Ezi-STEP® II Plus-E

PWR
MOTOR
ENCODER
IN / OUT
LK1 LK2
ACT ERR
PWR
RUN
SON
ALM
IP Display

CE

IIIFASTECH

Ezi-STEP® Ⅱ *Plus-E*

Micro Stepping System

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

Ezi-STEP II Series

Ezi-STEP II
Plus-E

Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL

FASTECH

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

Ezi-STEP®II *Plus-E*
Micro Stepping System
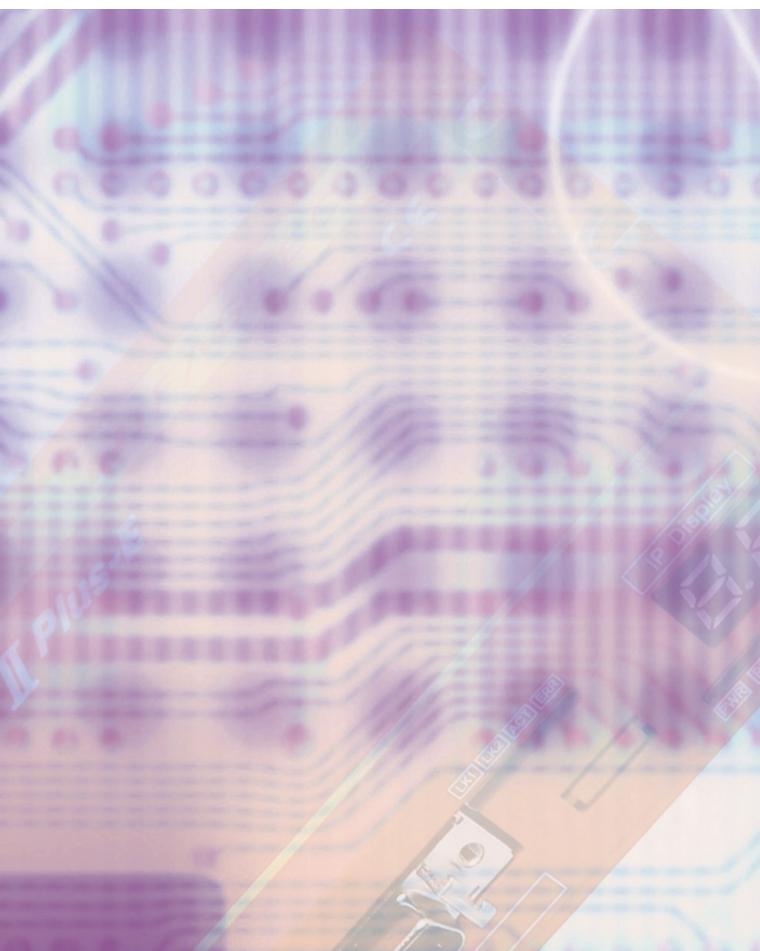
2 Position Table Function

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

PC/PLC

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

• Origin search OK
• Run/Stop
• Alarm
• Others
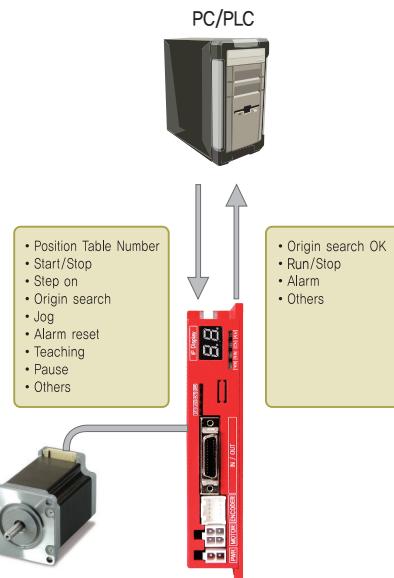
1 Network Based Motion Control

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

PC/PLC
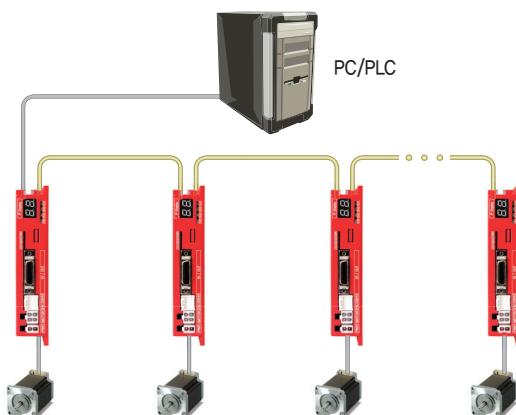
3 Microstep and Filtering

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

4 Software Damping

Motor vibration is created by magnetic flux variations of the motor, lower current from the drive due to back-emf from the motor at high speeds and lowering of phase voltages from the drive.

Ezi-STEPII drive detects these problems and the MCU adjusts the phase of the current according to the pole position of the motor, drastically suppressing vibration.

This allows the smooth operation of the motor at high speeds.

Software Damping OFF   **Software Damping ON**
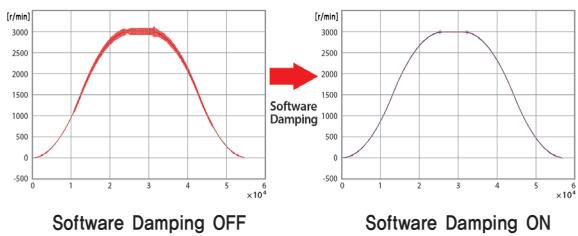
※ This is real measured speed that using 100,000 P/R encoder.

5 Improved high-speed operation performance

Depending on the speed of a stepping motor, Ezi-STEPII 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-STEPII-PE-42 Series
　　　　　　　　　　　 Ezi-STEPII-PE-56 Series
　　　　　　　　　　　 Ezi-STEPII-PE-60 Series

● Motion Controller Features

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
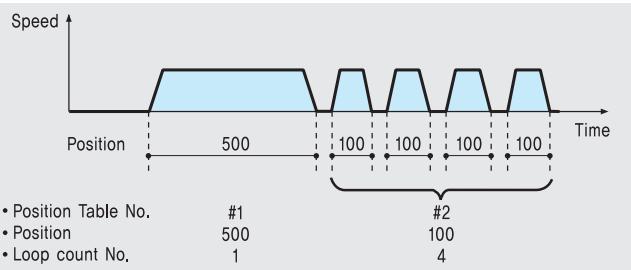
2. Acceleration/Deceleration

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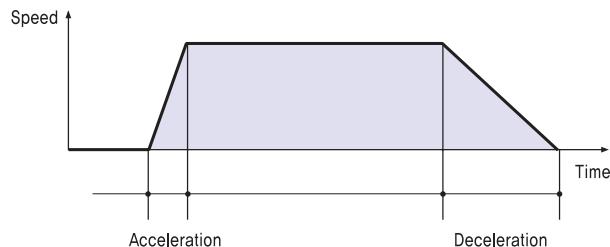

3. Pause

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.
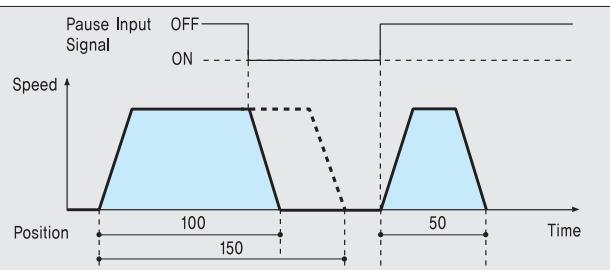
4. Alarm

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

Alarm Output from Drive

Motor   Drive

PC/PLC

ALARM

Host controller can notify which Alarm has occurred
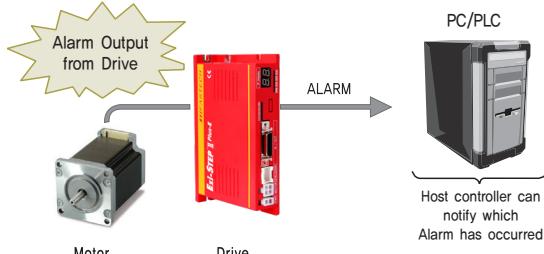
5. Teaching

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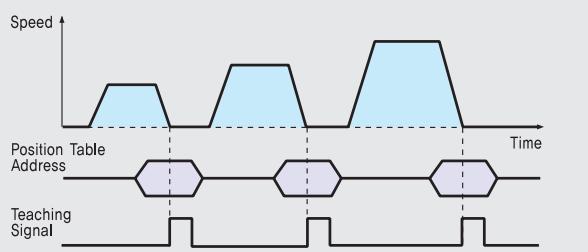
6. Jump

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	

Input 1 or Input 2 or Input 3

No effect

Input 2 signal

Jump to #116 Position Table

Ezi-STEP II Series

Ezi-STEP II
Plus-E

Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL
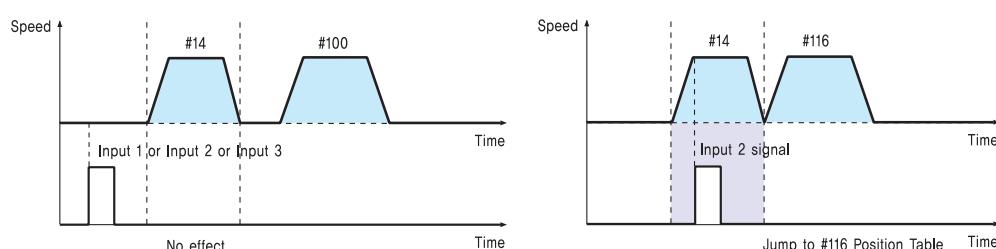
● Ezi-STEPII Plus-E Part Numbering

Ezi-STEPII-PE-42S-BK

| Series Name |
| Type Name |
| PE : Plus Ethernet |

| Motor Flange Size |
| 20 : 20mm |
| 28 : 28mm |
| 42 : 42mm |
| 56 : 56mm |
| 60 : 60mm |
| 86 : 86mm |

| Motor Length |
| S : Small |
| M : Medium |
| L : Large |
| XL : Extra Large |

| Brake |
| Blank : Without Brake |
| BK : Brake |
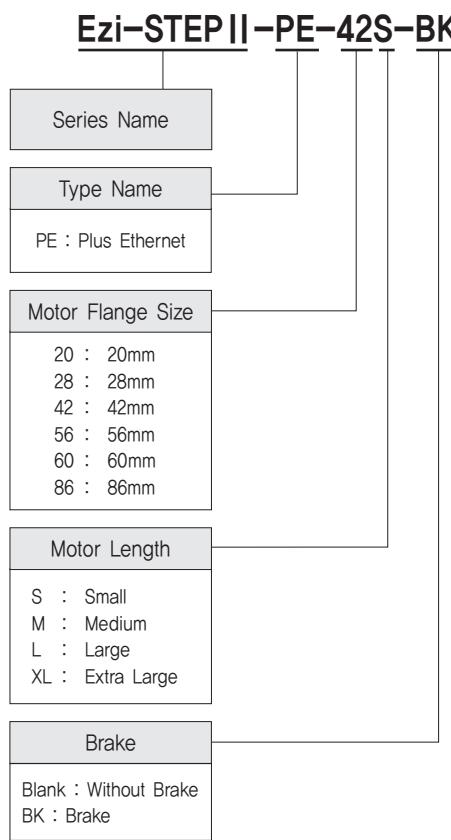
● Standard Combination

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

● Combination with Brake

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

● Specifications of Drive

Motor Model	BM−20 series	BM−28 series	BM−42 series	BM−56 series	BM−60 series	BM−86 series
Driver Model	EzT2−PE−20 series	EzT2−PE−28 series	EzT2−PE−42 series	EzT2−PE−56 series	EzT2−PE−60 series	EzT2−PE−86 series
Input Voltage	DC24V±10%					DC40~70V
Control Method	Bipolar PWM drive with 32bit MCU					
Multi Axis Drive	Maximum 254 axis operating (Selectable IP: 1~254)					
Position Table	256 motion command steps					
Current Consumption	Max. 500mA (Except motor current)					
Operating Condition — Ambient Temperature	· In Use: 0~50℃ · In Storage: −20~70℃					
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					
Function — 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)					
Function — Error Types	Over Current Error, Over Speed Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, ROM Error					
Function — LED Display	Power Status, Alarm Status, Run Status, STEP ON Status					
Function — Rotational Direction	CW/CCW (Set by parameter)					
I/O Signal — Input Signals	3 dedicated inputs (LIMIT+, LIMIT−, ORIGIN), 9 programmable inputs (Photocoupler Input)					
I/O Signal — Output Signals	1 dedicated output (Compare Out), 9 programmable outputs (Photocoupler Output), 1 Brake output					
Communication Interface	· Ethernet standard: 10BASE−T, 100BASE−TX · Full−Duplex · Dual port Ethernet switch embedded					
Position Control	· Incremental mode / Absolute mode Data Range: −134,217,728 to +134,217,727 [pulse] · Operating speed: Max. 3,000 r/min					
Return to Origin	Origin Sensor, ±Limit sensor, Z phase(with external encoder)					
GUI	User Interface Program within Windows					
Library	Motion Library (API) for windows 7/8/10					

● Dimensions of Drive [mm]

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

Ezi-STEP II Series

Ezi-STEP II
Plus-E

Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL
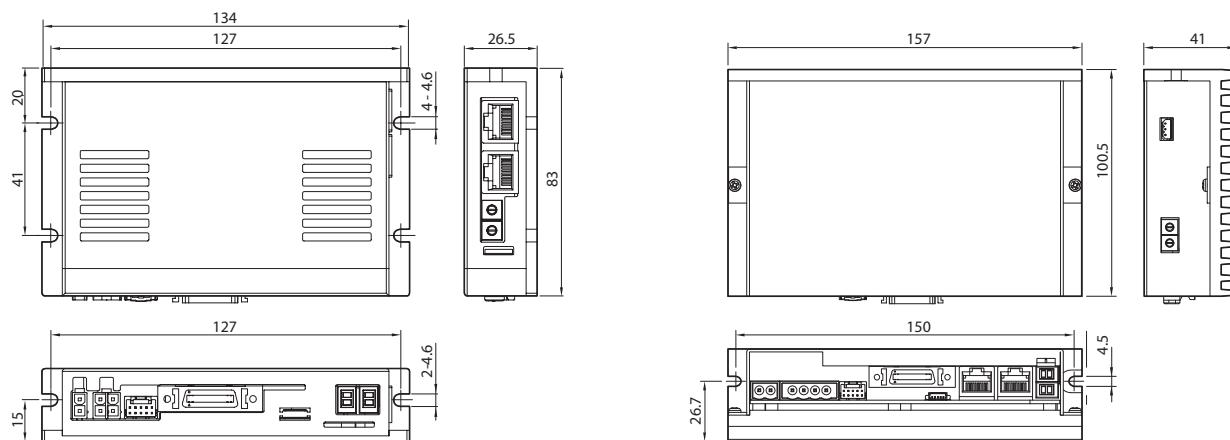
● Specifications of Motor

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
WEIGHTS		kg	0.053	0.078	0.115	0.174	0.202	0.238	0.303	0.374	0.508
LENGTH(L)		mm	28	38	32	45	50	34	40	48	60
PERMISSIBLE RADIAL LOAD	DISTANCE FROM END OF SHAFT 3mm	N	18	18	30	30	30	22	22	22	22
	8mm		30	30	38	38	38	26	26	26	26
	13mm		−	−	53	53	53	33	33	33	33
	18mm		−	−	−	−	−	46	46	46	46
PERMISSIBLE AXIAL LOAD		N	Lower then Motor Unit's Weight								
INSULATION RESISTANCE		MΩ	Min. 100(When measured with a DC500V insulation resistance meter)								
INSULATION CLASS		−	CLASS B(130℃)								
OPERATING TEMPERATURE		℃	0 ~ 55								

MODEL			BM-56 series			BM-60 series			BM-86 series		
		UNIT	56S	56M	56L	60S	60M	60L	86M	86L	86XL
DRIVE METHOD		−	Bipolar								
NUMBER OF PHASES		−	2 Phase								
CURRENT per PHASE		A/Phase	3.0	3.0	3.0	4.0	4.0	4.0	6.0	6.0	6.0
MAXIMUM HOLDING TORQUE		N·m	0.64	1.0	1.5	0.88	1.28	2.4	4.5	8.5	12
ROTOR INERTIA		g·cm²	180	280	520	240	490	690	1800	3600	5400
WEIGHTS		kg	0.548	0.726	1.159	0.616	0.793	1.349	2.275	3.808	5.330
LENGTH(L)		mm	46	55	80	47	56	85	78	117	155
PERMISSIBLE RADIAL LOAD	DISTANCE FROM END OF SHAFT 3mm	N	52	52	52	70	70	70	270	270	270
	8mm		65	65	65	87	87	87	300	300	300
	13mm		85	85	85	114	114	114	350	350	350
	18mm		123	123	123	165	165	165	400	400	400
PERMISSIBLE AXIAL LOAD		N	Lower then Motor Unit's Weight								
INSULATION RESISTANCE		MΩ	Min. 100(When measured with a DC500V insulation resistance meter)								
INSULATION CLASS		−	CLASS B(130℃)								
OPERATING TEMPERATURE		℃	0 ~ 55								

● Torque Characteristics of Motor

Ezi-STEP II-PE-20 series
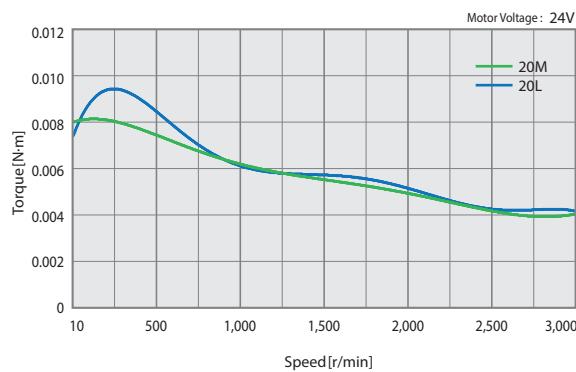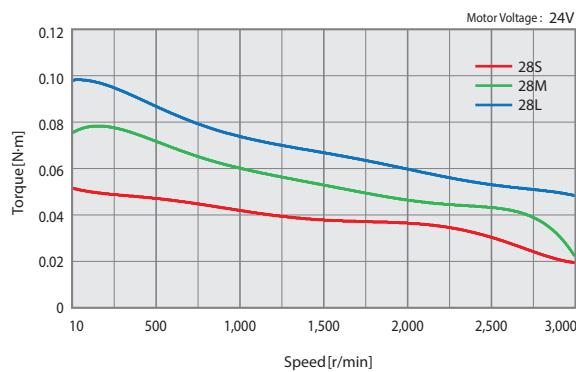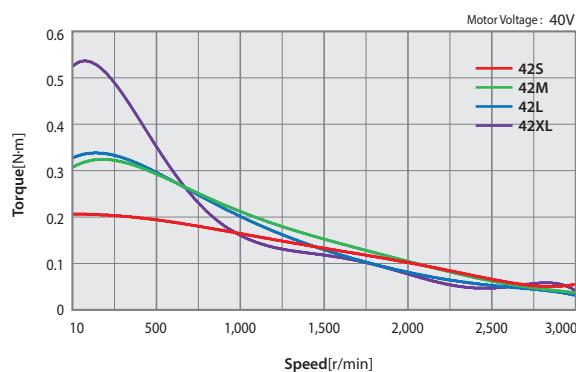
Motor Voltage: 24V

— 20M
— 20L

Torque[N·m] / Speed[r/min]

Ezi-STEP II-PE-28 series

Motor Voltage: 24V

— 28S
— 28M
— 28L

Torque[N·m] / Speed[r/min]

Ezi-STEP II-PE-42 series

Motor Voltage: 40V

— 42S
— 42M
— 42L
— 42XL

Torque[N·m] / Speed[r/min]

Ezi-STEP II-PE-56 series

Motor Voltage: 40V

— 56S
— 56M
— 56L

Torque[N·m] / Speed[r/min]

Ezi-STEP II-PE-60 series

Motor Voltage: 40V

— 60S
— 60M
— 60L

Torque[N·m] / Speed[r/min]

Ezi-STEP II-PE-86 series

Motor Voltage: 70V

— 86M
— 86L
— 86XL

Torque[N·m] / Speed[r/min]

Ezi-STEP II Series
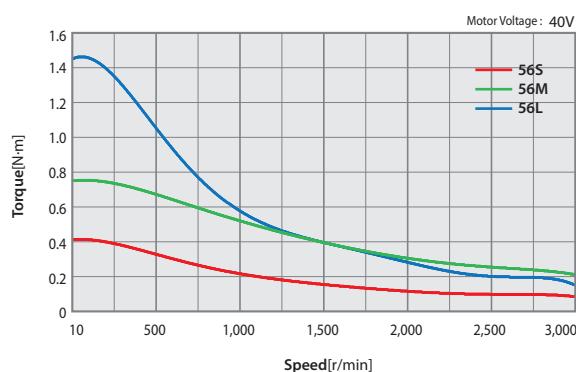
Ezi-STEP II
Plus-E
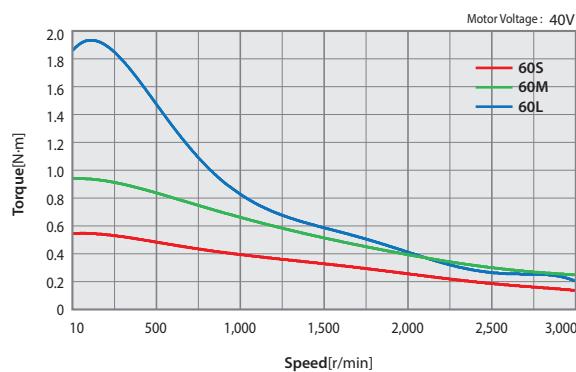
Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL
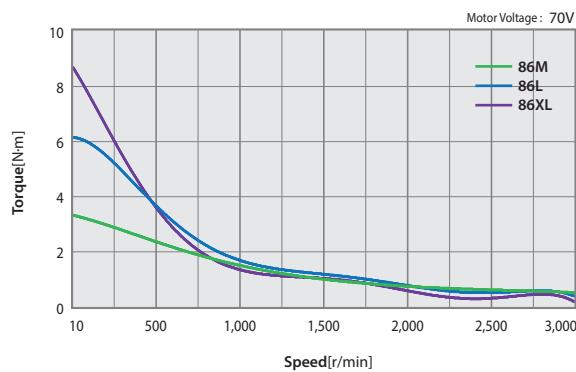
● Dimensions of Motor [mm]
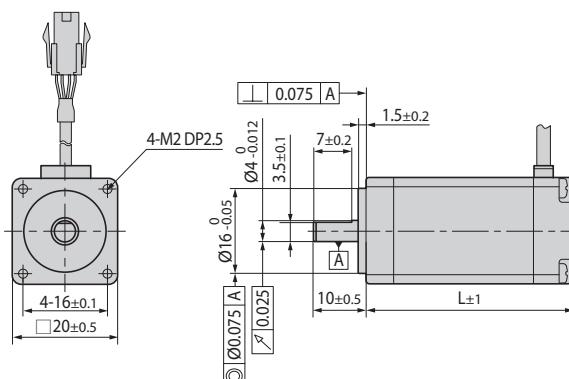
20mm

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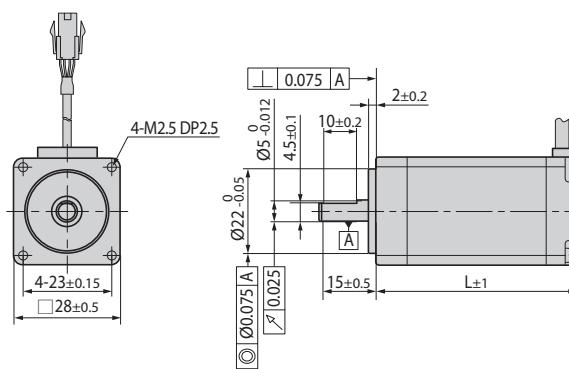
28mm

Model name	Length(L)
BM-28S	32
BM-28M	45
BM-28L	50
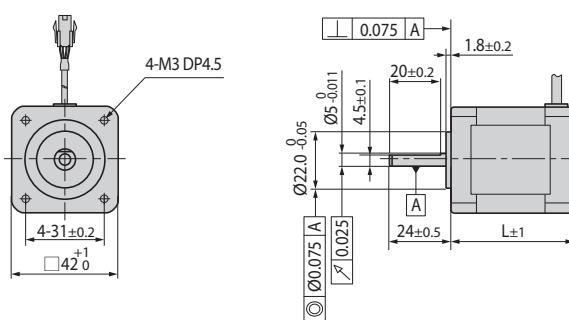
42mm

Model name	Length(L)
BM-42S	34
BM-42M	40
BM-42L	48
BM-42XL	60
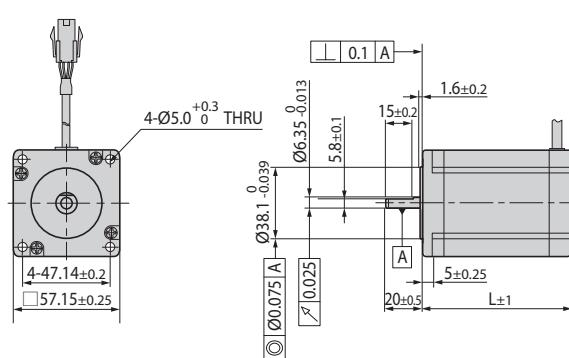
56mm

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

● Dimensions of Motor [mm]
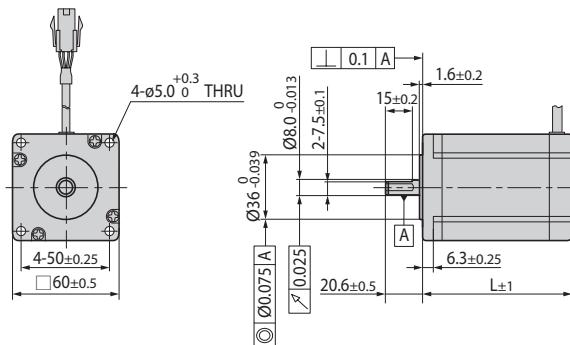
60mm

Model name	Length(L)
BM−60S	47
BM−60M	56
BM−60L	85
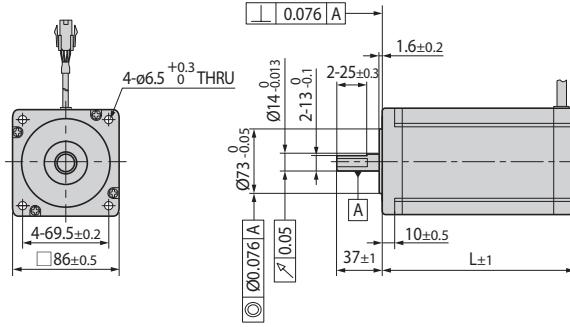
86mm

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

● **Settings and Operation**

Power connector (CN4)

Motor connector (CN3)

Encoder connector (CN2)

Input/Output signal connector (CN1)

Ethernet status LED

Drive status LED

Ethernet IP Display

Ethernet communication connector(CN5)

Ethernet communication connector (CN6)

Ethernet IP setting switch (SW1, SW2)

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

Power connector (CN4)

Motor connector (CN3)

Encoder connector (CN2)

Input/Output signal connector (CN1)

Drive status LED

Ethernet IP Display

Ethernet communication connector(CN5)

Ethernet communication connector (CN6)

Ethernet status LED

Ethernet IP setting switch (SW1, SW2)

Ezi-STEP II Series

Ezi-STEP II
Plus-E

Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL

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

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

(x16)   (x1)

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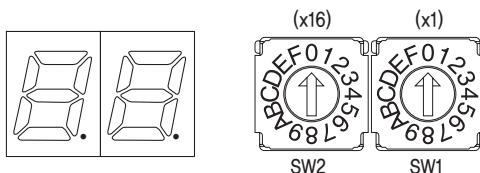
e.g.,) In case of SW2 : 5 and SW1 : 7
(5×16) + (7×1)= 87
IP is to be set as 192.168.0.87

2. Ethernet Status LED

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

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

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

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

IP Display

Activity   Link   Activity   Link
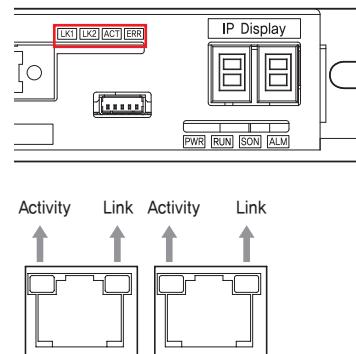
3. Drive Status LED

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

◆ List of error types by the number of LED blinking

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

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

0.5s   2.0 s

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

4. Input/Output Signal Connector(CN1)

| No.	Function	I/O
1	LIMIT+	Input
2	LIMIT−	Input
3	ORIGIN	Input
4	Digital In1	Input
5	Digital In6	Input
6	Digital In7	Input
7	Compare Out1	Output
8	Digital Out1	Output
9	Digital Out2	Output
10	Digital Out3	Output
11	Digital Out4	Output
12	Digital Out5	Output
13	Digital Out6	Output
14	Digital In2	Input
15	Digital In3	Input
16	Digital In4	Input
17	Digital In5	Input
18	Digital In8	Input
19	Digital In9	Input
20	Digital Out7	Output
21	Digital Out8	Output
22	Digital Out9	Output
23	BRAKE+	Output
24	BRAKE−	Output
25	EXT_GND	Input
26	EXT_DC24V	Input
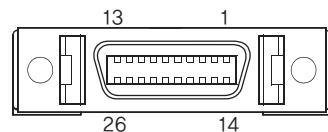
6. Motor Connector(CN3)

No.	Function	I/O
1	A Phase	Output
2	B Phase	Output
3	$\overline{A}$ Phase	Output
4	$\overline{B}$ Phase	Output
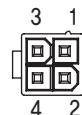
No.	Function	I/O
1	$\overline{B}$ Phase	Output
2	B Phase	Output
3	$\overline{A}$ Phase	Output
4	A Phase	Output
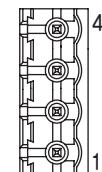
※ 86mm motor drive

7. Power Connector(CN4)

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

No.	Function	I/O
1	GND	Input
2	DC40~70V	Input
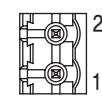
※ 86mm motor drive

5. Encoder Connector(CN2)

No.	Function	I/O
1	A+	Input
2	A−	Input
3	B+	Input
4	B−	Input
5	Z+	Input
6	Z−	Input
7	DC5V	Output
8	GND	Output
9	F.GND	−−−−
10	F.GND	−−−−
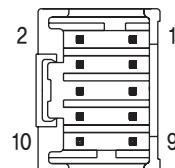
8. Ethernet Communication Connector(CN5, CN6)

No.	Function	No.	Function
1	TD+	6	RD−
2	TD−	7	−−−−
3	RD+	8	−−−−
4	−−−−	Connector hood	F.GND
5	−−−−		
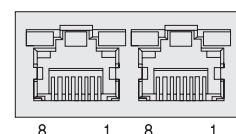
● System Configuration
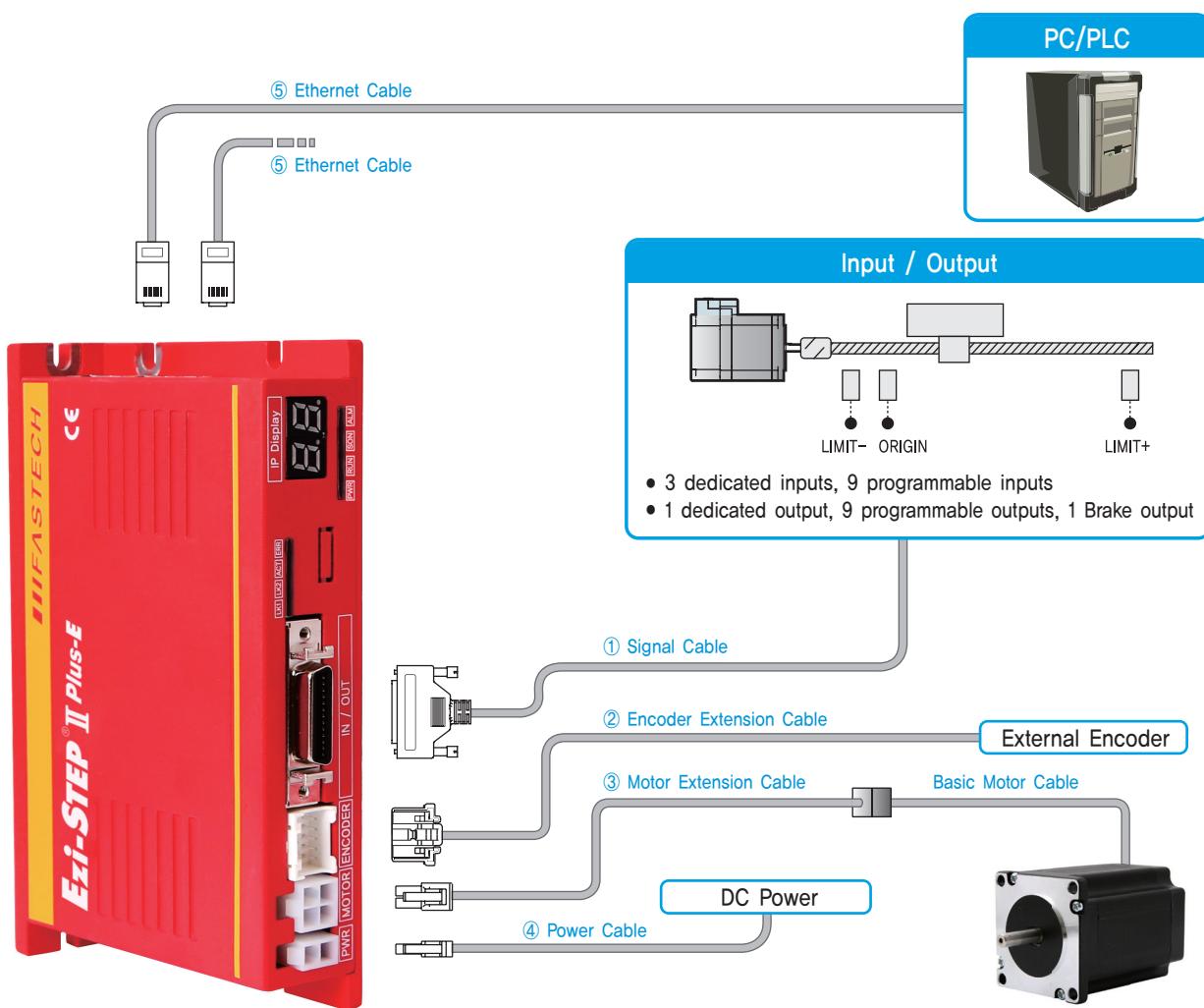
Ezi-STEP II Series

Ezi-STEP II
Plus-E

Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL

⑤ Ethernet Cable

⑤ Ethernet Cable

PC/PLC

Input / Output

LIMIT−   ORIGIN   LIMIT+

- 3 dedicated inputs, 9 programmable inputs
- 1 dedicated output, 9 programmable outputs, 1 Brake output

① Signal Cable

② Encoder Extension Cable

External Encoder

③ Motor Extension Cable   Basic Motor Cable

DC Power

④ Power Cable

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

Ezi-STEP II Series

Ezi-STEP II
Plus-E

Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL

1. Accessories

Connectors
These are connector specifications for drive cabling.

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

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

2. Options

① Signal Cable
These are the cables to connect Ezi−STEPⅡ Plus−E drive and other input/output devices.

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

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

② Encoder Extension Cable
These are the cables to connect Ezi−STEPⅡ Plus−E drive and the encoder.

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

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

③ Motor Extension Cable

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

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

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

④ Drive Power Cable

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

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

⑤ Ethernet Cable

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

* 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-STEPⅡ Plus-E drive and I/O signals more conveniently.

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

Ezi-STEP II Series

Ezi-STEP II
Plus-E

Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL
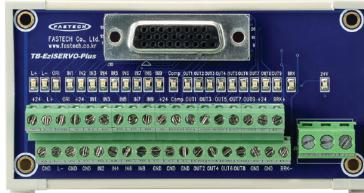
[Option] TB-Plus Interface Cable

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

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

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

● System Configuration [86mm Motor Drive]
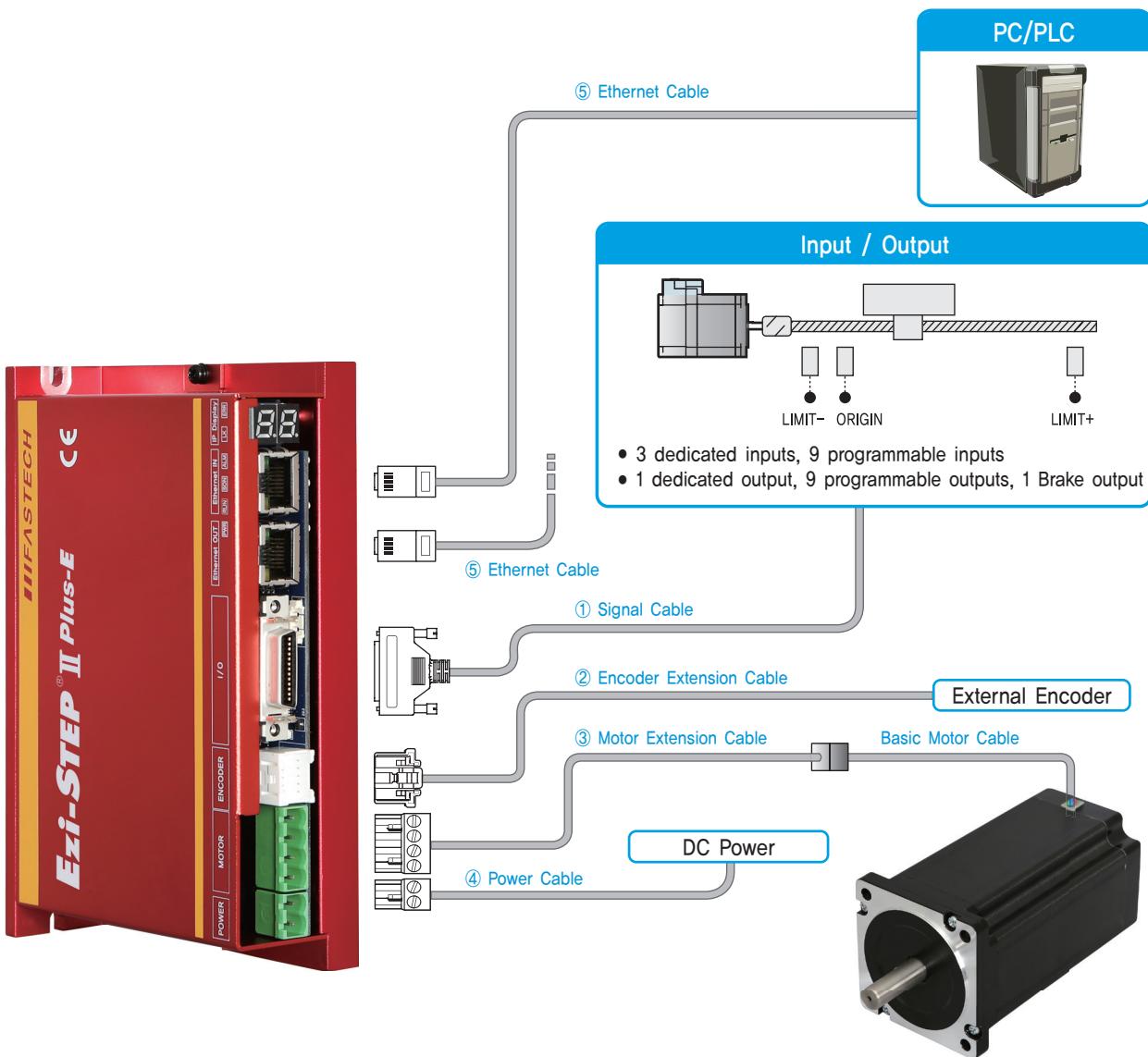
PC/PLC

⑤ Ethernet Cable

Input / Output

LIMIT−   ORIGIN   LIMIT+

● 3 dedicated inputs, 9 programmable inputs
● 1 dedicated output, 9 programmable outputs, 1 Brake output

⑤ Ethernet Cable

① Signal Cable

② Encoder Extension Cable

External Encoder

③ Motor Extension Cable   Basic Motor Cable

DC Power

④ Power Cable

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

1. Accessories

Connectors
These are connector specifications for drive cabling.

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

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

2. Options

① Signal Cable
These are the cables to connect Ezi−STEPII Plus−E [86mm motor] drive and other input/output devices.

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

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

② Encoder Extension Cable
These are the cables to connect Ezi−STEPⅡ Plus−E [86mm motor] drive and the encoder

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

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

Ezi-STEP II Series

Ezi-STEP II
Plus-E

Ezi-STEP II
Plus-E MINI

Ezi-STEP II
Plus-E ALL

③ Motor Extension Cable

These are the cables to connect Ezi-STEPⅡ Plus-E [86mm motor] drive and the motor.

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

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

④ Drive Power Cable

These are the cables to connect Ezi-STEPⅡ Plus-E [86mm motor] drive and the control power.

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

⑤ Ethernet Cable

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

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

[Option] TB-Plus Interface Board

This is an interface board to connect Ezi-STEPⅡ Plus-E [86mm motor] drive and I/O signals more conveniently.

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

[Option] TB−Plus Interface Board

This is an interface board to connect Ezi−STEP II Plus−E [86mm motor] drive and I/O signals more conveniently.

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

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

● External Wiring Diagram

Ezi-STEP II Plus-E

CN4
1 DC24V — DC24V
2 GND — GND

External IN/OUT *2 **CN1**

External IN/OUT	CN1
EXT_DC24V	26
LIMIT+	1
LIMIT −	2
ORIGIN	3
In1	4
In2	14
In3	15
In4	16
In5	17
In6	5
In7	6
In8	18
In9	19
Compare Out	7
EXT_GND	25
Out1	8
Out2	9
Out3	10
Out4	11
Out5	12
Out6	13
Out7	20
Out8	21
Out9	22
	23
BRAKE	24

DC24V

F.GND   F.GND

External Encoder

CN2 *1

CN2	
A+	1
A−	2
B+	3
B−	4
Z+	5
Z−	6
DC5V	7
GND	8
F.GND	9,10

Encoder E

CN3 **Motor**

CN3	
A	1
Ā	3
B	2
B̄	4

Motor M

* 1) Shielded Twisted Pair Cable

* 2) Shield Cable

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

CAUTION

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