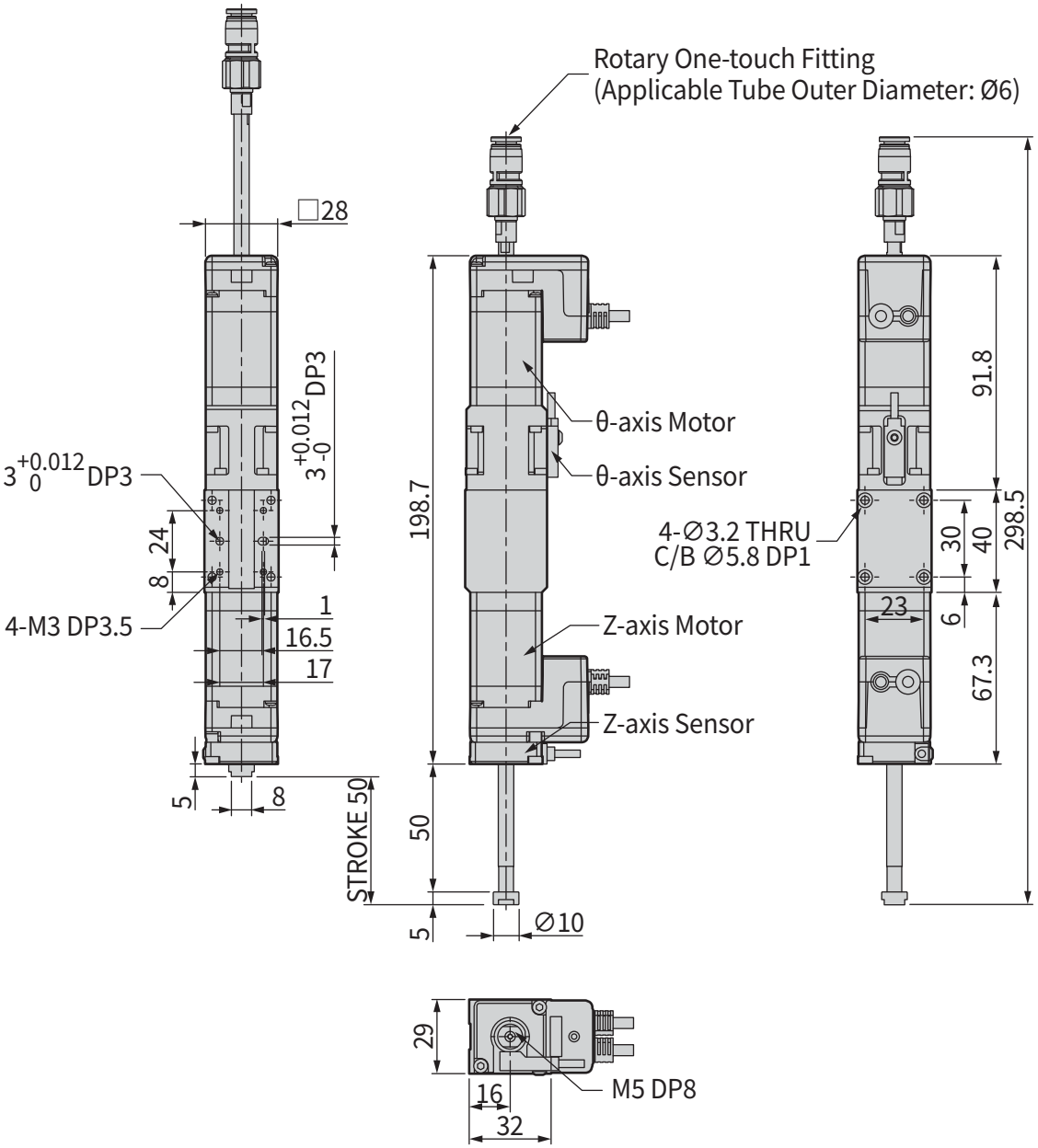
Model			Ezi-ROBO-VZR-42-50-P10-42-B-N-□ Ezi-ROBO-VZR-42-50-P10-42-B-P-□
Lead		[mm]	10
Ball screw grade			Precision
Repeatability	Z-axis	[mm]	±0.01
	θ-axis	[deg]	±0.1
Maximum speed	Z-axis	[mm/s]	200
	θ-axis	[rev/s]	3
Maximum acceleration	Z-axis	[m/s²]	1
	θ-axis	[rad/s²]	120 π
Permissible load*1		[kg]	1.5
Reference thrust force		[N]	15
Permissible moment		[kg · m²]	$0.35x10^{-4}$
Stroke		[mm]	50
Weight		[kg]	1.3
Operating temperature		[°C]	0 ~ 50(non-condensing)

*1: Radial loads cannot be applied to the Ezi-ROBO VZR. Always install the actuator in a vertical position.



Dimensions of Product [mm]

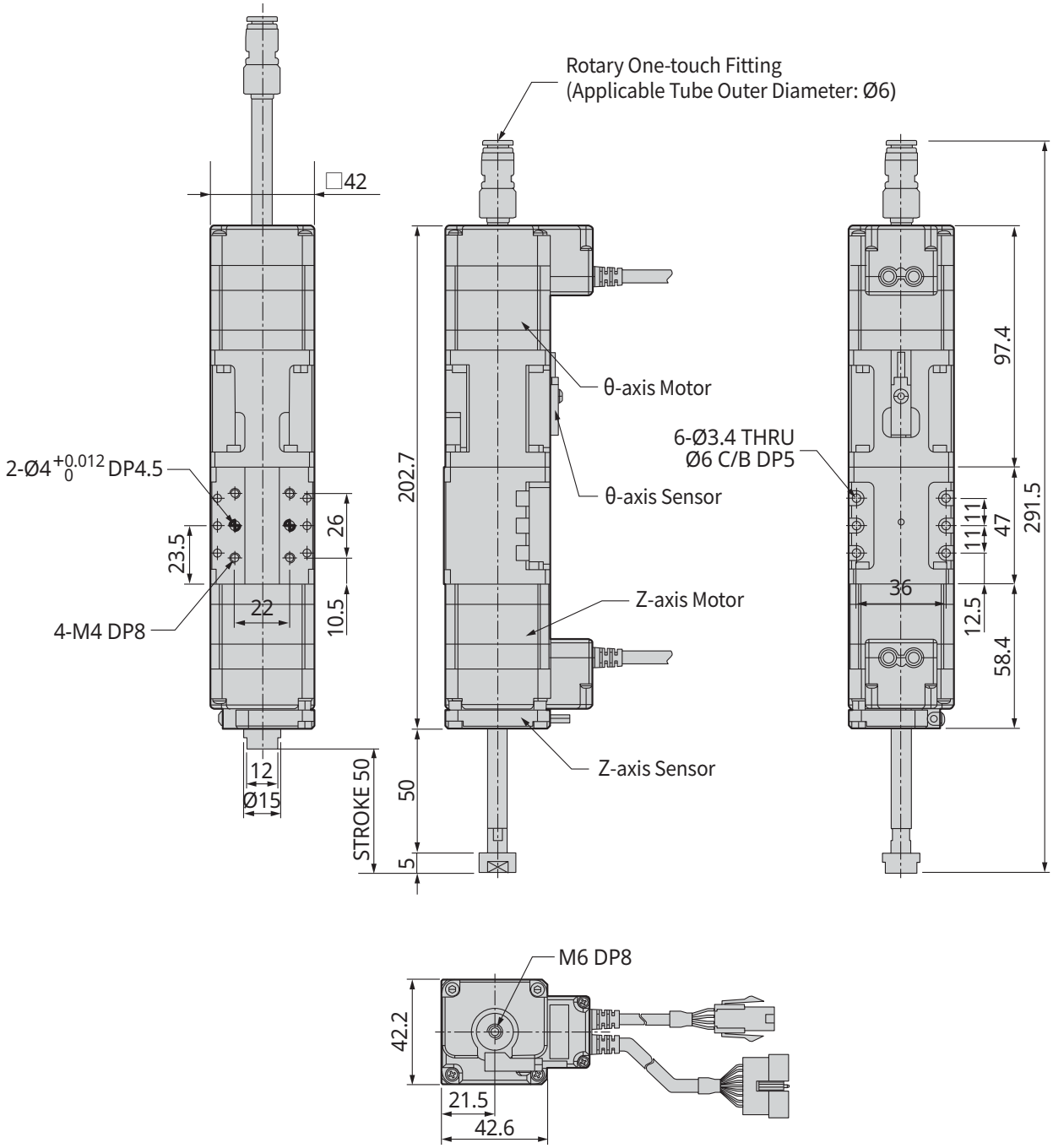
Ezi-ROBO-VZR-28-50-P6-28-D-N-□
Ezi-ROBO-VZR-28-50-P6-28-D-P-□



*□ is the drive type.

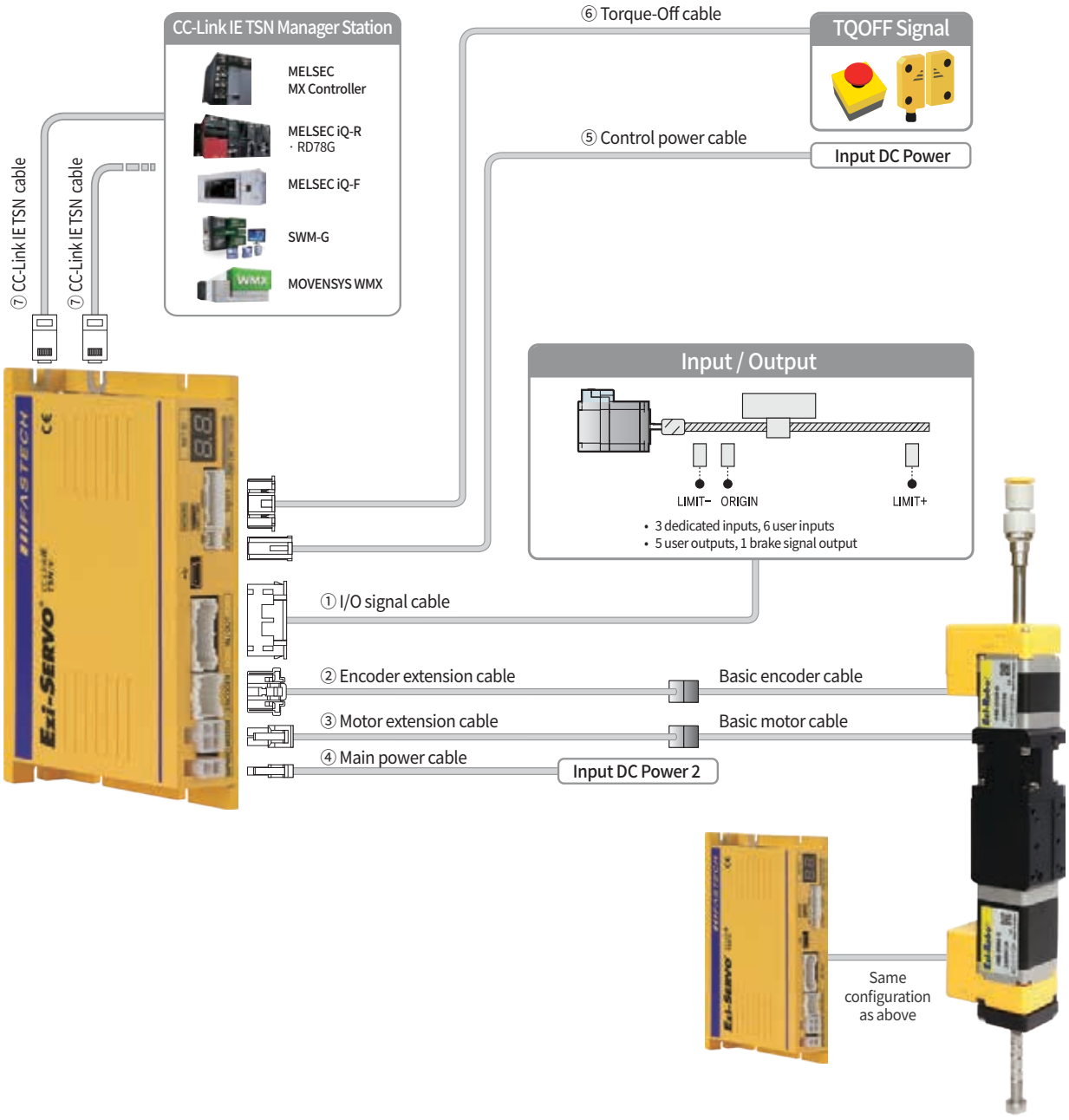
Dimensions of Product [mm]

Ezi-ROBO-VZR-42-50-P10-42-B-N-□
Ezi-ROBO-VZR-42-50-P10-42-B-P-□



*□ is the drive type.

System Configuration [Stnadard type Drive]



Cable Type	Max. Cable Type	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Encoder Extension Cable	20 m	
③ Motor Extension Cable	20 m	
④ Main Power Cable	2 m	
⑤ Control Power Cable	2 m	
⑥ Torque-Off Cable	20 m	
⑦ CC-Link IE TSN Cable	100 m	
Basic Encoder Cable	0.3 m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3 m (Basic length)	

Home Sensor Set

1. Type

Part Number	Sensor output	Applicable products
E2S-W23	NPN	VZR-28, VZR-42
E2S-W25	PNP	

2. Components (E2S-W23)





Z-axis sensor mounting bracket

3. Specifications

Category	NPN Type	PNP Type
Sensor Part Number	E2S-W23 (OMRON product)	E2S-W25 (OMRON product)
Power Supply Voltage	12 ~ 24 V DC ± 10 % Ripple (P-P) 10 % or less	12 ~ 24 V DC ± 10 % Ripple (P-P) 10 % or less
Current Consumption	13 mA or less	13 mA or less
Control Output	NPN Open Collector Output 12 ~ 24 V DC 50 mA or less Residual voltage 1 V or less (at 50 mA load current)	PNP Open Collector Output 12 ~ 24 V DC 50 mA or less Residual voltage 1 V or less (at 50 mA load current)
Indicator LED	Detection Display (Red)	Detection Display (Red)
Sensor Logic	Normally open	Normally open

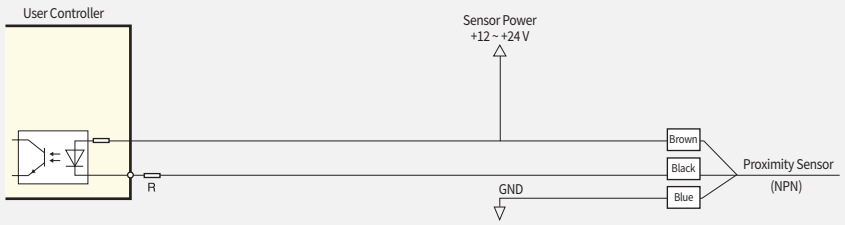
4. Precautions for Limit Sensor Set Installation

- Use the limit sensor set in environments where the installation surface temperature does not exceed 55 °C.
- Do not install the limit sensor while power is applied, as this may cause injury or equipment damage.
- After exposure to vibration or impact, check the sensor to ensure it remains properly mounted and functional.
- Accumulated dust on the sensor may cause malfunctions. Regular cleaning or replacement is recommended.

Home Sensor Cable Installation

1. NPN Type

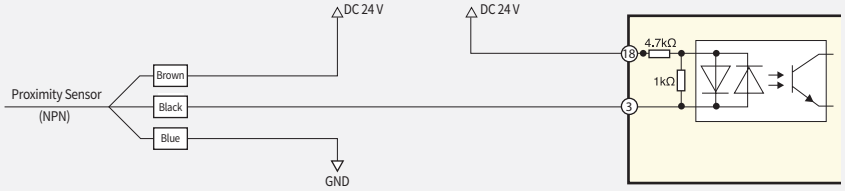
• With User's Controller



Only N.O. (normally open) output is supported.

The power voltage for the sensor can be 12 ~ 24 V DC and the signal current for the sensor can be up to 50 mA. For details, refer to the controller specifications for wiring. If the sensor's signal current exceeds the current range of the controller or sensor, connect a current limiting resistor (R).

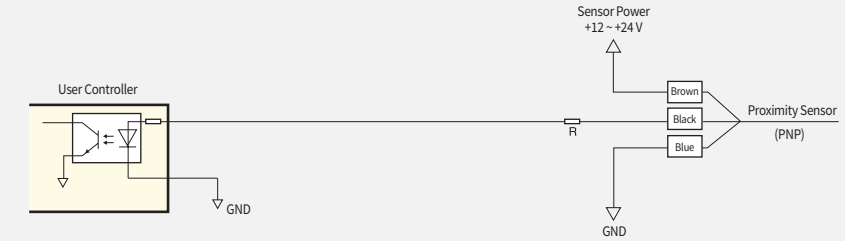
• With Embedded Motion Controller Type Products (e.g., Ezi-SERVO CC-Link IE TSN)



Only N.O. (normally open) output is supported.

2. PNP Type

• With User's Controller



Only N.O. (normally open) output is supported.

The power voltage for the sensor can be 12 ~ 24 V DC and the signal current for the sensor can be up to 50 mA. For details, refer to the controller specifications for wiring. If the sensor's signal current exceeds the current range of the controller or sensor, connect a current limiting resistor (R).

• With Embedded Motion Controller Type Products (e.g., Ezi-SERVO CC-Link IE TSN)



Only N.O. (normally open) output is supported.

Supported FASTECH Drive Types

Built-in Torque-Off Function Drive



Multi-Axis Drive (Max. 4-Axis)



- Further details on the products shown in the image above are available on our website.
- If you have questions regarding products not included in this catalog, or any other inquiries, please feel free to contact us.

Homepage cltsn.fastech-motions.com
E-mail sales@fastech-motions.com

Ezi-ROBO®

Precise Actuator System

CC-Link IE TSN

CLA

- Compact Linear Actuator with Hollow Shaft Motor & Ball Screw
- Repeatability (±0.01 mm), Lost Motion (≤ 0.05 mm)
- CiA402 Drive Profile
- CC-Link IE TSN-compatible Closed Loop Stepper System
- Tuning Not Required, No Hunting
- Low Heat Generation, High Torque, High Resolution, Fast Response



FASTECH

Fast Accurate Smooth Motion

Ezi-Robo®

Precise Actuator System

CC-Link IE TSN

CLA

*CLA : Compact Linear Actuator



Compact / Lightweight

The Compact Linear Actuator (CLA) is an integrated product that combines a hollow-shaft motor (Ezi-SERVO HS) with a ball screw. By applying the Ezi-ROBO CLA, equipment can be downsized and lightweight, achieving significant space savings.

Installation Dimensions
20 mm
CLAT-20-25R1



Installation Dimensions
28 mm
CLAT-28-30R2



Installation Dimensions
42 mm
CLAT-42-40R2/R8

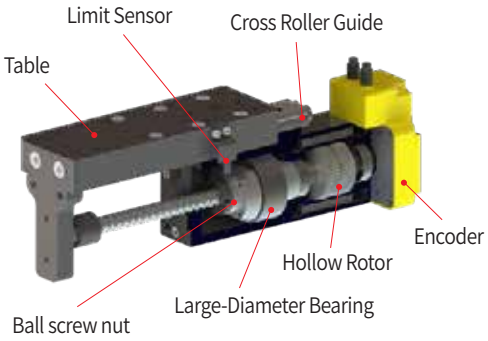


Installation Dimensions
56 mm
CLAT-56-50R4



Minimizing Backlash Effect

Ezi-ROBO CLA minimizes the impact of backlash by integrating the hollow rotor and ball screw nut without using coupling or other connecting components.



High Rigidity and Long Service Life

The compact linear actuator utilizes a cross roller guide on its table, ensuring smooth operation, high rigidity, and extended product lifespan.



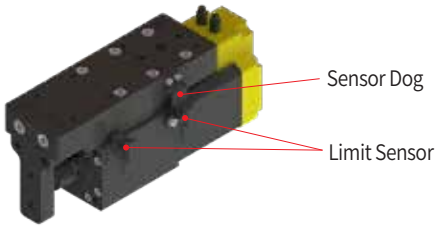


Cross Roller Guide

Simple Homing

A limit sensor set is provided as an option to simplify homing. This set includes all the parts necessary for homing, This set includes all required parts, allowing the limit sensors to be easily installed.

* The sensor is applicable only to the table type.

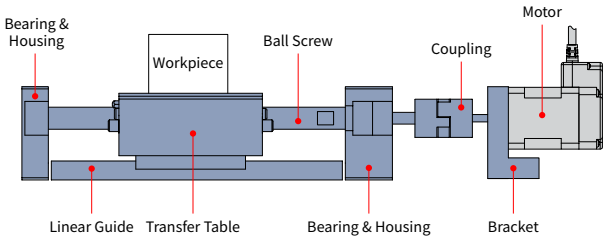


Reduced Equipment Setup Time

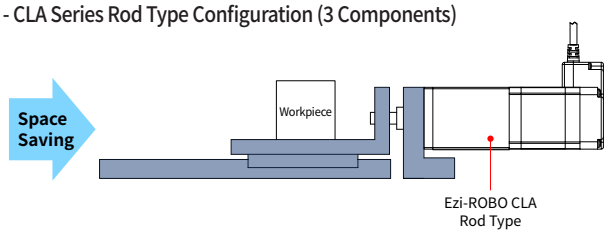
Since there is no need to manufacture components used for workpiece transportation, the time required for equipment design, component selection, assembly, and precision adjustments is significantly reduced, leading to a shorter setup time.

- General Configuration (9 components)

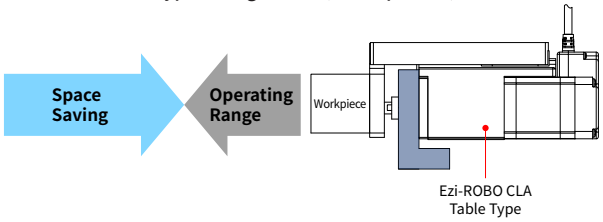
Additional Components



- CLA Series Rod Type Configuration (3 Components)



- CLA Series Table Type Configuration (1 Component)



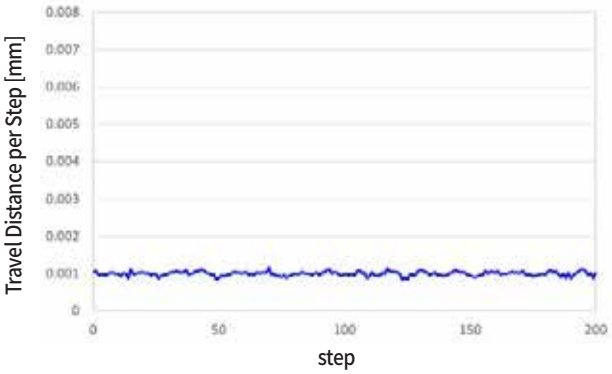
Enhanced Customer Convenience

Ezi-ROBO CLA comes equipped with a standard adjustment knob, allowing for easy and convenient operation.



Micro-step Movement

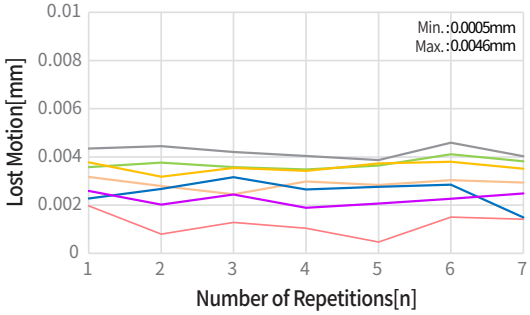
Ezi-SERVO HS is capable of consistently repeating fine movements step by step, making it ideal for precise adjustments of cameras or lenses.



Actual Travel Distance for a Commanded Travel of 0.001 mm
Product Name : Ezi-ROBO-CLAT-28-30R1-28UD-PE
Transfer Weight : 0.5 kg
Operating Current : 100 %
Minimum Travel Distance : 0.001 mm
Number of Repetitions : 200 times

High-Precision Positioning

Ezi-ROBO CLA utilizes the Ezi-SERVO HS motor equipped with a high-resolution encoder, minimizing lost motion and enabling high-precision positioning.

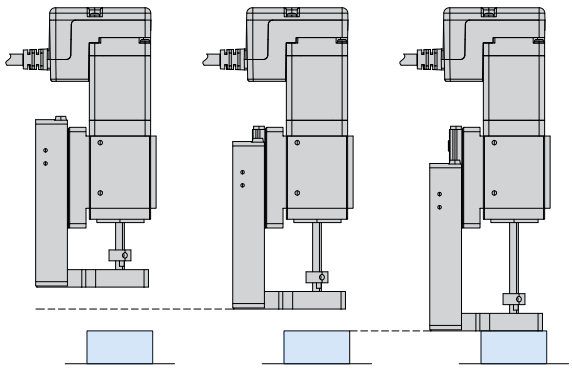


Product Name : Ezi-ROBO-CLAT-28-30R1-28UD-PE
Transfer Weight : 0.5 kg
Operating Current : 100 %

Push Motion Function

The push motion time can be easily adjusted, allowing high-speed movement toward the workpiece followed by deceleration just before contact to initiate the push motion at a lower speed.

[Advantages]
- Nearly no impact occurs when pressing, eliminating the need for additional cushioning mechanisms.
- High-speed approach is maintained until just before the push motion begins, reducing the tact time.



① Move at high speed near the workpiece

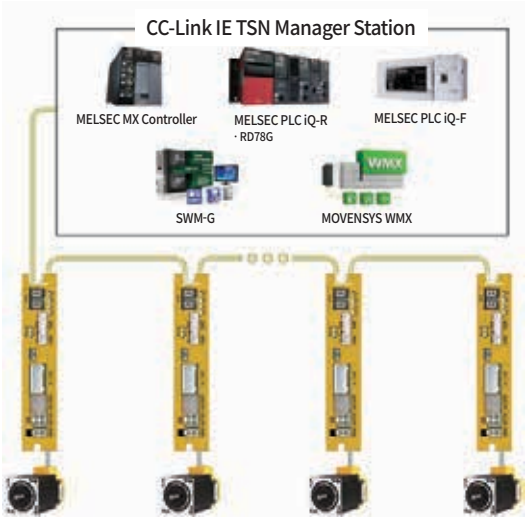
② Decelerate just before contact and approach at low speed

③ Initiate the push motion after reaching the workpiece

※ Ezi-SERVO ST does not support the Push Motion function.

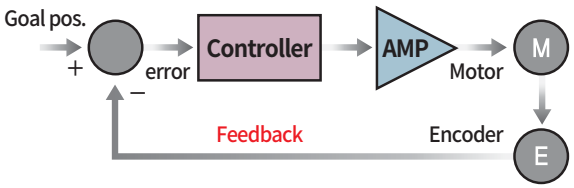
CC-Link IE TSN-compatible Motion Control

Ezi-SERVO CC-Link IE TSN is stepper motor control system that supports CC-Link IE TSN, an industrial network based on high-speed Ethernet (1 Gbps, full-duplex communication).
Ezi-SERVO CC-Link IE TSN employs CiA402 drive profile and supports Profile Position Mode (PP Mode), Homing Mode (HM Mode) and Cyclic Synchronous Position Mode (CSP Mode).



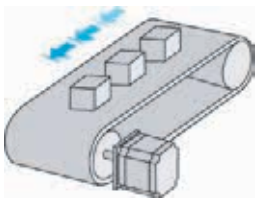
Closed-Loop System

Ezi-SERVO 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 to update the current position every 50 µs. It allows the Ezi-SERVO drive to compensate for the loss of position, ensuring accurate positioning. For example, due to a sudden load change, a conventional stepper motor and drive could lose a step but Ezi-SERVO automatically correct the position by encoder feedback.



Tuning Not Required

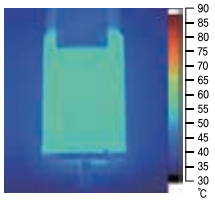
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed.
Ezi-SERVO employs the best characteristics of the stepper motor to eliminate the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



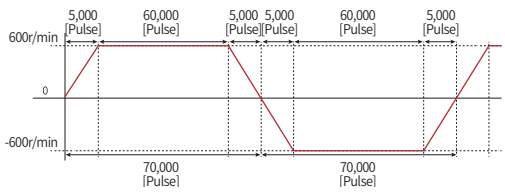
Low Heat Generation / Energy Savings

(Motor Current Control according to load)

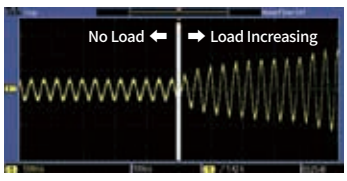
Ezi-SERVO automatically controls motor current according to load.
Ezi-SERVO reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

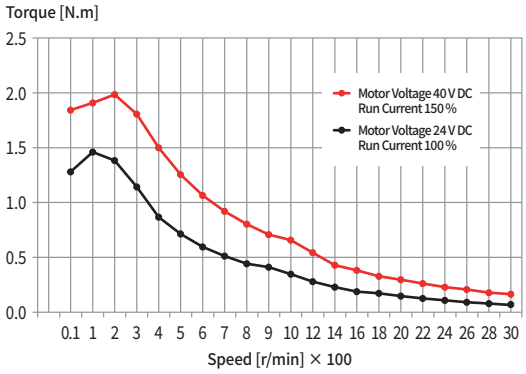


Motor Current
[Motor Current Waveform Measured by Oscilloscope Showing Variations in Motor Current According to Load]

High Torque

(Motor Voltage Increasing and Motor Current Setting)

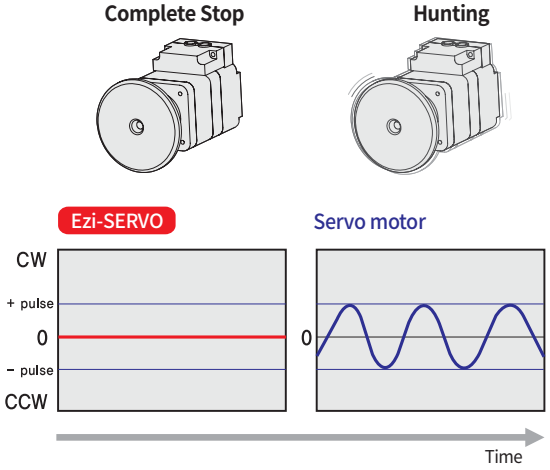
Ezi-SERVO features an internal voltage boosting circuit that increases the motor supply voltage above the drive's input voltage. This elevated motor voltage enhances torque at high speeds and allows the run current to be set up to 150 %. As a result, torque is also improved at low speeds. Ezi-SERVO can achieve approximately 30 % torque improvement across the entire speed range.



※ The torque at low speed and high speed is improved about 30 %.
Measured Condition: Drive = Ezi-SERVO-CT-56L
· Motor Voltage = 40 V DC
· Input Voltage = 24 V DC

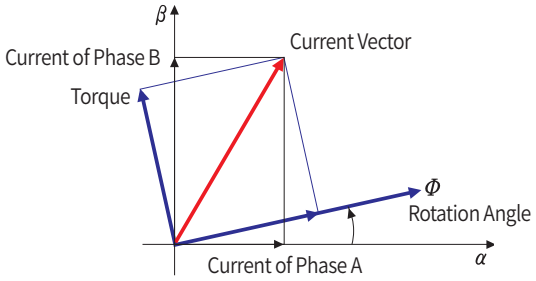
No Hunting

Ezi-SERVO utilizes the unique characteristics of stepper 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.



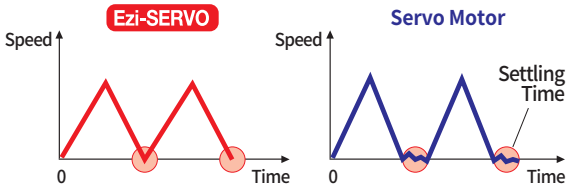
Smooth and Accurate Operation

Ezi-SERVO is a high-precision servo drive, using a high-resolution encoder with 20,000 pulse/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.



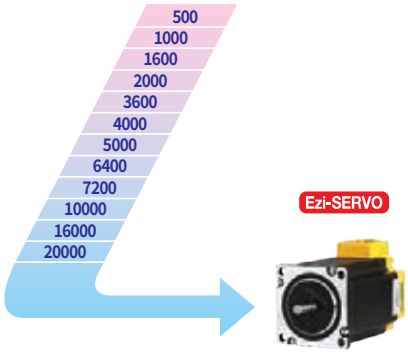
Fast Response

Similar to conventional stepper motors, Ezi-SERVO instantly synchronizes with command pulses providing fast positional response. Ezi-SERVO is the optimum 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.



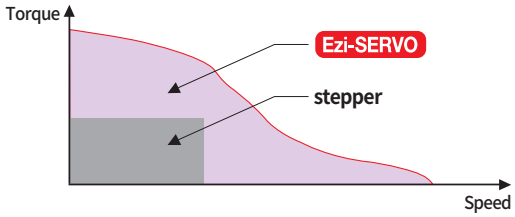
High Resolution

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



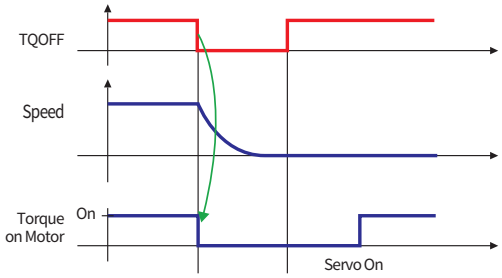
High Torque / Continuous Operation

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



Torque-Off Function

Ezi-SERVO CC-Link IE TSN has an input connector (TQ OFF) that can Servo OFF through an external signal, regardless of CC-Link IE TSN communication, to stop and protect the motor in an emergency. When the TQOFF signal is detected, the drive immediately turns off the servo, and the motor stops.

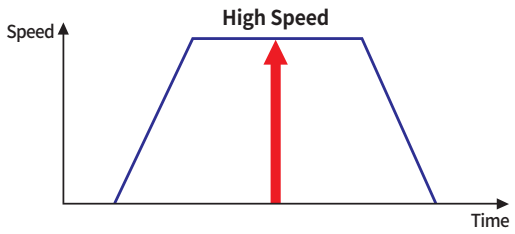


CAUTION

DO NOT use the Torque-Off function to stop or decelerate motors.

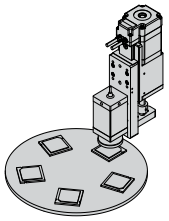
High Speed

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

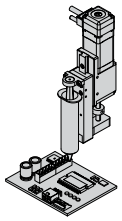


Examples

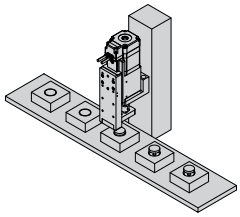
CCD Camera Focusing



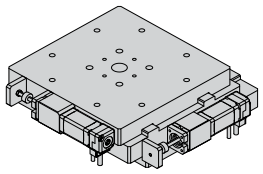
Dispenser Operation



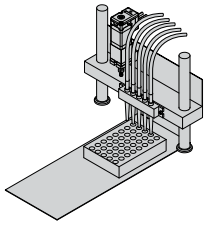
Pin Press-Fitting



XY Stage Operation



Automatic Dispensing



Ezi-ROBO CLA Part Numbering

Ezi-ROBO-CLAT-28-30 R 1-28 U D-CT-Option

- **Series Name**
- **Model Name**
  - CLAT : Table Type
  - CLAR : Rod Type
- **Installation Dimensions**
  - 20 : 20 mm 28 : 28 mm
  - 42 : 42 mm 56 : 56 mm
- **Stroke**
  - 25 : 25 mm 30 : 30 mm
  - 40 : 40 mm 50 : 50 mm
- **Ball Screw Grade**
  - R : Standard
- **Lead**
  - 01 : 1 mm 02 : 2 mm
  - 04 : 4 mm 08 : 8 mm
- **Motor Size**
  - 20 : 20 mm 28 : 28 mm
  - 42 : 42 mm 56 : 56 mm
- **Cable Direction**
  - U : Up D : Down
  - L : Left R : Right
- **Encoder Resolution**
  - B : 20,000 P/R
  - D : 16,000 P/R
  - F : 4,000 P/R
- **Drive Series**
  - CT : CC-Link IE TSN
- **Option**
  - Sensor

Applicable Product Series

Product	Specifications
Ezi-SERVO CC-Link IE TSN	CC-Link IE TSN Compatible, Built-in Torque-Off Function



Ezi-SERVO CC-Link IE TSN

Actuator and Drive Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-ROBO-CLAR-20-25R1-20□F-CT	HSE-RBP20L-F	EzS2-CT-20L-F
Ezi-ROBO-CLAR-28-30R1-28□D-CT	HSE-RBP28MM-D	EzS2-CT-28M-D
Ezi-ROBO-CLAR-42-40R2-42□B-CT	HSE-RBP42L-B	EzS2-CT-42L-B
Ezi-ROBO-CLAR-42-40R8-42□B-CT	HSE-RBP42L-B	EzS2-CT-42L-B
Ezi-ROBO-CLAR-56-50R4-56□B-CT	HSE-RBP56M-B	EzS2-CT-56M-B
Ezi-ROBO-CLAT-20-25R1-20□F-CT	HSE-RBP20L-F	EzS2-CT-20L-F
Ezi-ROBO-CLAT-28-30R1-28□D-CT	HSE-RBP28MM-D	EzS2-CT-28M-D
Ezi-ROBO-CLAT-42-40R2-42□B-CT	HSE-RBP42L-B	EzS2-CT-42L-B
Ezi-ROBO-CLAT-42-40R8-42□B-CT	HSE-RBP42L-B	EzS2-CT-42L-B
Ezi-ROBO-CLAT-56-50R4-56□B-CT	HSE-RBP56M-B	EzS2-CT-56M-B

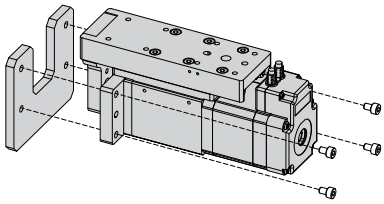
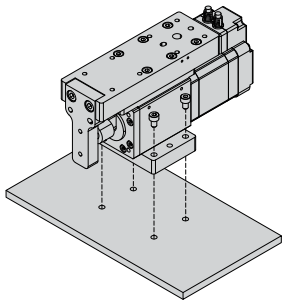
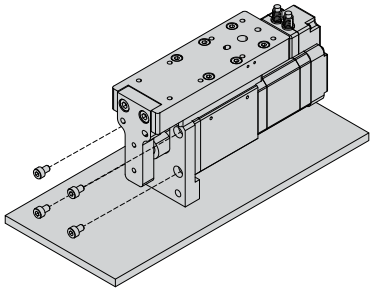
※ □ is the assembly direction of the motor.

Actuator Combination

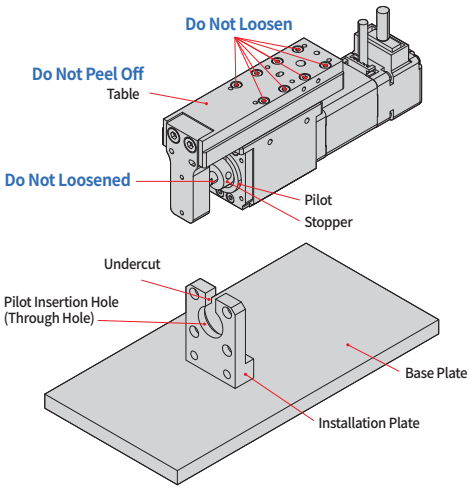
Actuator Type	CLA 20 Type	CLA 28 Type	CLA 42 Type	CLA 56 Type
Lead [mm]	1	1	2,8	4
Stroke [mm]	25	30	40	50
Resolution [P/R]	F (4,000)	D(16,000)	B(20,000)	B(20,000)

Product Installation

1-1. Table Type Installation Method

Rear Installation	Side Installation	Front Installation
		

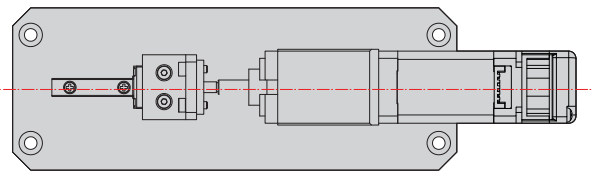
1-2. Precautions for Table Type Installation

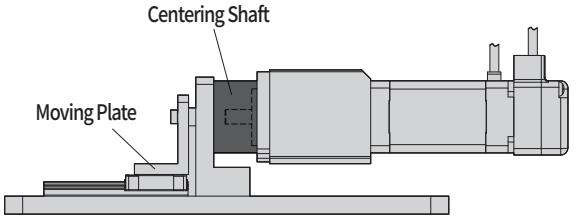


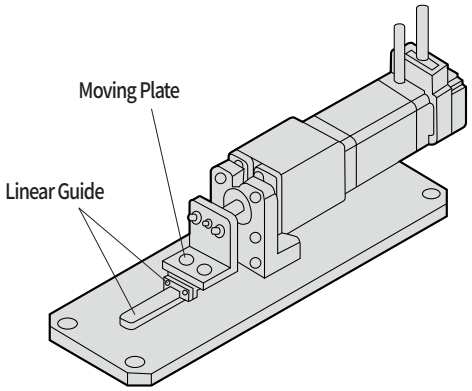
2. Rod Type Installation Method

For the rod type, ensure that the ball screw axis is aligned with the center of the load movement axis.
Please manufacture the centering shaft according to the installation method.

The rod type cannot operate without a ball screw rotation prevention mechanism. Be sure to install rotation prevention devices such as linear guides and moving plates.





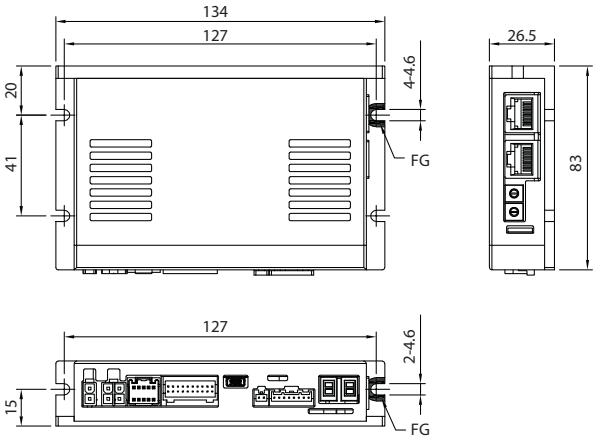


Specifications of Drive

Motor Model		HSE-RBP20 series	HSE-RBP28 series	HSE-RBP42 series	HSE-RBP56 series
Drive Model		EzS2-CT-20 series	EzS2-CT-28 series	EzS2-CT-42 series	EzS2-CT-56 series
Input Voltage		24 V DC ± 10 %			
Control Method		Closed loop control with 32 bit MCU			
Current Consumption		Max. 500 mA/axis (Except motor current)			
Operating Condition	Ambient Temperature	· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C			
	Humidity	· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)			
	Vib. Resist.	0.5 g			
Function	Rotation Speed	0 ~ 3,000 r/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 Type	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, Encoder Connection Error, Main Power Voltage Error, In-Position Error, ROM Error, Position Overflow Error, Torque-Off Circuit Error			
	LED Display	Power status, In-Position status, Servo On status, Alarm status			
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B			
	Operation Mode	CiA402 Drive Profile: Cyclic Synchronous Position Mode, Profile Position Mode, Homing Mode			
	Synchronization	Minimum Cycle Time: 250 µs / Synchronous Comm. (CSP, PP, HM) / Asynchronous Comm. (PP, HM)			
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 6 user inputs (photocoupler inputs), 2 Torque-Off signal inputs (TQOFF)			
	Output Signals	5 user outputs (photocoupler outputs), 1 brake signal output, 1 Torque-Off status output (TQMON)			

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

Dimensions of Drive [mm]



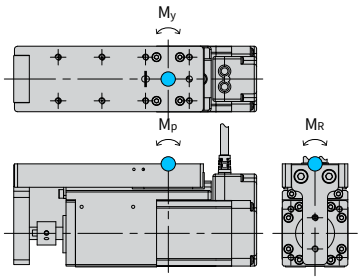
How to Read Specifications

Model			Ezi-ROBO-CLAT-42-40R2-42UB-□*1
① Lead		[mm]	2
② Stroke		[mm]	40
③ Repeatability		[mm]	±0.01
④ Lost Motion		[mm]	0.05 or less
⑤ Maximum Speed*2		[mm/s]	50
⑥ Maximum Acceleration		[m/s²]	0.4
⑦ Thrust		[N]	100
⑧ Permissible Load*3	Horizontal	[kg]	8
	Vertical	[kg]	4
⑨ Permissible Moment*4	Static	[N·m]	M_P : 1.30 M_Y : 1.00 M_R : 2.5
	Dynamic	[N·m]	
⑩ Weight		[kg]	1.11

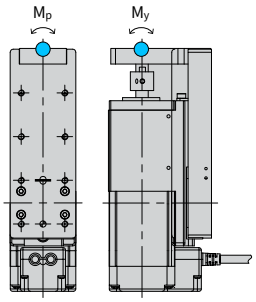
*1: □ includes options and drive type.
*2: The maximum speed is limited by the motor's maximum speed and permissible rotational speed of ball screw.
*3: The load attachment standards for permissible load in the horizontal and vertical directions are as follows:
*4: The direction definitions for permissible moments are as follows.

Direction of Permissible Moment

[Horizontal Direction]

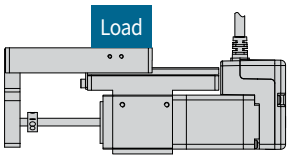


[Vertical Direction]

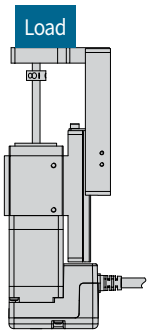


Load Attachment Standards for Permissible Load

[Horizontal Direction]



[Vertical Direction]



Description of Specification Items

No.	Item	Descriptions
①	Lead	The distance that the ball screw travels in the linear direction when the motor rotates once.
②	Stroke	This is the maximum distance that the load can be reciprocated.
③	Repeatability	This value indicates the amount of error that occurs when the same position is commanded repeatedly in the same direction. (The accuracy is the value when the temperature and load are constant.)
④	Lost Motion	This value indicates the error when executing positioning to the same position but in a different direction. (The accuracy value is given under constant temperature and load conditions.)
⑤	Maximum Speed	This is the maximum speed at which the load can be reciprocated.
⑥	Maximum Acceleration	This is the maximum acceleration at which the load can be reciprocated.
⑦	Thrust	The force that can push the load during constant-speed operation.
⑧	Permissible Load	The maximum load that can be transported when the compact linear actuator is used in the horizontal or vertical direction.
⑨	Permissible Moment	When a workpiece is placed off-center relative to the compact linear actuator's guide, a force is applied that attempts to rotate the guide. This represents the maximum force the guide can handle. Dynamic permissible moment refers to the moment that can be allowed during operation, and static permissible moment refers to the moment that can be allowed when the system is stationary.
⑩	Weight	The weight of the actuator (measured with the motor installed).

Specifications [CLA20 Type]

Model			Ezi-ROBO-CLAT-20-25R1-□*1	Ezi-ROBO-CLAR-20-25R1-□*1
Actuator Type			Table	Rod
Lead		[mm]	1	1
Stroke		[mm]	25	25
Repeatability		[mm]	±0.01	±0.01
Lost Motion		[mm]	0.05 or less	0.05 or less
Maximum Speed*2		[mm/s]	20	20
Maximum Acceleration		[m/s²]	0.2	0.2
Thrust		[N]	5	5
Permissible Load*3	Horizontal	[kg]	1	1
	Vertical	[kg]	0.5	0.5
Permissible Moment*4	Static	[N·m]	M_P : 0.10 M_Y : 0.05 M_R : 0.15	-
	Dynamic	[N·m]		
Weight		[kg]	0.23	0.16

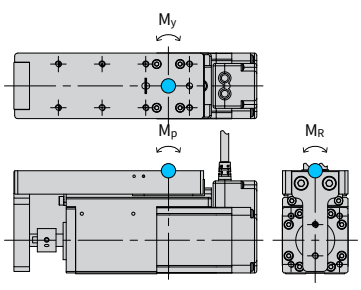
Specifications [CLA28 Type]

Model			Ezi-ROBO-CLAT-28-30R1-□*1	Ezi-ROBO-CLAR-28-30R1-□*1
Actuator Type			Table	Rod
Lead		[mm]	1	1
Stroke		[mm]	30	30
Repeatability		[mm]	±0.01	±0.01
Lost Motion		[mm]	0.05 or less	0.05 or less
Maximum Speed*2		[mm/s]	20	20
Maximum Acceleration		[m/s²]	0.2	0.2
Thrust		[N]	40	40
Permissible Load*3	Horizontal	[kg]	4	4
	Vertical	[kg]	2	2
Permissible Moment*4	Static	[N·m]	M_P : 0.3 M_Y : 0.24 M_R : 1.5	-
	Dynamic	[N·m]		
Weight		[kg]	0.48	0.32

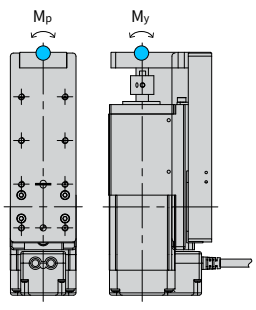
*1: □ includes options and drive type.
*2: The maximum speed is limited by the motor's maximum speed and permissible rotational speed of ball screw.
*3: The load attachment standards for permissible load in the horizontal and vertical directions are as follows:
*4: The direction definitions for permissible moments are as follows.

Direction of Permissible Moment

[Horizontal Direction]

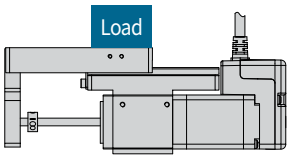


[Vertical Direction]

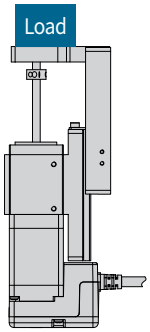


Load Attachment Standards for Permissible Load

[Horizontal Direction]



[Vertical Direction]



Specifications [CLA42 Type]

Model			Ezi-ROBO-CLAT-42-40R2-□*1 Ezi-ROBO-CLAT-42-40R8-□*1	Ezi-ROBO-CLAR-42-40R2-□*1 Ezi-ROBO-CLAR-42-40R8-□*1
Actuator Type			Table	Rod
Lead		[mm]	2,8	2,8
Stroke		[mm]	40	40
Repeatability		[mm]	±0.01	±0.01
Lost Motion		[mm]	0.05 or less	0.05 or less
Maximum Speed*2		[mm/s]	Lead 2 : 50, Lead 8 : 150	Lead 2 : 50, Lead 8 : 150
Maximum Acceleration		[m/s²]	0.4	0.4
Thrust		[N]	Lead 2 : 100, Lead 8 : 50	Lead 2 : 100, Lead 8 : 50
Permissible Load*3	Horizontal	[kg]	Lead 2 : 8, Lead 8 : 5	Lead 2 : 8, Lead 8 : 5
	Vertical	[kg]	Lead 2 : 4, Lead 8 : 3	Lead 2 : 4, Lead 8 : 3
Permissible Moment*4	Static	[N·m]	M_P : 1.30 M_Y : 1.00 M_R : 2.50	-
	Dynamic	[N·m]		
Weight		[kg]	1.11	0.75

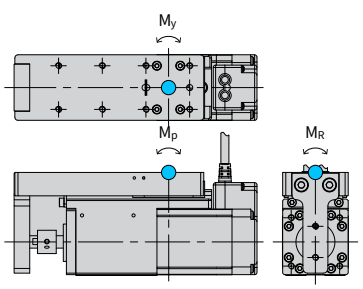
Specifications [CLA56 Type]

Model			Ezi-ROBO-CLAT-56-50R4-□*1	Ezi-ROBO-CLAR-56-50R4-□*1
Actuator Type			Table	Rod
Lead		[mm]	4	4
Stroke		[mm]	50	50
Repeatability		[mm]	±0.01	±0.01
Lost Motion		[mm]	0.05 or less	0.05 or less
Maximum Speed*2		[mm/s]	50	50
Maximum Acceleration		[m/s²]	0.26	0.26
Thrust		[N]	300	300
Permissible Load*3	Horizontal	[kg]	10	10
	Vertical	[kg]	5	5
Permissible Moment*4	Static	[N·m]	M_P : 2.50 M_Y : 2.00 M_R : 5.00	-
	Dynamic	[N·m]		
Weight		[kg]	2.43	1.70

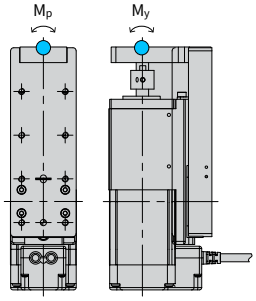
*1: □ includes options and drive type.
*2: The maximum speed is limited by the motor's maximum speed and permissible rotational speed of ball screw.
*3: The load attachment standards for permissible load in the horizontal and vertical directions are as follows:
*4: The direction definitions for permissible moments are as follows.

Direction of Permissible Moment

[Horizontal Direction]

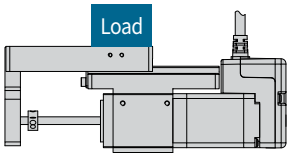


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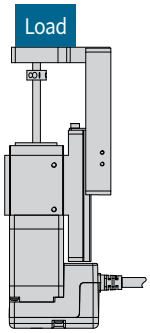


Load Attachment Standards for Permissible Load

[Horizontal Direction]

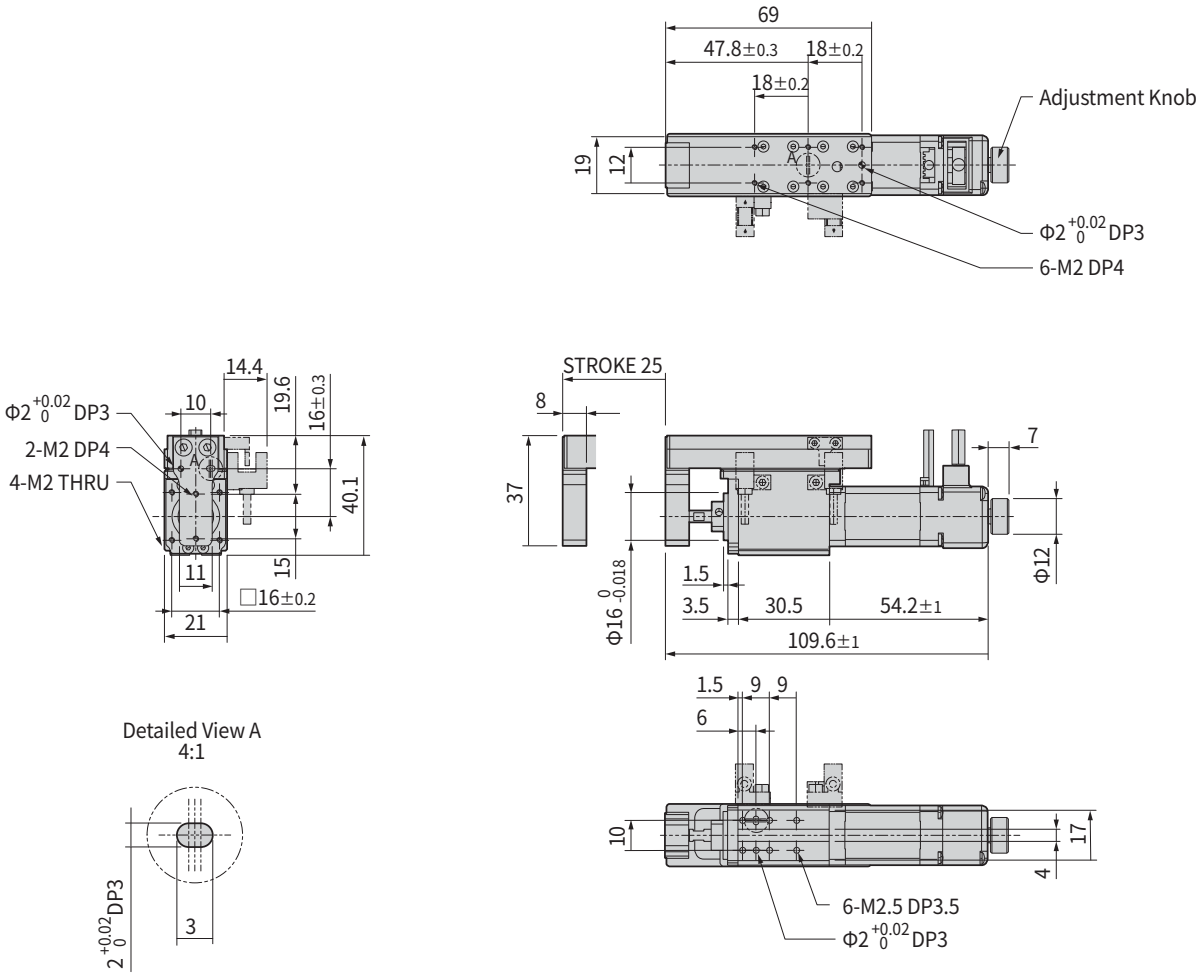


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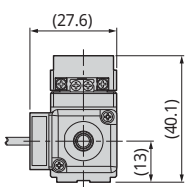
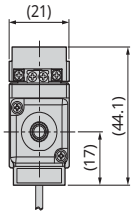
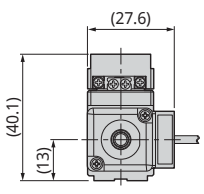
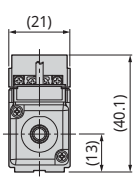


Dimensions of Product : Table Type [mm]

Ezi-ROBO-CLAT-20-25R1-□

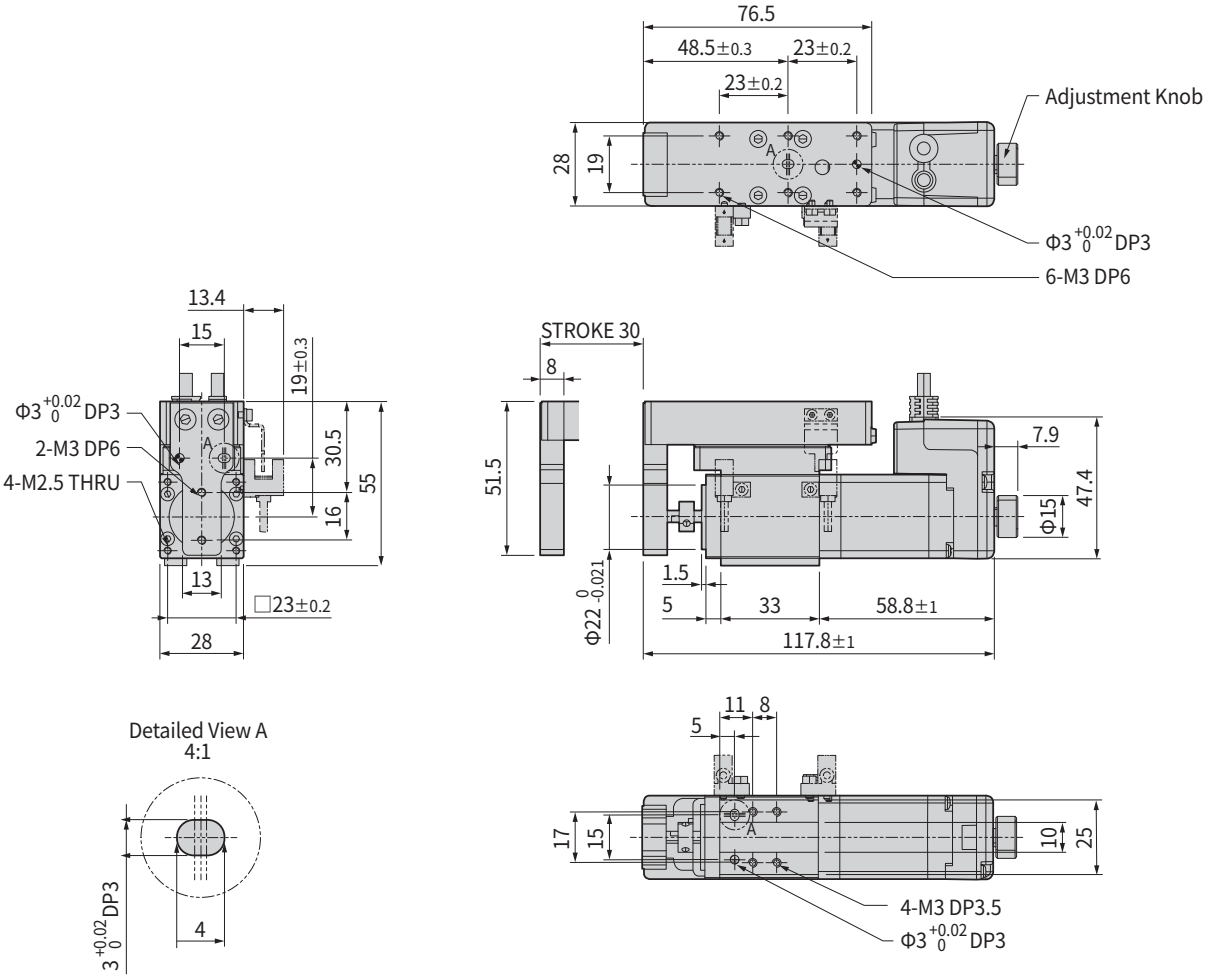


• Cable Direction

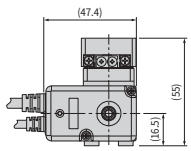
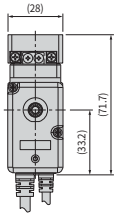
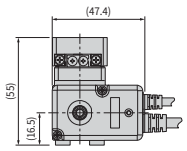
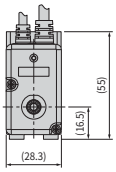
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※ □ includes options and drive types.

Ezi-ROBO-CLAT-28-30R1-□

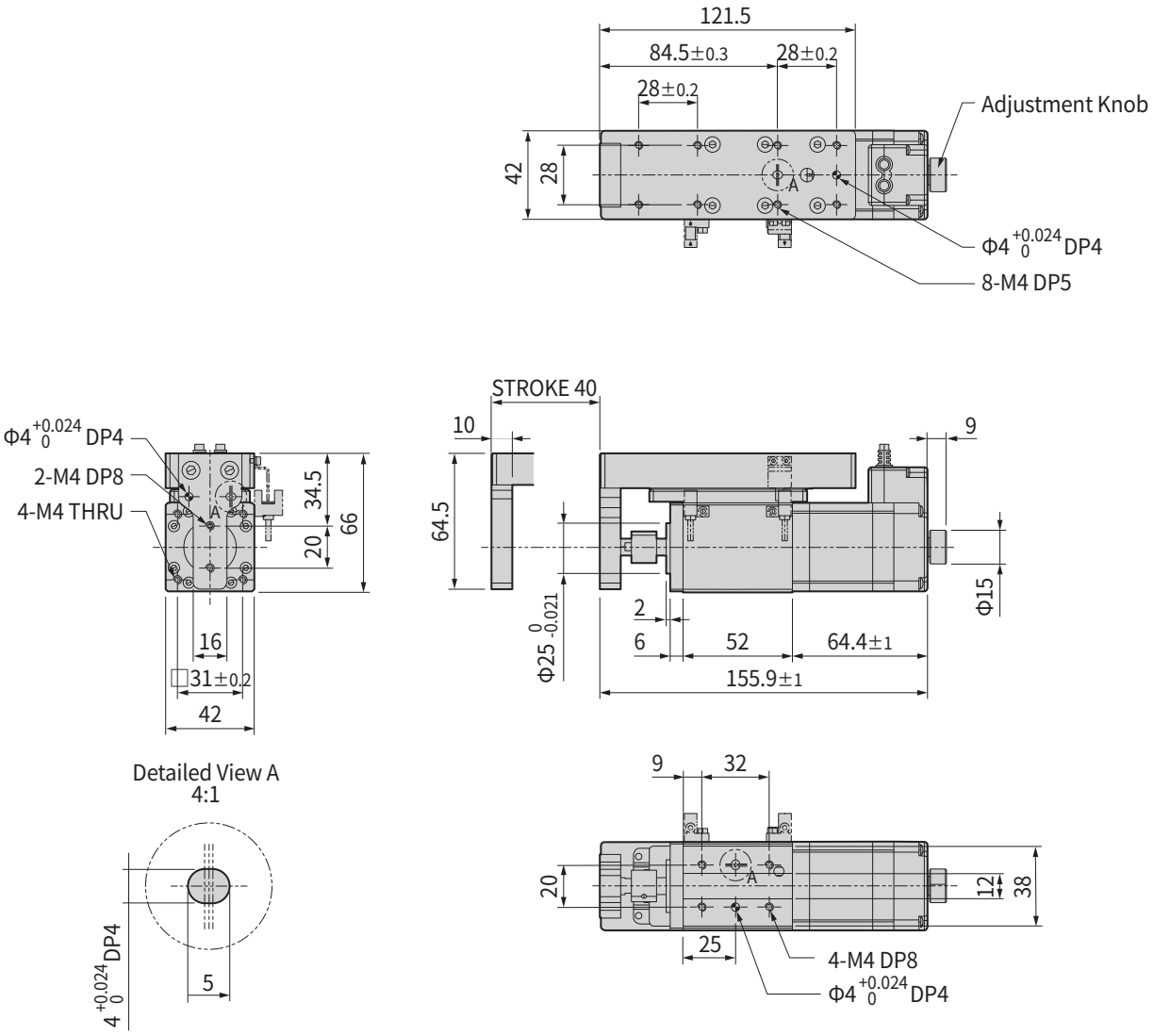


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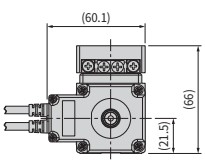
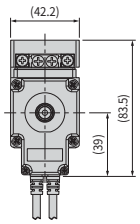
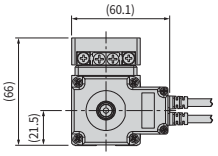
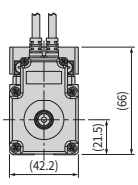
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※ □ includes options and drive types.

Ezi-ROBO-CLAT-42-40R2-□
Ezi-ROBO-CLAT-42-40R8-□

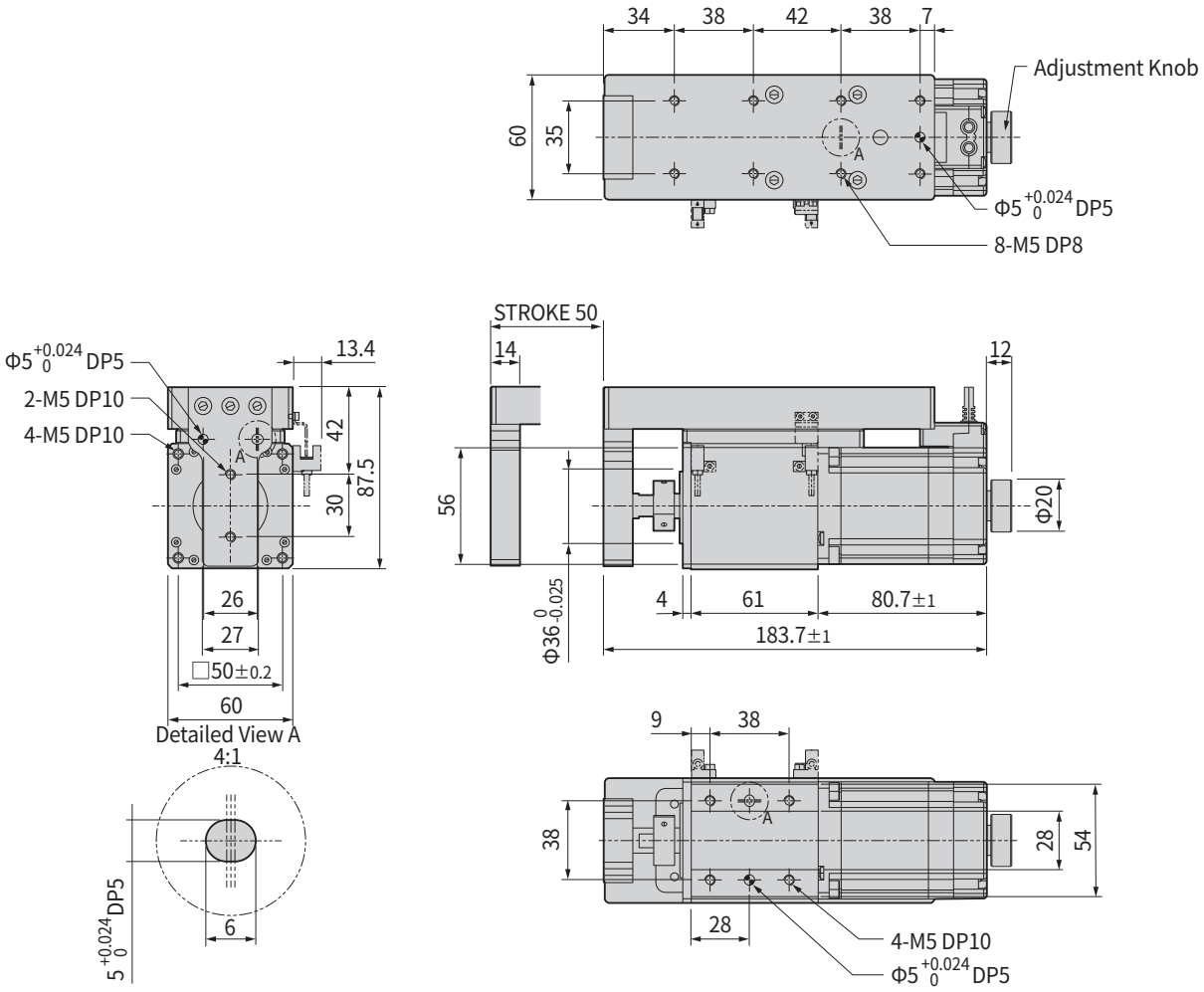


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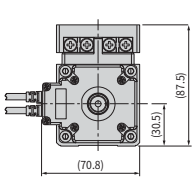
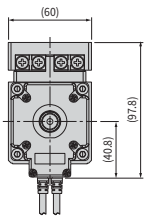
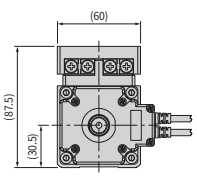
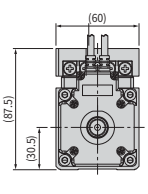
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※ □ includes options and drive types.

Ezi-ROBO-CLAT-56-50R4-□



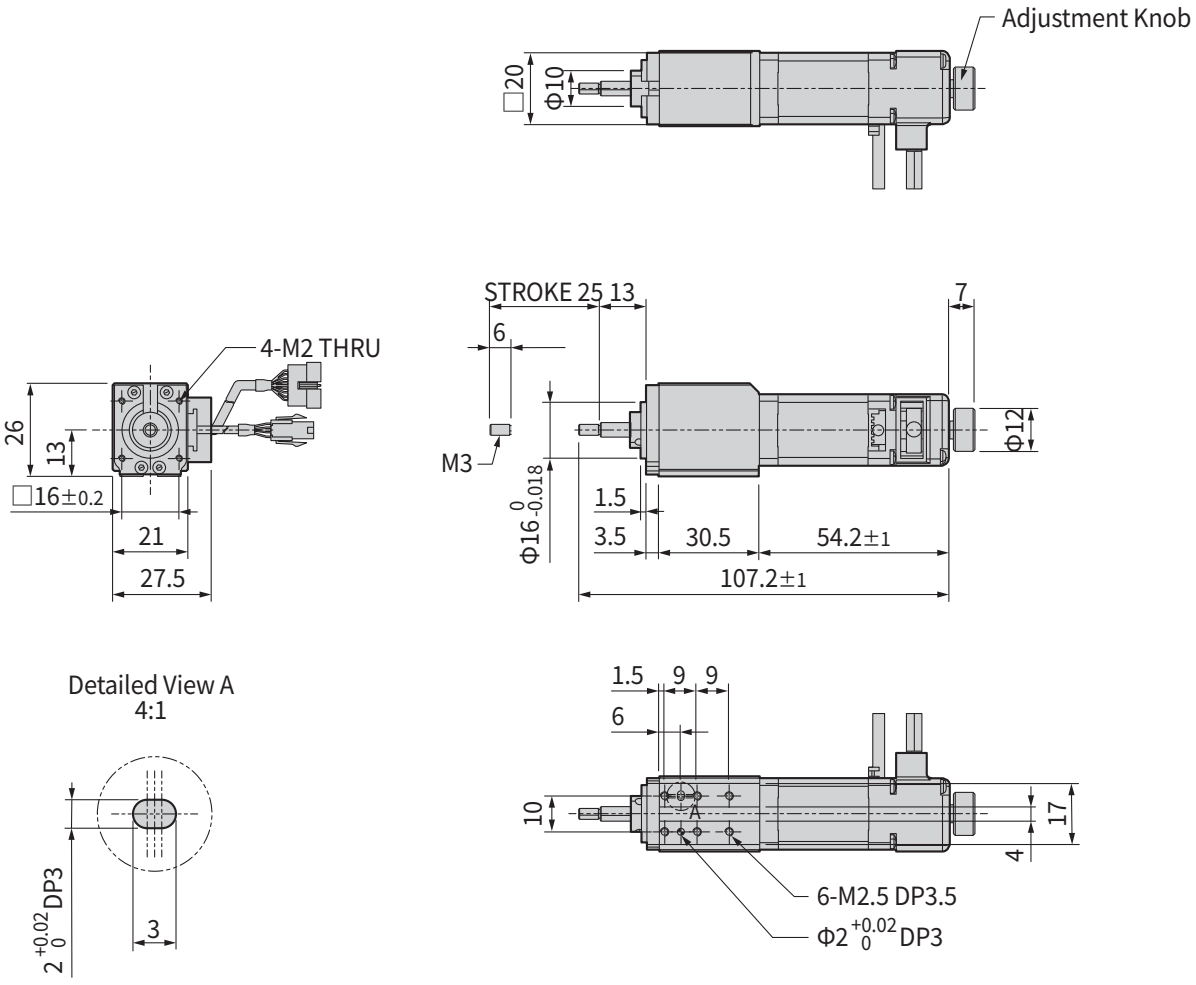
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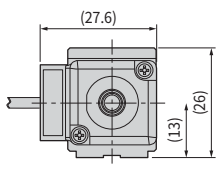
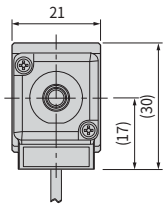
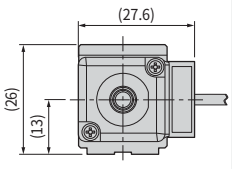
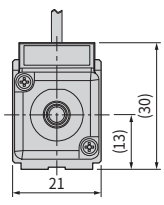
※ □ includes options and drive types.

Dimensions of Product : Rod Type [mm]

Ezi-ROBO-CLAR-20-25R1-□

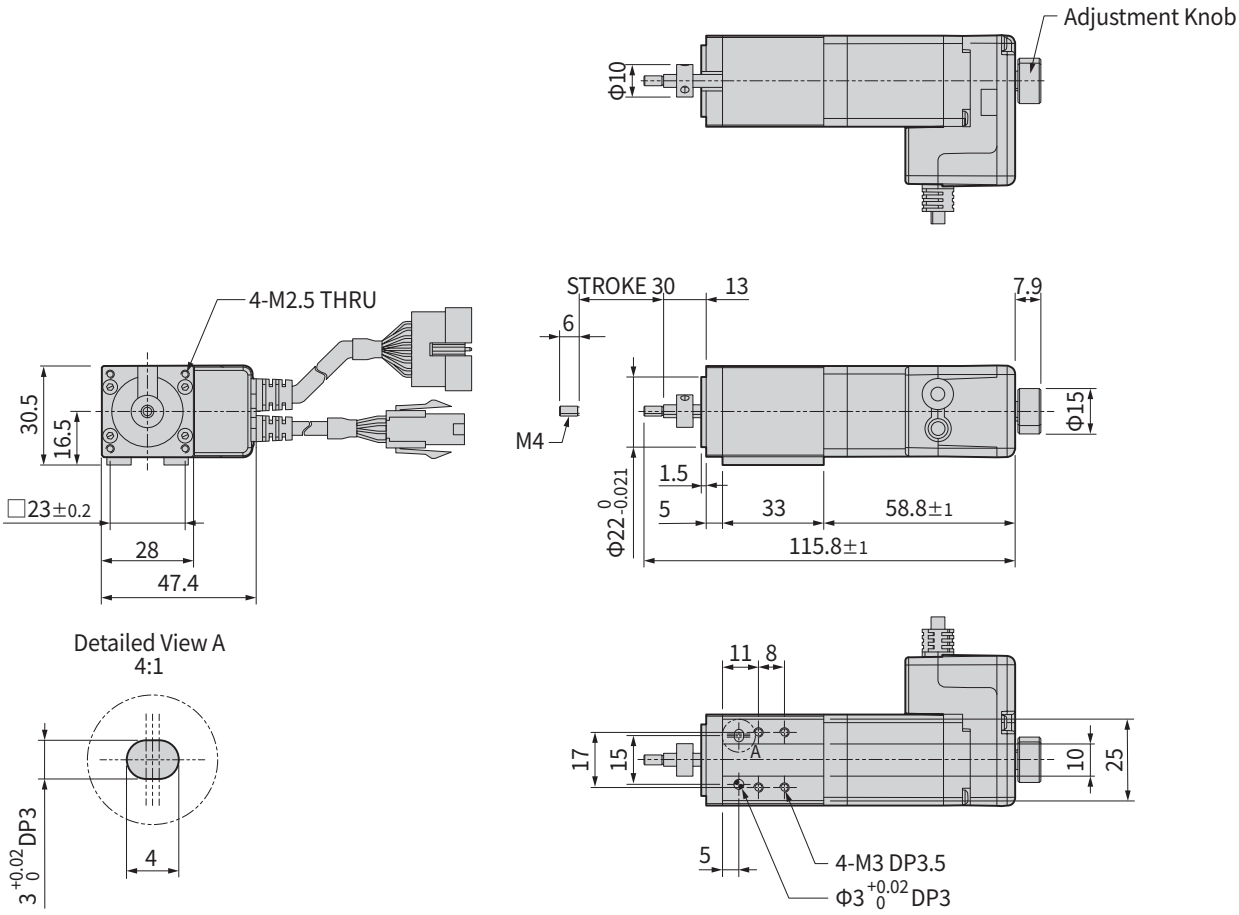


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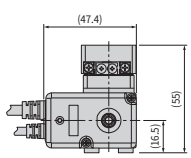
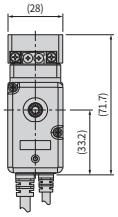
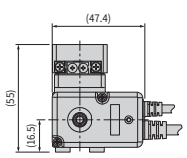
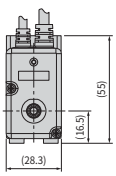
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※ □ includes options and drive types.

Ezi-ROBO-CLAR-28-30R1-□

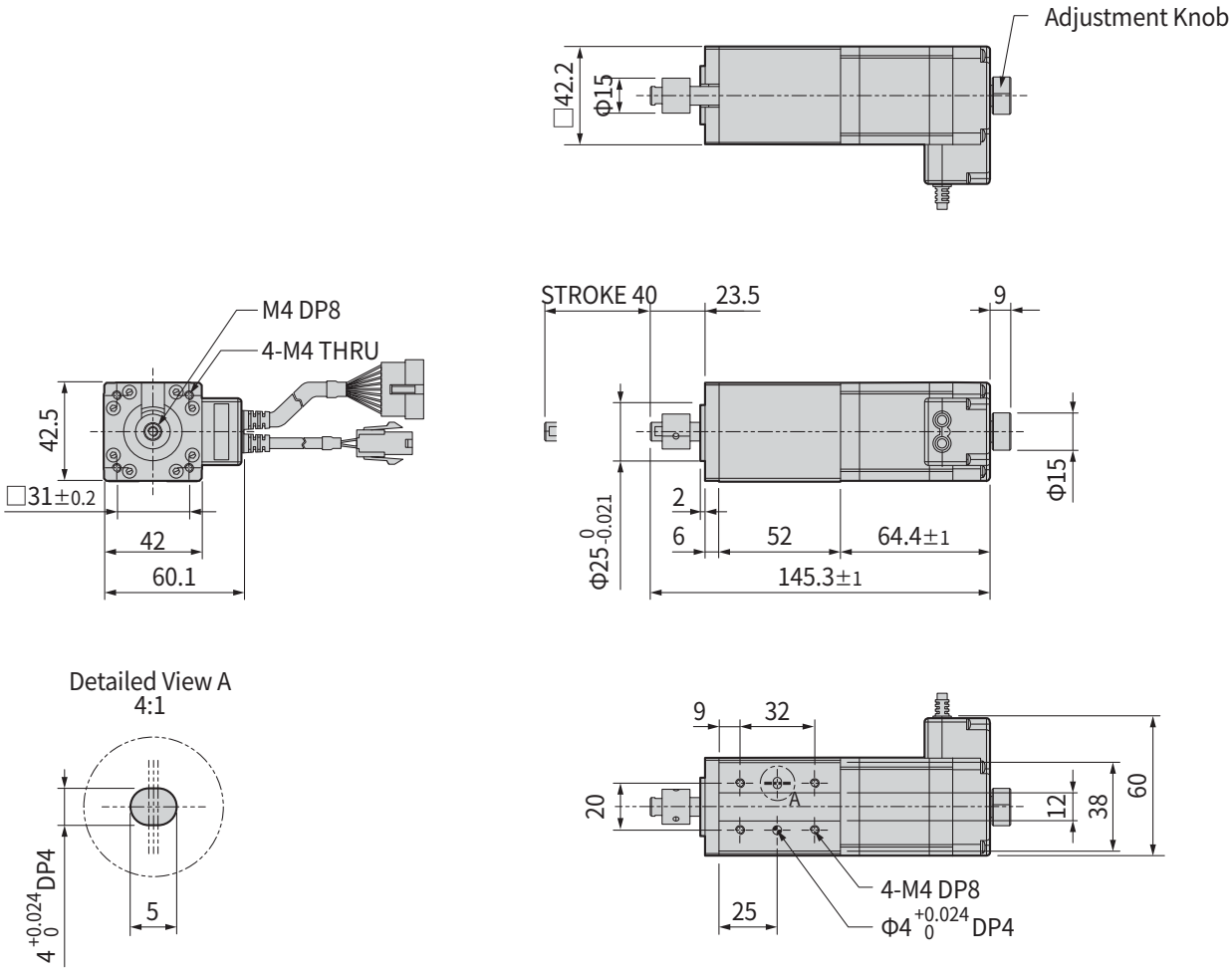


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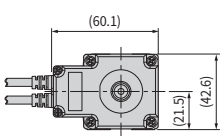
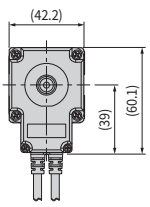
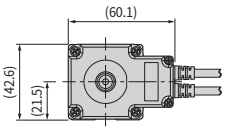
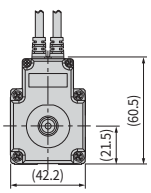
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※ □ includes options and drive types.

Ezi-ROBO-CLAR-42-40R2-□
Ezi-ROBO-CLAR-42-40R8-□

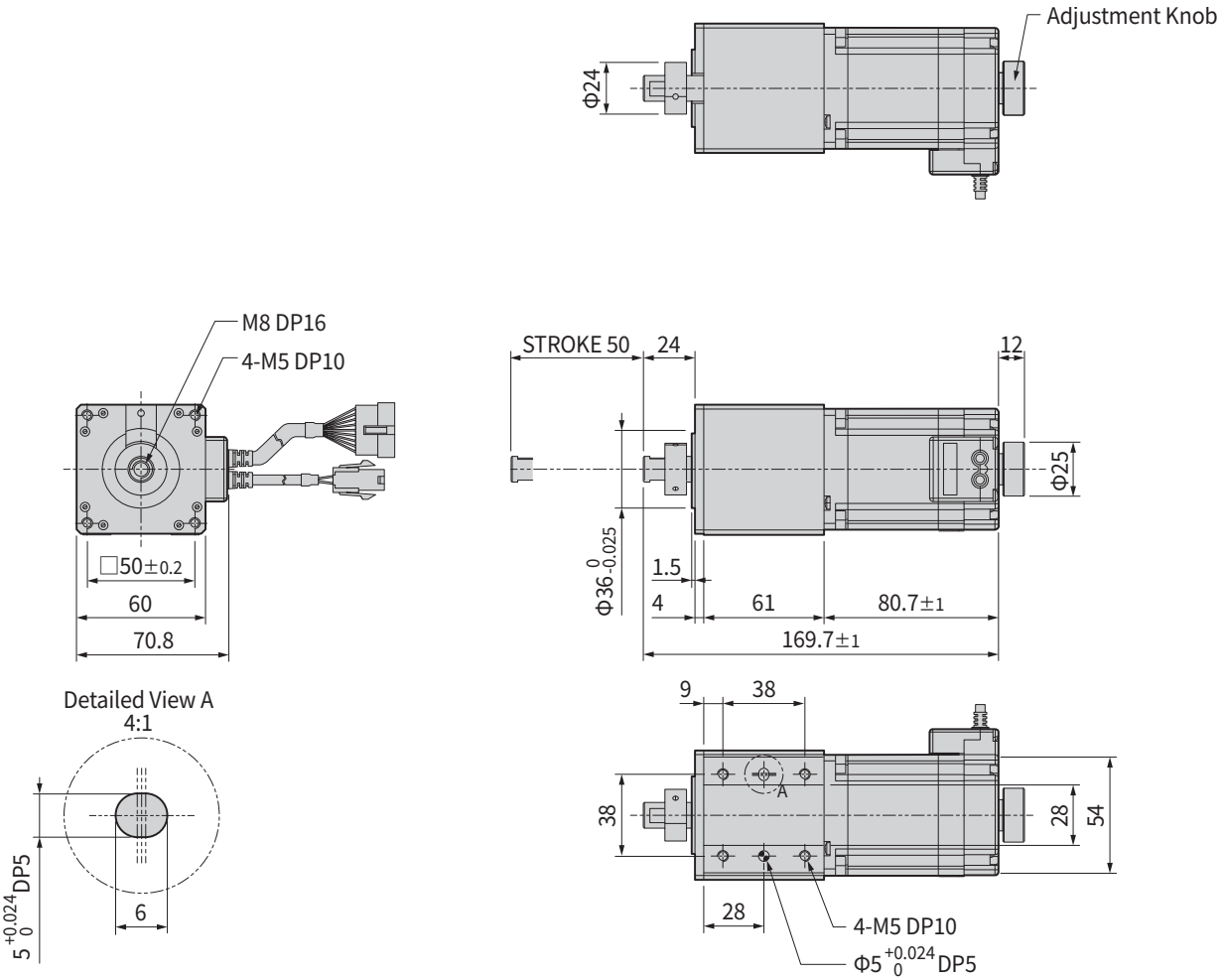


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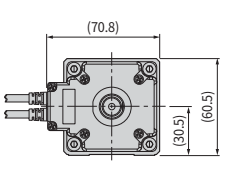
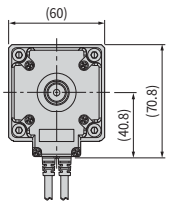
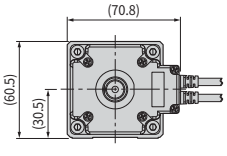
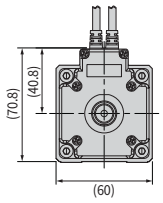
Left	Bottom	Right	Top
			

※ □ includes options and drive types.

Ezi-ROBO-CLAR-56-50R4-□

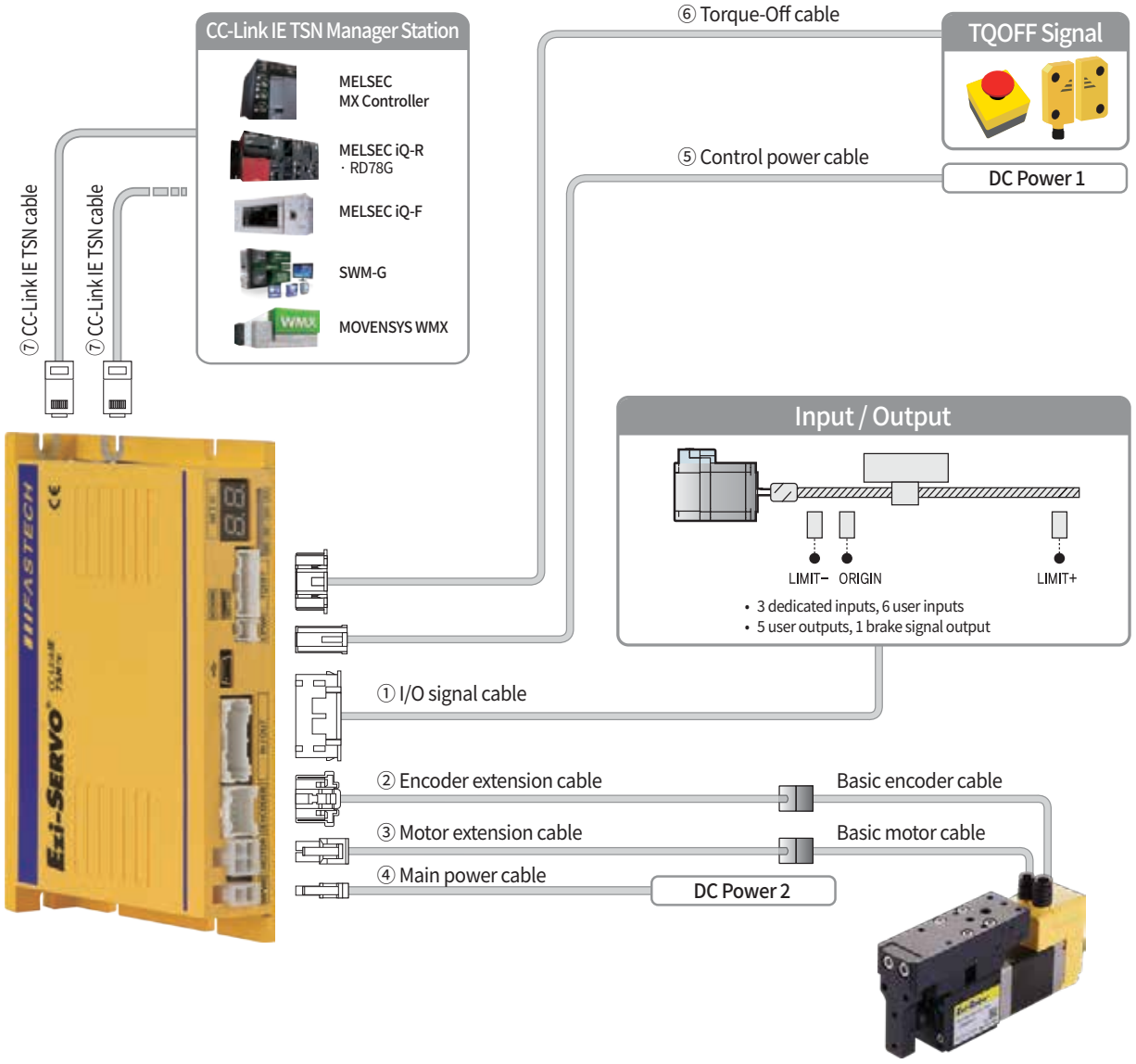


• Cable Direction

Left	Bottom	Right	Top
			

※ □ includes options and drive types.

System Configuration [Standard type Drive]

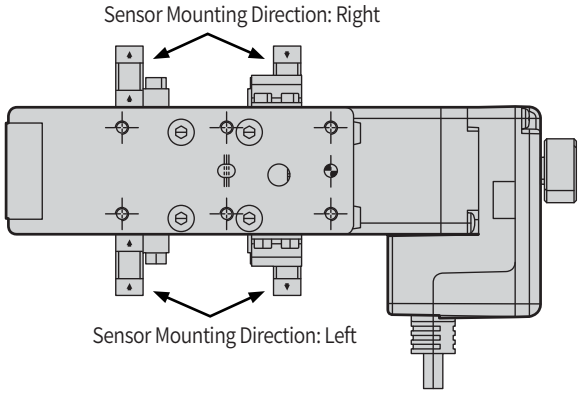


Cable Type	Max. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Encoder Extension Cable	20 m	
③ Motor Extension Cable	20 m	
④ Main Power Cable	2 m	
⑤ Control Power Cable	2 m	
⑥ Torque-Off Cable	20 m	
⑦ CC-Link IE TSN Cable	100 m	
Basic Encoder Cable	0.3 m (Basic length)	Basic cables are attached to motors.
Basic Motor Cable	0.3 m (Basic length)	

Option Model Names and Combinations

Option : P - LT
① ②

①	Sensor Type	**No Mark** : No Sensor **N** : NPN Type Sensor	**P** : PNP Type Sensor
②	Sensor Mounting Direction	**LT** : Left Mounting	**RT** : Right Mounting



• Reference: Cable Direction – Left

		CLA-20	CLA-28	CLA-42	CLA-56
①	Sensor	○	○	○	○
②	Sensor Mounting Direction	LT/RT			

• The sensor is applicable only to the table type.

Limit Sensor Set

1. Type

Part Number	Sensor Output	Applicable Products
PM-R25	NPN	Ezi-ROBO-CLAT-20/28/42/56
PM-R25-P	PNP	

2. Components (PM-R25, PM-F25)



PM-R25 PM-F25

3. Specifications

Category	NPN Type	PNP Type
Sensor Part Number	PM-R25, PM-F25 (Panasonic)	PM-R25-P, PM-F25-P (Panasonic)
Power Supply Voltage	5 ~ 24 V DC ± 10 % Ripple(P-P) 10 % or less	5 ~ 24 V DC ± 10 % Ripple(P-P) 10 % or less
Current Consumption	15 mA or less	15 mA or less
Control Output	NPN Open Collector Output 5 ~ 24 V DC 50 mA or less Residual Voltage 2 V or less (at 100 mA load current)	PNP Open Collector Output 5 ~ 24 V DC 50 mA or less Residual Voltage 2 V or less (at 50 mA load current)
Indicator LED	Detection Display (Red)	Detection Display (Red)
Sensor Logic	Normally Open / Normally Closed (Selectable depending on connection)	Normally Open / Normally Closed (Selectable depending on connection)

4. Precautions for Limit Sensor Set Installation

- Use the limit sensor set in environments where the installation surface temperature does not exceed 55 °C.
- Do not install the limit sensor while power is applied, as this may cause injury or equipment damage.
- After exposure to vibration or impact, check the sensor to ensure it remains properly mounted and functional.
- Accumulated dust on the sensor may cause malfunctions. Regular cleaning or replacement is recommended.

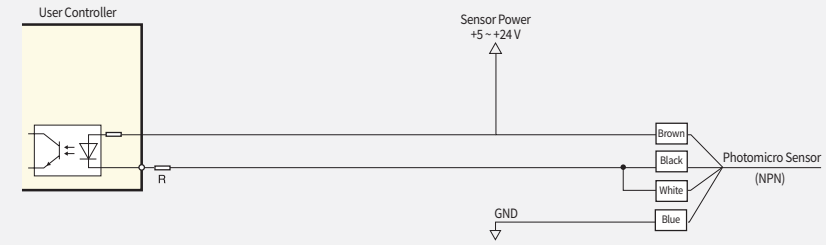
5. Precautions for Sensor Cable Extension

- The cable can be extended up to a maximum of 100 meters using a cable with a cross-sectional area of at least 0.3 mm^2. However, as the cable length increases, voltage drop may occur. Therefore, ensure that the voltage supplied at the end of the sensor's accessory cable remains within the rated range.

Limit Sensor Cable Installation

1. NPN Type

• With User's Controller



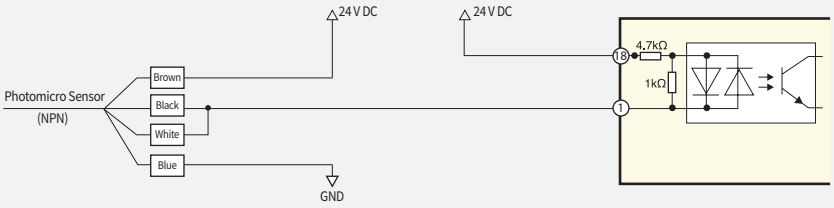
When applying N.C (Normally Closed), connect the black lead wire.

When applying N.O (Normally Open), connect the white lead wire.

Unused output wires must be properly insulated.

The power supply voltage for the sensor is 5 ~ 24 V DC, and the signal current of the sensor can be used up to 50 mA. For details, refer to the controller specifications for wiring. If the signal current of the sensor exceeds the current range of the controller or sensor, connect a current limiting resistor (R).

• With Embedded Motion Controller Type Products (e.g., Ezi-SERVO CC-Link IE TSN)



When applying N.C (Normally Closed), connect the black lead wire.

When applying N.O (Normally Open), connect the white lead wire.

Unused output wires must be properly insulated.

2. PNP Type

• With User's Controller



When applying N.C (Normally Closed), connect the black lead wire.

When applying N.O (Normally Open), connect the white lead wire.

Unused output wires must be properly insulated.

The power supply voltage for the sensor is 5 ~ 24 V DC, and the signal current of the sensor can be used up to 50 mA. For details, refer to the controller specifications for wiring. If the signal current of the sensor exceeds the current range of the controller or sensor, connect a current limiting resistor (R).

• With Embedded Motion Controller Type Products (e.g., Ezi-SERVO CC-Link IE TSN)



When applying N.C (Normally Closed), connect the black lead wire.

When applying N.O (Normally Open), connect the white lead wire.

Unused output wires must be properly insulated.

Supported FASTECH Drive Types

Built-in Torque-Off Function Drive



Multi-Axis Drive (Max. 4-Axis)



- Further details on the products shown in the image above are available on our website.
- If you have questions regarding products not included in this catalog, or any other inquiries, please feel free to contact us.

Homepage cltsn.fastech-motions.com
E-mail sales@fastech-motions.com

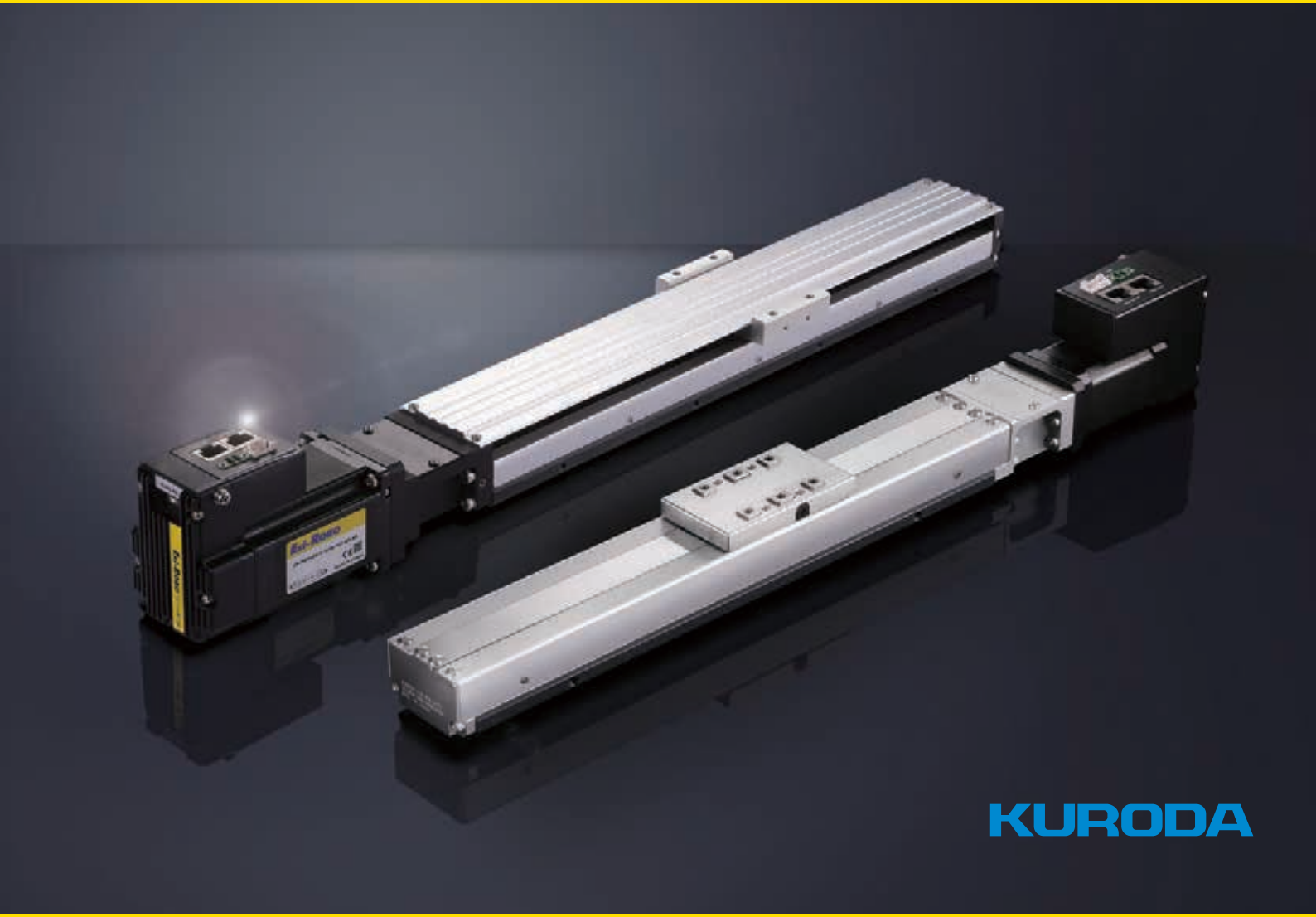
Ezi-ROBO®

Precise Actuator System

CC-Link IE TSN

IGH

- Slider Type Electric Actuator with Stepper Motor & Ball Screw
- Repeatability (±0.005 mm)
- High Strength Steel Frame
- CiA402 Drive Profile
- CC-Link IE TSN-compatible Closed Loop Stepper System
- Tuning Not Required, No Hunting
- Low Heat Generation, High Torque, High Resolution, Fast Response



FASTECH

Fast Accurate Smooth Motion

Ezi-ROBO®

Precise Actuator System

CC-LínkIE TSN

IGH

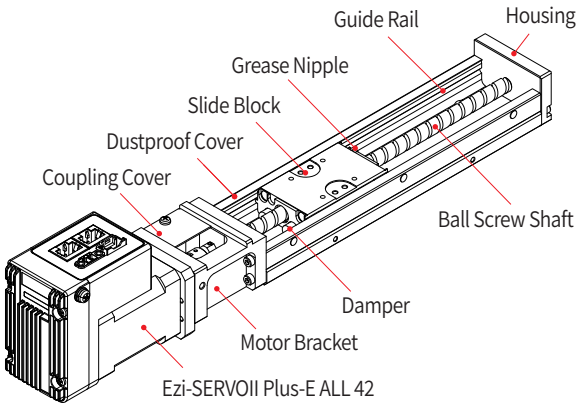
*IGH : Integrated Guide-rail High-ridigity Actuator

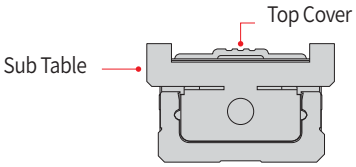


Compact Electric Slider

Ezi-ROBO IGH is an integrated product that combines a ball screw actuator※ and a stepper motor from the Ezi-SERVO series. By eliminating the need for precise alignment during assembly, it significantly reduces labor and setup time.

※ Ball screw actuator: A compact unit that integrates a ball screw and a slide guide.

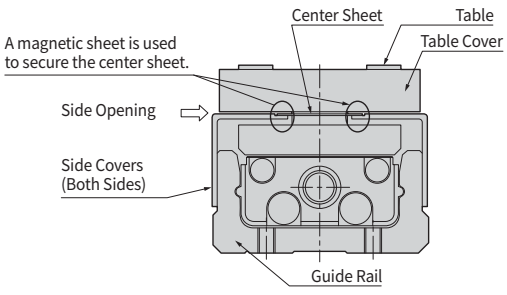




ex) **Ezi-ROBO**-IGH-23

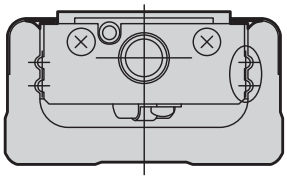
Dustproof Type Available

Ezi-ROBO IGH is designed to accommodate systems requiring dustproof protection. Compared to the cover type, the dustproof model maintains a compact yet highly rigid structure by utilizing the same guide rail width and a steel U-shaped design. To prevent the ingress of external contaminants, the actuator's exposed surface has been minimized. Additionally, the center sheet employs a stainless steel sheet securely held in place by magnets, preventing sheet lifting or displacement.



High-Precision & Rigid Ball Screw Actuator

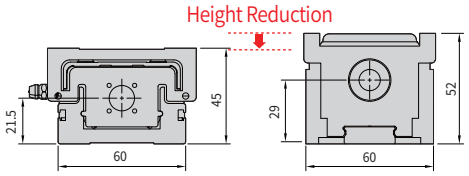
Ezi-ROBO IGH incorporates a ball screw actuator manufactured by KURODA Precision Industries of Japan. The actuator's guide rail features a U-shaped design, providing a compact structure with excellent rigidity. Due to its superior precision, it is ideally suited for applications requiring highly accurate positioning.



U-shaped Guide Rail

Space-Saving with a Compact Size

By installing a specialized linear guide on the body frame instead of using a conventional linear guide, the overall height can be significantly reduced.



Ezi-ROBO-IGH-30S Cross-section

Cross-section of Other Actuator

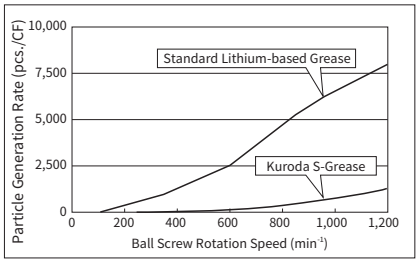
Various Product Lineup

To accommodate various environments, we offer Cover Type, and Dustproof Type models. The Dustproof Type is specially designed with enhanced protection to effectively prevent the ingress of external contaminants.

Cover Type	Dustproof Type
	

Low-Dust Grease

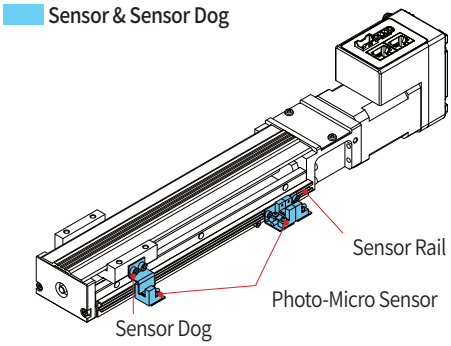
Ezi-ROBO IGH provides low-outgassing grease as an optional feature. This low-outgassing grease is optimized for standard clean environments and offers superior outgassing performance compared to conventional lithium-based grease. With excellent lubrication capability, it ensures stable torque characteristics and helps reduce maintenance requirements for the actuator.



Simple Homing

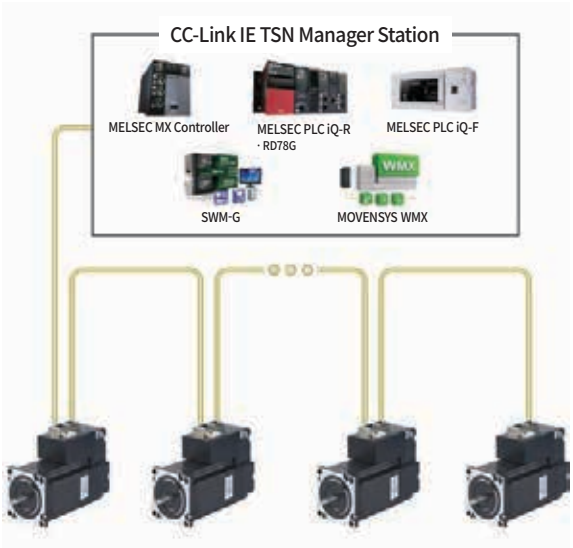
The Ezi-ROBO IGH offers an optional home sensor set to simplify home return operations, one of its most frequently used functions. The set includes all the components required for easy installation of the home sensor.

ex) **Ezi-ROBO**-IGH-23S



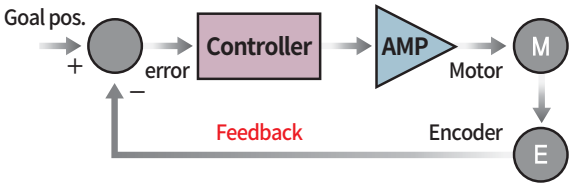
CC-Link IE TSN-compatible Motion Control

Ezi-SERVO CC-Link IE TSN ALL is stepper motor control system using CC-Link IE TSN, high speed Ethernet (1 Gbps Full-Duplex) based industrial network.
Ezi-SERVO CC-Link IE TSN ALL employs CiA402 drive profile and supports Profile Position Mode (PP Mode), Homing Mode (HM Mode) and Cyclic Synchronous Position Mode (CSP Mode).



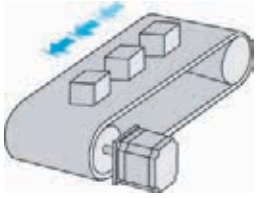
Closed-Loop System

Ezi-SERVO 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 to update the current position every 50 µs. It allows the Ezi-SERVO drive to compensate for the loss of position, ensuring accurate positioning. For example, due to a sudden load change, a conventional stepper motor and drive could lose a step but Ezi-SERVO automatically correct the position by encoder feedback.



Tuning Not Required

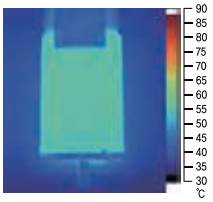
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed.
Ezi-SERVO employs the best characteristics of the stepper motor to eliminate the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



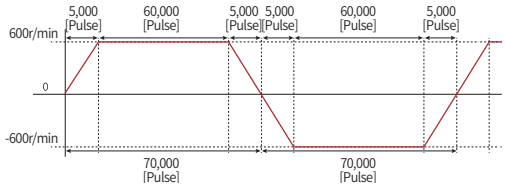
Low Heat Generation / Energy Savings

(Motor Current Control according to load)

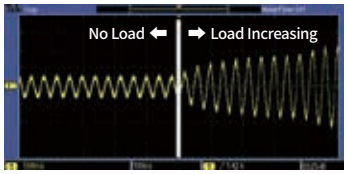
Ezi-SERVO automatically controls motor current according to load. Ezi-SERVO reduces motor current when motor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

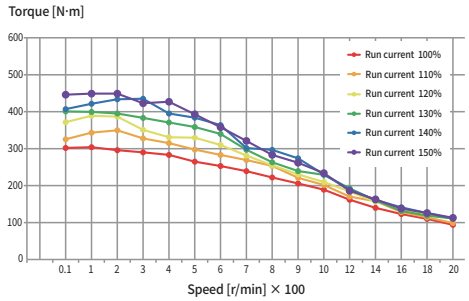


Motor Current
[Example of the Motor Current Control according to load]

High Torque

(Motor Current Setting)

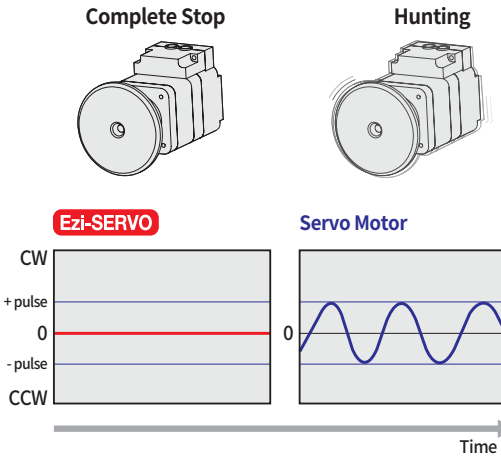
Ezi-SERVO features an internal voltage boosting circuit that increases the motor supply voltage above the drive's input voltage. This elevated motor voltage enhances torque at high speeds and allows the run current to be set up to 150 %. As a result, torque is also improved at low speeds. Ezi-SERVO can achieve approximately 30 % torque improvement across the entire speed range.



※ The torque at low speed is improved about 30 %
Measurement Conditions: Drive = Ezi-SERVO-CT-ALL-42L

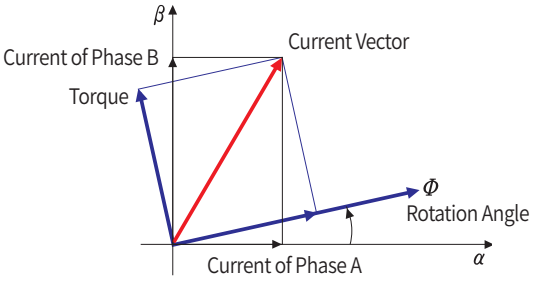
No Hunting

Ezi-SERVO utilizes the unique characteristics of stepper 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.



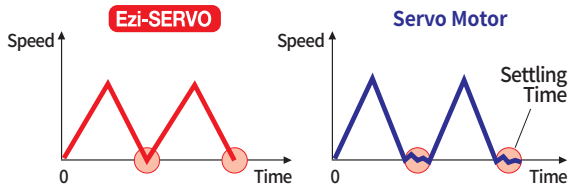
Smooth and Accurate Operation

Ezi-SERVO is a high-precision servo drive, using a high-resolution encoder with 20,000 pulse/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.



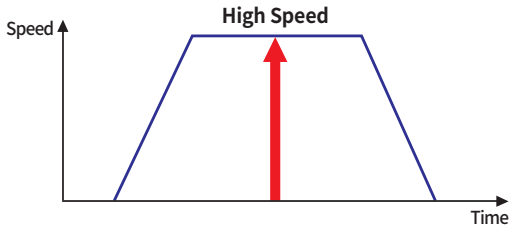
Fast Response

Similar to conventional stepper motors, Ezi-SERVO instantly synchronizes with command pulses providing fast positional response. Ezi-SERVO is the optimum 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.



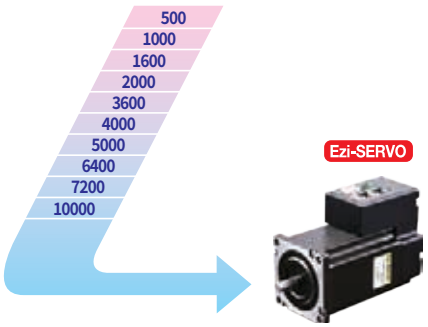
High Speed

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



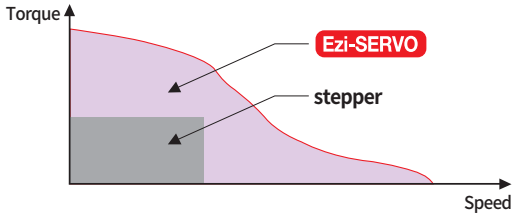
High Resolution

The unit of the position command can be divided precisely. (Max. 10,000 pulse/revolution)



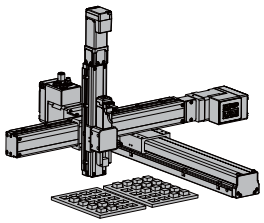
High Torque / Continuous Operation

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

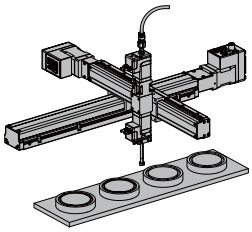


Examples

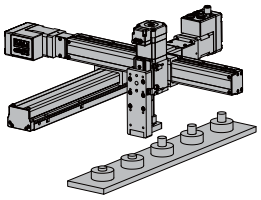
Pallet-to-Pallet Workpiece Placement System



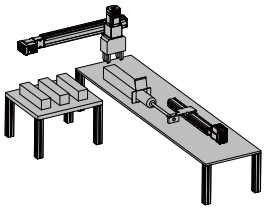
Automatic Dispensing



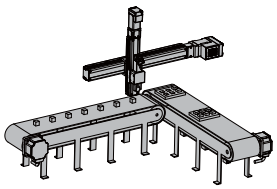
Component Assembly System



Packaging



Conveyor Logistics Transfer



Ezi-ROBO IGH Part Numbering

Ezi-ROBO-IGH-23 S-100-R 2-42 BK U A-CT-ALL-R-Option

- **Series**
- **Model Type**
- **Installation Dimensions**
  - 23 : 50.5 mm
  - 30 : 60 mm
- **Actuator Type**
  - S: Cover Type
  - C: Dustproof Type
- **Guide Rail Length**
  - 150 ~ 500 mm
- **Ball Screw Grade**
  - R : Standard
  - P : Precision
- **Lead**
  - 2 : 2 mm 5 : 5 mm
  - 10 : 10 mm
- **Motor Size**
  - 42 : 42 mm 60 : 60 mm
- **Motor Brake**
  - Blank : None
  - BK : With Brake
- **Motor Direction**
  - U: Up D: Down
  - L: Left R: Right
- **Encoder Resolution**
  - A : 10,000 P/R
- **Drive Series**
  - CT-ALL : CC-Link IE TSN ALL
- **Option**
  - Sensor
  - Positioning Pinhole
  - Low-Dust Grease
  - Surface Treatment

Applicable Product Series

Product	Specifications
Ezi-SERVO CC-Link IE TSN ALL	CC-Link IE TSN Compatible, Motor+Drive Integrated type



Ezi-SERVO CC-Link IE TSN ALL

Actuator and Drive Combination

Unit Part Number	Motor-Drive Integrated Model Number
Ezi-ROBO-IGH-23S-□*1-42□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-R
Ezi-ROBO-IGH-30S-□*1-60□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB60L-A-R
Ezi-ROBO-IGH-23C-□*1-42□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-R
Ezi-ROBO-IGH-30C-□*1-60□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB60L-A-R

Actuator and Drive Combination with Brake

Unit Part Number	Motor-Drive Integrated Model Number
Ezi-ROBO-IGH-23S-□*1-42BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-BK-R
Ezi-ROBO-IGH-30S-□*1-60BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB60L-A-BK-R
Ezi-ROBO-IGH-23C-□*1-42BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-BK-R
Ezi-ROBO-IGH-30C-□*1-60BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB60L-A-BK-R

*1: Indicates the stroke.
*2: Indicates the motor direction.

Actuator Combination

Unit Part Number			Ezi-ROBO-IGH-23	Ezi-ROBO-IGH-30
Installation Dimensions		[mm]	50.5	60
Actuator Type	Cover Type		○	○
	Dustproof Type		○	○
Lead		[mm]	2, 5	5, 10
Ball screw grade	R(Standard Grade)			
	P(Precision Grade)			
Guide Rail Length (mm)	100		-	-
	150		○	○
	200		○	○
	250		○	-
	300		○	○
	400		-	○
	500		-	○
Motor Size		[mm]	42L	60L
Motor Brake			○	○
Encoder Resolution	Standard Motor	[P/R]	B(20,000)	B(20,000)
	Motor + Drive Integrated		A(10,000)	A(10,000)
Option	Sensor	NPN	○	○
		PNP	○	○
	Positioning Pinhole		○	○
	Low-Dust Grease		○	○
	Surface Treatment		○	○

- The Dustproof Type do not support the application of positioning pinholes.
- For detailed information on options, please refer to page 273 of the catalog.

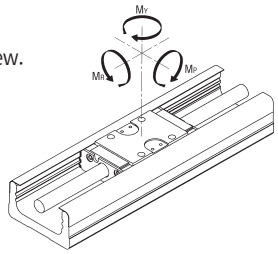
Specifications of Drive

<table>
<tr><th colspan="2">Part Number</th><th>Ezi-SERVO-CT-ALL-RB42 series</th><th>Ezi-SERVO-CT-ALL-RB60 series</th></tr>
<tr><td colspan="2">Input Voltage</td><td colspan="2">24 V DC ± 10 %</td></tr>
<tr><td colspan="2">Control Method</td><td colspan="2">Closed loop control with 32 bit MCU</td></tr>
<tr><td colspan="2">Current Consumption</td><td colspan="2">Max. 500 mA/axis (Except motor current)</td></tr>
<tr><td rowspan="3">Operating Condition</td><td>Ambient Temperature</td><td colspan="2">· In Use: 0 ~ 50 °C
· In Storage: -20 ~ 70 °C</td></tr>
<tr><td>Humidity</td><td colspan="2">· In Use: 35 ~ 85 % RH (Non-Condensing)
· In Storage: 10 ~ 90 % RH (Non-Condensing)</td></tr>
<tr><td>Vib. Resist.</td><td colspan="2">0.5 g</td></tr>
<tr><td rowspan="3">Function</td><td>Rotation Speed</td><td colspan="2">0 ~ 2,000 r/min</td></tr>
<tr><td>Resolution</td><td colspan="2">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
(Selectable by parameter)</td></tr>
<tr><td>Error Type</td><td colspan="2">Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, Encoder Connection Error, Main Power Voltage Error, In-Position Error, ROM Error, Position Overflow Error, Torque Off Circuit Error</td></tr>
<tr><td rowspan="3">CC-Link IE TSN</td><td>Communication Protocol</td><td colspan="2">CC-Link IE TSN Class B</td></tr>
<tr><td>Operation Mode</td><td colspan="2">CiA402 Drive Profile: Cyclic Synchronous Position Mode, Profile Position Mode, Homing Mode</td></tr>
<tr><td>Synchronization</td><td colspan="2">Minimum Cycle Time: 250 µs / Synchronous Communication(CSP, PP, HM) / Asynchronous Communication(PP, HM)</td></tr>
<tr><td rowspan="2">I/O Signal</td><td>Input Signals</td><td colspan="2">3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 3 user inputs (photocoupler inputs)</td></tr>
<tr><td>Output Signals</td><td colspan="2">2 user outputs (photocoupler outputs), 1 brake signal output</td></tr>
</table>

How to Read Specifications

Model			Ezi-ROBO-IGH-23C-□ *1			
① Actuator Type			Dustproof Type			
② Lead		[mm]	2, 5			
③ Guide Rail Length		[mm]	150	200	250	300
④ Stroke		[mm]	66	116	166	216
⑤ Positioning Accuracy*2		[mm]	0.070 (0.060)	0.075 (0.060)	0.085 (0.060)	0.090 (0.060)
⑥ Repeatability*2		[mm]	±0.005 (±0.003)			
⑦ Backlash*2		[mm]	0.005 (0.005)			
⑧ Travel Parallelism*2		[mm]	0.015 (0.015)			
⑨ Maximum Speed*3	Standard Motor	[mm/s]	Lead 2: 80, Lead 5: 200			
	Motor + Drive Integrated	[mm/s]	Lead 2: 65, Lead 5: 165			
⑩ Starting Torque		[N·m]	0.06			
⑪ Permissible load*4	Horizontal	[kg]	7.5			
	Vertical	[kg]	5			
⑫ Permissible moment*5		[N·m]	M_P: 29 M_Y: 69 M_R: 34			
⑬ Actuator Weight		[kg]	1.37	1.57	1.76	1.96
⑭ Motor + Brake Weight	Motor	[kg]	0.47 ~ 0.52 (Varies by Motor Type)			
	Brake		0.26			

*1: □ includes the option and drive name.
*2: The values in parentheses are the specifications of the precision-grade ball screw.
*3: The speed is limited by the motor's maximum speed and the permissible rotation speed of the ball screw.
*4: The permissible load varies depending on speed and acceleration/deceleration.
*5: The direction definition of the permissible moment is as shown on the right.



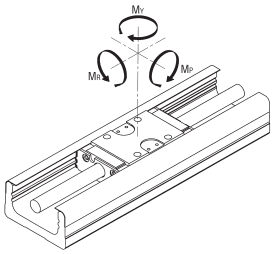
Description of Specification Items

No.	Item	Description
①	Actuator Type	Classified into General Environment and Dustproof Environment Types.
②	Lead	The distance that the ball screw travels in the linear direction when the motor rotates once.
③	Guide Rail Length	Refers to the length of the guide rail body, which is different from the stroke and overall length.
④	Stroke	This is the maximum distance that the load can be reciprocated.
⑤	Positioning Accuracy	The degree of error between the actual position traveled and the commanded position when moved to a specified location.
⑥	Repeatability	This value indicates the amount of error that occurs when the same position is commanded repeatedly in the same direction. (The accuracy is the value when the temperature and load are constant.)
⑦	Backlash	Refers to the gap between the ball screw and nut, indicating the looseness between the two components.
⑧	Travel Parallelism	This value indicates the degree to which the running surface is tilted relative to the surface on which the actuator is mounted.
⑨	Maximum Speed	This is the maximum speed at which the load can be reciprocated.
⑩	Starting Torque	The amount of torque required to start the motor's rotation from a stationary position.
⑪	Permissible load	The maximum load that can be transported when the compact linear actuator is used in the horizontal or vertical direction.
⑫	Permissible moment	The maximum force the guide that can handle when a workpiece is placed off-center relative to the compact linear actuator's guide.
⑬	Actuator Weight	The weight of the actuator (measured with the motor installed).
⑭	Motor + Brake Weight	The combined weight of the motor and brake.

Specification [IGH23 Type]

Model			Ezi-ROBO-IGH-23S-□*1				Ezi-ROBO-IGH-23C-□*1			
Actuator Type			Cover Type				Dustproof Type			
Lead		[mm]	2, 5				2, 5			
Guide Rail Length		[mm]	150	200	250	300	150	200	250	300
Stroke		[mm]	76	126	176	226	66	116	166	216
Positioning Accuracy*2		[mm]	0.070 (0.060)	0.075 (0.060)	0.085 (0.060)	0.090 (0.060)	0.070 (0.060)	0.075 (0.060)	0.085 (0.060)	0.090 (0.060)
Repeatability*2		[mm]	±0.005 (±0.003)				±0.005 (±0.003)			
Backlash*2		[mm]	0.005 (0.005)				0.005 (0.005)			
Running Parallelism*2		[mm]	0.015 (0.015)				0.015 (0.015)			
Maximum Speed*3	Standard Motor	[mm/s]	Lead 2: 80, Lead 5: 200				Lead 2: 80, Lead 5: 200			
	Motor + Drive Integrated	[mm/s]	Lead 2: 65, Lead 5: 165				Lead 2: 65, Lead 5: 165			
Starting Torque		[N·m]	0.06							
Permissible load*4	Horizontal	[kg]	7.5				7.5			
	Vertical	[kg]	5				5			
Permissible moment*5		[N·m]	M_P: 46 M_Y: 51 M_R: 134				M_P: 29 M_Y: 69 M_R: 34			
Actuator Weight		[kg]	1.11	1.32	1.52	1.73	1.37	1.57	1.76	1.96
Motor + Brake Weight	Motor	[kg]	0.47 ~ 0.52 (Varies by Motor Type)				0.47 ~ 0.52 (Varies by Motor Type)			
	Brake		0.26				0.26			

*1: □ includes optional components and drive name.
*2: The values in parentheses indicate the specifications for precision-grade ball screws.
*3: The maximum speed is limited by the motor's maximum speed and the permissible rotational speed of the ball screw.
*4: The permissible load varies depending on speed and acceleration/deceleration. Please refer to the table below.
*5: The definition of permissible moment direction is shown on the right.



Permissible load Table by Speed and Acceleration / Deceleration

Lead 2 mm — Permissible load Unit : kg

Mounting Direction	Horizontal			Vertical		
Speed [mm/s]	Acceleration[m/s²]					
	0.5	1	3	0.5	1	3
20	7.5	7.5	7.5	5	5	4
40	6	6	-	4	4	-
60	5	5	-	3.5	3.5	-
80	4.5	4.5	-	3.5	3.5	-

Lead 5 mm — Permissible load Unit : kg

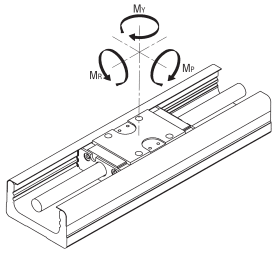
Mounting Direction	Horizontal					Vertical				
Speed [mm/s]	Acceleration[m/s²]									
	0.5	1	3	5	7	0.5	1	3	5	7
20	7.5	7.5	7.5	7.5	5.5	5	5	5	5	2.5
50	5.5	5.5	5.5	5.5	3.5	4	4	4	4	1.5
100	4.5	4.5	4.5	4.5	-	3	3	3	1.5	-
150	4	4	4	-	-	3	2.5	1	-	-
200	3.5	3.5	-	-	-	2.5	2	-	-	-

Applicable models			
Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL	

Specification [IGH30 Type]

Model			Ezi-ROBO-IGH-30S-□*1					Ezi-ROBO-IGH-30C-□*1				
Actuator Type			Cover Type					Cleanroom Type				
Lead		[mm]	5, 10					5, 10				
Guide Rail Length		[mm]	150	200	300	400	500	150	200	300	400	500
Stroke		[mm]	60	110	210	310	410	50	100	200	300	400
Positioning Accuracy*2		[mm]	0.070 (0.060)	0.080 (0.060)	0.090 (0.060)	0.095 (0.060)	0.100 (0.100)	0.070 (0.060)	0.080 (0.060)	0.090 (0.060)	0.095 (0.060)	0.100 (0.100)
Repeatability*2		[mm]	±0.005 (±0.003)					±0.005 (±0.003)				
Backlash*2		[mm]	0.005 (0.005)					0.005 (0.005)				
Running Parallelism*2		[mm]	0.015 (0.015)				0.025 (0.025)	0.015 (0.015)				0.025 (0.025)
Maximum Speed*3	Standard Motor	[mm/s]	Lead 5: 200, Lead 10: 400					Lead 5: 200, Lead 10: 400				
	Motor + Drive Integrated	[mm/s]	Lead 5: 165, Lead 10: 330					Lead 5: 165, Lead 10: 330				
Starting Torque		[N·m]	0.15					0.15				
Permissible load*4	Horizontal	[kg]	15					15				
	Vertical	[kg]	12					12				
Permissible moment*5		[N·m]	MP: 101 MY: 120 MR: 260					MP: 43 MY: 118 MR: 50				
Actuator Weight		[kg]	1.7	2.1	2.7	3.2	4.1	2.33	2.63	3.33	3.93	4.63
Motor + Brake Weight	Motor	[kg]	1.54 ~ 1.80 (Varies by Motor Type)					1.54 ~ 1.80 (Varies by Motor Type)				
	Brake		0.44					0.44				

*1: □ includes optional components and drive name.
*2: The values in parentheses indicate the specifications for precision-grade ball screws.
*3: The maximum speed is limited by the motor's maximum speed and the permissible rotational speed of the ball screw.
*4: The permissible load varies depending on speed and acceleration/deceleration. Please refer to the table below
*5: The definition of permissible moment direction is shown on the right.



Permissible load Table by Speed and Acceleration / Deceleration

Lead 5 mm — Permissible load Unit : kg

Mounting Direction	Horizontal				Vertical			
Speed [mm/s]	Acceleration[m/s²]							
	0.5	1	3	5	0.5	1	3	5
20	15	15	15	6.5	12	12	12	2
50	11	11	11	-	8.5	8.5	8.5	-
100	9	9	4.5	-	7	7	1	-
150	8	8	-	-	6	6	-	-
200	7.5	7	-	-	5.5	0.5	-	-

Lead 10 mm — Permissible load Unit : kg

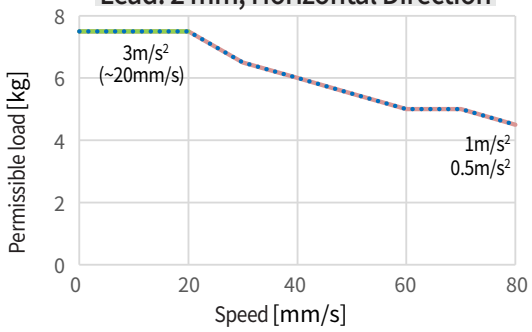
Mounting Direction	Horizontal						Vertical					
Speed [mm/s]	Acceleration[m/s²]											
	0.5	1	3	5	7	10	0.5	1	3	5	7	10
20	15	15	15	15	15	5	12	12	12	12	7.5	2.5
50	11	11	11	11	7.7	7.5	8.5	8.5	8.5	8.5	5	0.5
100	9	9	9	9	7.5		7	7	7	7	3	
150	8	8	7.5	7.5			6	6	6	3		
200	7.5	7	7	5.5			5	5.5	5.5	1.5		
250	7	7	6.5				5.5	5.5	1.5			
300	7	6.5	2.5				5.5	5	0.5			
350	6.5	6.5					4.5	3				
400	6.5	6					3.5	2.5				

Applicable models			
Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL	

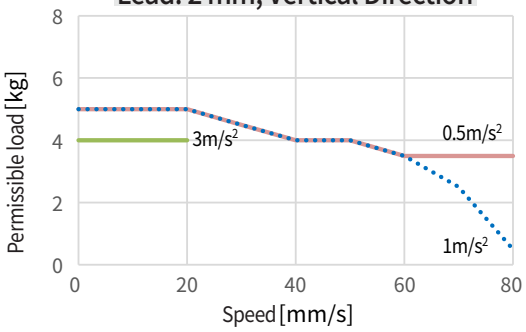
Permissible load Graph by Speed and Acceleration / Deceleration

IGH-23

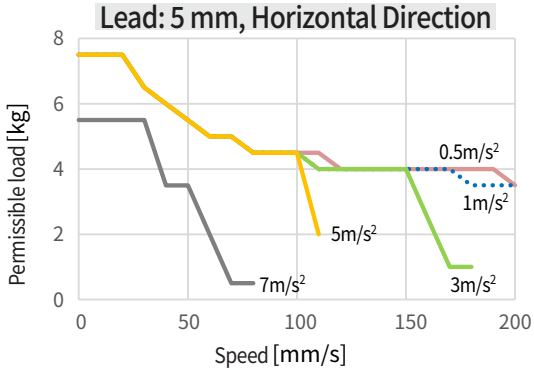
Lead: 2 mm, Horizontal Direction



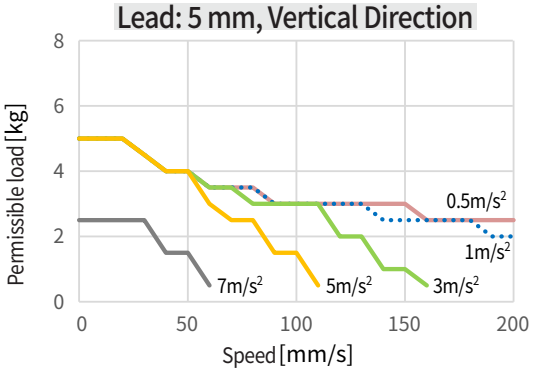
Lead: 2 mm, Vertical Direction



Lead: 5 mm, Horizontal Direction

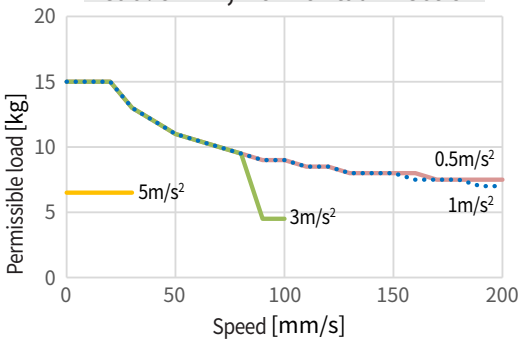


Lead: 5 mm, Vertical Direction

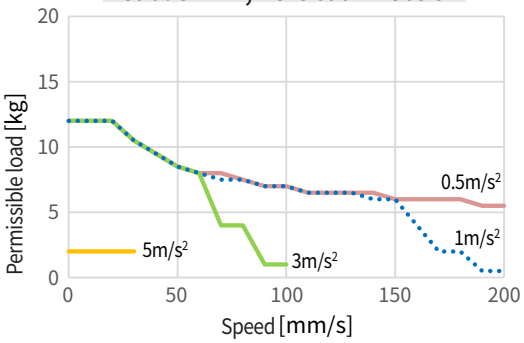


IGH-30

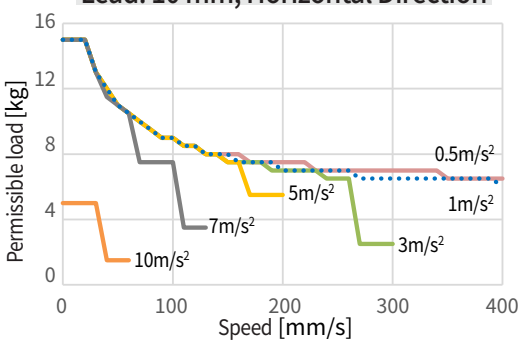
Lead: 5 mm, Horizontal Direction



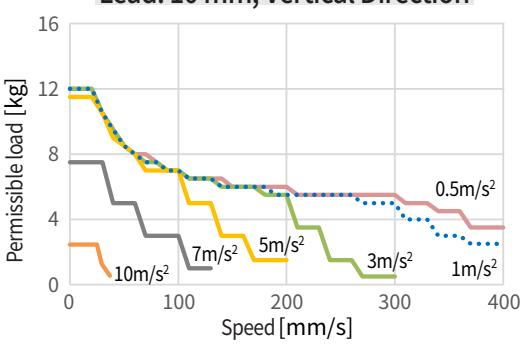
Lead: 5 mm, Vertical Direction



Lead: 10 mm, Horizontal Direction



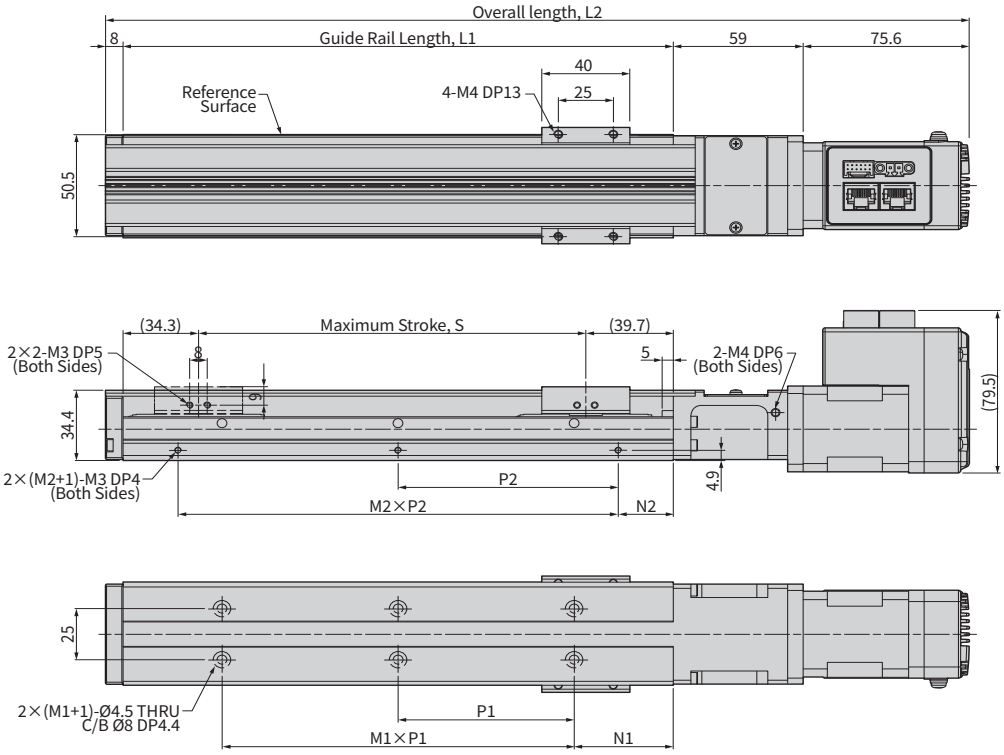
Lead: 10 mm, Vertical Direction



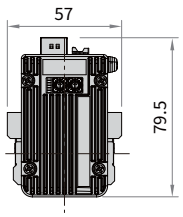
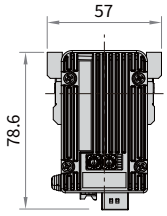
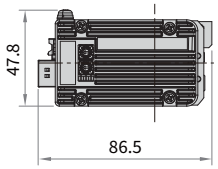
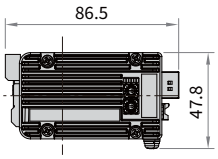
Dimensions of Product : Cover Type [mm]

When using an integrated drive

Ezi-ROBO-IGH-23S-□-R2-42UA-CT-ALL-R
Ezi-ROBO-IGH-23S-□-R5-42UA-CT-ALL-R



- Motor Direction

Up	Down	Left	Right
			

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

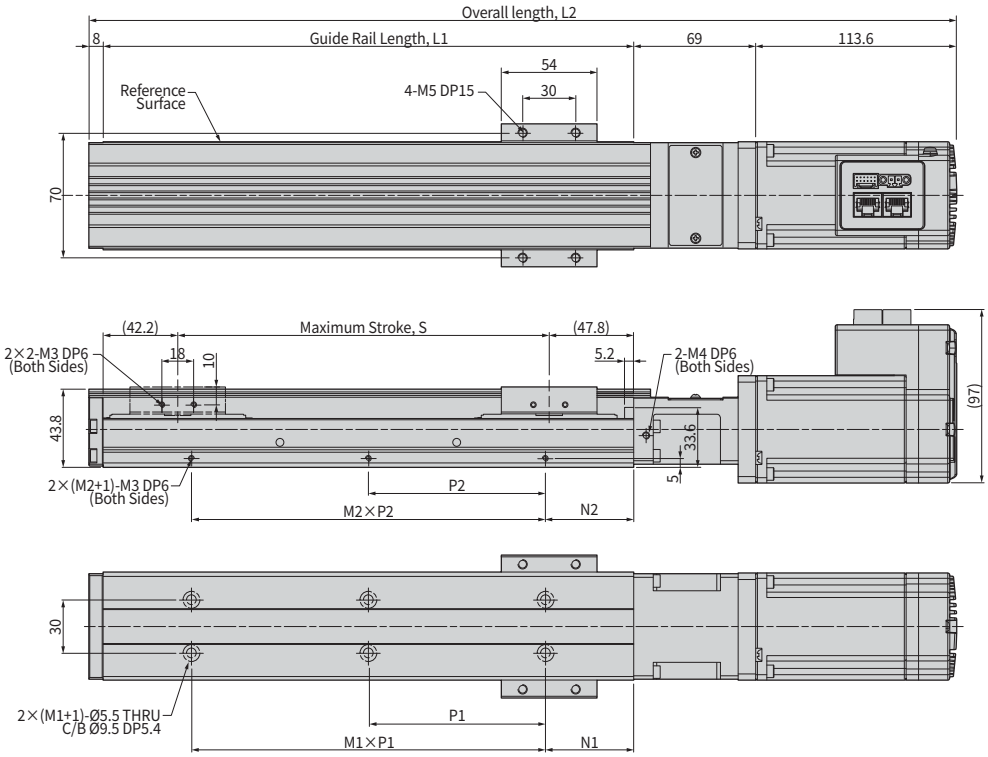
Unit : mm

L1, Guide Rail Length	L2 (Overall Length)	Stroke, S	N1	M1XP1	N2	M2XP2
150	292.6	76	35	1 X 80	25	1 X 100
200	342.6	126	20	2 X 80	50	
250	392.6	176	45		25	2 X 100
300	442.6	226	30	3 X 80	50	

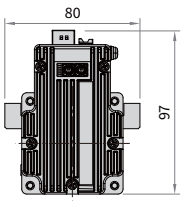
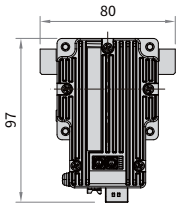
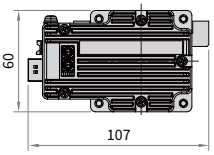
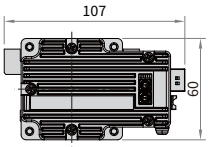
Dimensions of Product : Cover Type [mm]

When using an integrated drive

Ezi-ROBO-IGH-30S-□-R5-60UA-CT-ALL-R
Ezi-ROBO-IGH-30S-□-R10-60UA-CT-ALL-R



- Motor Direction

Up	Down	Left	Right
			

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

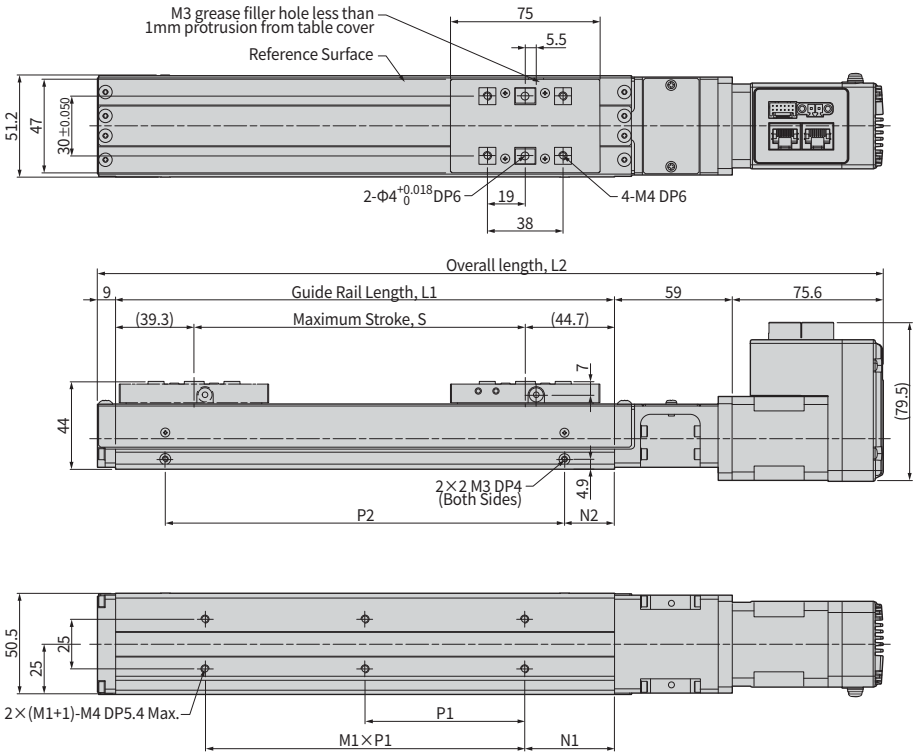
Unit : mm

L1, Guide Rail Length	L2 (Overall Length)	Stroke, S	N1	M1XP1	N2	M2XP2
150	340.6	60	25	1 X 100	25	1 X 100
200	390.6	110	50		50	
300	490.6	210		2 X 100		2 X 100
400	590.6	310		3 X 100		3 X 100
500	690.6	410		4 X 100		4 X 100

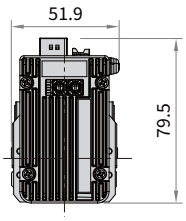
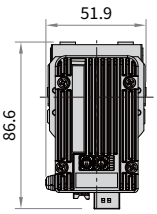
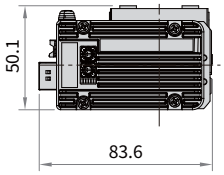
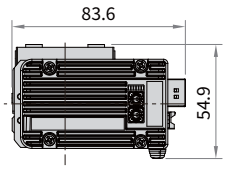
Dimensions of Product : Dustproof Type [mm]

When using an integrated drive

Ezi-ROBO-IGH-23C-□-R2-42UA-CT-ALL-R
Ezi-ROBO-IGH-23C-□-R5-42UA-CT-ALL-R



- Motor Direction

Up	Down	Left	Right
			

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

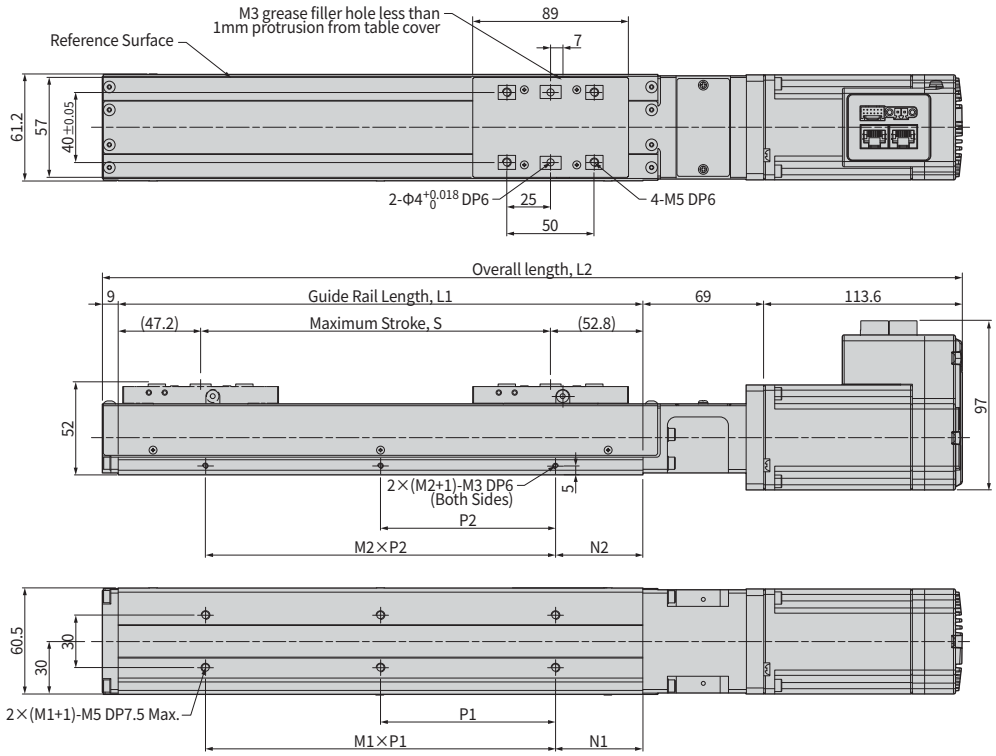
Unit : mm

L1, Guide Rail Length	L2 (Overall Length)	Stroke, S	N1	M1XP1	N2	P2
150	293.6	66	35	1 X 80	25	100
200	343.6	116	20	2 X 80	50	
250	393.6	166	45		25	200
300	443.6	216	30	3 X 80	50	

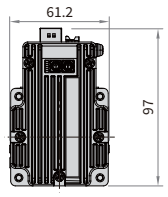
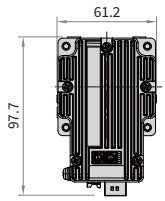
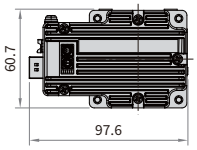
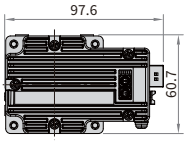
Dimensions of Product : Dustproof Type [mm]

When using an integrated drive

Ezi-ROBO-IGH-30C-□-R5-60UA-CT-ALL-R
Ezi-ROBO-IGH-30C-□-R10-60UA-CT-ALL-R



- Motor Direction

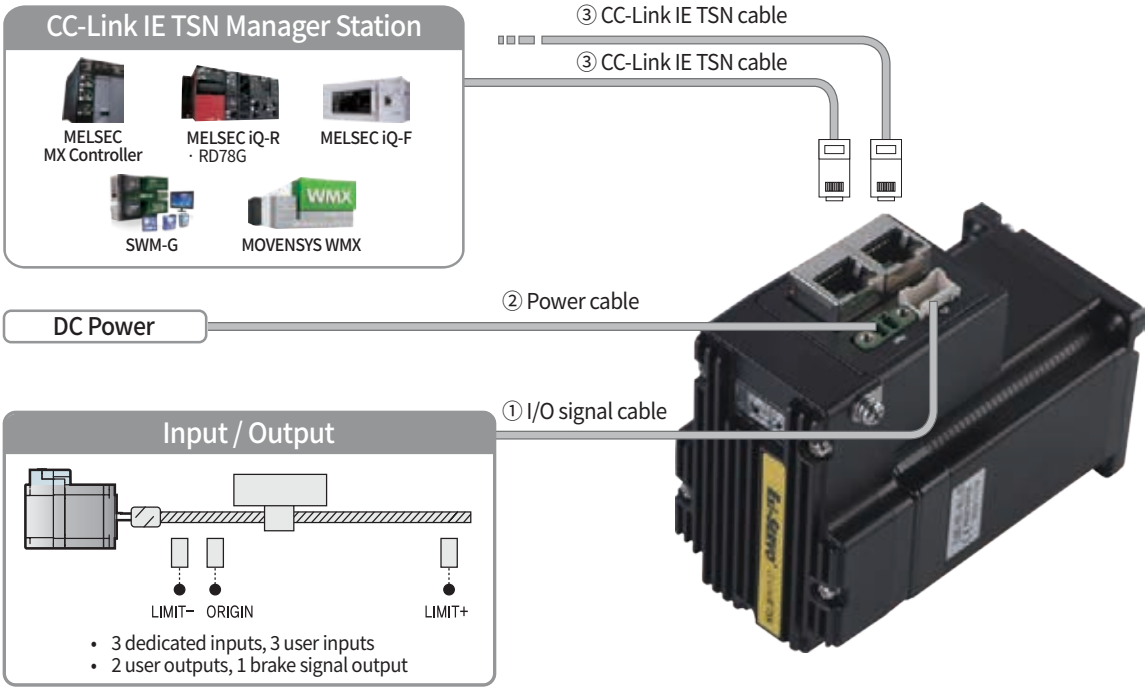
Up	Down	Left	Right
			

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

Unit : mm

L1, Guide Rail Length	L2 (Overall Length)	Stroke, S	N1	M1XP1	N2	M2XP2
150	341.6	50	25	1 X 100	25	1 X 100
200	391.6	100	50		50	
300	491.6	200		2 X 100		1 X 200
400	591.6	300		3 X 100		1 X 300
500	691.6	400		4 X 100		1 X 400

System Configuration

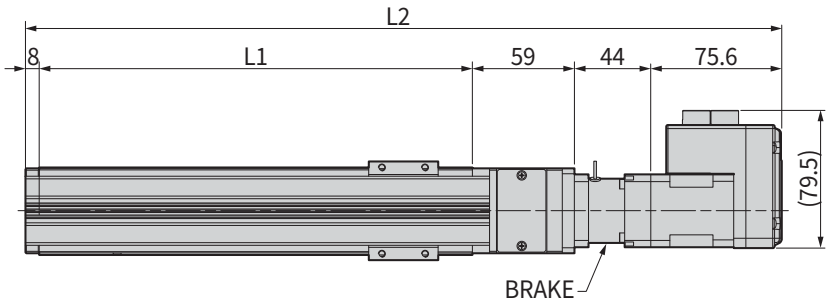


Cable Type	Max. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Power Cable	2 m	
③ CC-Link IE TSN Cable	100 m	

Dimensions with Brake Mounted

When using an integrated drive

Ezi-ROBO-IGH-23S-□-R2-42BKRA-CT-ALL-R
Ezi-ROBO-IGH-23S-□-R5-42BKRA-CT-ALL-R



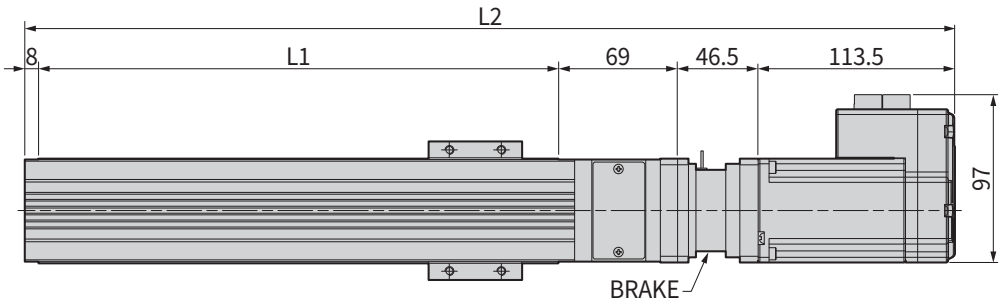
Unit : mm

L1 (Guide Rail Length)	L2 (Overall Length)		Stroke, S
	Before Brake Installation	After Brake Installation	
150	292.6	337.6	76
200	342.6	387.6	126
250	392.6	437.6	176
300	442.6	487.6	226

※ The symbol "□" indicates the stroke.

When using an integrated drive

Ezi-ROBO-IGH-30S-□-R5-60BKRA-CT-ALL-R
Ezi-ROBO-IGH-30S-□-R10-60BKRA-CT-ALL-R



Unit : mm

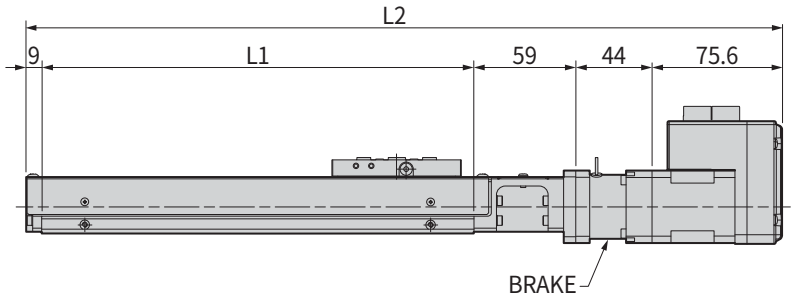
L1 (Guide Rail Length)	L2 (Overall Length)		Stroke, S
	Before Brake Installation	After Brake Installation	
150	340.6	387.1	60
200	390.6	437.1	110
300	490.6	537.1	210
400	590.6	637.1	310
500	690.6	737.1	410

※ The symbol "□" indicates the stroke.

Dimensions with Brake Mounted

When using an integrated drive

Ezi-ROBO-IGH-23C-□-R2-42BKUA-CT-ALL-R
Ezi-ROBO-IGH-23C-□-R5-42BKUA-CT-ALL-R



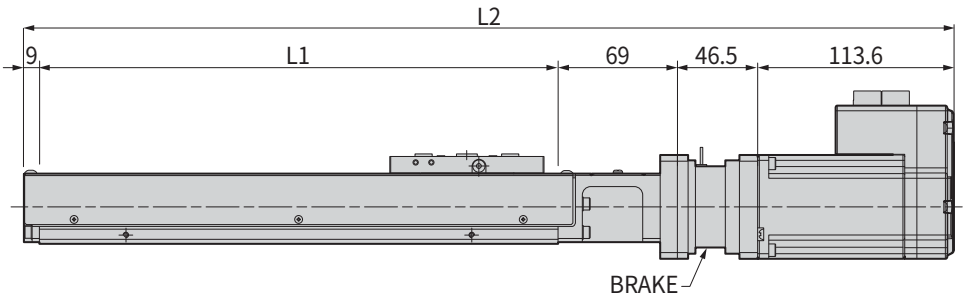
Unit : mm

L1 (Guide Rail Length)	L2 (Overall Length)		Stroke, S
	Before Brake Installation	After Brake Installation	
150	293.6	337.6	66
200	343.6	387.6	116
250	393.6	437.6	166
300	443.6	487.6	216

※ The symbol "□" indicates the stroke.

When using an integrated drive

Ezi-ROBO-IGH-30C-□-R5-60BKUA-CT-ALL-R
Ezi-ROBO-IGH-30C-□-R10-60BKUA-CT-ALL-R



Unit : mm

L1 (Guide Rail Length)	L2 (Overall Length)		Stroke, S
	Before Brake Installation	After Brake Installation	
150	341.6	388.1	50
200	391.6	438.1	100
300	491.6	538.1	200
400	591.6	638.1	300
500	691.6	738.1	400

※ The symbol "□" indicates the stroke.

Option Name and Combination

Option : R-BP - C - CB
①②③④

①	Sensor	**No Symbol** : No Sensor	**R** : Sensor Rail Only
		N : NPN Type Sensor	**P** : PNP Type Sensor
②	Positioning Pin Hole (Slide Block Pin Hole)	**No Symbol** : No Pin Hole	**BP** : Slide Block Pin Hole
③	Grease	**No Symbol** : Standard Grease	**C** : Low Vibration Grease
④	Surface Treatment	**No Symbol** : Guide Rail in Black Oxide Finish Only **CB** : Black Oxide Coating for Corrosion Protection	

Item		Cover Type		Dustproof Type	
		IGH-23S	IGH-30S	IGH-23C	IGH-30C
①	Sensor	○	○	○	○
②	Positioning Pin Hole	○	○	-	-
③	Low Vibration Grease	○	○	○	○
④	Black Oxide Coating for Corrosion Protection	○	○	○	○

Option ① Home Sensor Set

1. Type

Part Number	Sensor Output	Applicable products
PM-L25	NPN	IGH-23S, IGH-30S, IGH-23C, IGH-30C
PM-Y65		
PM-L25-P	PNP	IGH-23S, IGH-30S, IGH-23C, IGH-30C
PM-Y65-P		

2. Components (PM-L25)



PM-L25
PM-L25-P



PM-Y65
PM-Y65P



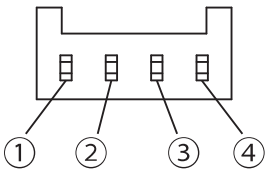
CN-14
(Sensor con-
nector)

3. Specifications

Type	NPN Type	PNP Type
Sensor Part Number	PM-L25 (Panasonic)	PM-L25-P (Panasonic)
Power Supply Voltage	5 ~ 24 V DC ±10 %, Ripple (P-P) 10 % or less	5 ~ 24 V DC ±10 %, Ripple (P-P) 10 % or less
Current Consumption	15 mA or less	15 mA or less
Control Output	NPN Open Collector Output 5 ~ 24 V DC, 50 mA or less Residual Voltage 2 V or less (at 50 mA load current)	PNP Open Collector Output 5 ~ 24 V DC, 50 mA or less Residual Voltage 2 V or less (at 50 mA load current)
Indicator LED	Detection Display (Red)	Detection Display (Red)
Sensor Logic	Normally Open / Normally Closed (Selectable depending on connection)	Normally Open / Normally Closed (Selectable depending on connection)

4. Accessories Items

Item	NPN Type	PNP Type	NPN Type	PNP Type
Sensor Type	PM-L25 (Qty. 3)	PM--L25-P (Qty. 3)	PM-Y65 (Qty. 3)	PM-Y65P (Qty. 3)
Sensor Connector	-	-	CN-14 (Qty. 3)	CN-14 (Qty. 3)
Sensor Rail	Qty. 1	Qty. 1	Qty. 1	Qty. 1
Sensor Dog	Qty. 1	Qty. 1	Qty. 1	Qty. 1
Sensor Bracket	Qty. 2	Qty. 2	Qty. 3	Qty. 3



① +V
② Normally Open
③ Normally Closed
④ 0V

5. Precautions for Home Sensor Set Installation

- Use the home sensor set in environments where the installation surface temperature does not exceed 55 °C.
- Do not install the home sensor while power is applied, as this may cause injury or equipment damage.
- After exposure to vibration or impact, check the sensor to ensure it remains properly mounted and functional.
- Accumulated dust on the sensor may cause malfunctions. Regular cleaning or replacement is recommended.

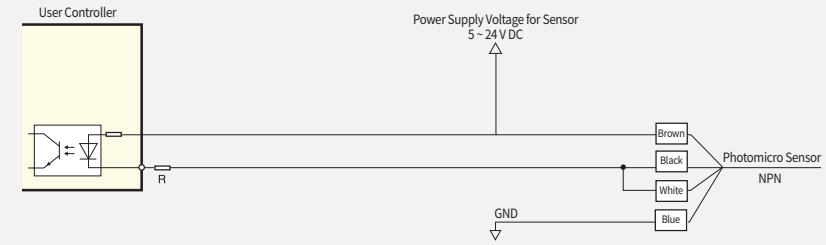
6. Precautions for Sensor Cable Extension

- The cable can be extended up to a maximum of 100 meters using a cable with a cross-sectional area of at least 0.3 mm^2. However, as the cable length increases, voltage drop may occur. Therefore, ensure that the voltage supplied at the end of the sensor's accessory cable remains within the rated range.

Home Sensor Cable Installation

1. NPN Type

• With User's Controller



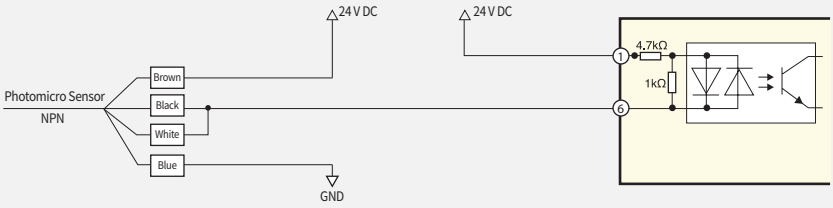
When applying N.C (Normally Closed), connect the output wire to the black lead.

When applying N.O (Normally Open), connect the output wire to the white lead.

Any unused output wires must be properly insulated.

The power supply voltage for the sensor is 5 ~ 24 V DC, and the sensor's signal current can be used up to 50 mA. For detailed information, please refer to the controller specifications and wire accordingly. If the sensor's signal current exceeds the current range of the controller or sensor, please connect a current-limiting resistor (R).

• With Embedded Motion Controller Type Products (e.g., Ezi-SERVO CC-Link IE TSN ALL)



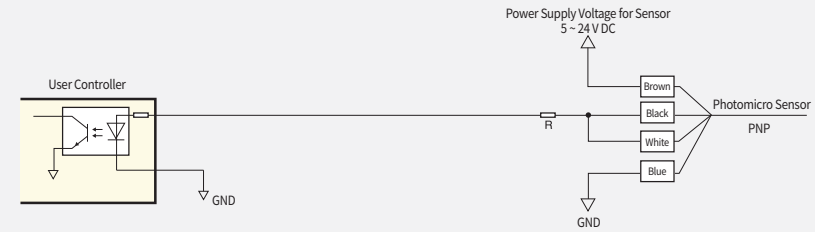
When applying N.C (Normally Closed), connect the output wire to the black lead.

When applying N.O (Normally Open), connect the output wire to the white lead.

Any unused output wires must be properly insulated.

2. PNP Type

• With User's Controller



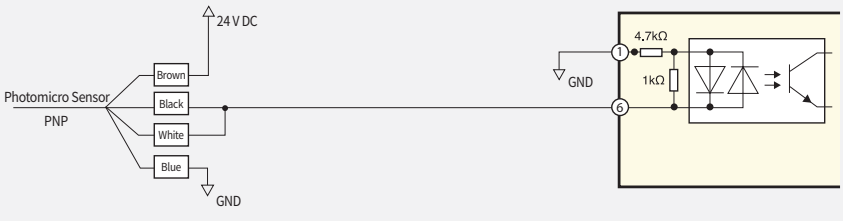
When applying N.C (Normally Closed), connect the output wire to the black lead.

When applying N.O (Normally Open), connect the output wire to the white lead.

Any unused output wires must be properly insulated.

The power supply voltage for the sensor is 5 ~ 24 V DC, and the sensor's signal current can be used up to 50 mA. For detailed information, please refer to the controller specifications and wire accordingly. If the sensor's signal current exceeds the current range of the controller or sensor, please connect a current-limiting resistor (R).

• With Embedded Motion Controller Type Products (e.g., Ezi-SERVO CC-Link IE TSN ALL)



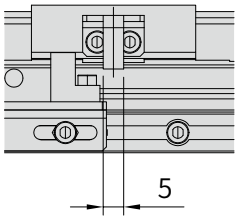
When applying N.C (Normally Closed), connect the output wire to the black lead.

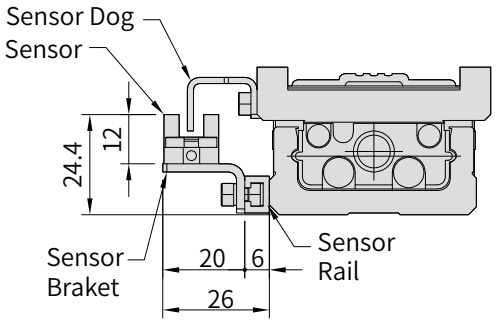
When applying N.O (Normally Open), connect the output wire to the white lead.

Any unused output wires must be properly insulated.

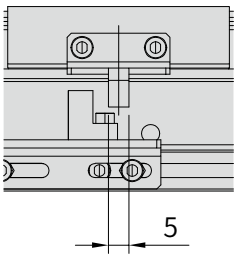
Dimensions with Sensor Installed: Cover Type [mm]

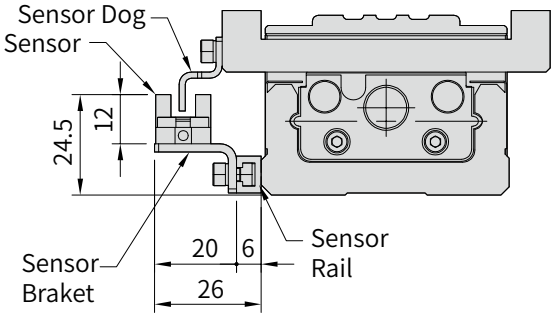
Ezi-ROBO-IGH-23S-□





Ezi-ROBO-IGH-30S-□

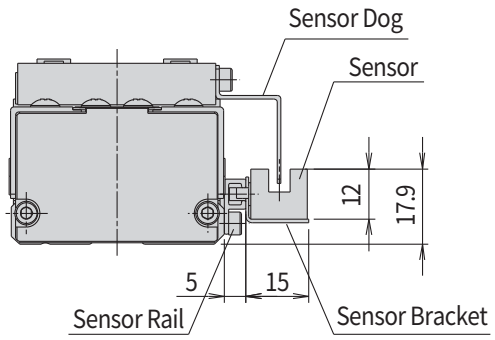


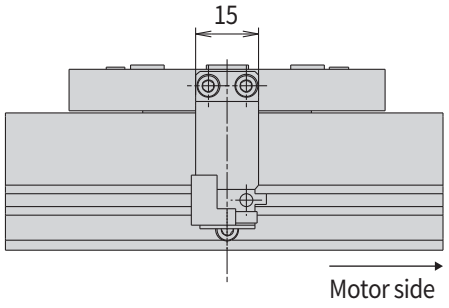


※ □ includes actuator, drive, and option specifications.

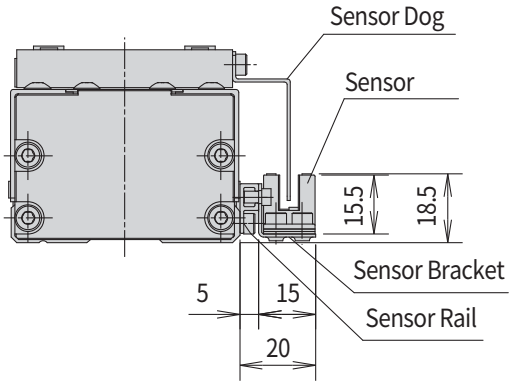
Dimensions with Sensor Installed: Dustproof Type [mm]

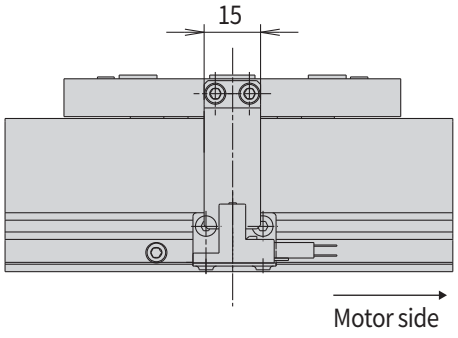
Ezi-ROBO-IGH-23C-□





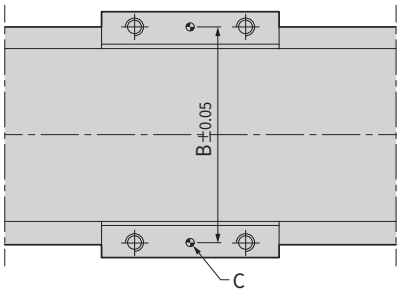
Ezi-ROBO-IGH-30C-□





※ □ includes actuator, drive, and option specifications.
※ The dustproof-type sensor dog (light-blocking plate) is not removable.

Option ② Positioning Pin Hole



Unit : mm

Cover Type			
Actuator Type	B	C	Pin Height
Ezi-ROBO-IGH-23S-□	50	2-Ø2 $^{+0.016}_{0}$ Depth 4	Below 5.9
Ezi-ROBO-IGH-30S-□	70	2-Ø3 $^{+0.016}_{0}$ Depth 5	Below 8.0

Other Option V : ③ Grease

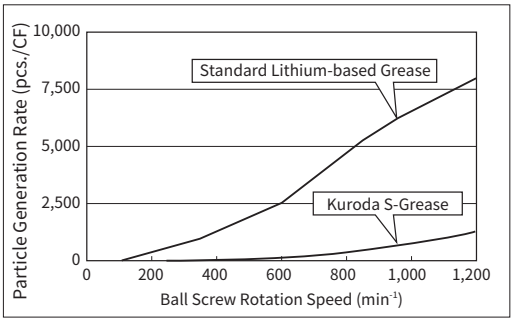
1. Type

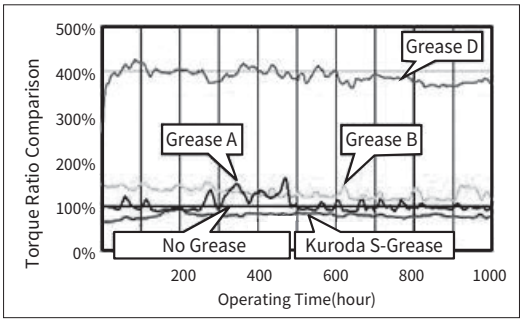
Classification	Product Code	Applicable Products
Standard Grease (Kyodo Yushi Maru Tenpu PS NO.2)	No Symbol	IGH-23S, IGH-23C, IGH-30S, IGH-30C
Low Vibration Grease (Kuroda S Grease)	C	

2. Characteristic

Item	Standard Grease	Low Vibration Grease*1
Appearance	White	Yellowish White
Main Topic	Lithium-based	Urea-based
Lubricating Oil	Synthetic Oil / Mineral Oil	Mineral Oil
Operating Temperature Range	-50 ~ +130 °C	-20 ~ +150 °C

*1: Low-outgassing grease is optimized for clean environments and provides excellent torque stability and lubrication performance.





3. Precautions for Use

When using grease, please read the precautions listed in the relevant 'Material Safety Data Sheet (MSDS)' thoroughly.

Precautions	• It is a flammable substance (flash point 195 °C), so do not store near fire. • Always wear protective goggles when handling grease. It may cause irritation if it gets into the eyes. • Always wear protective gloves when handling grease. It may cause irritation if it comes into contact with the skin. • Do not ingest. It may cause diarrhea or vomiting. • Keep out of reach of children. • After use, seal tightly to prevent contamination from dust or moisture.
First Aid	• If it gets into the eyes, rinse with clean water for at least 15 minutes and seek medical attention. • If it comes into contact with the skin, wash thoroughly with water and soap. • If swallowed, do not induce vomiting and seek medical attention immediately.
Disposal of Waste Oil and Waste Containers	When disposing of, please handle in accordance with waste management regulations.
Storage Method	Store in a cool, dark place, away from direct sunlight, heat sources, and open flames.

Supported FASTECH Drive Types

Built-in Torque-Off Function Drive



Multi-Axis Drive (Max. 4-Axis)



Motor+Drive Integrated type



Batteryless Absolute Encoder type



- Further details on the products shown in the image above are available on our website.
- If you have questions regarding products not included in this catalog, or any other inquiries, please feel free to contact us.

Homepage cltsn.fastech-motions.com
E-mail sales@fastech-motions.com

Ezi-ROBO®

Precise Actuator System

CC-Link IE TSN

IGS

- Slider Type Electric Actuator with Stepper Motor & Ball Screw
- Repeatability (±0.005 mm)
- CiA402 Drive Profile
- CC-Link IE TSN-compatible Closed Loop Stepper System
- Tuning Not Required, No Hunting
- Low Heat Generation, High Torque, High Resolution, Fast Response



FASTECH

Fast Accurate Smooth Motion

Ezi-ROBO®

Precise Actuator System

CC-LinkIE TSN

IGS

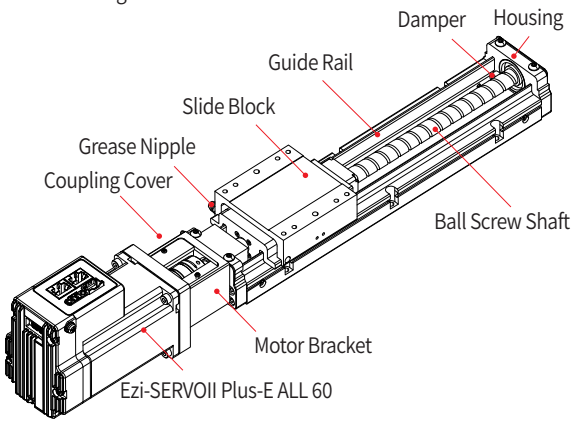
*IGS : Integrated Guide Standard Actuator



Compact Electric Slider

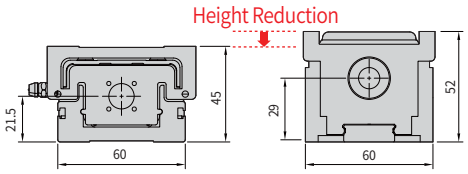
Ezi-ROBO IGS is an integrated product that combines a ball screw actuator※ and a stepper motor from the Ezi-SERVO series. By eliminating the need for precise alignment during assembly, it significantly reduces labor and setup time.

※ Ball screw actuator: A compact unit that integrates a ball screw and a slide guide.



Space-Saving with a Compact Size

By installing a specialized linear guide on the body frame instead of using a conventional linear guide, the overall height can be significantly reduced.

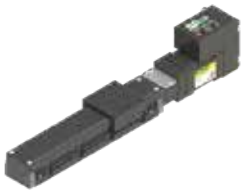


Ezi-ROBO IGS30 Cross-Section

Cross-Section of Other Actuator

Various Product Lineup

To accommodate various environments, we offer four models in the straight type and two models in the parallel type.
The parallel type features a belt and pulley system, making the overall length shorter than that of the straight type for the same stroke.

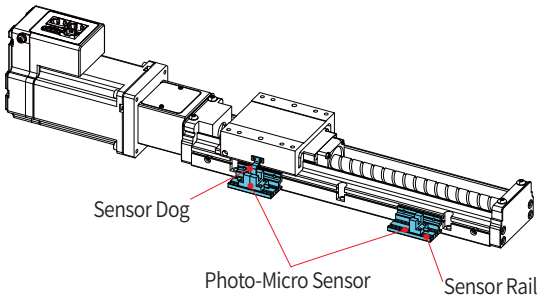
Straight Type	Parallel Type
	

Simple Homing

The Ezi-ROBO IGS a home sensor set is provided as an option to simplify home return operations. This set includes all the components needed for home return.

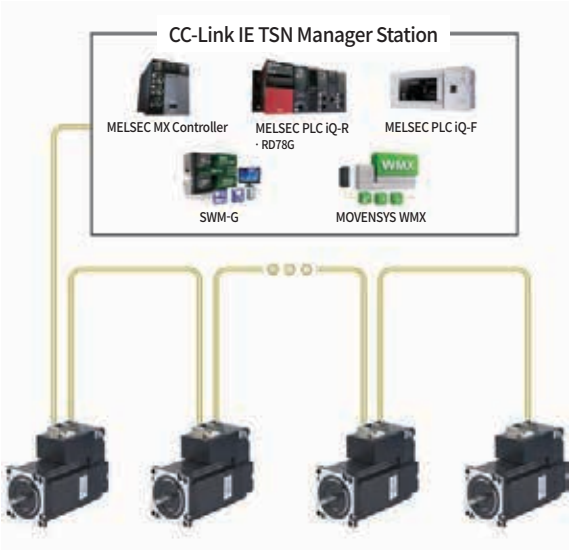
ex) Ezi-ROBO-IGS-60S + Home Sensor

Sensor & Sensor Dog



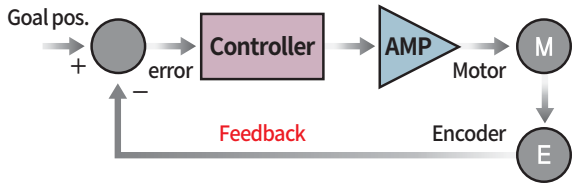
CC-Link IE TSN-compatible Motion Control

Ezi-SERVO CC-Link IE TSN ALL is stepper motor control system using CC-Link IE TSN, high speed Ethernet (1 Gbps Full-Duplex) based industrial network.
Ezi-SERVO CC-Link IE TSN ALL employs CiA402 drive profile and supports Profile Position Mode (PP Mode), Homing Mode (HM Mode) and Cyclic Synchronous Position Mode (CSP Mode).



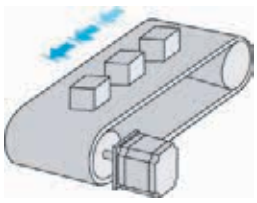
Closed-Loop System

Ezi-SERVO 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 to update the current position every 50 µs. It allows the Ezi-SERVO drive to compensate for the loss of position, ensuring accurate positioning. For example, due to a sudden load change, a conventional stepper motor and drive could lose a step but Ezi-SERVO automatically correct the position by encoder feedback.



Tuning Not Required

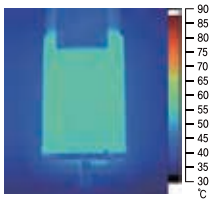
To ensure machine performance, conventional servo systems require the adjustment of its servo's gains as an initial crucial step. Even systems that employ auto-tuning require manual tuning after the system is installed.
Ezi-SERVO employs the best characteristics of the stepper motor to eliminate the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



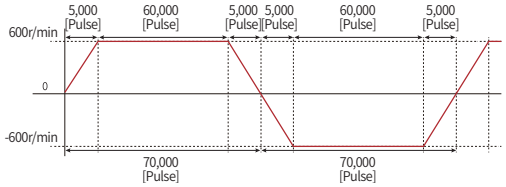
Low Heat Generation / Energy Savings

(Motor Current Control according to load)

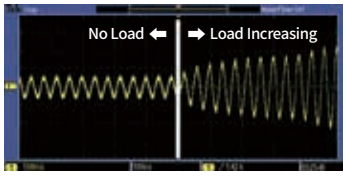
Ezi-SERVO automatically controls motor current according to load. Ezi-SERVO reduces motor current when otor load is low and increases motor current when load is high. By optimizing the motor current, motor heat can be minimized and energy can be saved.



Motor temperature [Measured by Thermal Imaging Camera]



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

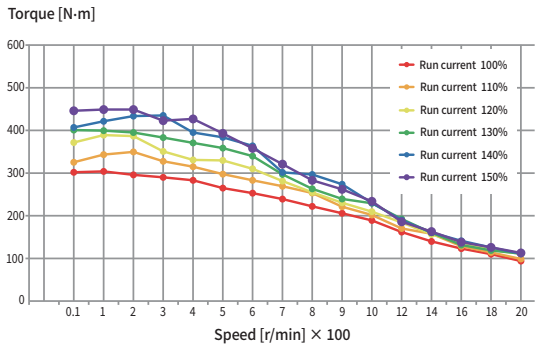


Motor Current
[Example of the Motor Current Control according to load]

High Torque

(Motor Current Setting)

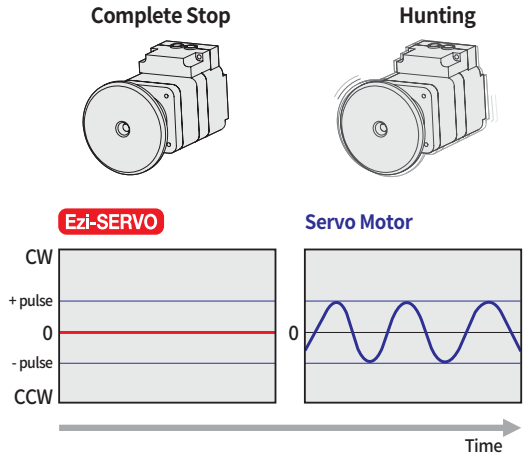
Ezi-SERVO features an internal voltage boosting circuit that increases the motor supply voltage above the drive's input voltage. This elevated motor voltage enhances torque at high speeds and allows the run current to be set up to 150 %. As a result, torque is also improved at low speeds. Ezi-SERVO can achieve approximately 30 % torque improvement across the entire speed range.



※ The torque at low speed is improved about 30 %
Measurement Conditions: Drive = Ezi-SERVO-CT-ALL-42L

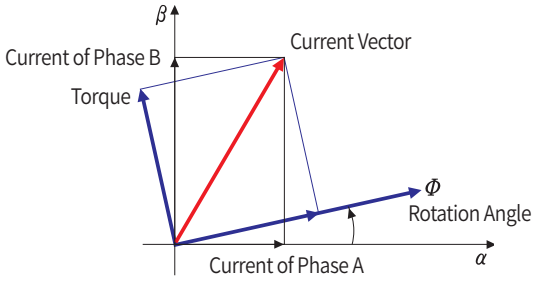
No Hunting

Ezi-SERVO utilizes the unique characteristics of stepper 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.



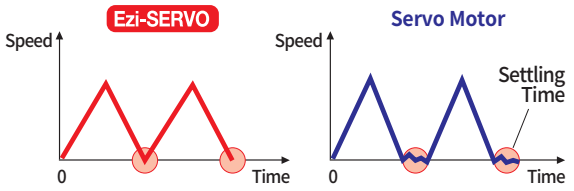
Smooth and Accurate Operation

Ezi-SERVO is a high-precision servo drive, using a high-resolution encoder with 20,000 pulse/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.



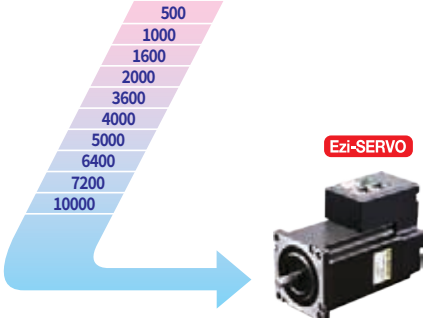
Fast Response

Similar to conventional stepper motors, Ezi-SERVO instantly synchronizes with command pulses providing fast positional response. Ezi-SERVO is the optimum 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 onstant monitoring of the current position.



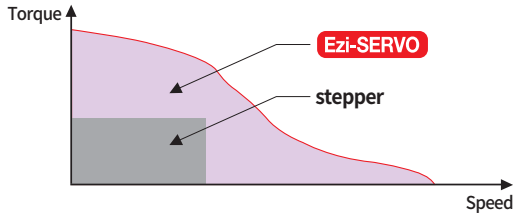
High Resolution

The unit of the position command can be divided precisely. (Max. 10,000 pulse/revolution)



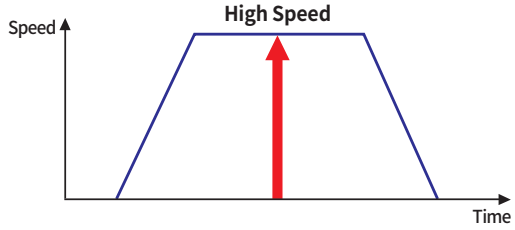
High Torque / Continuous Operation

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



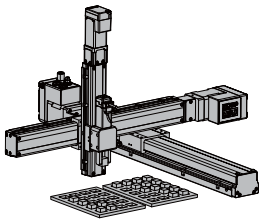
High Speed

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

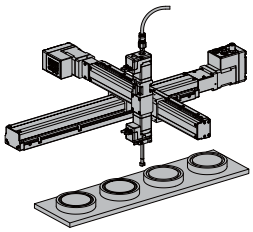


Examples

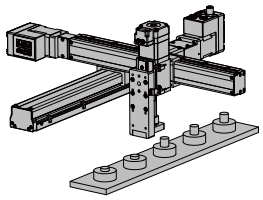
Pallet-to-Pallet Workpiece Placement System



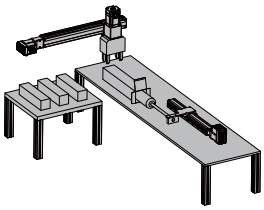
Automatic Dispensing



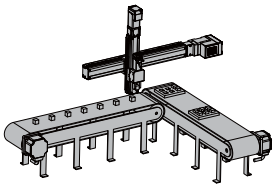
Component Assembly System



Packaging



Conveyor Logistics Transfer



Ezi-ROBO IGS Part Numbering

Ezi-ROBO-IGS-40 S-100-R 2-42 BK U A-CT-ALL-R-Option

- **Series**
- **Model Type**
- **Installation Dimensions**
  - 40:42 mm 50:52 mm 60:60 mm
- **Actuator Type**
  - S : Straight
  - PL : Parallel
- **Stroke**
  - 50 ~ 500 mm
- **Ball Screw Grade**
  - R : Standard
- **Lead**
  - 2 : 2 mm 5 : 5 mm 10 : 10 mm
- **Option**
  - Sensor
- **Drive Series**
  - CT-ALL : CC-Link IE TSN ALL
- **Encoder Resolution**
  - A : 10,000 P/R
- **Motor Direction**
  - U : Up D : Down
  - L : Left R : Right
  - PL : Parallel Left
  - PR : Parallel Right
  - PD : Parallel Down
- **Motor Brake**
  - No Symbol : None
  - BK : With Brake
- **Motor Size**
  - 42:42 mm 60:60 mm

Applicable Product Series

Product	Specifications
Ezi-SERVO CC-Link IE TSN ALL	CC-Link IE TSN Compatible, Motor+Drive Integrated type



Ezi-SERVO CC-Link IE TSN ALL

Actuator and Drive Combination

Unit Part Number	Motor-Drive Integrated Model Number
Ezi-ROBO-IGS-40S-□*1--42□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-R
Ezi-ROBO-IGS-50S-□*1--42□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-R
Ezi-ROBO-IGS-60S-□*1--60□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB60L-A-R
Ezi-ROBO-IGS-40PL-□*1--42□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-R
Ezi-ROBO-IGS-50PL-□*1--42□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-R

Actuator and Drive Combination with Brake

Unit Part Number	Motor-Drive Integrated Model Number
Ezi-ROBO-IGS-40S-□*1-42BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-BK-R
Ezi-ROBO-IGS-50S-□*1-42BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-BK-R
Ezi-ROBO-IGS-60S-□*1-60BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB60L-A-BK-R
Ezi-ROBO-IGS-40PL-□*1-42BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-BK-R
Ezi-ROBO-IGS-50PL-□*1-42BK□*2A-CT-ALL-R	Ezi-SERVO-CT-ALL-RB42LH-A-BK-R

*1: Indicates the stroke.
*2: Indicates the motor direction.

Actuator Combination

Unit Part Number			Ezi-ROBO-IGS-40		Ezi-ROBO-IGS-50		Ezi-ROBO-IGS-60	
Installation Dimensions		[mm]	42		52		60	
Actuator Type	Straight Type		○	○	○	○	○	○
	Parallel Type		○	○	○	○	-	-
Lead		[mm]	2	5	5	10	5	10
Ball Screw Grade		R(Standard)						
Stroke (mm)	50		○	○	○	○	○	○
	100		○	○	○	○	○	○
	150		○	○	○	○	○	○
	200		○	○	○	○	○	○
	250		○	○	○	○	○	○
	300		-	-	○	○	○	○
	400		-	-	○	○	○	○
	500		-	-	○	○	○	○
Motor Size		[mm]	42L		42L		60L	
Motor Brake			○		○		○	
Encoder Resolution	Standard Motor	[P/R]	B(20,000)		B(20,000)		B(20,000)	
	Motor + Drive Integrated		A(10,000)		A(10,000)		A(10,000)	
Sensor	NPN		○	○	○	○	○	○
	PNP		○	○	○	○	○	○

• For more details on the options, please refer to page 304 of the catalog.

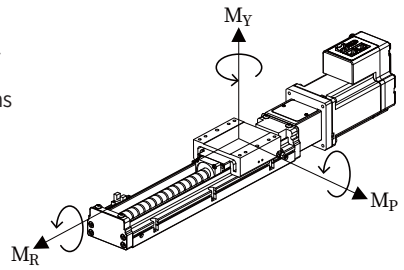
Specifications of Drive

<table>
<tr><th colspan="2">Part Number</th><th>Ezi-SERVO-CT-ALL-RB42 series</th><th>Ezi-SERVO-CT-ALL-RB60 series</th></tr>
<tr><td colspan="2">Input Voltage</td><td colspan="2">24 V DC ± 10 %</td></tr>
<tr><td colspan="2">Control Method</td><td colspan="2">Closed loop control with 32 bit MCU</td></tr>
<tr><td colspan="2">Current Consumption</td><td colspan="2">Max. 500 mA/axis (Except motor current)</td></tr>
<tr><td rowspan="3">Operating Condition</td><td>Ambient Temperature</td><td colspan="2">· In Use: 0 ~ 50 °C
· In Storage: -20 ~ 70 °C</td></tr>
<tr><td>Humidity</td><td colspan="2">· In Use: 35 ~ 85 % RH (Non-Condensing)
· In Storage: 10 ~ 90 % RH (Non-Condensing)</td></tr>
<tr><td>Vib. Resist.</td><td colspan="2">0.5 g</td></tr>
<tr><td rowspan="3">Function</td><td>Rotation Speed</td><td colspan="2">0 ~ 2,000 r/min</td></tr>
<tr><td>Resolution</td><td colspan="2">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
(Selectable by parameter)</td></tr>
<tr><td>Error Type</td><td colspan="2">Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerative Voltage Error, Motor Connection Error, Encoder Connection Error, Main Power Voltage Error, In-Position Error, ROM Error, Position Overflow Error, Torque Off Circuit Error</td></tr>
<tr><td rowspan="3">CC-Link IE TSN</td><td>Communication Protocol</td><td colspan="2">CC-Link IE TSN Class B</td></tr>
<tr><td>Operation Mode</td><td colspan="2">CiA402 Drive Profile: Cyclic Synchronous Position Mode, Profile Position Mode, Homing Mode</td></tr>
<tr><td>Synchronization</td><td colspan="2">Minimum Cycle Time: 250 µs / Synchronous Communication(CSP, PP, HM) / Asynchronous Communication(PP, HM)</td></tr>
<tr><td rowspan="2">I/O Signal</td><td>Input Signals</td><td colspan="2">3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 3 user inputs (photocoupler inputs)</td></tr>
<tr><td>Output Signals</td><td colspan="2">2 user outputs (photocoupler outputs), 1 Brake signal output</td></tr>
</table>

How to Read the Specifications

Model			Ezi-ROBO-IGS-40S-□*1 Ezi-ROBO-IGS-40PL-□*1				
① Actuator Type			Straight Type/Parallel Type				
② Lead		[mm]	2, 5				
③ Stroke		[mm]	50	100	150	200	250
④ Repeatibliity		[mm]	±0.005				
⑤ Maximum Speed*2	Standard Motor	[mm/s]	Lead 2 : 80, Lead 5 : 200				
	Motor + Drive Integrated	[mm/s]	Lead 2 : 65, Lead 5 : 165				
⑥ Permissible Load*3	Horizontal	[kg]	4				
	Vertical	[kg]	3				
⑦ Permissible Moment*4		[N·m]	M_P : 34.7 M_Y : 34.7 M_R : 64.8				
⑧ Actuator Weight	Straight	[kg]	0.7	0.8	0.9	1	1.1
	Parallel		0.8	0.9	1	1.1	1.1
⑨ Motor + Brake Weight	Motor	[kg]	0.47 ~ 0.52(Depending on Motor Type)				
	Brake		0.25				

*1: □ includes options and drive type.
*2: The maximum speed is limited by the motor's maximum speed and permissible rotational speed of ball screw.
*3: The load attachment standards for permissible load in the horizontal and vertical directions are as follows.
*4: The direction definitions for permissible moments are as follows.



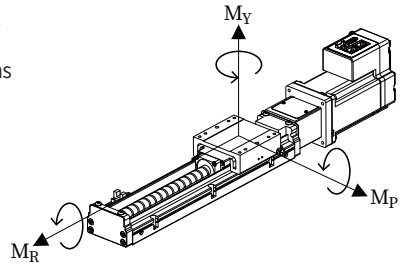
Description of Specification Items

No.	Item	Descriptions
①	Actuator Type	Classified into straight and parallel types.
②	Lead	The distance that the ball screw travels in the linear direction when the motor rotates once.
③	Stroke	This is the maximum distance that the load can be reciprocated.
④	Repeatibility	This value indicates the amount of error that occurs when the same position is commanded repeatedly in the same direction. (The accuracy is the value when the temperature and load are constant.)
⑤	Maximum Speed	This is the maximum speed at which the load can be.
⑥	Permissible Load	The maximum load that can be transported when the compact linear actuator is used in the horizontal or vertical direction.
⑦	Permissible Moment	The maximum force the guide that can handle when a workpiece is placed off-center relative to the compact linear actuator's guide.
⑧	Actuator Weight	The weight of the actuator (measured with the motor installed).
⑨	Motor + Brake Weight	The combined weight of the motor and brake.

Specification [IGS40 Type]

Model			Ezi-ROBO-IGS-40S-□*1 Ezi-ROBO-IGS-40PL-□*1				
Actuator Type			Straight Type/ Parallel Type				
Lead		[mm]	2, 5				
Stroke		[mm]	50	100	150	200	250
Repeatbliity		[mm]	±0.005				
Maximum Speed*2	Standard Motor	[mm/s]	Lead 2 : 80, Lead 5 : 200				
	Motor + Drive Integrated	[mm/s]	Lead 2 : 65, Lead 5 : 165				
Permissible Load*3	Horizontal	[kg]	4				
	Vertical	[kg]	3				
Permissible Moment*4		[N·m]	M_P : 34.7 M_Y : 34.7 M_R : 64.8				
Actuator Weight	Straight	[kg]	0.7	0.8	0.9	1	1.1
	Parallel		0.8	0.9	1	1.1	1.1
Motor + Brake Weight	Motor	[kg]	0.47 ~ 0.52(Depending on Motor Type)				
	Brake		0.25				

*1: □ includes options and drive type.
*2: The maximum speed is limited by the motor's maximum speed and permissible rotational speed of ball screw.
*3: The load attachment standards for permissible load in the horizontal and vertical directions are as follows:
*4: The direction definitions for permissible moments are as follows.



Permissible load Table by Speed and Acceleration / Deceleration

Lead 2 mm — Permissible load Unit : kg

Mounting Direction	Horizontal			Vertical		
Speed [mm/s]	Acceleration[m/s²]					
	0.5	1	3	0.5	1	3
20	4	4	4	3	3	3
40	3	3	-	2	2	-
60	2.5	2.5	-	2	2	-
80	2.5	2.5	-	2	1	-

Lead 5 mm — Permissible load Unit : kg

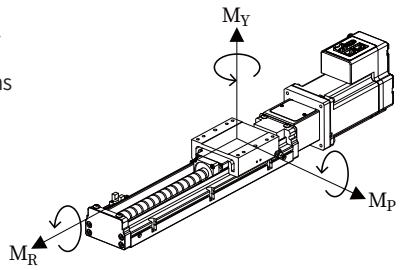
Mounting Direction	Horizontal					Vertical				
Speed [mm/s]	Acceleration[m/s²]									
	0.5	1	3	5	7	0.5	1	3	5	7
20	4	4	4	4	4	3	3	3	3	2.5
50	3	3	3	3	3	2	2	2	2	1.5
100	2.5	2	2	2	-	1.5	1.5	1.5	1.5	-
150	2	2	2	-	-	1.5	1.5	1	-	-
200	2	2	-	-	-	1.5	1.5	-	-	-

Applicable models			
Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL	

Specification [IGS50 Type]

Model			Ezi-ROBO-IGS-50S-□ *1 Ezi-ROBO-IGS-50PL-□ *1							
Actuator Type			Straight Type/ Parallel Type							
Lead		[mm]	5, 10							
Stroke		[mm]	50	100	150	200	250	300	400	500
Repeatibliity		[mm]	±0.005							
Maximum Speed*2	Standard Motor	[mm/s]	Lead 5 : 200, Lead 10 : 400							
	Motor + Drive Integrated	[mm/s]	Lead 5 : 165, Lead 10 : 330							
Permissible Load*3	Horizontal	[kg]	10							
	Vertical	[kg]	Lead 5 : 9.5, Lead 10 : 7.5							
Permissible Moment*4		[N·m]	M_P : 131.4 M_Y : 131.4 M_R : 164							
Actuator Weight	Straight	[kg]	1.1	1.2	1.4	1.5	1.6	1.8	2.1	2.3
	Parallel		1.3	1.4	1.6	1.7	1.8	2.1	2.3	2.5
Motor+Brake Weight	Motor	[kg]	0.47 ~ 0.52(Depending on Motor Type)							
	Brake		0.25							

*1: □ includes options and drive type.
*2: The maximum speed is limited by the motor's maximum speed and permissible rotational speed of ball screw.
*3: The load attachment standards for permissible load in the horizontal and vertical directions are as follows:
*4: The direction definitions for permissible moments are as follows.



Permissible load Table by Speed and Acceleration / Deceleration

Lead 5 mm — Permissible load Unit : kg

Mounting Direction	Horizontal				Vertical			
Speed [mm/s]	Acceleration[m/s²]							
	0.5	1	3	5	0.5	1	3	5
20	10	10	10	4.5	9.5	9.5	6	1.5
50	7.5	7.5	7.5	1.5	7	7	4.5	0.5
100	6	6	6	-	5.5	5.5	2	-
150	5.5	5	-	-	4.5	3	-	-
200	5	5	-	-	2.5	1	-	-

Lead 10 mm — Permissible load Unit : kg

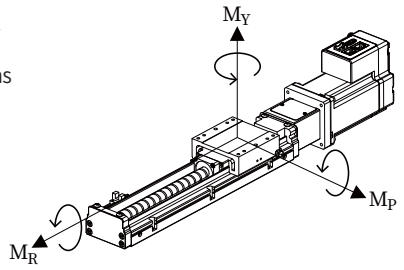
Mounting Direction	Horizontal						Vertical					
Speed [mm/s]	Acceleration[m/s²]											
	0.5	1	3	5	7	10	0.5	1	3	5	7	10
20	10	10	10	8.5	4.5	1.5	7.5	7	4.5	3	2	0.5
50	7.5	7.5	7.5	7.5	4	1	7	6.5	4.5	3	1.5	-
100	6	6	6	6	3	-	5.5	5.5	3.5	2	1	-
150	5.5	5	5	4.5	1.5	-	5	4.5	3	1.5	0.5	-
200	5	5	4.5	3.5	0.5	-	4.5	4	2.5	1	-	-
250	4.5	4.5	4.5	0.5	-	-	3	2.5	1	-	-	-
300	4.5	4.5	3	-	-	-	2.5	2	0.5	-	-	-
350	4.5	4	1.5	-	-	-	2	1.5	-	-	-	-
400	4.5	4	-	-	-	-	1.5	1	-	-	-	-

Applicable models			
Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL	

Specification [IGS60 Type]

Model			Ezi-ROBO-IGS-60S-□ *1								
Actuator Type			Straight Type								
Lead		[mm]	5, 10								
Stroke		[mm]	50	100	150	200	250	300	400	500	600
Repeatibliity		[mm]	±0.005								
Maximum Speed*2	Standard Motor	[mm/s]	Lead 5 : 200, Lead 10 : 400								
	Motor + Drive Integrated	[mm/s]	Lead 5 : 165, Lead 10 : 330								
Permissible Load*3	Horizontal	[kg]	13								
	Vertical	[kg]	Lead 5 : 10, Lead 10 : 12.5								
Permissible Moment*4		[N·m]	M_P : 172.1 M_Y : 172.1 M_R : 224.9								
Actuator Weight		[kg]	1.3	1.4	1.6	1.7	1.9	2.1	2.4	2.7	3.0
Motor+Brake Weight	Motor	[kg]	1.54 ~ 1.80(Depending on Motor Type)								
	Brake		0.44								

*1: □ includes options and drive type.
*2: The maximum speed is limited by the motor's maximum speed and permissible rotational speed of ball screw.
*3: The load attachment standards for permissible load in the horizontal and vertical directions are as follows:
*4: The direction definitions for permissible moments are as follows.



Permissible load Table by Speed and Acceleration / Deceleration

Lead 5 mm — Permissible load Unit : kg

Mounting Direction	Horizontal				Vertical		
Speed [mm/s]	Acceleration[m/s²]						
	0.5	1	3	5	0.5	1	3
20	13	13	13	1.5	10	10	10
50	9.5	9.5	9.5	-	7	7	7
100	7.5	7.5	0.5	-	5.5	5.5	-
150	7	6.5	-	-	5	5	-
200	6.5	4	-	-	4.5	0.5	-

Lead 10 mm — Permissible load Unit : kg

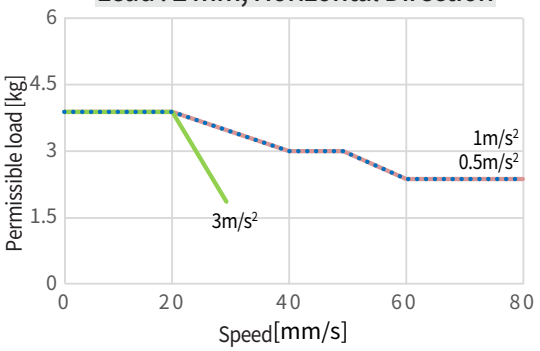
Mounting Direction	Horizontal						Vertical					
Speed [mm/s]	Acceleration[m/s²]											
	0.5	1	3	5	7	10	0.5	1	3	5	7	10
20	13	13	13	13	13	3.5	12.5	12.5	12.5	11.5	7	1.5
50	9.5	9.5	9.5	9.5	9.5	-	9	9	9	8.5	4.5	-
100	7.5	7.5	7.5	7.5	6	-	7.5	7.5	7	6.5	2.5	-
150	7	6.5	6.5	6.5	-	-	6.5	6.5	6.5	2.5	-	-
200	6.5	6	6	4.5	-	-	6	6	5.5	1.5	-	-
250	6	6	5.5	-	-	-	6	5.5	1.5	-	-	-
300	6	5.5	1.5	-	-	-	5.5	5	-	-	-	-
350	6	5.5	-	-	-	-	4.5	3	-	-	-	-
400	6	5.5	-	-	-	-	3.5	2	-	-	-	-

Applicable models		
Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

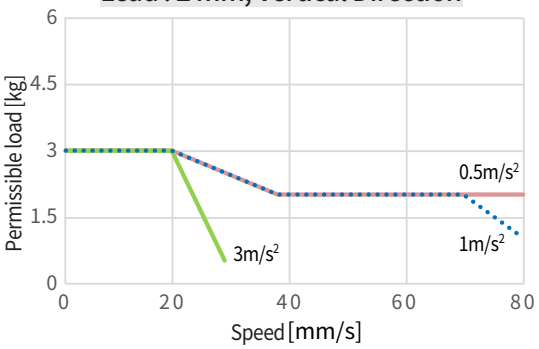
Permissible load Graph by Speed and Acceleration / Deceleration

IGS-40

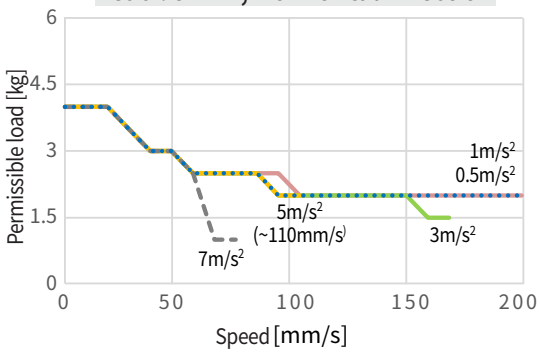
Lead : 2 mm, Horizontal Direction



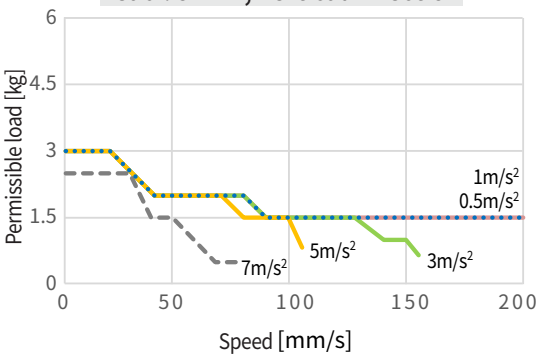
Lead : 2 mm, Vertical Direction



Lead : 5 mm, Horizontal Direction

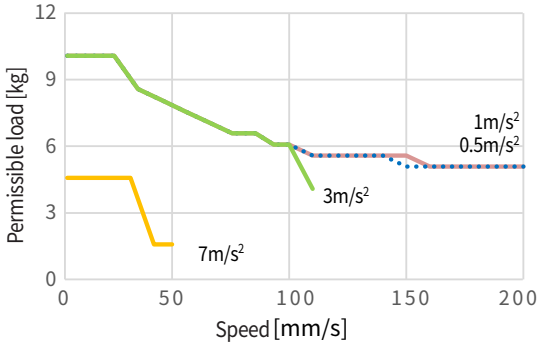


Lead : 5 mm, Vertical Direction

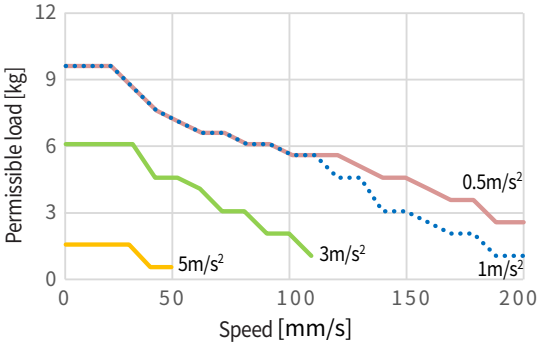


IGS-50

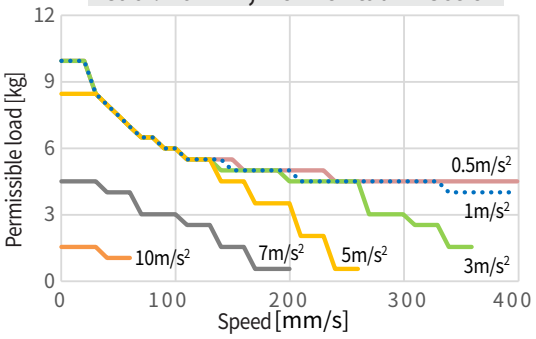
Lead : 5 mm, Horizontal Direction



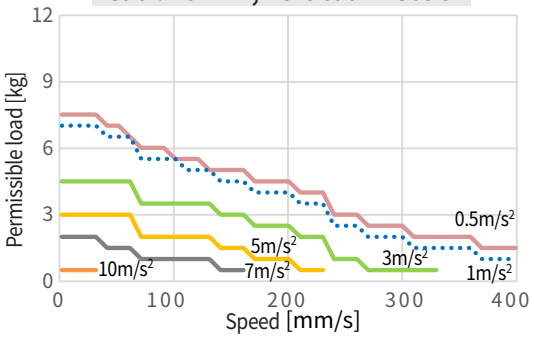
Lead : 5 mm, Vertical Direction



Lead : 10 mm, Horizontal Direction

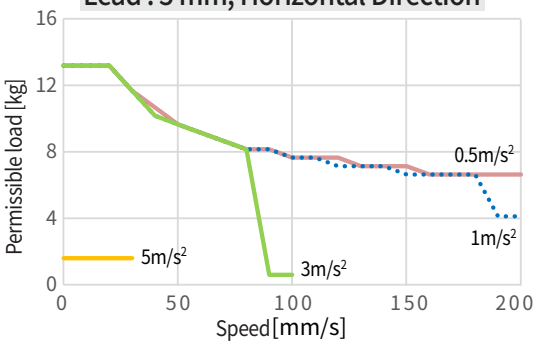


Lead : 10 mm, Vertical Direction

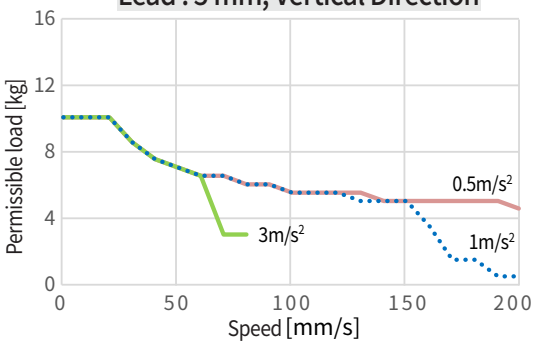


IGS-60

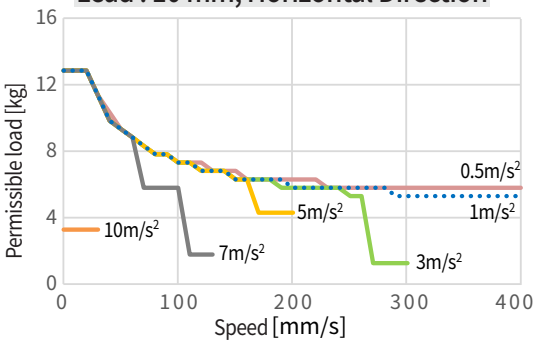
Lead : 5 mm, Horizontal Direction



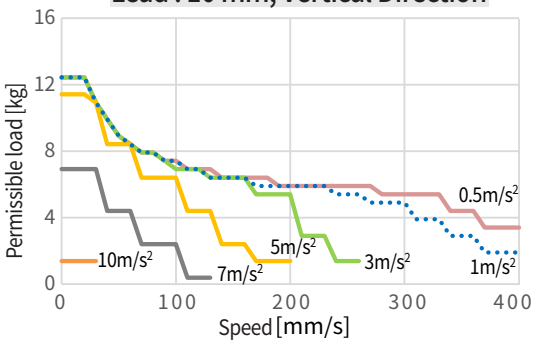
Lead : 5 mm, Vertical Direction



Lead : 10 mm, Horizontal Direction



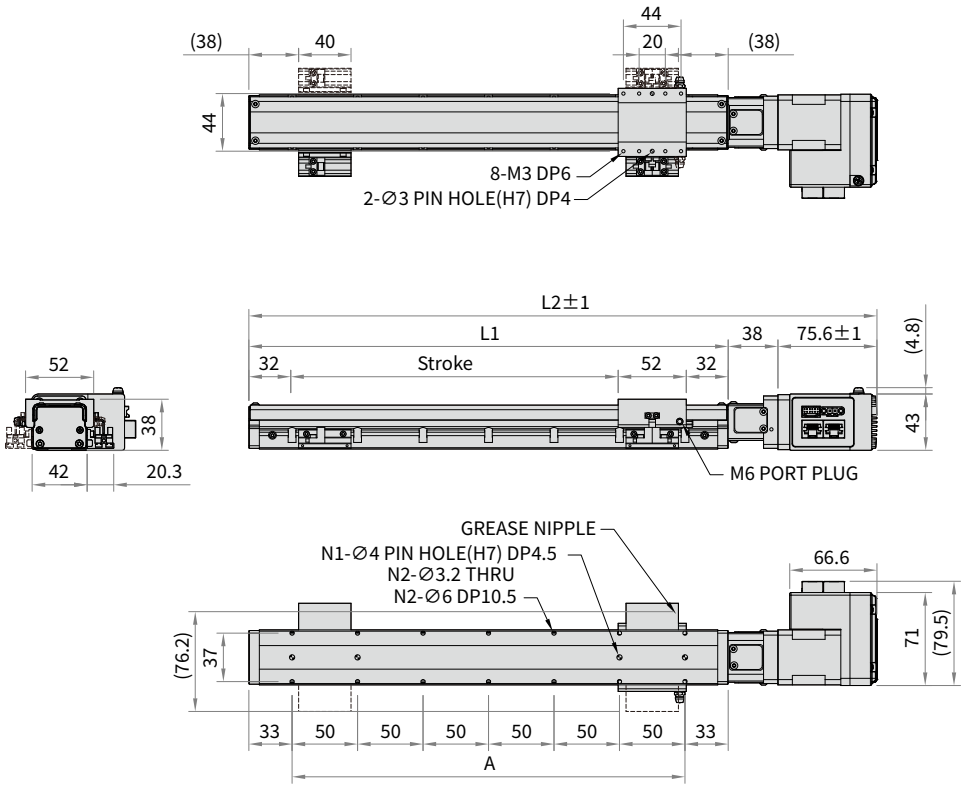
Lead : 10 mm, Vertical Direction



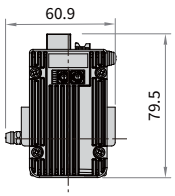
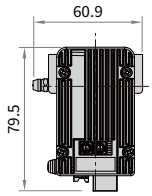
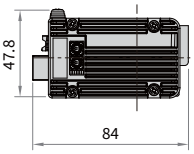
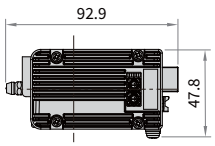
Dimensions of Product : Straight Type [mm]

When using an integrated drive

Ezi-ROBO-IGS-40S-□-R2-42LA-CT-ALL-R-P
Ezi-ROBO-IGS-40S-□-R5-42LA-CT-ALL-R-P



- Motor Direction

Up	Down	Left	Right
			

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

Unit : mm

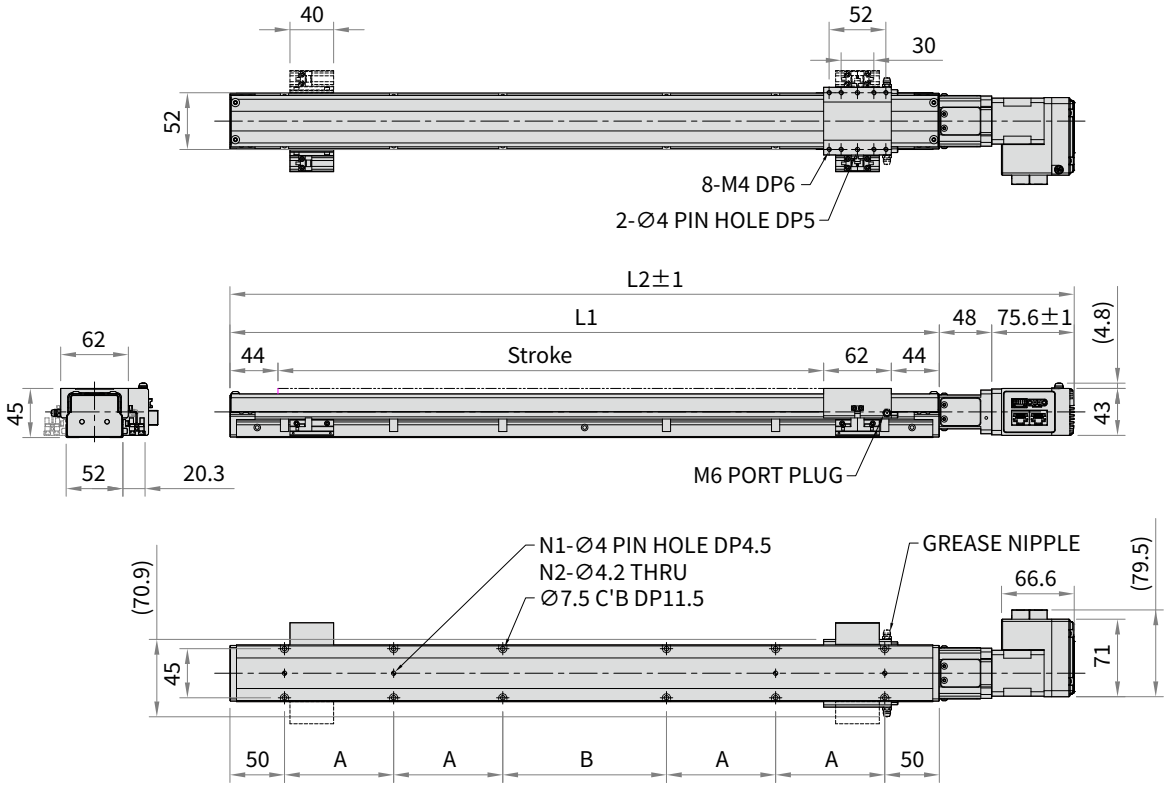
Stroke, S	L1	L2 (Overall Length)		Number of Positioning Pin Holes, N1	Number of Mounting Holes, N2	Mounting Hole Pitch, A
		ALL Motor	BT Motor			
50	166	279.6	285	3	6	100
100	216	329.6	335	4	8	150
150	266	379.6	385	4	10	200
200	316	429.6	435	4	12	250
250	366	479.6	485	4	14	300

※ The mounting hole pitch varies depending on the stroke. Please refer to the individual drawings for details.

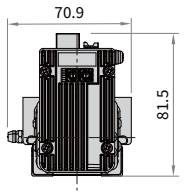
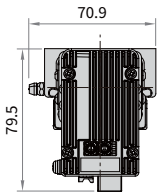
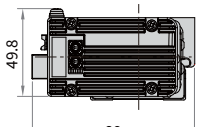
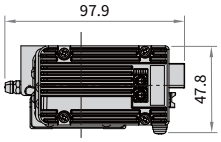
Dimensions of Product : Straight Type [mm]

When using an integrated drive

Ezi-ROBO-IGS-50S-□-R5-42LA-CT-ALL-R-P
Ezi-ROBO-IGS-50S-□-R10-42LA-CT-ALL-R-P



- Motor Direction

Up	Down	Left	Right
			

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

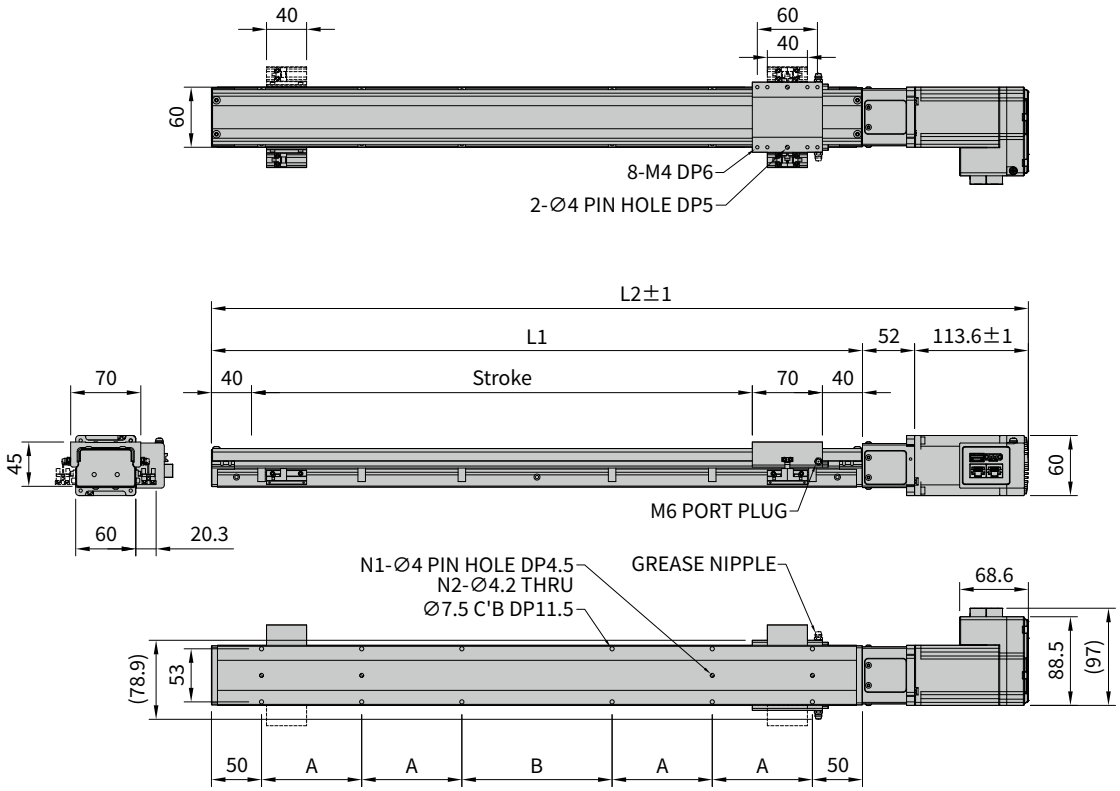
Unit : mm

Stroke, S	L1	L2 (Overall Length)		Number of Positioning Pin Holes, N1	Number of Mounting Holes, N2	Mounting Hole Pitch, A	Mounting Hole Pitch, B
		ALL Motor	BT Motor				
50	200	323.6	329	2	4	100	-
100	250	373.6	379	2	4	150	-
150	300	423.6	429	3	6	100	-
200	350	473.6	479	4	8	100	50
250	400	523.6	529	4	8	100	50
300	450	573.6	579	4	8	100	150
400	550	673.6	679	4	12	100	50
500	650	773.6	779	4	12	100	150

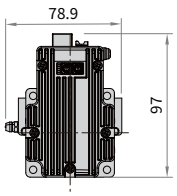
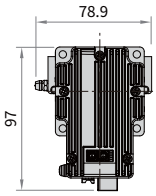
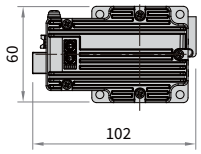
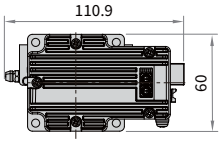
Dimensions of Product : Straight Type [mm]

When using an integrated drive

Ezi-ROBO-IGS-60S-□-R5-60LA-CT-ALL-R-P
Ezi-ROBO-IGS-60S-□-R10-60LA-CT-ALL-R-P



- Motor Direction

Up	Down	Left	Right
			

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

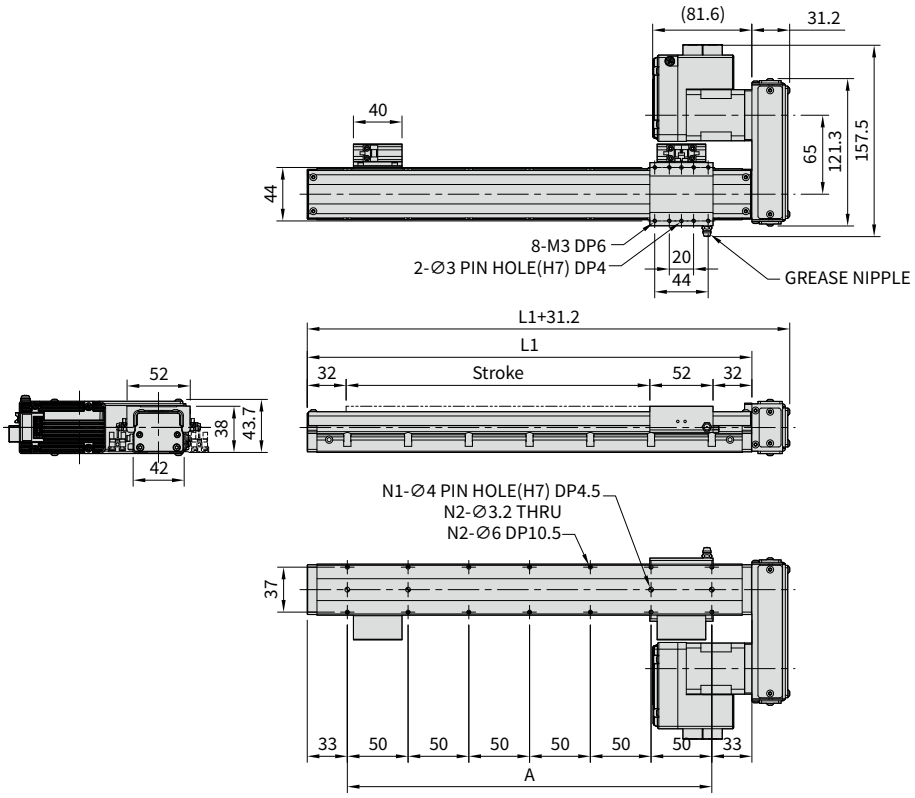
Unit : mm

Stroke, S	L1	L2 (Overall Length)		Number of Positioning Pin Holes, N1	Number of Mounting Holes, N2	Mounting Hole Pitch, A	Mounting Hole Pitch, B
		ALL Motor	BT Motor				
50	200	365.6	370	2	4	100	-
100	250	415.6	420	2	4	150	-
150	300	465.6	470	3	6	100	-
200	350	515.6	520	4	8	100	50
250	400	565.6	570	4	6	100	-
300	450	615.6	620	4	8	100	150
400	550	715.6	720	4	12	100	450
500	650	815.6	820	4	12	100	150

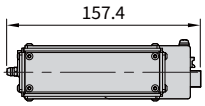
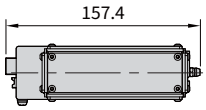
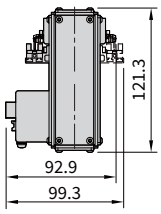
Dimensions of Product : Parallel Type [mm]

When using an integrated drive

Ezi-ROBO-IGS-40PL-□-R2-42PRA-CT-ALL-R-P
Ezi-ROBO-IGS-40PL-□-R5-42PRA-CT-ALL-R-P



- Motor Direction

Right	Left	Down
		

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

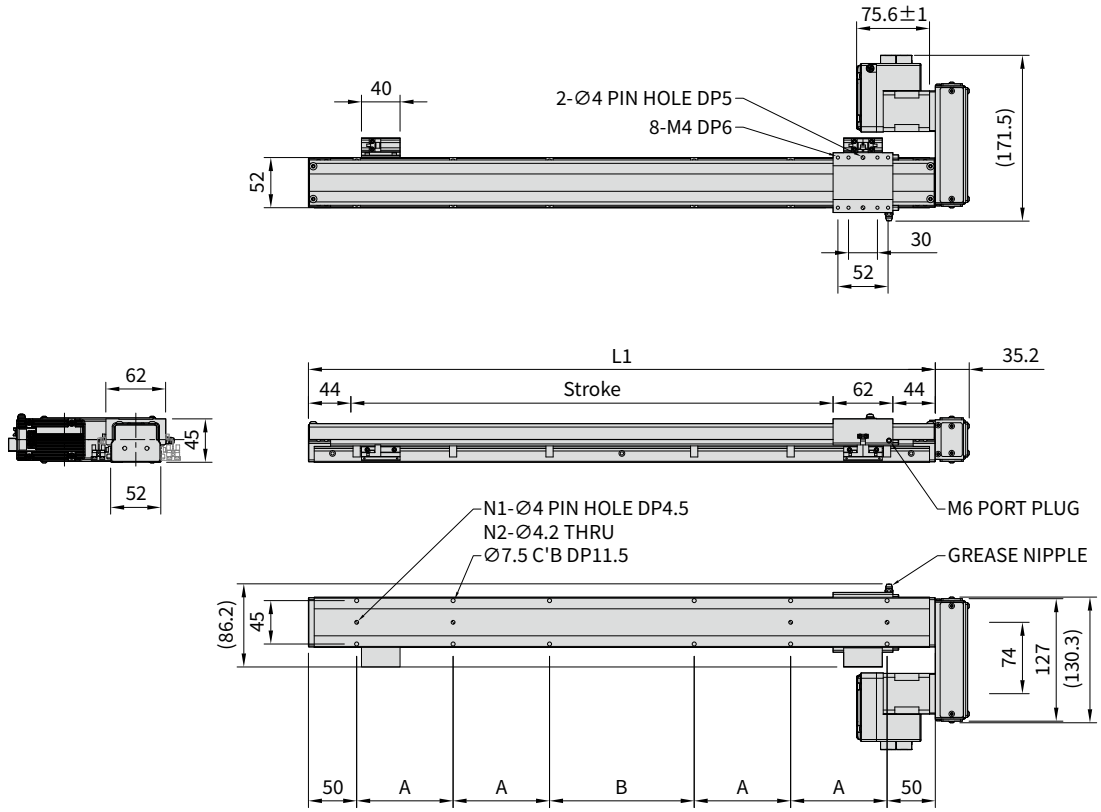
Unit : mm

Stroke, S	L1	Number of Positioning Pin Holes, N1	Number of Mounting Holes, N2	Mounting Hole Pitch, A
50	166	3	6	100
100	216	4	8	150
150	266	4	10	200
200	316	4	12	250
250	366	4	14	300

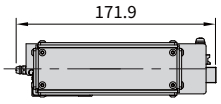
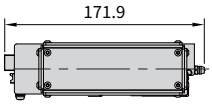
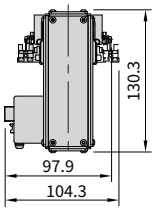
Dimensions of Product : Parallel Type [mm]

When using an integrated drive

Ezi-ROBO-IGS-50PL-□-R5-42PRA-CT-ALL-R-P
Ezi-ROBO-IGS-50PL-□-R10-42PRA-CT-ALL-R-P



- Motor Direction

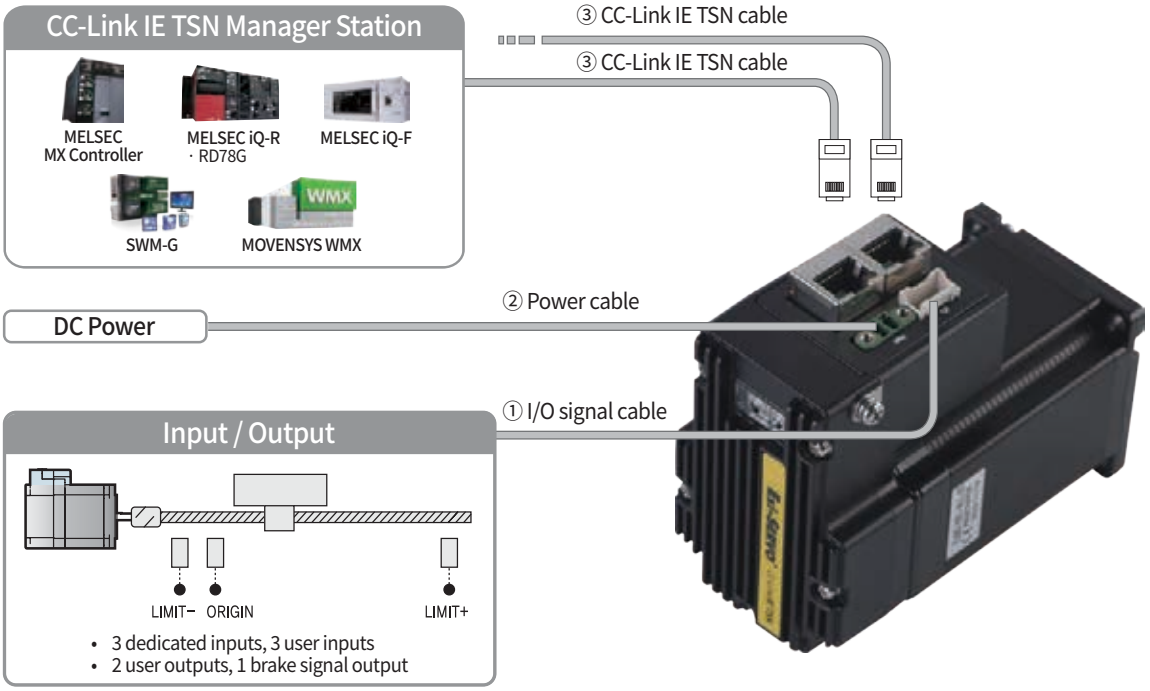
Right	Left	Down
		

※ The symbol "□" indicates the stroke.
The drawings in this catalog are based on products equipped with a CC-Link IE TSN ALL R connector type drive.
Some dimensions differ depending on the drive type. Please refer to the product drawings for detailed information.

Unit : mm

Stroke, S	L1	Number of Positioning Pin Holes, N1	Number of Mounting Holes, N2	Mounting Hole Pitch, A	Mounting Hole Pitch, B
50	200	2	4	100	-
100	250	2	4	150	-
150	300	3	6	100	-
200	350	4	8	100	50
250	400	4	8	100	-
300	450	4	8	100	150
400	550	4	12	100	50
500	650	4	12	100	150

System Configuration

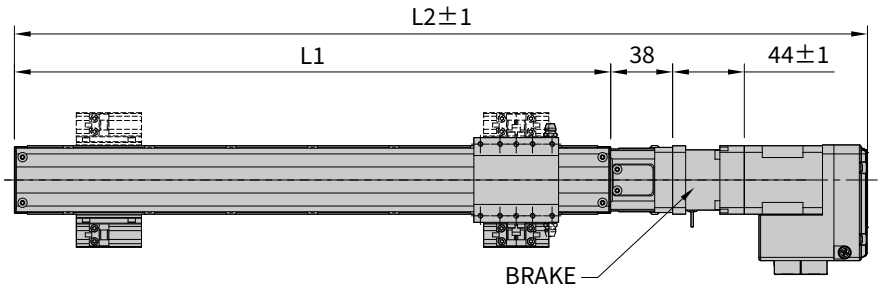


Cable Type	Max. Cable Length	Remarks
① I/O Signal Cable	20 m	Options (Sold separately)
② Power Cable	2 m	
③ CC-Link IE TSN Cable	100 m	

Dimensions with Brake Mounted

When using an integrated drive

Ezi-ROBO-IGS-40S-□-R2-42BKLA-CT-ALL-R-P
Ezi-ROBO-IGS-40S-□-R5-42BKLA-CT-ALL-R-P



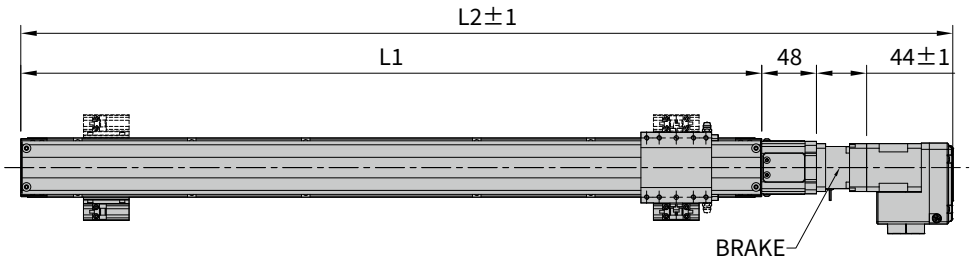
Unit : mm

Stroke	L1	L2 (Overall Length)			
		Before Brake Installation		After Brake Installation	
		ALL Motor	BT Motor	ALL Motor	BT Motor
50	166	279.6	285	323.6	329
100	216	329.6	335	373.6	379
150	266	379.6	385	423.6	429
200	316	429.6	435	4736.	479
250	366	479.6	485	523.6	529

※ The symbol "□" indicates the stroke.

When using an integrated drive

Ezi-ROBO-IGS-50S-□-R5-42BKLA-CT-ALL-R-P
Ezi-ROBO-IGS-50S-□-R10-42BKLA-CT-ALL-R-P



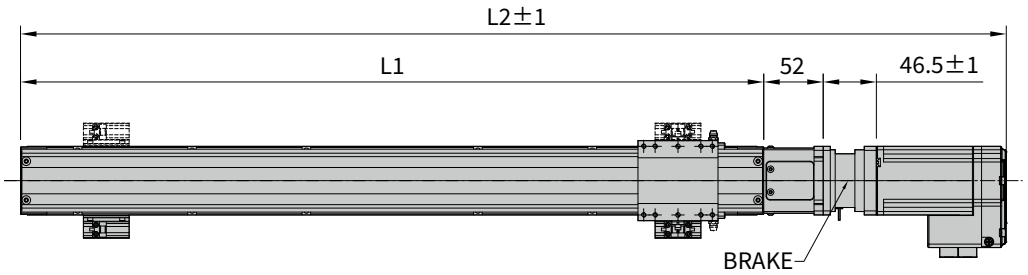
Unit : mm

Stroke	L1	L2 (Overall Length)			
		Before Brake Installation		After Brake Installation	
		ALL Motor	BT Motor	ALL Motor	BT Motor
50	200	367.6	373	411.6	417
100	250	417.6	423	461.6	467
150	300	467.6	473	511.6	517
200	350	517.6	523	561.6	567
250	400	567.6	573	611.6	617
300	450	617.6	623	661.6	667
400	550	717.6	723	761.6	767
500	650	817.6	823	861.6	867

※ The symbol "□" indicates the stroke.

When using an integrated drive

Ezi-ROBO-IGS-60S-□-R5-60BKLA-CT-ALL-R-P
Ezi-ROBO-IGS-60S-□-R10-60BKLA-CT-ALL-R-P



Unit : mm

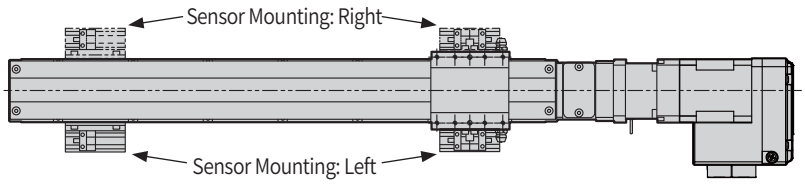
Stroke	L1	L2 (Overall Length)			
		Before Brake Installation		After Brake Installation	
		ALL Motor	BT Motor	ALL Motor	BT Motor
50	200	365.6	370	412.1	416.5
100	250	415.6	420	462.1	466.5
150	300	465.6	470	512.1	516.5
200	350	515.6	520	562.1	566.5
250	400	565.6	570	612.1	616.5
300	450	615.6	620	662.1	666.5
400	550	715.6	720	762.1	766.5
500	650	815.6	820	862.1	866.5

※ The symbol "□" indicates the stroke.

Option Name and Combination

Option : R-LT-01
① ② ③

①	Sensor	**No Symbol** : No Sensor **N** : NPN Type Sensor	**R** : Sensor Rail Only **P** : PNP Type Sensor
②	Sensor Mounting Direction	**LT** : Left Mounting	**RT** : Right Mounting
③	Number of Sensors	**01** : 1 **03** : 3	**02** : 2



• Motor Direction: Left

Item		IGS-40	IGS-50	IGS-60
①	Sensor	○	○	○
②	Sensor Mounting Direction	○	○	○
③	Number of Sensors	○	○	○

Home Sensor Set

1. Type

Part Number	Sensor Output	Applicable products
PM-L25	NPN	IGS-40S, IGS-50S, IGS-60S IGS-40PL, IGS-50PL
PM-L25-P	PNP	

2. Components (PM-L25)



PM-L25

3. Specifications

Type	NPN Type	PNP Type
Sensor Part Number	PM-L25 (Panasonic)	PM-L25-P (Panasonic)
Power Supply Voltage	5 ~ 24 V DC ±10 %, Ripple (P-P) 10 % or less	5 ~ 24 V DC ±10 %, Ripple (P-P) 10 % or less
Current Consumption	15 mA or less	15 mA or less
Control Output	NPN Open Collector Output 5 ~ 24 V DC, 50 mA or less Residual Voltage 2 V or less (at 50 mA load current)	PNP Open Collector Output 5 ~ 24 V DC, 50 mA or less Residual Voltage 2 V or less (at 50 mA load current)
Indicator LED	Detection Display (Red)	Detection Display (Red)
Sensor Logic	Normally Open / Normally Closed (Selectable depending on connection)	Normally Open / Normally Closed (Selectable depending on connection)

4. Precautions for Home Sensor Set Installation

- Use the home sensor set in environments where the installation surface temperature does not exceed 55 °C.
- Do not install the home sensor while power is applied, as this may cause injury or equipment damage.
- After exposure to vibration or impact, check the sensor to ensure it remains properly mounted and functional.
- Accumulated dust on the sensor may cause malfunctions. Regular cleaning or replacement is recommended.

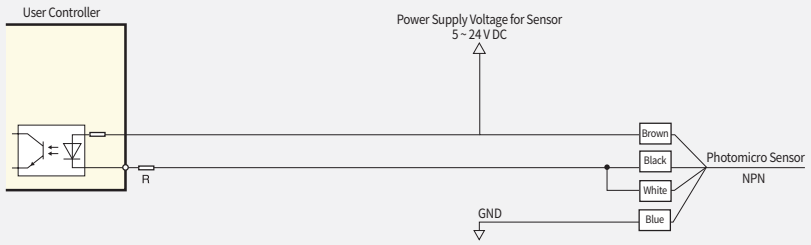
5. Precautions for Sensor Cable Extension

- The cable can be extended up to a maximum of 100 meters using a cable with a cross-sectional area of at least 0.3 mm^2. However, as the cable length increases, voltage drop may occur. Therefore, ensure that the voltage supplied at the end of the sensor's accessory cable remains within the rated range.

Home Sensor Cable Installation

1. NPN Type

• With User's Controller



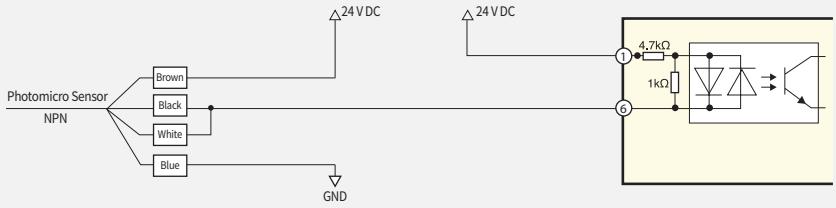
When applying N.C (Normally Closed), connect the output wire to the black lead.

When applying N.O (Normally Open), connect the output wire to the white lead.

Any unused output wires must be properly insulated.

The power supply voltage for the sensor is 5 ~ 24 V DC, and the sensor's signal current can be used up to 50 mA. For detailed information, please refer to the controller specifications and wire accordingly. If the sensor's signal current exceeds the current range of the controller or sensor, please connect a current-limiting resistor (R).

• With Embedded Motion Controller Type Products (e.g., Ezi-SERVO CC-Link IE TSN ALL)



When applying N.C (Normally Closed), connect the output wire to the black lead.

When applying N.O (Normally Open), connect the output wire to the white lead.

Any unused output wires must be properly insulated.

2. PNP Type

• With User's Controller



When applying N.C (Normally Closed), connect the output wire to the black lead.

When applying N.O (Normally Open), connect the output wire to the white lead.

Any unused output wires must be properly insulated.

The power supply voltage for the sensor is 5 ~ 24 V DC, and the sensor's signal current can be used up to 50 mA. For detailed information, please refer to the controller specifications and wire accordingly. If the sensor's signal current exceeds the current range of the controller or sensor, please connect a current-limiting resistor (R).

• With Embedded Motion Controller Type Products (e.g., Ezi-SERVO CC-Link IE TSN ALL)



When applying N.C (Normally Closed), connect the output wire to the black lead.

When applying N.O (Normally Open), connect the output wire to the white lead.

Any unused output wires must be properly insulated.

Supported FASTECH Drive Types

Built-in Torque-Off Function Drive



Multi-Axis Drive (Max. 4-Axis)



Motor+Drive Integrated type



Batteryless Absolute Encoder type



- Further details on the products shown in the image above are available on our website.
- If you have questions regarding products not included in this catalog, or any other inquiries, please feel free to contact us.

Homepage cltsn.fastech-motions.com
E-mail sales@fastech-motions.com

MEMO

Ezi-IO®

CC-Link IE TSN

Network Input/Output DIO

- CC-Link IE TSN-compatible Digital I/O Module
- Input Filter Function
- Simple and Easy Wiring
- DIN Rail Mounting



FASTECH

Fast Accurate Smooth Motion

Ezi-IO®

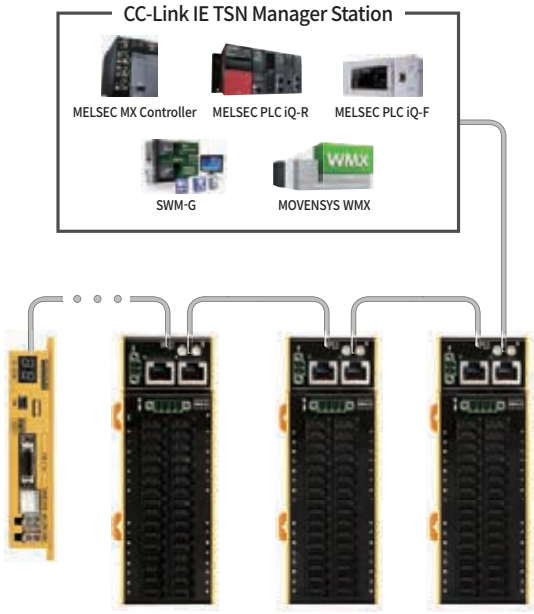
Network Input/Output

CC-Link IE TSN DIO



CC-Link IE TSN-compatible Digital I/O Module

Ezi-IO CC-Link IE TSN DIO is Digital I/O Module whipoints supports CC-Link IE TSN, a industrial network based on high speed Ethernet(1 Gbps, Full-Duplex). Ezi-IO CC-Link IE TSN DIO is a remote device station connected to the CC-Link IE TSN system. It supports various topologies to configure the system flexibly.



Simple and Easy Wiring

Ezi-IO CC-Link IE TSN DIO uses e-CON connectors. The e-CON connector is widely used in the sensor connector industry, and making the wiring mupoints simpler and easier.

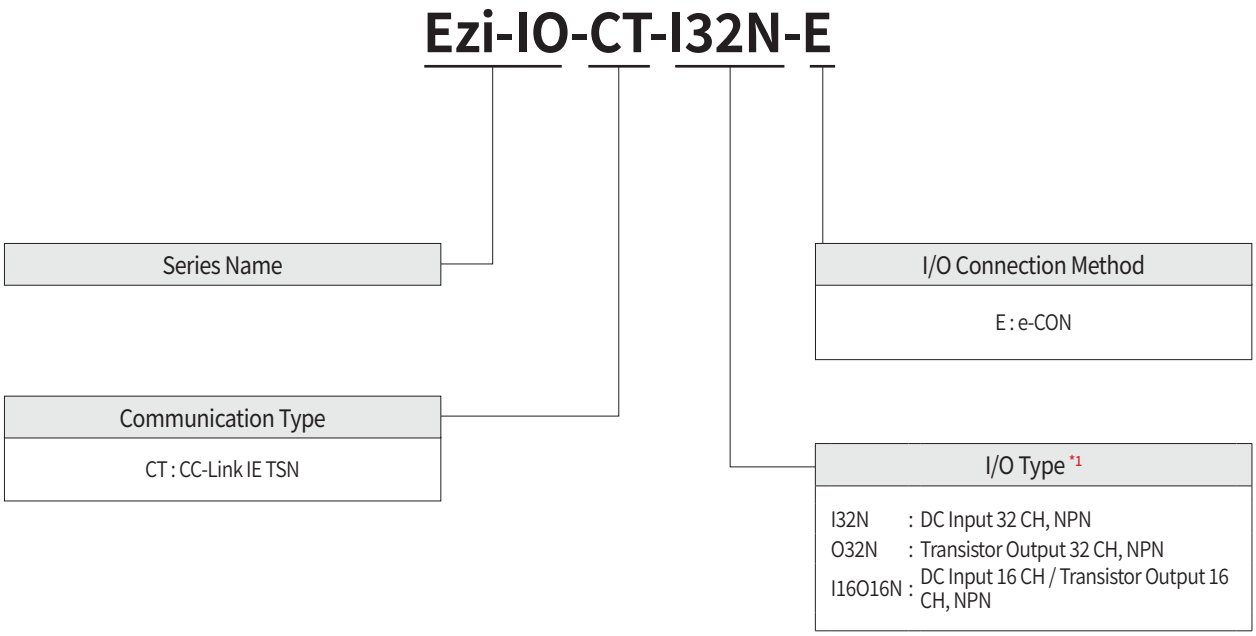
Various I/O Module Supported

Ezi-IO CC-Link IE TSN DIO provides 32 CH DC input module, 32 CH transistor output module, and 16 CH DC input/8CH transistor output module.

Input Filter Function

The input module can prevent unstable operation of the input signal due to pointsattering or noise with the input filter function.

Ezi-IO CC-Link IE TSN DIO Part Numbering



*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 Type
	PNP	Source Type

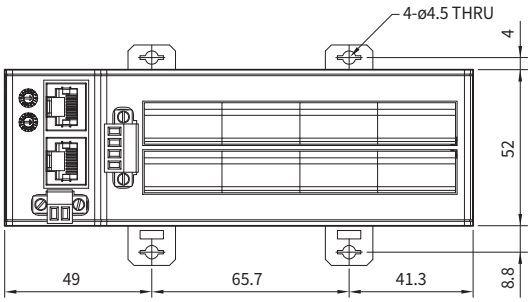
Ezi-IO CC-Link IE TSN DIO Part Number

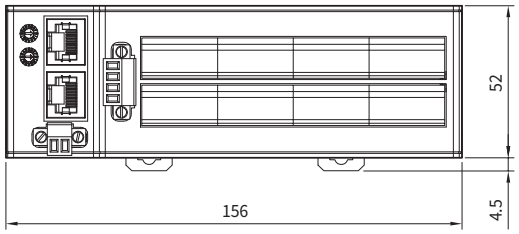
Part Number	Remarks
Ezi-IO-CT-I32N-E	32 CH e-CON Connector type
Ezi-IO-CT-O32N-E	
Ezi-IO-CT-I16O16N-E	

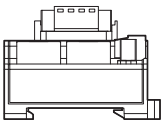
Specifications of Module

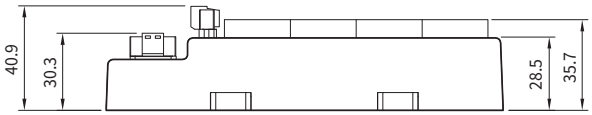
Model			Ezi-IO-CT-I32N-E	Ezi-IO-CT-O32N-E	Ezi-IO-CT-I16O16N-E
Input Voltage			24 V DC ± 10 %		
Current Consumption			· Control Power: Max. 150 mA · I/O Power : Max. 110 mA (Except Load Current)	· Control Power: Max. 180 mA · I/O Power : Max. 70mA (Except Load Current)	· Control Power: Max. 170 mA · I/O Power : Max. 90mA (Except Load Current)
Operating Condition	Ambient Temperature		· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C		
	Humidity		· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)		
	Vib. Resist.		0.5 g		
Function	Input	Number of Input Channels	32 CH	-	16 CH
		Rated Input Voltage	24 V DC		24 V DC
		Rated Input Current	5 mA/CH		5 mA/CH
		Isolation Method	Photocoupler Isolation		Photocoupler Isolation
		Common Method	16 CH/COM		16 CH/COM
		Input filter	Max. 40 ms (Filter Resolution: 200 µs)		Max. 40 ms (Filter Resolution: 200 µs)
		Off→On Response Time	10 µs or lower		10 µs or lower
		On→Off Response Time	70 µs or lower		70 µs or lower
	Output	Number of Output Points	-	32 CH	16 CH
		Rated Input Voltage		24 V DC	24 V DC
		Rated Input Current		0.5 A/CH (3 A/COM)	0.5 A/CH (3 A/COM)
		Isolation Method		Photocoupler Isolation	Photocoupler Isolation
		Common Method		16 CH/COM	16 CH/COM
		Off→On Response Time		4 µs or lower	4 µs or lower
		On→Off Response Time		190 µs or lower	190 µs or lower
LED Display			· Control Power Status (PWR) · Module Status (RUN) · Operation Error (ERR) · CC-Link IE TSN Connection (LA P1, LA P2) · I/O Status (0 ~ 31)		· Control Power Status (PWR) · Module Status (RUN) · Operation Error (ERR) · CC-Link IE TSN Connection (LA P1, LA P2) · I/O Status (0 ~ 15 / 0 ~ 15)
CC-Link IE TSN	Communication Protocol		CC-Link IE TSN Class B		
	Synpointsronization		Asynpointsronous Comm. (Minimum Cycle Time: 250 µs)		

Dimensions of Module [mm]



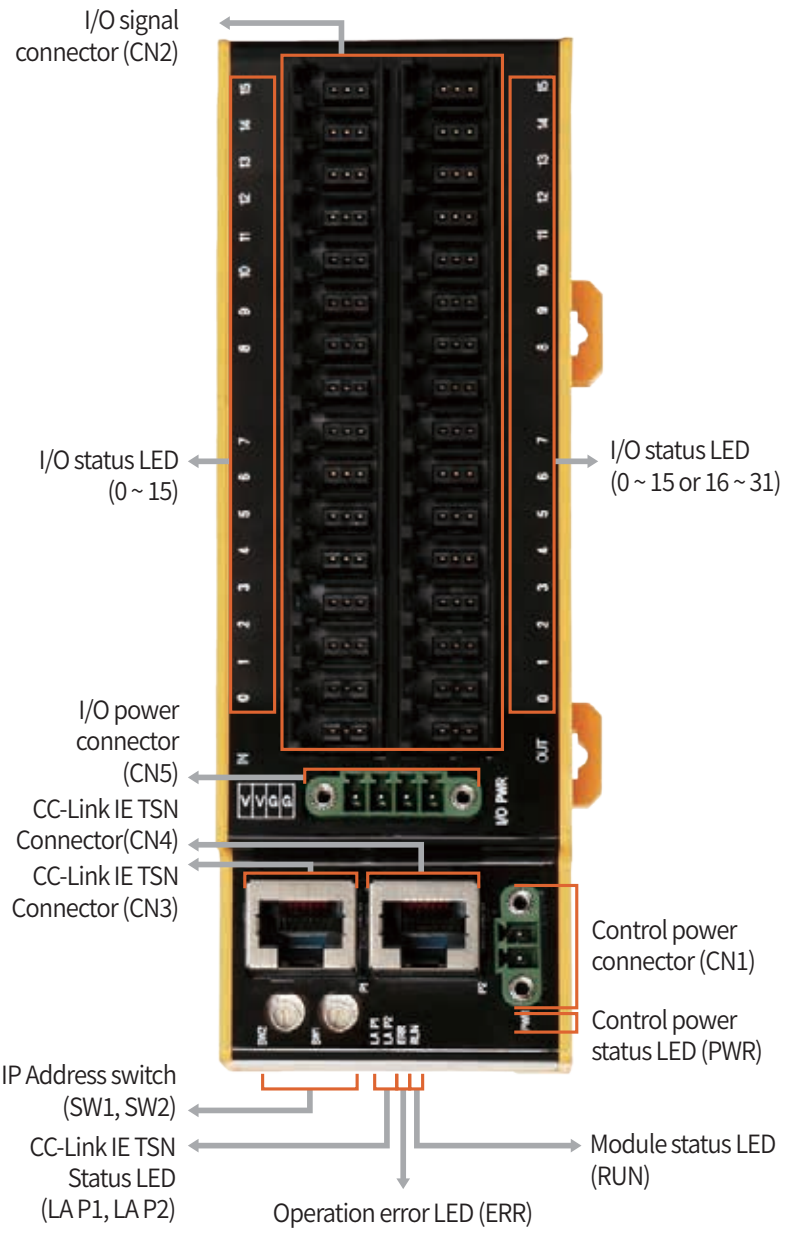






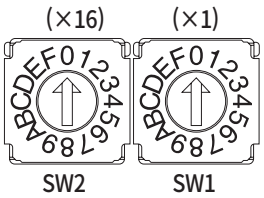
※ Install the product on a din rail with a width of 35 mm.

Names and Functions of Each Part [32 CH e-CON Connector Type]



1. IP Address Setting Switch (SW1, SW2)

These Switches set the 4th octet of IP address for CC-Link IE TSN communication.



e.g.) In case of SW2 : 5 and SW1
(5×16) + (7×1) = 87
IP is to be set as 192.168.3.87

2. Status LED

Control Power Status LED

Indicator	Color	Status	Description
PWR	Red	OFF	Power is not supplied
		ON	Power is supplied

Module Status LED

Indicator	Color	Status	Description
RUN	Green	OFF	INIT state or power off
		ON	OPERATIONAL state

Operation Error LED

Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		ON	Data link error

CC-Link IE TSN Status LED

Indicator	Color	Status	Description
LA P1 / LA P2	Green	OFF	Link inactive
		ON	Link active

I/O Status LED

Indicator *1	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

*1: For Ezi-IO-CT-I16O16N-E module, the name is written as 0~15 / 0~15.

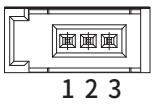
3. Control Power Connector (CN1)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input



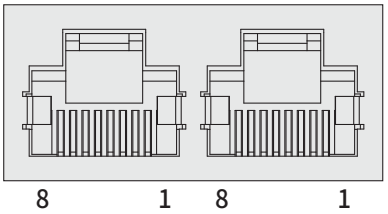
4. I/O Connector (CN2)

No.	Function	I/O
1	EXT_24 V DC	Output
2	SIGNAL	Input/ Output
3	EXT_GND	Output



5. CC-Link IE TSN Connector (CN3, CN4)

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

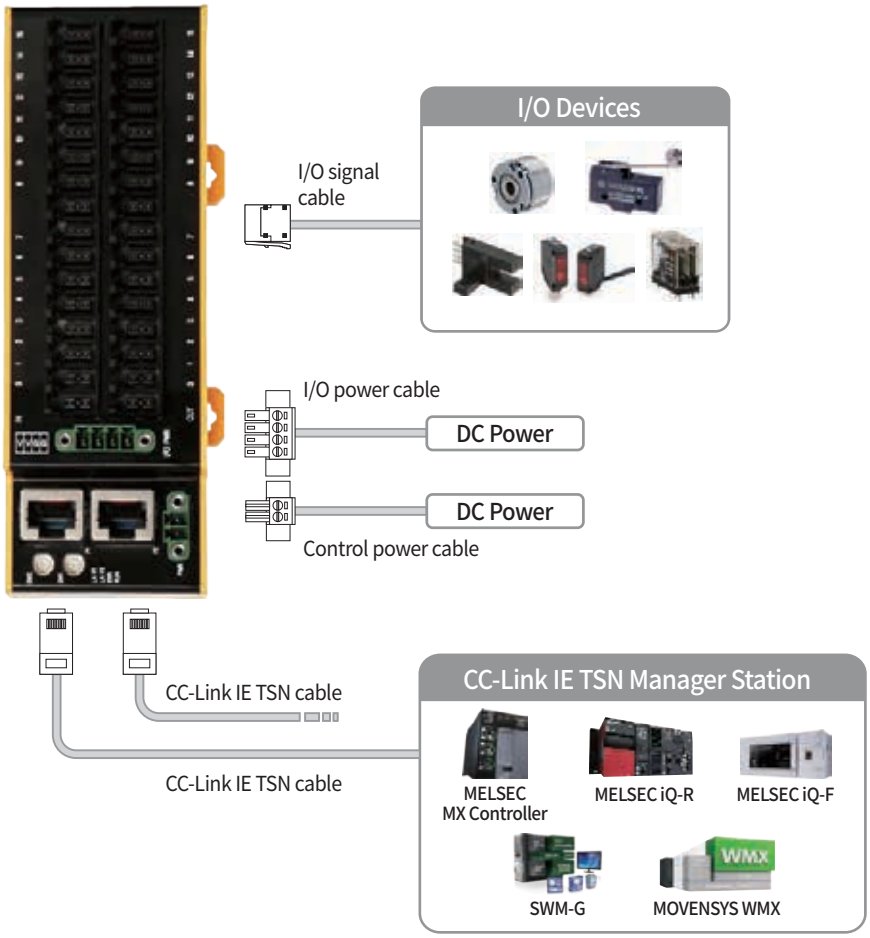


6. I/O Power Connector (CN5)

No.	Function	I/O
1	EXT_24 V DC	Input
2	EXT_24 V DC	Input
3	EXT_GND	Input
4	EXT_GND	Input



System Configuration



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
I/O Connection (CN2)	e-CON Plug Connector	CNE-P03-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

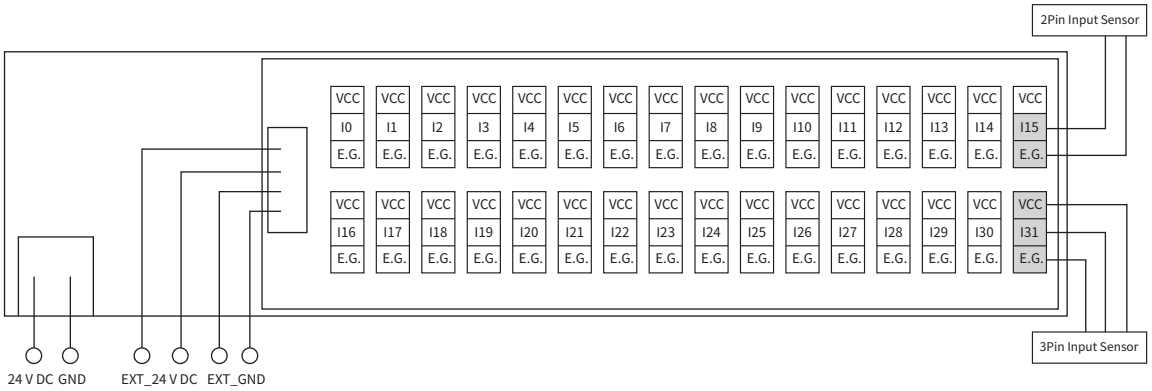
CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection (CN3, CN4)	CGNR-EC-001F	1	• STP(Shielded Twisted Pair) Cable • Category 5e or higher • Max. Cable Length: 100 m • Flexible Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

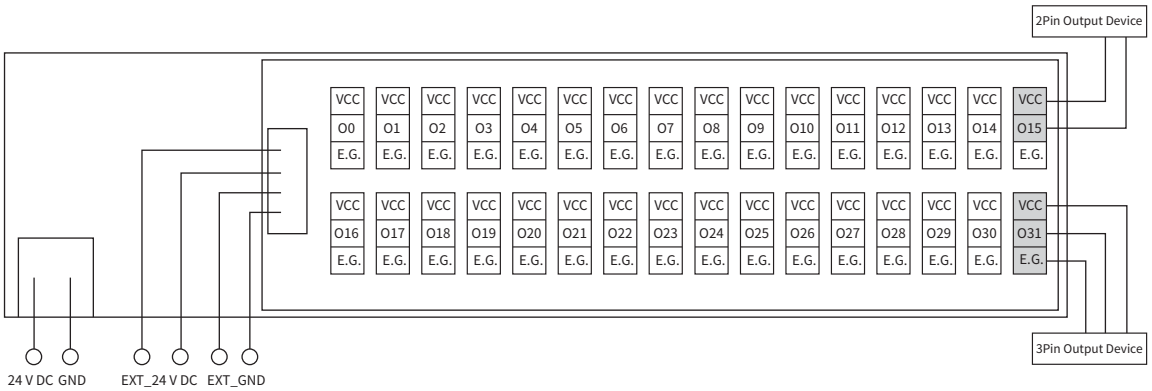
※ If you need cables with length(in units of 1 m) not listed on the table or robot cables, please contact FASTECH Points for more information.

External Wiring Diagram

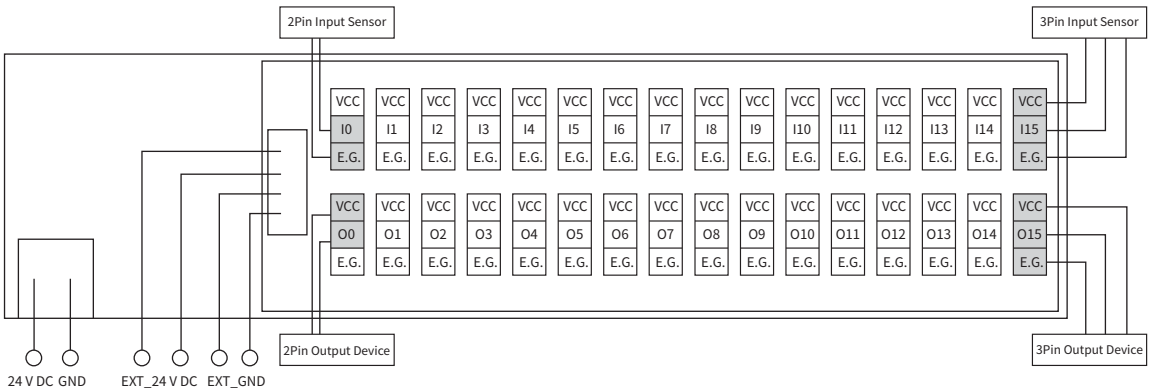
Ezi-IO-CT-I32N-E (NPN)



Ezi-IO-CT-O32N-E (NPN)



Ezi-IO-CT-I16O16N-E (NPN)



※ VC and E.G are supplied from I/O Power Connector(CN5).
※ e.g.) · 2 Pin Input Sensor : Limit Sensor, etc.
· 3 Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

MEMO

Ezi-IO® CC-Link IE TSN

Network Input/Output AD

- CC-Link IE TSN-compatible Analog Input Module
- Configurable Input Mode and Input Range
- Moving Average Filtering
- Simple and Easy Wiring
- DIN Rail Mounting



FASTECH

Fast Accurate Smooth Motion

Ezi-IO®

Network Input/Output

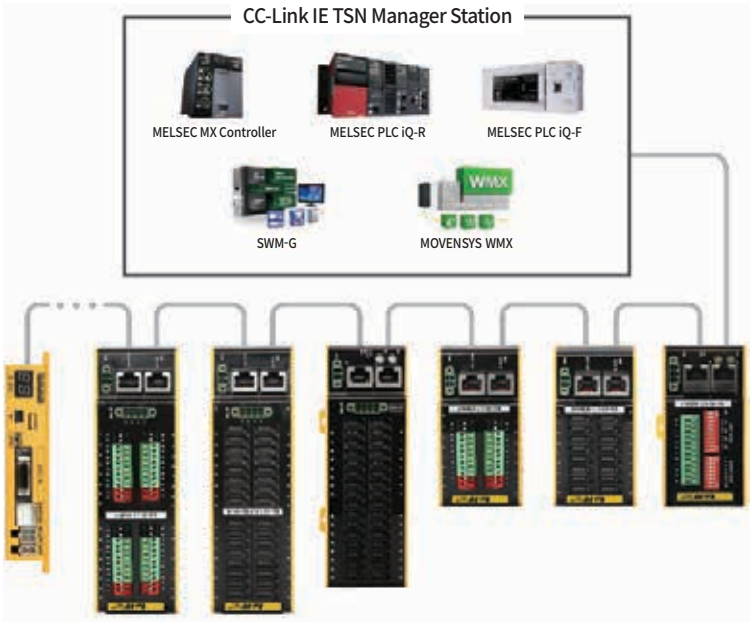
CC-Link*IE TSN*

AD



CC-Link IE TSN-compatible Analog Input Module

Ezi-IO CC-Link IE TSN AD is analog input module whipoints supports CC-Link IE TSN, a industrial network based on high speed Ethernet(1 Gbps, Full-Duplex). Ezi-IO CC-Link IE TSN AD is a remote device station connected to the CC-Link IE TSN system. It supports various topologies to configure the system flexibly.



Simple and Easy Wiring

Ezi-IO CC-Link IE TSN 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 mupoints simpler and easier.

Network Synpointsronous Communication

Ezi-IO CC-Link IE TSN AD supports asynpointsronous & synpointsronous modes.

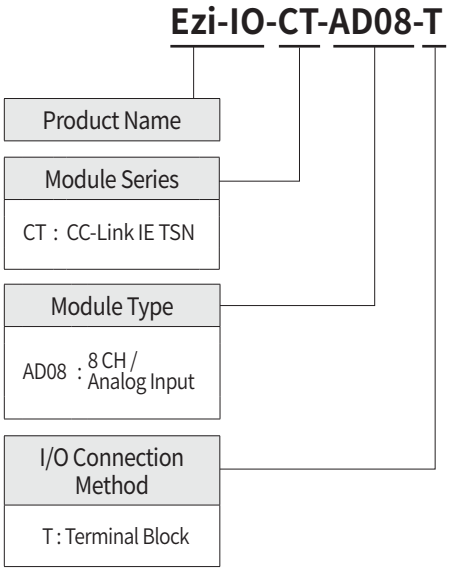
Easy Setup with Switches

Ezi-IO CC-Link IE TSN AD can easily set CC-Link IE TSN ID with rotary Switches and identify CC-Link IE TSN address easily. In addition, 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.

Moving Average Filtering

Ezi-IO CC-Link IE TSN 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 ~ 100 ms.

Ezi-IO CC-Link IE TSN AD Part Numbering



Ezi-IO CC-Link IE TSN AD Part Number

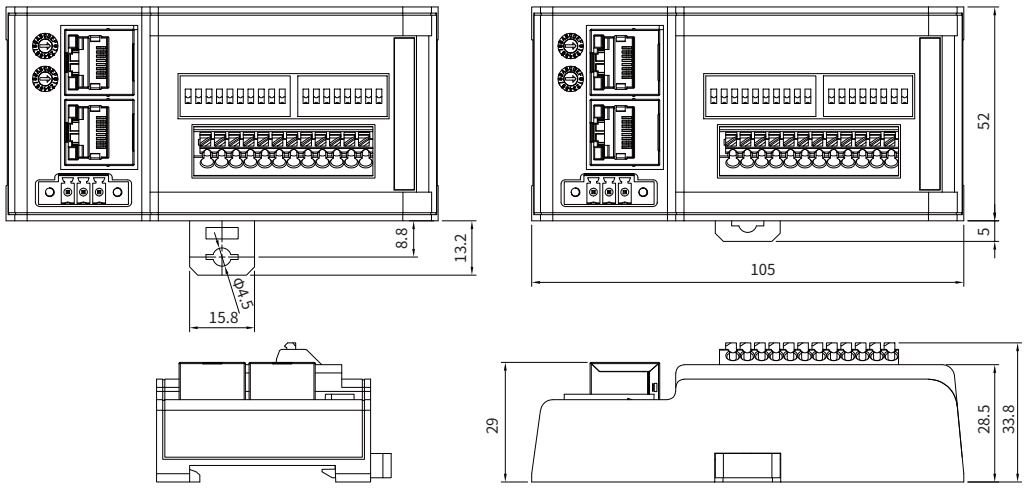
Part Number
Ezi-IO-CT-AD08-T

Specifications of Module

Model			Ezi-IO-CT-AD08-T	
Input Mode			Voltage Input	Current Input
Input Voltage			24 V DC ± 10 %	
Current Consumption			Max. 120 mA	
Operating Condition	Ambient Temperature		· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C	
	Humidity		· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)	
	Vib. Resist.		0.5 g	
Function	Number of Input Channels		8 CH	
	Max. Signal Input		± 15 V	± 30 mA
	Input Range		· -10 ~ 10 V · -5 ~ 5 V · -2.5 ~ 2.5 V · 0 ~ 10 V	· 0 ~ 20 mA
	Input Range Setting Method		· Parameter Setting Window (Separate settings for CH 1~8) · DIP Switch (Separate settings for CH 1 / CH 2, CH 3 / CH 4, CH 5 / CH 6, CH 7 / CH 8)	
	Input Impedance		1 MΩ	249 Ω
	Max. Resolution		1/8,191 (Full Scale)	
	Accuracy	25 °C	±0.3% (Full Scale)	±0.3% (Full Scale)
		0 ~ 50 °C	±0.4% (Full Scale)	±0.6% (Full Scale)
	Analog Conversion Cycle		200 µs/8 CH	
	A/D Converted Data		· -10 ~ 10 V : -4,096 ~ 4,095 · -5 ~ 5 V: -4,096 ~ 4,095 · -2.5 ~ 2.5 V: -4,096 ~ 4,095 · 0 ~ 10 V: 0 ~ 8,191	· 0 ~ 20 mA: 0 ~ 8,191
	Isolation Method		Between analog input and CC-Link IE TSN connectors : Digital isolation (Between CH : Non-isolated)	
LED Display			· Power Status (PWR) · CC-Link IE TSN Status (RUN)	· Operation Error (ERR) · CC-Link IE TSN Connection(P1, P2)
CC-Link IE TSN		Station Type	Remote Device Station	
		Authentication Class	Class B	
		Bus Interface	2×RJ45 Connector	
		Cable	STP (Shielded Twisted Pair) Cable, Category 5e or higher / Max. 100 m	

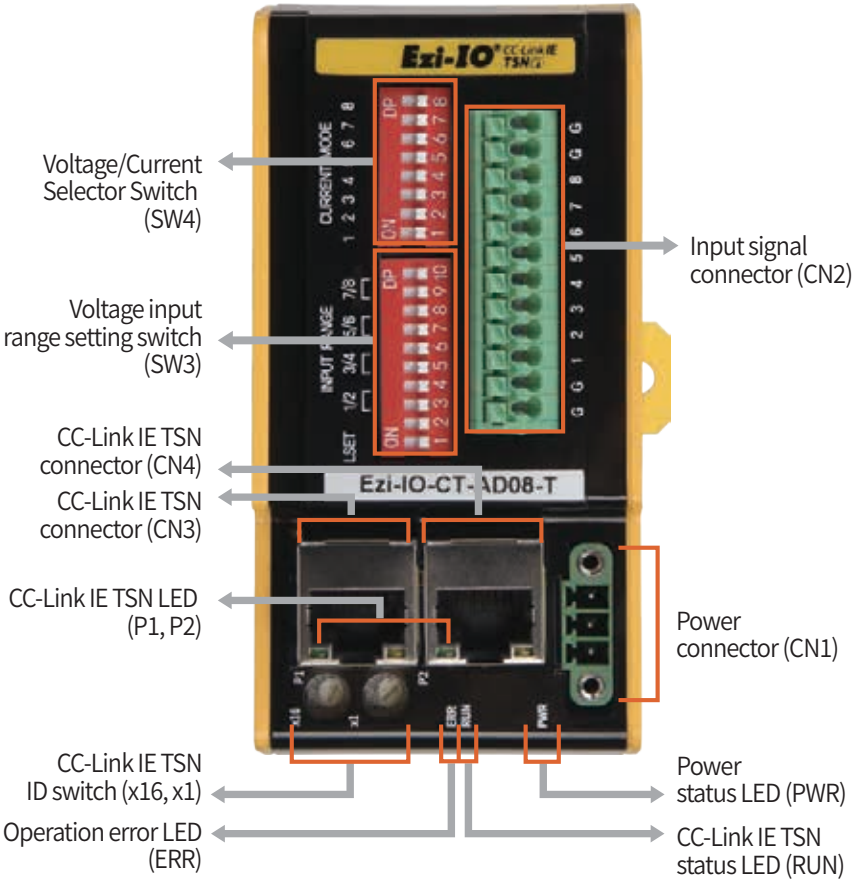
Dimensions of Module [mm]

Terminal Block Type - Applied model : Ezi-IO-CT-AD08-T



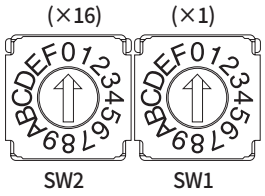
※ Install the product on a din rail with a width of 35 mm.

Names and Functions of Each Part [Ezi-IO-CT-AD08-T]

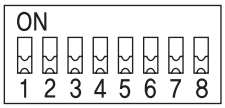


1. Network ID Switch (SW1, SW2)

They are Switches to set the CC-Link IE TSN ID(Remote Station ID) node address, and they represent a hexadecimal number.
SW1 indicates the units digit (×1), and SW2 indicates the tens digit (×16).



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

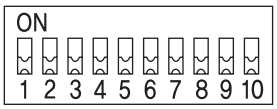


SW4 is a Switch that selects voltage/current mode for Each point.
Refer to the following pointsart for how to use SW4.

Switch / Mode	Points 1	Points 2	Points 3	Points 4	Points 5	Points 6	Points 7	Points 8
	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 ofr Each point with the Input Mode Selection Switch (SW4) beof re 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 setting method with the LSET (SW3.1) Switch as follows.

Switch / Setting Method	LSET SW 3.1	Description
DIP Switch	ON	Setting voltage input range with DIP Switches (SW3.3~SW3.10)
Parameter Setting Window	OFF	Setting voltage/current input range with Parameter Setting Window

※ If you use any points in current input mode, select the Parameter Setting Window f or setting method (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 of setting (SW3.1 = ON), the voltage input is set as shown in the table below.

Switch / Input Range	Points 1/Points 2		Points 3/Points 4		Points 5/Points 6		Points 7/Points 8	
	SW3.3	SW3.4	SW3.5	SW3.6	SW3.7	SW3.8	SW3.9	SW3.10
-10 ~ 10 V	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
-5 ~ 5 V	OFF	ON	OFF	ON	OFF	ON	OFF	ON
-2.5 ~ 2.5 V	ON	OFF	ON	OFF	ON	OFF	ON	OFF
0 ~ 10 V	ON	ON	ON	ON	ON	ON	ON	ON

4. Status LED

Power Status LED

Indicator	Color	Status	Description
PWR	Red	OFF	Power is not supplied
		ON	Power is supplied

Module Status LED

Indicator	Color	Status	Description
RUN	Green	OFF	INIT state or power off
		ON	OPERATIONAL state

Operation Error LED

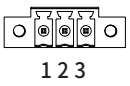
Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		ON	Error occurred

CC-Link IE TSN LED

Indicator	Color	Status	Description
P1 / P2	Green	OFF	Link inactive
		ON	Link active

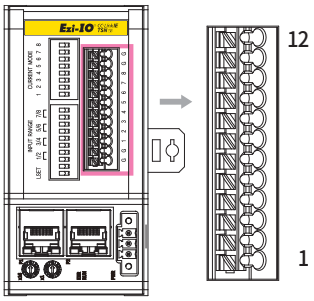
5. Power Connector (CN1)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input
3	FG	Input



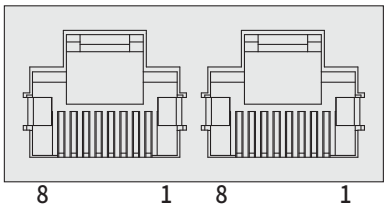
6. Input Signal Connector (CN2)

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

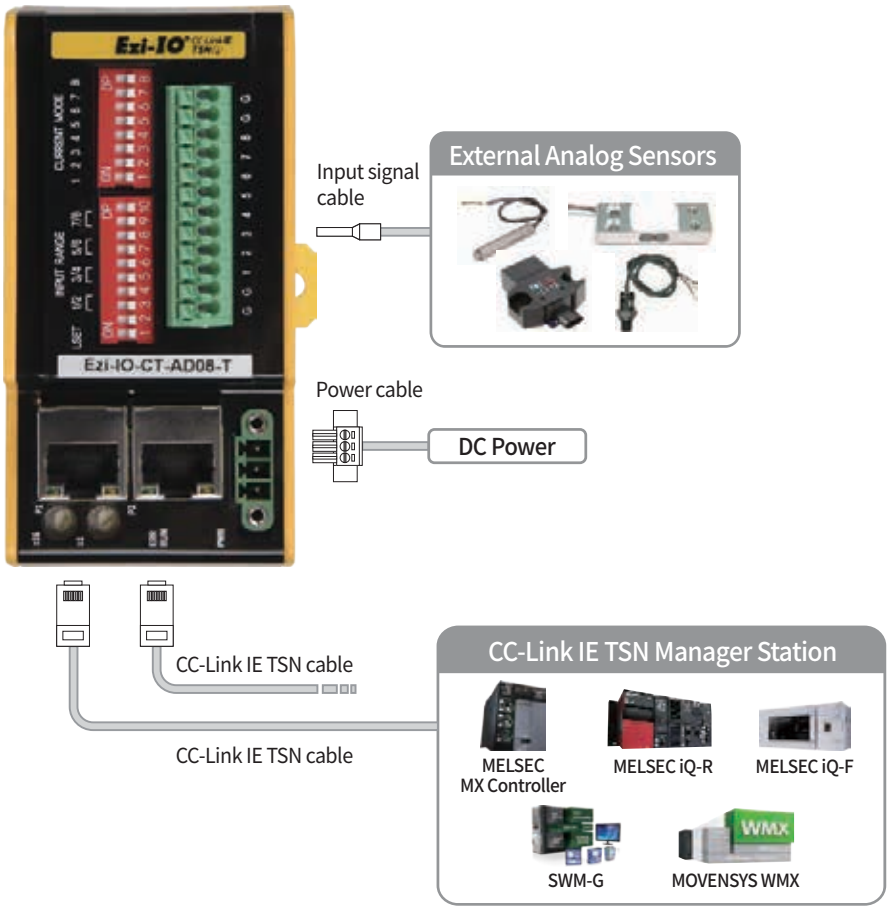


7. CC-Link IE TSN Connector (CN3, CN4)

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



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



1. Accessories

Connectors

Purpose	Item	Part Number	Manufacturer
Power (CN1)	Terminal Block	MC421-38103	DECA

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

2. Options

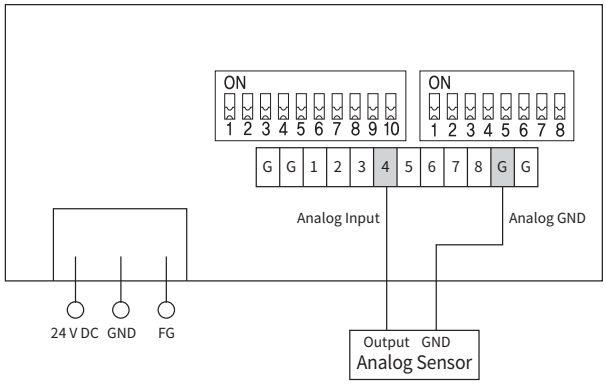
CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection (CN3, CN4)	CGNR-EC-001F	1	• STP(Shielded Twisted Pair) Cable • Category 5e or higher • Max. Cable Length: 100 m • Fixed Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

External Wiring Diagram [Terminal Block Type]

Ezi-IO-CT-AD08-T



Ezi-IO® CC-Link IE TSN DA

Network Input/Output

- CC-Link IE TSN-compatible Analog Output Module
- Configurable Output Range
- Calibration for Output Deviation
- Simple and Easy Wiring
- DIN Rail Mounting



FASTECH

Fast Accurate Smooth Motion

Ezi-IO®

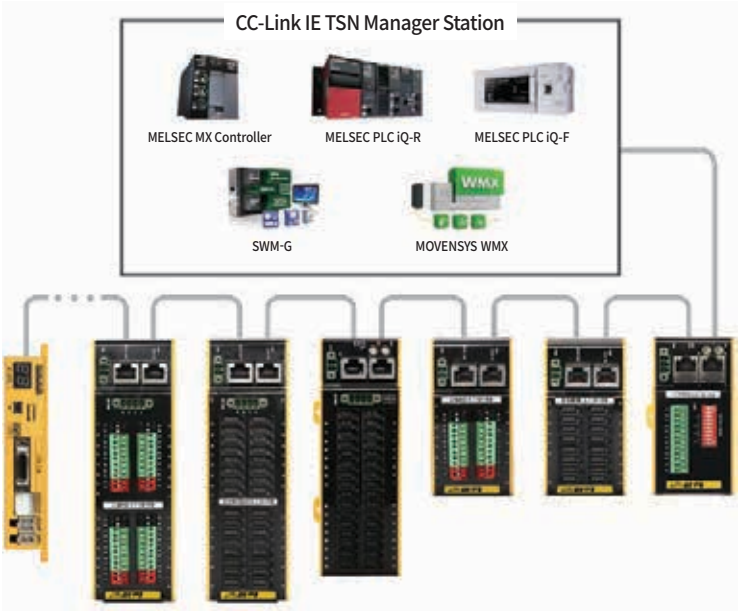
Network Input/Output

CC-Link IE TSN DA



CC-Link IE TSN-compatible Analog Output Module

Ezi-IO CC-Link IE TSN DA is analog output module whipoints supports CC-Link IE TSN, a industrial network based on high speed Ethernet(1 Gbps, Full-Duplex). Ezi-IO CC-Link IE TSN DA is a remote device station connected to the CC-Link IE TSN system. It supports various topologies to configure the system flexibly.



Simple and Easy Wiring

Ezi-IO CC-Link IE TSN 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 mupoints simpler and easier.

Network Synpointsronous Communication

Ezi-IO CC-Link IE TSN DA supports asynpointsronous & synpointsronous modes.

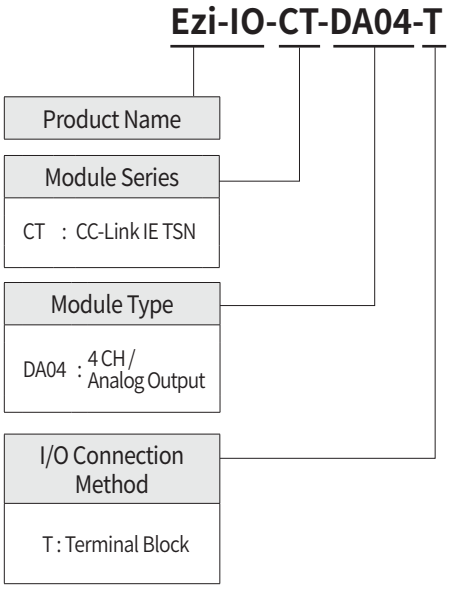
Easy Setup with Switches

Ezi-IO CC-Link IE TSN DA can easily set CC-Link IE TSN ID with rotary Switches and identify CC-Link IE TSN address easily. In addition, the output signal range can be easily set with the DIP Switches.

Calibration for Output Deviation

Ezi-IO CC-Link IE TSN DA provides an output deviation calibration function as a countermeasure against deviations in the output signal due to the type of connected device, the pointsaracteristics of the cable, and the difference in the connection method.

Ezi-IO CC-Link IE TSN DA Part Numbering



Ezi-IO CC-Link IE TSN DA Part Number

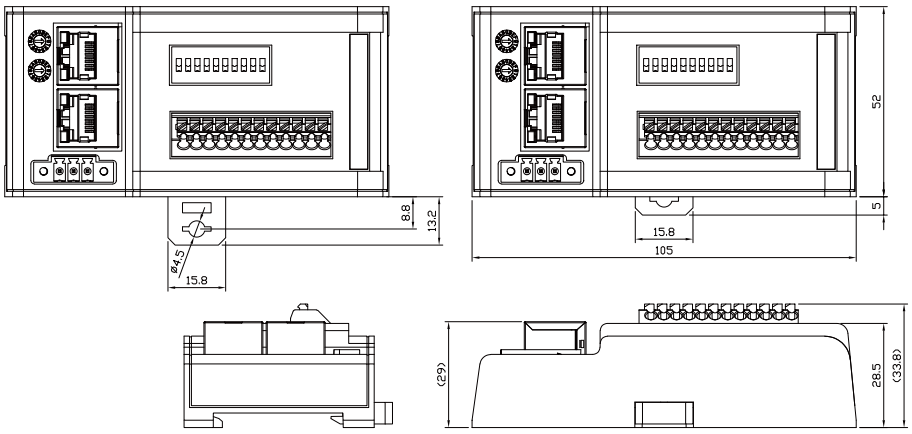
Part Numbering
Ezi-IO-CT-DA04-T

Specifications of Module

Model			Ezi-IO-CT-DA04-T	
Output Mode			**Voltage Output**	**Current Output**
Input Voltage			24 V DC ± 10 %	
Current Consumption			Max. 180 mA	
Operating Condition	Ambient Temperature		· In Use: 0 ~ 50°C · In Storage: -20 ~ 70°C	
	Humidity		· In Use: 35 ~ 85% RH (Non-Condensing) · In Storage: 10 ~ 90% RH (Non-Condensing)	
	Vib. Resist.		0.5 g	
Function	Number of Output Channels		4 CH	
	Output Range		· 0 ~ 5 V · 1 ~ 5 V · 0 ~ 10 V · -10 ~ 10 V	· 0 ~ 20 mA · 4 ~ 20 mA
	Output Range Setting Method		· Parameter Setting Window (Separate settings for CH 1~4) · DIP Switch (Separate settings forCH 1 / CH 2, CH 3 / CH 4, CH 5 / CH 6, CH 7 / CH 8)	
	External Load Resistor		1 kΩ or higher	400 Ω or lower
	Max. Resolution		1 / 50,000 (Full Scale)	
	Accuracy	25 °C	± 0.3 % (Full Scale)	
		0 ~ 50 °C	± 0.4 % (Full Scale)	
	Analog Conversion Cycle		500 µs / 4 CH	
	D/A Converted Data		· -25,000~25,000 (-10 ~ 10 V output range) · 0 ~ 25,000 (Other output ranges except -10 ~ 10V)	· 0 ~ 25,000
	Isolation Method		Between analog output and CC-Link IE TSN connectors : Digital isolation (Between channels: Non-isolated)	
LED Display			· Power Status (PWR) · CC-Link IE TS Status (RUN)	· Operation Error (ERR) · CC-Link IE TSN Connection(P1, P2)
CC-Link IE TSN	Communication Protocol		CC-Link IE TSN Class B	
	Synpointsroni-zation		Asynpointsronous, Synpointsronous Mode	

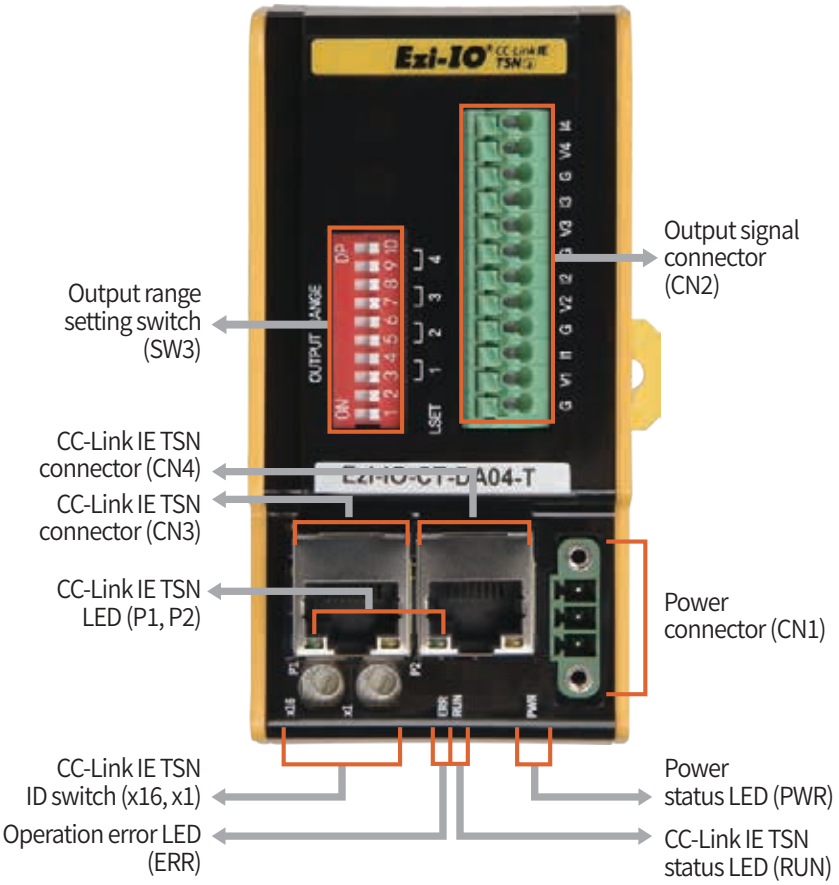
Dimensions of Module [mm]

Ezi-IO-CT-DA04-T



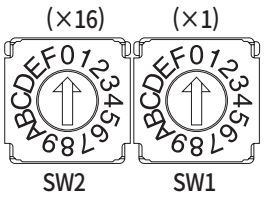
※ Install the product on a din rail with a width of 35 mm.

Names and Functions of Each Part [Ezi-IO-CT-DA04-T]

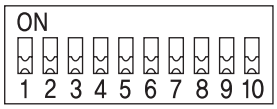


1. Network ID Switch (SW1, SW2)

They are Switches to set the CC-Link IE TSN ID(Remote Station ID) node address, and they represent a hexadecimal number.
SW1 indicates the units digit (×1), and SW2 indicates the tens digit (×16).



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 Output Setting Method

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

Switch / Setting Method	LSET SW 3.1	Description
DIP Switch	ON	Setting output range with DIP Switches (SW3.3 ~ SW3.10)
Parameter Setting Window	OFF	Setting output range with Parameter Setting Window

※ 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	Points 1		Points 2		Points 3		Points 4	
	SW3.3	SW3.4	SW3.5	SW3.6	SW3.7	SW3.8	SW3.9	SW3.10
0 ~ 5 V	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
-10 ~ 10 V	OFF	ON	OFF	ON	OFF	ON	OFF	ON
0 ~ 20 mA	ON	OFF	ON	OFF	ON	OFF	ON	OFF
4 ~ 20 mA	ON	ON	ON	ON	ON	ON	ON	ON

※ Output range of 1 ~ 5 V and 0 ~ 10 V can only be set by Parameter Setting Window.

3. Status LED

Power Status LED

Indicator	Color	Status	Description
PWR	Red	OFF	Power is not supplied
		ON	Power is supplied

Module Status LED

Indicator	Color	Status	Description
RUN	Green	OFF	INIT state or power off
		ON	OPERATIONAL state

Operation Error LED

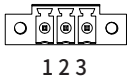
Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		ON	Error occurred

CC-Link IE TSN LED

Indicator	Color	Status	Description
P1 / P2	Green	OFF	Link inactive
		ON	Link active

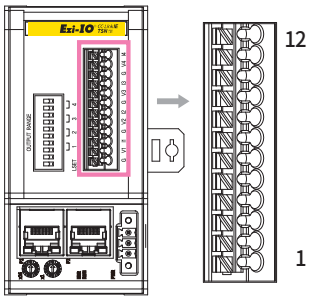
4. Power Connector (CN1)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input
3	FG	Input



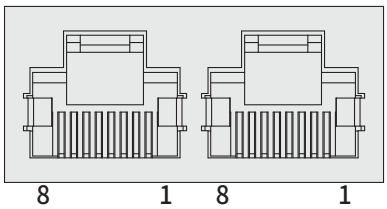
5. Output Signal Connector (CN2)

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

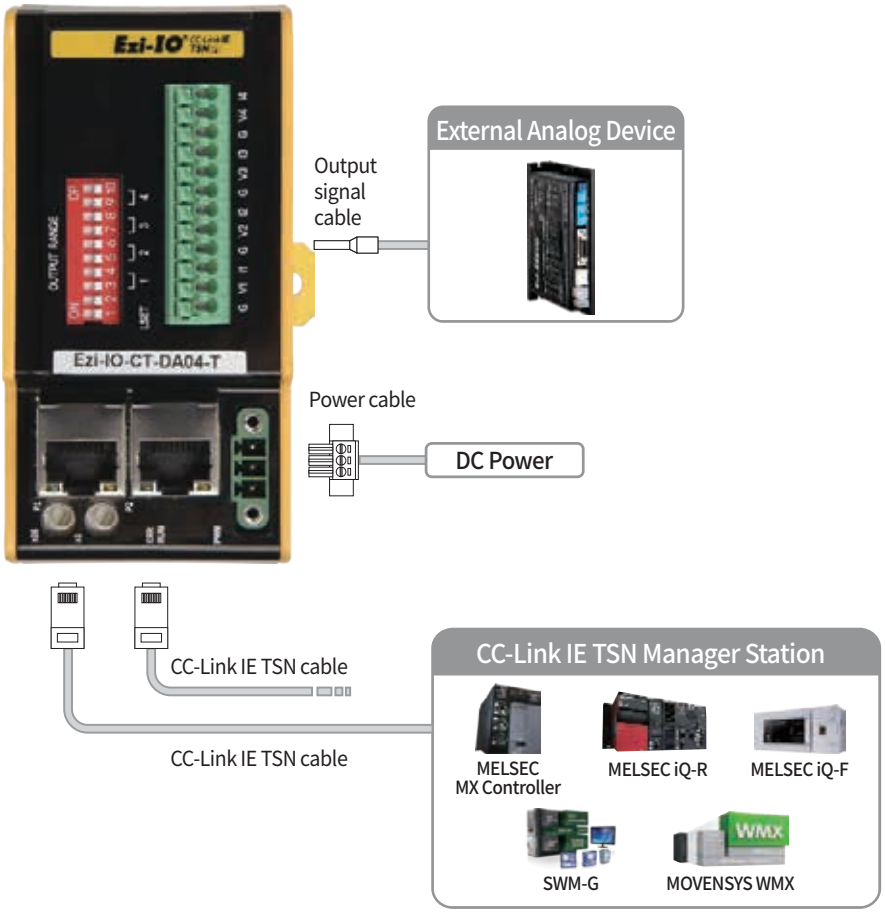


6. CC-Link IE TSN Connector (CN3, CN4)

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



System Configuration [Ezi-IO-CT-DA04-T]



1. Accessories

Connectors

Purpose	Item	Part Number	Manufacturer
Power (CN1)	Terminal Block	MC421-38103	DECA

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

2. Options

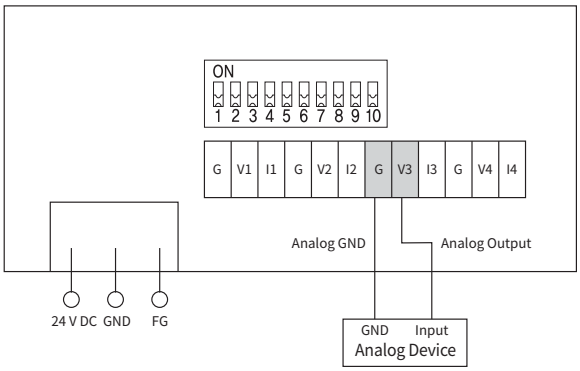
CC-Link IE TSN Cable

Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection (CN3, CN4)	CGNR-EC-001F	1	• STP(Shielded Twisted Pair) Cable • Category 5e or higher • Max. Cable Length: 100 m • Fixed Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

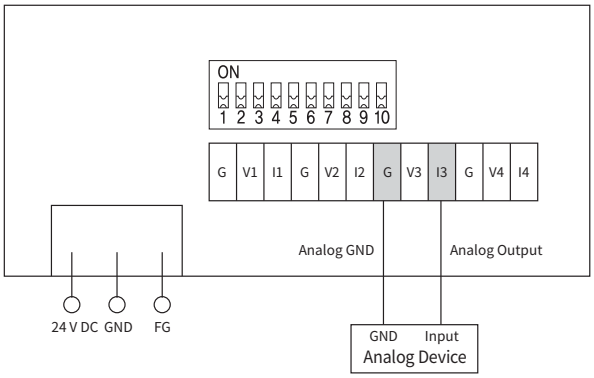
※ If you need cables with length(in units of 1 m) not listed on the table or robot cables, please contact FASTECH Points for more information.

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

Voltage Output Mode



Current Output Mode



MEMO

Ezi-IO®

Network Input/Output

CC-Link IE TSN

CNT

- CC-Link IE TSN-compatible High Speed Counter Module
- Line Receiver and DC Input Type Provided
- Comparison Output Function
- Simple and Easy Wiring
- DIN Rail Mounting



FASTECH

Fast Accurate Smooth Motion

Ezi-IO®

Network Input/Output

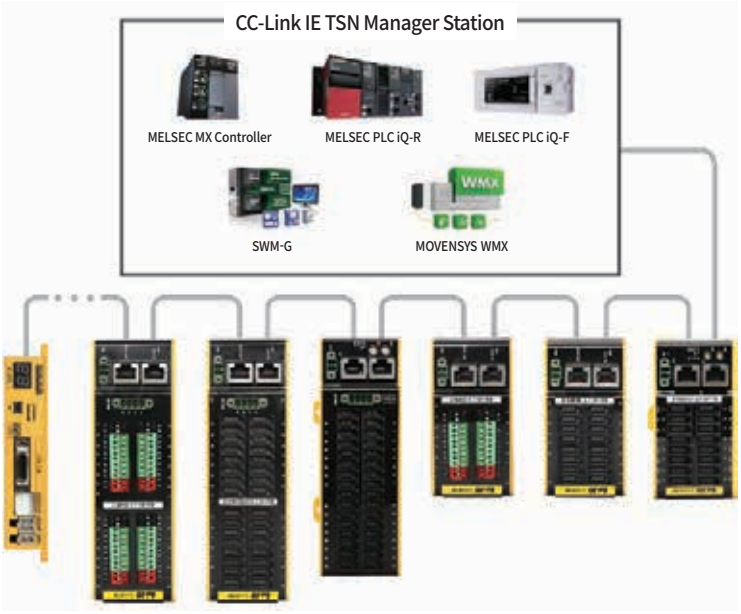
CC-Link IE TSN

CNT



CC-Link IE TSN-compatible High Speed Counter Module

Ezi-IO CC-Link IE TSN CNT is high speed counter module whipoints supports CC-Link IE TSN, an industrial network based on high speed Ethernet(1 Gbps, Full-Duplex). Ezi-IO CC-Link IE TSN CNT is a remote device station connected to the CC-Link IE TSN system. It supports various topologies to configure the system flexibly.



Simple and Easy Wiring

Ezi-IO CC-Link IE TSN CNT uses 4-pin e-CON connectors. The e-CON connector is widely used in the sensor connector industry, and making the wiring mupoints simpler and easier.

Network Synpointsronous Communication

Ezi-IO CC-Link IE TSN CNT supports asynpointsronous & synpointsronous modes.

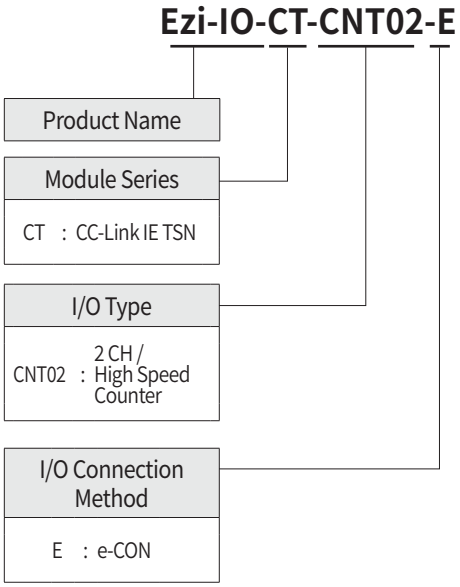
Various Input Types Supported

Ezi-IO CC-Link IE TSN CNT can be connected to various external devices without special input setting because the counter input circuit of Ezi-IO CC-Link IE TSN CNT supports both open collector output and line driver output.

Comparison Output Available

Comparison output function outputs ON/OFF signals by comparing the reference value and the current value of the counter. Up to 60 comparison position values can be set for Each point. Comparison output function supports TTL output and open collector output.

Ezi-IO CC-Link IE TSN CNT Part Numbering



Ezi-IO CC-Link IE TSN CNT Part Number

Part Number
Ezi-IO-CT-CNT02-E

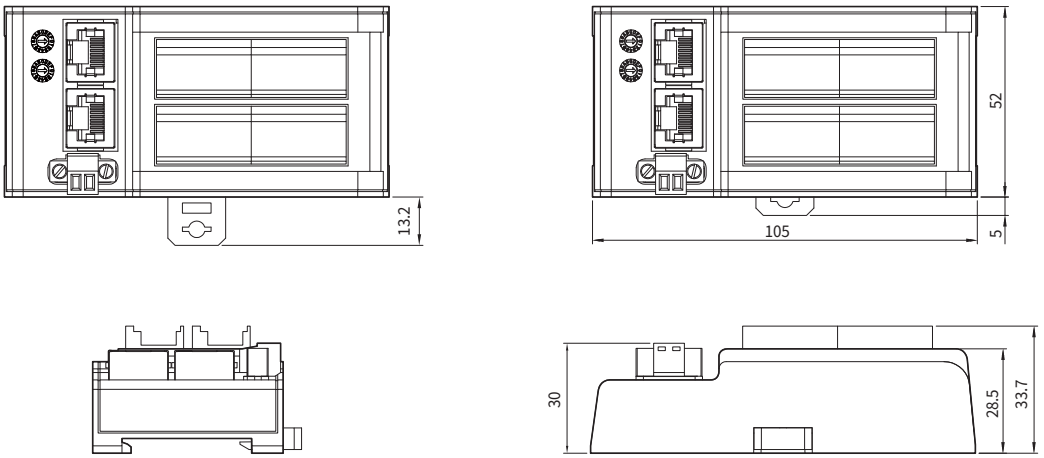
Specifications of Module

Model			Ezi-IO-CT-CNT02-E	
Input Voltage			24 V DC ± 10 %	
Current Consumption			Max. 160 mA (Except 5 V DC Encoder supply current and load current)	
Operating Condition	Ambient Temperature		· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C	
	Humidity		· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)	
	Vib. Resist.		0.5 g	
Function	Number of Input Channels		2 CH	
	Count Range		0 ~ 4,294,967,295 (32 bit)	
	Counter Function		· Counter Value LatCH · Counter Value Reset · Counter Value Preset · Pulse Rate Measurement · Comparison Output	
	Pulse Input	Input Signal	3 dedicated Inputs (A phase, B phase, Z phase) for Each point	
		Input Type	Line Receiver Input (Line Driver Output Support)	DC Input (NPN/PNP Open Collector Output)
		Rated Input Voltage	5 V DC	24 V DC, 5 V DC
		Rated Input Current	6.3 mA	
		Pulse Input Method	· Phase Differential Pulse Input (Multiplication X2, X4) · 1 Pulse Input (Pulse/Direction Input) · 2 Pulse (CW/CCW Input)	
		Max. Response Frequency	· A Phase, B Phase: - Phase Differential Pulse Input: 1MHz (When multiplied by 4, 4MHz) - 1 Pulse / 2 Pulse Input: 4MHz · Z Phase: 100 kHz	
		Isolation Method	Photocoupler Isolation	
	Control Input	Input Signal	3 dedicated Inputs (LatCH A, LatCH B, Reset) for Each point	
		Input Type	DC Input (NPN/PNP Open Collector Output Supported)	
		Rated Input Voltage	24 V DC	5 V DC
		Rated Input Current	4.4 mA	4.6 mA
		Off→On Response Time	3 µs or lower	
		On→Off Response Time	3 µs or lower	
		Isolation Method	Photocoupler Isolation	
	Com-parison Output	Output Signal	1 dedicated Input (Comparison Output) for Each point	
		Output Type	TTL Output	Open Collector Output (Transistor Output)
		Rated Output Voltage	5 V DC	30 V DC or lower
		Rated Output Current	Max. 20 mA	Max. 20 mA
		Off→On Response Time	150 ns or lower	About 20 µs*
		On→Off Response Time	150 ns or lower	About 20 µs*
		Isolation Method	None	Photocoupler Isolation
LED Display			· Power Status (PWR) · CC-Link IE TSN Status (RUN) · Operation Error (ERR) · CC-Link IE TSN Connection (P1, P2) · Counter Operation Status (CH 1, CH 2) · I/O Status (A1, B1, Z1, LTA1, LTB1, RST1, CP1, A2, B2, Z2, LTA2, LTB2, RST2, CP2)	
CC-Link IE TSN		Communication Protocol	CC-Link IE TSN Class B	
		Synpointsronization	Asynpointsronous, Synpointsronous Mode	

※ This is the value when 24 V DC power and a load ersistance of 2 kΩ are connected, and the value may pointsange depending on the cicruit configuration.

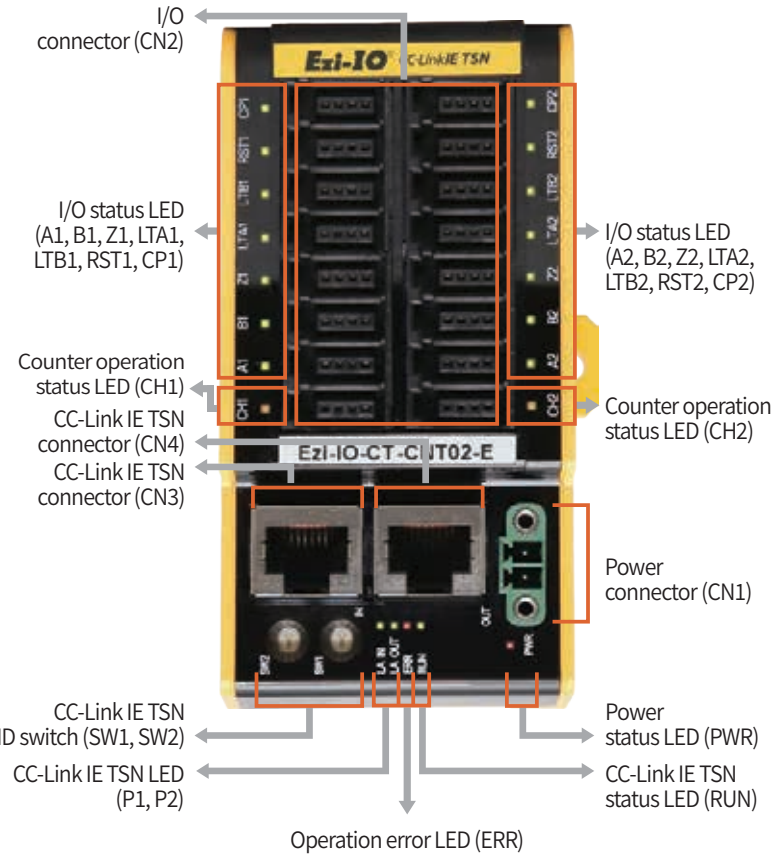
Dimensions of Module [mm]

Ezi-IO-CT-CNT02-E



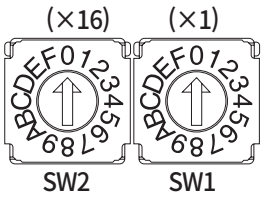
※ Install the product on a din rail with a width of 35 mm.

Names and Functions of Each Part [Ezi-IO-CT-CNT02-E]



1. Network ID Switch (SW1, SW2)

They are Switches to set the CC-Link IE TSN ID(Remote Station ID) node address, and they represent a hexadecimal number.
SW1 indicates the units digit (×1), and SW2 indicates the tens digit (×16).



2. Status LED

Power Status LED

Indicator	Color	Status	Description
PWR	Red	OFF	Power is not supplied
		ON	Power is supplied

Module Status LED

Indicator	Color	Status	Description
RUN	Green	OFF	INIT state or power off
		ON	OPERATIONAL state

Operation Error LED

Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		ON	Error occurred

CC-Link IE TSN LED

Indicator	Color	Status	Description
P1 / P2	Green	OFF	Link inactive
		ON	Link active

Counter Operation Status LED

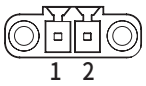
Indicator	Color	Status	Description
CH 1 / CH 2	Yellow	OFF	CH 1 / CH 2 is not ready to count
		ON	CH 1 / CH 2 is ready to count

I/O Status LED

Indicator	Color	Status	Description
A1 / A2	Green	OFF	A signal is OFF
		ON	A signal is ON
B1 / B2	Green	OFF	B signal is OFF
		ON	B signal is ON
Z1 / Z2	Green	OFF	Z signal is OFF
		ON	Z signal is ON
LTA1 /LTA2	Green	OFF	LTA(Latpoints A) signal is OFF
		ON	LTA(Latpoints A) signal is ON
LTB1 / LTB2	Green	OFF	LTB(Latpoints B) signal is OFF
		ON	LTB(Latpoints B) signal is ON
RST1 / RST2	Green	OFF	RST(Reset) signal is OFF
		ON	RST(Reset) signal is ON
CP1 / CP2	Green	OFF	CP(Comparison Out) signal is OFF
		ON	CP(Comparison Out) signal is ON

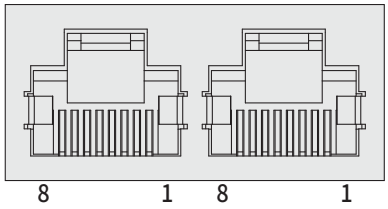
3. Power Connector (CN1)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input

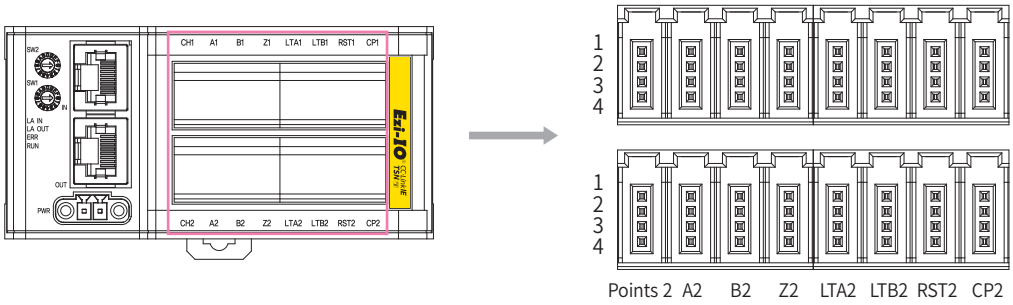


4. CC-Link IE TSN Connector (CN3, CN4)

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

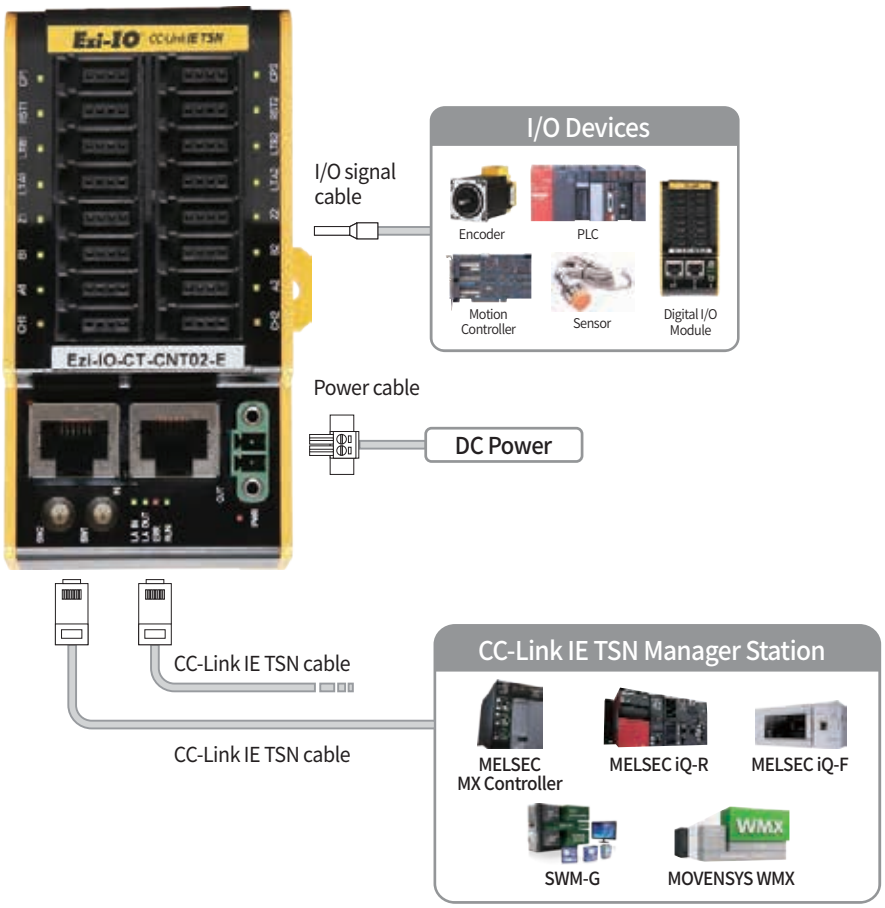


5. I/O Signal Connector (CN2)



CN 1					CN 2				
Indicator	No.	Name	Function	I/O	Indicator	No.	Name	Function	I/O
Ch 1	1	NC	----	----	Ch 2	1	NC	----	----
	2	5 V	5 V DC	Output		2	5 V	5 V DC	Output
	3	GND	GND	Output		3	GND	GND	Output
	4	NC	----	----		4	NC	----	----
A1	1	AV1	A Pulse Input Power (24 V)	Input	A2	1	AV2	A Pulse Input Power (24 V)	Input
	2	A1+	A+	Input		2	A2+	A+	Input
	3	A1-	A-	Input		3	A2-	A-	Input
	4	AG1	A Pulse Input GND	Input		4	AG2	A Pulse Input GND	Input
B1	1	BV1	B Pulse Input Power (24 V)	Input	B2	1	BV2	B Pulse Input Power (24 V)	Input
	2	B1+	B+	Input		2	B2+	B+	Input
	3	B1-	B-	Input		3	B2-	B-	Input
	4	BG1	B Pulse Input GND	Input		4	BG2	B Pulse Input GND	Input
Z1	1	ZV1	Z Pulse Input Power (24 V)	Input	Z2	1	ZV2	Z Pulse Input Power (24 V)	Input
	2	Z1+	Z+	Input		2	Z2+	Z+	Input
	3	Z1-	Z-	Input		3	Z2-	Z-	Input
	4	ZG1	Z Pulse Input GND	Input		4	ZG2	Z Pulse Input GND	Input
LTA1	1	LAV1	Latch A Input Power (24 V)	Input	LTA2	1	LAV2	Latch A Input Power (24 V)	Input
	2	LTA1+	Latch A(+)	Input		2	LTA2+	Latch A(+)	Input
	3	LTA1-	Latch A(-)	Input		3	LTA2-	Latch A(-)	Input
	4	LAG1	Latch A Input GND	Input		4	LAG2	Latch A Input GND	Input
LTB1	1	LBV1	Latch B Input Power (24 V)	Input	LTB2	1	LBV2	Latch B Input Power (24 V)	Input
	2	LTB1+	Latch B(+)	Input		2	LTB2+	Latch B(+)	Input
	3	LTB1-	Latch B(-)	Input		3	LTB2-	Latch B(-)	Input
	4	LBG1	Latch B Input GND	Input		4	LBG2	Latch B Input GND	Input
RST1	1	RV1	Reset Input Power (24 V)	Input	RST2	1	RV2	Reset Input Power (24 V)	Input
	2	RST1+	Reset(+)	Input		2	RST2+	Reset(+)	Input
	3	RST1-	Reset(-)	Input		3	RST2-	Reset(-)	Input
	4	RG1	Reset Input GND	Input		4	RG2	Reset Input GND	Input
CP1	1	UCP1+	User Comparison Output(+)	Output	CP2	1	UCP2+	User Comparison Output(+)	Output
	2	5CP1	5 V Comparison Output	Output		2	5CP2	5 V Comparison Output	Output
	3	GND	GND	Output		3	GND	GND	Output
	4	UCP1-	User Comparison Output(-)	Output		4	UCP2-	User Comparison Output(-)	Output

System Configuration [Ezi-IO-CT-CNT02-E]



1. Accessories

Connectors

Purpose	Item	Part Number	Manufacturer
Power(CN1)	Terminal Block	MC421-38102	DECA
I/O Connection(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

CC-Link IE TSN Cable

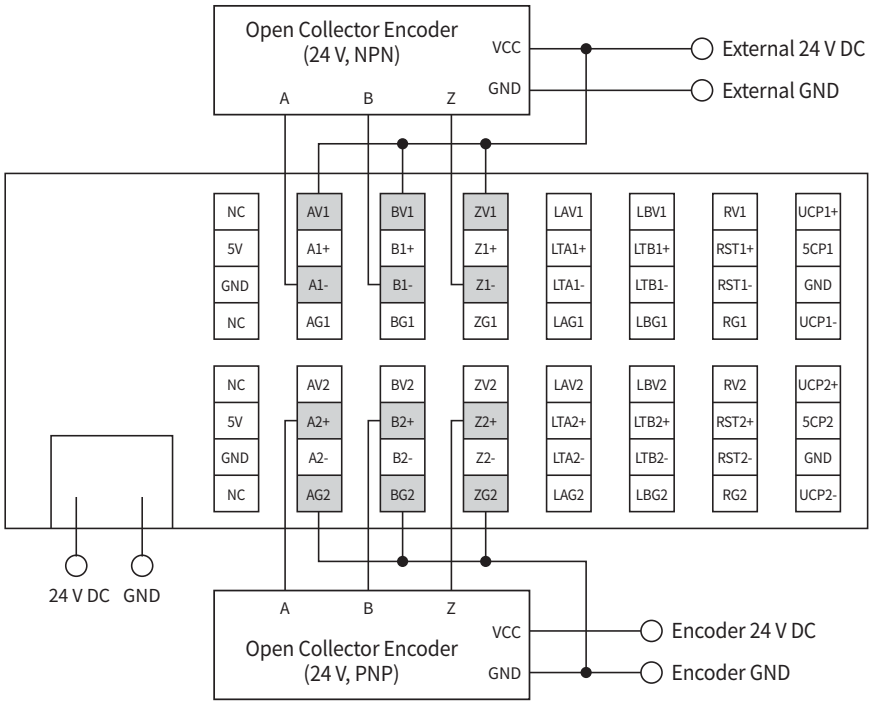
Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection (CN3, CN4)	CGNR-EC-001F	1	• STP(Shielded Twisted Pair) Cable • Category 5e or higher • Max. Cable Length: 100 m • Fixed Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

External Wiring Diagram [Ezi-IO-CT-CNT02-E]

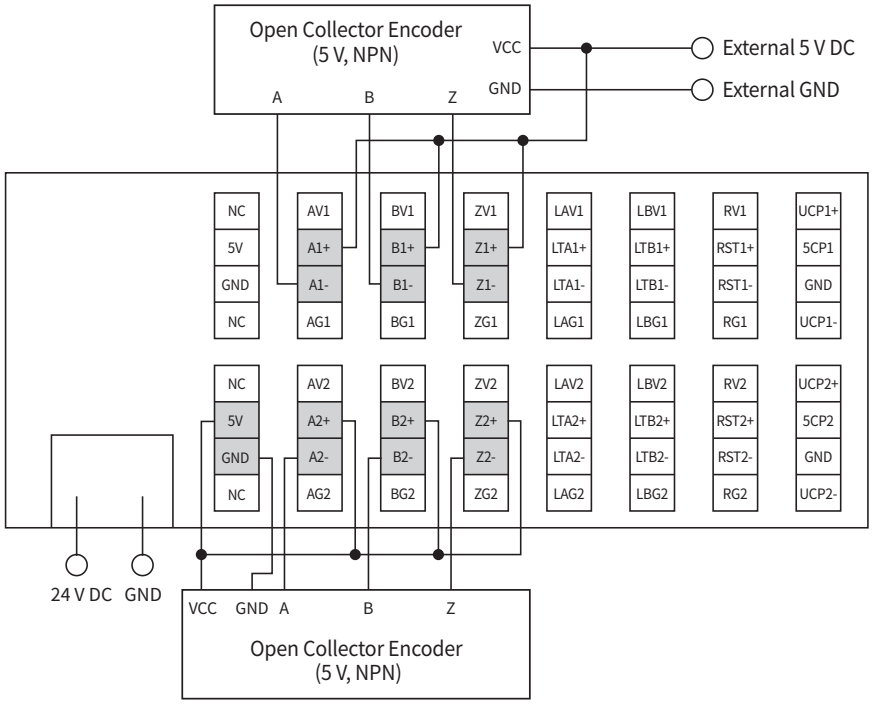
Pulse Input Part

1. When connecting with 24 V DC open collector output type encoder



※ If the module and the encoder use the same power supply, the photocoupler isolation is not possible.

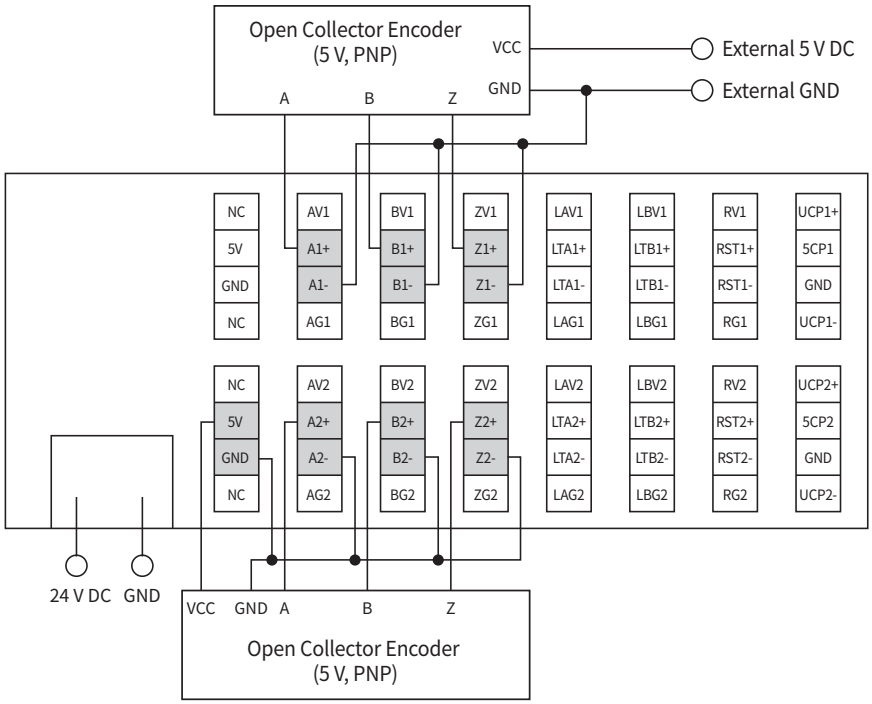
2. When connecting with 5 V DC NPN open collector output type encoder



※ If the 5 V DC output inside the product is used as the encoder power, photocoupler isolation is not possible.

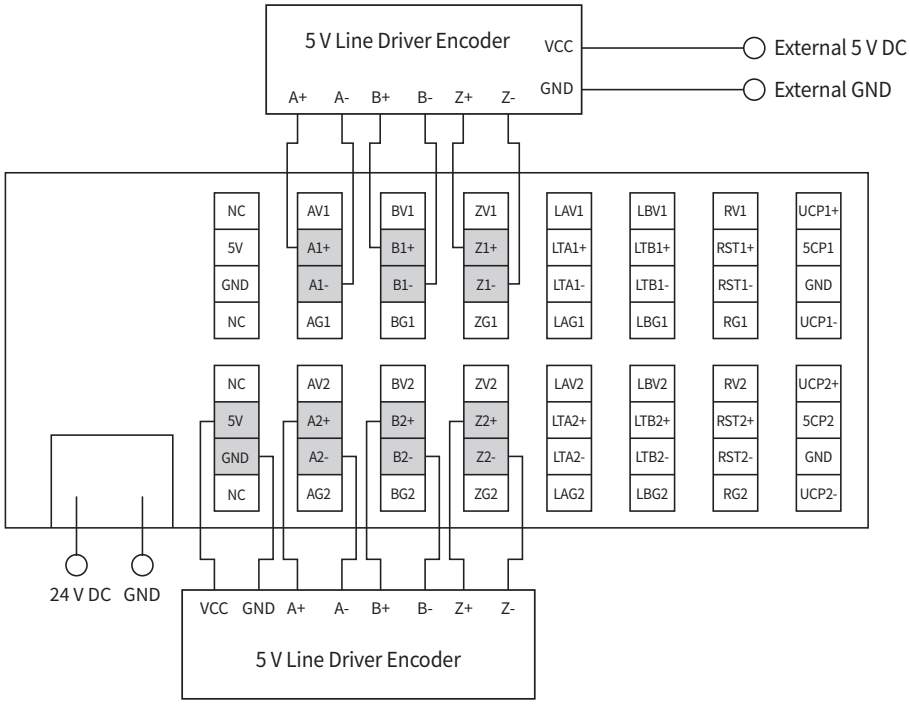
External Wiring Diagram [Ezi-IO-CT-CNT02-E]

3. When connecting with 5 V DC PNP open collector output type encoder



※ If the 5 V DC output inside the product is used as the encoder power, photocoupler isolation is not possible.

4. When connecting with 5 V DC line driver output type encoder

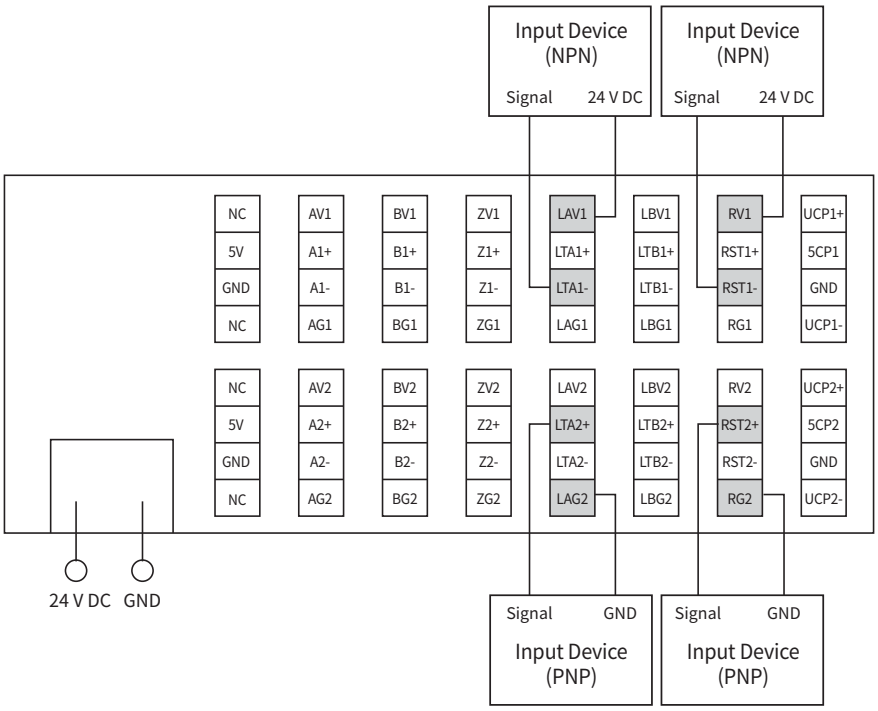


※ If the 5 V DC output inside the product is used as the encoder power, photocoupler isolation is not possible.

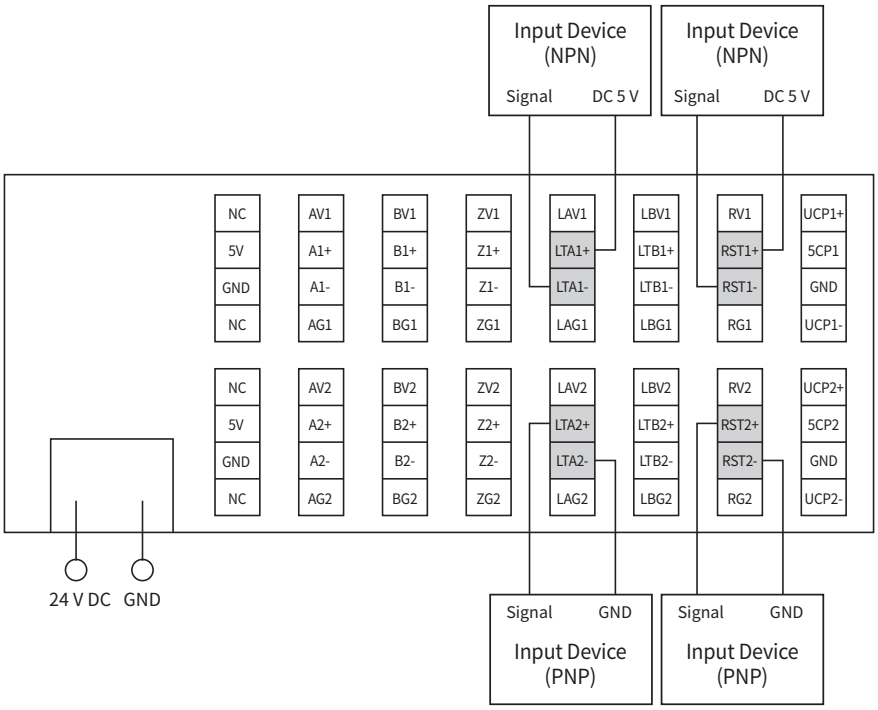
External Wiring Diagram [Ezi-IO-CT-CNT02-E]

Control Input Part

1. When connecting with 24 V DC open collector output type input device



2. When connecting with 5 V DC open collector output type input device

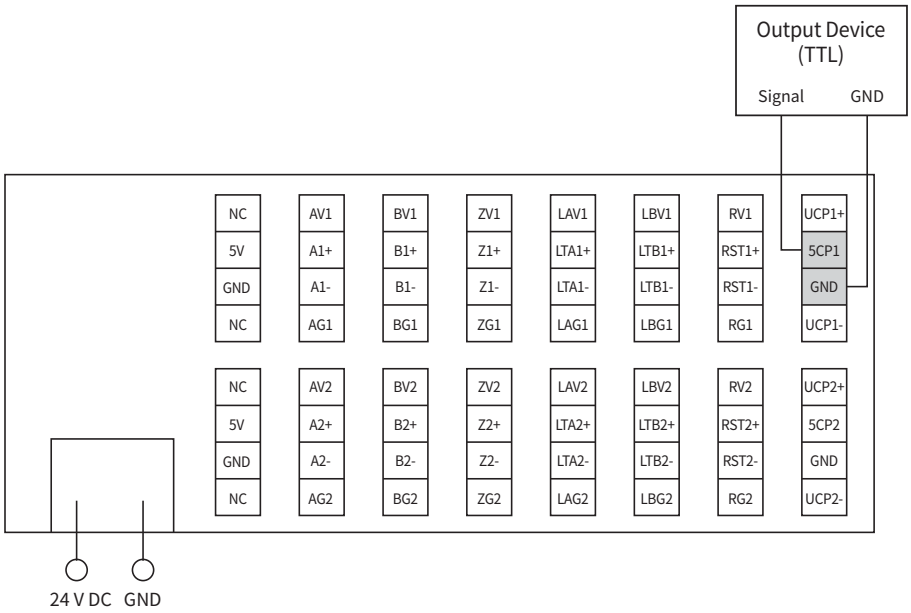


※ e.g. Input Device : PLC, Motion Controller, Digital Output Module, Limit Sensor , Proximity Sensor, etc.

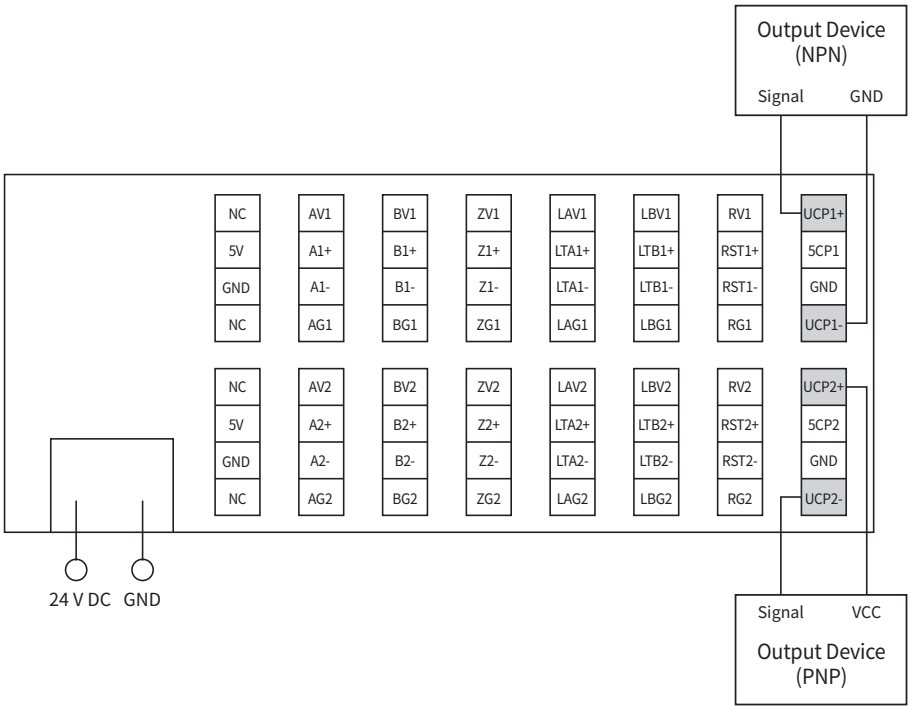
External Wiring Diagram [Ezi-IO-CT-CNT02-E]

Comparison Output Part

1. TTL Output



2. Open Collector Output



※ e.g. Output Device: PLC, Motion Controller, Digital Input Module, etc.

MEMO

Option Brake

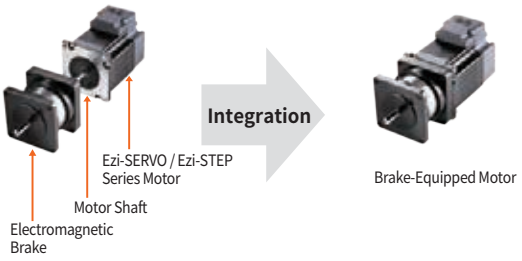


Overall Table of Brake

Name of Product	Motor Brake Size		
	42 mm	56 mm	60 mm
Ezi-SERVO CC-Link IE TSN			
Ezi-SERVO CC-Link IE TSN ALL			
Ezi-SERVO CC-Link IE TSN 4X			
Ezi-STEP CC-Link IE TSN			
Ezi-STEP CC-Link IE TSN ALL			
Ezi-STEP CC-Link IE TSN 4X			

High-Performance Brake-Equipped Motors

FASTECH's brake-equipped motors are integrated units that combine an electromagnetic brake with a stepper motor from the Ezi-SERVO or Ezi-STEP series.



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.

Apply non-excitation electromagnetic Brake

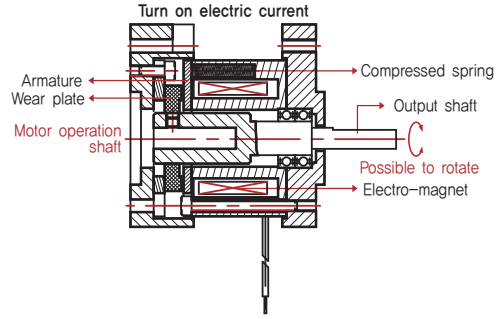
Different from excitation type of brake that only generates braking-power by electromagnetic-power when power supplies at brake and loses brake power when power cutoff, Ezi-SERVO BK series adopts non-excitation electromagnetic brake that immediately generate friction of brake torque by inner spring's 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.

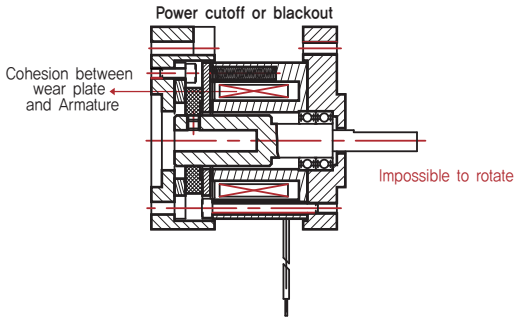
Rapid Brake Timing

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 (mm)				Allowable Thrust Load [N]
	3	8	13	18	
42 mm	22	26	33	46	Must be less than the motor weight
56 mm	52	65	85	123	
60 mm	70	87	114	165	

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. T(he name of drive model is not changed.)

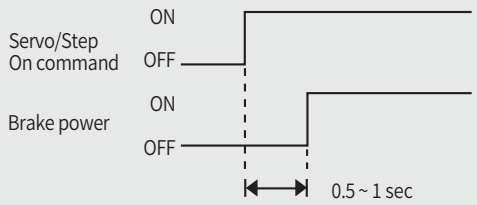
changed.)

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

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

When releasing the brake externally, wait 0.5 to 1 second after executing the Servo/Step ON command before releasing the brake. Failure to do so may cause the load to fall.



- Please use Cable at least thicker than AWG24(0.2 ㎟) when connect electromagnetic brake and power.
- ctromagnetic Brake is non-polar so there is no polarity in Brake Cable
- Over input voltage can induce high temperature of electromagnetic
- brake and motor so it can be main reason of failure
- Reversely too low input voltage will cause non-operation of electromagnetic brake.

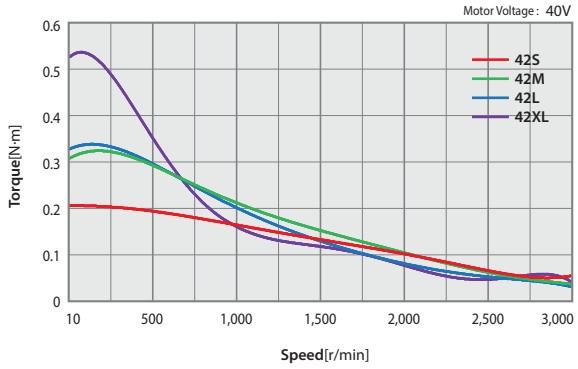
Specifications of Brake [42 mm]

Applicable Model		
Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN ALL	Ezi-SERVO CC-Link IE TSN 4X
Ezi-STEP CC-Link IE TSN	Ezi-STEP CC-Link IE TSN ALL	Ezi-STEP CC-Link IE TSN 4X

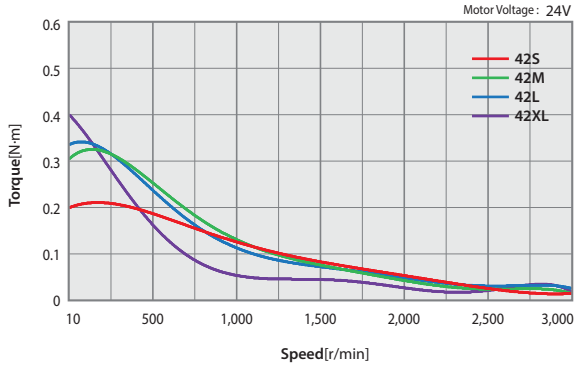
Model	Unit	42			
		42S	42M	42L	42XL
Electromagnetic Brake	-	Non-Excitation Type			
Input Voltage	V	24 V DC ± 10 %			
Rated Current	A	0.2			
Power Consumption	W	5			
Friction Torque	N·m	0.2			

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

Torque Charcteristics of Motor with Brake [42 mm]



Applicable Model
Ezi-SERVO CC-Link IE TSN
Ezi-STEP CC-Link IE TSN



Applicable Model
Ezi-SERVO CC-Link IE TSN ALL
Ezi-SERVO CC-Link IE TSN 4X
Ezi-STEP CC-Link IE TSN ALL
Ezi-STEP CC-Link IE TSN 4X

※ The maximum supported speed of Ezi-SERVO CC-Link IE TSN ALL is 2,000 r/min.

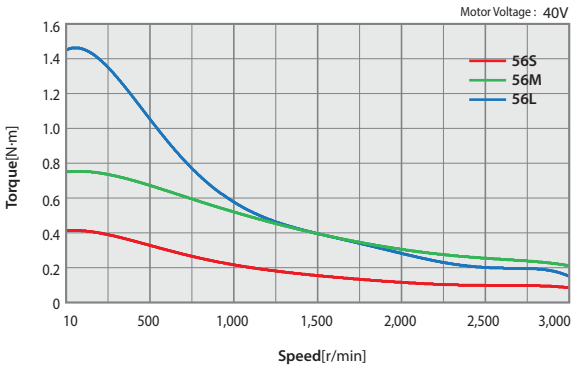
Specifications of Brake [56 mm]

Applicable Model		
Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN ALL	Ezi-SERVO CC-Link IE TSN 4X
Ezi-STEP CC-Link IE TSN	Ezi-STEP CC-Link IE TSN ALL	Ezi-STEP CC-Link IE TSN 4X

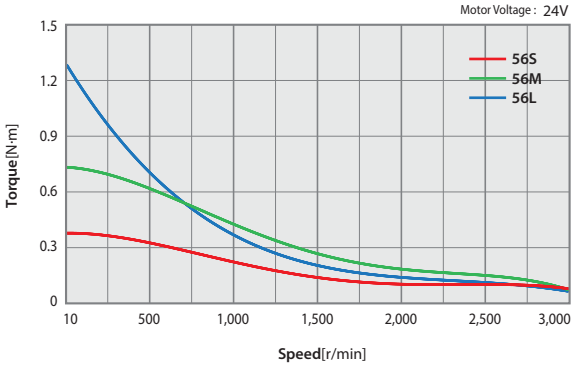
Model	Unit	56		
		56S	56M	56L
Electromagnetic Brake	-	Non-Excitation Type		
Input Voltage	V	24 V DC ± 10 %		
Rated Current	A	0.27		
Power Consumption	W	6.6		
Friction Torque	N·m	0.7		

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

Torque Charcteristics of Motor with Brake [56 mm]



Applicable Model
Ezi-SERVO CC-Link IE TSN
Ezi-STEP CC-Link IE TSN



Applicable Model
Ezi-SERVO CC-Link IE TSN ALL
Ezi-SERVO CC-Link IE TSN 4X
Ezi-STEP CC-Link IE TSN ALL
Ezi-STEP CC-Link IE TSN 4X

※ The maximum supported speed of Ezi-SERVO CC-Link IE TSN ALL is 2,000 r/min.

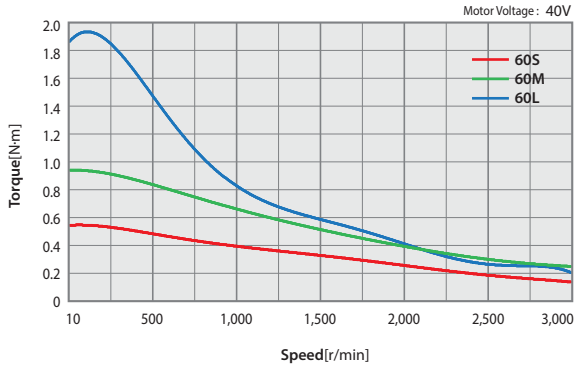
Specifications of Brake [60 mm]

Applicable Model		
Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN ALL	Ezi-SERVO CC-Link IE TSN 4X
Ezi-STEP CC-Link IE TSN	Ezi-STEP CC-Link IE TSN ALL	Ezi-STEP CC-Link IE TSN 4X

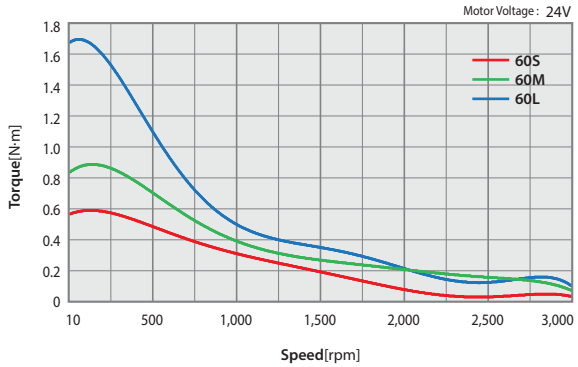
Model	Unit	60		
		60S	60M	60L
Electromagnetic Brake	-	Non-Excitation Type		
Input Voltage	V	24 V DC ± 10 %		
Rated Current	A	0.27		
Power Consumption	W	6.6		
Friction Torque	N·m	0.7		

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

Torque Charcteristics of Motor with Brake [60 mm]



Applicable Model
Ezi-SERVO CC-Link IE TSN
Ezi-STEP CC-Link IE TSN



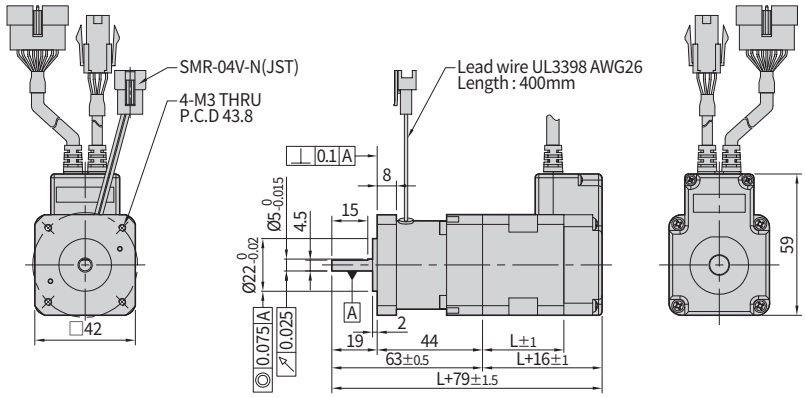
Applicable Model
Ezi-SERVO CC-Link IE TSN ALL
Ezi-SERVO CC-Link IE TSN 4X
Ezi-STEP CC-Link IE TSN ALL
Ezi-STEP CC-Link IE TSN 4X

※ The maximum supported speed of Ezi-SERVO CC-Link IE TSN ALL is 2,000 r/min.

Dimensions of Motor with Brake [42 mm]

Applicable Model

Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X	

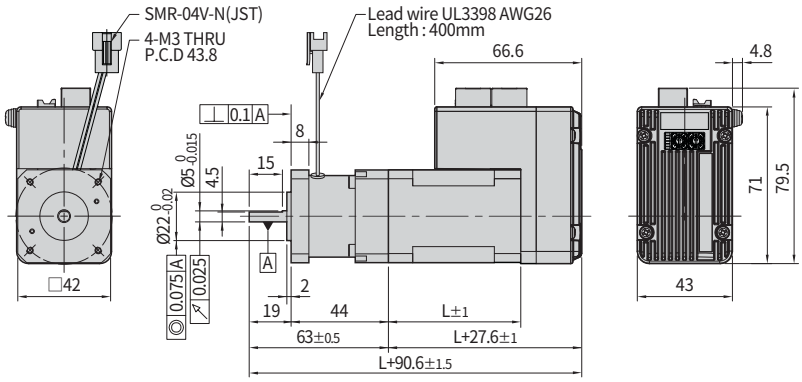


42 *mm*

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

Applicable Model

Ezi-SERVO CC-Link IE TSN ALL	Ezi-STEP CC-Link IE TSN ALL	

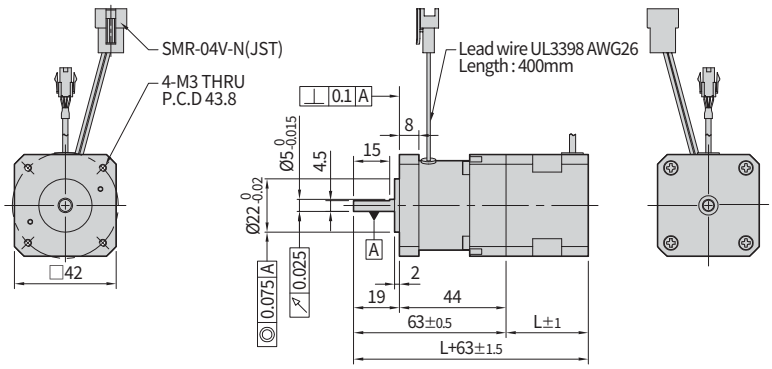


42 *mm*

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

Applicable Model

Ezi-STEP CC-Link IE TSN	Ezi-STEP CC-Link IE TSN 4X	



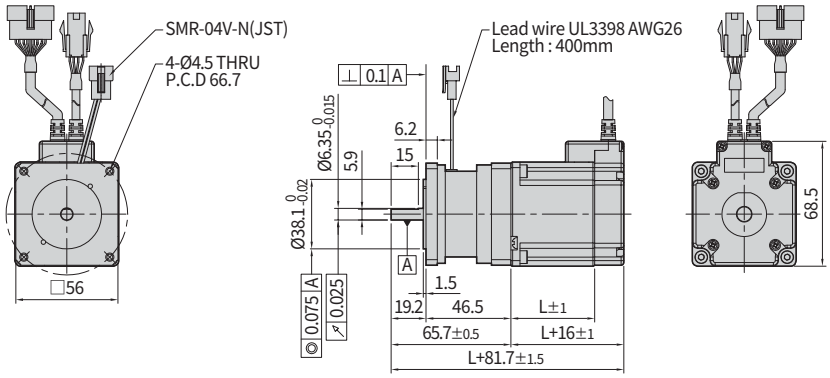
42 *mm*

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

Dimensions of Motor with Brake [56 mm]

Applicable Model

Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X

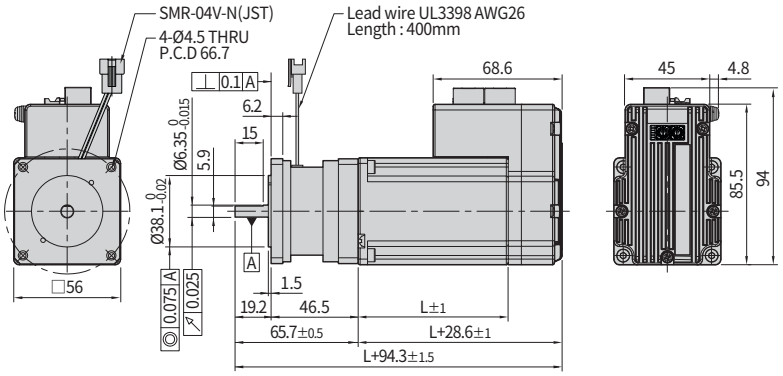


56 mm

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

Applicable Model

Ezi-SERVO CC-Link IE TSN ALL	Ezi-STEP CC-Link IE TSN ALL

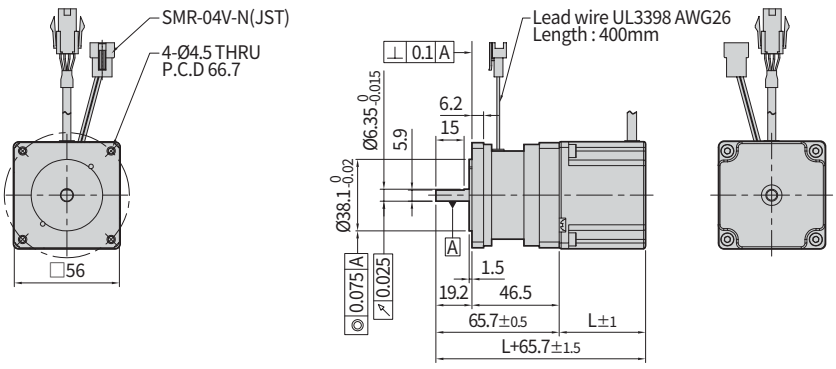


56 mm

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

Applicable Model

Ezi-STEP CC-Link IE TSN	Ezi-STEP CC-Link IE TSN 4X



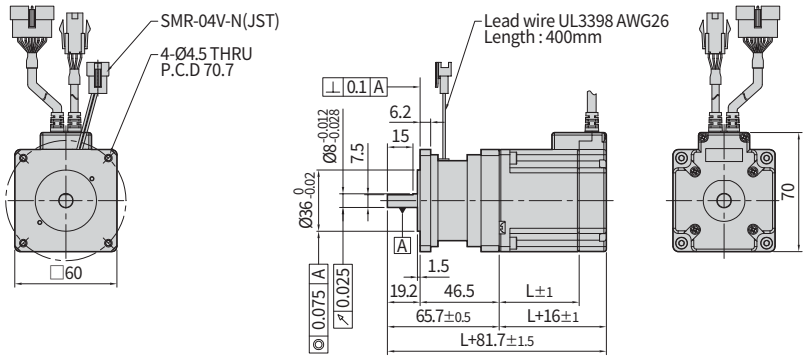
56 mm

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

Dimensions of Motor with Brake [60 mm]

Applicable Model

Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X	

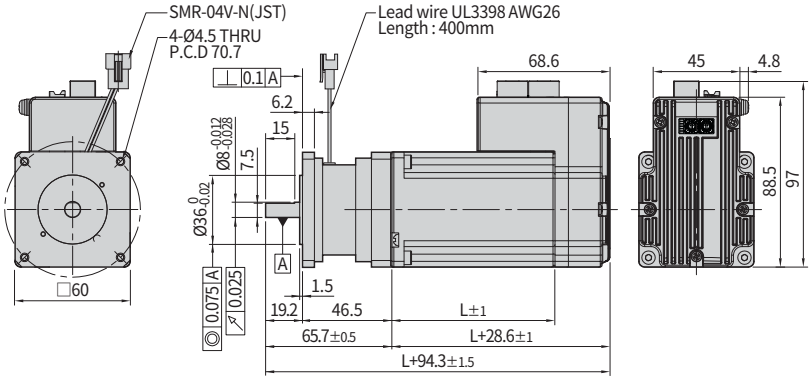


60 *mm*

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

Applicable Model

Ezi-SERVO CC-Link IE TSN ALL	Ezi-STEP CC-Link IE TSN ALL	

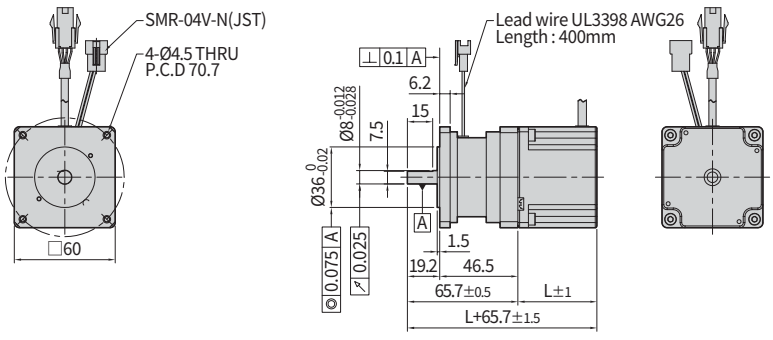


60 *mm*

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

Applicable Model

Ezi-STEP CC-Link IE TSN	Ezi-STEP CC-Link IE TSN 4X	

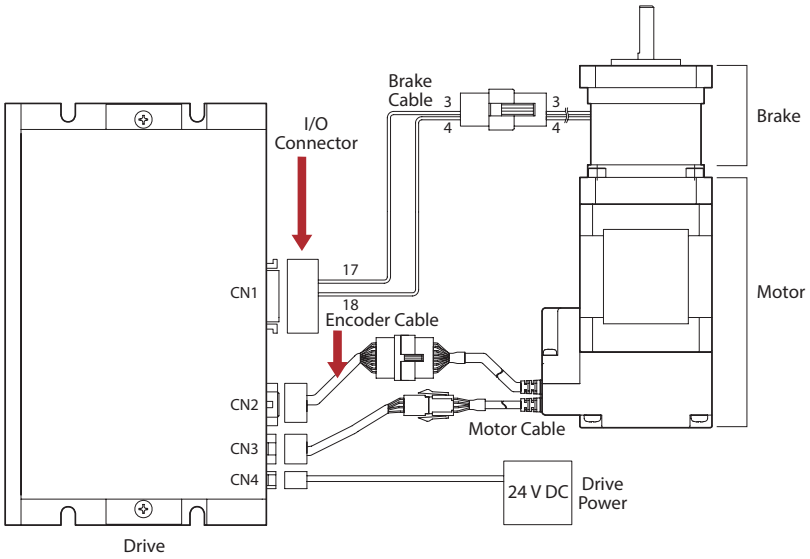


60 *mm*

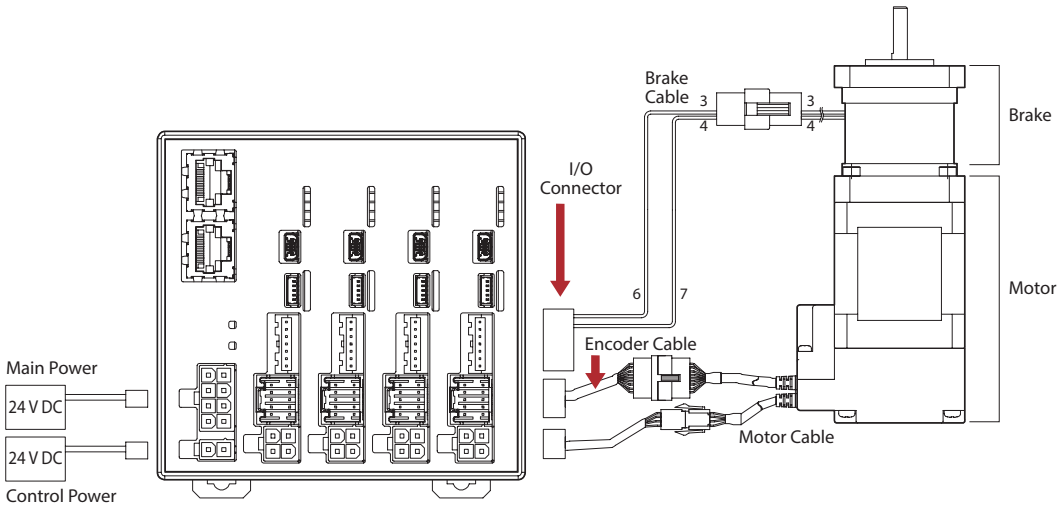
Model Name	Length(L)
BM-60S	47
BM-60M	56
BM-60L	85

Electrical Brake and Power Connection

Ezi-SERVO CC-Link IE TSN

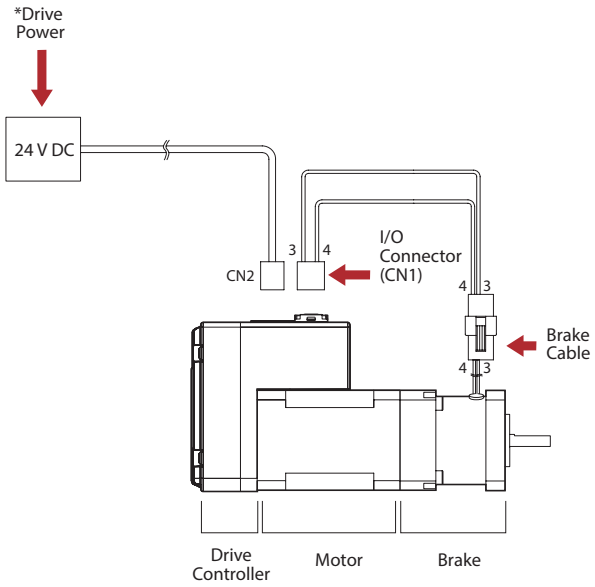


Ezi-SERVO CC-Link IE TSN 4X



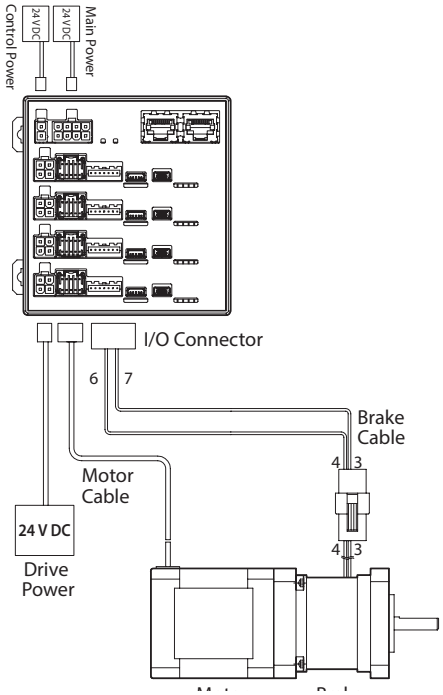
Electrical Brake and Power Connection

Ezi-SERVO CC-Link IE TSN ALL

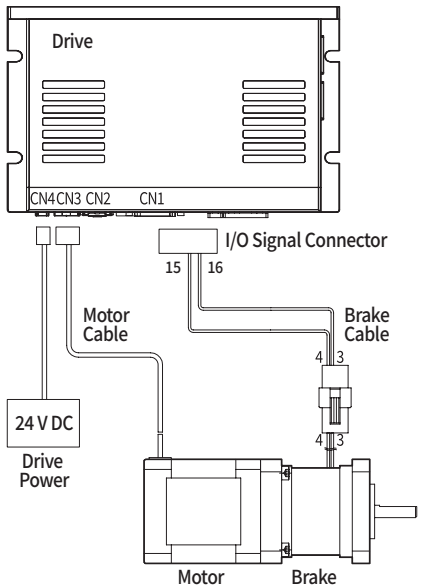


Electrical Brake and Power Connection

Ezi-STEP CC-Link IE TSN 4X

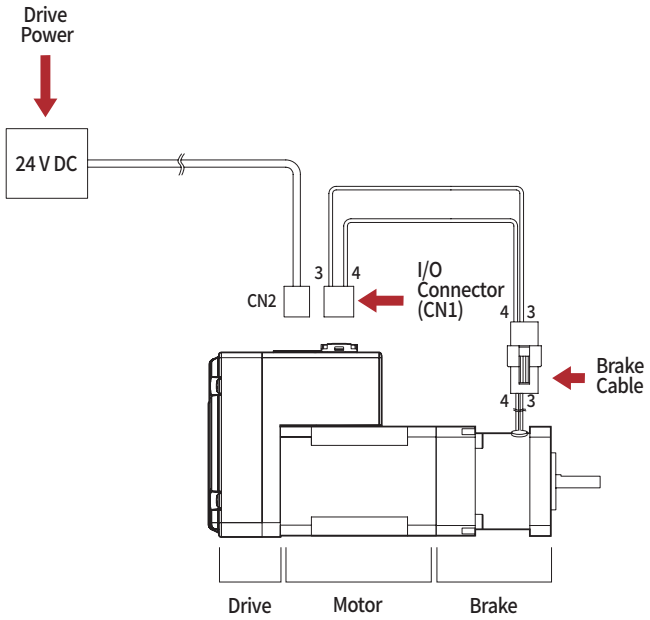


Ezi-STEP CC-Link IE TSN



Electrical Brake and Power Connection

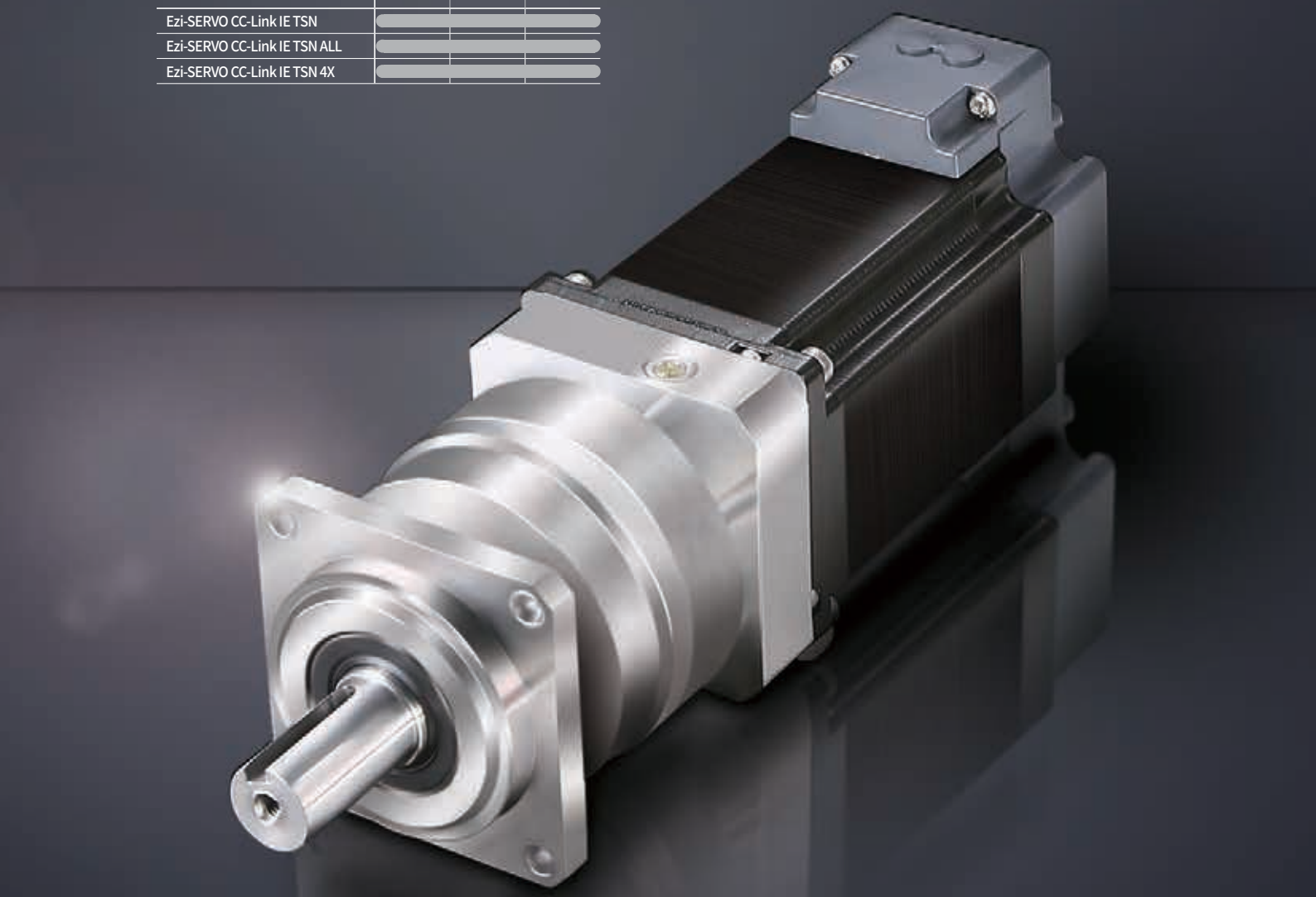
Ezi-STEP CC-Link IE TSN ALL



OPTION Gearbox

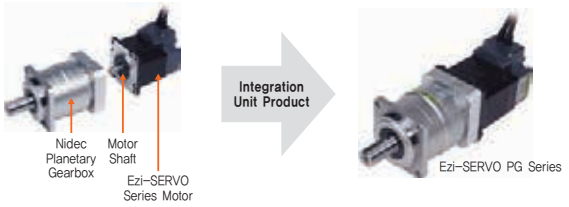
Overall Table of Gearbox

Name of Product	Gearbox frame size		
	42 mm	60 mm	
	Motor frame size		
	42 mm	56 mm	60 mm
Ezi-SERVO CC-Link IE TSN			
Ezi-SERVO CC-Link IE TSN ALL			
Ezi-SERVO CC-Link IE TSN 4X			



Adopt SHIMPO's high accuracy planetary gearbox

FASTECH's geared motors are integrated units that combine a stepper motor from the Ezi-SERVO series with a Nidec Drive Technology planetary gearbox.

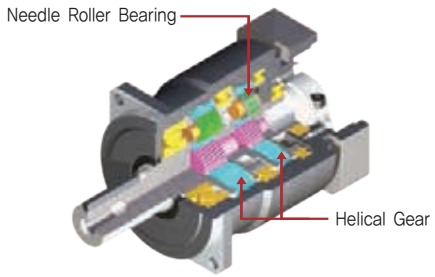


Resonance Minimization

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.

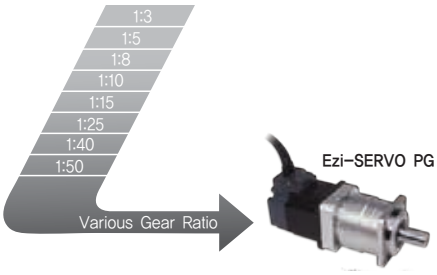
Vibration, Low Noise

The planetary gearboxes supplied by Nidec Drive Technology feature helical gears, ensuring extremely low vibration and noise levels. Both single-stage and two-stage gearboxes have a backlash of 3 arcmin or less, enabling high-speed, high-precision operation.



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.

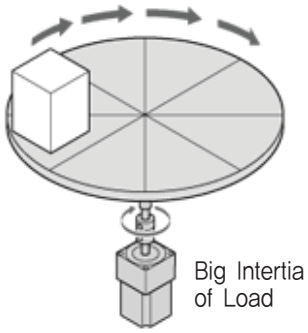


High Rigidity, High Torque

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.

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

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.



Allowable Overhung Load and Allowable Thrust Load of PG series

Motor Size	Gear Raio	Allowable Overhung Load [N] Based on Center of Shaft	Allowable Thrust Load [N]
42 mm	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, 60 mm	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

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-□-□-□-PN□	EzM-□-□-PN□	Not Change

※ It can be added PN□ at the end of model name of each series(T.he 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 Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
⑥ Resolution(10,000[ppr] Standard)	°	0.012	0.0072	0.0045	0.0036	0.0024	0.00144	0.0009	0.00072
⑦ Permissible Tor	N·m	6	9	9	6	6	9	9	9
⑧ Maximum Torque	N·m	12	18	18	12	12	18	18	18
⑨ Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
⑩ Motor 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 below the maximum 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	Reduction Gear Ra	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	This value is a torque value at which the life of the motor becomes 20,000 hours when the input rotation speed is 3,000rpm. It refers to the permissible continuous torque.
⑧	Maximum Torque	This is the maximum torque allowed during acceleration/deceleration.
⑨	Permitted Speed Range	It is the range of rotation speed based on the output shaft of the gearbox.
⑩	Motor Weight	It is the sum of the weight of the gearbox and the motor.

Specifications of Motor with Gearbox [42S]

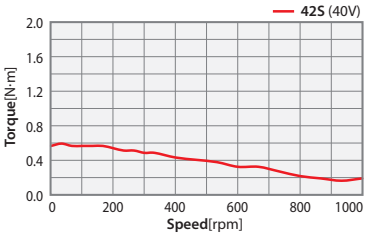
Applicable Model

Ezi-SERVO CC-Link IE TSN

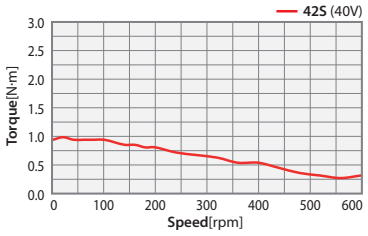
Model	Unit	42S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.57	0.95	1.52	1.90	2.76	4.60	7.36	9
Rotor Inertia Moment	kg·m²	35 × 10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

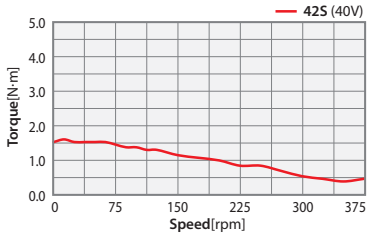
42S-PN3 Series



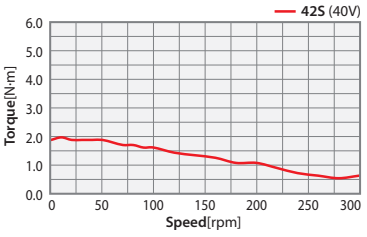
42S-PN5 Series



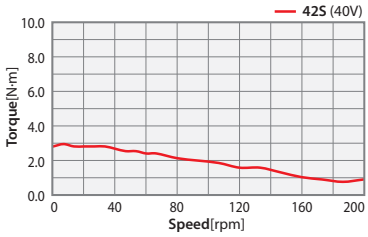
42S-PN8 Series



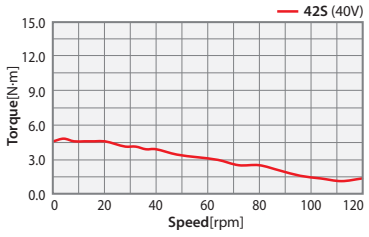
42S-PN10 Series



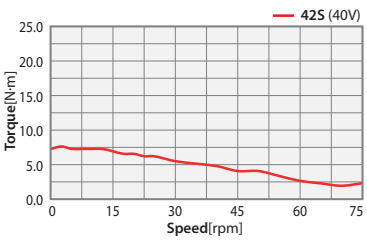
42S-PN15 Series



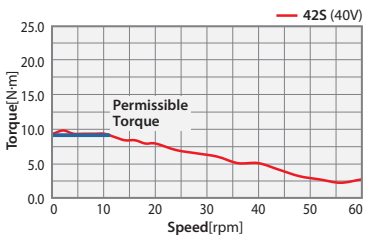
42S-PN25 Series



42S-PN40 Series



42S-PN50 Series



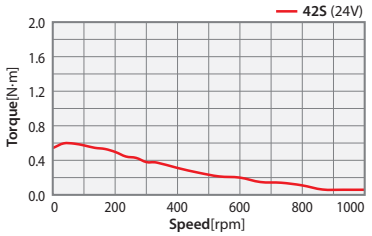
Specifications of Motor with Gearbox [42S]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

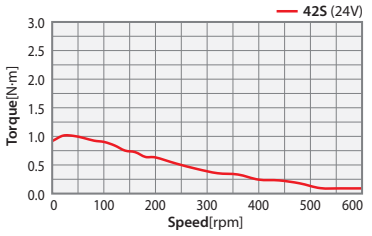
Model	Unit	42S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.55	0.92	1.47	1.84	2.67	4.46	7.13	9
Rotor Inertia Moment	kg·m²	35 × 10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

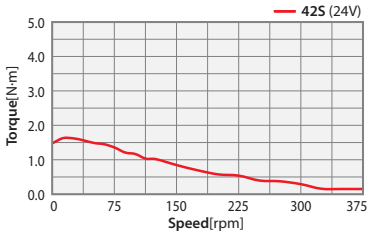
42S-PN3 Series



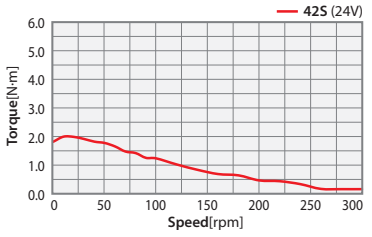
42S-PN5 Series



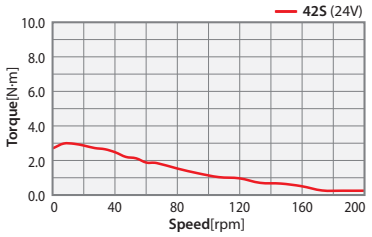
42S-PN8 Series



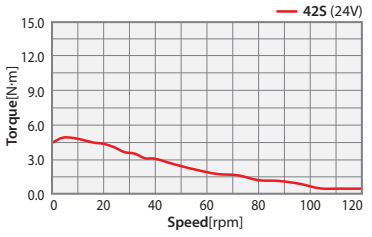
42S-PN10 Series



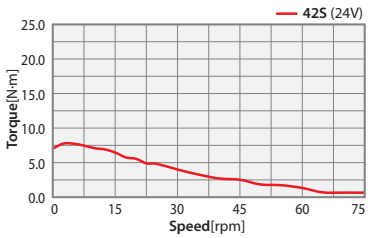
42S-PN15 Series



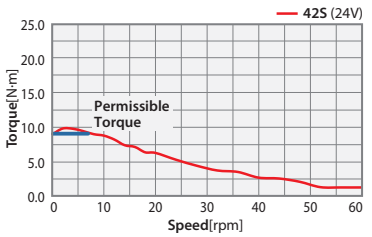
42S-PN25 Series



42S-PN40 Series



42S-PN50 Series



Specifications of Motor with Gearbox [42M]

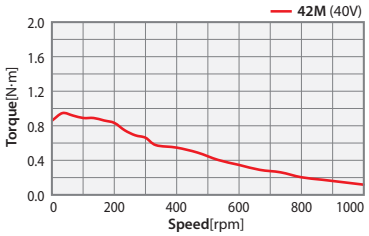
Applicable Model

Ezi-SERVO CC-Link IE TSN

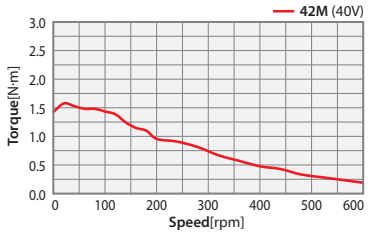
Model	Unit	42M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.85	1.42	2.28	2.85	4.14	6.9	9	9
Rotor Inertia Moment	kg·m²	54 × 10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

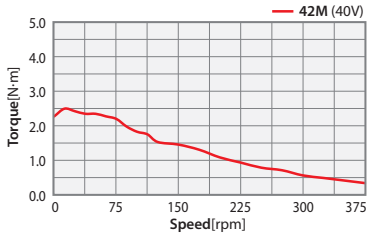
42M-PN3 Series



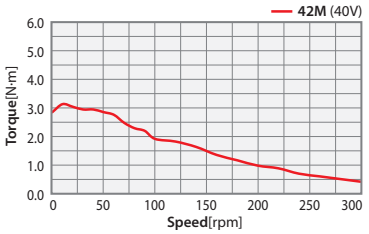
42M-PN5 Series



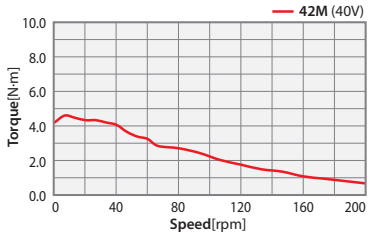
42M-PN8 Series



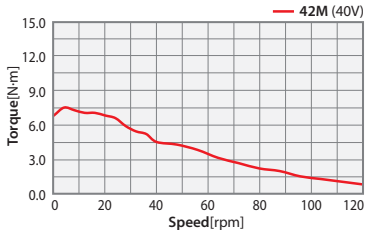
42M-PN10 Series



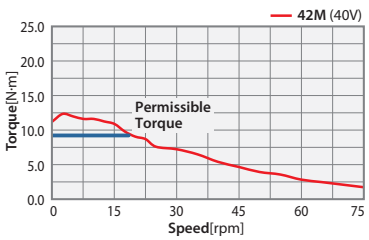
42M-PN15 Series



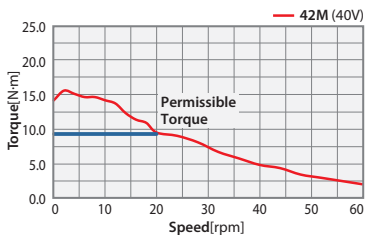
42M-PN25 Series



42M-PN40 Series



42M-PN50 Series



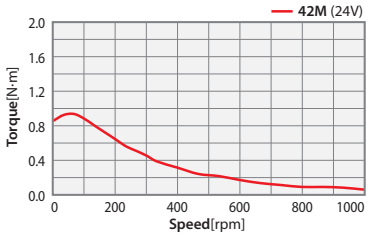
Specifications of Motor with Gearbox [42M]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

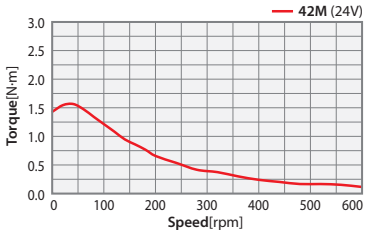
Model	Unit	42M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.85	1.42	2.28	2.85	4.14	6.9	9	9
Rotor Inertia Moment	kg·m²	54 × 10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

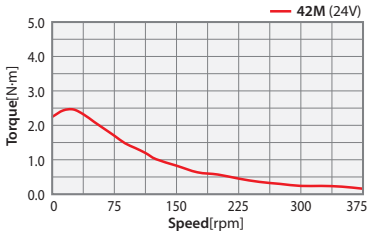
42M-PN3 Series



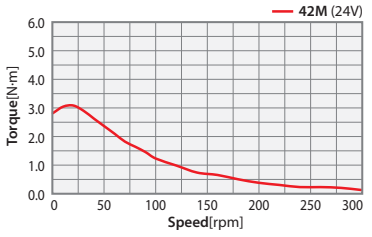
42M-PN5 Series



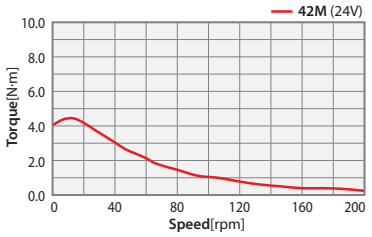
42M-PN8 Series



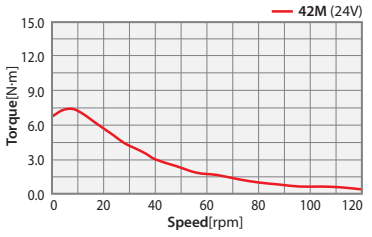
42M-PN10 Series



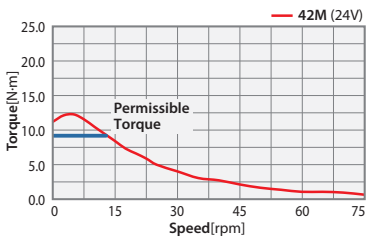
42M-PN15 Series



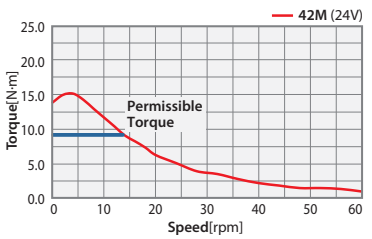
42M-PN25 Series



42M-PN40 Series



42M-PN50 Series



Specifications of Motor with Gearbox [42L]

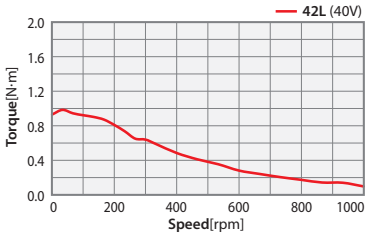
Applicable Model

Ezi-SERVO CC-Link IE TSN

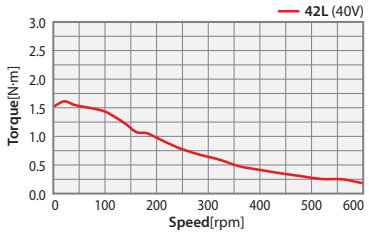
Model	Unit	42L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.92	1.54	2.47	3.09	4.49	7.49	9	9
Rotor Inertia Moment	kg·m²	77 × 10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

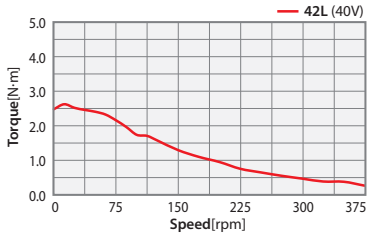
42L-PN3 Series



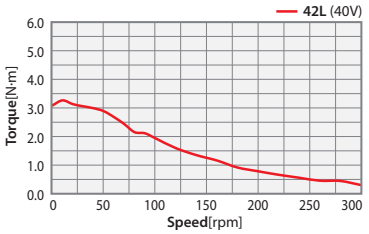
42L-PN5 Series



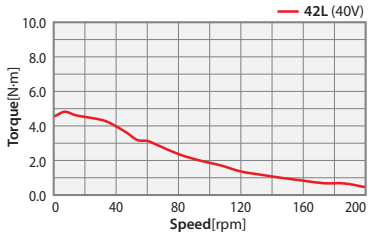
42L-PN8 Series



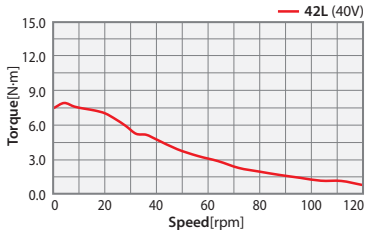
42L-PN10 Series



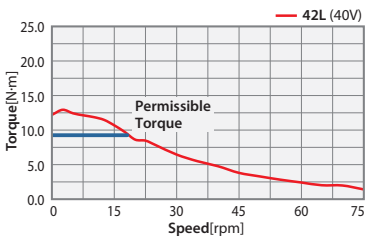
42L-PN15 Series



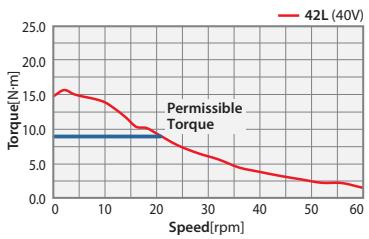
42L-PN25 Series



42L-PN40 Series



42L-PN50 Series



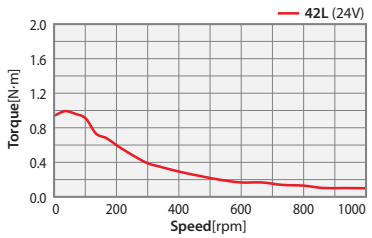
Specifications of Motor with Gearbox [42L]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

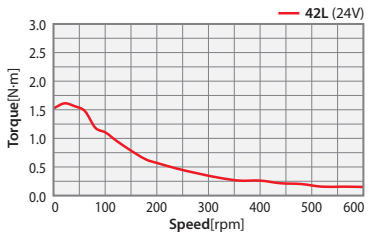
Model	Unit	42L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	0.93	1.55	2.48	3.1	4.51	7.52	9	9
Rotor Inertia Moment	kg·m²	77 × 10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	1.02				1.12			

Torque Graph with Gearbox

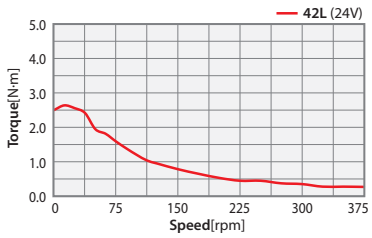
42L-PN3 Series



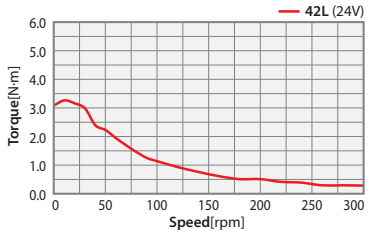
42L-PN5 Series



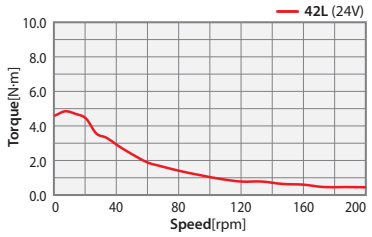
42L-PN8 Series



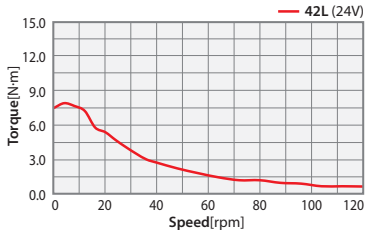
42L-PN10 Series



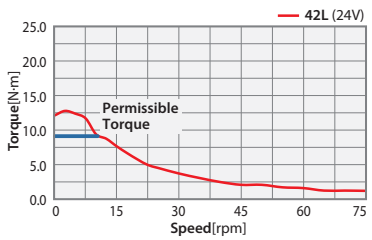
42L-PN15 Series



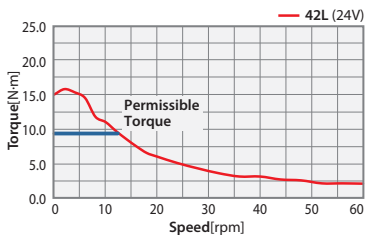
42L-PN25 Series



42L-PN40 Series



42L-PN50 Series



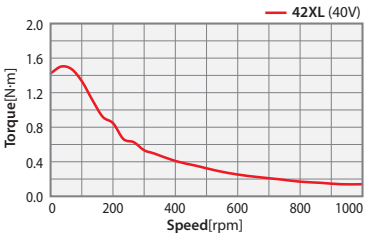
Specifications of Motor with Gearbox [42XL]

Applicable Model
Ezi-SERVO CC-Link IE TSN

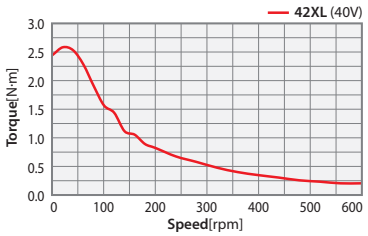
Model	Unit	42XL							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.45	2.42	3.87	4.84	6	9	9	9
Rotor Inertia Moment	kg·m²	114 × 10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	1.15				1.25			

Torque Graph with Gearbox

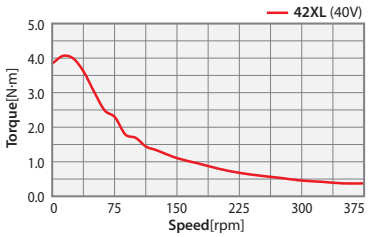
42XL-PN3 Series



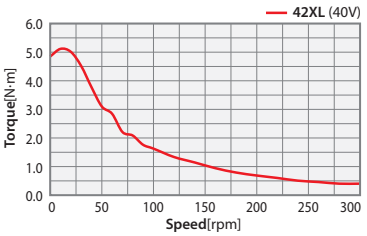
42XL-PN5 Series



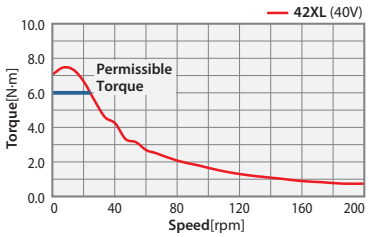
42XL-PN8 Series



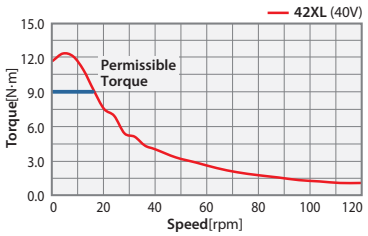
42XL-PN10 Series



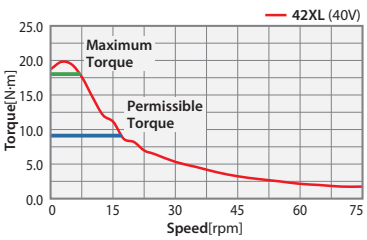
42XL-PN15 Series



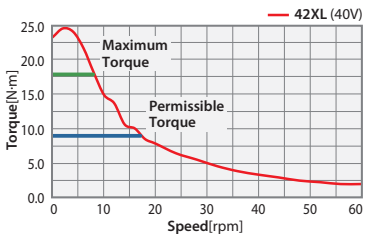
42XL-PN25 Series



42XL-PN40 Series



42XL-PN50 Series



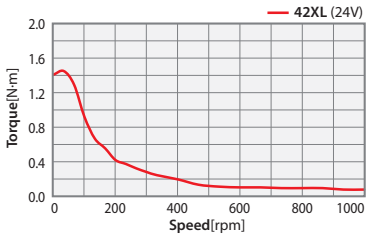
Specifications of Motor with Gearbox [42XL]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

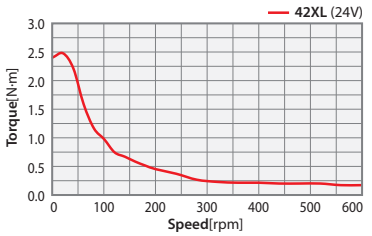
Model	Unit	42XL							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.42	2.38	3.8	4.76	6	9	9	9
Rotor Inertia Moment	kg·m²	114 × 10^{-7}							
Backlash	arcmin	3				5			
Angle Transmission Error	arcmin	5				7			
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	12	18	18	12	12	18	18	18
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	1.15				1.25			

Torque Graph with Gearbox

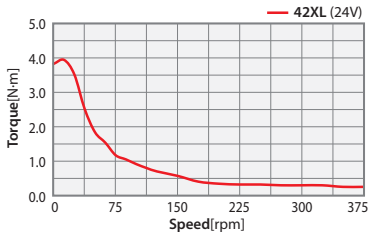
42XL-PN3 Series



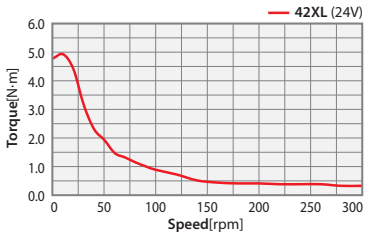
42XL-PN5 Series



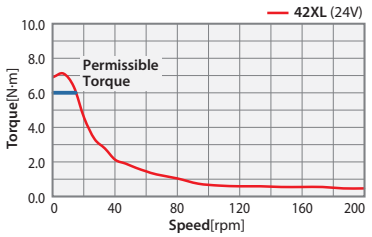
42XL-PN8 Series



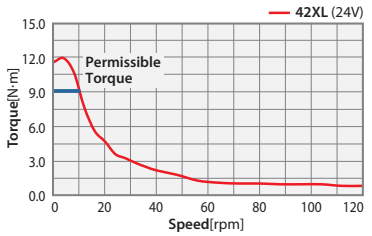
42XL-PN10 Series



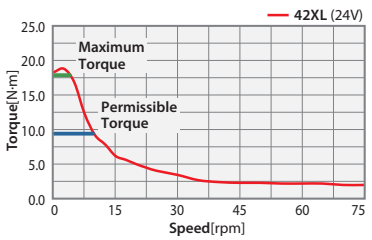
42XL-PN15 Series



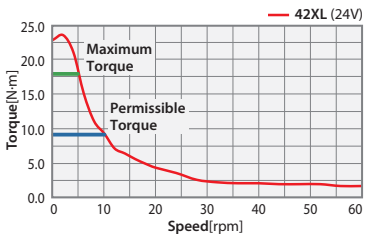
42XL-PN25 Series



42XL-PN40 Series



42XL-PN50 Series



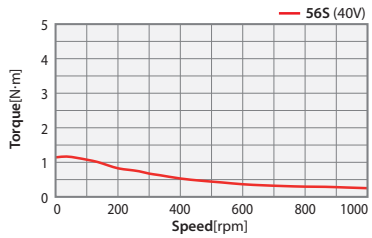
Specifications of Motor with Gearbox [56S]

Applicable Model
Ezi-SERVO CC-Link IE TSN

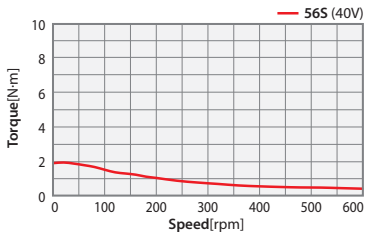
Model	Unit	56S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.1	1.9	3.0	3.8	5.5	9.3	14.9	18.6
Rotor Inertia Moment	kg·m^2	180 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	1.94				2.14			

Torque Graph with Gearbox

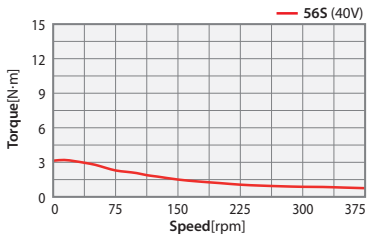
56S-PN3 Series



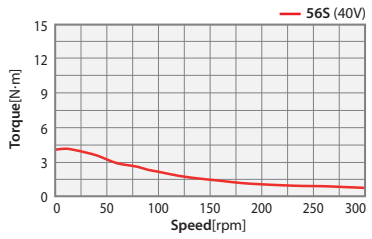
56S-PN5 Series



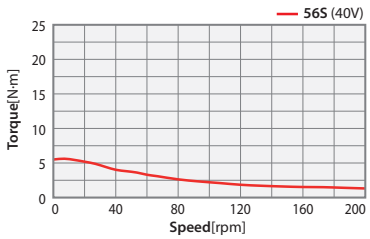
56S-PN8 Series



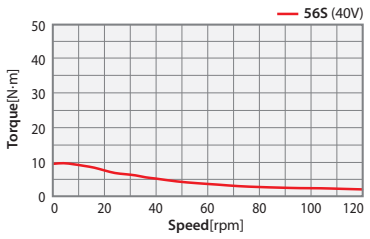
56S-PN10 Series



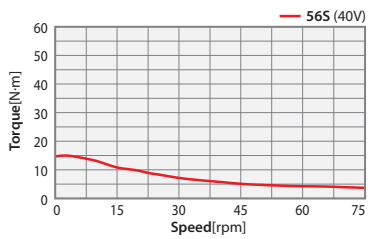
56S-PN15 Series



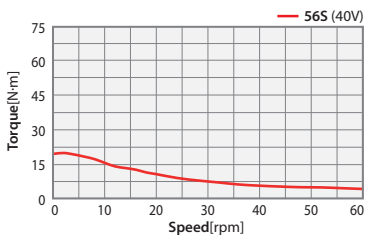
56S-PN25 Series



56S-PN40 Series



56S-PN50 Series



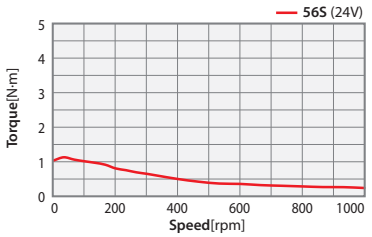
Specifications of Motor with Gearbox [56S]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

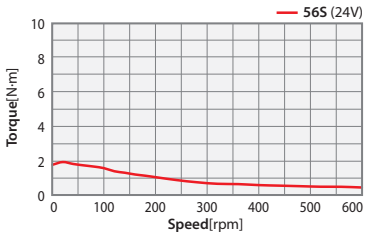
Model	Unit	56S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1	1.7	2.8	3.5	5.1	8.6	13.8	17.2
Rotor Inertia Moment	kg·m^2	180 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	1.9				2.1			

Torque Graph with Gearbox

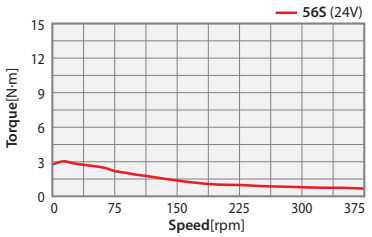
56S-PN3 Series



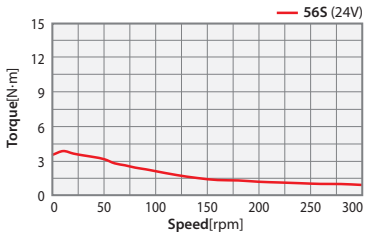
56S-PN5 Series



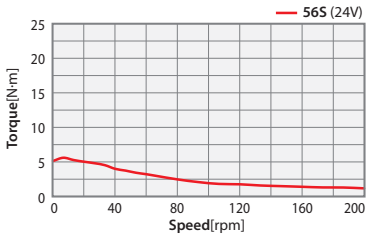
56S-PN8 Series



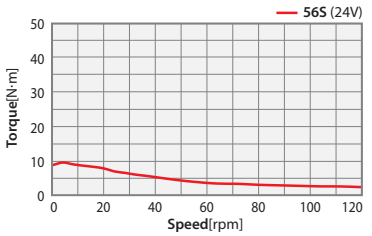
56S-PN10 Series



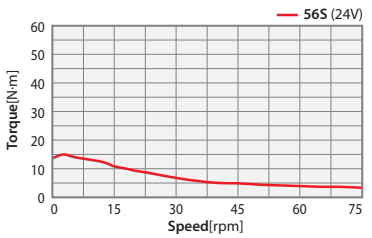
56S-PN15 Series



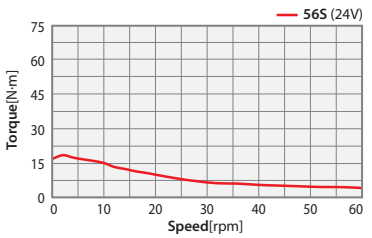
56S-PN25 Series



56S-PN40 Series



56S-PN50 Series



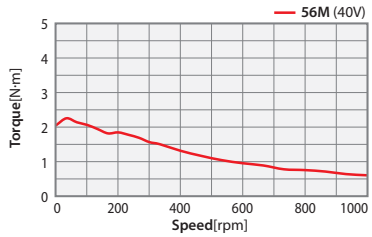
Specifications of Motor with Gearbox [56M]

Applicable Model
Ezi-SERVO CC-Link IE TSN

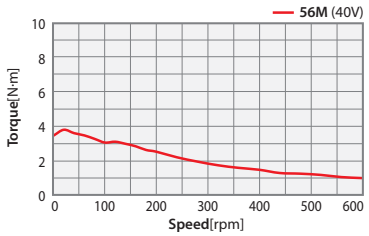
Model	Unit	56M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	2.0	3.4	5.4	6.8	9.9	16.6	27	27
Rotor Inertia Moment	kg·m^2	280 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	2.15				2.35			

Torque Graph with Gearbox

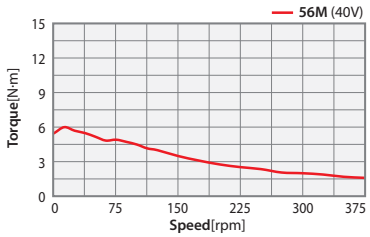
56M-PN3 Series



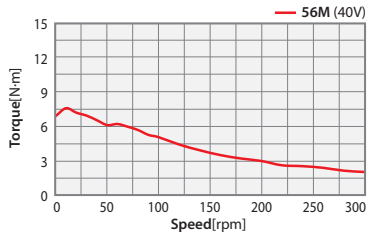
56M-PN5 Series



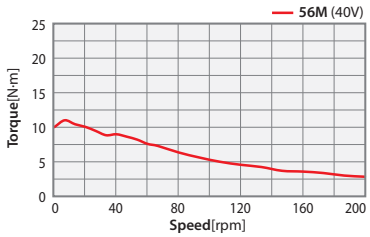
56M-PN8 Series



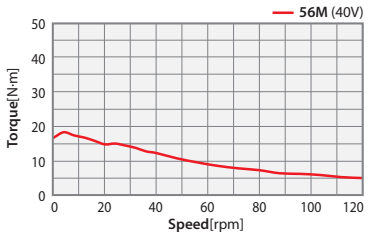
56M-PN10 Series



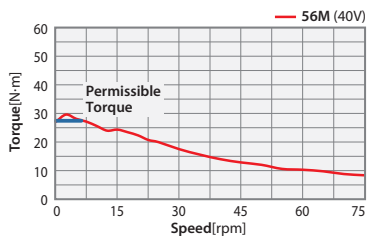
56M-PN15 Series



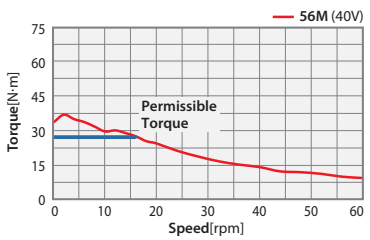
56M-PN25 Series



56M-PN40 Series



56M-PN50 Series



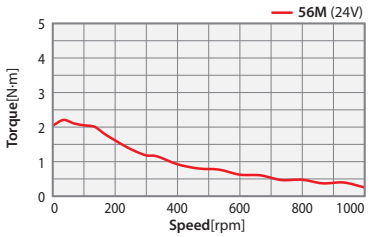
Specifications of Motor with Gearbox [56M]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

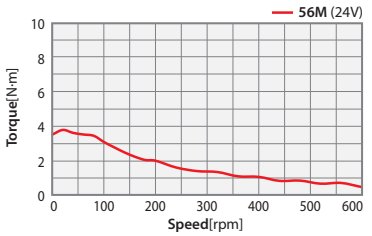
Model	Unit	56M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	2	3.4	5.5	6.9	10	16.7	27	27
Rotor Inertia Moment	kg·m^2	280 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	2.1				2.3			

Torque Graph with Gearbox

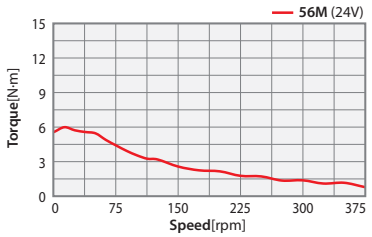
56M-PN3 Series



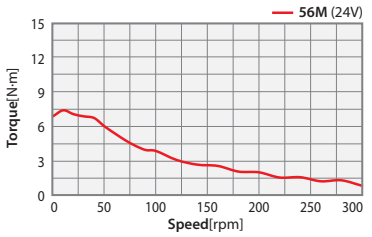
56M-PN5 Series



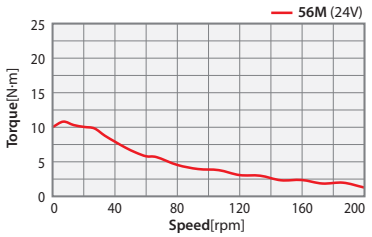
56M-PN8 Series



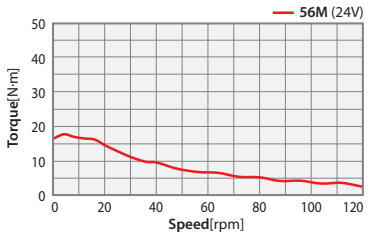
56M-PN10 Series



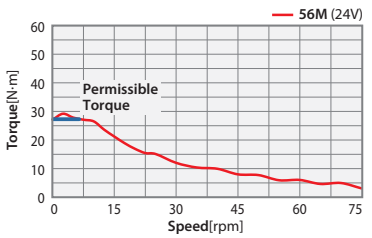
56M-PN15 Series



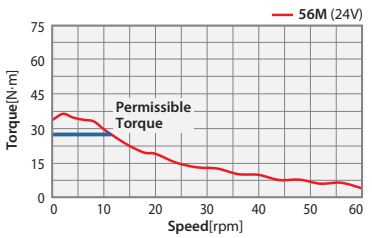
56M-PN25 Series



56M-PN40 Series



56M-PN50 Series



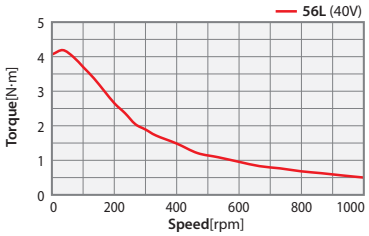
Specifications of Motor with Gearbox [56L]

Applicable Model
Ezi-SERVO CC-Link IE TSN

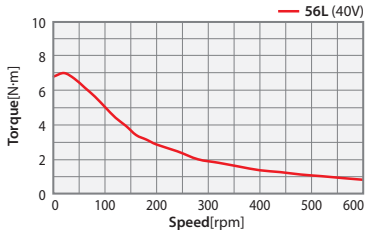
Model	Unit	56L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	4.0	6.8	10.8	13.6	18	27	27	27
Rotor Inertia Moment	kg·m^2	520 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	2.52				2.72			

Torque Graph with Gearbox

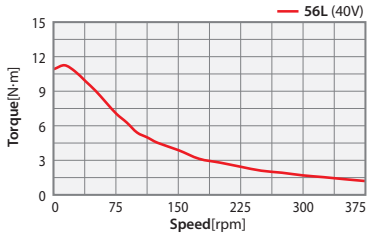
56L-PN3 Series



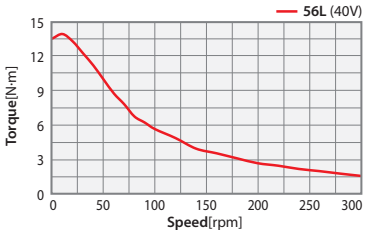
56L-PN5 Series



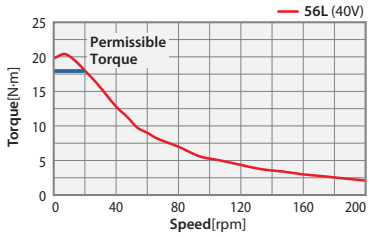
56L-PN8 Series



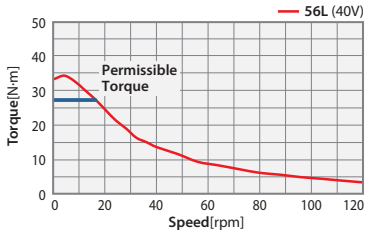
56L-PN10 Series



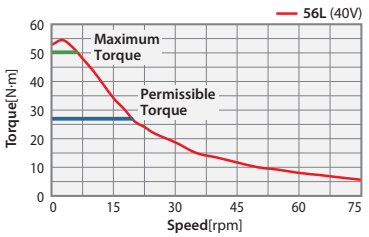
56L-PN15 Series



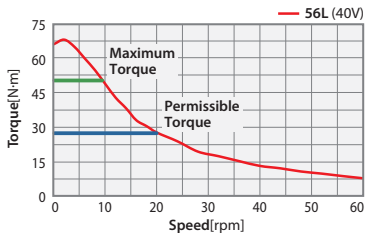
56L-PN25 Series



56L-PN40 Series



56L-PN50 Series



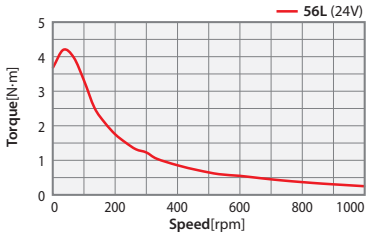
Specifications of Motor with Gearbox [56L]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

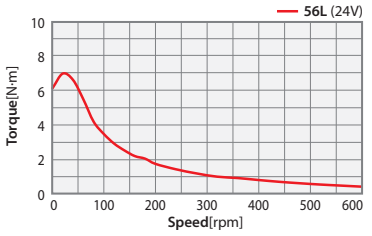
Model	Unit	56L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	3.6	6	9.7	12.1	18	27	27	27
Rotor Inertia Moment	kg·m^2	520 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

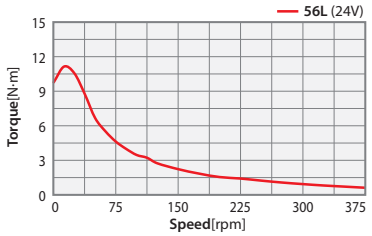
56L-PN3 Series



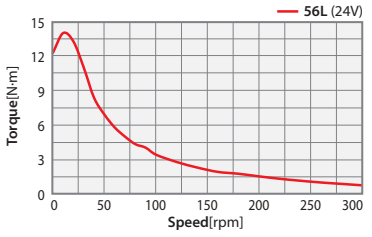
56L-PN5 Series



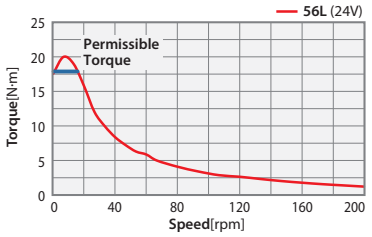
56L-PN8 Series



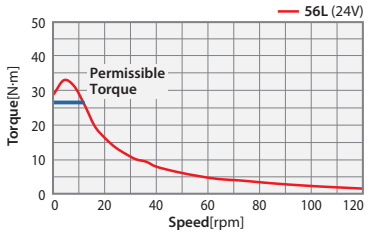
56L-PN10 Series



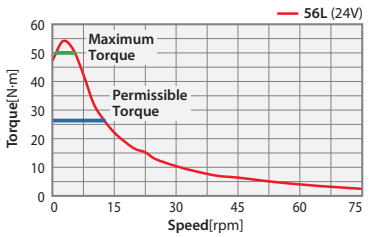
56L-PN15 Series



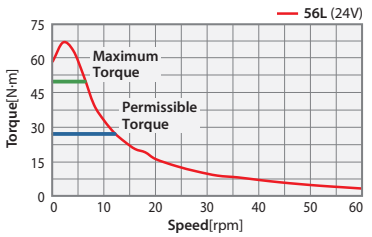
56L-PN25 Series



56L-PN40 Series



56L-PN50 Series



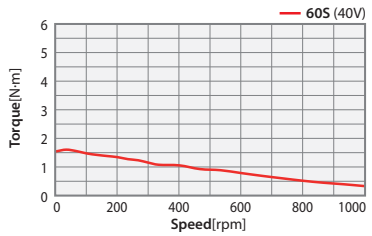
Specifications of Motor with Gearbox [60S]

Applicable Model
Ezi-SERVO CC-Link IE TSN

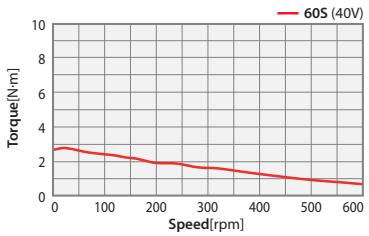
Model	Unit	60S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.5	2.5	4.0	5.1	7.4	12.3	19.8	24.7
Rotor Inertia Moment	kg·m^2	240 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	2				2.2			

Torque Graph with Gearbox

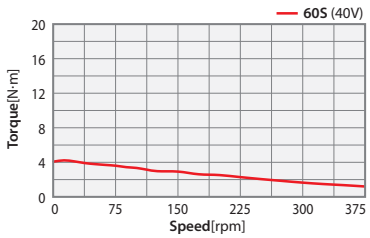
60S-PN3 Series



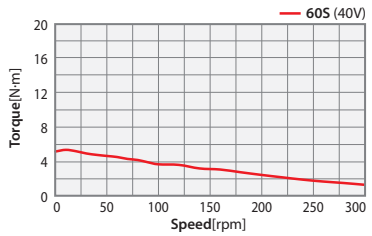
60S-PN5 Series



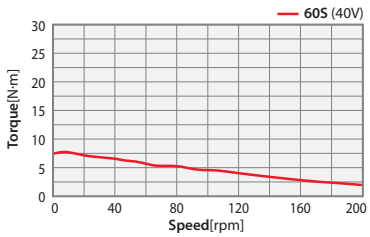
60S-PN8 Series



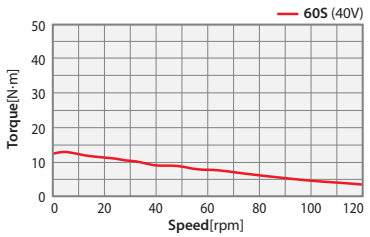
60S-PN10 Series



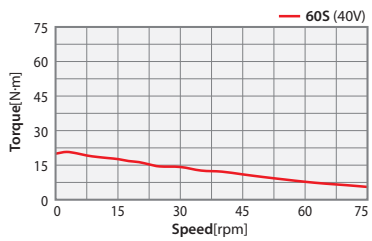
60S-PN15 Series



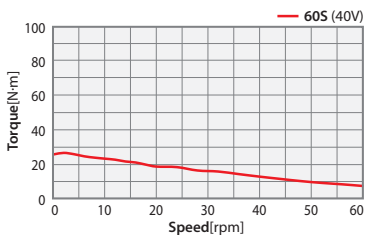
60S-PN25 Series



60S-PN40 Series



60S-PN50 Series



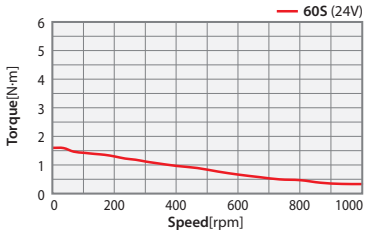
Specifications of Motor with Gearbox [60S]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

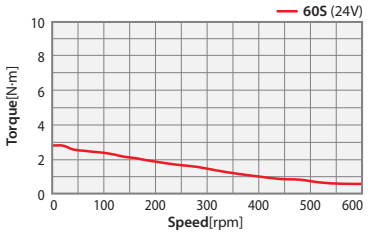
Model	Unit	60S							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	1.6	2.7	4.4	5.5	8	13.4	21.4	26.8
Rotor Inertia Moment	kg·m^2	240 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	2				2.2			

Torque Graph with Gearbox

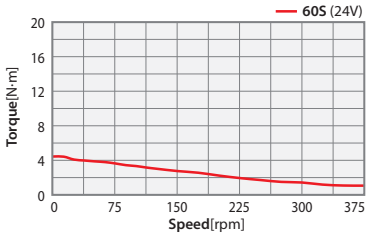
60S-PN3 Series



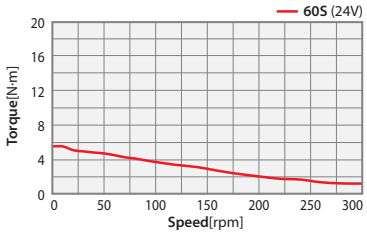
60S-PN5 Series



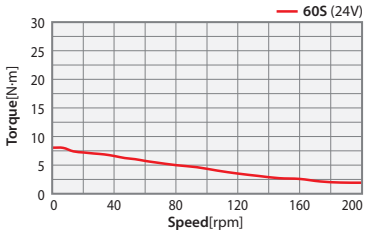
60S-PN8 Series



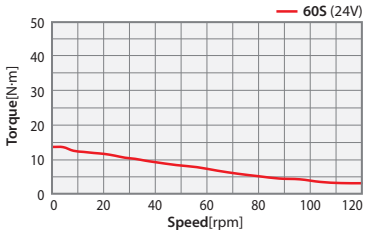
60S-PN10 Series



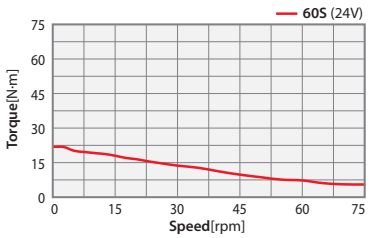
60S-PN15 Series



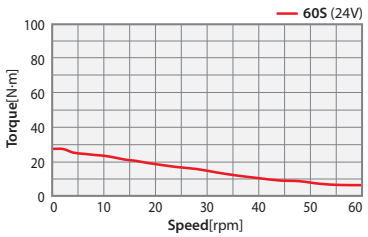
60S-PN25 Series



60S-PN40 Series



60S-PN50 Series



Specifications of Motor with Gearbox [60M]

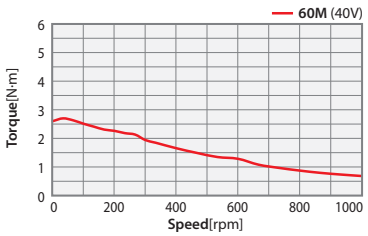
Applicable Model

Ezi-SERVO CC-Link IE TSN

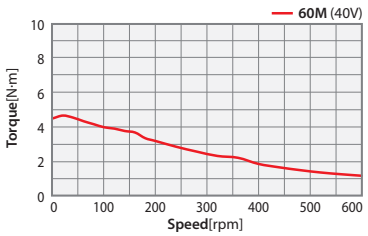
Model	Unit	60M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	2.6	4.4	7.0	8.8	12.8	21.4	27	27
Rotor Inertia Moment	kg·m²	490 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

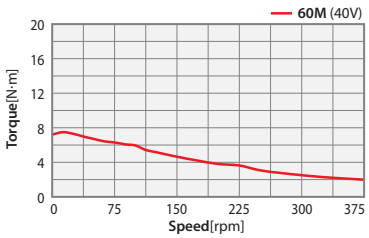
60M-PN3 Series



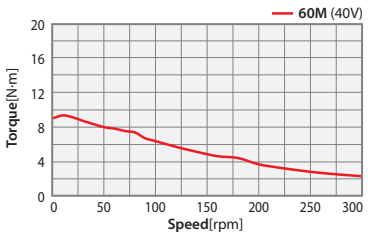
60M-PN5 Series



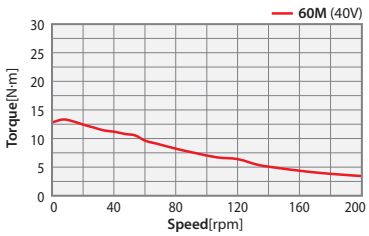
60M-PN8 Series



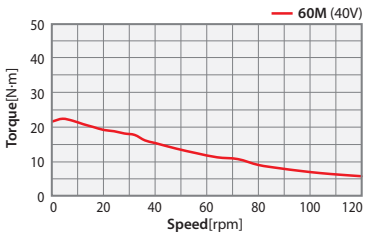
60M-PN10 Series



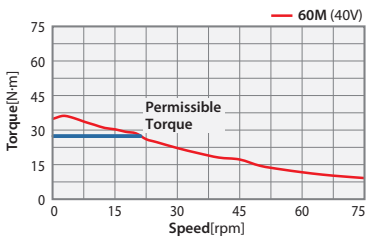
60M-PN15 Series



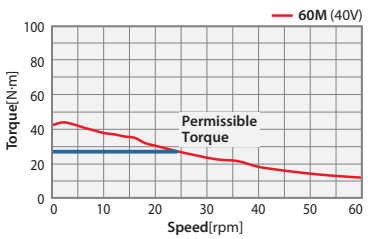
60M-PN25 Series



60M-PN40 Series



60M-PN50 Series



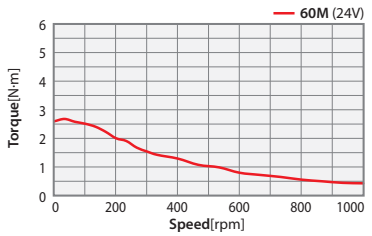
Specifications of Motor with Gearbox [60M]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

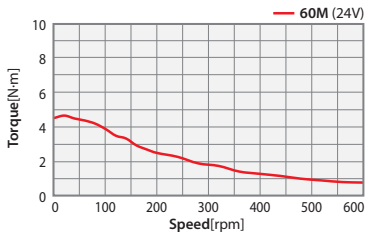
Model	Unit	60M							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	2.6	4.4	7.0	8.8	12.8	21.4	27	27
Rotor Inertia Moment	kg·m^2	490 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

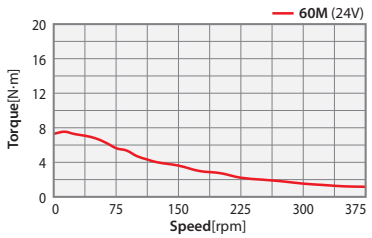
60M-PN3 Series



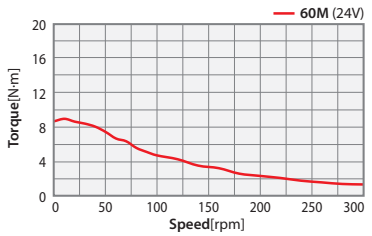
60M-PN5 Series



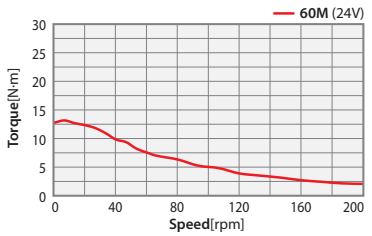
60M-PN8 Series



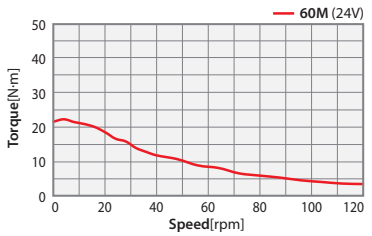
60M-PN10 Series



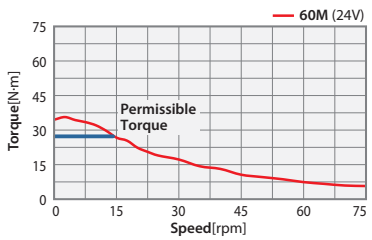
60M-PN15 Series



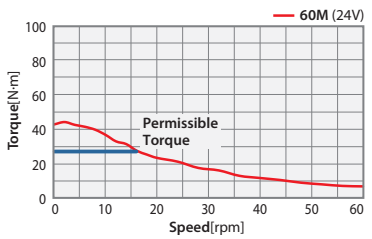
60M-PN25 Series



60M-PN40 Series



60M-PN50 Series



Specifications of Motor with Gearbox [60L]

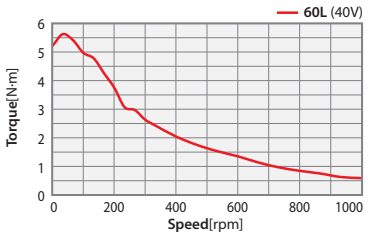
Applicable Model

Ezi-SERVO CC-Link IE TSN

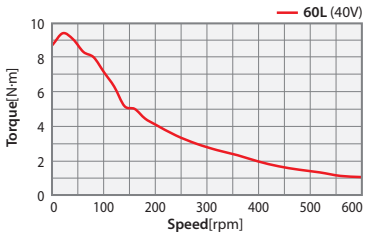
Model	Unit	60L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	5.2	8.7	13.9	18	18	27	27	27
Rotor Inertia Moment	kg·m²	690 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000 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
Maximum Torque	N·m	35	50	50	35	35	50	50	50
Permitted Speed Range	r/min	0 ~ 1000	0 ~ 600	0 ~ 375	0 ~ 300	0 ~ 200	0 ~ 120	0 ~ 75	0 ~ 60
Motor Weight	kg	3				3.2			

Torque Graph with Gearbox

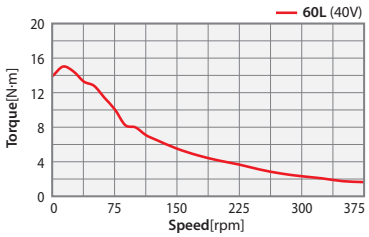
60L-PN3 Series



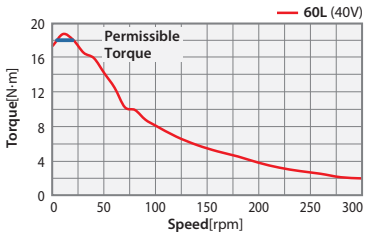
60L-PN5 Series



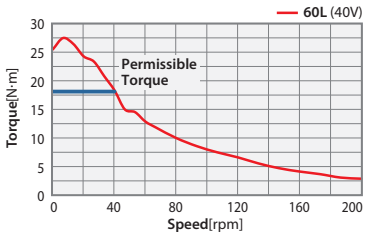
60L-PN8 Series



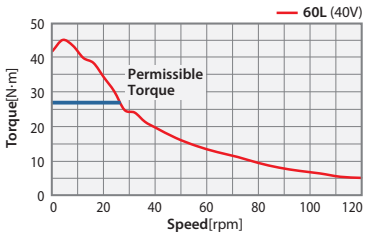
60L-PN10 Series



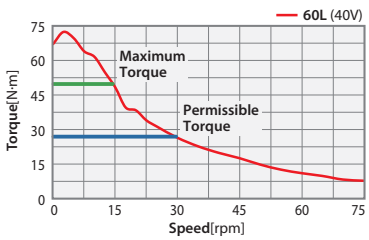
60L-PN15 Series



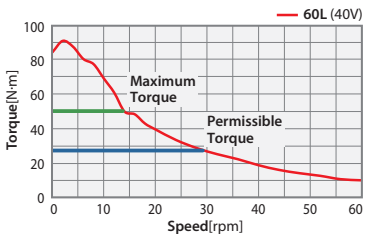
60L-PN25 Series



60L-PN40 Series



60L-PN50 Series



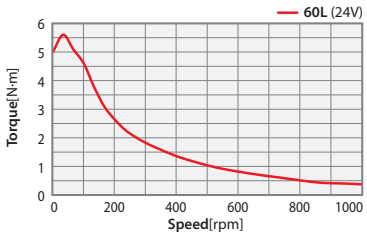
Specifications of Motor with Gearbox [60L]

Applicable Model	
Ezi-SERVO CC-Link IE TSN 4X	Ezi-SERVO CC-Link IE TSN ALL

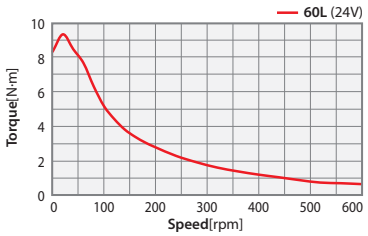
Model	Unit	60L							
		PN3	PN5	PN8	PN10	PN15	PN25	PN40	PN50
Maximum Holding Torque	N·m	4.9	8.3	13.2	16.6	18	27	27	27
Rotor Inertia Moment	kg·m^2	690 × 10^{-7}							
Backlash	arcmin	3							
Angle Transmission Error	arcmin	5							
Reduction Gear Ratio	-	1:3	1:5	1:8	1:10	1:15	1:25	1:40	1:50
Resolution(10,000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

Torque Graph with Gearbox

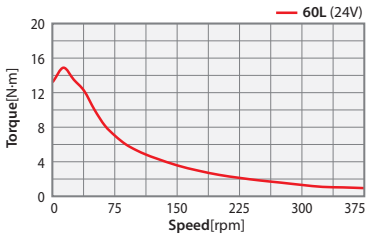
60L-PN3 Series



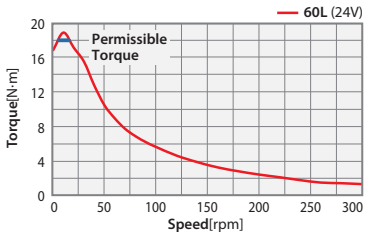
60L-PN5 Series



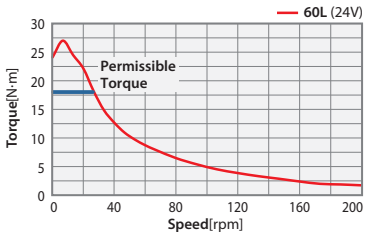
60L-PN8 Series



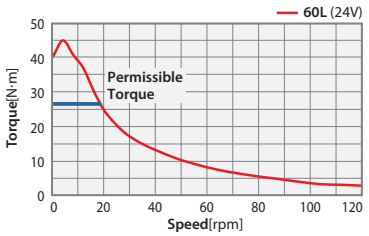
60L-PN10 Series



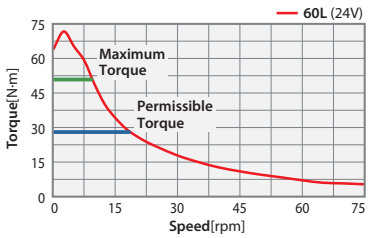
60L-PN15 Series



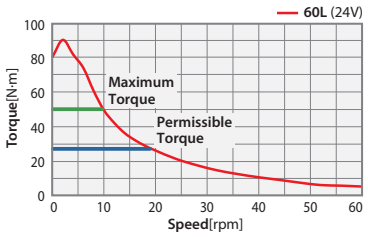
60L-PN25 Series



60L-PN40 Series



60L-PN50 Series

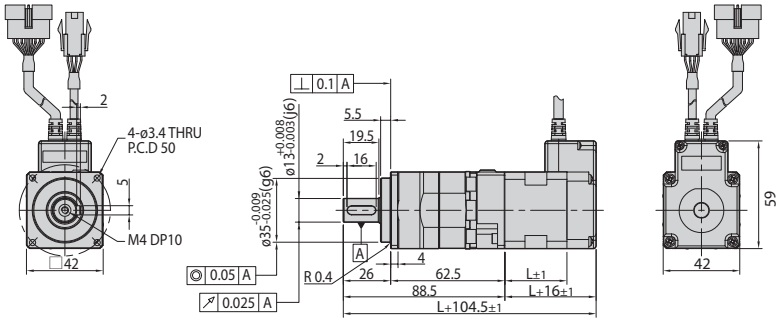


Dimensions of Motor with Gearbox [42 mm]

Applicable Model

Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X

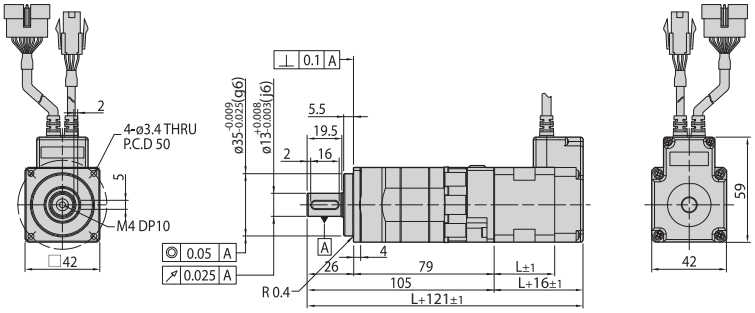
Gear Ratio 3, 5, 8, 10 : Single



42 *mm*

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

Gear Ratio 15, 25, 40, 50 : Double



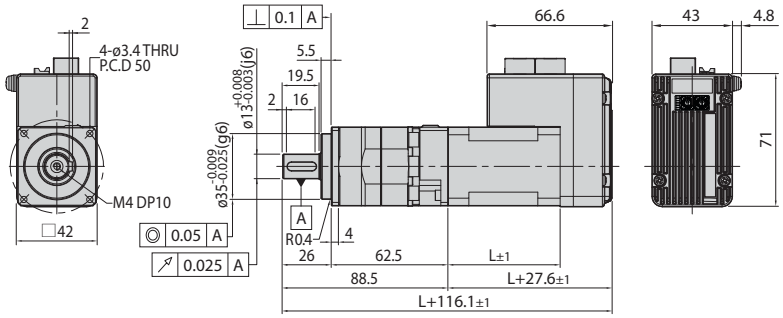
42 *mm*

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

Applicable Model

Ezi-SERVO CC-Link IE TSN ALL

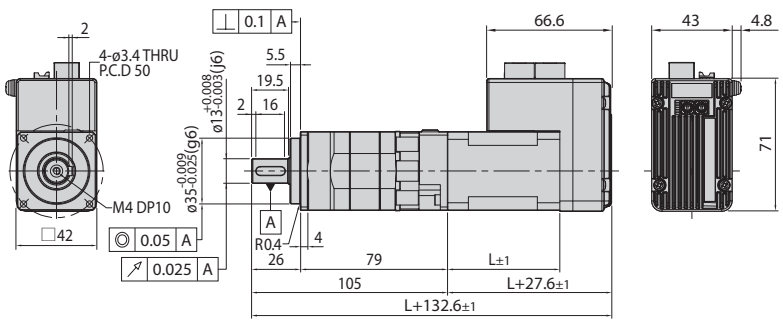
Gear Ratio 3, 5, 8, 10 : Single



42 *mm*

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

Gear Ratio 15, 25, 40, 50 : Double



42 *mm*

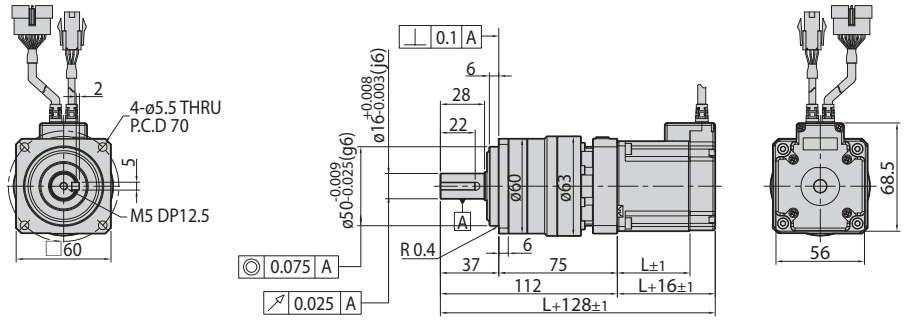
Model name	Length(L)
42M	40
42L	48
42XL	60

Dimensions of Motor with Gearbox [56 mm]

Applicable Model

Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X

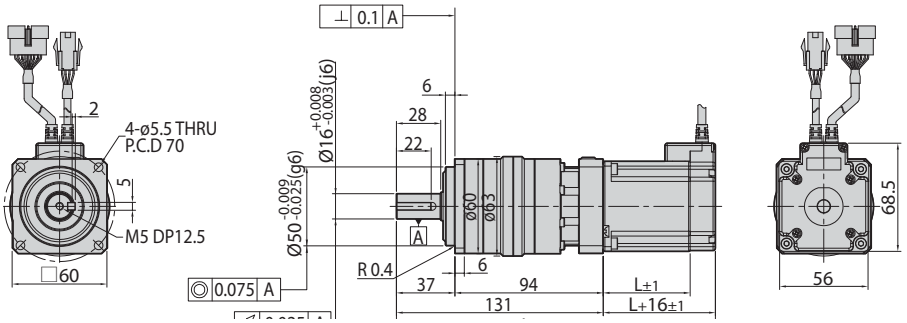
Gear Ratio 3, 5, 8, 10 : Single



56 *mm*

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

Gear Ratio 15, 25, 40, 50 : Double



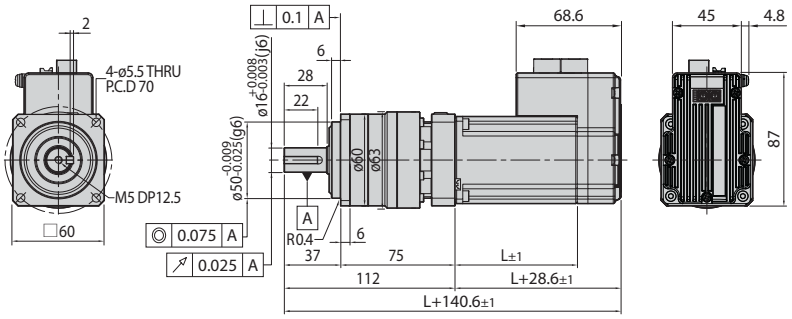
56 *mm*

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

Applicable Model

Ezi-SERVO CC-Link IE TSN ALL

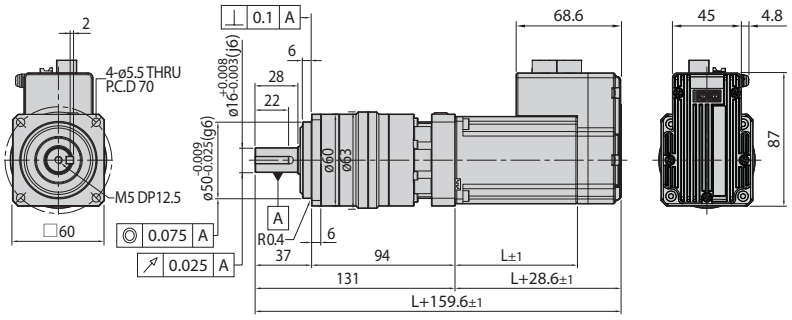
Gear Ratio 3, 5, 8, 10 : Single



56 *mm*

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

Gear Ratio 15, 25, 40, 50 : Double



56 *mm*

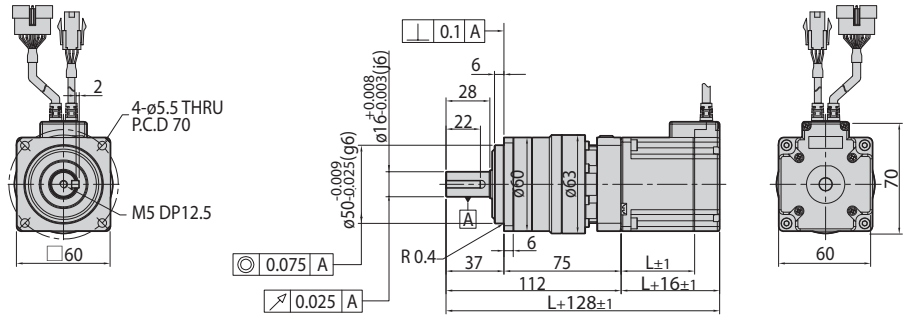
Model name	Length(L)
56S	46
56M	55
56L	80

Dimensions of Motor with Gearbox [60 mm]

Applicable Model

Ezi-SERVO CC-Link IE TSN	Ezi-SERVO CC-Link IE TSN 4X

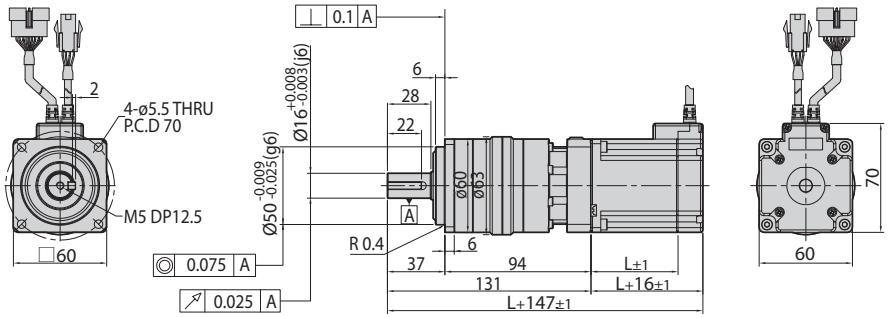
Gear Ratio 3, 5, 8, 10 : Single



60 mm

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

Gear Ratio 15, 25, 40, 50 : Double



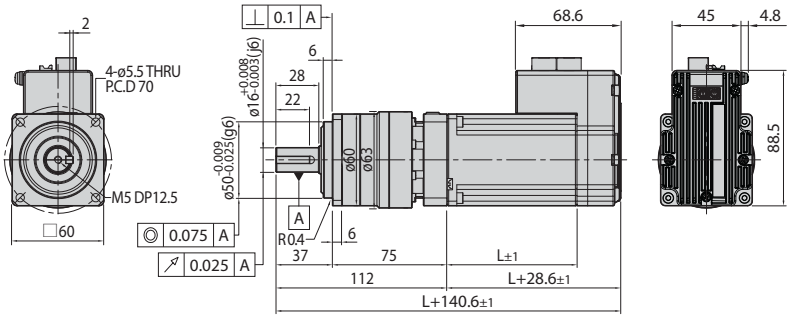
60 mm

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

Applicable Model

Ezi-SERVO CC-Link IE TSN ALL

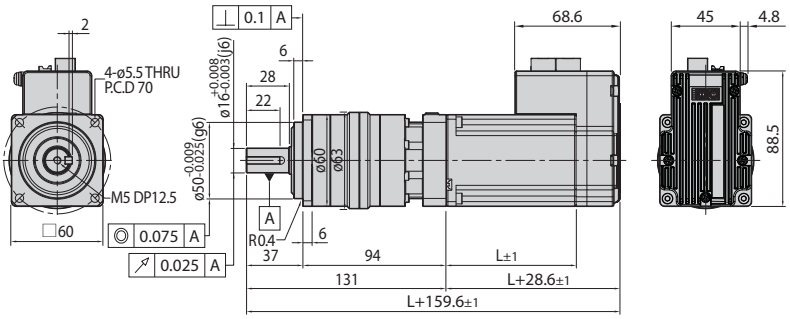
Gear Ratio 3, 5, 8, 10 : Single



60 mm

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

Gear Ratio 15, 25, 40, 50 : Double



60 mm

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

C-LINK-TSN

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