Ezi-SERVO®

Closed Loop Stepping System

- Motor + High Resolution Encoder + Drive + Motion Controller
- Space Saving / Reduced Wiring
- RS-485 Interface
- Position Table
- Closed-Loop Stepping System
- Tuning Not Required / No Hunting
- Low Heat Generation / High Torque
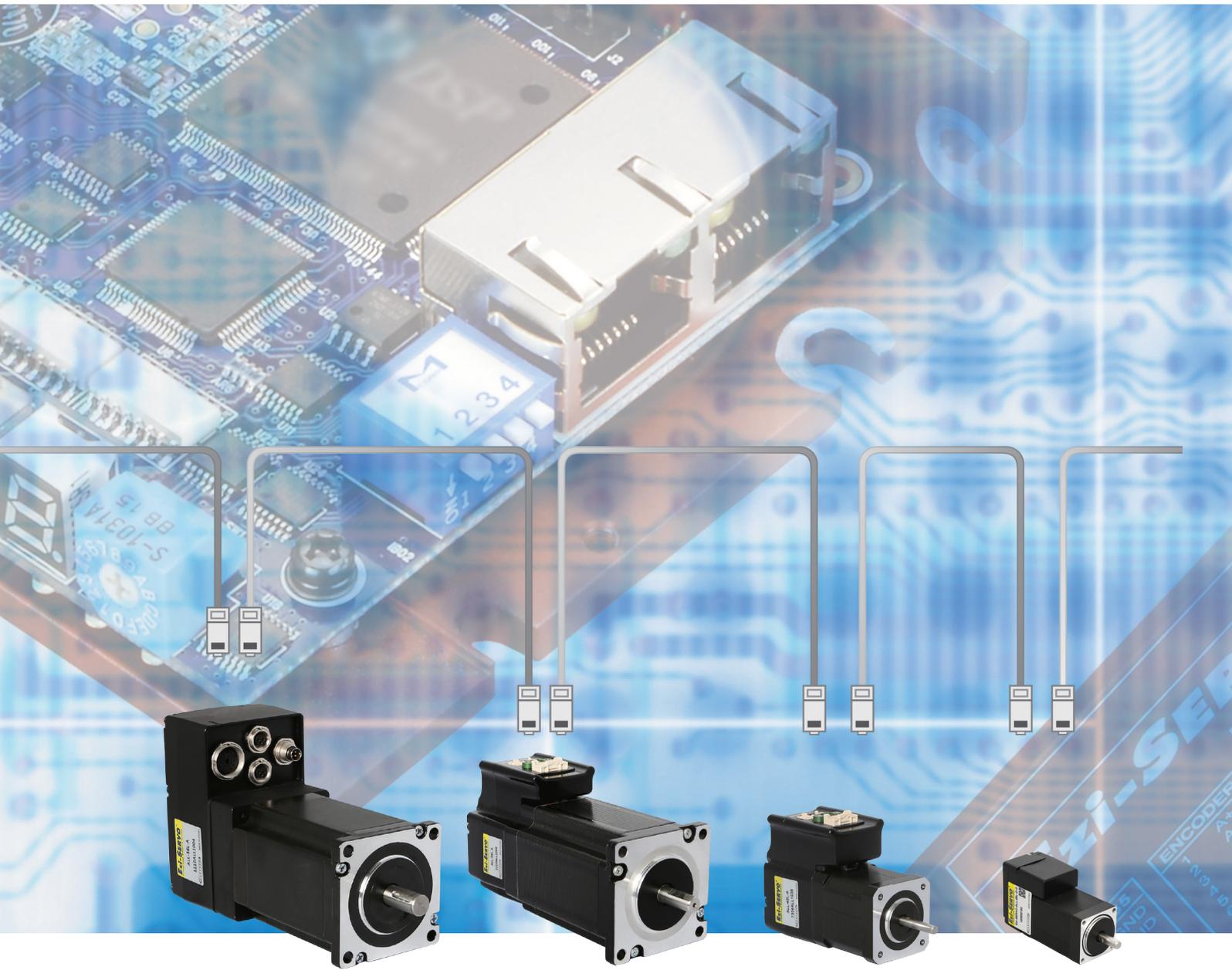- IP65 Protection (NEMA 24)

ALL

CE

FASTECH

Fast, Accurate, Smooth Motion

FASTECH

Fast, Accurate, Smooth Motion

Ezi-SERVO® ALL
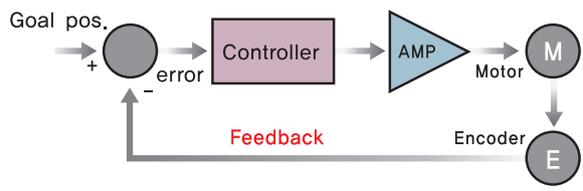
Closed Loop Stepping System

2 Position Table Function

Position Table can be used for motion control by digital input and output signals of host controller.

You can operate the motor directly by sending the position table number, start/stop, origin search and other digital input values from a PC.

The PC can monitor the In-Position, origin search, moving/stop, servo ready and other digital output signals from a drive. A maximum of 64 positioning points can be set from PC.

PC/PLC

- • Position Table Number
- • Start/Stop
- • Servo on
- • Origin search
- • Jog
- • Alarm reset
- • Teaching
- • Pause
- • Others

- • Inposition
- • Origin search OK
- • Moving/Stop
- • Servo Ready
- • Alarm
- • Others

* Ezi-SERVO-ALL 28 series doesn't support the position table.

3 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 25μs. 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 stepping motor and drive could lose a step but Ezi-SERVO automatically correct the position by encoder feedback.

Goal pos.

+ − error Controller AMP Motor M

Feedback Encoder E

1 RS-485 Based Motion Control

A maximum of 16 axis can be operated from a PC through RS-485 communications. Also, motions are controlled by RS-485, and all of the Motion conditions are set through the network and saved in Flash ROM as a parameter. Motion Library(API) is provided for programming under Windows 7/8/10.

PC/PLC

4 Batteryless Absolute System

Ezi-SERVO-ALL-60-ABS series has high-resolution absolute encoder (Single Turn: 262,144 P/R, Multi Turn: 4,096 P/R). This encoder maintains the position data even after the power supplied to the drive is cut off. Thus, Ezi-SERVO-ALL-60-ABS series can build an absolute system without using batteries.

5 IP65 Protection

Ezi-SERVO-ALL-60 series and Ezi-SERVO-ALL-60-ABS series are IP65-rated products, so they can be used in harsh environments with splashes of water or dust.

6 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 stepping 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.
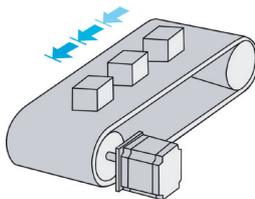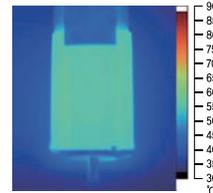
## 7 Low Heat Generation / Energy Savings

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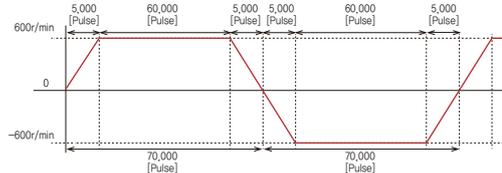
Condition to measure the motor temperature
[4hours operation, Motor surface temperature saturation]

No Load ← → Load Increasing
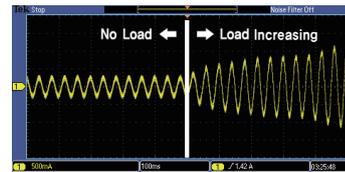
Example of the Motor Current Control according to load

8 High Torque

(Motor Current Setting)

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

Torque [mN·m]

Run current 100%
Run current 110%
Run current 120%
Run current 130%
Run current 140%
Run current 150%

Speed [r/min] × 100
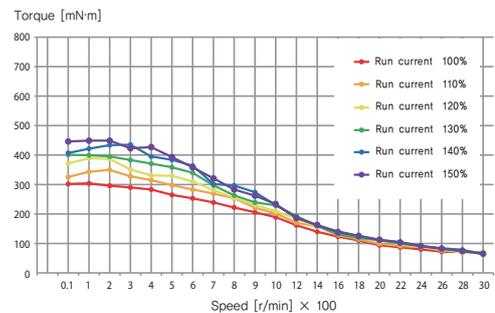
※ The torque at low speed is improved about 30%.

Measured Condition : Drive = Ezi-SERVO-ALL-42L
Motor Voltage = DC24V
Input Voltage = DC24V

9 No Hunting

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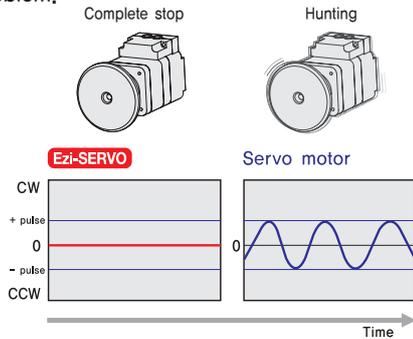This feature is especially useful in applications such as vision systems in which system oscillation and vibration could be a problem.

Complete stop   Hunting

Ezi-SERVO   Servo motor

CW
+ pulse
0   0
− pulse
CCW

Time

12 High Resolution

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

500
1000
1600
2000
3600
4000
5000
6400
7200
10000
16000
20000

Ezi-SERVO

10 Smooth and Accurate Operation

Ezi−SERVO is a high−precision servo drive, using a high−resolution encoder with 32,000 pulses/revolution. Unlike a conventional Microstep drive, the on−board high performance MCU (Micro Controller Unit) performs vector control and filtering, producing a smooth rotational control with minimum ripples.

β

Current of Phase B
Current Vector
Torque

Φ
Rotation Angle

Current of Phase A α
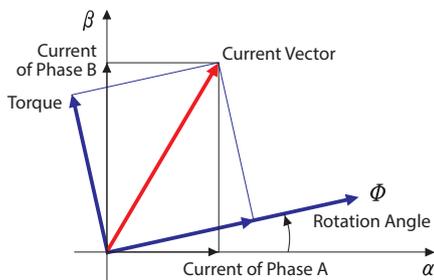
11 High Torque/Continuous Operation

Compared with common step 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

Ezi-SERVO
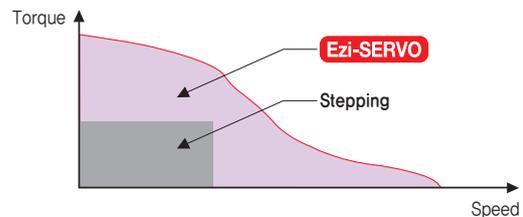
Stepping

Speed

9 High Response

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

Speed   Ezi-SERVO   Speed   Servo motor

Settling Time

0   Time   0   Time
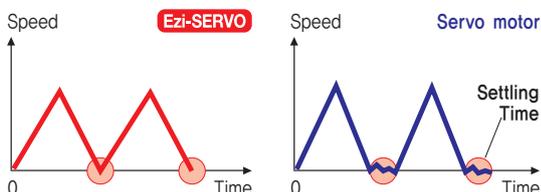
12 High Speed

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 stepping motor to generate high torque, even under a 100% load condition.

Speed   High Speed

Time
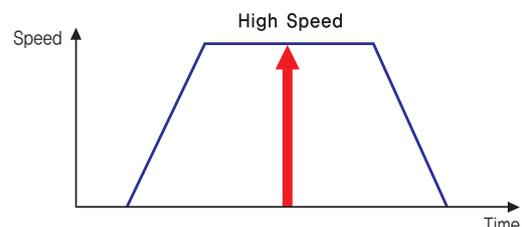
● Advantages over Open-Loop Stepping System Drive

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

● Advantages over Servo Motor Controller

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

● Motion Controller Features of Ezi-SERVO

1. Loop Count

This function allows positioning repeatedly according to the Loop Count Number.
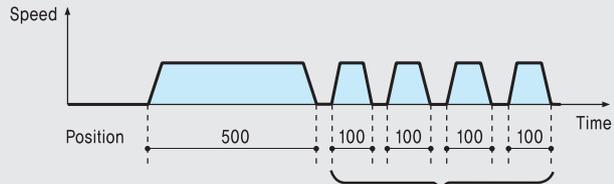
• Position Table No.	#1	#2
• Position	500	100
• Loop count No.	1	4

2. Acceleration/Deceleration

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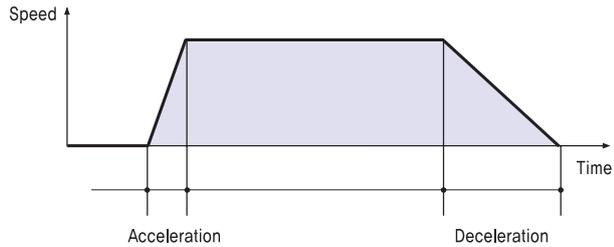
3. Pause

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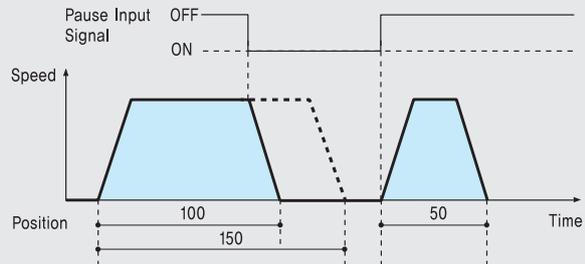
4. Alarm

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

Alarm Output from Drive

ALARM

PLC

Host controller can notify which Alarm has occurred
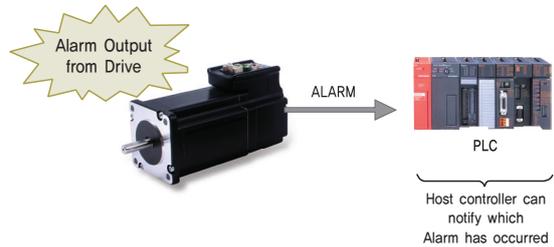
5. Teaching

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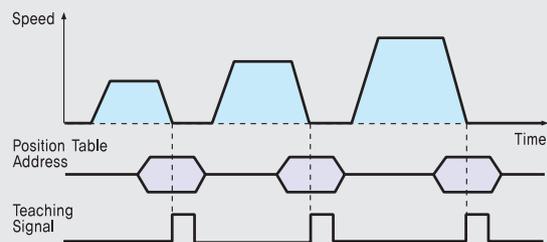
6. Jump

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

◆ Position Table #14

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

No effect

Jump to #116 Position Table
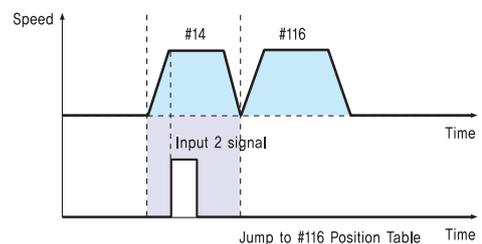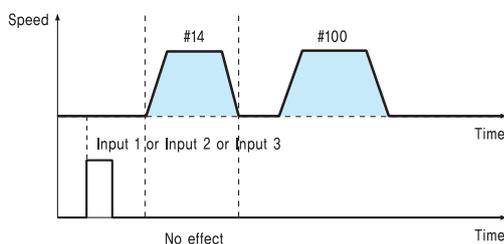
● Ezi-SERVO ALL Part Numbering

Ezi-SERVO-ALL-42S-A-BK-PN05

Product Name

Drive Series

ALL : ALL Type

Motor Flange Size

28 : 28mm
42 : 42mm
56 : 56mm
60 : 60mm

Motor Length

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

Encoder Resolution

A : 10,000P/R
B : 20,000P/R
D : 16,000P/R
ABS : Absolute Encoder

Brake

Blank : Without Brake
BK : Brake

Gear Ratio

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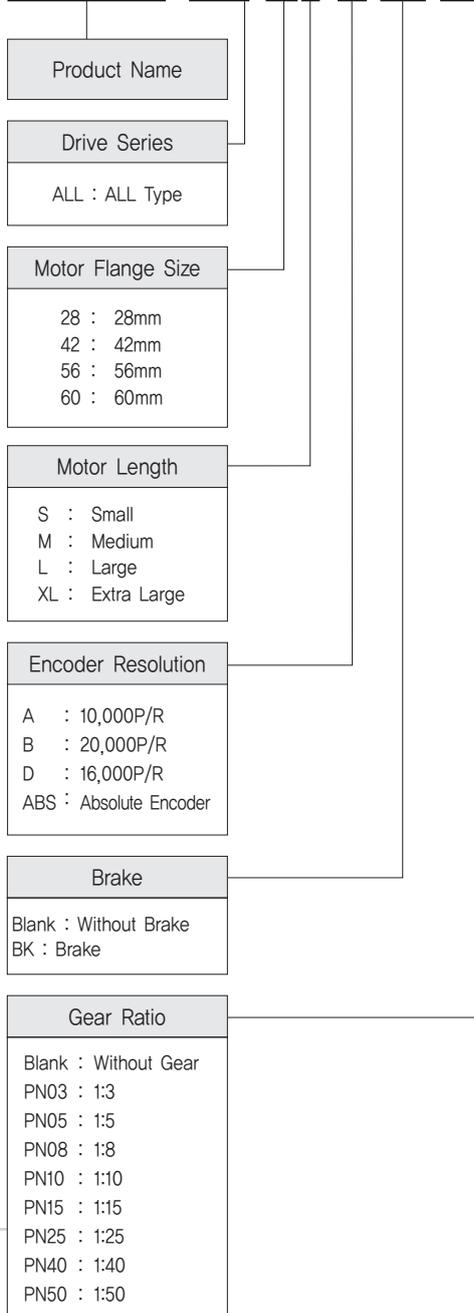
● Standard Combination

Unit Part Number	Motor Model Number	Drive Model Number
Ezi-SERVO-ALL-28S-D		
Ezi-SERVO-ALL-28M-D		
Ezi-SERVO-ALL-28L-D		
Ezi-SERVO-ALL-42S-A		
Ezi-SERVO-ALL-42S-B		
Ezi-SERVO-ALL-42M-A		
Ezi-SERVO-ALL-42M-B		
Ezi-SERVO-ALL-42L-A		
Ezi-SERVO-ALL-42L-B		
Ezi-SERVO-ALL-42XL-A	Motor & Drive Integrated	
Ezi-SERVO-ALL-42XL-B		
Ezi-SERVO-ALL-56S-A		
Ezi-SERVO-ALL-56S-B		
Ezi-SERVO-ALL-56M-A		
Ezi-SERVO-ALL-56M-B		
Ezi-SERVO-ALL-56L-A		
Ezi-SERVO-ALL-56L-B		
Ezi-SERVO-ALL-60L-A		
Ezi-SERVO-ALL-60L-B		
Ezi-SERVO-ALL-60L-ABS		

● Combination with Brake

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

● Combination with Gearbox

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

● Combination with Gearbox

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

● Combination with Gearbox

Unit Part Number	Motor Model Number	Drive Model Number	Gear Ratio
Ezi−SERVO−ALL−56L−A−PN3			1:3
Ezi−SERVO−ALL−56L−B−PN3			
Ezi−SERVO−ALL−56L−A−PN5			1:5
Ezi−SERVO−ALL−56L−B−PN5			
Ezi−SERVO−ALL−56L−A−PN8			1:8
Ezi−SERVO−ALL−56L−B−PN8			
Ezi−SERVO−ALL−56L−A−PN10			1:10
Ezi−SERVO−ALL−56L−B−PN10			
Ezi−SERVO−ALL−56L−A−PN15			1:15
Ezi−SERVO−ALL−56L−B−PN15			
Ezi−SERVO−ALL−56L−A−PN25			1:25
Ezi−SERVO−ALL−56L−B−PN25			
Ezi−SERVO−ALL−56L−A−PN40			1:40
Ezi−SERVO−ALL−56L−B−PN40			
Ezi−SERVO−ALL−56L−A−PN50			1:50
Ezi−SERVO−ALL−56L−B−PN50			
Ezi−SERVO−ALL−60L−A−PN3			1:3
Ezi−SERVO−ALL−60L−B−PN3			
Ezi−SERVO−ALL−60L−ABS−PN3			
Ezi−SERVO−ALL−60L−A−PN5	Motor & Drive Integrated		1:5
Ezi−SERVO−ALL−60L−B−PN5			
Ezi−SERVO−ALL−60L−ABS−PN5			
Ezi−SERVO−ALL−60L−A−PN8			1:8
Ezi−SERVO−ALL−60L−B−PN8			
Ezi−SERVO−ALL−60L−ABS−PN8			
Ezi−SERVO−ALL−60L−A−PN10			1:10
Ezi−SERVO−ALL−60L−B−PN10			
Ezi−SERVO−ALL−60L−ABS−PN10			
Ezi−SERVO−ALL−60L−A−PN15			1:15
Ezi−SERVO−ALL−60L−B−PN15			
Ezi−SERVO−ALL−60L−ABS−PN15			
Ezi−SERVO−ALL−60L−A−PN25			1:25
Ezi−SERVO−ALL−60L−B−PN25			
Ezi−SERVO−ALL−60L−ABS−PN25			
Ezi−SERVO−ALL−60L−A−PN40			1:40
Ezi−SERVO−ALL−60L−B−PN40			
Ezi−SERVO−ALL−60L−ABS−PN40			
Ezi−SERVO−ALL−60L−A−PN50			1:50
Ezi−SERVO−ALL−60L−B−PN50			
Ezi−SERVO−ALL−60L−ABS−PN50			

● Specifications of Motor

MODEL			UNIT	Ezi−SERVO−ALL−28 series			Ezi−SERVO−ALL−42 series			
				28S	28M	28L	42S	42M	42L	42XL
DRIVE METHOD			−	Bipolar						
NUMBER OF PHASES			−	2 Phase						
CURRENT per PHASE			A/Phase	0.95	0.95	0.95	1.2	1.2	1.2	1.2
MAXIMUM HOLDING TORQUE			N·m	0.069	0.098	0.118	0.32	0.44	0.5	0.65
ROTOR INERTIA			g·cm^2	9.0	13	18	35	54	77	114
WEIGHTS			kg	0.170	0.227	0.257	0.340	0.400	0.470	0.600
LENGTH(L)			mm	32	45	50	34	40	48	60
PERMISSIBLE RADIAL LOAD	DIS−TANCE FROM END OF SHAFT	3mm	N	30	30	30	22	22	22	22
		8mm		38	38	38	26	26	26	26
		13mm		53	53	53	33	33	33	33
		18mm		−	−	−	46	46	46	46
PERMISSIBLE AXIAL LOAD			N	Lower than Motor Unit's Weight						
INSULATION RESISTANCE			MΩ	Min. 100(When measured with a DC500V insulation resistance meter)						
INSULATION CLASS			−	CLASS B(130℃)						
OPERATING TEMPERATURE			℃	0 ~ 55						

MODEL			UNIT	Ezi−SERVO−ALL−56 series			Ezi−SERVO−ALL−60 series
				56S	56M	56L	60L
DRIVE METHOD			−	Bipolar			
NUMBER OF PHASES			−	2 Phase			
CURRENT per PHASE			A/Phase	3.0	3.0	3.0	4.0
MAXIMUM HOLDING TORQUE			N·m	0.64	1.0	1.5	2.4
ROTOR INERTIA			g·cm^2	180	280	520	690
WEIGHTS			kg	0.640	0.800	1.320	1.800
LENGTH(L)			mm	46	55	80	85
PERMISSIBLE RADIAL LOAD	DIS−TANCE FROM END OF SHAFT	3mm	N	52	52	52	70
		8mm		65	65	65	87
		13mm		85	85	85	114
		18mm		123	123	123	165
PERMISSIBLE AXIAL LOAD			N	Lower than Motor Unit's Weight			
INSULATION RESISTANCE			MΩ	Min. 100(When measured with a DC500V insulation resistance meter)			
INSULATION CLASS			−	CLASS B(130℃)			
OPERATING TEMPERATURE			℃	0 ~ 55			

● Torque Characteristics of Motor

Ezi-SERVO-ALL-28 series

Motor Voltage : 24V

Torque[N·m] vs Speed[r/min]

- 20M
- 20L

Ezi-SERVO-ALL-42 series

Motor Voltage : 24V

Torque[N·m] vs Speed[r/min]

- 42S
- 42M
- 42L
- 42XL

Ezi-SERVO-ALL-56 series

Motor Voltage : 24V

Torque[N·m] vs Speed[r/min]

- 56S
- 56M
- 56L

Ezi-SERVO-ALL-60 series

Motor Voltage : 40V

Torque[N·m] vs Speed[r/min]

- 60L
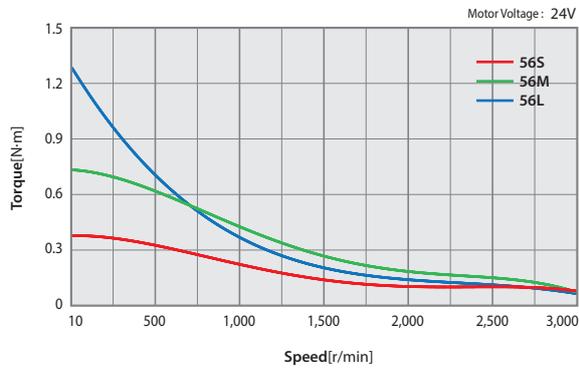
● Dimensions of Motor [mm]

28mm

Model Name	Length(L)
28S	32
28M	45
28L	50
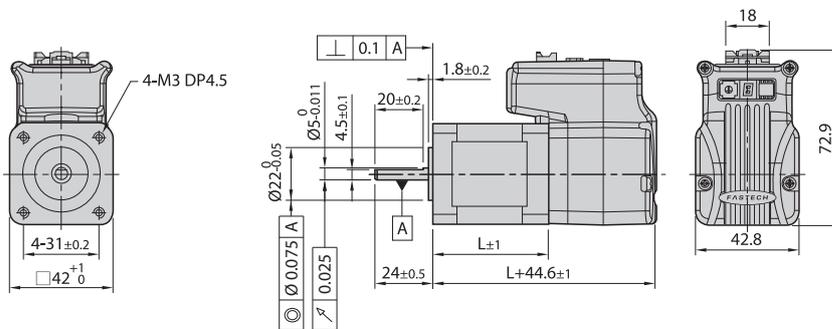
4-M2.5 DP2.5
4-23±0.15
□28±0.5
⊥ 0.075 A
2±0.2
35
40.5
10±0.2
Ø5 0 -0.012
4.5±0.1
Ø22 0 -0.05
A
Ø 0.075 A
0.025
15±0.5
L±1
L+15±1

42mm

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

4-M3 DP4.5
4-31±0.2
□42 +1 0
⊥ 0.1 A
1.8±0.2
18
72.9
20±0.2
Ø5 0 -0.011
4.5±0.1
Ø22 0 -0.05
A
Ø 0.075 A
0.025
24±0.5
L±1
L+44.6±1
42.8

56mm

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

4-Ø5 +0.3 0 THRU
4-47.14±0.2
□57.15±0.25
⊥ 0.1 A
15±0.2
18
1.6±0.25
80
Ø6.35 0 -0.013
5.8±0.1
Ø38.1 0 -0.039
A
Ø 0.075 A
0.025
5±0.25
L±1
20±0.5
L+45.5±1
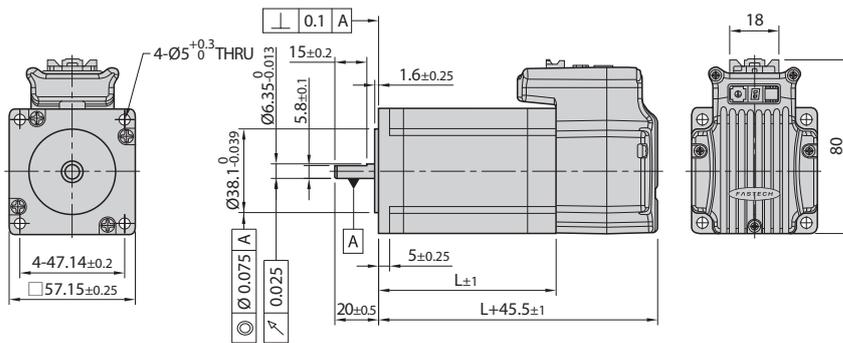
※ There are 2 kinds size of front shaft diameter for Ezi−SERVO−ALL−56 series as Ø6.35 and Ø8.0

60mm

Model Name	Length(L)
60L	85

4-Ø5 +0.3 0 THRU
4-50±0.25
□60±0.5
⊥ 0.1 A
15±0.2
57.6
8.6
1.5±0.25
98.4
Ø8-0.013
2-7.5±0.1
Ø36 0 -0.039
A
Ø 0.075 A
0.025
6.3±0.25
L±1
20.6±0.5
L+71.5±1
61.6
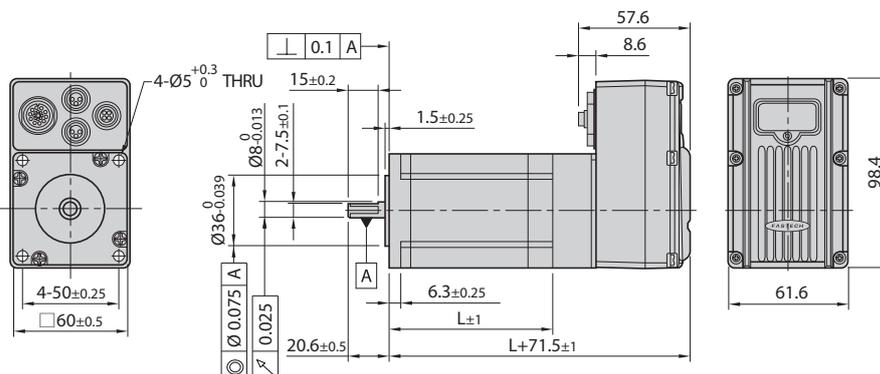
● Dimensions of Motor [mm]
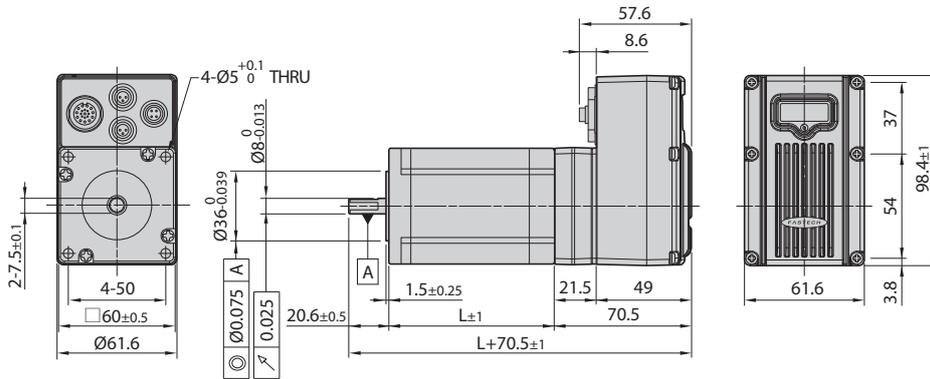
60mm

Model Name	Length(L)
60L−ABS	85

● Specifications of Motor with Brake

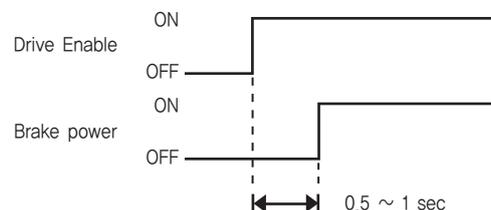| Unit Part Number	Motor Model Number	Electromagnetic Brake					Motor Unit Weight [kg]	Permissible Radial Load [N]				Permissible Axial Load [N]
		Type	Voltage Input [V]	Rated Current [A]	Power Con−sumption [W]	Static Friction Torque [N · m]		Distance from End of Shaft [mm]				
								3	8	13	18	
Ezi−SERVO−ALL−42S−■−BK	Motor & Drive Integrated	Non−excitation run Type	DC24V ±10%	0.2	5	0.2	0.670	22	26	33	46	Must be Lower than Motor Unit Weight
Ezi−SERVO−ALL−42M−■−BK							0.770					
Ezi−SERVO−ALL−42L−■−BK							0.840					
Ezi−SERVO−ALL−42XL−■−BK							0.950					
Ezi−SERVO−ALL−56S−■−BK				0.27	6.6	0.7	1.260	52	65	85	123	
Ezi−SERVO−ALL−56M−■−BK							1.360					
Ezi−SERVO−ALL−56L−■−BK							1.890					
Ezi−SERVO−ALL−60L−■−BK							2.540	70	87	114	165	

* Electronic Brake cannot be used for braking. Position hold purpose only when power OFF.
* The weight means Motor Unit Weight including Motor and Electronic Brake.
* Motor Model Number is combined model name of Motor and Brake.
* Motor specification and torque characteristic are same as Standard Motor.

* Brake Operation Timing Chart

Ezi−SERVO−ALL−56/60/60−ABS series controls Brake by Drive automatically.
Please refer to below Timing Chart when Brake is controlled by the upper controller other than using Ezi−SERVO−ALL−56/60/60−ABS series Brake control. Otherwise, Drive might malfunction and loads might fall down.
Also, please do not operate Brake during motor operation to prevent damage.
Ezi−SERVO−ALL−28 series doesn't have Brake control function.

Drive Enable — ON / OFF
Brake power — ON / OFF
0.5 ~ 1 sec

● Dimensions of Motor with Brake [mm]

42mm

SMR-04V-N(JST)

4-M3 THRU P.C.D 43.8

Lead wire UL3398 AWG26
Length : 400mm

⊥ 0.1 A

Ø5 -0.015
Ø22 0 -0.02

◎ 0.075 A
⌀ 0.025

62.1
68.7
42.8
□42

8
15
4.5
2
19
44
L±1
63±0.5
L+44.6±1
L+107.6±1.5

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

56mm

SMR-04V-N(JST)

4-Ø4.5 THRU P.C.D 66.7

Lead wite UL3398 AWG26
Length : 400mm

⊥ 0.1 A

Ø6.35 -0.015
Ø38.1 0 -0.02

◎ 0.075 A
⌀ 0.025

63
75.8
57
□56

6.2
15
5.9
1.5
19.2
46.5
L±1
65.7±0.5
L+45.4±1
L+111.1±1.5

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

60mm

SMR-04V-N(JST)

4-Ø4.5 THRU P.C.D 70.7

Lead wire UL3398 AWG26
Length : 400mm

⊥ 0.1 A

Ø8 -0.012 -0.028
Ø36 0 -0.02

◎ 0.075 A
⌀ 0.025

49
98.4
61.6
□60

6.2
15
7.5
1.5
19.2
46.5
L±1
65.7±0.5
L+72±1
L+137.7±1.5

Model Name	Length(L)
60L	85

60mm

SMR-04V-N(JST)

4-Ø4.5 THRU P.C.D 70.7

Lead wire UL3398 AWG26
Length : 400mm

⊥ 0.1 A

Ø8 -0.012 -0.028
Ø36 0 -0.02

◎ 0.075 A
⌀ 0.025

49
98.4
61.6
□60

6.2
15
7.5
1.5
19.2
46.5
L±1
65.7±0.5
L+155.5±1
L+221.2±1.5

Model Name	Length(L)
60L-ABS	85

● How to Read Specifications

Unit Part Number	① Maximum Holding Torque [N·m]	② Rotor Inertia Moment [kg·m²]	③ Back-lash [arcmin]	④ Angle Trans-mission Error [arcmin]	⑤ Gear Ratio	⑥ Resolution (10,000 P/R Standard)	⑦ Permis-sible Torque [N·m]	⑧ Instan-taneous Max-imum Torque [N·m]	⑨ Permis-sible Speed Range [r/min]	⑩ Unit Weight [kg]	⑪ Permissi-ble Radial Load (At Center of Axis) [N]	⑫ Permissi-ble Axial Load [N]
Ezi-SERVO-ALL-42S-■-PN3	0.55				3	0.012°	6	12	0~1000		240	270
Ezi-SERVO-ALL-42S-■-PN5	0.92				5	0.0072°	9	18	0~600		290	330
Ezi-SERVO-ALL-42S-■-PN8	1.47		3	5	8	0.0045°	9	18	0~375	0.80	340	410
Ezi-SERVO-ALL-42S-■-PN10	1.84	35×10^{-7}			10	0.0036°	6	12	0~300		360	450
Ezi-SERVO-ALL-42S-■-PN15	2.67				15	0.0024°	6	12	0~200		410	540
Ezi-SERVO-ALL-42S-■-PN25	4.46		5	7	25	0.00144°	9	18	0~120	0.96	490	640
Ezi-SERVO-ALL-42S-■-PN40	7.13				40	0.0009°	9	18	0~75		570	640
Ezi-SERVO-ALL-42S-■-PN50	9.00				50	0.00072°	9	18	0~60		620	640

Description of Specification Items

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

● Specifications of Motor with Gearbox

42mm

Unit Part Number	Maximum Holding Torque [N·m]	Rotor Inertia Moment [kg·m²]	Back-lash [arcmin]	Angle Trans-mission Error [arcmin]	Gear Ratio	Resolution (10,000 P/R Standard)	Permis-sible Torque [N·m]	Instan-taneous Max-imum Torque [N·m]	Permis-sible Speed Range [r/min]	Unit Weight [kg]	Permissi-ble Radial Load (At Center of Axis) [N]	Permissi-ble Axial Load [N]
Ezi−SERVO−ALL−42S−■−PN3	0.55	35x10⁻⁷	3	5	3	0.012°	6	12	0∼1000	0.80	240	270
Ezi−SERVO−ALL−42S−■−PN5	0.92				5	0.0072°	9	18	0∼600		290	330
Ezi−SERVO−ALL−42S−■−PN8	1.47				8	0.0045°	9	18	0∼375		340	410
Ezi−SERVO−ALL−42S−■−PN10	1.84				10	0.0036°	6	12	0∼300		360	450
Ezi−SERVO−ALL−42S−■−PN15	2.67		5	7	15	0.0024°	6	12	0∼200	0.96	410	540
Ezi−SERVO−ALL−42S−■−PN25	4.46				25	0.00144°	9	18	0∼120		490	640
Ezi−SERVO−ALL−42S−■−PN40	7.13				40	0.0009°	9	18	0∼75		570	640
Ezi−SERVO−ALL−42S−■−PN50	9.00				50	0.00072°	9	18	0∼60		620	640
Ezi−SERVO−ALL−42M−■−PN3	0.85	54x10⁻⁷	3	5	3	0.012°	6	12	0∼1000	0.86	240	270
Ezi−SERVO−ALL−42M−■−PN5	1.42				5	0.0072°	9	18	0∼600		290	330
Ezi−SERVO−ALL−42M−■−PN8	2.28				8	0.0045°	9	18	0∼375		340	410
Ezi−SERVO−ALL−42M−■−PN10	2.85				10	0.0036°	6	12	0∼300		360	450
Ezi−SERVO−ALL−42M−■−PN15	4.14		5	7	15	0.0024°	6	12	0∼200	1.02	410	540
Ezi−SERVO−ALL−42M−■−PN25	6.90				25	0.00144°	9	18	0∼120		490	640
Ezi−SERVO−ALL−42M−■−PN40	9.00				40	0.0009°	9	18	0∼75		570	640
Ezi−SERVO−ALL−42M−■−PN50	9.00				50	0.00072°	9	18	0∼60		620	640
Ezi−SERVO−ALL−42L−■−PN3	0.93	77x10⁻⁷	3	5	3	0.012°	6	12	0∼1000	0.93	240	270
Ezi−SERVO−ALL−42L−■−PN5	1.55				5	0.0072°	9	18	0∼600		290	330
Ezi−SERVO−ALL−42L−■−PN8	2.48				8	0.0045°	9	18	0∼375		340	410
Ezi−SERVO−ALL−42L−■−PN10	3.10				10	0.0036°	6	12	0∼300		360	450
Ezi−SERVO−ALL−42L−■−PN15	4.51		5	7	15	0.0024°	6	12	0∼200	1.09	410	540
Ezi−SERVO−ALL−42L−■−PN25	7.52				25	0.00144°	9	18	0∼120		490	640
Ezi−SERVO−ALL−42L−■−PN40	9.00				40	0.0009°	9	18	0∼75		570	640
Ezi−SERVO−ALL−42L−■−PN50	9.00				50	0.00072°	9	18	0∼60		620	640
Ezi−SERVO−ALL−42XL−■−PN3	1.42	114x10⁻⁷	3	5	3	0.012°	6	12	0∼1000	1.06	240	270
Ezi−SERVO−ALL−42XL−■−PN5	2.38				5	0.0072°	9	18	0∼600		290	330
Ezi−SERVO−ALL−42XL−■−PN8	3.80				8	0.0045°	9	18	0∼375		340	410
Ezi−SERVO−ALL−42XL−■−PN10	4.76				10	0.0036°	6	12	0∼300		360	450
Ezi−SERVO−ALL−42XL−■−PN15	6.00		5	7	15	0.0024°	6	12	0∼200	1.22	410	540
Ezi−SERVO−ALL−42XL−■−PN25	9.00				25	0.00144°	9	18	0∼120		490	640
Ezi−SERVO−ALL−42XL−■−PN40	9.00				40	0.0009°	9	18	0∼75		570	640
Ezi−SERVO−ALL−42XL−■−PN50	9.00				50	0.00072°	9	18	0∼60		620	640

* The code of encoder resolution will be marked in "■"

● Specifications of Motor with Gearbox

56mm

Unit Part Number	Maximum Holding Torque [N·m]	Rotor Inertia Moment [kg·m²]	Back-lash [arcmin]	Angle Trans-mission Error [arcmin]	Gear Ratio	Resolution (10,000 P/R Standard)	Permis-sible Torque [N·m]	Instan-taneous Max-imum Torque [N·m]	Permis-sible Speed Range [r/min]	Unit Weight [kg]	Permissi-ble Radial Load (At Center of Axis) [N]	Permissi-ble Axial Load [N]
Ezi−SERVO−ALL−56S−■−PN3	1				3	0.012°	18	35	0~1000		430	310
Ezi−SERVO−ALL−56S−■−PN5	1.7				5	0.0072°	27	50	0~600		510	390
Ezi−SERVO−ALL−56S−■−PN8	2.8				8	0.0045°	27	50	0~375	1.78	600	480
Ezi−SERVO−ALL−56S−■−PN10	3.5	180x10⁻⁷	3	5	10	0.0036°	18	35	0~300		640	530
Ezi−SERVO−ALL−56S−■−PN15	5.1				15	0.0024°	18	35	0~200		740	630
Ezi−SERVO−ALL−56S−■−PN25	8.6				25	0.00144°	27	50	0~120	2.08	870	790
Ezi−SERVO−ALL−56S−■−PN40	13.8				40	0.0009°	27	50	0~75		1000	970
Ezi−SERVO−ALL−56S−■−PN50	17.2				50	0.00072°	27	50	0~60		1100	1100
Ezi−SERVO−ALL−56M−■−PN3	2.0				3	0.012°	18	35	0~1000		430	310
Ezi−SERVO−ALL−56M−■−PN5	3.4				5	0.0072°	27	50	0~600		510	390
Ezi−SERVO−ALL−56M−■−PN8	5.5				8	0.0045°	27	50	0~375	1.94	600	480
Ezi−SERVO−ALL−56M−■−PN10	6.9	280x10⁻⁷	3	5	10	0.0036°	18	35	0~300		640	530
Ezi−SERVO−ALL−56M−■−PN15	10				15	0.0024°	18	35	0~200		740	630
Ezi−SERVO−ALL−56M−■−PN25	16.7				25	0.00144°	27	50	0~120	2.24	870	790
Ezi−SERVO−ALL−56M−■−PN40	27.0				40	0.0009°	27	50	0~75		1000	970
Ezi−SERVO−ALL−56M−■−PN50	27.0				50	0.00072°	27	50	0~60		1100	1100
Ezi−SERVO−ALL−56L−■−PN3	3.6				3	0.012°	18	35	0~1000		430	310
Ezi−SERVO−ALL−56L−■−PN5	6				5	0.0072°	27	50	0~600	2.46	510	390
Ezi−SERVO−ALL−56L−■−PN8	9.7				8	0.0045°	27	50	0~375		600	480
Ezi−SERVO−ALL−56L−■−PN10	12.1	520x10⁻⁷	3	5	10	0.0036°	18	35	0~300		640	530
Ezi−SERVO−ALL−56L−■−PN15	18.0				15	0.0024°	18	35	0~200		740	630
Ezi−SERVO−ALL−56L−■−PN25	27.0				25	0.00144°	27	50	0~120	2.76	870	790
Ezi−SERVO−ALL−56L−■−PN40	27.0				40	0.0009°	27	50	0~75		1000	970
Ezi−SERVO−ALL−56L−■−PN50	27.0				50	0.00072°	27	50	0~60		1100	1100

＊ The code of encoder resolution will be marked in "■"

● Specifications of Motor with Gearbox

60mm

Unit Part Number	Maximum Holding Torque [N·m]	Rotor Inertia Moment [kg·m²]	Back-lash [arcmin]	Angle Trans-mission Error [arcmin]	Gear Ratio	Resolution (10,000 P/R Standard)	Permis-sible Torque [N·m]	Instan-taneous Max-imum Torque [N·m]	Permis-sible Speed Range [r/min]	Unit Weight [kg]	Permissi-ble Radial Load (At Center of Axis) [N]	Permissi-ble Axial Load [N]
Ezi−SERVO−ALL−60L−■−PN3	4.9	690x10⁻⁷	3	5	3	0.012°	18	35	0∼1000	2.94	430	310
Ezi−SERVO−ALL−60L−■−PN5	8.3				5	0.0072°	27	50	0∼600		510	390
Ezi−SERVO−ALL−60L−■−PN8	13.2				8	0.0045°	27	50	0∼375		600	480
Ezi−SERVO−ALL−60L−■−PN10	16.6				10	0.0036°	18	35	0∼300		640	530
Ezi−SERVO−ALL−60L−■−PN15	18.0				15	0.0024°	18	35	0∼200	3.24	740	630
Ezi−SERVO−ALL−60L−■−PN25	27.0				25	0.00144°	27	50	0∼120		870	790
Ezi−SERVO−ALL−60L−■−PN40	27.0				40	0.0009°	27	50	0∼75		1000	970
Ezi−SERVO−ALL−60L−■−PN50	27.0				50	0.00072°	27	50	0∼60		1100	1100

* The code of encoder resolution will be marked in "■"

42mm

Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi−SERVO−ALL−42S−■−PN□	Motor & Drive Integrated	Single Stage	3, 5, 8, 10	34
Ezi−SERVO−ALL−42M−■−PN□			3, 5, 8, 10	40
Ezi−SERVO−ALL−42L−■−PN□			3, 5, 8, 10	48
Ezi−SERVO−ALL−42XL−■−PN□			3, 5, 8, 10	60

* The code of encoder resolution will be marked in "■"
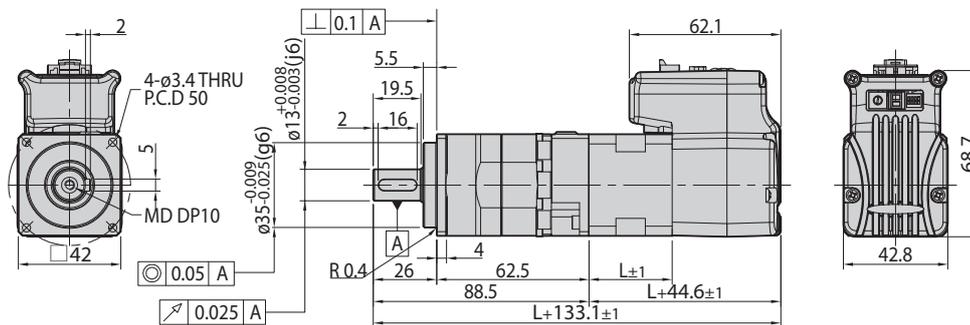
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi−SERVO−ALL−42S−■−PN□	Motor & Drive Integrated	Double Stage	15, 25, 40, 50	34
Ezi−SERVO−ALL−42M−■−PN□			15, 25, 40, 50	40
Ezi−SERVO−ALL−42L−■−PN□			15, 25, 40, 50	48
Ezi−SERVO−ALL−42XL−■−PN□			15, 25, 40, 50	60

* The code of encoder resolution will be marked in "■"
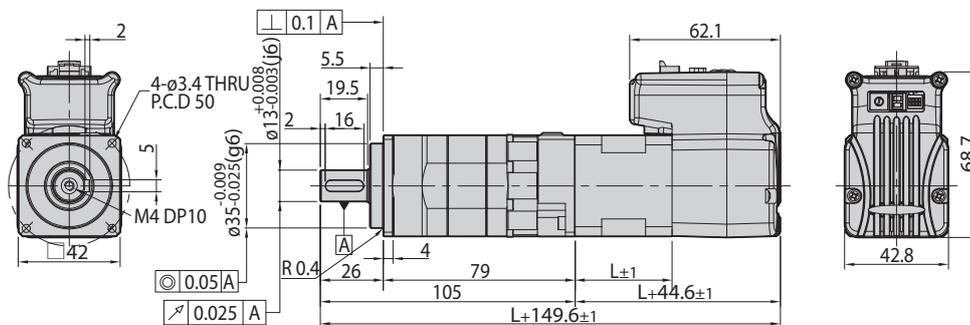
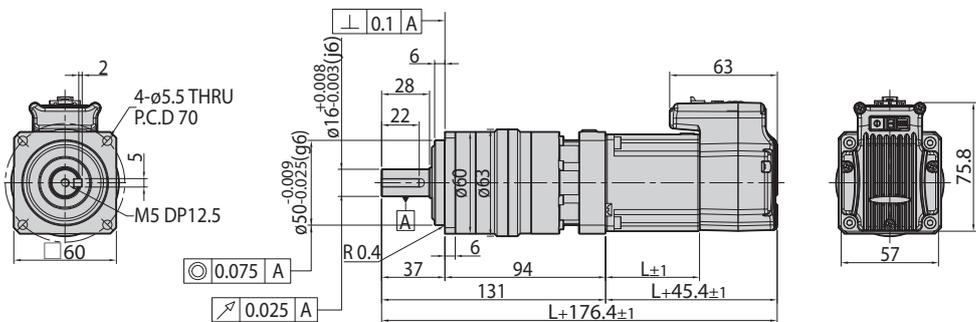## ● Dimensions of Motor with Gearbox [mm]

56mm

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

* The code of encoder resolution will be marked in "■"
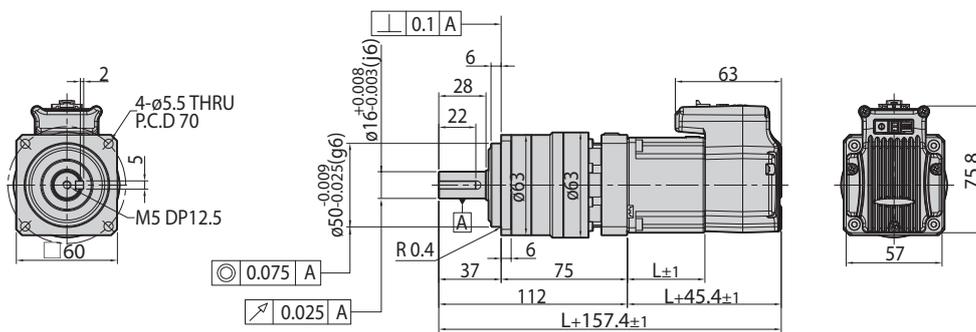
Unit Part Number	Motor	Stage	□Gear Ratio	L [mm]
Ezi−SERVO−ALL−56S−■−PN□	Motor & Drive Integrated	Double Stage	15, 25, 40, 50	46
Ezi−SERVO−ALL−56M−■−PN□			15, 25, 40, 50	55
Ezi−SERVO−ALL−56L−■−PN□			15, 25, 40, 50	80

* The code of encoder resolution will be marked in "■"

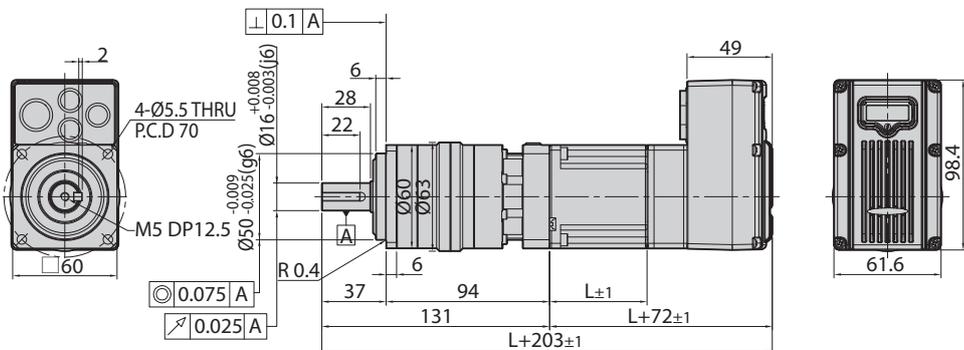## ● Dimensions of Motor with Gearbox [mm]

60mm

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

* The code of encoder resolution will be marked in "■"

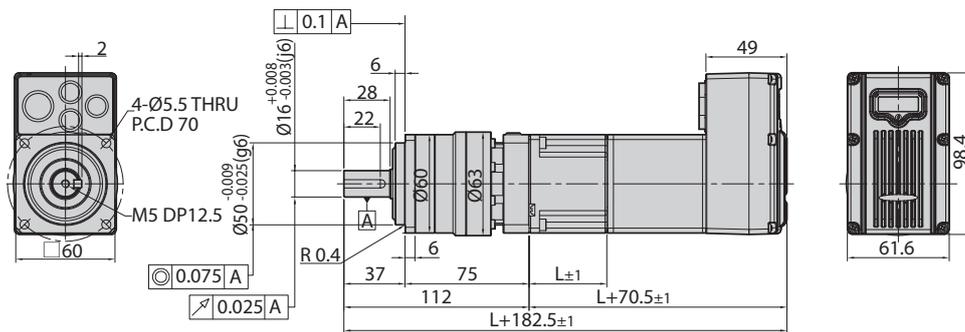| Unit Part Number	Motor	Stage	□ Gear Ratio	L [mm]
Ezi-SERVO-ALL-60L-■-PN□	Motor & Drive Integrated	Double Stage	15, 25, 40, 50	85

* The code of encoder resolution will be marked in "■"
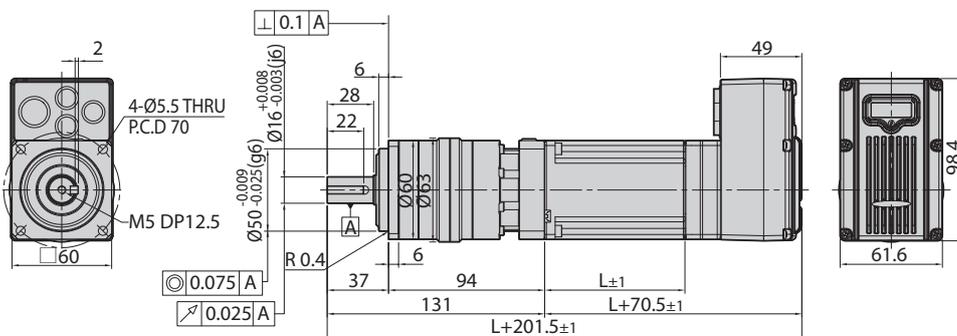
● Dimensions of Motor with Gearbox [mm]

60mm

Unit Part Number	Motor	Stage	☐ Gear Ratio	L [mm]
Ezi−SERVO−ALL−60L−ABS−■−PN☐	Motor & Drive Integrated	Single Stage	3, 5, 8, 10	85

* The code of encoder resolution will be marked in "■"

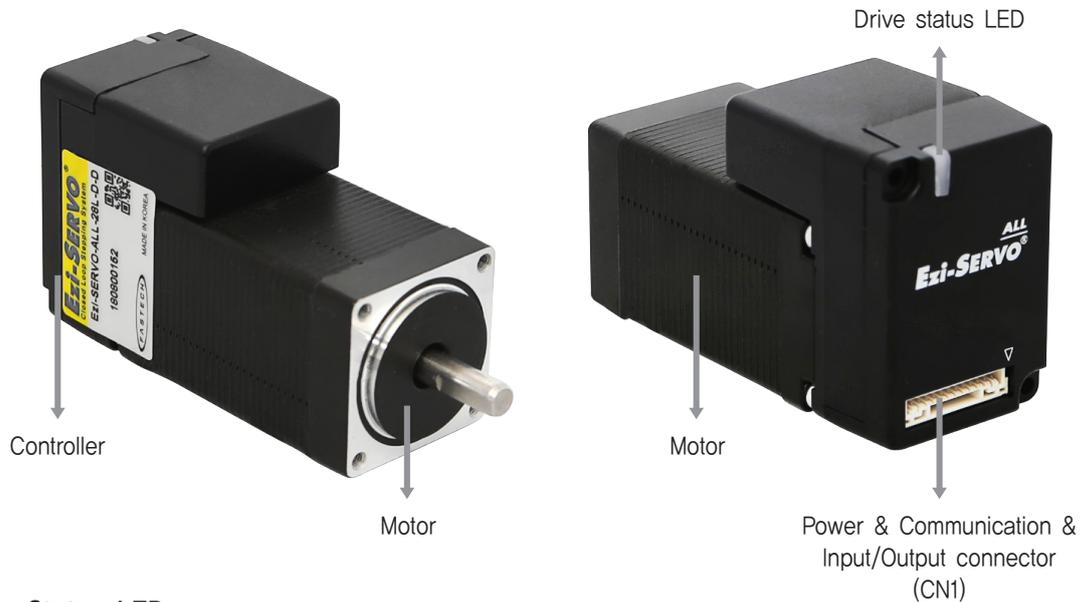| Unit Part Number	Motor	Stage	☐ Gear Ratio	L [mm]
Ezi−SERVO−ALL−60L−ABS−■−PN☐	Motor & Drive Integrated	Double Stage	15, 25, 40, 50	85

* The code of encoder resolution will be marked in "■"

● Specifications of Drive [Ezi-SERVO-ALL-28 Series]

Model		Ezi-SERVO-ALL-28 series
Input Voltage		DC24V±10%
Control Method		Closed-loop control with 32 bit MCU
Multi Axis Drive		Max. 16 axis operating (Star Topology)
Position Table		Not supported
Current Consumption		Max. 500mA (Except motor current)
Operating Condition	Ambient Temperature	· In Use: 0~40℃ · In Storage: -20~70℃
	Humidity	· In Use: 35~85% RH (Non-Condensing) · In Storage: 10~90% RH (Non-Condensing)
	Vib. Resist.	0.5g
Function	Rotation Speed	0~3,000r/min
	Resolution	Configurable Resolution [P/R] 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 16,000 (Selectable by parameter)
	Error Types	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, Encoder Connect Error, In-Position Error, ROM Error, Position Overflow Error
	In-Position Selection	0~63 (Set by parameter)
	Position Gain Selection	0~63 (Set by parameter)
	Rotation Direction	CW/CCW (Set by parameter)
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT-, ORIGIN), 1 programmable input (Photocoupler Input, NPN/PNP supported)
	Output Signals	None
Communication Interface		RS-485 Communication, Baud Rate: 112,500bps (Fixed)
Position Control		· Incremental mode / Absolute mode Data Range: -2,147,483,648~+2,147,483,647 [pulse] · Operating speed: Max. 3,000 r/min
Return to Origin		Origin Sensor, Z phase, ±Limit sensor, Torque
GUI		User Interface Program within Windows
Library		Motion Library (API) for Windows 7/8/10

Drive status LED

Controller

Motor

Motor

Motor

Power & Communication &
Input/Output connector
(CN1)

1. Drive Status LED

LED informs operation status of the drive.

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

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

No.	Error Type	Causes
1	Over Current Error	The current through power devices in drive exceeds 4.8A.
2	Over Speed Error	The motor speed exceeds 3,000r/min
3	Position Tracking Error	Position error value is greater than the reference value while the motor is running [*1]
4	Over Load Error	The motor is continuously operated more than 5 seconds under a load exceeding the max. torque.
5	Over Temperature Error	An error occurred inside the drive when the operating temperature of the drive exceeded 50℃.
6	Over Regenerative Voltage Error	Back-EMF is higher than 48V
7	Motor Connect Error	There is a problem with the connection between the drive and the motor
8	Encoder Connect Error	There is a problem with the connection between the drive and the encoder
10	In-Position Error	After operation is finished, position error larger than 1 pulse is continued for more than 3 seconds
12	ROM Error	Error occurs in parameter storage device(ROM)
15	Position Overflow Error	Position error value is greater than the reference value while the motor is stopped

*1 : The default setting value is 180˚, and it can be changed by parameter. (Refer to the Manual)
※ Please refer to user Manual for the details of protection functions.

0.5s   2s

Alarm LED flash
(e.g., Position tracking error)
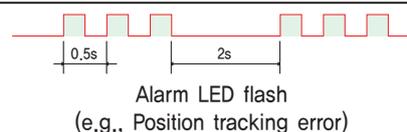
2. Termination Resistor Setting

A termination resistor prevents signal distortion caused by the signal rebound, and Ezi-SERVO ALL has a built-in termination resistor. To connect a terminating resistor, please connect pin 9 and 10 of the connector (CN1) of the drive installed at the end of the network.
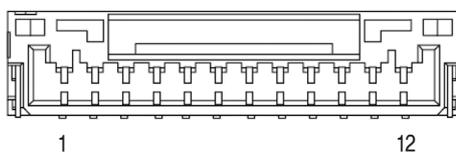
3. Network ID Setting

The network ID of Ezi-SERVO-ALL-28 series is set by the GUI program(Ezi-MOTION Plus-R, version 6.40.7.12 or higher).
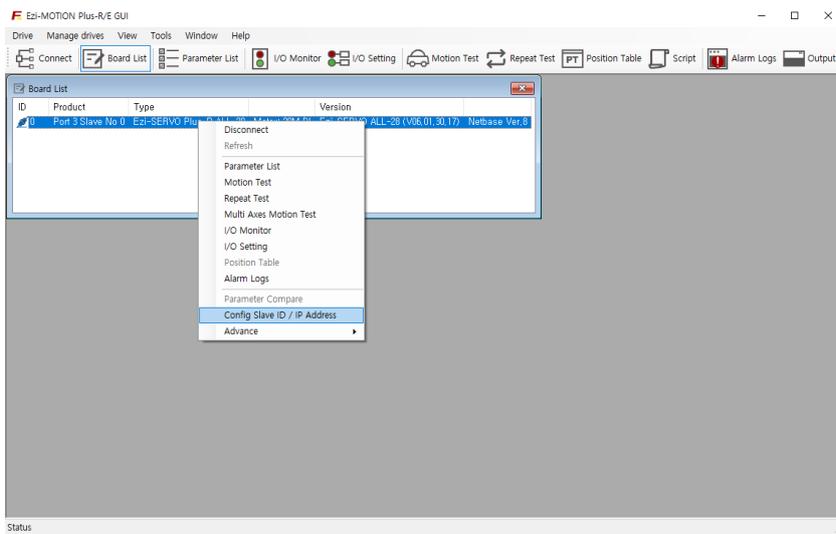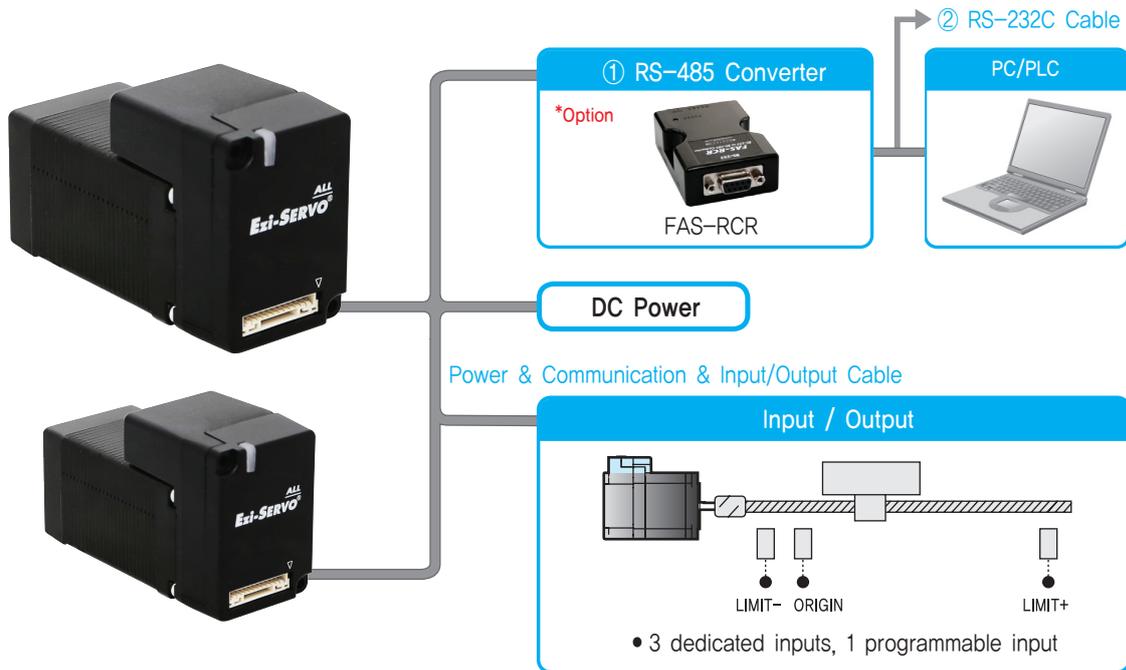

4. Power & Communication & Input/Output Connector(CN1)

No.	Function	I/O
1	GND	Input
2	DC24V	Input
3	IO COMMON	Input
4	ORIGIN	Input
5	LIMIT+	Input
6	LIMIT−	Input
7	In1	Input
9	Termination	Input
10	Data−	Communication Signal
11	Data+	Communication Signal
12	S.GND	Communication Ground

② RS-232C Cable

① RS-485 Converter

PC/PLC

*Option

FAS-RCR

DC Power

Power & Communication & Input/Output Cable

Input / Output

LIMIT- ORIGIN   LIMIT+

● 3 dedicated inputs, 1 programmable input

1. Accessories

◆ Connectors

These are connector specifications for drive cabling.

Purpose	Item	Part Number	Manufacturer
Power & Signal	Housing	GHR-12V-S	JST
	Terminal	SSHL-002T-P0.2	

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

◆ Power & Communication & Input/Output Cable

It is the cable to connect Ezi-SERVO-ALL-28 drive, power, communication, and other input/output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive − Power & Communication & Input/Output Connection	CSVB-A-OR4F	0.4	Normal Cable	Maximum Length: · Signal Cable: 20m · Power Cable: 2m · RS-485 Cable: 30m
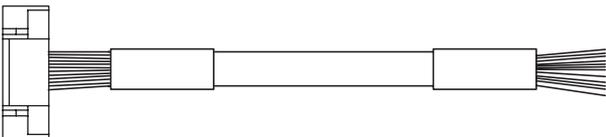
2. Options

① RS-485 Converter

| Purpose	Part Number	Specifications		Product Image
RS-232C to RS-485 Converter	FAS-RCR	Baud Rate	Max. 115.2kbps	
		Comm. Distance	RS-232C: Max. 15m RS-485: Max. 1.2km	
		Connector	RS-232C: DB9 Female RS-485: RJ-45	
		Dimensions	50X75X23mm	
		Weight	38g	
		Power	Power supplied by RS-232C (DC5~24V external power can be applied)	

② RS-232C Cable

These are the cables to connect FAS-RCR and RS-232C port of the host controller.

Purpose	Part Number	Length [m]	Cable Type
FAS-RCR-RS-232C Connection	CGNR-C-002F	2	Normal Cable
	CGNR-C-003F	3	
	CGNR-C-005F	5	

③ IFA28-4X Interface Board

This is an interface board to connect Ezi-SERVO-ALL-28 drive and the host controller more conveniently. It supports up to 4 axis of Ezi-SERVO-ALL-28 products.
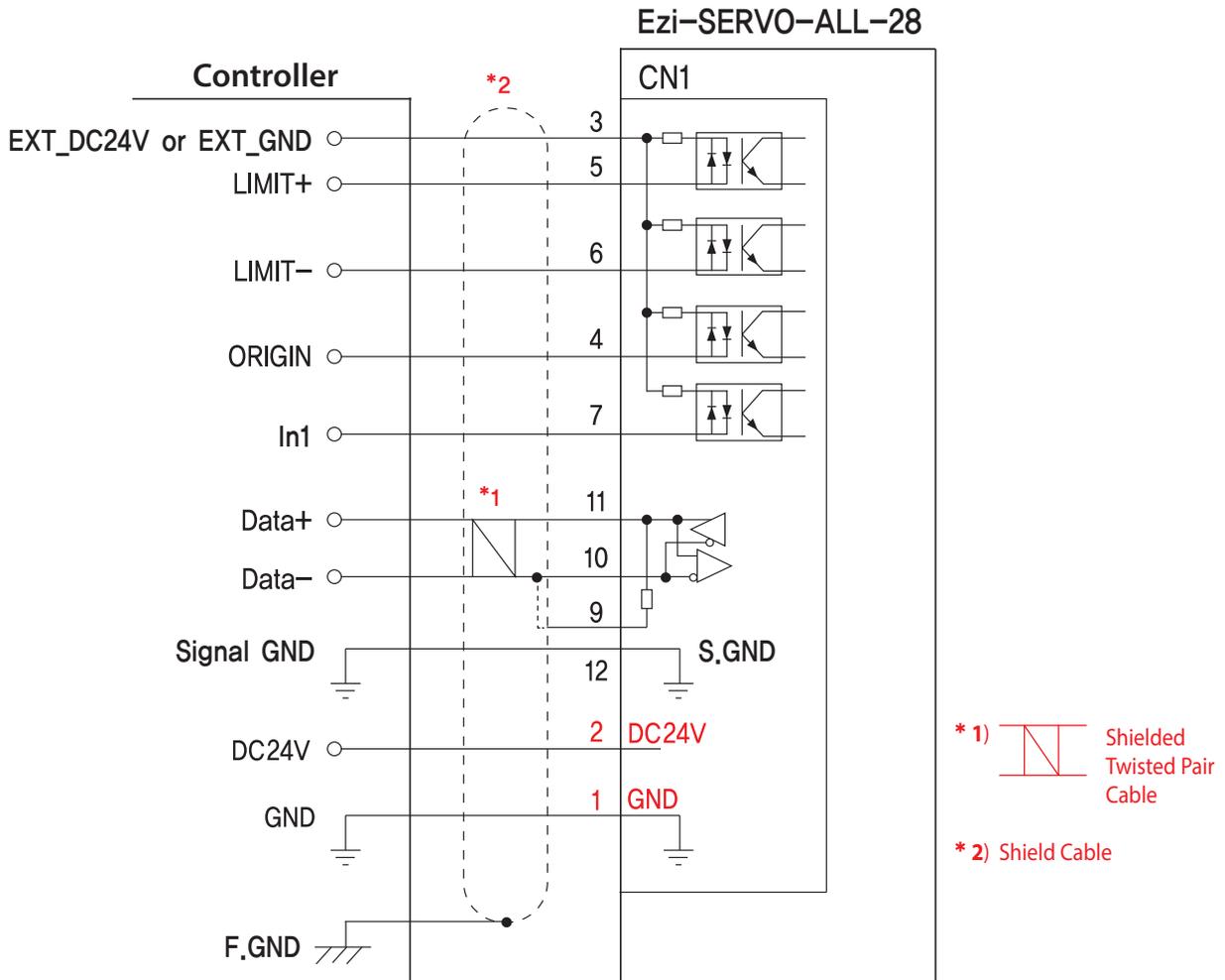
Purpose	Part Number	Product Image
Drive - Host Controller Connection Board	IFA28-4X	
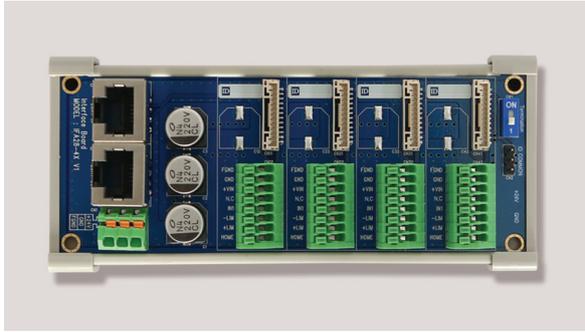
④ IFA28-4X Interface Cable

These are the cables to connect Ezi-SERVO-ALL-28 drive and IFA28-4X interface board.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Drive - Interface(IFA28-4X) Connection	CSVA-A-001F	1	Normal Cable	Maximum Length: 5m
	CSVA-A-002F	2		
	CSVA-A-003F	3		
	CSVA-A-005F	5		

● External Wiring Diagram [Ezi-SERVO-ALL-28 Series]

Ezi-SERVO-ALL-28

Controller *2   CN1

EXT_DC24V or EXT_GND — 3
LIMIT+ — 5
LIMIT− — 6
ORIGIN — 4
In1 — 7
Data+ *1 — 11
Data− — 10
— 9
Signal GND — S.GND — 12
DC24V — **2 DC24V**
GND — **1 GND**
F.GND

* **1)** Shielded Twisted Pair Cable
* **2)** Shield Cable

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CAUTION

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

※ When connecting I/O cable between controller and drive, please turn off the power of both controller and drive to prevent electric shock or to protect the drive from any damage.
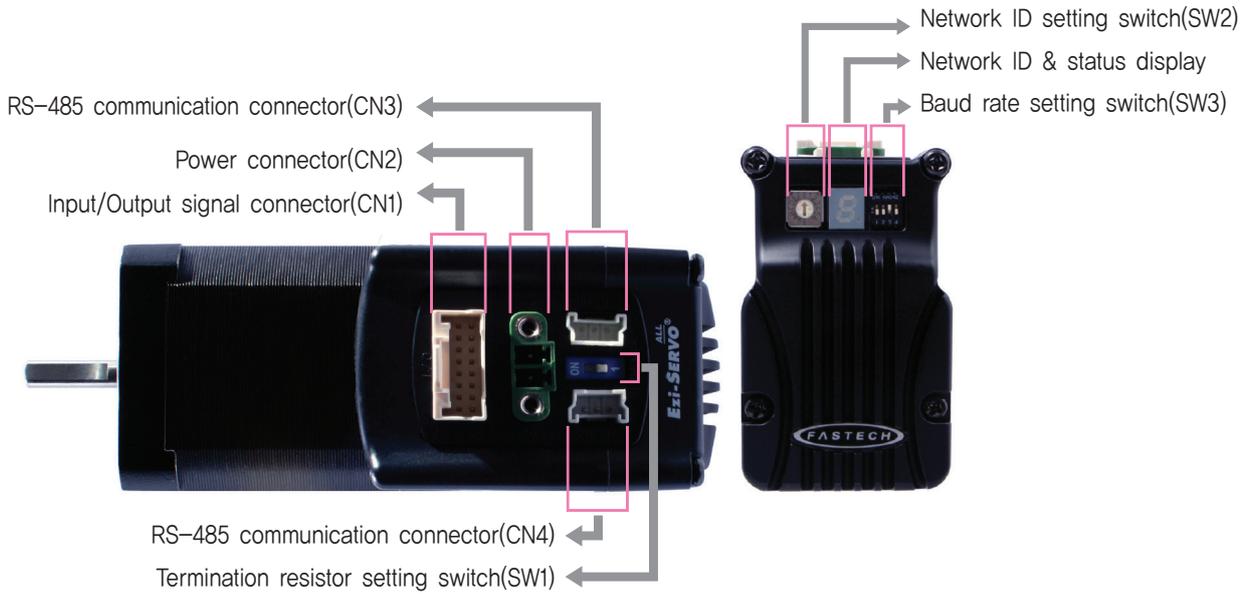
● Specifications of Drive [Ezi−SERVO−ALL−42/56 Series]

Model	Ezi−SERVO−ALL−42 series										Ezi−SERVO−ALL−56 series	
Input Voltage	DC24V±10%											
Control Method	Closed−loop control with 32 bit MCU											
Multi Axis Drive	Max. 16 axis operating (Daisy Chain)											
Position Table	64 motion command steps											
Current Consumption	Max. 500mA (Except motor current)											
Operating Condition — Ambient Temperature	· In Use: 0~55℃ · In Storage: −20~70℃											
Operating Condition — Humidity	· In Use: 35~85% RH (Non−Condensing) · In Storage: 10~90% RH (Non−Condensing)											
Operating Condition — Vib. Resist.	0.5g											

Function	Rotation Speed	0~3,000r/min *1										
	Resolution	Encoder Resolution [P/R]	Configurable Resolution [P/R]									
		10,000	500	1,000	1,600	2,000	3,600	5,000	6,400	7,200	10,000	
		20,000	500	1,000	1,600	2,000	3,600	5,000	6,400	7,200	10,000	20,000
		(Selectable by parameter)										
	Error Types	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, Encoder Connect Error, In−Position Error, ROM Error, Position Overflow Error										
	In−Position Selection	0~15 (Set by Parameter)										
	Position Gain Selection	0~15 (Set by Parameter)										
	Rotation Direction	CW/CCW (Set by Parameter)										

I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT−, ORIGIN), 7 programmable inputs (Photocoupler Input)
	Output Signals	1 dedicated output (Compare Out), 1 programmable output (Photocoupler Output), 1 Brake output

Communication Interface	RS−485 Communication, Baud Rate : 9,600~921,600bps
Position Control	· Incremental mode / Absolute mode Data Range: −134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min *1
Return to Origin	Origin Sensor, Z phase, ±Limit sensor, Torque
GUI	User Interface Program within Windows
Library	Motion Library (API) for Windows 7/8/10

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

Network ID setting switch(SW2)

Network ID & status display

Baud rate setting switch(SW3)

RS-485 communication connector(CN3)

Power connector(CN2)

Input/Output signal connector(CN1)

RS-485 communication connector(CN4)

Termination resistor setting switch(SW1)

◆ List of error types by the number of 7-segment LED display blinking

The type of error can be checked according to the number of blinks of the 7-segment LED display for Network ID.

No.	Error Type	Error Type
1	Over Current Error	The current through power devices in drive exceeds 4.8A.
2	Over Speed Error	The motor speed exceeds 3,000r/min
3	Position Tracking Error	Position error value is greater than the reference value while the motor is running [1]
4	Over Load Error	The motor is continuously operated more than 5 seconds under a load exceeding the max. torque.
5	Over Temperature Error	Internal temperature of the drive exceeds 85℃.
6	Over Regenerative Voltage Error	Back-EMF is higher than 48V
7	Motor Connect Error	There is a problem with the connection between the drive and the motor
8	Encoder Connect Error	There is a problem with the connection between the drive and the encoder
10	In-Position Error	After operation is finished, position error larger than 1 pulse is continued for more than 3 seconds
12	ROM Error	Error occurs in parameter storage device(ROM)
15	Position Overflow Error	Position error value is greater than the reference value while the motor is stopped [1]

[1] : The default setting value is 180°, and it can be changed by parameter. (Refer to the Manual)
※ Please refer to user Manual for the details of protection functions.

| 0.5s | 2s |

7-segment LED display flash (e.g., Position tracking error)

1. Baud Rate Setting Switch(SW1)

SW1 is a termination resistor setting switch, and Ezi-SERVO ALL has a built-in terminaton resistor. When using multiple drives, set a termination resistor for the drive installed at the end of the network for stable operation.
· SW1 ON: Termination resistor is set
· SW1 OFF: Termination resistor is not set

2. Network ID Setting Switch(SW2)

Value	ID No.	Value	ID No.
0	0	8	8
1	1	9	9
2	2	A	10
3	3	B	11
4	4	C	12
5	5	D	13
6	6	E	14
7	7	F	15

※ Up to 16 axis can be operated with one network.

3. Baud Rate Setting Switch(SW3)

Baud rate is set by SW3.1~SW3.3 as follows.

SW3.1	SW3.2	SW3.3	Baud Rate [bps]
OFF	OFF	OFF	9,600
ON	OFF	OFF	19,200
OFF	ON	OFF	38,400
ON	ON	OFF	57,600
OFF	OFF	ON	115,200[1]
ON	OFF	ON	230,400
OFF	ON	ON	460,800
ON	ON	ON	921,600

[1] : Default Value
[2] : SW3.4 is not used.

ON
1 2 3 4
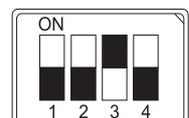
4. Input/Output Signal Connector(CN1)

No.	Function	I/O
1	EXT_DC24V	Input
2	EXT_GND	Input
3	BRAKE+	Output
4	BRAKE−	Output
5	LIMIT+	Input
6	LIMIT−	Input
7	ORIGIN	Input
8	Digital In1	Input
9	Digital In2	Input
10	Digital In3	Input
11	Digital In4	Input
12	Digital In5	Input
13	Digital In6	Input
14	Digital In7	Input
15	Compare Out	Output
16	Digital Out1	Output
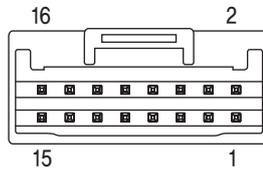
5. Power Connector(CN2)

No.	Function	I/O
1	DC24V	Input
2	GND	Input
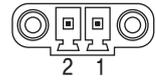
6. RS−485 Communication Connector(CN3, CN4)

No.	Function
1	Data+
2	Data−
3	GND
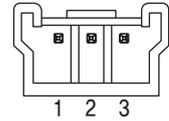
● System Configuration [Ezi−SERVO−ALL−42/56 Series]

Input / Output

- 3 dedicated inputs, 7 programmable inputs
- 1 dedicated output, 1 programmable output, 1 Brake output

LIMIT− ORIGIN   LIMIT+

① Signal Cable

DC Power

② Power Cable

③ RS−485 Cable 1

④ RS−485 Cable 2

PC/PLC

⑤ RS−485 Converter
*Option
FAS−RCR

⑥ RS−232C Cable
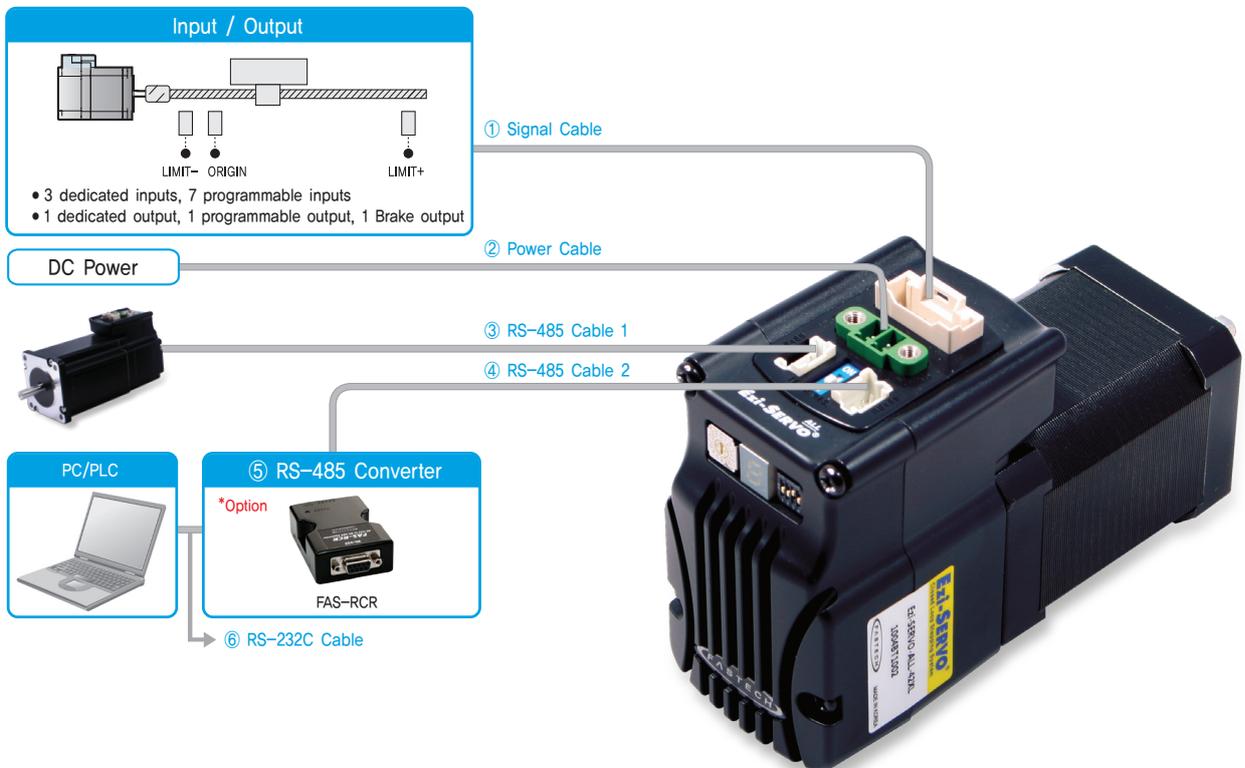
Cable Type	Max. Length	Remarks
① Signal Cable	20m	Options (Sold seperately)
② Power Cable	2m	
③ RS−485 Cable 1	30m	
④ RS−485 Cable 2	30m	

1. Accessories

Connectors
These are connector specifications for drive cabling.

Purpose	Item	Part Number	Manufacturer
Power (CN2)	Terminal Block	MC421-38102	DECA
Signal (CN1)	Housing	501646-1600	MOLEX
	Terminal	501648-1000 (AWG 26~28)	
RS-485 (CN3, CN4)	Housing	35507-0300	MOLEX
	Terminal	50212-8100	

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

2. Options

① Signal Cable
These are the cables to connect Ezi-SERVO-ALL-42/56 drive and other input/output devices.

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

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

② Drive Power Cable
These are the cables to connect Ezi-SERVO-ALL-42/56 drive and the power.

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

③ RS-485 Cable 1
These are the cables to connect Ezi-SERVO-ALL-42/56 drive with RS-485 network.

Purpose	Part Number	Length [m]	Cable Type	Remarks
RS-485 Connection	CGNB-R-0R6F	0.6	Normal Cable	Maximum Length: 30m
	CGNB-R-001F	1		
	CGNB-R-1R5F	1.5		
	CGNB-R-002F	2		
	CGNB-R-003F	3		
	CGNB-R-005F	5		

④ RS-485 Cable 2
These are the cables to connect Ezi-SERVO-ALL-42/56 drive and FAS-RCR.

Purpose	Part Number	Length [m]	Cable Type	Remarks
RS-485 Connection	CGNA-R-0R6F	0.6	Normal Cable	Maximum Length: 30m
	CGNA-R-001F	1		
	CGNA-R-1R5F	1.5		
	CGNA-R-002F	2		
	CGNA-R-003F	3		
	CGNA-R-005F	5		

⑤ RS-485 Converter

Purpose	Part Number	Specifications		Product Image
RS-232C to RS-485 Converter	FAS-RCR	Baud Rate	Max. 115.2kbps	
		Comm. Distance	RS-232C: Max. 15m RS-485: Max. 1.2km	
		Connector	RS-232C: DB9 Female RS-485: RJ-45	
		Dimensions	50X75X23mm	
		Weight	38g	
		Power	Power supplied by RS-232C (DC5~24V external power can be applied)	

⑥ RS-232C Cable
These are the cables to connect FAS-RCR and RS-232C port of the host controller.

Purpose	Part Number	Length [m]	Cable Type
FAS-RCR-RS-232C Connection	CGNR-C-002F	2	Normal Cable
	CGNR-C-003F	3	
	CGNR-C-005F	5	

● External Wiring Diagram [Ezi-SERVO-ALL-42/56 Series]
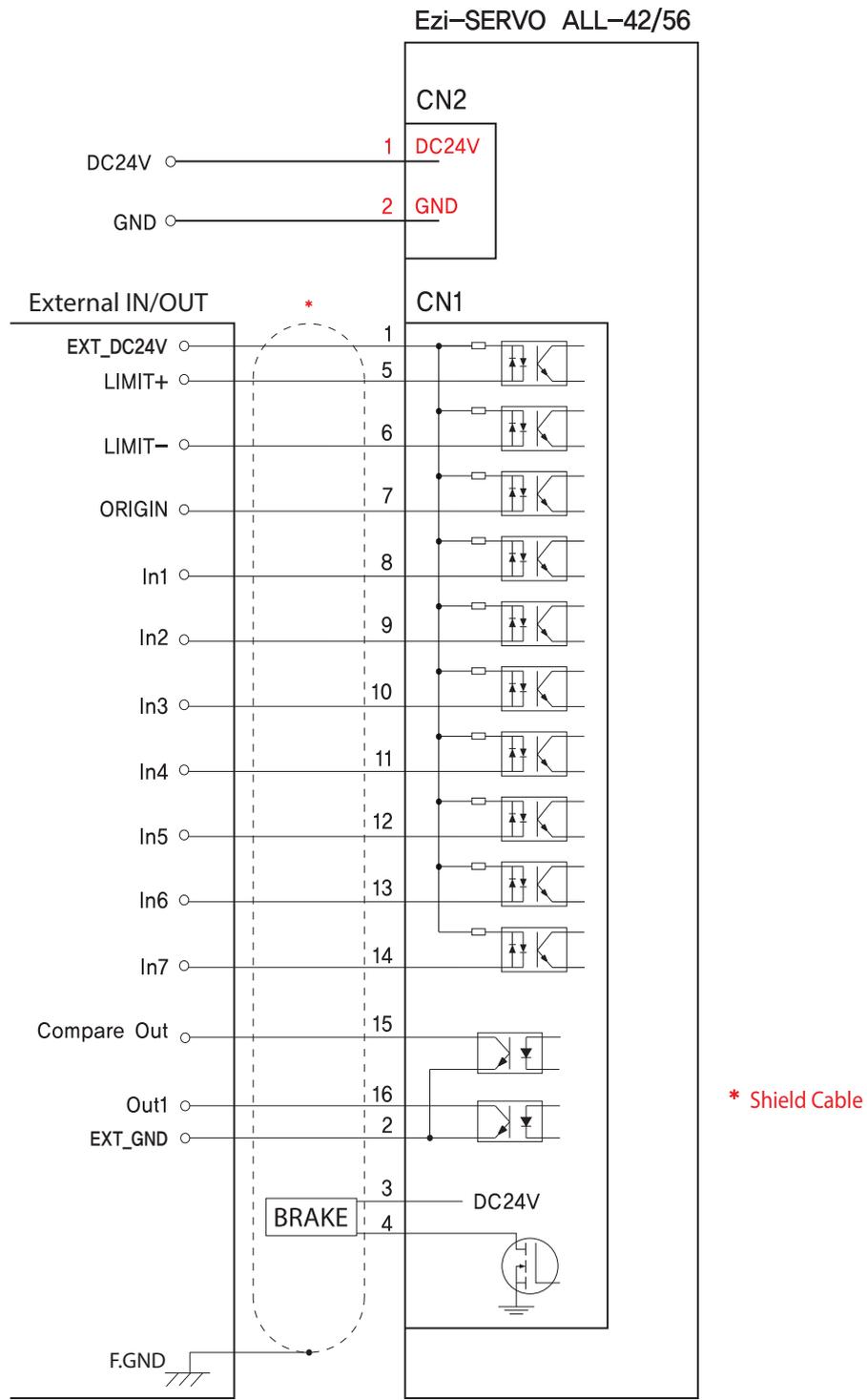
Ezi-SERVO ALL-42/56

CN2

DC24V — 1	DC24V
GND — 2	GND

External IN/OUT   *   CN1

External	Pin
EXT_DC24V	1
LIMIT+	5
LIMIT−	6
ORIGIN	7
In1	8
In2	9
In3	10
In4	11
In5	12
In6	13
In7	14
Compare Out	15
Out1	16
EXT_GND	2
	3
BRAKE	4
F.GND	

DC24V

* Shield Cable

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

CAUTION

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

● Specifications of Drive [Ezi-SERVO-ALL-60/60-ABS Series]

Model		Ezi-SERVO-ALL-60 series	Ezi-SERVO-ALL-60-ABS series
Input Voltage		DC24V±10%	
Control Method		Closed-loop control with 32 bit MCU	
Multi Axis Drive		Max. 16 axis operating (Daisy Chain)	
Position Table		64 motion command steps	
Current Consumption		Max. 500mA (Except motor current)	
Operating Condition	Ambient Temperature	· In Use: 0~55℃ · In Storage: −20~70℃	
	Humidity	· In Use: 35~85%RH (Non-Condensing) · In Storage: 10~90%RH (Non-Condensing)	
	Vib. Resist.	0.5g	
Function	Rotation Speed	0~3,000r/min [1]	
	Resolution	· 10,000P/R Resolution Encoder: 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 · 20,000P/R Resolution Encoder: 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 20,000 (Selectable by Parameter)	· 500 1,000 1,600 2,000 3,600 5,000 6,400 7,200 10,000 (Selectable by Parameter)
	Error Types	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, Encoder Connect Error, In-Position Error, ROM Error, Position Overflow Error	
	In-Position Selection	0~15 (Set by Parameter)	
	Position Gain Selection	0~15 (Set by Parameter)	
	Rotation Direction	CW/CCW (Set by Parameter)	
I/O Signal	Input Signals	3 dedicated inputs (LIMIT+, LIMIT−, ORIGIN), 7 programmable inputs (Photocoupler Input)	3 dedicated inputs (LIMIT+, LIMIT−, ORIGIN), 6 programmable inputs (Photocoupler Input)
	Output Signals	1 dedicated output (Compare Out), 3 programmable outputs (Photocoupler Output), 1 Brake output	6 programmable outputs (Photocoupler Output), 1 Brake output
Communication Interface		RS-485 Communication, Baud Rate : 9,600~921,600bps	RS-485 Communication, Baud Rate: 112,500bps (Fixed)
Position Control		· Incremental mode / Absolute mode Data Range: −134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min [1]	
Return to Origin		Origin Sensor, Z phase, ±Limit sensor, Torque	
GUI		User Interface Program within Windows	
Library		Motion Library (API) for Windows 7/8/10	

[1] : Up to the resolution of 10,000P/R, maximum speed can be reached by 3,000r/min and with the resolution more than 10,000P/R, maximum speed shall be reduced accordingly.
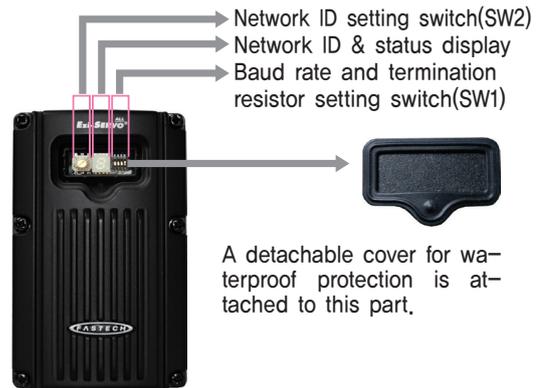
● Settings and Operation [Ezi-SERVO-ALL-60/60-ABS Series]

◆ Ezi-SERVO-ALL-60-ABS series

Power connector (CN2)

RS-485 communication connector (CN3)

Input/Output signal connector (CN1)

RS-485 communication connector (CN4)

Power LED

Termination resistor setting switch(SW1)

Alarm LED

A detachable cover for waterproof protection is attached to this part.

◆ Ezi-SERVO-ALL-60 series

Network ID setting switch(SW2)
Network ID & status display
Baud rate and termination resistor setting switch(SW1)

A detachable cover for waterproof protection is attached to this part.

◆ List of error types by the number of 7-segment LED display blinking

The type of error can be checked according to the number of blinks of the 7-segment LED display for Network ID.

No.	Error Type	Causes
1	Over Current Error	The current through power devices in drive exceeds 4.8A.
2	Over Speed Error	The motor speed exceeds 3,000r/min
3	Position Tracking Error	Position error value is greater than the reference value while the motor is running [*1]
4	Over Load Error	The motor is continuously operated more than 5 seconds under a load exceeding the max. torque.
5	Over Temperature Error	Internal temperature of the drive exceeds 85℃.
6	Over Regenerative Voltage Error	Back-EMF is higher than 48V
7	Motor Connect Error	There is a problem with the connection between the drive and the motor
8	Encoder Connect Error	There is a problem with the connection between the drive and the encoder
10	In-Position Error	After operation is finished, position error larger than 1 pulse is continued for more than 3 seconds
12	ROM Error	Error occurs in parameter storage device(ROM)
15	Position Overflow Error	Position error value is greater than the reference value while the motor is stopped [*1]

*1 : The default setting value is 180°, and it can be changed by parameter. (Refer to the Manual)
※ Please refer to user Manual for the details of protection functions.

0.5s   2s

7-segment LED display flash (e.g., Position tracking error)

1. Network ID Setting Switch(SW2)

Value	ID No.	Value	ID No.
0	0	8	8
1	1	9	9
2	2	A	10
3	3	B	11
4	4	C	12
5	5	D	13
6	6	E	14
7	7	F	15

※ Up to 16 axis can be operated with one network.
※ Only Ezi-SERVO-ALL-60 series has this switch.
※ The network ID of Ezi-SERVO-ALL-60-ABS series is set by GUI software(Ezi-MOTION Plus-R, version 6.40.7.12 or higher).

2. Baud Rate and Termination Resistor Setting Switch

◆ **Ezi-SERVO-ALL-60 Series**

Termination Resistor Setting Switch(SW1.4)
When using multiple drives, termination resistors must be connected at both ends of the communication line to prevent signal distortion caused by the signal rebound.
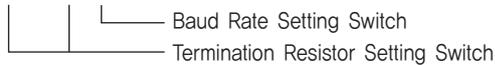
Baud Rate Setting Switch(SW1.1~SW1.3)
Baud rate is set by SW1.1~SW1.3 as follows.

SW1.1	SW1.2	SW1.3	SW1.4	Baud Rate [bps]
OFF	OFF	OFF	−	9,600
ON	OFF	OFF	−	19,200
OFF	ON	OFF	−	38,400
ON	ON	OFF	−	57,600
OFF	OFF	ON	−	115,200*1
ON	OFF	ON	−	230,400
OFF	ON	ON	−	460,800
ON	ON	ON	−	921,600
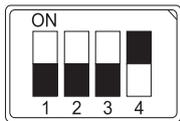
*1 : Default Value

Ezi-SERVO-ALL-60 Series Baud Rate and Termination Resistor Setting Switch(SW1)

Baud Rate Setting Switch
Termination Resistor Setting Switch

◆ **Ezi-SERVO-ALL-60-ABS Series**

Termination Resistor Setting Switch(SW1)
When using multiple drives, termination resistors must be connected at both ends of the communication line to prevent signal distortion caused by the signal rebound.
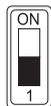
Ezi-SERVO-ALL-60-ABS Series Termination Resistor Setting Switch(SW1)

3. Power Connector(CN2)

No.	Function	I/O
1	DC24V	Input
2	DC24V	Input
3	GND	Input
4	GND	Input
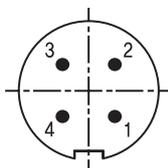
4. Input/Output Signal Connector(CN1)

◆ **Ezi-SERVO-ALL-60 Series**

No.	Function	I/O
A	EXT_DC24V	Input
B	EXT_GND	Input
C	LIMIT+	Input
D	LIMIT−	Input
E	ORIGIN	Input
F	Digital In1	Input
G	Digital In2	Input
H	Digital In3	Input
I	Digital In4	Input
K	Digital In5	Input
L	Digital In6	Input
M	Digital In7	Input
N	Compare Out	Output
O	Digital Out1	Output
P	Digital Out2	Output
R	Digital Out3	Output
S	NC	−−−−
T	BRAKE+	Output
U	BRAKE−	Output
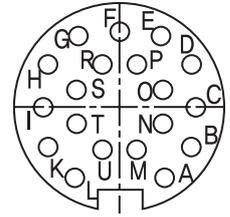
◆ **Ezi-SERVO-ALL-60-ABS Series**

No.	Function	I/O
A	EXT_DC24V	Input
B	EXT_GND	Input
C	LIMIT+	Input
D	LIMIT−	Input
E	ORIGIN	Input
F	Digital In1	Input
G	Digital In2	Input
H	Digital In3	Input
I	Digital In4	Input
K	Digital In5	Input
L	Digital In6	Input
M	Digital Out1	Output
N	Digital Out2	Output
O	Digital Out3	Output
P	Digital Out4	Output
R	Digital Out5	Output
S	Digital Out6	Output
T	BRAKE+	Output
U	BRAKE−	Output

5. RS-485 Communication Connector(CN3, CN4)

No.	Function
1	Data+
2	Data−
3	GND

FASTECH Ezi-SERVO ALL

⑦ RS-485 Cable3

③ RS-485 Cable1

Input / Output

LIMIT− ORIGIN   LIMIT+

① Signal Cable

④ RS-485 Cable2

PC/PLC

⑤ RS-485 Converter
*Option

FAS-RCR

DC Power

② Power Cable

⑥ RS-232C Cable
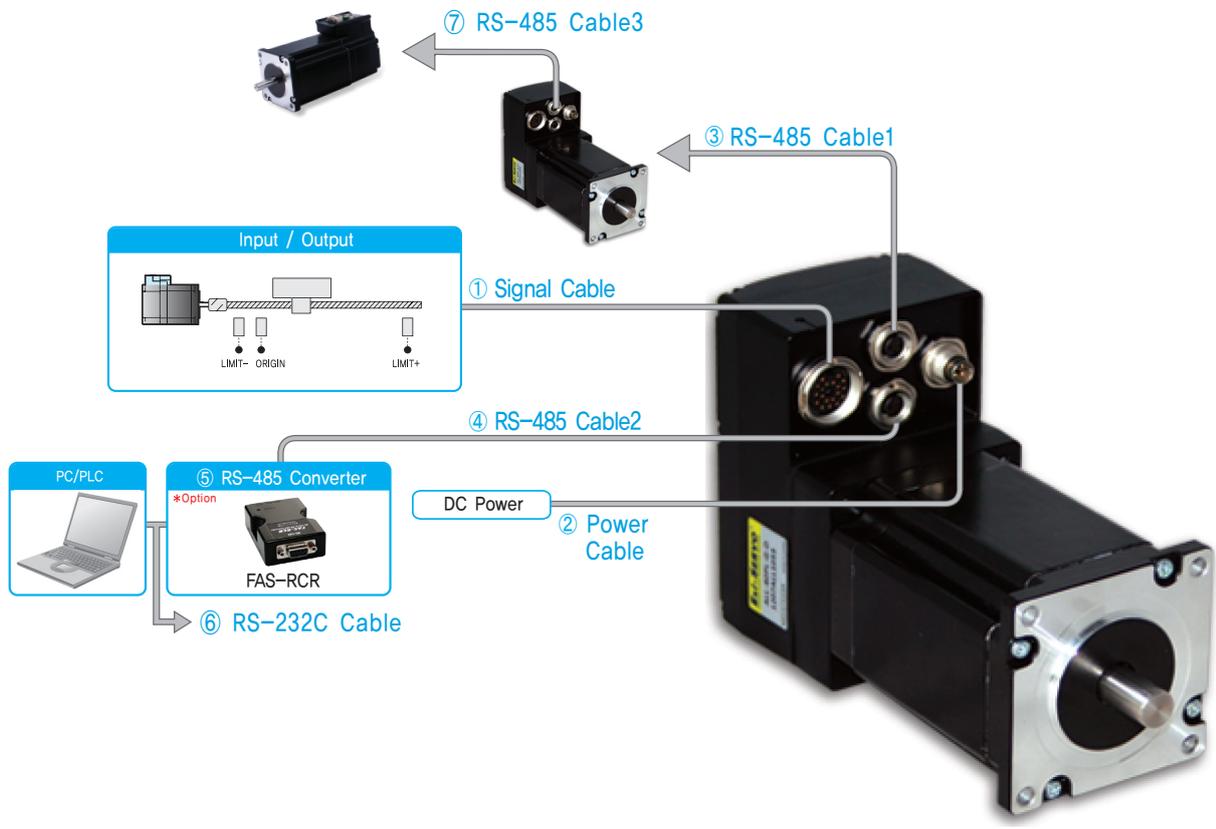
Cable Type	Max. Length	Remarks
① Signal Cable	20m	
② Power Cable	2m	Options (Sold separately)
③ RS-485 Cable 1	30m	
④ RS-485 Cable 2	30m	

1. Accessories

Connectors

These are connector specifications for drive cabling.

Purpose	Item	Part Number	Manufacturer
Power (CN2)	Connector	99-0410-00-04	BINDER
Signal (CN1)	Connector	99-5461-40-19	BINDER
RS-485 (CN3, CN4)	Connector	99-0405-00-03	BINDER

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

2. Options

① Signal Cable

These are the cables to connect Ezi−SERVO−ALL−60/60−ABS drive and other input/output devices.

Purpose	Part Number	Length [m]	Cable Type	Remarks
Ezi−SERVO−ALL−60 Drive − I/O Device Connection	CWPA−S−001F	1	Normal Cable	Maximum Length: 20m
	CWPA−S−002F	2		
	CWPA−S−003F	3		
	CWPA−S−005F	5		
	CWPA−S−001M	1	Robot Cable	
	CWPA−S−002M	2		
	CWPA−S−003M	3		
	CWPA−S−005M	5		
Ezi−SERVO−ALL−60−ABS Drive − I/O Device Connection	CAPA−S−001F	1	Normal Cable	Maximum Length: 20m
	CAPA−S−002F	2		
	CAPA−S−003F	3		
	CAPA−S−005F	5		
	CAPA−S−001M	1	Robot Cable	
	CAPA−S−002M	2		
	CAPA−S−003M	3		
	CAPA−S−005M	5		

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

② Drive Power Cable

These are the cables to connect Ezi−SERVO−ALL−60/60−ABS drive and the power.

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

③ RS−485 Cable 1

These are the cables to connect Ezi−SERVO−ALL−60/60−ABS drive with RS−485 network.

Purpose	Part Number	Length [m]	Cable Type	Remarks
RS−485 Connection	CWPA−R−0R6F	0.6	Normal Cable	Maximum Length: 30m
	CWPA−R−001F	1		
	CWPA−R−1R5F	1.5		
	CWPA−R−002F	2		
	CWPA−R−003F	3		
	CWPA−R−005F	5		
	CWPA−R−0R6M	0.6	Robot Cable	
	CWPA−R−001M	1		
	CWPA−R−1R5M	1.5		
	CWPA−R−002M	2		
	CWPA−R−003M	3		
	CWPA−R−005M	5		

④ **RS-485 Cable 2**

These are the cables to connect Ezi-SERVO-ALL-60/60-ABS drive and FAS-RCR.

Purpose	Part Number	Length [m]	Cable Type	Remarks
RS-485 Connection	CWPB-R-0R6F	0.6	Normal Cable	Maximum Length: 30m
	CWPB-R-001F	1		
	CWPB-R-1R5F	1.5		
	CWPB-R-002F	2		
	CWPB-R-003F	3		
	CWPB-R-005F	5		

⑤ **RS-485 Converter**

Purpose	Part Number	Specifications		Product Image
RS-232C to RS-485 Converter	FAS-RCR	Baud Rate	Max. 115.2kbps	
		Comm. Distance	RS-232C: Max. 15m RS-485: Max. 1.2km	
		Connector	RS-232C: DB9 Female RS-485: RJ-45	
		Dimensions	50X75X23mm	
		Weight	38g	
		Power	Power supplied by RS-232C (DC5~24V external power can be applied)	

⑥ **RS-232C Cable**

These are the cables to connect FAS-RCR and RS-232C port of the host controller.

Purpose	Part Number	Length [m]	Cable Type
FAS-RCR – RS-232C Connection	CGNR-C-002F	2	Normal Cable
	CGNR-C-003F	3	
	CGNR-C-005F	5	

⑦ **RS-485 Cable 3**

These are the cables to connect Ezi-SERVO-ALL-60/60-ABS drive and Ezi-SERVO-ALL-42/56 drive with RS-485 network.

Purpose	Part Number	Length [m]	Cable Type	Remarks
RS-485 Connection	CWPC-R-0R6F	0.6	Normal Cable	Maximum Length: 30m
	CWPC-R-001F	1		
	CWPC-R-1R5F	1.5		
	CWPC-R-002F	2		
	CWPC-R-003F	3		
	CWPC-R-005F	5		

Ezi-SERVO ALL-60

CN2

DC24V   **1,2** DC24V

GND   **3,4** GND

External IN/OUT   *   CN1

EXT_DC24V   A
LIMIT+   C
LIMIT−   D
ORIGIN   E
In1   F
In2   G
In3   H
In4   I
In5   K
In6   L
In7   M
Compare Out   N
Out1   O
Out2   P
Out3   R
EXT_GND   B
   T   DC24V
BRAKE   U
F.GND   F.GND

* Shield Cable

FASTECH Ezi-SERVO ALL

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CAUTION

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

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

● External Wiring Diagram [Ezi-SERVO-ALL-60-ABS Series]

Ezi-SERVO ALL-60-ABS

* Shield Cable

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

CAUTION

In order to use the products listed in this catalog safely and correctly, be sure to read the instruction manual before using the product.
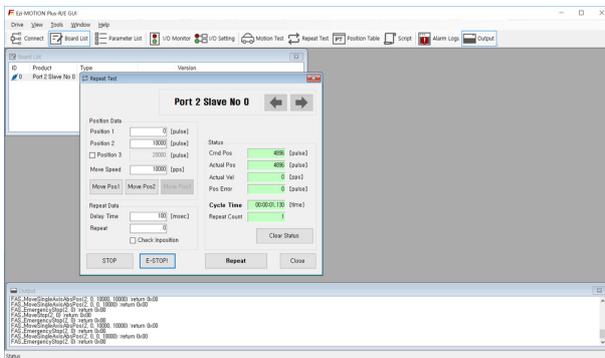
● GUI(Graphic User Interface) Screenshot
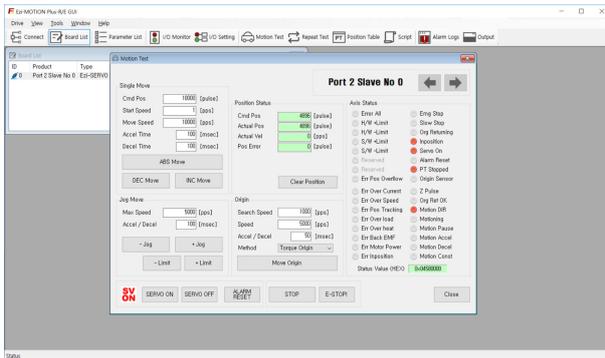
◆ Product List and Motion Test

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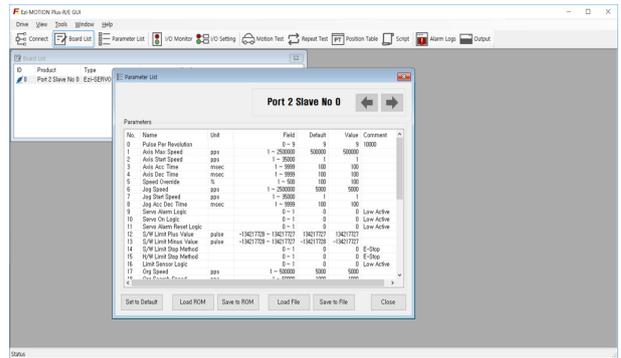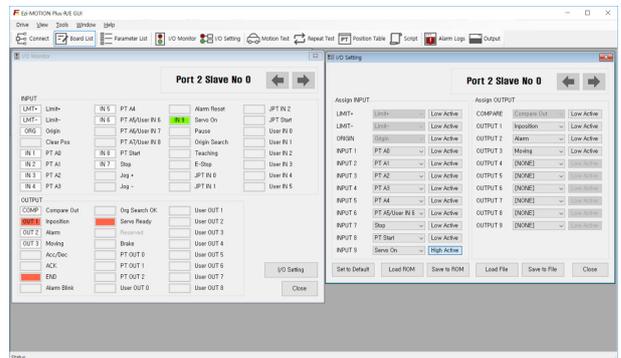

◆ Parameter List

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

◆ Motion Repeat and Status Monitoring

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

◆ I/O Monitoring and Setting

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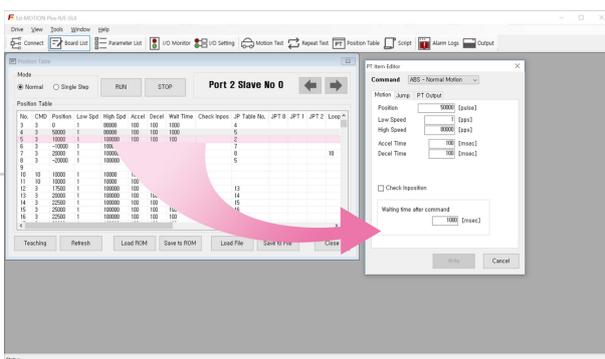
◆ Position Table

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

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

MEMO

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*F*ast, *A*ccurate, *S*mooth Motion

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