

# Programless Controller Series **LECP1**



Model Selection

LEHZ

LEHZJ

Step Motor (Servo/24 VDC)

LEHF

LEHS

LECP6

LEC-G

LECP1

LECPA

Specific Product Precautions

## How to Order

**LECP1N1** - **LEHZ10LK2-4**

- Controller**
- Compatible motor**
  - P** Step motor (Servo/24 VDC)
- Number of step data (Points)**
  - 1** 14 (Programless)
- Parallel I/O type**
  - N** NPN
  - P** PNP
- Option**
  - Nil** Screw mounting
  - D** (Note) DIN rail mounting

Note) DIN rail is not included. Order it separately.
- I/O cable length [m]**

Nil	Without cable
<b>1</b>	1.5
<b>3</b>	3
<b>5</b>	5
- Actuator part number**

(Except cable specifications and actuator options)  
Example: Enter "LEHZ10LK2-4" for the LEHZ10LK2-4AF-R11N1.

\* When controller equipped type is selected when ordering the LE series, you do not need to order this controller.

**Caution**  
[CE-compliant products]  
EMC compliance was tested by combining the electric actuator LEH series and the controller LEC series. The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore conformity to the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result it is necessary for the customer to verify conformity to the EMC directive for the machinery and equipment as a whole.

[UL-compliant products]  
When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

**The controller is sold as single unit after the compatible actuator is set.**  
Confirm that the combination of the controller and the actuator is correct.

\* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

## Specifications

### Basic Specifications

Item	LECP1
Compatible motor	Step motor (Servo/24 VDC)
Power supply <sup>Note 1)</sup>	Power supply voltage: 24 VDC ±10%, Max. current consumption: 3 A (Peak 5 A) <sup>Note 2)</sup> [Including the motor drive power, control power supply, stop, lock release]
Parallel input	6 inputs (Photo-coupler isolation)
Parallel output	6 outputs (Photo-coupler isolation)
Stop points	14 points (Position number 1 to 14(E))
Compatible encoder	Incremental A/B phase (800 pulse/rotation)
Serial communication	RS485 (Modbus protocol compliant)
Memory	EEPROM
LED indicator	LED (Green/Red) one of each
7-segment LED display <sup>Note 3)</sup>	1 digit, 7-segment display (Red) Figures are expressed in hexadecimal ("10" to "15" in decimal number are expressed as "A" to "F")
Lock control	Forced-lock release terminal <sup>Note 4)</sup>
Cable length [m]	I/O cable: 5 or less, Actuator cable: 20 or less
Cooling system	Natural air cooling
Operating temperature range [°C]	0 to 40 (No freezing)
Operating humidity range [%RH]	90 or less (No condensation)
Storage temperature range [°C]	-10 to 60 (No freezing)
Storage humidity range [%RH]	90 or less (No condensation)
Insulation resistance [MΩ]	Between the housing and SG terminal: 50 (500 VDC)
Weight [g]	130 (Screw mounting), 150 (DIN rail mounting)

Note 1) Do not use the power supply of "inrush current prevention type" for the controller input power supply. When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

Note 2) The power consumption changes depending on the actuator model. Refer to the each actuator's operation manual etc. for details.

Note 3) "10" to "15" in decimal number are displayed as follows in the 7-segment LED.

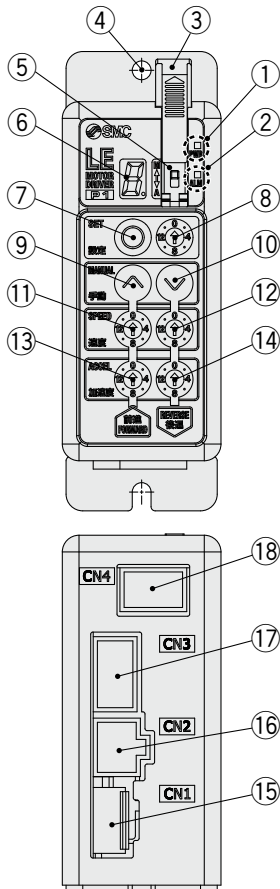


Decimal display      10      11      12      13      14      15  
Hexadecimal display      A      b      c      d      E      F

Note 4) Applicable to non-magnetizing lock.

# Series LECP1

## Controller Details



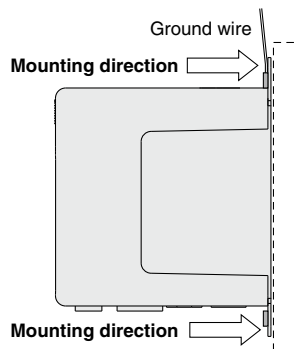
No.	Display	Description	Details
①	<b>PWR</b>	Power supply LED	Power supply ON/Servo ON : Green turns on Power supply ON/Servo OFF: Green flashes
②	<b>ALM</b>	Alarm LED	With alarm : Red turns on Parameter setting : Red flashes
③	—	Cover	Change and protection of the mode switch (Close the cover after changing switch)
④	—	FG	Frame ground (Tighten the bolt with the nut when mounting the controller. Connect the ground wire.)
⑤	—	Mode switch	Switch the mode between manual and auto.
⑥	—	7-segment LED	Stop position, the value set by ⑧ and alarm information are displayed.
⑦	<b>SET</b>	Set button	Decide the settings or drive operation in Manual mode.
⑧	—	Position selecting switch	Assign the position to drive (1 to 14), and the origin position (15).
⑨	<b>MANUAL</b>	Manual forward button	Perform forward jog and inching.
⑩		Manual reverse button	Perform reverse jog and inching.
⑪	<b>SPEED</b>	Forward speed switch	16 forward speeds are available.
⑫		Reverse speed switch	16 reverse speeds are available.
⑬	<b>ACCEL</b>	Forward acceleration switch	16 forward acceleration steps are available.
⑭		Reverse acceleration switch	16 reverse acceleration steps are available.
⑮	<b>CN1</b>	Power supply connector	Connect the power supply cable.
⑯	<b>CN2</b>	Motor connector	Connect the motor connector.
⑰	<b>CN3</b>	Encoder connector	Connect the encoder connector.
⑱	<b>CN4</b>	I/O connector	Connect I/O cable.

## How to Mount

Controller mounting shown below.

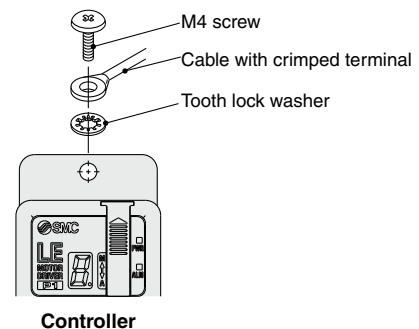
### 1. Mounting screw (LECP1□□-□)

(Installation with two M4 screws)



### 2. Grounding

Tighten the bolt with the nut when mounting the ground wire as shown below.

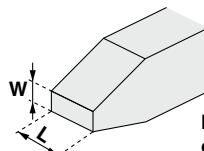


### ⚠ Caution

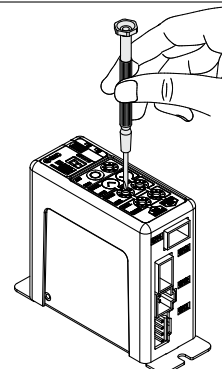
- M4 screws, cable with crimping terminal and tooth lock washer are not included. Be sure to carry out grounding earth in order to ensure the noise tolerance.
- Use a watchmaker's screwdriver of the size shown below when changing position switch ⑧ and the set value of the speed/acceleration switch ⑪ to ⑭.

#### Size

End width **L**: 2.0 to 2.4 [mm]  
End thickness **W**: 0.5 to 0.6 [mm]

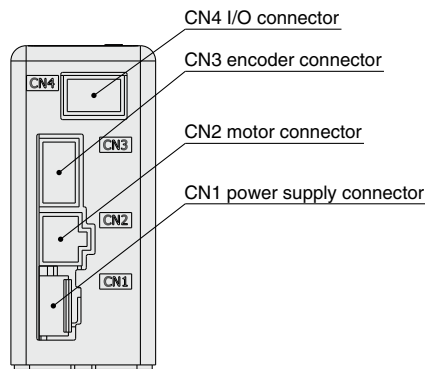
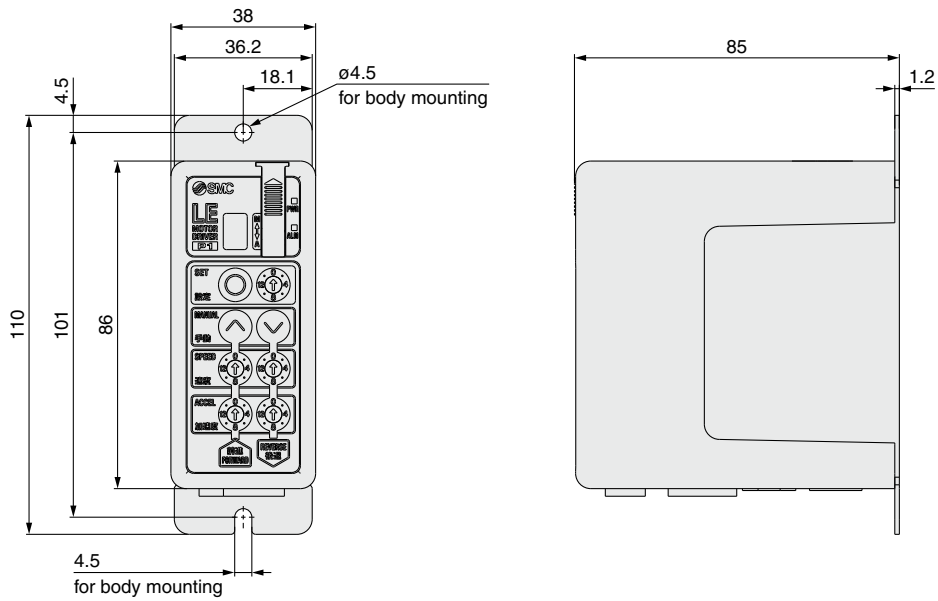


Magnified view of the end of the screwdriver

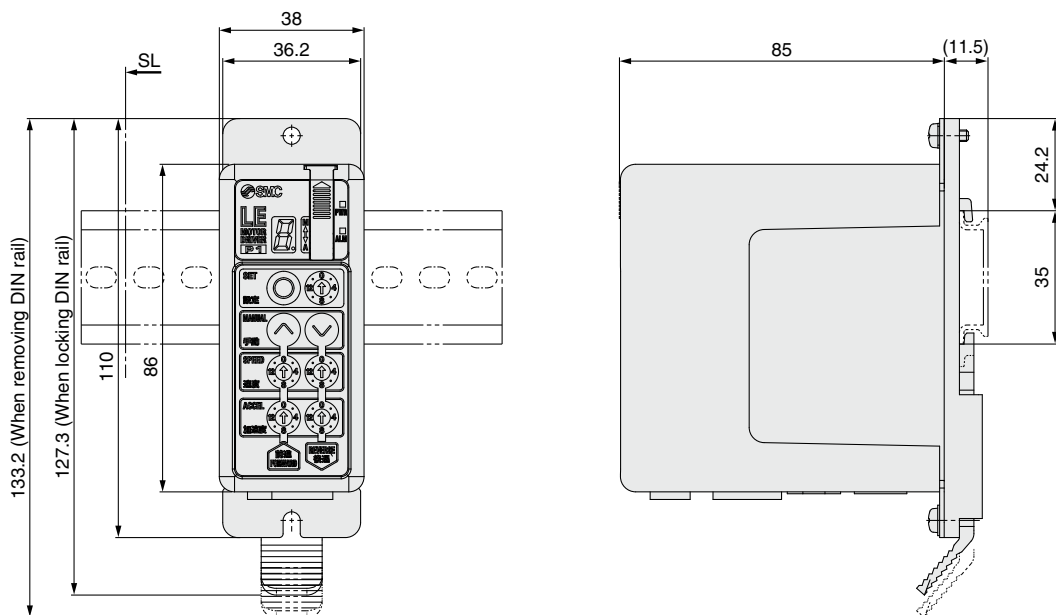


**Dimensions**

**Screw mounting (LEC□1□□-□)**



**DIN rail mounting (LEC□1□□D-□)**



Model Selection

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LEHZJ

LEHF

LEHS

LECP6

LEC-G

LECP1

LECPA

Specific Product Precautions

Step Motor (Servo/24 VDC)

# Series LECP1

## Wiring Example 1

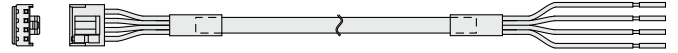
### Power Supply Connector: CN1

- \* When you connect a CN1 power supply connector, please use the power supply cable (LEC-CK1-1).
- \* Power supply cable (LEC-CK1-1) is an accessory.

### CN1 Power Supply Connector Terminal for LECP1

Terminal name	Cable color	Function	Details
0V	Blue	Common supply (-)	M24V terminal/C24V terminal/BK RLS terminal are common (-).
M24V	White	Motor power supply (+)	Motor power supply (+) supplied to the controller
C24V	Brown	Control power supply (+)	Control power supply (+) supplied to the controller
BK RLS	Black	Lock release (+)	Input (+) for releasing the lock

### Power supply cable for LECP1 (LEC-CK1-1)

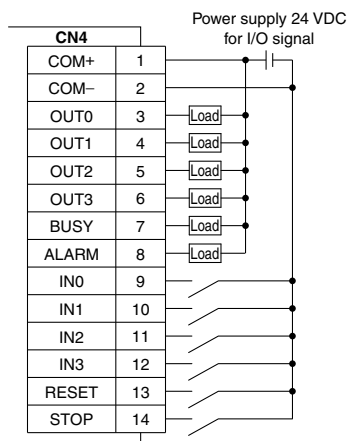


## Wiring Example 2

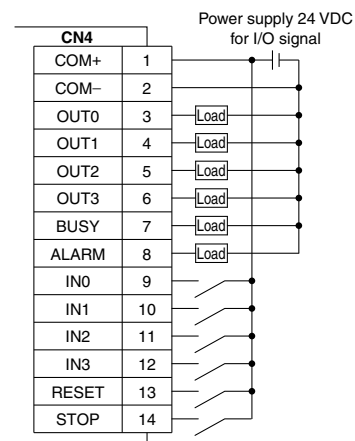
### Parallel I/O Connector: CN4

- \* When you connect a PLC, etc., to the CN4 parallel I/O connector, please use the I/O cable (LEC-CK4-□).
- \* The wiring should be changed depending on the type of the parallel I/O (NPN or PNP).

#### ■NPN



#### ■PNP



### Input Signal

Name	Details								
COM+	Connects the power supply 24 V for input/output signal								
COM-	Connects the power supply 0 V for input/output signal								
IN0 to IN3	<ul style="list-style-type: none"> <li>• Instruction to drive (input as a combination of IN0 to IN3)</li> <li>• Instruction to return to origin (IN0 to IN3 all ON simultaneously)</li> </ul> Example - (instruction to drive for position no. 5) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>IN3</th> <th>IN2</th> <th>IN1</th> <th>IN0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> </tbody> </table>	IN3	IN2	IN1	IN0	OFF	ON	OFF	ON
IN3	IN2	IN1	IN0						
OFF	ON	OFF	ON						
RESET	Alarm reset and operation interruption During operation: deceleration stop from position at which signal is input (servo ON maintained) While alarm is active: alarm reset								
STOP	Instruction to stop (after maximum deceleration stop, servo OFF)								

### Output Signal

Name	Details								
OUT0 to OUT3	Turns on when the positioning or pushing is completed. (Output is instructed in the combination of OUT0 to 3.) Example - (operation complete for position no. 3) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>OUT3</th> <th>OUT2</th> <th>OUT1</th> <th>OUT0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	OUT3	OUT2	OUT1	OUT0	OFF	OFF	ON	ON
OUT3	OUT2	OUT1	OUT0						
OFF	OFF	ON	ON						
BUSY	Outputs when the actuator is moving								
*ALARM (Note)	Not output when alarm is active or servo OFF								

Note) Signal of negative-logic circuit (N.C.)

### Input Signal [IN0 - IN3] Position Number Chart ○: OFF ●: ON

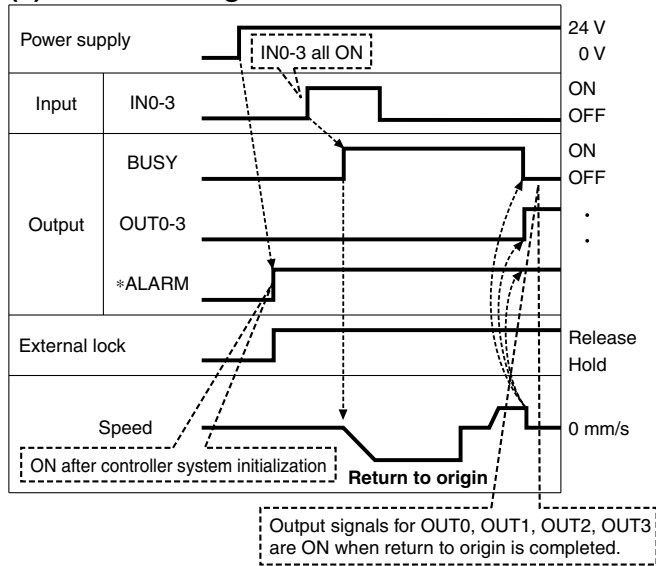
Position number	IN3	IN2	IN1	IN0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

### Output Signal [OUT0 - OUT3] Position Number Chart ○: OFF ●: ON

Position number	OUT3	OUT2	OUT1	OUT0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

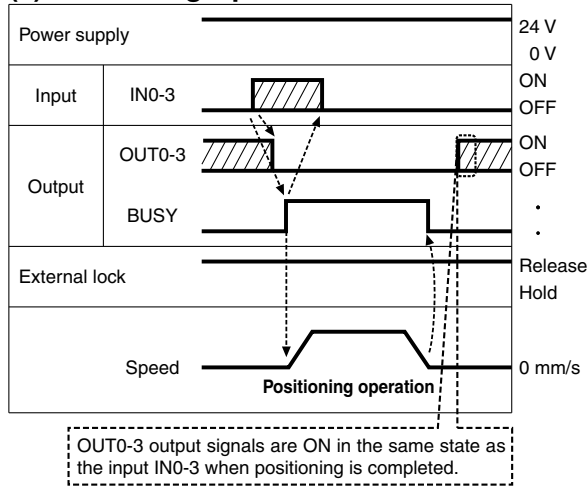
## Signal Timing

### (1) Return to Origin

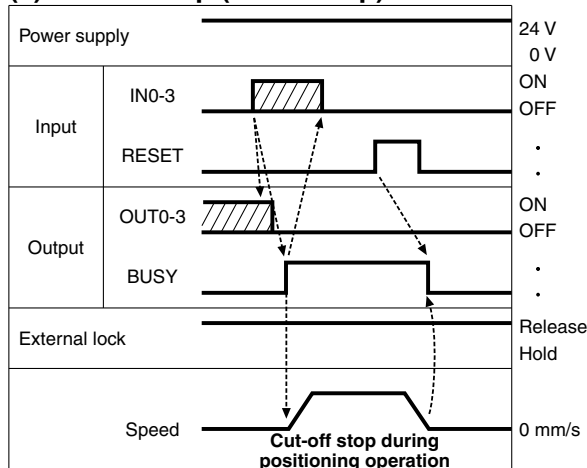


\* \*ALARM" is expressed as negative-logic circuit.

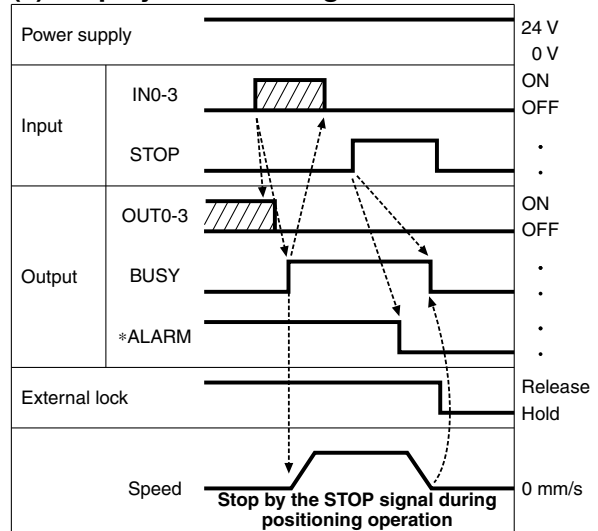
### (2) Positioning Operation



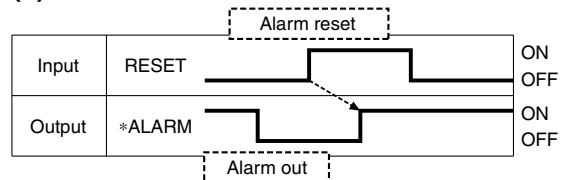
### (3) Cut-off Stop (Reset Stop)



### (4) Stop by the STOP Signal



### (5) Alarm Reset



\* \*ALARM" is expressed as negative-logic circuit.

Model Selection

LEHZ

LEHZJ

LEHF

LEHS

LECP6

LEC-G

LECP1

LECPA

Specific Product Precautions

# Series LECP1

## Options: Actuator Cable

[Robotic cable, standard cable for step motor (Servo/24 VDC)]

LE-CP-1-

Cable length (L) [m]

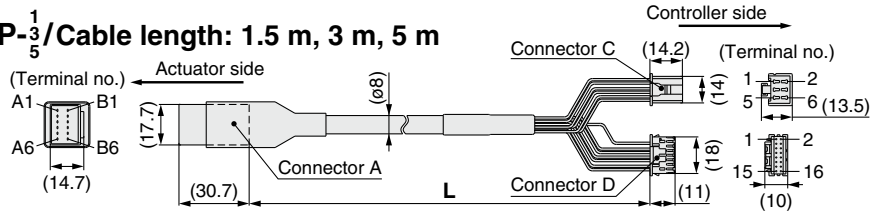
1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

\* Produced upon receipt of order (Robotic cable only)

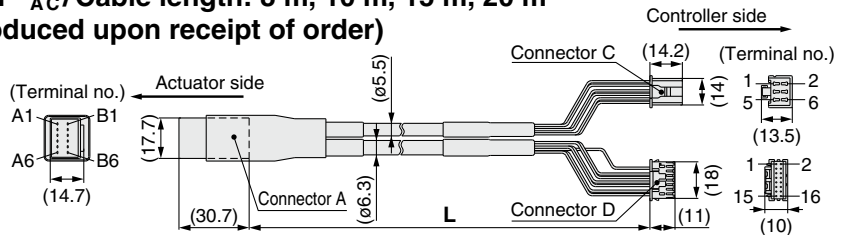
Cable type

Nil	Robotic cable (Flexible cable)
S	Standard cable

LE-CP-<sup>1</sup>/<sub>5</sub>/Cable length: 1.5 m, 3 m, 5 m



LE-CP-<sup>8B</sup>/<sub>AC</sub>/Cable length: 8 m, 10 m, 15 m, 20 m  
(\* Produced upon receipt of order)



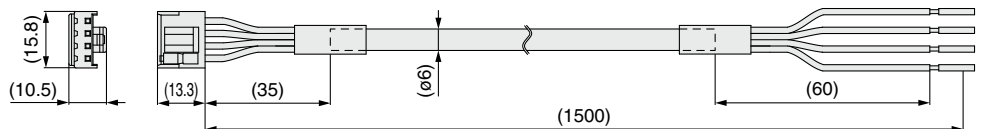
Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
		-	3

## Options

[Power supply cable]

LEC-CK1-1

Terminal name	Covered color	Function
0V	Blue	Common supply (-)
M24V	White	Motor power supply (+)
C24V	Brown	Control power supply (+)
BK RLS	Black	Lock release (+)



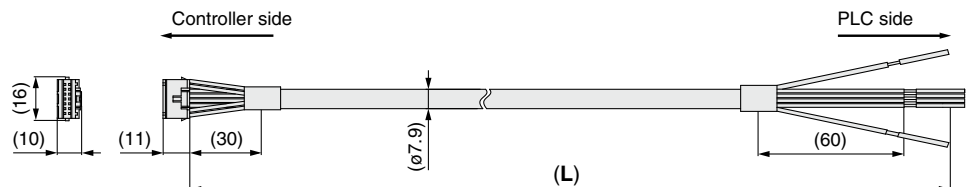
\* Conductor size: AWG20

[I/O cable]

LEC-CK4-

Cable length (L) [m]

1	1.5
3	3
5	5



\* Conductor size: AWG26

Terminal no.	Insulation color	Dot mark	Dot color	Function
1	Light brown	■	Black	COM+
2	Light brown	■	Red	COM-
3	Yellow	■	Black	OUT0
4	Yellow	■	Red	OUT1
5	Light green	■	Black	OUT2
6	Light green	■	Red	OUT3
7	Gray	■	Black	BUSY

Terminal no.	Insulation color	Dot mark	Dot color	Function
8	Gray	■	Red	ALARM
9	White	■	Black	IN0
10	White	■	Red	IN1
11	Light brown	■ ■	Black	IN2
12	Light brown	■ ■	Red	IN3
13	Yellow	■ ■	Black	RESET
14	Yellow	■ ■	Red	STOP

\* Parallel I/O signal is valid in auto mode. While the test function operates at manual mode, only the output is valid.

# Programless Controller Series **LECP1**



## How to Order

**LECP1N1** - **LEFS16A-400**

- Controller**: LECP1
- Compatible motor**: N (Step motor (Servo/24 VDC))
- Number of step data (Points)**: 1 (14 (Programless))
- Parallel I/O type**: N (NPN), P (PNP)
- Option**: Nil (Screw mounting), D (Note) (DIN rail mounting)  
Note) DIN rail is not included. Order it separately.
- I/O cable length [m]**: Nil (Without cable), 1 (1.5), 3 (3), 5 (5)
- Actuator part number**: LEFS16A-400  
(Except cable specifications and actuator options)  
Example: Enter "LEFS16A-400" for the LEFS16A-400B-R17N1.

\* When controller equipped type is selected when ordering the LE series, you do not need to order this controller.

### Caution

#### [CE-compliant products]

EMC compliance was tested by combining the electric actuator LEF series and the controller LEC series. The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore conformity to the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result it is necessary for the customer to verify conformity to the EMC directive for the machinery and equipment as a whole.

#### [UL-compliant products]

When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

**The controller is sold as single unit after the compatible actuator is set.**

Confirm that the combination of the controller and the actuator is correct.

\* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

## Specifications

### Basic Specifications

Item	LECP1
<b>Compatible motor</b>	Step motor (Servo/24 VDC)
<b>Power supply</b> <small>Note 1)</small>	Power supply voltage: 24 VDC $\pm 10\%$ , Max. current consumption: 3A (Peak 5A) <small>Note 2)</small> [Including the motor drive power, control power supply, stop, lock release]
<b>Parallel input</b>	6 inputs (Photo-coupler isolation)
<b>Parallel output</b>	6 outputs (Photo-coupler isolation)
<b>Stop points</b>	14 points (Position number 1 to 14(E))
<b>Compatible encoder</b>	Incremental A/B phase (800 pulse/rotation)
<b>Memory</b>	EEPROM
<b>LED indicator</b>	LED (Green/Red) one of each
<b>7-segment LED display</b> <small>Note 3)</small>	1 digit, 7-segment display (Red) Figures are expressed in hexadecimal ("10" to "15" in decimal number are expressed as "A" to "F")
<b>Lock control</b>	Forced-lock release terminal <small>Note 4)</small>
<b>Cable length [m]</b>	I/O cable: 5 or less, Actuator cable: 20 or less
<b>Cooling system</b>	Natural air cooling
<b>Operating temperature range [°C]</b>	0 to 40 (No freezing)
<b>Operating humidity range [%RH]</b>	90 or less (No condensation)
<b>Storage temperature range [°C]</b>	-10 to 60 (No freezing)
<b>Storage humidity range [%RH]</b>	90 or less (No condensation)
<b>Insulation resistance [MΩ]</b>	Between the housing and SG terminal: 50 (500 VDC)
<b>Weight [g]</b>	130 (Screw mounting), 150 (DIN rail mounting)

Note 1) Do not use the power supply of "inrush current prevention type" for the controller input power supply. When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

Note 2) The power consumption changes depending on the actuator model. Refer to the each actuator's operation manual etc. for details.

Note 3) "10" to "15" in decimal number are displayed as follows in the 7-segment LED.

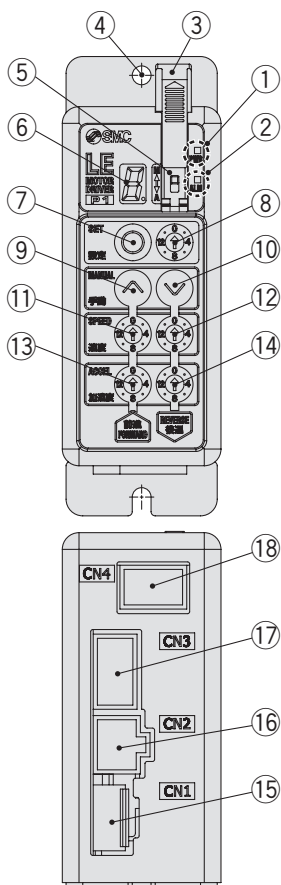


Decimal display: 10, 11, 12, 13, 14, 15  
Hexadecimal display: A, b, c, d, E, F

Note 4) Applicable to non-magnetizing lock.

# Series LECP1

## Controller Details



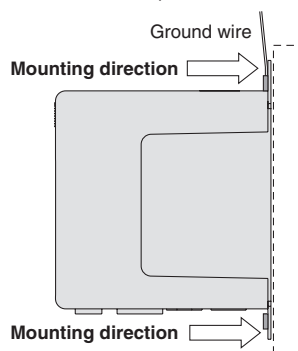
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③	—	Cover	Change and protection of the mode switch (Close the cover after changing switch)
④	—	FG	Frame ground (Tighten the bolt with the nut when mounting the controller. Connect the ground wire.)
⑤	—	Mode switch	Switch the mode between manual and auto.
⑥	—	7-segment LED	Stop position, the value set by ⑧ and alarm information are displayed.
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⑧	—	Position selecting switch	Assign the position to drive (1 to 14), and the origin position (15).
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⑩		Manual reverse button	Perform reverse jog and inching.
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⑫		Reverse speed switch	16 reverse speeds are available.
⑬	<b>ACCEL</b>	Forward acceleration switch	16 forward acceleration steps are available.
⑭		Reverse acceleration switch	16 reverse acceleration steps are available.
⑮	<b>CN1</b>	Power supply connector	Connect the power supply cable.
⑯	<b>CN2</b>	Motor connector	Connect the motor connector.
⑰	<b>CN3</b>	Encoder connector	Connect the encoder connector.
⑱	<b>CN4</b>	I/O connector	Connect I/O cable.

## How to Mount

Controller mounting shown below.

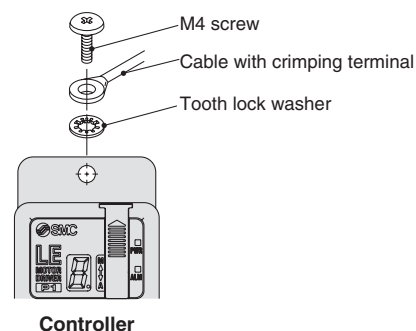
### 1. Mounting screw (LECP1□□-□)

(Installation with two M4 screws)



### 2. Grounding

Tighten the bolt with the nut when mounting the ground wire as shown below.



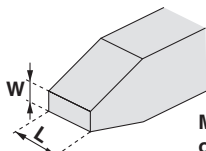
Note) When size 25 or more of the LEF series are used, the space between the controllers should be 10 mm or more.

### ⚠ Caution

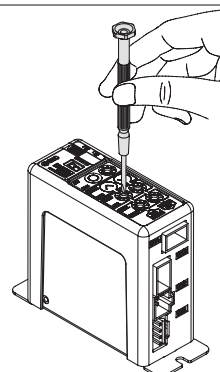
- M4 screws, cable with crimping terminal and tooth lock washer are not included. Be sure to carry out grounding earth in order to ensure the noise tolerance.
- Use a watchmaker's screwdriver of the size shown below when changing position switch ⑧ and the set value of the speed/acceleration switch ⑪ to ⑭.

#### Size

End width **L**: 2.0 to 2.4 [mm]  
End thickness **W**: 0.5 to 0.6 [mm]



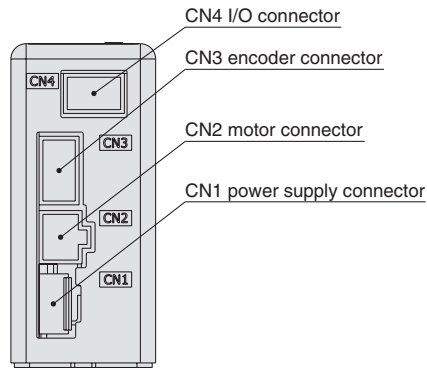
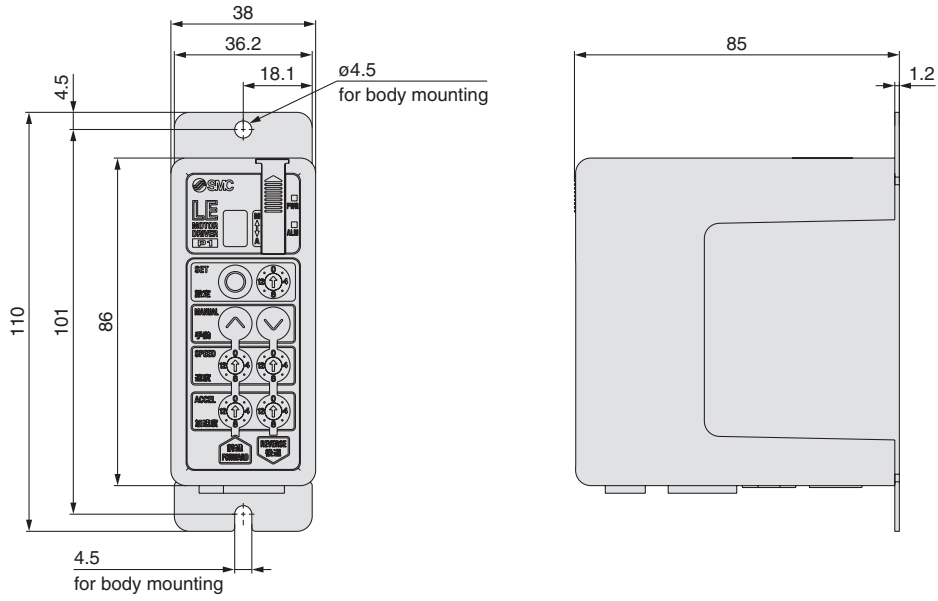
Magnified view of the end of the screwdriver



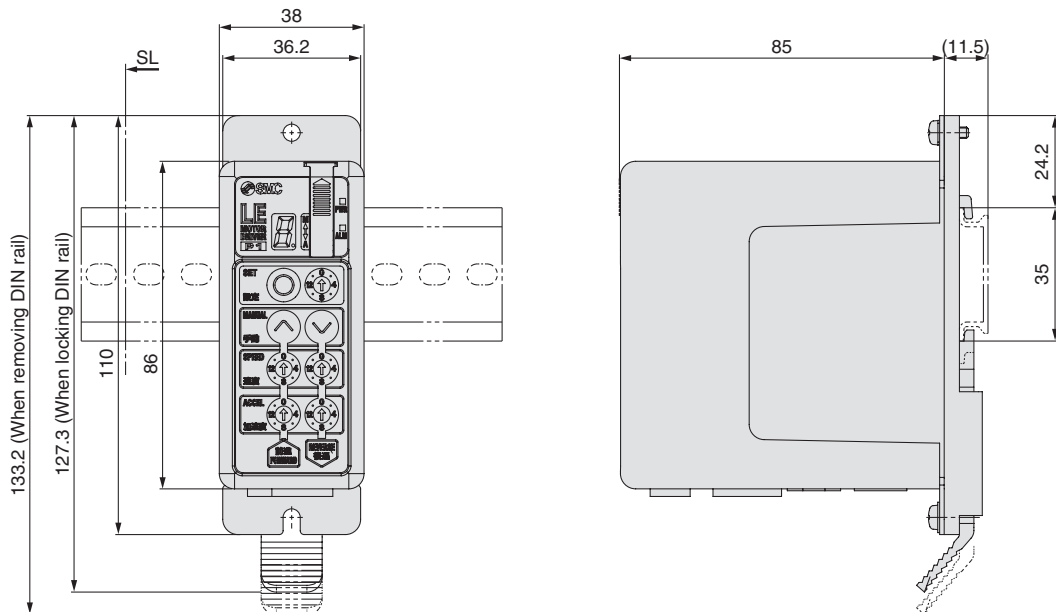


**Dimensions**

**Screw mounting (LEC□1□□-□)**



**DIN rail mounting (LEC□1□□D-□)**



Model Selection

Servo Motor (24 VDC)/Step Motor (Servo/24 VDC)

LEFS

LEFB

LECA6  
LECP6

LEC-G

LECP1

LECPA

AC Servo Motor

LEFS

LEFB

LECS□

Specific Product Precautions

# Series LECP1

## Wiring Example 1

### Power Supply Connector: CN1

- \* When you connect a CN1 power supply connector, please use the power supply cable (LEC-CK1-1).
- \* Power supply cable (LEC-CK1-1) is an accessory.

### CN1 Power Supply Connector Terminal for LECP1

Terminal name	Cable color	Function	Details
0V	Blue	Common supply (-)	M24V terminal/C24V terminal/BK RLS terminal are common (-).
M24V	White	Motor power supply (+)	Motor power supply (+) supplied to the controller
C24V	Brown	Control power supply (+)	Control power supply (+) supplied to the controller
BK RLS	Black	Lock release (+)	Input (+) for releasing the lock

### Power supply cable for LECP1 (LEC-CK1-1)

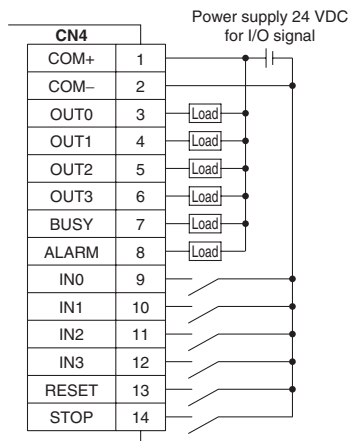


## Wiring Example 2

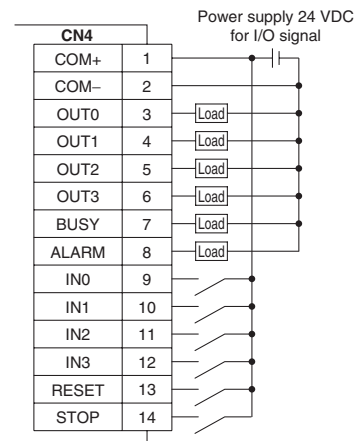
### Parallel I/O Connector: CN4

- \* When you connect a PLC, etc., to the CN4 parallel I/O connector, please use the I/O cable (LEC-CK4-□).
- \* The wiring should be changed depending on the type of the parallel I/O (NPN or PNP).

#### ■NPN



#### ■PNP



### Input Signal

Name	Details								
COM+	Connects the power supply 24 V for input/output signal								
COM-	Connects the power supply 0 V for input/output signal								
IN0 to IN3	<ul style="list-style-type: none"> <li>• Instruction to drive (input as a combination of IN0 to IN3)</li> <li>• Instruction to return to origin (IN0 to IN3 all ON simultaneously)</li> </ul> Example - (instruction to drive for position no. 5) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>IN3</th> <th>IN2</th> <th>IN1</th> <th>IN0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> </tbody> </table>	IN3	IN2	IN1	IN0	OFF	ON	OFF	ON
IN3	IN2	IN1	IN0						
OFF	ON	OFF	ON						
RESET	Alarm reset and operation interruption During operation: deceleration stop from position at which signal is input (servo ON maintained) While alarm is active: alarm reset								
STOP	Instruction to stop (after maximum deceleration stop, servo OFF)								

### Output Signal

Name	Details								
OUT0 to OUT3	Turns on when the positioning or pushing is completed. (Output is instructed in the combination of OUT0 to 3.) Example - (operation complete for position no. 3) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>OUT3</th> <th>OUT2</th> <th>OUT1</th> <th>OUT0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	OUT3	OUT2	OUT1	OUT0	OFF	OFF	ON	ON
OUT3	OUT2	OUT1	OUT0						
OFF	OFF	ON	ON						
BUSY	Outputs when the actuator is moving								
*ALARM (Note)	Not output when alarm is active or servo OFF								

Note) Signal of negative-logic circuit (N.C.)

### Input Signal [IN0 - IN3] Position Number Chart ○: OFF ●: ON

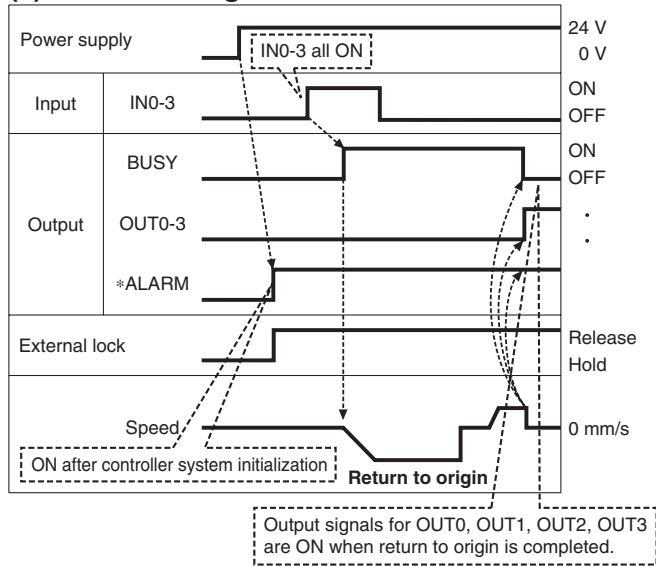
Position number	IN3	IN2	IN1	IN0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

### Output Signal [OUT0 - OUT3] Position Number Chart ○: OFF ●: ON

Position number	OUT3	OUT2	OUT1	OUT0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

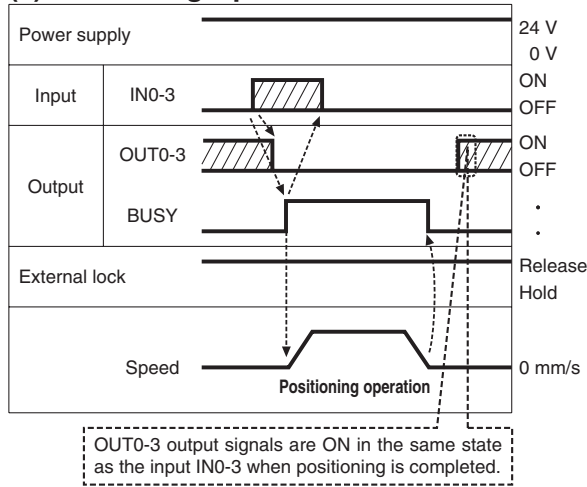
## Signal Timing

### (1) Return to Origin

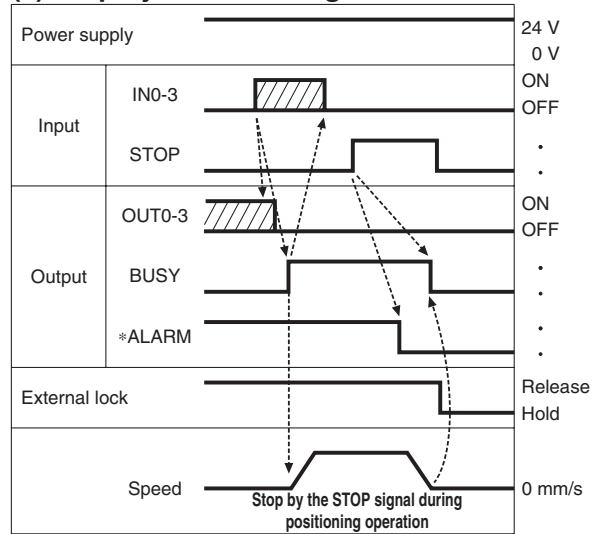


\* \*ALARM" is expressed as negative-logic circuit.

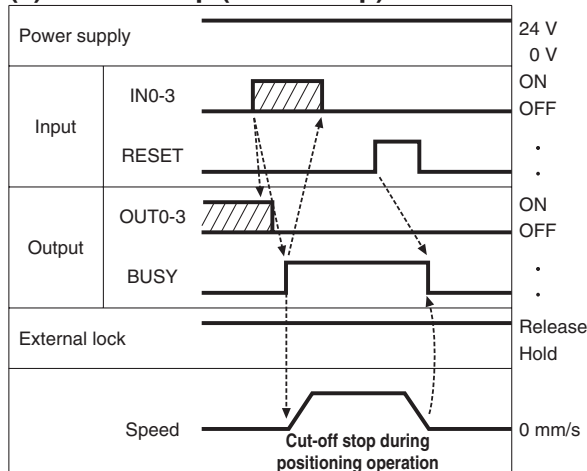
### (2) Positioning Operation



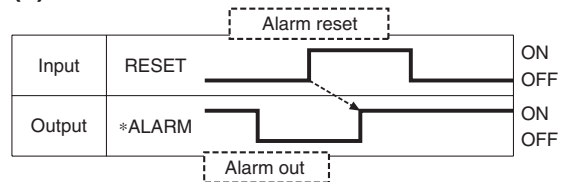
### (4) Stop by the STOP Signal



### (3) Cut-off Stop (Reset Stop)



### (5) Alarm Reset



\* \*ALARM" is expressed as negative-logic circuit.

# Series LECP1

## Options: Actuator Cable

[Robotic cable, standard cable for step motor (Servo/24 VDC)]

LE-CP-1-□

Cable length (L) [m]

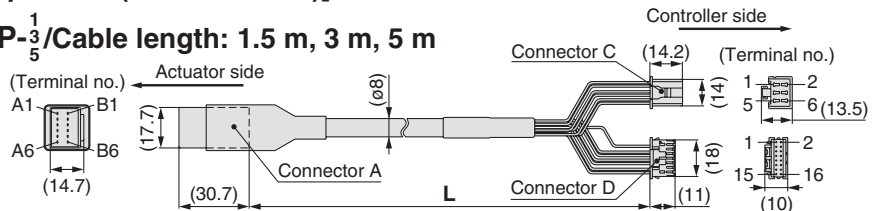
1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

\* Produced upon receipt of order (Robotic cable only)

Cable type

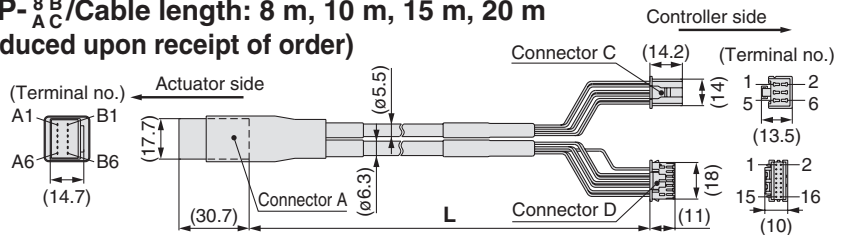
Nil	Robotic cable (Flexible cable)
S	Standard cable

LE-CP- $\frac{1}{5}$ /Cable length: 1.5 m, 3 m, 5 m



LE-CP- $\frac{8}{5}$ /Cable length: 8 m, 10 m, 15 m, 20 m

(\* Produced upon receipt of order)



Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
			3

[Robotic cable, standard cable with lock and sensor for step motor (Servo/24 VDC)]

LE-CP-1-B-□

Cable length (L) [m]

1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

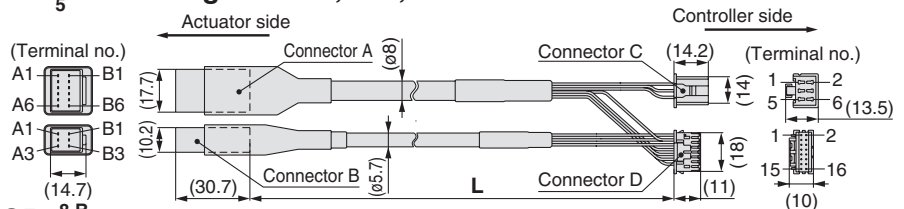
\* Produced upon receipt of order (Robotic cable only)

With lock and sensor

Cable type

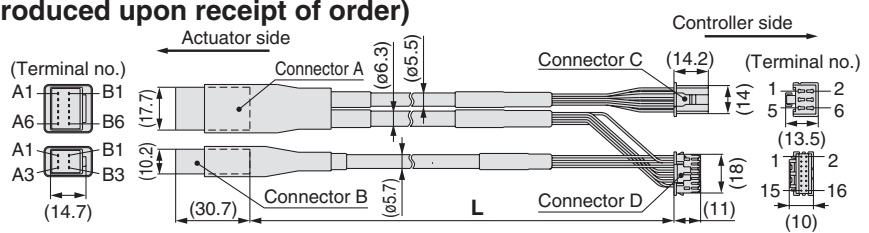
Nil	Robotic cable (Flexible cable)
S	Standard cable

LE-CP- $\frac{1}{5}$ /Cable length: 1.5 m, 3 m, 5 m



LE-CP- $\frac{8}{5}$ /Cable length: 8 m, 10 m, 15 m, 20 m

(\* Produced upon receipt of order)



Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
			3

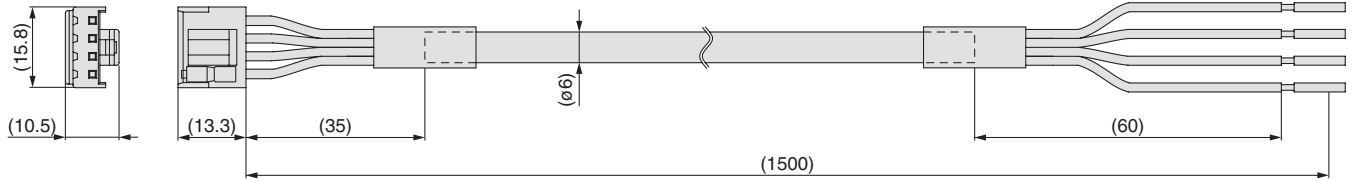
Signal	Connector B terminal no.	Cable color	Connector D terminal no.
Lock (+)	B-1	Red	4
Lock (-)	A-1	Black	5
Sensor (+) (Note)	B-3	Brown	1
Sensor (-) (Note)	A-3	Blue	2

Note) Not used for the LE series.

**Options**

[Power supply cable]

**LEC-CK1-1**



Terminal name	Covered color	Function
0V	Blue	Common supply (-)
M24V	White	Motor power supply (+)
C24V	Brown	Control power supply (+)
BK RLS	Black	Lock release (+)

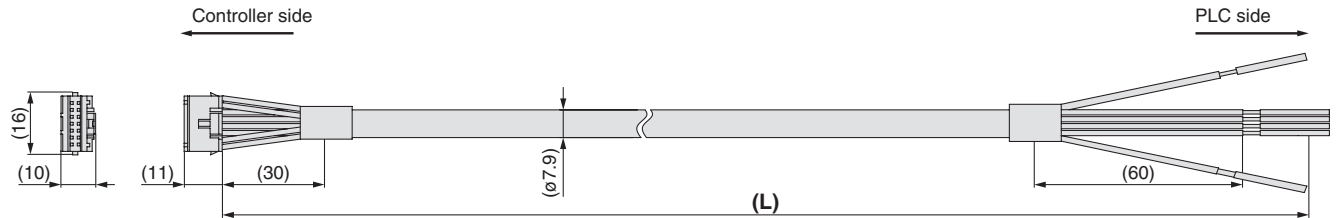
\* Conductor size: AWG20

[I/O cable]

**LEC-CK4-**

Cable length (L) [m]

1	1.5
3	3
5	5



Terminal no.	Insulation color	Dot mark	Dot color	Function
1	Light brown	■	Black	COM+
2	Light brown	■	Red	COM-
3	Yellow	■	Black	OUT0
4	Yellow	■	Red	OUT1
5	Light green	■	Black	OUT2
6	Light green	■	Red	OUT3
7	Gray	■	Black	BUSY
8	Gray	■	Red	ALARM
9	White	■	Black	IN0
10	White	■	Red	IN1
11	Light brown	■ ■	Black	IN2
12	Light brown	■ ■	Red	IN3
13	Yellow	■ ■	Black	RESET
14	Yellow	■ ■	Red	STOP

\* Conductor size: AWG26

\* Parallel I/O signal is valid in auto mode. While the test function operates at manual mode, only the output is valid.

Model Selection

Servo Motor (24 VDC)/Step Motor (Servo/24 VDC)

LEFS

LEFB

LECA6  
LECP6

LEC-G

LECP1

LECPA

AC Servo Motor

LEFS

LEFB

LECS

Specific Product Precautions

# Programless Controller Series *LECP1*



RoHS



Model Selection

## How to Order

**LECP1N1 - LEL25MT-100**

**Controller**

**Compatible motor**

<b>P</b>	Step motor (Servo/24 VDC)
----------	---------------------------

**Number of step data (Points)**

<b>1</b>	14 (Programless)
----------	------------------

**I/O cable length [m]**

	Without cable
<b>1</b>	1.5
<b>3</b>	3
<b>5</b>	5

**Parallel I/O type**

<b>N</b>	NPN
<b>P</b>	PNP

**Actuator part number**

(Except cable specifications and actuator options)  
Example: Enter "LEL25MT-100" for the LEL25MT-100B-R36N3.

**\* When controller equipped type (-□1N□/-□1P□) is selected when ordering the LE series, you do not need to order this controller.**

Step Motor (Servo/24 VDC)

LEL

LECP6

LECP1

Specific Product Precautions

**The controller is sold as single unit after the compatible actuator is set.**

Confirm that the combination of the controller and the actuator is correct.

\* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

## Specifications

### Basic Specifications

Item	Specifications
<b>Compatible motor</b>	Step motor (Servo/24 VDC)
<b>Power supply</b> <sup>Note 1)</sup>	Power supply voltage: 24 VDC ±10% Max. current consumption: 3 A (Peak 5 A) <sup>Note 2)</sup> [Including the motor drive power, control power supply, stop, lock release]
<b>Parallel input</b>	6 inputs (Photo-coupler isolation)
<b>Parallel output</b>	6 outputs (Photo-coupler isolation)
<b>Stop points</b>	14 points (Position number 1 to 14(E))
<b>Compatible encoder</b>	Incremental A/B phase (800 pulse/rotation)
<b>Serial communication</b>	RS485 (Modbus protocol compliant)
<b>Memory</b>	EEPROM
<b>LED indicator</b>	LED (Green/Red) one of each
<b>7-segment LED display</b> <sup>Note 3)</sup>	1 digit, 7-segment display (red) Figures are expressed in hexadecimal ("10" to "15" in decimal number are expressed as "A" to "F")
<b>Lock control</b>	Forced-lock release terminal <sup>Note 4)</sup>
<b>Cable length [m]</b>	I/O cable: 5 or less Actuator cable: 20 or less
<b>Cooling system</b>	Natural air cooling
<b>Operating temperature range</b>	32 to 104°F (0 to 40°C) (No freezing)
<b>Operating humidity range [%RH]</b>	90 or less (No condensation)
<b>Storage temperature range</b>	14 to 140°F (-10 to 60°C) (No freezing)
<b>Storage humidity range [%RH]</b>	90 or less (No condensation)
<b>Insulation resistance [MΩ]</b>	Between the housing (radiation fin) and SG terminal 50 (500 VDC)
<b>Weight</b>	4.6 oz (130 g)

Note 1) Do not use the power supply of "inrush current prevention type" for the controller input power supply.

Note 2) The power consumption changes depending on the actuator model. Refer to the each actuator's operation manual etc. for details.

Note 3) "10" to "15" in decimal number are displayed as follows in the 7-segment LED.



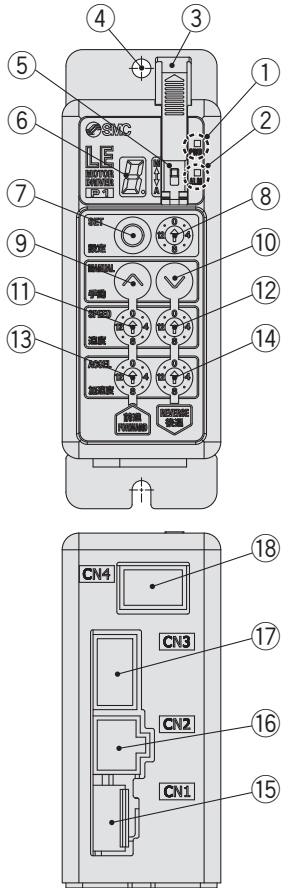
Decimal display	10	11	12	13	14	15
Hexadecimal display	A	b	c	d	E	F

Note 4) Applicable to non-magnetizing lock.



# Series LECP1

## Controller Details

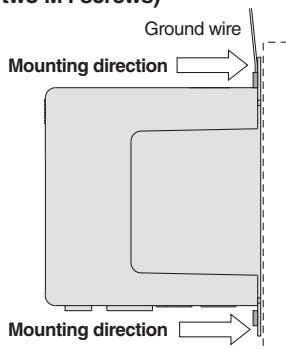


No.	Display	Description	Details
①	<b>PWR</b>	Power supply LED	Power supply ON/Servo ON: Green turns on Power supply ON/Servo OFF: Green flashes
②	<b>ALM</b>	Alarm LED	With alarm: Red turns on Parameter setting: Red flashes
③	—	Cover	Change and protection of the mode SW (Close the cover after changing SW)
④	—	FG	Frame ground (Tighten the bolt with the nut when mounting the controller. Connect the ground wire.)
⑤	—	Mode switch	Switch the mode between manual and auto.
⑥	—	7-segment LED	Stop position, the value set by ⑧ and alarm information are displayed.
⑦	<b>SET</b>	Set button	Decide the settings or drive operation in Manual mode.
⑧	—	Position selecting switch	Assign the position to drive (1 to 14), and the origin position (15).
⑨	<b>MANUAL</b>	Manual forward button	Perform forward jog and inching.
⑩		Manual reverse button	Perform reverse jog and inching.
⑪	<b>SPEED</b>	Forward speed switch	16 forward speeds are available.
⑫		Reverse speed switch	16 reverse speeds are available.
⑬	<b>ACCEL</b>	Forward acceleration switch	16 forward acceleration steps are available.
⑭		Reverse acceleration switch	16 reverse acceleration steps are available.
⑮	<b>CN1</b>	Power supply connector	Connect the power supply cable.
⑯	<b>CN2</b>	Motor connector	Connect the motor connector.
⑰	<b>CN3</b>	Encoder connector	Connect the encoder connector.
⑱	<b>CN4</b>	I/O connector	Connect I/O cable.

## How to Mount

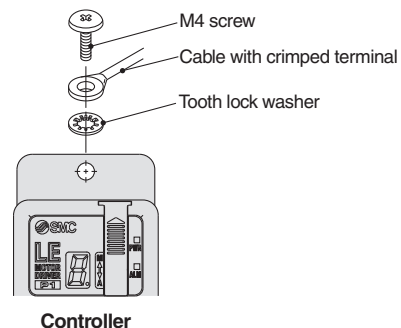
Controller mounting shown below.

### 1. Mounting screw (LECP1□□-□) (Installation with two M4 screws)



### 2. Grounding

Tighten the bolt with the nut when mounting the ground wire as shown below.

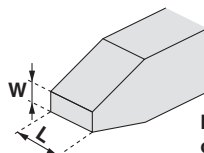


### ⚠ Caution

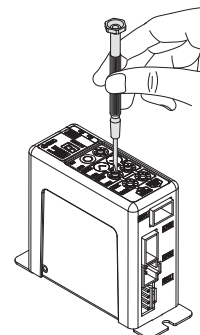
- M4 screws, cable with crimping terminal and tooth lock washer are not included. Be sure to carry out grounding earth in order to ensure the noise tolerance.
- Use a watchmaker's screwdriver of the size shown below when changing position switch ⑧ and the set value of the speed/acceleration switch ⑪ to ⑭.

#### Size

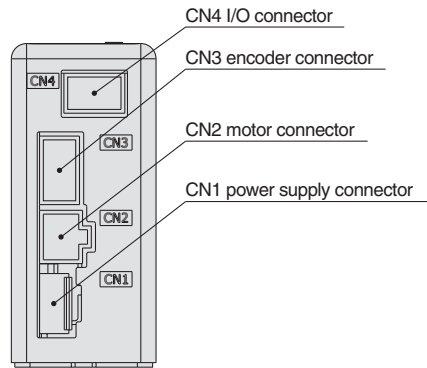
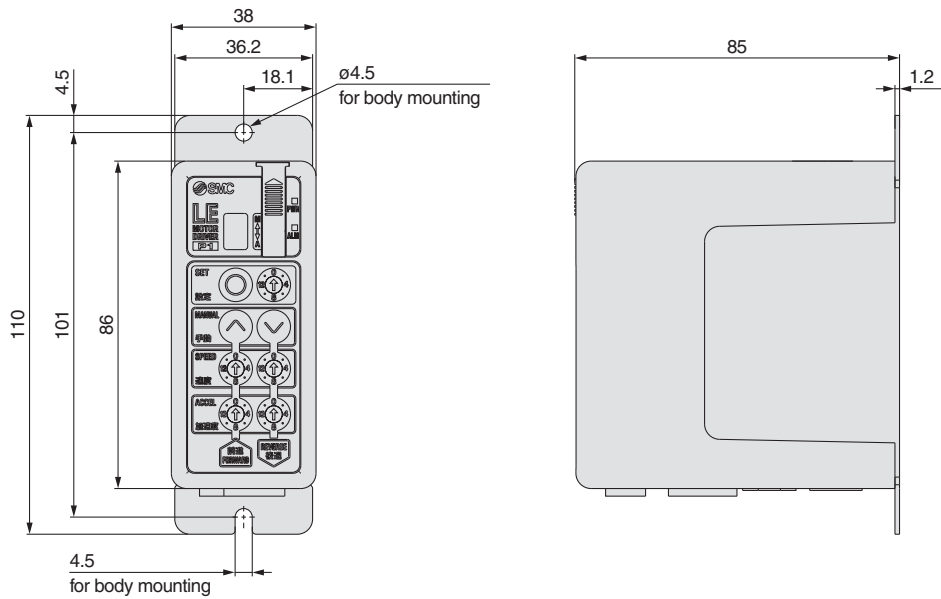
End width **L**: 2.0 to 2.4 [mm]  
End thickness **W**: 0.5 to 0.6 [mm]



Magnified view of the end of the screwdriver



**Dimensions**



Model Selection

Step Motor (Servo/24 VDC)

**LEL**

**LECP6**

**LECP1**

Specific Product  
Precautions



# Series LECP1

## Wiring Example 1

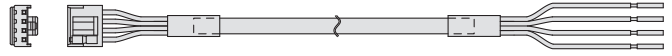
### Power Supply Connector: CN1

\* When you connect a CN1 power supply connector, please use the power supply cable (LEC-CK1-1).  
 \* Power supply cable (LEC-CK1-1) is an accessory.

### CN1 Power Supply Connector Terminal for LECP1

Terminal name	Cable color	Function	Details
0V	Blue	Common supply (-)	M24V terminal/C24V terminal/BK RLS terminal are common (-).
M24V	White	Motor power supply (+)	Motor power supply (+) supplied to the controller
C24V	Brown	Control power supply (+)	Control power supply (+) supplied to the controller
BK RLS	Black	Lock release (+)	Input (+) for releasing the lock

### Power supply cable for LECP1 (LEC-CK1-1)

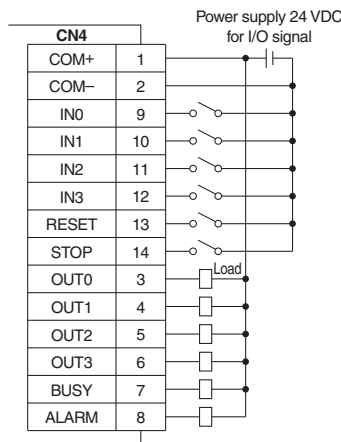


## Wiring Example 2

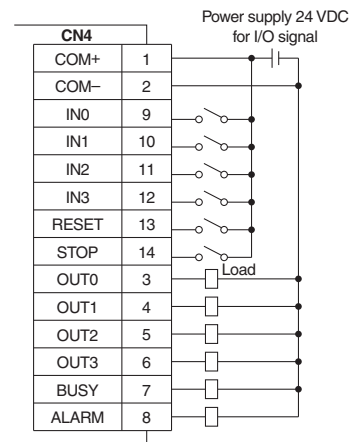
### Parallel I/O Connector: CN4

\* When you connect a PLC, etc., to the CN4 parallel I/O connector, please use the I/O cable (LEC-CK4-□).  
 \* The wiring should be changed depending on the type of the parallel I/O (NPN or PNP).

#### ■ NPN



#### ■ PNP



### Input Signal

Name	Details								
COM+	Connects the power supply 24 V for input/output signal								
COM-	Connects the power supply 0 V for input/output signal								
IN0 to IN3	<ul style="list-style-type: none"> <li>Instruction to drive (input as a combination of IN0 to IN3)</li> <li>Instruction to return to the origin position (IN0 to IN3 all ON simultaneously)</li> </ul> <p>Example - (instruction to drive for position no. 5)</p> <table border="1"> <tr> <td>IN3</td> <td>IN2</td> <td>IN1</td> <td>IN0</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> </table>	IN3	IN2	IN1	IN0	OFF	ON	OFF	ON
IN3	IN2	IN1	IN0						
OFF	ON	OFF	ON						
RESET	Alarm reset and operation interruption During operation: deceleration stop from position at which signal is input (servo ON maintained) While alarm is active: alarm reset								
STOP	Instruction to stop (after maximum deceleration stop, servo OFF)								

### Input Signal [IN0 - IN3] Position Number Chart

○: OFF ●: ON

Position number	IN3	IN2	IN1	IN0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

### Output Signal

Name	Details
OUT0 to OUT3	Turns on when the positioning or pushing is completed. (Output is instructed in the combination of OUT0 to 3.) Example - (operation complete for position no. 3)
BUSY	Outputs when the actuator is moving
*ALARM <sup>Note)</sup>	Not output when alarm is active or servo OFF

OUT3	OUT2	OUT1	OUT0
OFF	OFF	ON	ON

Note) Signal of negative-logic circuit (N.C.)

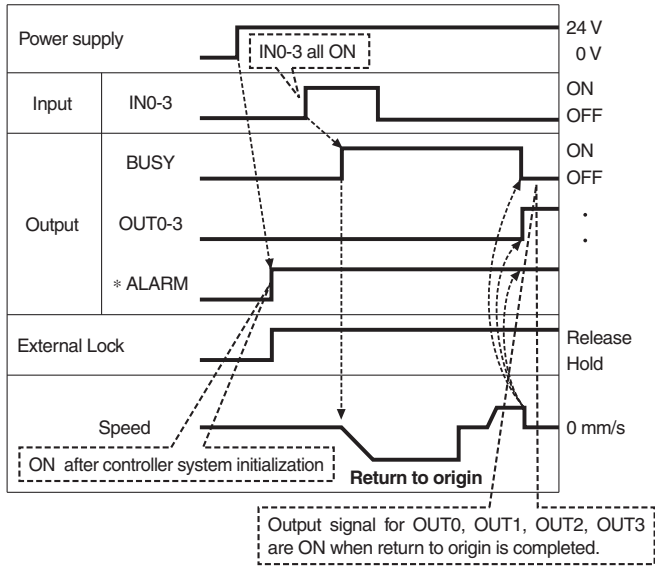
### Output Signal [OUT0 - OUT3] Position Number Chart

○: OFF ●: ON

Position number	OUT3	OUT2	OUT1	OUT0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

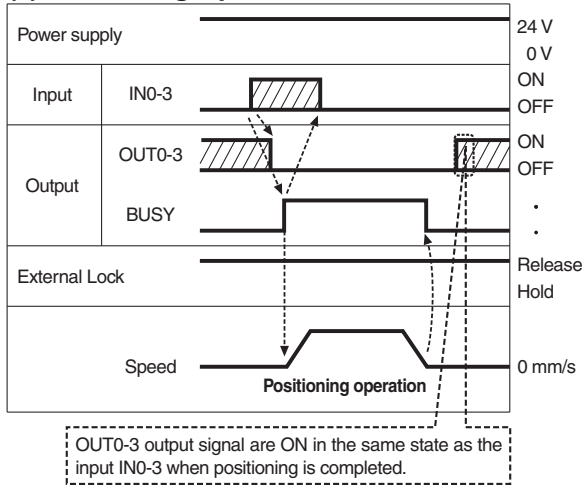
## Signal Timing

### (1) Return to Origin

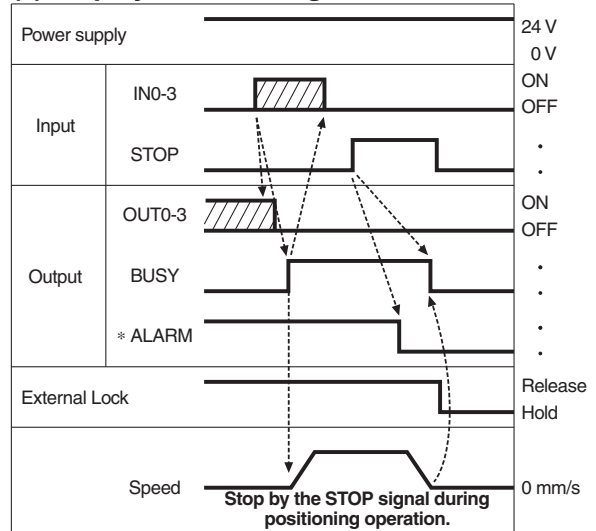


\*ALARM is expressed as negative-logic circuit.

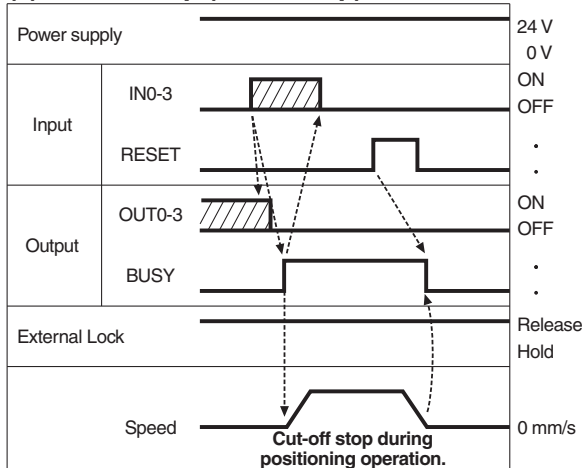
### (2) Positioning Operation



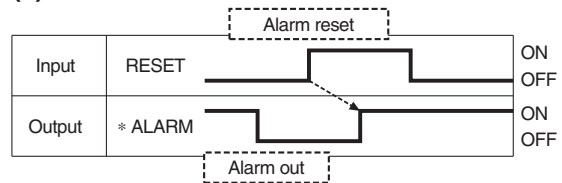
### (4) Stop by the STOP Signal



### (3) Cut-off Stop (Reset Stop)



### (5) Alarm Reset



# Series LECP1

## Options: Actuator Cable

[Robotic cable, standard cable for step motor (servo/24 VDC)]

LE-CP-1-

Cable length(L)[m]

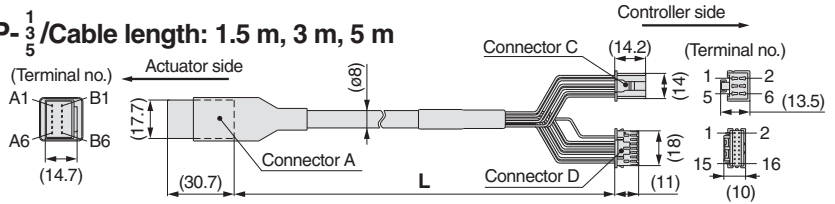
1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

\* Produced upon receipt of order (Robotic cable only)

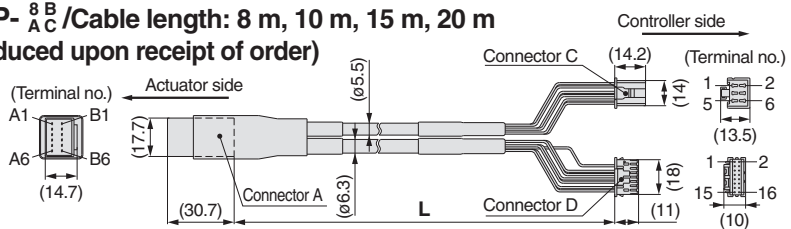
Cable type

Nil	Robotic cable (Flexible cable)
S	Standard cable

LE-CP- $\frac{1}{3}$  / Cable length: 1.5 m, 3 m, 5 m



LE-CP- $\frac{8}{AC}$  / Cable length: 8 m, 10 m, 15 m, 20 m  
(\* Produced upon receipt of order)



Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
			3

[Robotic cable, standard cable with lock and sensor for step motor (servo/24 VDC)]

LE-CP-1-B-

Cable length(L)[m]

1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

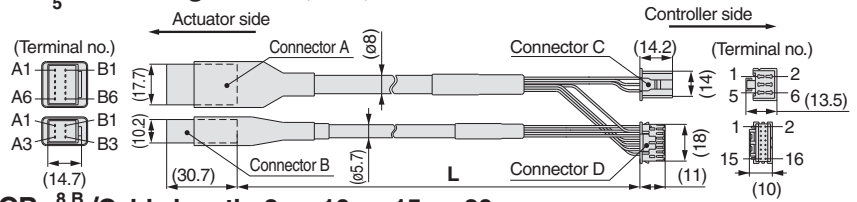
\* Produced upon receipt of order (Robotic cable only)

With lock and sensor

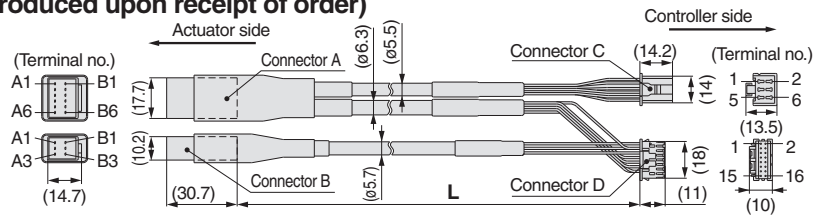
Cable type

Nil	Robotic cable (Flexible cable)
S	Standard cable

LE-CP- $\frac{1}{3}$  / Cable length: 1.5 m, 3 m, 5 m



LE-CP- $\frac{8}{AC}$  / Cable length: 8 m, 10 m, 15 m, 20 m  
(\* Produced upon receipt of order)



Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
			3

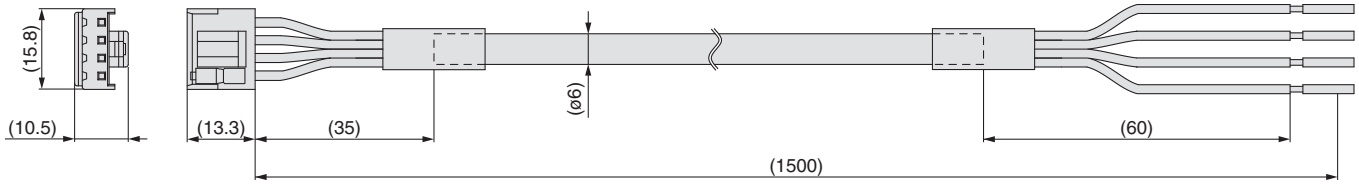
Signal	Connector B terminal no.	Cable color	Connector D terminal no.
Lock (+)	B-1	Red	4
Lock (-)	A-1	Black	5
Sensor (+) (Note)	B-3	Brown	1
Sensor (-) (Note)	A-3	Blue	2

Note) This is not used for the LEL series.

**Options**

[Power supply cable]

**LEC-CK1-1**



Terminal name	Covered color	Function
0 V	Blue	Common supply (-)
M24 V	White	Motor power supply (+)
C24 V	Brown	Control power supply (+)
BK RLS	Black	Lock release (+)

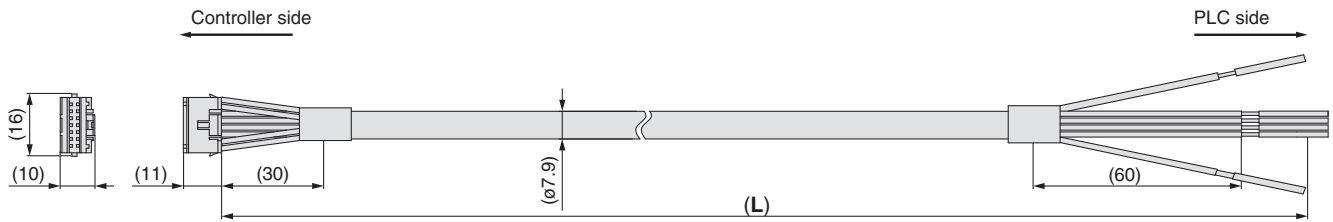
\* Conductor size: AWG20

[I/O cable]

**LEC-CK4-**

Cable length(L)[m]

<b>1</b>	1.5
<b>3</b>	3
<b>5</b>	5



\* Conductor size: AWG26

Terminal no.	Insulation color	Dot mark	Dot color	Function
1	Light brown	■	Black	COM +
2	Light brown	■	Red	COM -
3	Yellow	■	Black	OUT0
4	Yellow	■	Red	OUT1
5	Light green	■	Black	OUT2
6	Light green	■	Red	OUT3
7	Gray	■	Black	BUSY
8	Gray	■	Red	ALARM
9	White	■	Black	IN0
10	White	■	Red	IN1
11	Light brown	■ ■	Black	IN2
12	Light brown	■ ■	Red	IN3
13	Yellow	■ ■	Black	RESET
14	Yellow	■ ■	Red	STOP

\* Parallel I/O signal is valid in auto mode. While the test function operates at manual mode, only the output is valid.

Model Selection

Step Motor (Servo/24 VDC)

**LEL**

**LECP6**

**LECP1**

Specific Product  
Precautions

# Programless Controller Series *LECP1*



## How to Order

**LECP1N1-LEPY10K-50**

<p><b>Controller</b></p> <p><b>Compatible motor</b></p> <table border="1"> <tr> <td><b>P</b></td> <td>Step motor (Servo/24 VDC)</td> </tr> </table> <p><b>Number of step data (Points)</b></p> <table border="1"> <tr> <td><b>1</b></td> <td>14 (Programless)</td> </tr> </table> <p><b>Parallel I/O type</b></p> <table border="1"> <tr> <td><b>N</b></td> <td>NPN</td> </tr> <tr> <td><b>P</b></td> <td>PNP</td> </tr> </table>	<b>P</b>	Step motor (Servo/24 VDC)	<b>1</b>	14 (Programless)	<b>N</b>	NPN	<b>P</b>	PNP	<p><b>Option</b></p> <table border="1"> <tr> <td><b>Nil</b></td> <td>Screw mounting</td> </tr> <tr> <td><b>D</b> (Note)</td> <td>DIN rail mounting</td> </tr> </table> <p>Note) DIN rail is not included. Order it separately.</p> <p><b>I/O cable length [m]</b></p> <table border="1"> <tr> <td><b>Nil</b></td> <td>Without cable</td> </tr> <tr> <td><b>1</b></td> <td>1.5</td> </tr> <tr> <td><b>3</b></td> <td>3</td> </tr> <tr> <td><b>5</b></td> <td>5</td> </tr> </table>	<b>Nil</b>	Screw mounting	<b>D</b> (Note)	DIN rail mounting	<b>Nil</b>	Without cable	<b>1</b>	1.5	<b>3</b>	3	<b>5</b>	5	<p><b>Actuator part number</b></p> <p>(Except cable specifications and actuator options) Example: Enter "LEPY10K-50" for the LEPY10K-50U-R11N1.</p> <p>* When controller equipped type is selected when ordering the LE series, you do not need to order this controller.</p>
<b>P</b>	Step motor (Servo/24 VDC)																					
<b>1</b>	14 (Programless)																					
<b>N</b>	NPN																					
<b>P</b>	PNP																					
<b>Nil</b>	Screw mounting																					
<b>D</b> (Note)	DIN rail mounting																					
<b>Nil</b>	Without cable																					
<b>1</b>	1.5																					
<b>3</b>	3																					
<b>5</b>	5																					

### Caution

#### [CE-compliant products]

EMC compliance was tested by combining the electric actuator LEP series and the controller LEC series. The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore conformity to the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result it is necessary for the customer to verify conformity to the EMC directive for the machinery and equipment as a whole.

#### [UL-compliant products]

When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

**The controller is sold as single unit after the compatible actuator is set.**

Confirm that the combination of the controller and the actuator is correct.

\* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

## Specifications

### Basic Specifications

Item	LECP1
<b>Compatible motor</b>	Step motor (Servo/24 VDC)
<b>Power supply</b> <sup>Note 1)</sup>	Power supply voltage: 24 VDC ±10%, Max. current consumption: 3 A (Peak 5 A) <sup>Note 2)</sup> [Including the motor drive power, control power supply, stop, lock release]
<b>Parallel input</b>	6 inputs (Photo-coupler isolation)
<b>Parallel output</b>	6 outputs (Photo-coupler isolation)
<b>Stop points</b>	14 points (Position number 1 to 14(E))
<b>Compatible encoder</b>	Incremental A/B phase (800 pulse/rotation)
<b>Serial communication</b>	RS485 (Modbus protocol compliant)
<b>Memory</b>	EEPROM
<b>LED indicator</b>	LED (Green/Red) one of each
<b>7-segment LED display</b> <sup>Note 3)</sup>	1 digit, 7-segment display (Red) Figures are expressed in hexadecimal ("10" to "15" in decimal number are expressed as "A" to "F")
<b>Lock control</b>	Forced-lock release terminal <sup>Note 4)</sup>
<b>Cable length [m]</b>	I/O cable: 5 or less, Actuator cable: 20 or less
<b>Cooling system</b>	Natural air cooling
<b>Operating temperature range</b>	32 to 104°F (0 to 40°C) (No freezing)
<b>Operating humidity range [%RH]</b>	90 or less (No condensation)
<b>Storage temperature range</b>	14 to 140°F (-10 to 60°C) (No freezing)
<b>Storage humidity range [%RH]</b>	90 or less (No condensation)
<b>Insulation resistance [MΩ]</b>	Between the housing and SG terminal: 50 (500 VDC)
<b>Weight</b>	4.6 oz (130 g) (Screw mounting), 5.3 oz (150 g) (DIN rail mounting)

Note 1) Do not use the power supply of "inrush current prevention type" for the controller input power supply. When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

Note 2) The power consumption changes depending on the actuator model. Refer to the each actuator's operation manual etc. for details.

Note 3) "10" to "15" in decimal number are displayed as follows in the 7-segment LED.

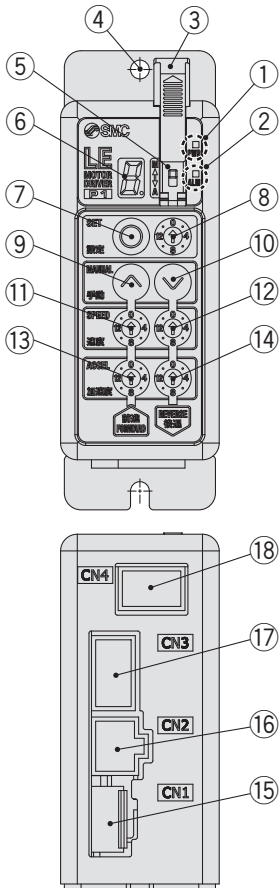


Decimal display	10	11	12	13	14	15
Hexadecimal display	A	b	c	d	E	F

Note 4) Applicable to non-magnetizing lock.

Model Selection  
 LEPY  
 LEPY  
 LEP6  
 LEC-G  
 LECP1  
 LECPA  
 Specific Product Precautions

## Controller Details

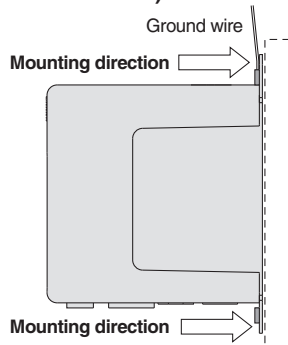


No.	Display	Description	Details
①	<b>PWR</b>	Power supply LED	Power supply ON/Servo ON : Green turns on Power supply ON/Servo OFF : Green flashes
②	<b>ALM</b>	Alarm LED	With alarm : Red turns on Parameter setting : Red flashes
③	—	Cover	Change and protection of the mode SW (Close the cover after changing SW)
④	—	FG	Frame ground (Tighten the bolt with the nut when mounting the controller. Connect the ground wire.)
⑤	—	Mode switch	Switch the mode between manual and auto.
⑥	—	7-segment LED	Stop position, the value set by ⑧ and alarm information are displayed.
⑦	<b>SET</b>	Set button	Decide the settings or drive operation in Manual mode.
⑧	—	Position selecting switch	Assign the position to drive (1 to 14), and the origin position (15).
⑨	<b>MANUAL</b>	Manual forward button	Perform forward jog and inching.
⑩		Manual reverse button	Perform reverse jog and inching.
⑪	<b>SPEED</b>	Forward speed switch	16 forward speeds are available.
⑫		Reverse speed switch	16 reverse speeds are available.
⑬	<b>ACCEL</b>	Forward acceleration switch	16 forward acceleration steps are available.
⑭		Reverse acceleration switch	16 reverse acceleration steps are available.
⑮	<b>CN1</b>	Power supply connector	Connect the power supply cable.
⑯	<b>CN2</b>	Motor connector	Connect the motor connector.
⑰	<b>CN3</b>	Encoder connector	Connect the encoder connector.
⑱	<b>CN4</b>	I/O connector	Connect I/O cable.

## How to Mount

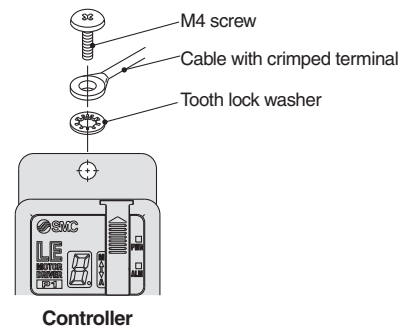
Controller mounting shown below.

### 1. Mounting screw (LECP1□□-□) (Installation with two M4 screws)



### 2. Grounding

Tighten the bolt with the nut when mounting the ground wire as shown below.



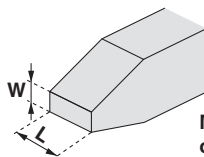
### ⚠ Caution

- M4 screws, cable with crimping terminal and tooth lock washer are not included. Be sure to carry out grounding earth in order to ensure the noise tolerance.
- Use a watchmaker's screwdriver of the size shown below when changing position switch ⑧ and the set value of the speed/acceleration switch ⑪ to ⑭.

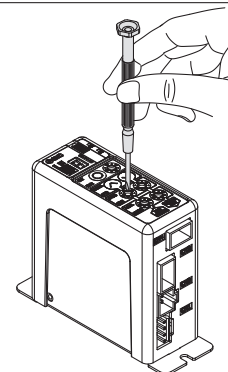
#### Size

End width **L**: 2.0 to 2.4 [mm]

End thickness **W**: 0.5 to 0.6 [mm]

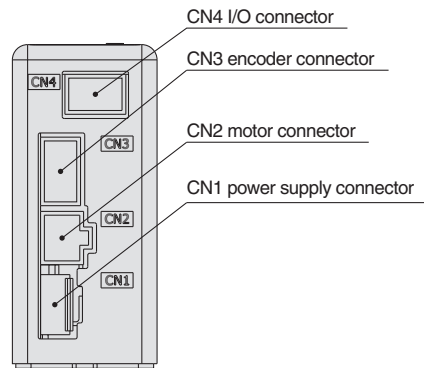
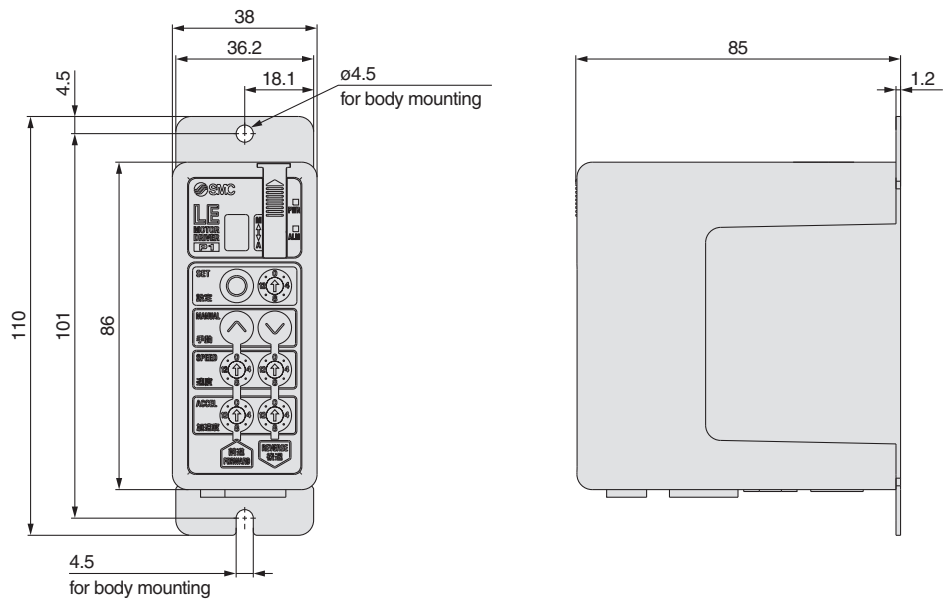


Magnified view of the end of the screwdriver



# Series LECP1

## Dimensions



## Wiring Example 1

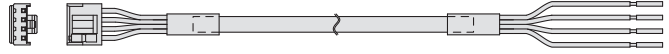
### Power Supply Connector: CN1

- \* When you connect a CN1 power supply connector, please use the power supply cable (LEC-CK1-1).
- \* Power supply cable (LEC-CK1-1) is an accessory.

### CN1 Power Supply Connector Terminal for LECP1

Terminal name	Cable color	Function	Details
0V	Blue	Common supply (-)	M24V terminal/C24V terminal/BK RLS terminal are common (-).
M24V	White	Motor power supply (+)	Motor power supply (+) supplied to the controller
C24V	Brown	Control power supply (+)	Control power supply (+) supplied to the controller
BK RLS	Black	Lock release (+)	Input (+) for releasing the lock

### Power supply cable for LECP1 (LEC-CK1-1)

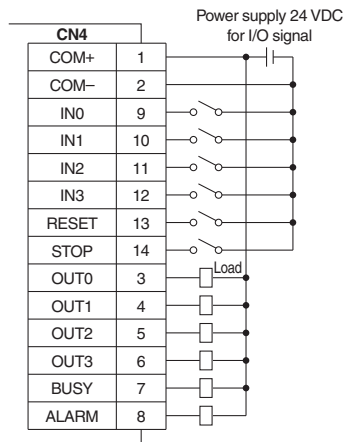


## Wiring Example 2

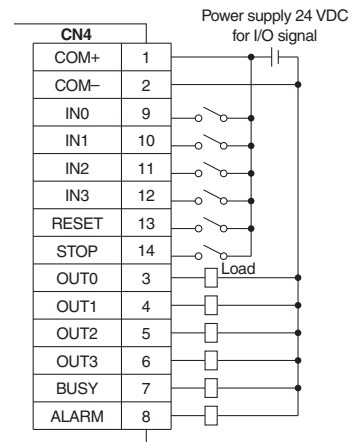
### Parallel I/O Connector: CN4

- \* When you connect a PLC, etc., to the CN4 parallel I/O connector, please use the I/O cable (LEC-CK4-□).
- \* The wiring should be changed depending on the type of the parallel I/O (NPN or PNP).

#### ■ NPN



#### ■ PNP



### Input Signal

Name	Details								
COM+	Connects the power supply 24 V for input/output signal								
COM-	Connects the power supply 0 V for input/output signal								
IN0 to IN3	<ul style="list-style-type: none"> <li>• Instruction to drive (input as a combination of IN0 to IN3)</li> <li>• Instruction to return to the origin position (IN0 to IN3 all ON simultaneously)</li> </ul> <p>Example - (instruction to drive for position no. 5)</p> <table border="1"> <thead> <tr> <th>IN3</th> <th>IN2</th> <th>IN1</th> <th>IN0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> </tbody> </table>	IN3	IN2	IN1	IN0	OFF	ON	OFF	ON
IN3	IN2	IN1	IN0						
OFF	ON	OFF	ON						
RESET	Alarm reset and operation interruption During operation : deceleration stop from position at which signal is input (servo ON maintained) While alarm is active : alarm reset								
STOP	Instruction to stop (after maximum deceleration stop, servo OFF)								

### Input Signal [IN0 - IN3] Position Number Chart ○: OFF ●: ON

Position number	IN3	IN2	IN1	IN0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

### Output Signal

Name	Details								
OUT0 to OUT3	Turns on when the positioning or pushing is completed. (Output is instructed in the combination of OUT0 to 3.) Example - (operation complete for position no. 3)								
	<table border="1"> <thead> <tr> <th>OUT3</th> <th>OUT2</th> <th>OUT1</th> <th>OUT0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	OUT3	OUT2	OUT1	OUT0	OFF	OFF	ON	ON
OUT3	OUT2	OUT1	OUT0						
OFF	OFF	ON	ON						
BUSY	Outputs when the actuator is moving								
*ALARM (Note)	Not output when alarm is active or servo OFF								

Note) Signal of negative-logic circuit (N.C.)

### Output Signal [OUT0 - OUT3] Position Number Chart ○: OFF ●: ON

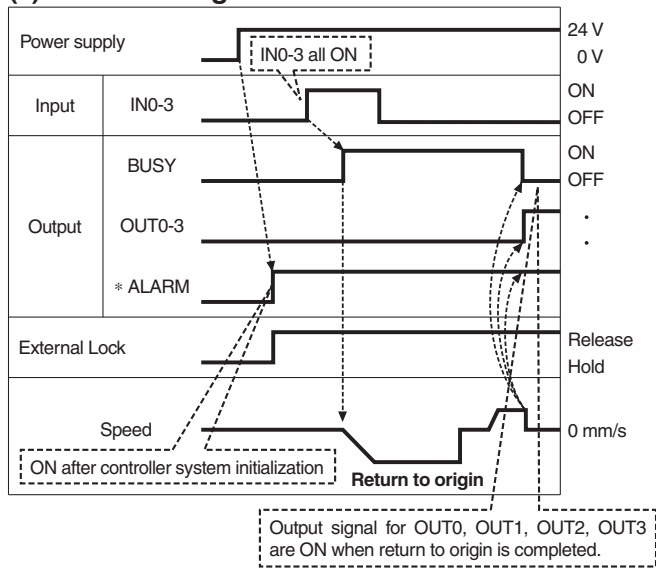
Position number	OUT3	OUT2	OUT1	OUT0
1	○	○	○	●
2	○	○	●	○
3	○	○	○	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●



# Series LECP1

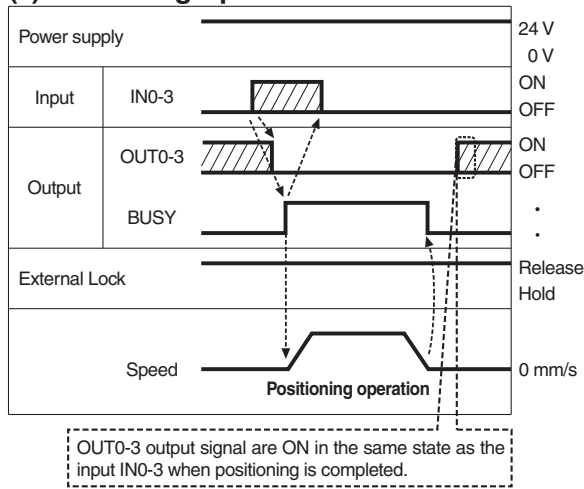
## Signal Timing

### (1) Return to Origin

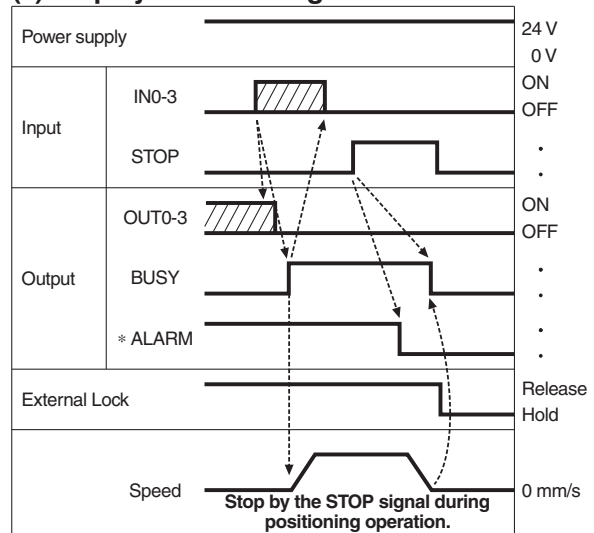


\*ALARM is expressed as negative-logic circuit.

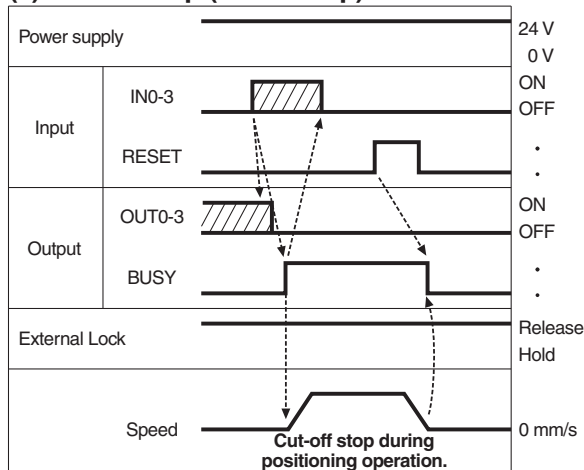
### (2) Positioning Operation



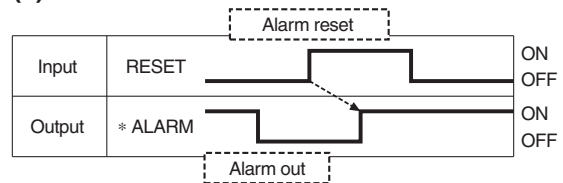
### (4) Stop by the STOP Signal



### (3) Cut-off Stop (Reset Stop)



### (5) Alarm Reset



\*ALARM is expressed as negative-logic circuit.

## Options: Actuator Cable

[Robotic cable, standard cable for step motor (servo/24 VDC)]

**LE – CP – 1 –**   

Cable length(L)[m]

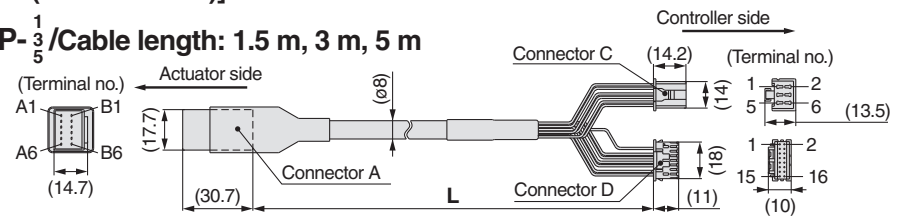
1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

\* Produced upon receipt of order  
(Robotic cable only)

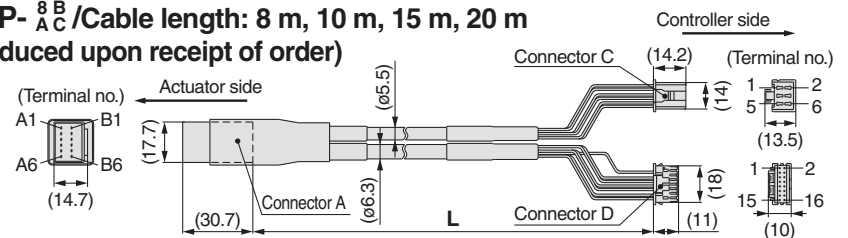
Cable type

Nil	Robotic cable (Flexible cable)
S	Standard cable

**LE-CP- $\frac{1}{5}$**  /Cable length: 1.5 m, 3 m, 5 m



**LE-CP- $\frac{8B}{AC}$**  /Cable length: 8 m, 10 m, 15 m, 20 m  
(\* Produced upon receipt of order)



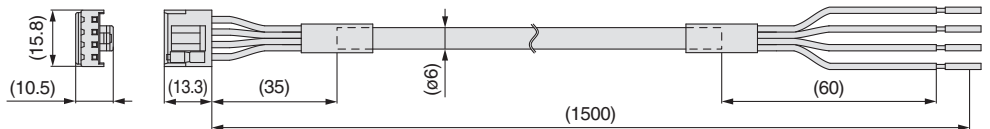
Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
			3

## Options

[Power supply cable]

**LEC – CK1 – 1**

Terminal name	Covered color	Function
0V	Blue	Common supply (-)
M24V	White	Motor power supply (+)
C24V	Brown	Control power supply (+)
BK RLS	Black	Lock release (+)



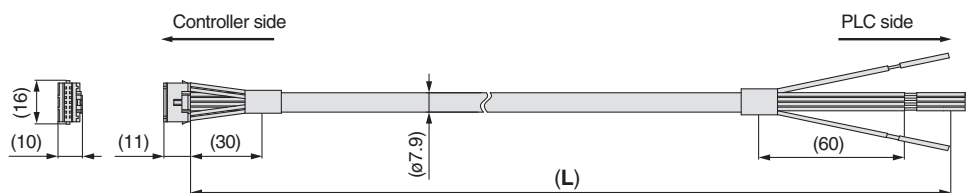
\* Conductor size: AWG20

[I/O cable]

**LEC – CK4 –**   

Cable length(L)[m]

1	1.5
3	3
5	5



\* Conductor size: AWG26

Terminal no.	Insulation color	Dot mark	Dot color	Function
1	Light brown	■	Black	COM +
2	Light brown	■	Red	COM -
3	Yellow	■	Black	OUT0
4	Yellow	■	Red	OUT1
5	Light green	■	Black	OUT2
6	Light green	■	Red	OUT3
7	Gray	■	Black	BUSY

Terminal no.	Insulation color	Dot mark	Dot color	Function
8	Gray	■	Red	ALARM
9	White	■	Black	IN0
10	White	■	Red	IN1
11	Light brown	■ ■	Black	IN2
12	Light brown	■ ■	Red	IN3
13	Yellow	■ ■	Black	RESET
14	Yellow	■ ■	Red	STOP

\* Parallel I/O signal is valid in auto mode. While the test function operates at manual mode, only the output is valid.

# Programless Controller Series *LECP1*



Model Selection

Step Motor (Servo/24 VDC)

LER

LECP6

LEC-G

LECP1

LECPA

Specific Product Precautions

## How to Order

**LECP1N1** - **LER10K-2**

**Controller**

**Compatible motor**

<b>P</b>	Step motor (Servo/24 VDC)
----------	---------------------------

**Number of step data (Points)**

<b>1</b>	14 (Programless)
----------	------------------

**Parallel I/O type**

<b>N</b>	NPN
<b>P</b>	PNP

**Option**

<b>Nil</b>	Screw mounting
<b>D</b> (Note)	DIN rail mounting

Note) DIN rail is not included. Order it separately.

**I/O cable length [m]**

<b>Nil</b>	Without cable
<b>1</b>	1.5
<b>3</b>	3
<b>5</b>	5

**Actuator part number**  
(Except cable specifications and actuator options)  
Example: Enter "LER10K-2" for the LER10K-2L-R11N1.

\* When controller equipped type is selected when ordering the LE series, you do not need to order this controller.

### Caution

#### [CE-compliant products]

EMC compliance was tested by combining the electric actuator LER series and the controller LEC series. The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore conformity to the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result it is necessary for the customer to verify conformity to the EMC directive for the machinery and equipment as a whole.

#### [UL-compliant products]

When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

**The controller is sold as single unit after the compatible actuator is set.**

Confirm that the combination of the controller and the actuator is correct.

\* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

## Specifications

### Basic Specifications

Item	LECP1
<b>Compatible motor</b>	Step motor (Servo/24 VDC)
<b>Power supply</b> (Note 1)	Power supply voltage: 24 VDC ±10%, Max. current consumption: 3A (Peak 5A) (Note 2) [Including the motor drive power, control power supply, stop, lock release]
<b>Parallel input</b>	6 inputs (Photo-coupler isolation)
<b>Parallel output</b>	6 outputs (Photo-coupler isolation)
<b>Stop points</b>	14 points (Position number 1 to 14(E))
<b>Compatible encoder</b>	Incremental A/B phase (800 pulse/rotation)
<b>Serial communication</b>	RS485 (Modbus protocol compliant)
<b>Memory</b>	EEPROM
<b>LED indicator</b>	LED (Green/Red) one of each
<b>7-segment LED display</b> (Note 3)	1 digit, 7-segment display (Red) Figures are expressed in hexadecimal ("10" to "15" in decimal number are expressed as "A" to "F")
<b>Lock control</b>	Forced-lock release terminal (Note 4)
<b>Cable length [m]</b>	I/O cable: 5 or less, Actuator cable: 20 or less
<b>Cooling system</b>	Natural air cooling
<b>Operating temperature range [°C]</b>	0 to 40 (No freezing)
<b>Operating humidity range [%RH]</b>	90 or less (No condensation)
<b>Storage temperature range [°C]</b>	-10 to 60 (No freezing)
<b>Storage humidity range [%RH]</b>	90 or less (No condensation)
<b>Insulation resistance [MΩ]</b>	Between the housing and SG terminal: 50 (500 VDC)
<b>Weight [g]</b>	130 (Screw mounting), 150 (DIN rail mounting)

Note 1) Do not use the power supply of "inrush current prevention type" for the controller input power supply. When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

Note 2) The power consumption changes depending on the actuator model. Refer to the each actuator's operation manual etc. for details.

Note 3) "10" to "15" in decimal number are displayed as follows in the 7-segment LED.

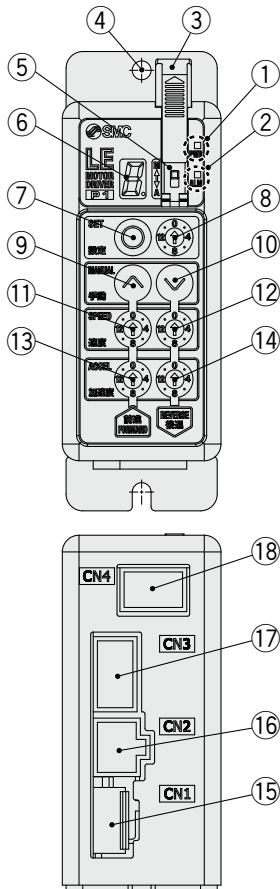


Decimal display	10	11	12	13	14	15
Hexadecimal display	A	b	c	d	E	F

Note 4) Applicable to non-magnetizing lock.

# Series LECP1

## Controller Details



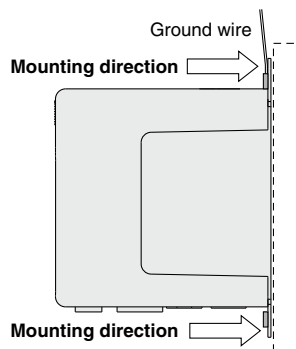
No.	Display	Description	Details
①	<b>PWR</b>	Power supply LED	Power supply ON/Servo ON : Green turns on Power supply ON/Servo OFF: Green flashes
②	<b>ALM</b>	Alarm LED	With alarm : Red turns on Parameter setting : Red flashes
③	—	Cover	Change and protection of the mode switch (Close the cover after changing switch)
④	—	FG	Frame ground (Tighten the bolt with the nut when mounting the controller. Connect the ground wire.)
⑤	—	Mode switch	Switch the mode between manual and auto.
⑥	—	7-segment LED	Stop position, the value set by ⑧ and alarm information are displayed.
⑦	<b>SET</b>	Set button	Decide the settings or drive operation in Manual mode.
⑧	—	Position selecting switch	Assign the position to drive (1 to 14), and the origin position (15).
⑨	<b>MANUAL</b>	Manual forward button	Perform forward jog and inching.
⑩		Manual reverse button	Perform reverse jog and inching.
⑪	<b>SPEED</b>	Forward speed switch	16 forward speeds are available.
⑫		Reverse speed switch	16 reverse speeds are available.
⑬	<b>ACCEL</b>	Forward acceleration switch	16 forward acceleration steps are available.
⑭		Reverse acceleration switch	16 reverse acceleration steps are available.
⑮	<b>CN1</b>	Power supply connector	Connect the power supply cable.
⑯	<b>CN2</b>	Motor connector	Connect the motor connector.
⑰	<b>CN3</b>	Encoder connector	Connect the encoder connector.
⑱	<b>CN4</b>	I/O connector	Connect I/O cable.

## How to Mount

Controller mounting shown below.

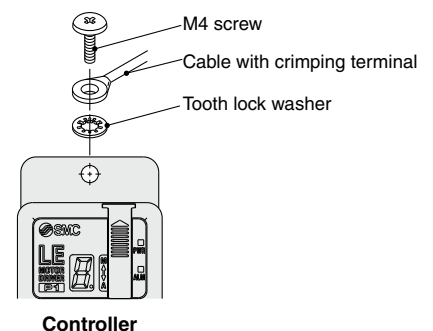
### 1. Mounting screw (LECP1□□-□)

(Installation with two M4 screws)



### 2. Grounding

Tighten the bolt with the nut when mounting the ground wire as shown below.



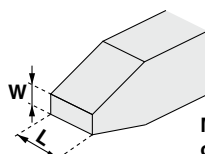
Note) When sizes 30 or 50 of the LER series are used, the space between the controllers should be 10 mm or more.

### ⚠ Caution

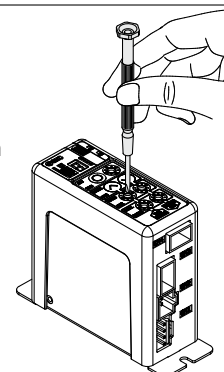
- M4 screws, cable with crimping terminal and tooth lock washer are not included. Be sure to carry out grounding earth in order to ensure the noise tolerance.
- Use a watchmaker's screwdriver of the size shown below when changing position switch ⑧ and the set value of the speed/acceleration switch ⑪ to ⑭.

#### Size

End width **L**: 2.0 to 2.4 [mm]  
End thickness **W**: 0.5 to 0.6 [mm]

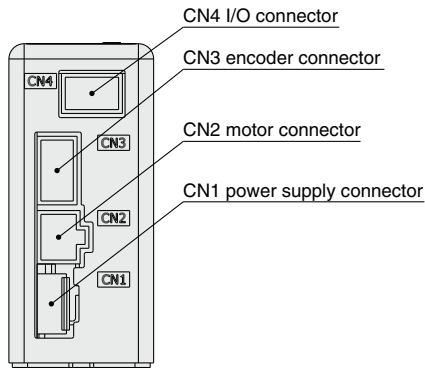
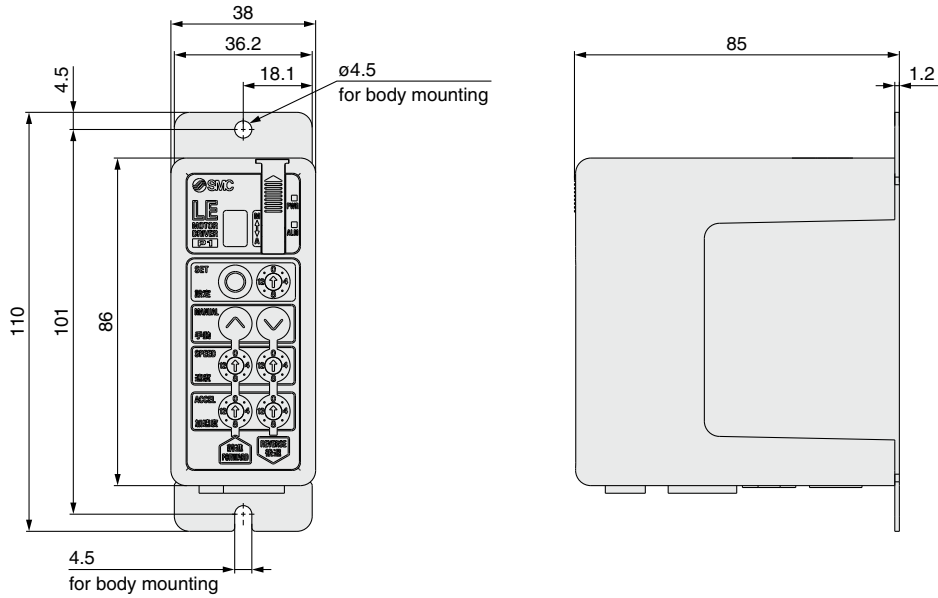


Magnified view of the end of the screwdriver

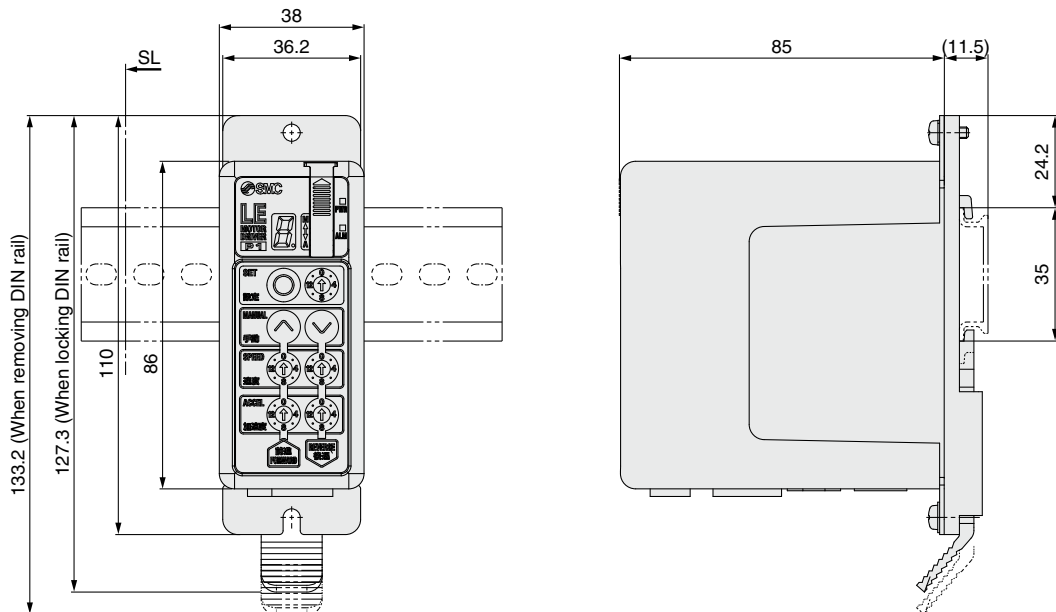


## Dimensions

### Screw mounting (LEC□1□□-□)



### DIN rail mounting (LEC□1□□D-□)



Model Selection

Step Motor (Servo/24 VDC)

LER

LECP6

LEC-G

LECP1

LECPA

Specific Product Precautions

# Series LECP1

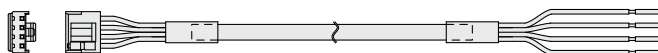
## Wiring Example 1

**Power Supply Connector: CN1** \* When you connect a CN1 power supply connector, please use the power supply cable (LEC-CK1-1).  
\* Power supply cable (LEC-CK1-1) is an accessory.

### CN1 Power Supply Connector Terminal for LECP1

Terminal name	Cable color	Function	Details
0V	Blue	Common supply (-)	M24V terminal/C24V terminal/BK RLS terminal are common (-).
M24V	White	Motor power supply (+)	Motor power supply (+) supplied to the controller
C24V	Brown	Control power supply (+)	Control power supply (+) supplied to the controller
BK RLS	Black	Lock release (+)	Input (+) for releasing the lock

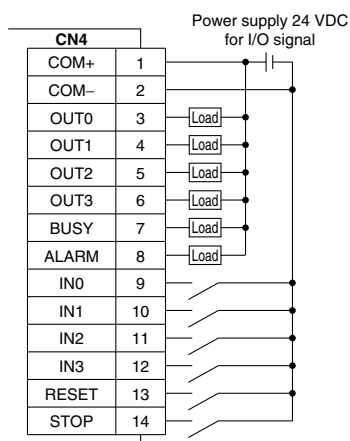
### Power supply cable for LECP1 (LEC-CK1-1)



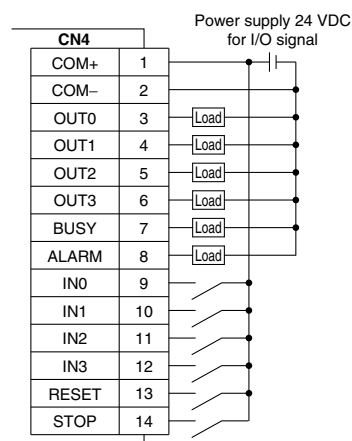
## Wiring Example 2

**Parallel I/O Connector: CN4** \* When you connect a PLC, etc., to the CN4 parallel I/O connector, please use the I/O cable (LEC-CK4-□).  
\* The wiring should be changed depending on the type of the parallel I/O (NPN or PNP).

### ■NPN



### ■PNP



### Input Signal

Name	Details								
COM+	Connects the power supply 24 V for input/output signal								
COM-	Connects the power supply 0 V for input/output signal								
IN0 to IN3	<ul style="list-style-type: none"> <li>Instruction to drive (input as a combination of IN0 to IN3)</li> <li>Instruction to return to origin (IN0 to IN3 all ON simultaneously)</li> </ul> Example - (instruction to drive for position no. 5) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>IN3</th> <th>IN2</th> <th>IN1</th> <th>IN0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> </tbody> </table>	IN3	IN2	IN1	IN0	OFF	ON	OFF	ON
IN3	IN2	IN1	IN0						
OFF	ON	OFF	ON						
RESET	Alarm reset and operation interruption During operation: deceleration stop from position at which signal is input (servo ON maintained) While alarm is active: alarm reset								
STOP	Instruction to stop (after maximum deceleration stop, servo OFF)								

### Output Signal

Name	Details								
OUT0 to OUT3	Turns on when the positioning or pushing is completed. (Output is instructed in the combination of OUT0 to 3.) Example - (operation complete for position no. 3) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>OUT3</th> <th>OUT2</th> <th>OUT1</th> <th>OUT0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	OUT3	OUT2	OUT1	OUT0	OFF	OFF	ON	ON
OUT3	OUT2	OUT1	OUT0						
OFF	OFF	ON	ON						
BUSY	Outputs when the actuator is moving								
*ALARM (Note)	Not output when alarm is active or servo OFF								

Note) Signal of negative-logic circuit (N.C.)

### Input Signal [IN0 - IN3] Position Number Chart ○: OFF ●: ON

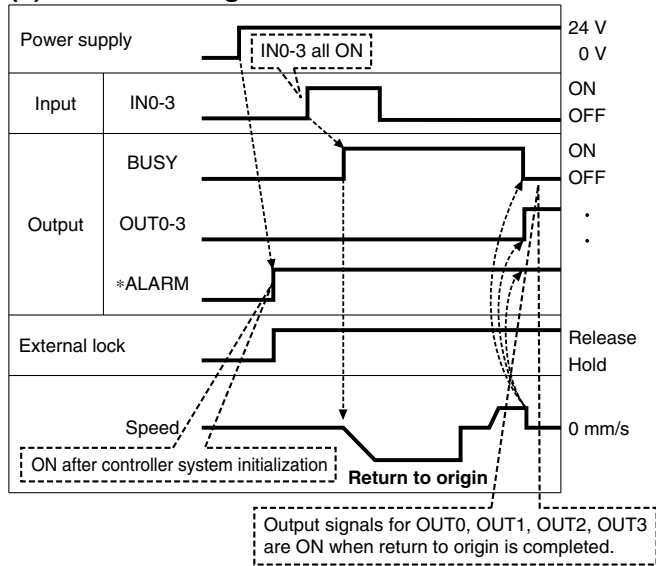
Position number	IN3	IN2	IN1	IN0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

### Output Signal [OUT0 - OUT3] Position Number Chart ○: OFF ●: ON

Position number	OUT3	OUT2	OUT1	OUT0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

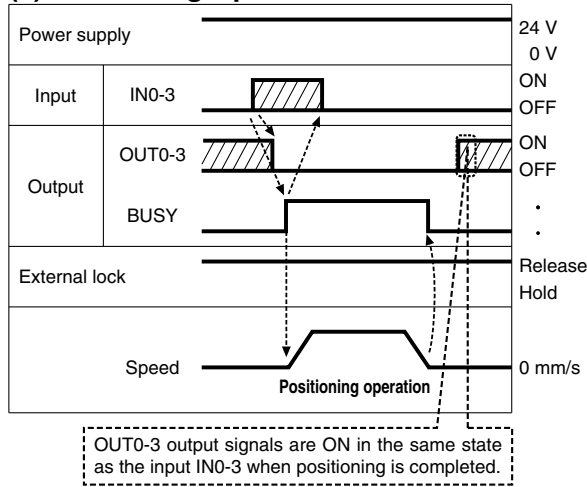
## Signal Timing

### (1) Return to Origin

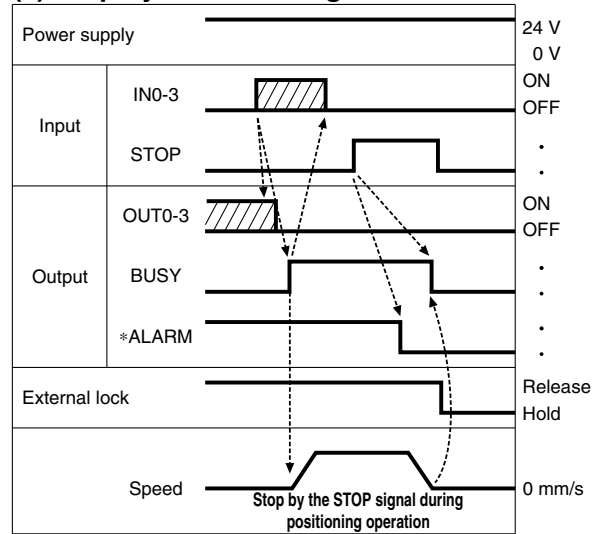


\*"ALARM" is expressed as negative-logic circuit.

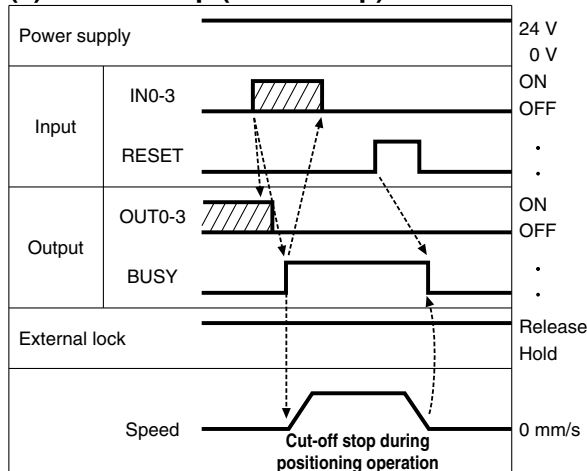
### (2) Positioning Operation



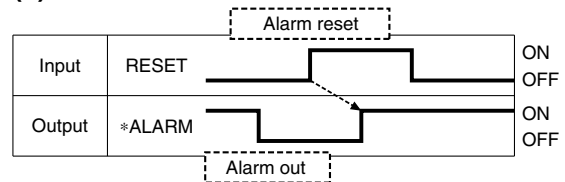
### (4) Stop by the STOP Signal



### (3) Cut-off Stop (Reset Stop)



### (5) Alarm Reset



\*"ALARM" is expressed as negative-logic circuit.

# Series LECP1

## Options: Actuator Cable

[Robotic cable, standard cable for step motor (Servo/24 VDC)]

LE-CP-1-

Cable length (L) [m]

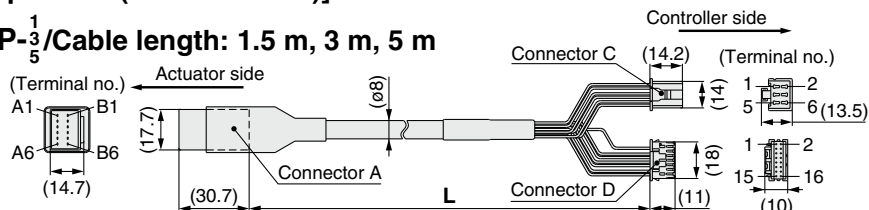
1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

\* Produced upon receipt of order (Robotic cable only)

Cable type

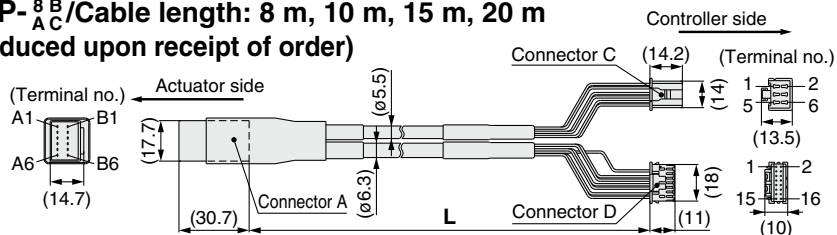
Nil	Robotic cable (Flexible cable)
S	Standard cable

LE-CP-<sup>1</sup>/<sub>5</sub>/Cable length: 1.5 m, 3 m, 5 m



LE-CP-<sup>8</sup>/<sub>A B</sub>/Cable length: 8 m, 10 m, 15 m, 20 m

(\* Produced upon receipt of order)



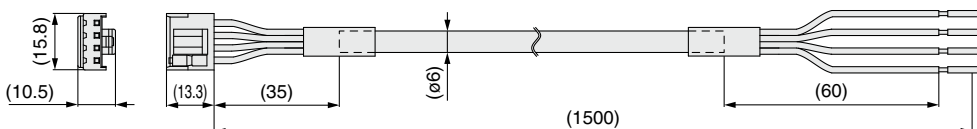
Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
		—	3

## Options

[Power supply cable]

LEC-CK1-1

Terminal name	Covered color	Function
0V	Blue	Common supply (-)
M24V	White	Motor power supply (+)
C24V	Brown	Control power supply (+)
BK RLS	Black	Lock release (+)



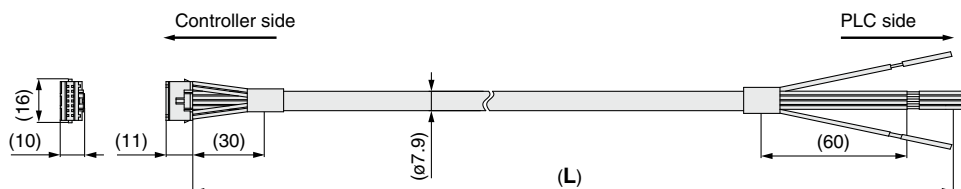
\* Conductor size: AWG20

[I/O cable]

LEC-CK4-

Cable length (L) [m]

1	1.5
3	3
5	5



\* Conductor size: AWG26

Terminal no.	Insulation color	Dot mark	Dot color	Function
1	Light brown	■	Black	COM+
2	Light brown	■	Red	COM-
3	Yellow	■	Black	OUT0
4	Yellow	■	Red	OUT1
5	Light green	■	Black	OUT2
6	Light green	■	Red	OUT3
7	Gray	■	Black	BUSY

Terminal no.	Insulation color	Dot mark	Dot color	Function
8	Gray	■	Red	ALARM
9	White	■	Black	IN0
10	White	■	Red	IN1
11	Light brown	■ ■	Black	IN2
12	Light brown	■ ■	Red	IN3
13	Yellow	■ ■	Black	RESET
14	Yellow	■ ■	Red	STOP

\* Parallel I/O signal is valid in auto mode. While the test function operates at manual mode, only the output is valid.



# Programless Controller Series **LECP1**



Model Selection

Servo Motor (24 VDC)/Servo Motor (Servo/24 VDC)  
LESH  
LESH

LECA6  
LECP6

LEC-G

LECP1

LECPA

Specific Product  
Precautions

## How to Order

**LECP1N1** - **LESH8RJ-50**

- Controller**: LECP1
- Compatible motor**: N (Step motor (Servo/24 VDC))
- Number of step data (Points)**: 1 (14 (Programless))
- Parallel I/O type**: N (NPN), P (PNP)
- Option**: Nil (Screw mounting), D (Note) (DIN rail mounting)  
Note) DIN rail is not included. Order it separately.
- I/O cable length [m]**: Nil (Without cable), 1 (1.5), 3 (3), 5 (5)
- Actuator part number**: LESH8RJ-50  
(Except cable specifications and actuator options)  
Example: Enter "LESH8RJ-50" for the LESH8RJ-50B-R16N1.

\* When controller equipped type is selected when ordering the LE series, you do not need to order this controller.

### Caution

#### [CE-compliant products]

EMC compliance was tested by combining the electric actuator LESH series and the controller LEC series. The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore conformity to the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result it is necessary for the customer to verify conformity to the EMC directive for the machinery and equipment as a whole.

#### [UL-compliant products]

When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

The controller is sold as single unit after the compatible actuator is set.

Confirm that the combination of the controller and the actuator is correct.

\* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

## Specifications

### Basic Specifications

Item	LECP1
<b>Compatible motor</b>	Step motor (Servo/24 VDC)
<b>Power supply</b> <small>Note 1)</small>	Power supply voltage: 24 VDC $\pm 10\%$ , Max. current consumption: 3A (Peak 5A) <small>Note 2)</small> [Including the motor drive power, control power supply, stop, lock release]
<b>Parallel input</b>	6 inputs (Photo-coupler isolation)
<b>Parallel output</b>	6 outputs (Photo-coupler isolation)
<b>Stop points</b>	14 points (Position number 1 to 14(E))
<b>Compatible encoder</b>	Incremental A/B phase (800 pulse/rotation)
<b>Memory</b>	EEPROM
<b>LED indicator</b>	LED (Green/Red) one of each
<b>7-segment LED display</b> <small>Note 3)</small>	1 digit, 7-segment display (Red) Figures are expressed in hexadecimal ("10" to "15" in decimal number are expressed as "A" to "F")
<b>Lock control</b>	Forced-lock release terminal <small>Note 4)</small>
<b>Cable length [m]</b>	I/O cable: 5 or less, Actuator cable: 20 or less
<b>Cooling system</b>	Natural air cooling
<b>Operating temperature range [°C]</b>	0 to 40 (No freezing)
<b>Operating humidity range [%RH]</b>	90 or less (No condensation)
<b>Storage temperature range [°C]</b>	-10 to 60 (No freezing)
<b>Storage humidity range [%RH]</b>	90 or less (No condensation)
<b>Insulation resistance [MΩ]</b>	Between the housing and SG terminal: 50 (500 VDC)
<b>Weight [g]</b>	130 (Screw mounting), 150 (DIN rail mounting)

Note 1) Do not use the power supply of "inrush current prevention type" for the controller input power supply. When conformity to UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

Note 2) The power consumption changes depending on the actuator model. Refer to the each actuator's operation manual etc. for details.

Note 3) "10" to "15" in decimal number are displayed as follows in the 7-segment LED.

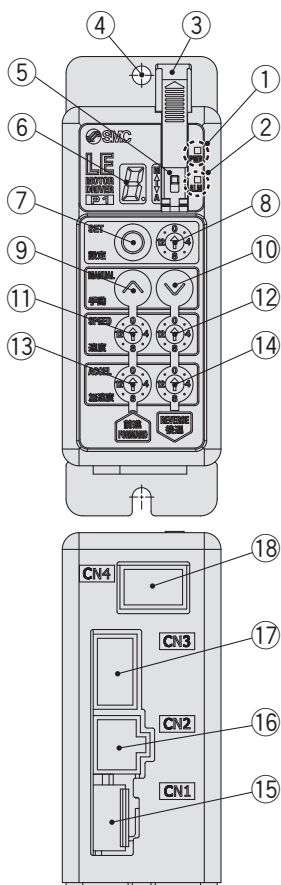


Decimal display    10    11    12    13    14    15  
Hexadecimal display    A    b    c    d    E    F

Note 4) Applicable to non-magnetizing lock.

# Series LECP1

## Controller Details



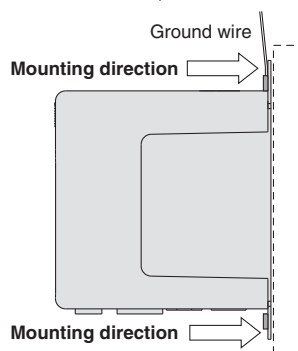
No.	Display	Description	Details
①	<b>PWR</b>	Power supply LED	Power supply ON/Servo ON : Green turns on Power supply ON/Servo OFF: Green flashes
②	<b>ALM</b>	Alarm LED	With alarm : Red turns on Parameter setting : Red flashes
③	—	Cover	Change and protection of the mode switch (Close the cover after changing switch)
④	—	FG	Frame ground (Tighten the bolt with the nut when mounting the controller. Connect the ground wire.)
⑤	—	Mode switch	Switch the mode between manual and auto.
⑥	—	7-segment LED	Stop position, the value set by ⑧ and alarm information are displayed.
⑦	<b>SET</b>	Set button	Decide the settings or drive operation in Manual mode.
⑧	—	Position selecting switch	Assign the position to drive (1 to 14), and the origin position (15).
⑨	<b>MANUAL</b>	Manual forward button	Perform forward jog and inching.
⑩		Manual reverse button	Perform reverse jog and inching.
⑪	<b>SPEED</b>	Forward speed switch	16 forward speeds are available.
⑫		Reverse speed switch	16 reverse speeds are available.
⑬	<b>ACCEL</b>	Forward acceleration switch	16 forward acceleration steps are available.
⑭		Reverse acceleration switch	16 reverse acceleration steps are available.
⑮	<b>CN1</b>	Power supply connector	Connect the power supply cable.
⑯	<b>CN2</b>	Motor connector	Connect the motor connector.
⑰	<b>CN3</b>	Encoder connector	Connect the encoder connector.
⑱	<b>CN4</b>	I/O connector	Connect I/O cable.

## How to Mount

Controller mounting shown below.

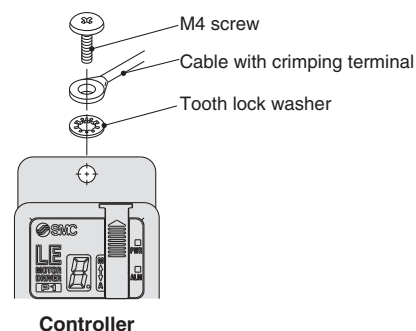
### 1. Mounting screw (LECP1□□-□)

(Installation with two M4 screws)



### 2. Grounding

Tighten the bolt with the nut when mounting the ground wire as shown below.



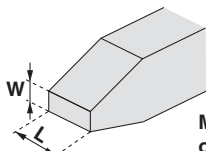
Note) When size 25 or more of the LES series are used, the space between the controllers should be 10 mm or more.

### ⚠ Caution

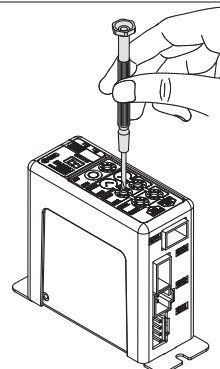
- M4 screws, cable with crimping terminal and tooth lock washer are not included. Be sure to carry out grounding earth in order to ensure the noise tolerance.
- Use a watchmaker's screwdriver of the size shown below when changing position switch ⑧ and the set value of the speed/acceleration switch ⑪ to ⑭.

#### Size

End width **L**: 2.0 to 2.4 [mm]  
End thickness **W**: 0.5 to 0.6 [mm]

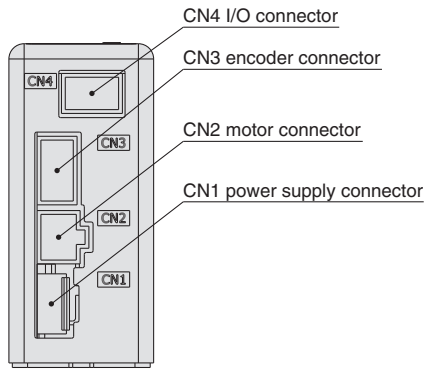
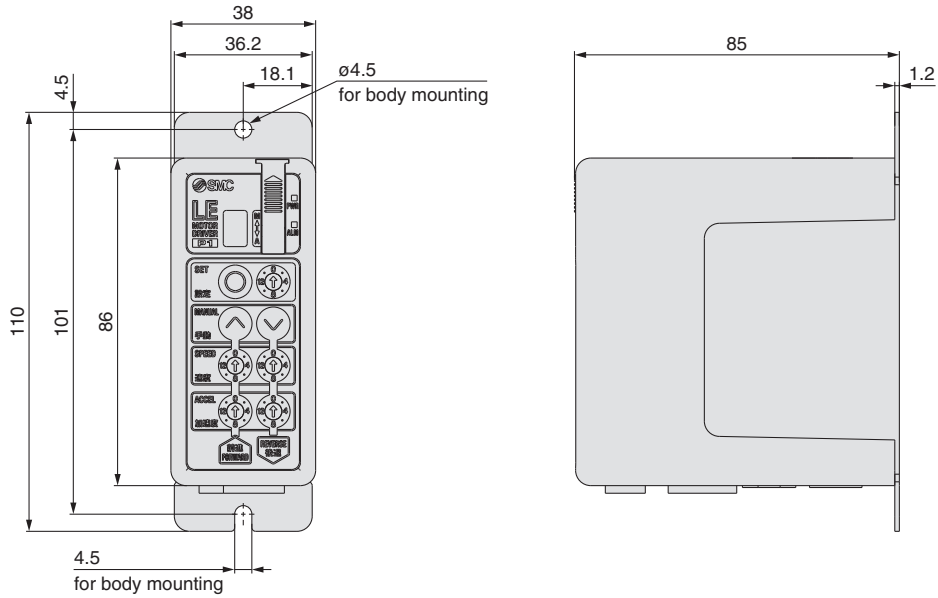


Magnified view of the end of the screwdriver

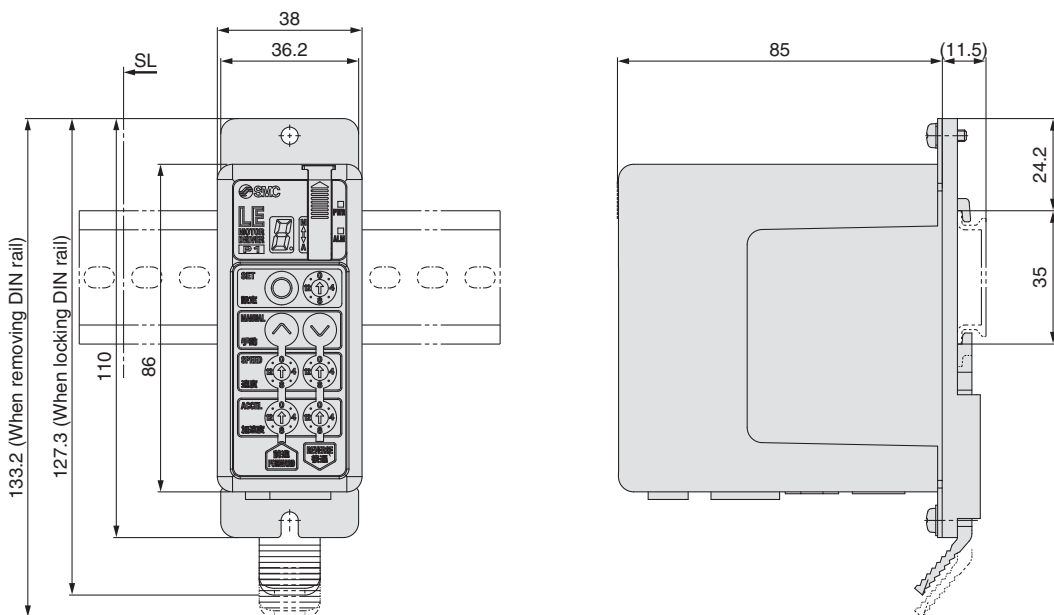


**Dimensions**

**Screw mounting (LECP1□□□□)**



**DIN rail mounting (LECP1□□□□D□)**



Model Selection

Servo Motor (24 VDC)/Step Motor (Servo/24 VDC)

**LES**

**LESH**

**LECA6**  
**LECP6**

**LEC-G**

**LECP1**

**LECPA**

Specific Product  
Precautions

# Series LECP1

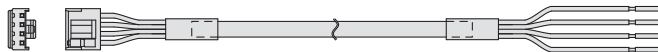
## Wiring Example 1

**Power Supply Connector: CN1** \* When you connect a CN1 power supply connector, please use the power supply cable (LEC-CK1-1).  
\* Power supply cable (LEC-CK1-1) is an accessory.

### CN1 Power Supply Connector Terminal for LECP1

Terminal name	Cable color	Function	Details
0V	Blue	Common supply (-)	M24V terminal/C24V terminal/BK RLS terminal are common (-).
M24V	White	Motor power supply (+)	Motor power supply (+) supplied to the controller
C24V	Brown	Control power supply (+)	Control power supply (+) supplied to the controller
BK RLS	Black	Lock release (+)	Input (+) for releasing the lock

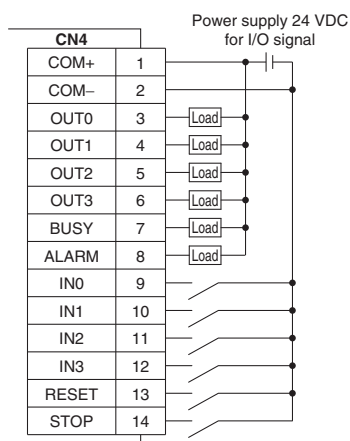
### Power supply cable for LECP1 (LEC-CK1-1)



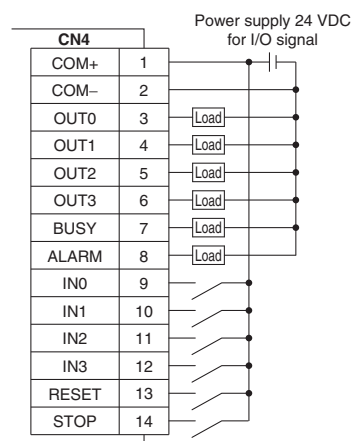
## Wiring Example 2

**Parallel I/O Connector: CN4** \* When you connect a PLC, etc., to the CN4 parallel I/O connector, please use the I/O cable (LEC-CK4-□).  
\* The wiring should be changed depending on the type of the parallel I/O (NPN or PNP).

### ■NPN



### ■PNP



### Input Signal

Name	Details								
COM+	Connects the power supply 24 V for input/output signal								
COM-	Connects the power supply 0 V for input/output signal								
IN0 to IN3	<ul style="list-style-type: none"> <li>Instruction to drive (input as a combination of IN0 to IN3)</li> <li>Instruction to return to origin (IN0 to IN3 all ON simultaneously)</li> </ul> Example - (instruction to drive for position no. 5) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>IN3</th> <th>IN2</th> <th>IN1</th> <th>IN0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> </tbody> </table>	IN3	IN2	IN1	IN0	OFF	ON	OFF	ON
IN3	IN2	IN1	IN0						
OFF	ON	OFF	ON						
RESET	Alarm reset and operation interruption During operation: deceleration stop from position at which signal is input (servo ON maintained) While alarm is active: alarm reset								
STOP	Instruction to stop (after maximum deceleration stop, servo OFF)								

### Output Signal

Name	Details								
OUT0 to OUT3	Turns on when the positioning or pushing is completed. (Output is instructed in the combination of OUT0 to 3.) Example - (operation complete for position no. 3) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>OUT3</th> <th>OUT2</th> <th>OUT1</th> <th>OUT0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	OUT3	OUT2	OUT1	OUT0	OFF	OFF	ON	ON
OUT3	OUT2	OUT1	OUT0						
OFF	OFF	ON	ON						
BUSY	Outputs when the actuator is moving								
*ALARM (Note)	Not output when alarm is active or servo OFF								

Note) Signal of negative-logic circuit (N.C.)

### Input Signal [IN0 - IN3] Position Number Chart ○: OFF ●: ON

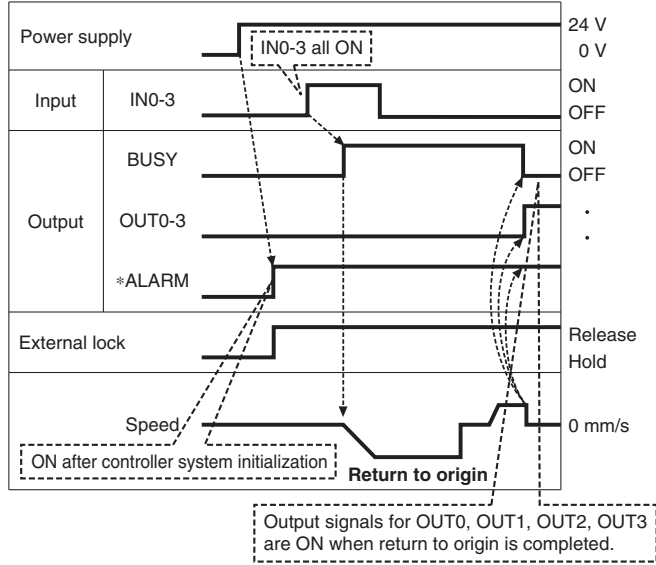
Position number	IN3	IN2	IN1	IN0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

### Output Signal [OUT0 - OUT3] Position Number Chart ○: OFF ●: ON

Position number	OUT3	OUT2	OUT1	OUT0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

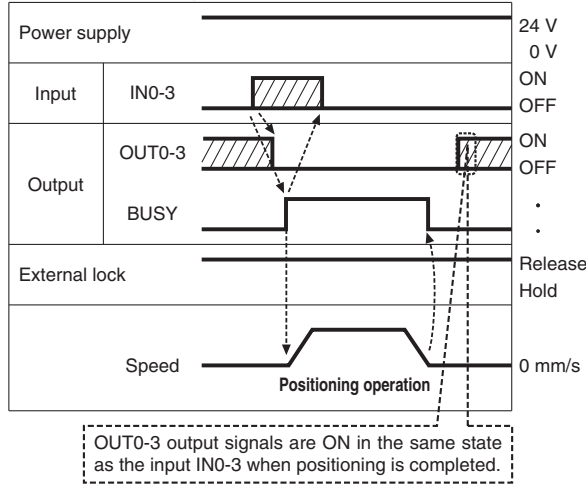
## Signal Timing

### (1) Return to Origin

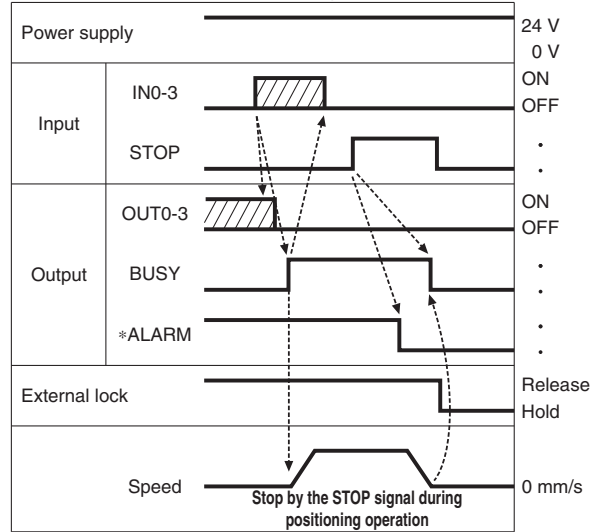


\* \*ALARM" is expressed as negative-logic circuit.

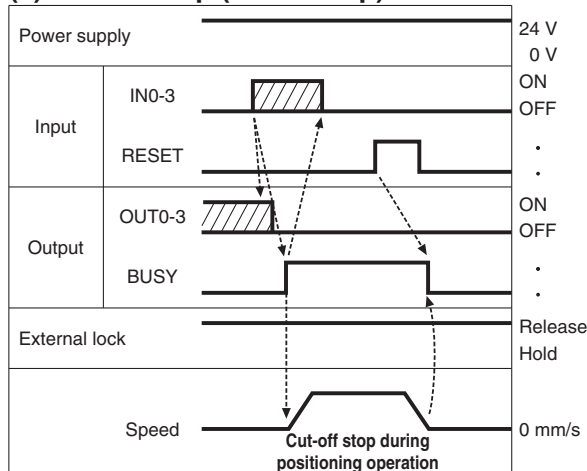
### (2) Positioning Operation



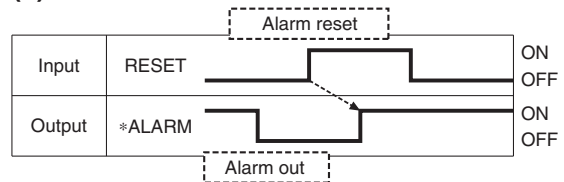
### (4) Stop by the STOP Signal



### (3) Cut-off Stop (Reset Stop)



### (5) Alarm Reset



\* \*ALARM" is expressed as negative-logic circuit.

# Series LECP1

## Options: Actuator Cable

[Robotic cable, standard cable for step motor (Servo/24 VDC)]

LE-CP-1-□

Cable length (L) [m]

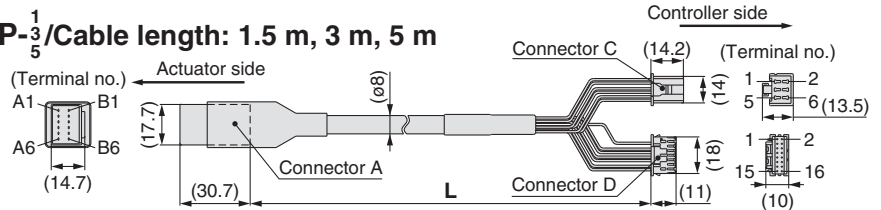
1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

\* Produced upon receipt of order (Robotic cable only)

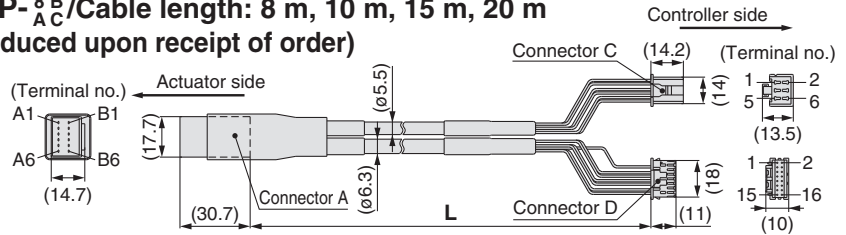
Cable type

Nil	Robotic cable (Flexible cable)
S	Standard cable

LE-CP-<sup>1</sup>/<sub>5</sub>/Cable length: 1.5 m, 3 m, 5 m



LE-CP-<sup>8</sup>/<sub>A C</sub> B/Cable length: 8 m, 10 m, 15 m, 20 m  
(\* Produced upon receipt of order)



Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
Ā	A-1	Red	1
B	B-2	Orange	6
B̄	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
Ā	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B̄	A-6	Black	8
			3

[Robotic cable, standard cable with lock and sensor for step motor (Servo/24 VDC)]

LE-CP-1-B-□

Cable length (L) [m]

1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

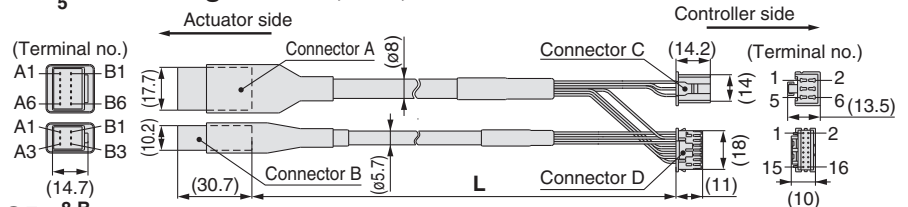
\* Produced upon receipt of order (Robotic cable only)

With lock and sensor

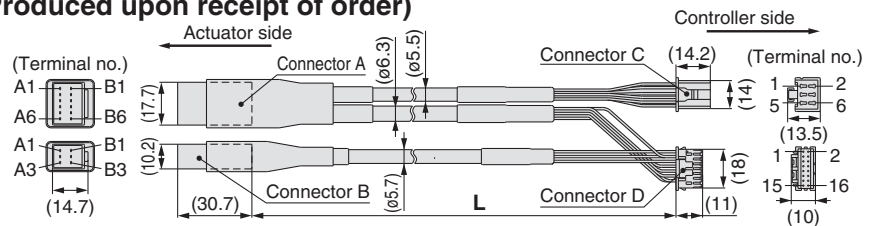
Cable type

Nil	Robotic cable (Flexible cable)
S	Standard cable

LE-CP-<sup>1</sup>/<sub>5</sub>/Cable length: 1.5 m, 3 m, 5 m



LE-CP-<sup>8</sup>/<sub>A C</sub> B/Cable length: 8 m, 10 m, 15 m, 20 m  
(\* Produced upon receipt of order)



Signal	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
Ā	A-1	Red	1
B	B-2	Orange	6
B̄	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
Ā	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B̄	A-6	Black	8
			3

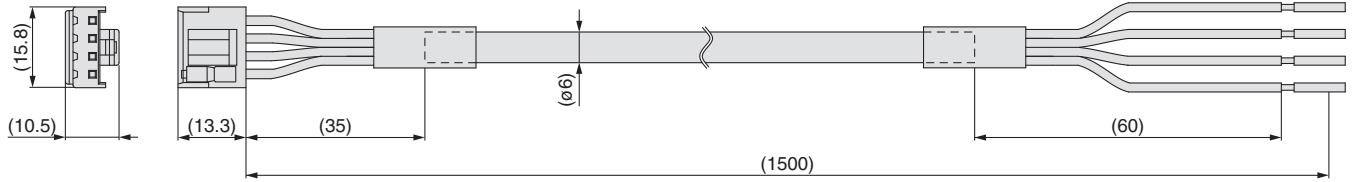
Signal	Connector B terminal no.	Cable color	Connector D terminal no.
Lock (+)	B-1	Red	4
Lock (-)	A-1	Black	5
Sensor (+) (Note)	B-3	Brown	1
Sensor (-) (Note)	A-3	Blue	2

Note) Not used for the LE series.

**Options**

[Power supply cable]

**LEC-CK1-1**



Terminal name	Covered color	Function
0V	Blue	Common supply (-)
M24V	White	Motor power supply (+)
C24V	Brown	Control power supply (+)
BK RLS	Black	Lock release (+)

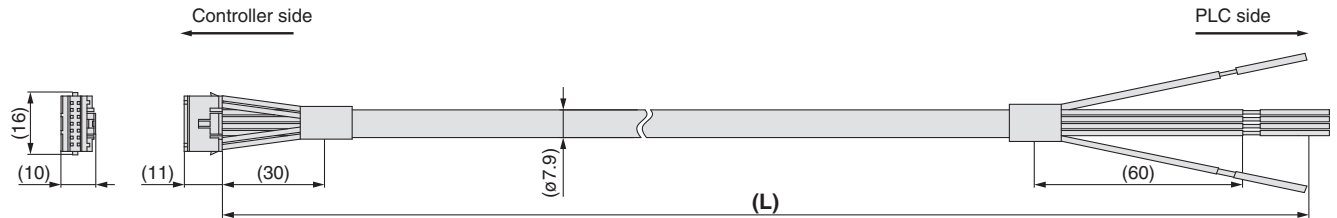
\* Conductor size: AWG20

[I/O cable]

**LEC-CK4-**

Cable length (L) [m]

1	1.5
3	3
5	5



Terminal no.	Insulation color	Dot mark	Dot color	Function
1	Light brown	■	Black	COM+
2	Light brown	■	Red	COM-
3	Yellow	■	Black	OUT0
4	Yellow	■	Red	OUT1
5	Light green	■	Black	OUT2
6	Light green	■	Red	OUT3
7	Gray	■	Black	BUSY
8	Gray	■	Red	ALARM
9	White	■	Black	IN0
10	White	■	Red	IN1
11	Light brown	■ ■	Black	IN2
12	Light brown	■ ■	Red	IN3
13	Yellow	■ ■	Black	RESET
14	Yellow	■ ■	Red	STOP

\* Conductor size: AWG26

\* Parallel I/O signal is valid in auto mode. While the test function operates at manual mode, only the output is valid.

Model Selection

LES

LESH

Servo Motor (24 VDC)/Step Motor (Servo/24 VDC)

LECA6  
LECP6

LEC-G

LECP1

LECPA

Specific Product  
Precautions



# Programless Controller Series **LECP1**



## How to Order

**LECP1N1-LEY16B-100**

- Controller**: LECP1
- Compatible motor**: P (Step motor (Servo/24 VDC))
- Number of step data (Points)**: 1 (14 (Programless))
- I/O cable length [m]**:
 

Nil	Without cable
1	1.5
3	3
5	5
- Parallel I/O type**:
 

N	NPN
P	PNP
- Actuator part number**: LEY16B-100 (Except cable specifications and actuator options. Example: Enter [LEY16B-100] for LEY16B-100B-R16N1)

\* When placing an order for the controller with an actuator, this part number is not necessary.

**The controller is sold as single unit after the compatible actuator is set.**

Confirm that the combination of the controller and the actuator is correct.

\* Refer to the operation manual for using the products. Please download it via our website. <http://www.smcworld.com>

## Specifications

### Basic Specifications

Item	LECP1
<b>Compatible motor</b>	Step motor (Servo/24 VDC)
<b>Power supply</b> <sup>Note 1)</sup>	Power supply voltage: 24 VDC ±10% Max. current consumption: 3A (Peak 5A) <sup>Note 2)</sup> [Including the motor drive power, control power supply, stop, lock release]
<b>Parallel input</b>	6 inputs (Photo-coupler isolation)
<b>Parallel output</b>	6 outputs (Photo-coupler isolation)
<b>Stop points</b>	14 points (Position number 1 to 14(E))
<b>Compatible encoder</b>	Incremental A/B phase (800 pulse/rotation)
<b>Serial communication</b>	RS485 (Modbus protocol compliant)
<b>Memory</b>	EEPROM
<b>LED indicator</b>	LED (Green/Red) one of each
<b>7-segment LED display</b> <sup>Note 3)</sup>	1 digit, 7-segment display (red) Figures are expressed in hexadecimal ("10" to "15" in decimal number are expressed as "A" to "F")
<b>Lock control</b>	Forced-lock release terminal <sup>Note 4)</sup>
<b>Cable length [m]</b>	I/O cable: 5 or less Actuator cable: 20 or less
<b>Cooling system</b>	Natural air cooling
<b>Operating temperature range</b>	32 to 104°F (0 to 40°C) (No freezing)
<b>Operating humidity range [%RH]</b>	90 or less (No condensation)
<b>Storage temperature range</b>	14 to 140°F (-10 to 60°C) (No freezing)
<b>Storage humidity range [%RH]</b>	90 or less (No condensation)
<b>Insulation resistance [MΩ]</b>	Between the housing (radiation fin) and SG terminal 50 (500 VDC)
<b>Weight</b>	4.59 oz. (130 g)

Note 1) Do not use the power supply of "inrush current prevention type" for the controller input power supply.

Note 2) The power consumption changes depending on the actuator model. Refer to the each actuator's operation manual etc. for details.

Note 3) "10" to "15" in decimal number are displayed as follows in the 7-segment LED.

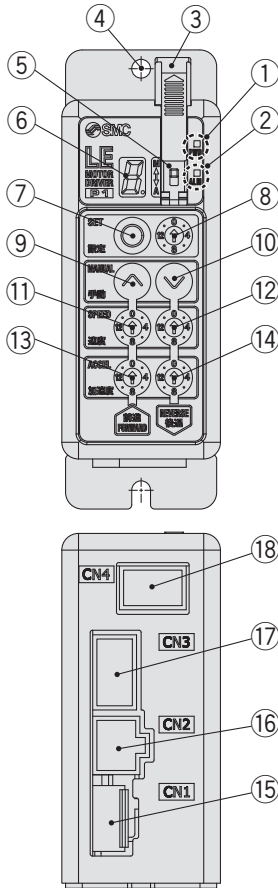


Decimal display	10	11	12	13	14	15
Hexadecimal display	A	b	c	d	E	F

Note 4) Applicable to non-magnetizing lock.



## Details of The Controller



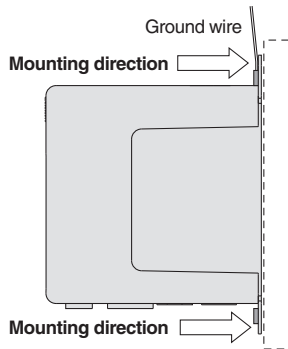
No.	Display	Description	Details
①	<b>PWR</b>	Power supply LED	Power supply ON/servo ON : Green turns on Power supply ON/servo OFF : Green flashes
②	<b>ALM</b>	Alarm LED	With alarm : Red turns on Parameter setting : Red flashes
③	—	Cover	Change and protection of the mode SW (Close the cover after changing SW)
④	—	FG	Frame ground (Tighten the bolt with the nut when mounting the controller. Connect the ground wire.)
⑤	—	Mode switch	Switch the mode between manual and auto.
⑥	—	7-segment LED	Stop position, the value set by ⑧ and alarm information are displayed.
⑦	<b>SET</b>	Set button	Decide the settings or drive operation in Manual mode.
⑧	—	Position selecting switch	Assign the position to drive (1 to 14), and the origin position (15).
⑨	<b>MANUAL</b>	Manual forward button	Perform forward jog and inching.
⑩		Manual reverse button	Perform reverse jog and inching.
⑪	<b>SPEED</b>	Forward speed switch	16 forward speeds are available.
⑫		Reverse speed switch	16 reverse speeds are available.
⑬	<b>ACCEL</b>	Forward acceleration switch	16 forward acceleration steps are available.
⑭		Reverse acceleration switch	16 reverse acceleration steps are available.
⑮	<b>CN1</b>	Power supply connector	Connect the power supply cable.
⑯	<b>CN2</b>	Motor connector	Connect the motor connector.
⑰	<b>CN3</b>	Encoder connector	Connect the encoder connector.
⑱	<b>CN4</b>	I/O connector	Connect I/O cable.

## How to Mount

Controller mounting shown below.

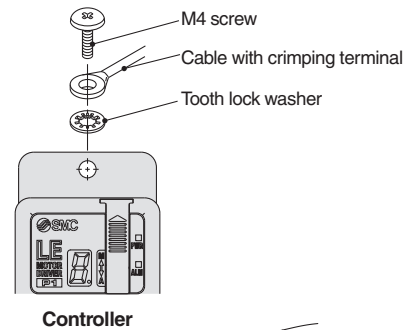
### 1. Mounting screw (LECP1□□-□)

(Installation with two M4 screws)



### 2. Grounding

Tighten the bolt with the nut when mounting the ground wire as shown below.



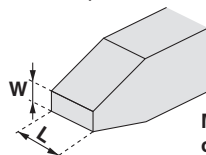
### ⚠ Caution

- M4 screws, cable with crimping terminal and tooth lock washer are not included. Be sure to carry out grounding earth in order to ensure the noise tolerance.
- Use a watchmaker's screwdriver of the size shown below when changing position switch ⑧ and the set value of the speed/acceleration switch ⑪ to ⑭.

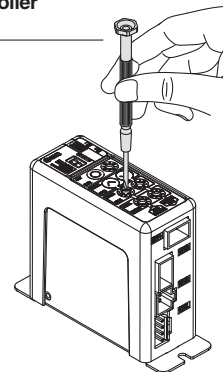
#### Size

End width **L** : 2.0 to 2.4 [mm]

End thickness **W** : 0.5 to 0.6 [mm]



Magnified view of the end of the screwdriver



Model Selection

LE Y

LE Y G

LECA6 / LECP6

LECP1

AC Servo Motor

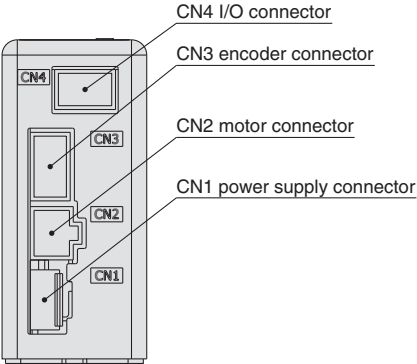
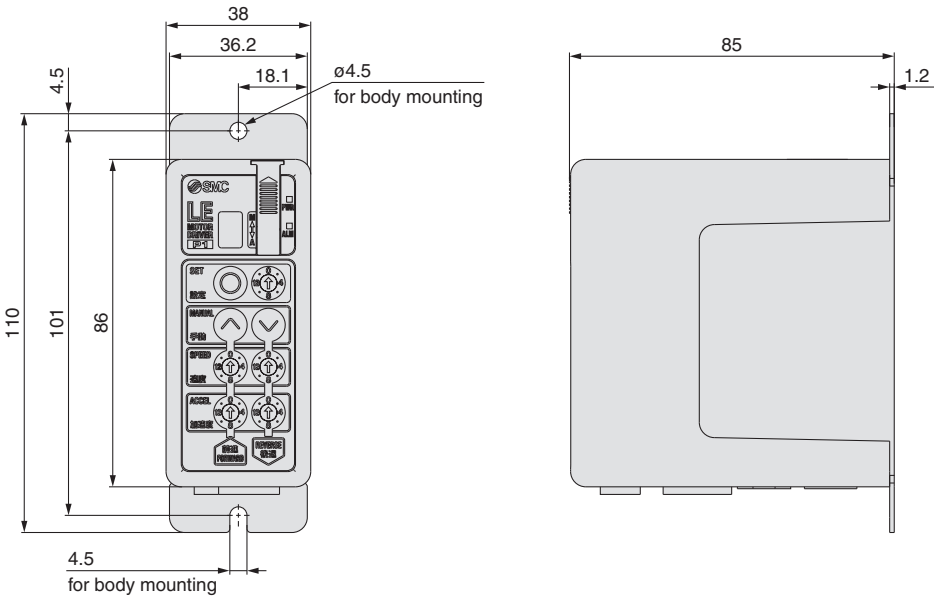
LE Y

LECSA / LECSB

Specific Product Precautions

# Series LECP1

## Dimensions



## Wiring Example 1

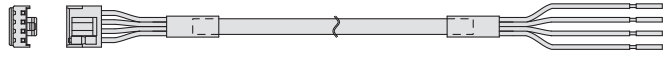
### Power Supply Connector: CN1

- \* When you connect a CN1 power supply connector, please use the power supply cable (LEC-CK1-1).
- \* Power supply cable (LEC-CK1-1) is an accessory.

### CN1 Power Supply Connector Terminal for LECP1

Terminal name	Cable color	Function	Function details
0V	Blue	Common supply (-)	M24V terminal/C24V terminal/BK RLS terminal are common (-).
M24V	White	Motor power supply (+)	This is the motor power supply (+) that is supplied to the controller.
C24V	Brown	Control power supply (+)	This is the control power supply (+) that is supplied to the controller.
BK RLS	Black	Lock release (+)	This is the input (+) that releases the lock.

### Power supply cable for LECP1 (LEC-CK1-1)

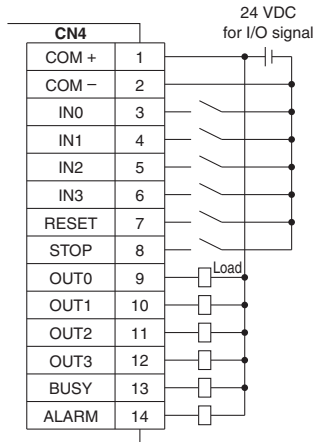


## Wiring Example 2

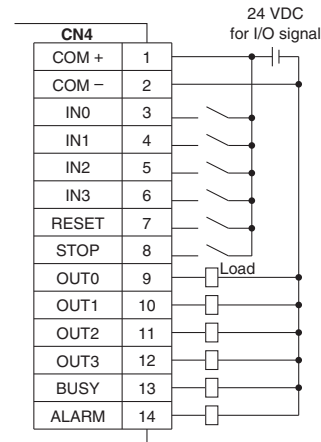
### Parallel I/O Connector: CN4

- \* When you connect a PLC, etc., to the CN4 parallel I/O connector, please use the I/O cable (LEC-CK4-□).
- \* The wiring should be changed depending on the type of the parallel I/O (NPN or PNP). Please wire referring to the following diagram.

#### ■NPN



#### ■PNP



### Input Signal

Name	Contents								
COM+	Connects the power supply 24 V for input/output signal								
COM-	Connects the power supply 0 V for input/output signal								
IN0 to IN3	<ul style="list-style-type: none"> <li>• Instruction to drive (input as a combination of IN0 to IN3)</li> <li>• Instruction to return to the origin position (IN0 to IN3 all ON simultaneously)</li> </ul> <p>Example - (instruction to drive for position no. 5)</p> <table border="1"> <thead> <tr> <th>IN3</th> <th>IN2</th> <th>IN1</th> <th>IN0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> </tbody> </table>	IN3	IN2	IN1	IN0	OFF	ON	OFF	ON
IN3	IN2	IN1	IN0						
OFF	ON	OFF	ON						
RESET	Alarm reset and operation interruption During operation : deceleration stop from position at which signal is input (servo ON maintained) While alarm is active : alarm reset								
STOP	Instruction to stop (after maximum deceleration stop, servo OFF)								

### Input Signal [IN0 - IN3] Position Number Chart ○: OFF ●: ON

Position number	IN3	IN2	IN1	IN0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

### Output Signal

Name	Contents								
OUT0 to OUT3	Turns on when the positioning or pushing is completed. (Output is instructed in the combination of OUT0 to 3.) Example - (operation complete for position no. 3)								
	<table border="1"> <thead> <tr> <th>OUT3</th> <th>OUT2</th> <th>OUT1</th> <th>OUT0</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table>	OUT3	OUT2	OUT1	OUT0	OFF	OFF	ON	ON
OUT3	OUT2	OUT1	OUT0						
OFF	OFF	ON	ON						
BUSY	Outputs when the actuator is moving								
*ALARM (Note)	Not output when alarm is active or servo OFF								

Note) These signals are output when the power supply of the controller is ON. (N.C.)

### Output Signal [OUT0 - OUT3] Position Number Chart ○: OFF ●: ON

Position number	OUT3	OUT2	OUT1	OUT0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

Model Selection

Servo Motor (24 VDC)/Step Motor (Servo/24 VDC)

LEY

LEYG

LECA6 / LECP6

LECP1

AC Servo Motor

LEY

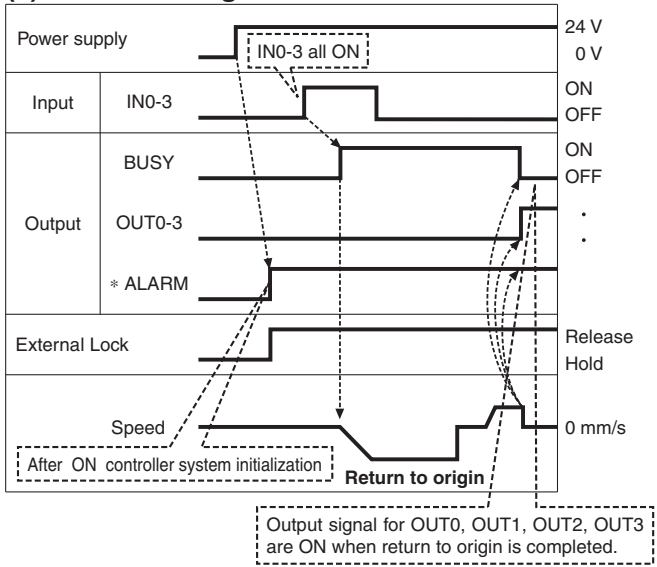
LECSA / LECSB

Specific Product Precautions

# Series LECP1

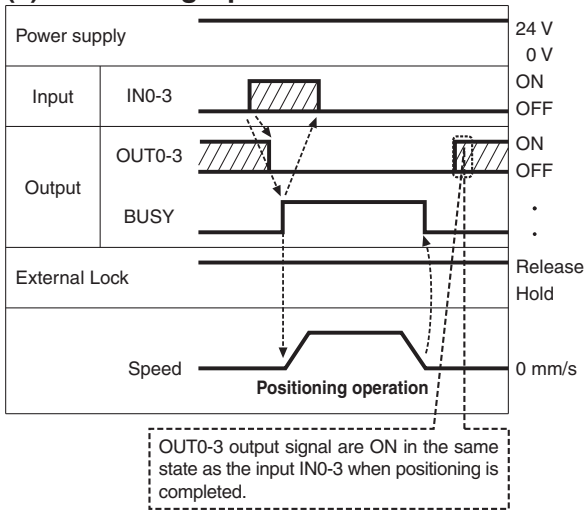
## Signal Timing

### (1) Return to Origin

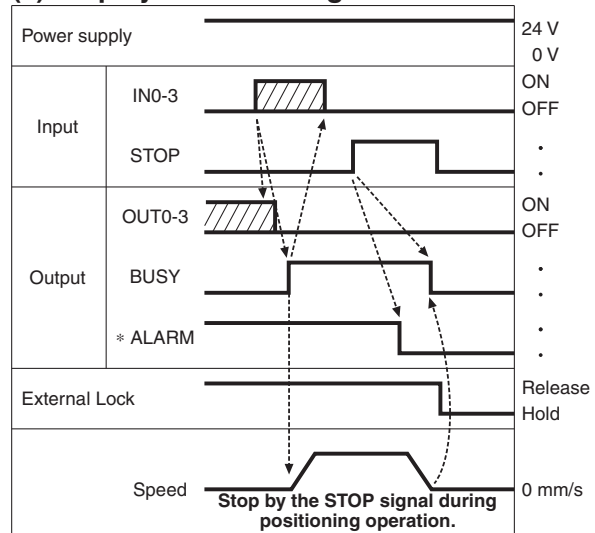


\* \*ALARM" is expressed as negative-logic circuit.

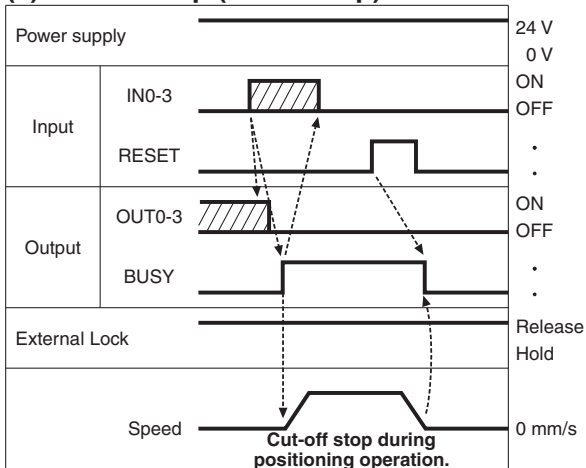
### (2) Positioning Operation



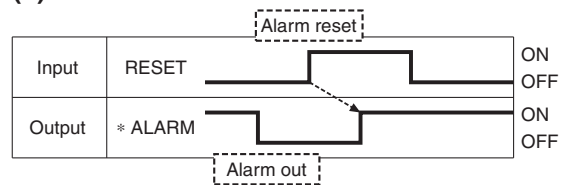
### (4) Stop by The STOP Signal



### (3) Cut-off Stop (Reset Stop)



### (5) Alarm Reset



\* \*ALARM" is expressed as negative-logic circuit.

## Options: Actuator Cable

[Robotic cable for step motor (Servo/24 VDC), standard cable]

**LE-CP-1-** 1 -  

Cable length (L)[m]

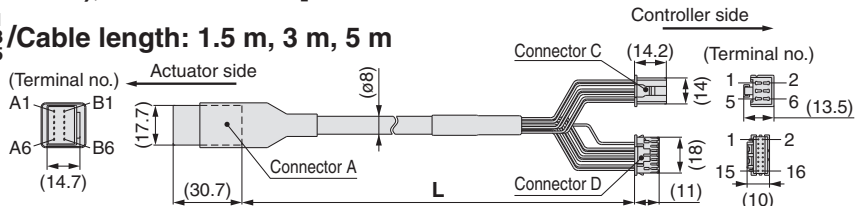
1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

\* Produced upon receipt of order (Robotic cable only)

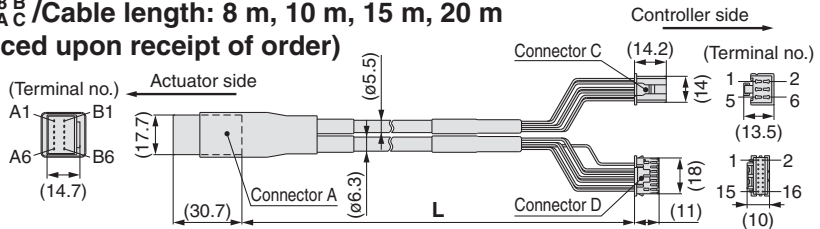
Cable type

Nil	Robotic cable (Flexible cable)
S	Standard cable

**LE-CP- $\frac{1}{5}$** /Cable length: 1.5 m, 3 m, 5 m



**LE-CP- $\frac{8}{AC}$** /Cable length: 8 m, 10 m, 15 m, 20 m  
(\* Produced upon receipt of order)



Circuit	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
		-	3

[Robotic cable with lock and sensor for step motor (Servo/24 VDC), standard cable]

**LE-CP-1-B-** 1 - B -  

Cable length (L)[m]

1	1.5
3	3
5	5
8	8*
A	10*
B	15*
C	20*

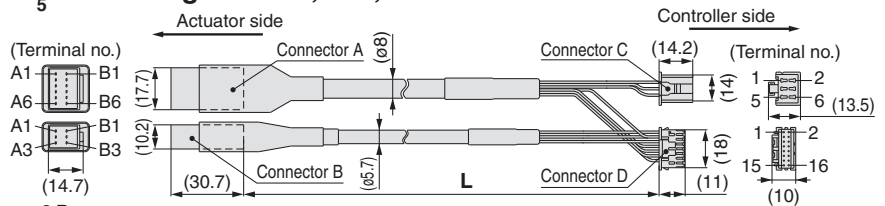
\* Produced upon receipt of order (Robotic cable only)

With lock and sensor

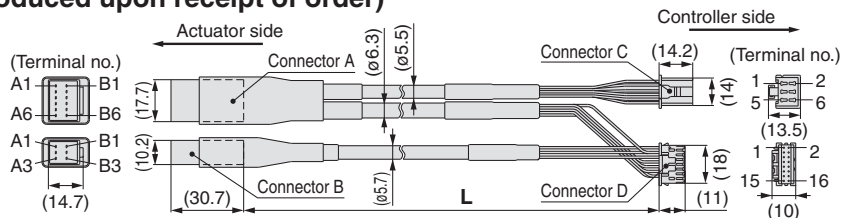
Cable type

Nil	Robotic cable (Flexible cable)
S	Standard cable

**LE-CP- $\frac{1}{5}$** /Cable length: 1.5 m, 3 m, 5 m



**LE-CP- $\frac{8}{AC}$** /Cable length: 8 m, 10 m, 15 m, 20 m  
(\* Produced upon receipt of order)



Circuit	Connector A terminal no.	Cable color	Connector C terminal no.
A	B-1	Brown	2
A	A-1	Red	1
B	B-2	Orange	6
B	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/-	A-3	Blue	4
Shield			
Vcc	B-4	Brown	12
GND	A-4	Black	13
A	B-5	Red	7
A	A-5	Black	6
B	B-6	Orange	9
B	A-6	Black	8
		-	3

Circuit	Connector B terminal no.	Cable color	Connector D terminal no.
Lock (+)	B-1	Red	4
Lock (-)	A-1	Black	5
Sensor (+) (Note)	B-3	Brown	1
Sensor (-) (Note)	A-3	Blue	2

Note) This is not used for the LEY series.

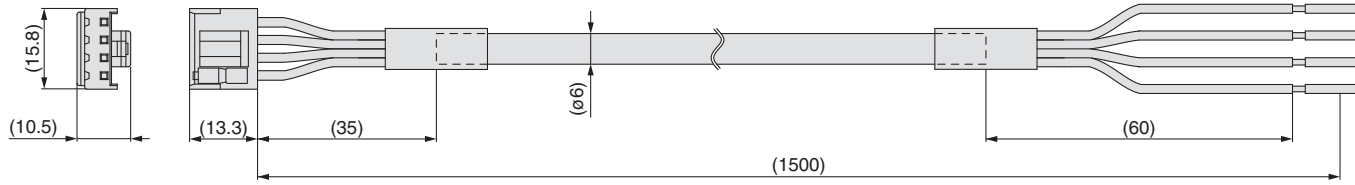
Model Selection  
 Servo Motor (24 VDC)/Step Motor (Servo/24 VDC)  
 LEY  
 LEYG  
 LECA6 / LECP6  
 LECP1  
 AC Servo Motor  
 LEY  
 LECSA / LECSB  
 Specific Product Precautions

# Series **LECP1**

## Options

### [Power supply cable]

#### LEC-CK1-1



Terminal name	Covered color	Function
0V	Blue	Common supply (-)
M24V	White	Motor power supply (+)
C24V	Brown	Control power supply (+)
BK RLS	Black	Lock release (+)

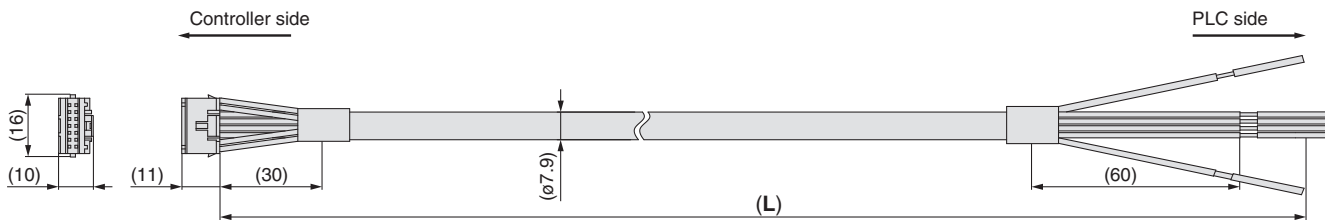
\* Conductor size: AWG20

### [I/O cable]

#### LEC-CK4-□

Cable length (L)[m]

1	1.5
3	3
5	5



Terminal no.	Insulation color	Dot mark	Dot color	Function
1	Light brown	■	Black	COM +
2	Light brown	■	Red	COM -
3	Yellow	■	Black	OUT0
4	Yellow	■	Red	OUT1
5	Light green	■	Black	OUT2
6	Light green	■	Red	OUT3
7	Gray	■	Black	BUSY
8	Gray	■	Red	ALARM
9	White	■	Black	IN0
10	White	■	Red	IN1
11	Light brown	■ ■	Black	IN2
12	Light brown	■ ■	Red	IN3
13	Yellow	■ ■	Black	RESET
14	Yellow	■ ■	Red	STOP

\* Conductor size: AWG26

\* Parallel I/O signal is valid in auto mode. While the test function operates at manual mode, only the output is valid.