Step Motor Controller

Controller with STO Sub-Function

＊ For details, refer to the **Web Catalogue**.

RoHS

EtherCAT/EtherNet/IP™/PROFINET/IO-Link Direct Input Type

- **Step Motor (Servo/24 VDC)**
- **Fieldbus direct input**
- **Numerical data/step data (64 points) defined operation**

With STO Sub-Function

- Product certification obtained by a third party (EN61508-1/2 SIL3, EN62061 SIL CL3, EN ISO13849-1 Cat.3 PLe)
- Equipped with the EN61800-5-2 STO (Safe Torque Off) function

With STO Sub-Function

EtherCAT direct input type

JXCEF Series

Applicable network

EtherCAT®

With STO Sub-Function

EtherNet/IP™ direct input type

JXC9F Series

Applicable network

EtherNet/IP™

With STO Sub-Function

PROFINET direct input type

JXCPF Series

Applicable network

PROFINET®

With STO Sub-Function

IO-Link direct input type

JXCLF Series

Applicable network

IO-Link

◎Two types of operation command

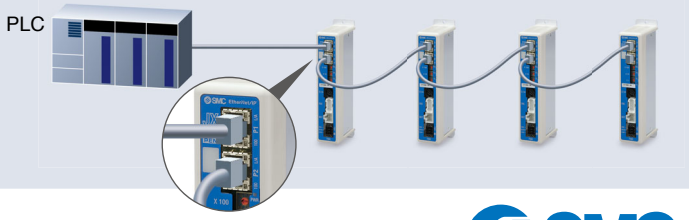
Step no. defined operation: Operate using the preset step data in the controller.
Numerical data defined operation: The actuator operates using values such as position and speed from the PLC.

◎Numerical monitoring available

Numerical information, such as the current speed, current position, and alarm codes, can be monitored on the PLC.

◎Transition wiring of communication cables

Two communication ports are provided.
＊ 1 to 1 in the case of IO-Link



JXC□F Series

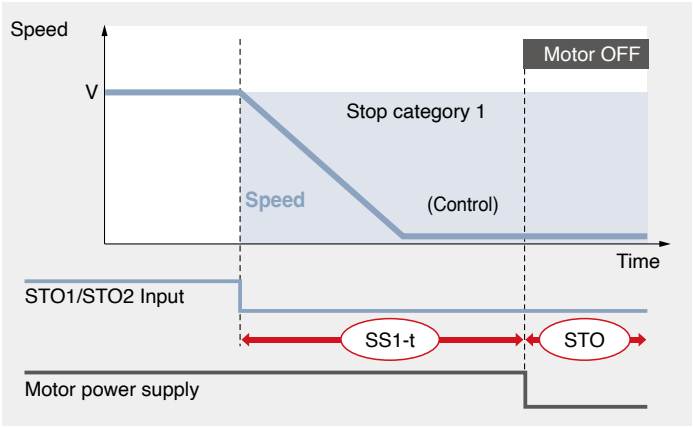
SMC

EMC-JXCF-01A-UK

Controller with STO Sub-Function JXC□F Series

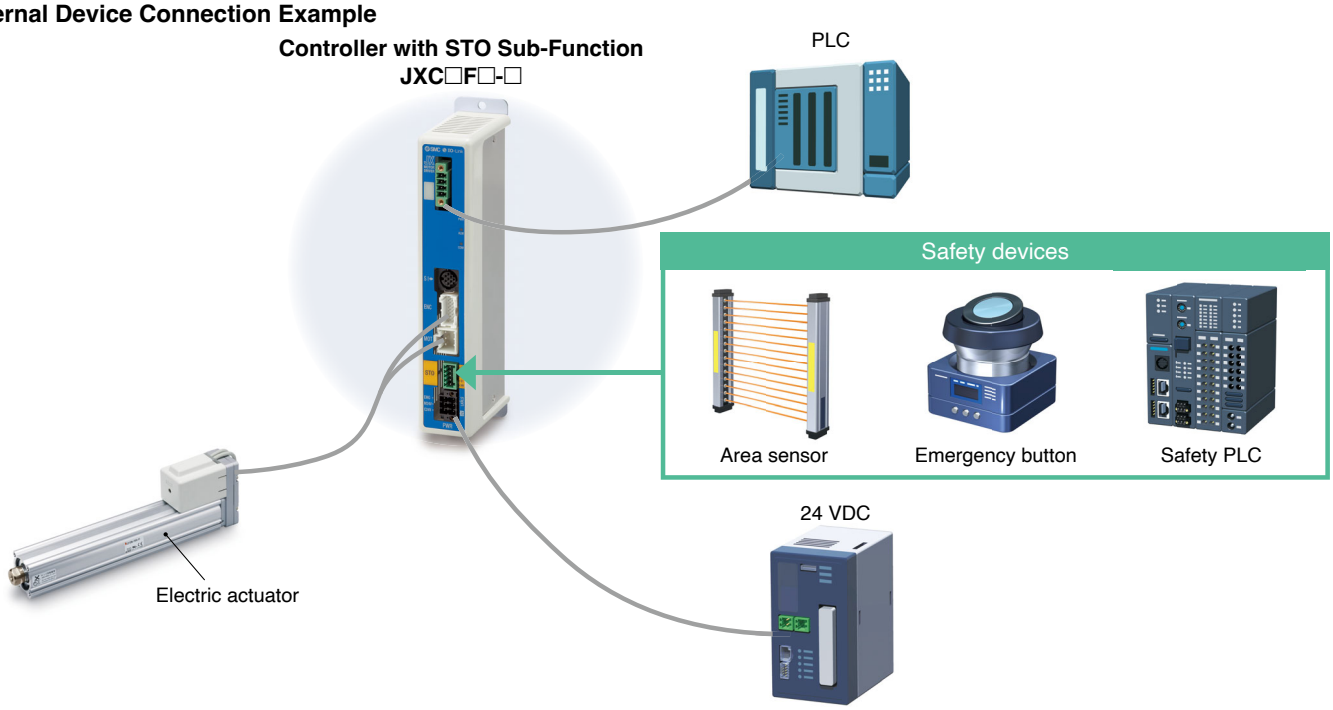
Safety function/STO, SS1-t (EN 61800-5-2)

When the STO signal is input from the safety device, after the SS1-t operation is completed, the unit shifts to the STO operation and the power supply of the motor is turned OFF.



SS1-t operation: Safe Stop 1—After deceleration, a shift to the STO operation occurs.
STO operation: Safe Torque Off—The power supply of the motor is turned OFF.

External Device Connection Example



Certified by a third-party organization

Facilitates the safety designing of equipment and facilities (compliant with ISO/IEC standards)

EN 61508 SIL 3*1
EN 62061 SIL CL 3*1
EN ISO 13849-1 Cat. 3 PL e
EN 61800-5-2 STO, SS1-t

SIL (Safety Integrity Level)
A safety integrity level as defined by international standard IEC 61508/62061
There are 4 levels of safety, with the lowest being SIL 1 and the highest being SIL 4.

PL (Performance Level)
A scale used to define the capability of safety-related parts to perform a safety function as defined by international standard ISO 13849
There are 5 levels of safety function, with the lowest being PL a and the highest being PL e.

*1 The above safety integrity level is the max. value. The achievable level varies depending on the configuration and inspection method of the component. Be sure to refer to "Safety Manual: JXC#-OMY0009" for more information.

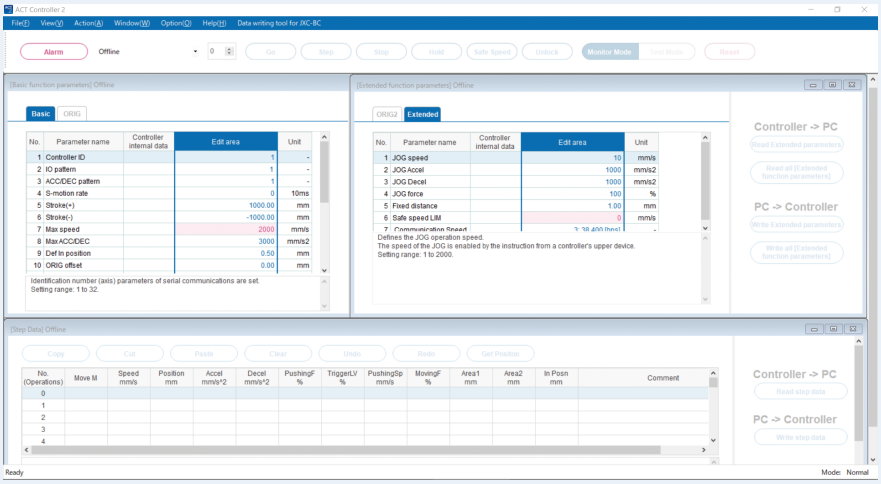
ACT 2

Controller Setting Software ACT Controller 2

Easy-to-use setting software ACT Controller 2 (For PC)

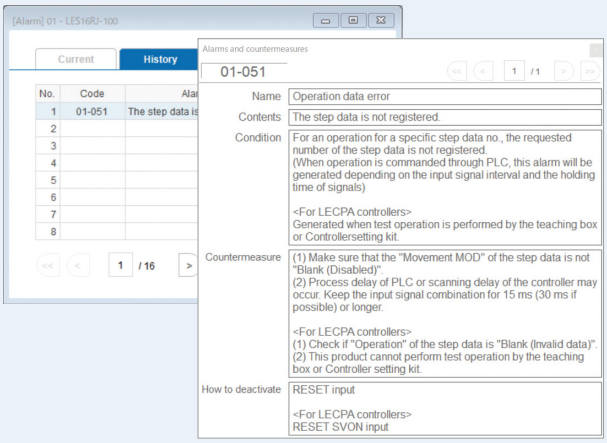
Various functions available in normal mode (Compared with the existing ACT Controller)

● Parameter and step data setting

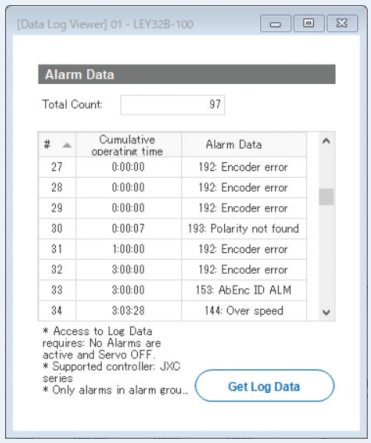


* Customers operating computers with specifications other than Windows 10/64 bit and Windows 11 should use the existing ACT Controller.

● Alarm confirmation

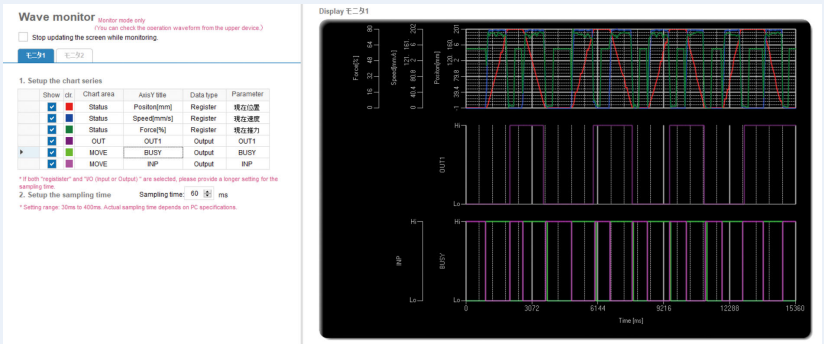


When an alarm is generated, the alarm details and countermeasures can be confirmed.



When an alarm is generated, the cumulative startup time of the controller can be confirmed.

● Waveform monitoring

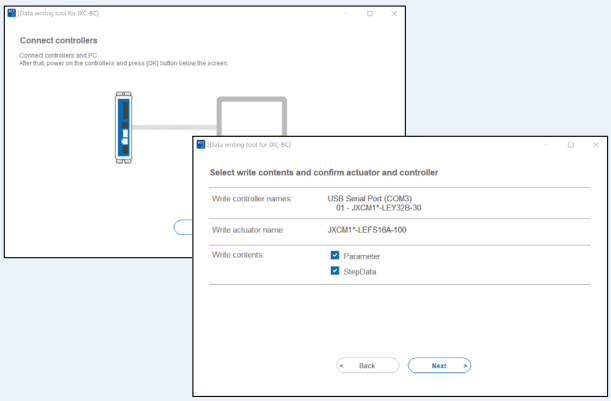


The position, speed, force, and input/output signals' waveform data during operation can be measured.

* When using the ACT Controller 2 test operation function, waveform monitoring is not available.

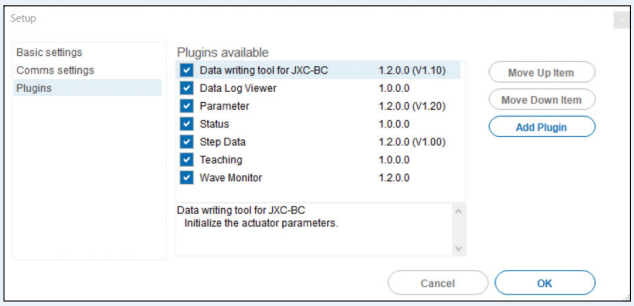
ACT 2 Controller Setting Software ACT Controller 2

The JXC-BC writing tool



The writing tool can be used to write the connected actuator's parameters and step data to a JXC series blank controller.

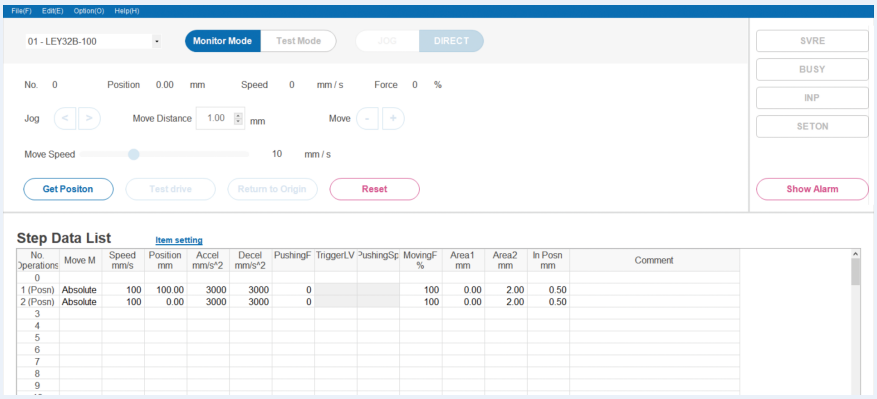
Customizable plug-in functions



Which plug-in functions are displayed as well as the display order are customizable. Customers can add the functions they require.

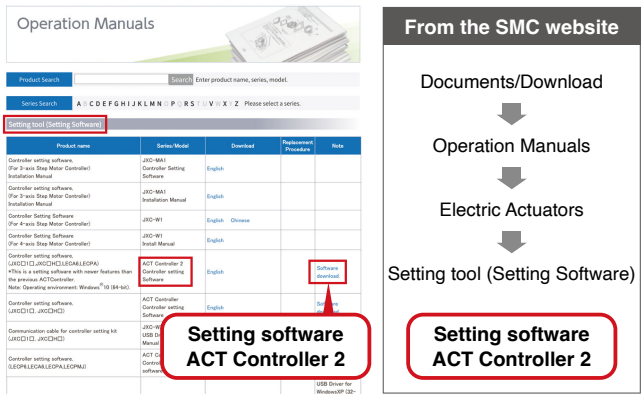
In normal mode, various other test operation methods (program operation, jogging, moving of the constant rate, etc.), signal status monitoring, one-touch switching between Japanese and English, and other functions are available.

For immediate use, operate in easy mode.



Step data setting, various test operations, and status confirmation can be done on a single screen.

How to download the setting software



From the SMC website

Documents/Download

↓

Operation Manuals

↓

Electric Actuators

↓

Setting tool (Setting Software)

Setting software ACT Controller 2

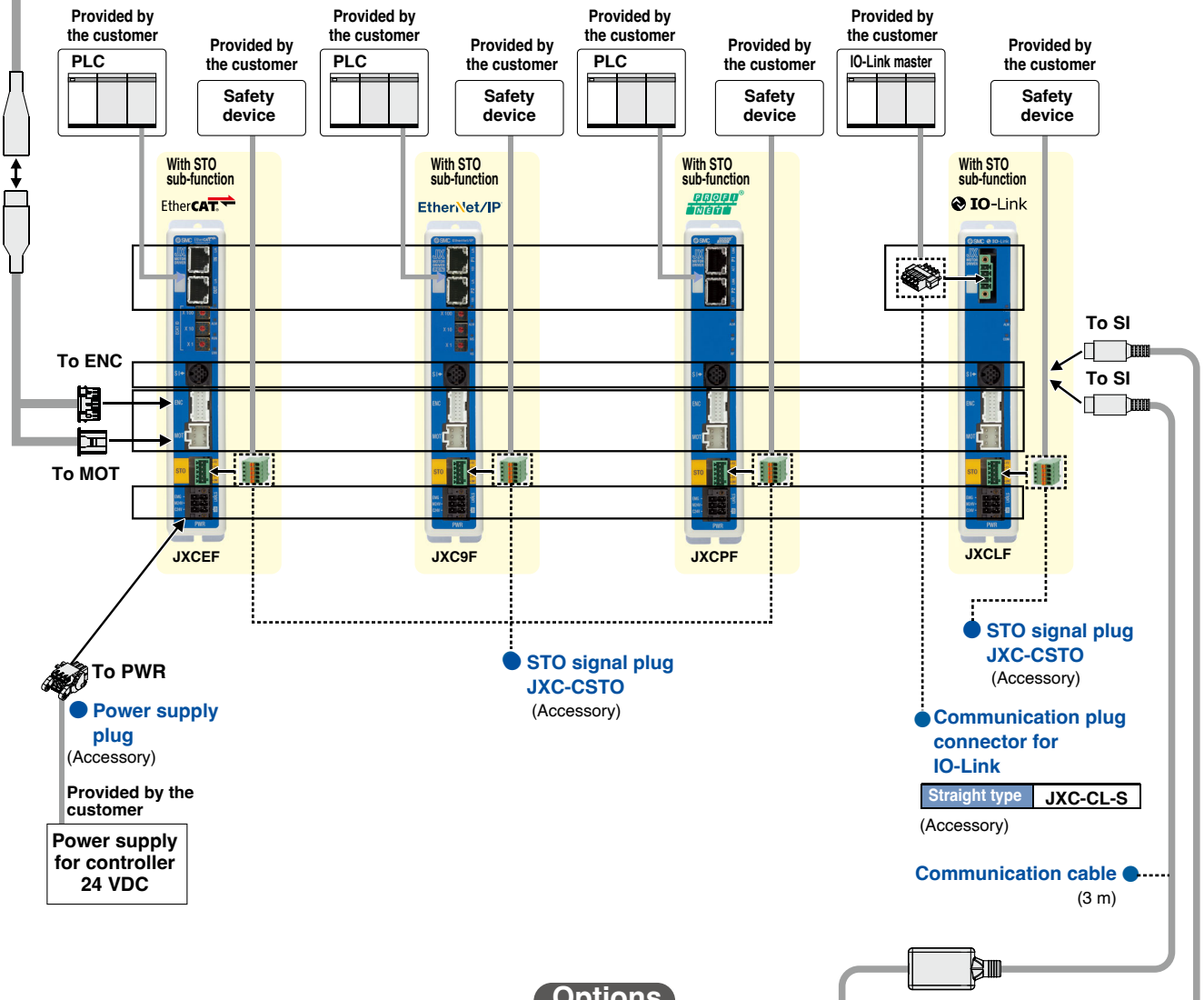
System Construction/Fieldbus Network
(EtherCAT/EtherNet/IP™/PROFINET/IO-Link Direct Input Type)

Electric actuator

LEY/LEYG Series
LEKFS Series
LEF Series
LESYH Series
LES/LESH Series
LER Series
LEL Series
LEPY/LEPS Series
LEH Series
LEM Series

Actuator cable

Cable type \ Compatible encoder	Incremental	Battery-less absolute
Standard cable	LE-CP-□-S	—
Robotic cable	LE-CP-□	LE-CE-□



Options

Teaching box
(With 3 m cable)
LEC-T1-3□G□

or

Communication cable for controller setting
Communication cable : JXC-W2A-C
USB cable : LEC-W2-U
<Controller setting software/USB driver>
· Controller setting software
· USB driver (For JXC-W2A-C)
* Download from SMC's website:
https://www.smc.eu

USB cable
(A-mini B type)
(0.8 m)

Conversion cable
P5062-5
(0.3 m)
The conversion cable is not required for the JXC-W2A-C. The conversion cable can be used for connecting this controller to the optional teaching box [LEC-T1] offered with the LEC series.

Conversion cable

Compatible actuators

LEKFS LEF LEL
LEM LEY/G LESYH
LES/H LEP LER
LEH

Step Motor Controller

JXCEF/9F/PF/LF Series

∗ For details, refer to the **Web Catalogue**.

RoHS

How to Order

JXC P F 7 – ❑

❶ ❷ ❸ ❹

❶ Communication protocol

E	EtherCAT
9	EtherNet/IP™
P	PROFINET
L	IO-Link

❷ Number of axes, Special specification

F	1 axis, With STO sub-function

❸ Mounting

7	Screw mounting
8∗1	DIN rail

∗1 The DIN rail is not included. It must be ordered separately.

EtherCAT. EtherNet/IP PROFINET IO-Link

With STO sub-function | With STO sub-function | With STO sub-function | With STO sub-function

❹ Actuator part number

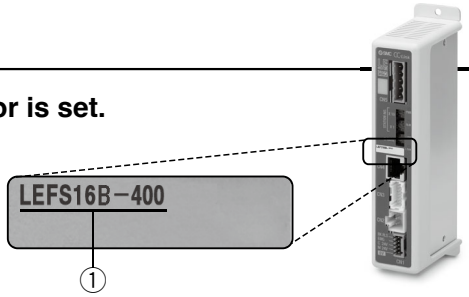
Without cable specifications and actuator options Example: Enter "**LEFS16B-100**" for the LEFS16B-100B-S1□□.	
BC	Blank controller∗1

∗1 Requires dedicated software (JXC-BCW or ACT Controller 2)

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

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

① Check the actuator label for the model number. This number should match that of the controller.



∗ Refer to the operation manual for using the products. Please download it via our website: https://www.smc.eu

Precautions for blank controllers (JXC□□□□-BC)

A blank controller is a controller to which the customer can write the data of the actuator it is to be combined and used with. For data writing, use the controller setting software ACT Controller 2 or the dedicated software JXC-BCW.

- Both ACT Controller 2 and JXC-BCW can be downloaded from the SMC website.
- To use this software, order the communication cable for controller setting (JXC-W2A-C) and the USB cable (LEC-W2-U) separately.

Hardware Requirements

OS	Windows®10 (64 bit)	Windows®11	Windows®7	Windows®8	Windows®10
Software	ACT Controller 2 (With JXC-BCW function)		JXC-BCW		

∗ Windows®7, Windows®8, Windows®10, and Windows®11 are registered trademarks of Microsoft Corporation in the United States.

SMC website: https://www.smc.eu

Specifications

Model			JXCEF	JXC9F	JXCPF	JXCLF
Network			EtherCAT	EtherNet/IP™	PROFINET	IO-Link
Compatible motor			Step motor (Servo/24 VDC)			
Power supply			Power voltage: 24 VDC ±10 %			
Current consumption (Controller)			200 mA or less	130 mA or less	200 mA or less	100 mA or less
Compatible encoder			Incremental/Battery-less absolute			
Communication specifications	Applicable system	**Protocol**	EtherCAT*2	EtherNet/IP™*2	PROFINET*2	IO-Link
		Version*1	Conformance Test Record V.1.2.6	Volume 1 (Edition 3.14) Volume 2 (Edition 1.15)	Specification Version 2.32	Version 1.1 Port Class A
	Communication speed		100 Mbps*2	10/100 Mbps*2 (Automatic negotiation)	100 Mbps*2	230.4 kbps (COM3)
	Configuration file*3		ESI file	EDS file	GSDML file	IODD file
	I/O occupation area		Input 20 bytes Output 36 bytes	Input 36 bytes Output 36 bytes	Input 36 bytes Output 36 bytes	Input 14 bytes Output 22 bytes
	Terminating resistor		Not included			
Memory			EEPROM			
LED indicator			PWR, ALM, RUN, ERR	PWR, ALM, MS, NS	PWR, ALM, SF, BF	PWR, ALM, COM
Cable length [m]			Actuator cable: 20 or less			
Cooling system			Natural air cooling			
Operating temperature range [°C]			0 to 55 (No freezing)*5			
Operating humidity range [%RH]			90 or less (No condensation)			
Enclosure			IP30 (Excludes the connector)			
Insulation resistance [MΩ]			Between all external terminals and the case: 50 (500 VDC)			
Safety function			STO,SS1-t	STO,SS1-t	STO,SS1-t	STO, SS1-t
Safety standards			EN61508 SIL3*4 EN62061 SIL CL3*4 EN ISO13849-1 Cat.3 PLe*4	EN61508 SIL3*4 EN62061 SIL CL3*4 EN ISO13849-1 Cat.3 PLe*4	EN61508 SIL3*4 EN62061 SIL CL3*4 EN ISO13849-1 Cat.3 PLe*4	EN 61508 SIL 3*4 EN 62061 SIL CL 3*4 EN ISO 13849-1 Cat. 3 PL e*4
Weight [g]	Screw mounting		250	240	250	220
	DIN rail mounting		270	260	270	240

*1 Please note that versions are subject to change.
*2 Use a shielded communication cable with CAT5 or higher for the PROFINET, EtherNet/IP™ and EtherCAT.
*3 The files can be downloaded from the SMC website.
*4 The above safety integrity level is the max. value. The achievable level varies depending on the configuration and inspection method of the component. Be sure to refer to "Safety Manual for more information.
*5 If the vertical work load for the LEY40□E or LEYG40□E series product is equal to or greater than the weight below, use the controller at an ambient temperature at 40°C or less.

Series	Weight [kg]	Series	Weight [kg]
LEY40□EA	9	**LEYG40□EA**	7
LEY40□EB	19	**LEYG40□EB**	17
LEY40□EC	38	**LEYG40□EC**	36

■Trademark
EtherNet/IP® is a registered trademark of ODVA, Inc.
EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Example of Operation Command

In addition to the step data input of 64 points maximum in each communication protocol, the changing of each parameter can be performed in real time via numerical data defined operation.
* Numerical values other than "Moving force," "Area 1," and "Area 2" can be used to perform operation under numerical instructions from JXCL□.

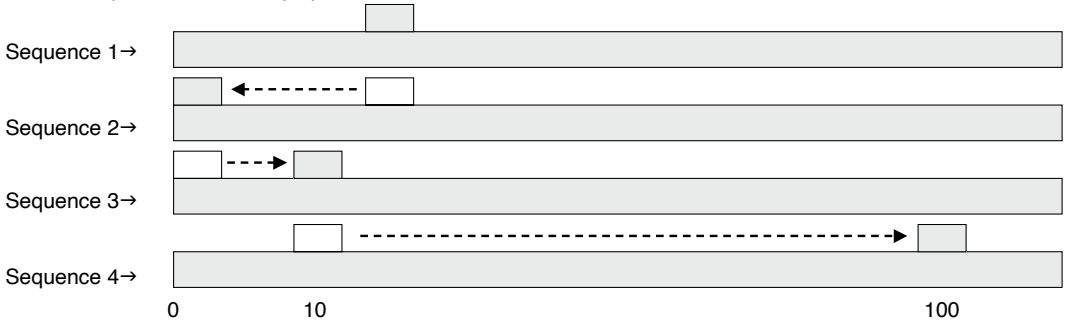
<Application example> Movement between 2 points

No.	Movement mode	Speed	Position	Acceleration	Deceleration	Pushing force	Trigger LV	Pushing speed	Moving force	Area 1	Area 2	In position
0	1: Absolute	100	10	3000	3000	0	0	0	100	0	0	0.50
1	1: Absolute	100	100	3000	3000	0	0	0	100	0	0	0.50

<Step no. defined operation>
Sequence 1: Servo ON instruction
Sequence 2: Instruction to return to origin
Sequence 3: Specify step data No. 0 to input the DRIVE signal.
Sequence 4: Specify step data No. 1 after the DRIVE signal has been temporarily turned OFF to input the DRIVE signal.

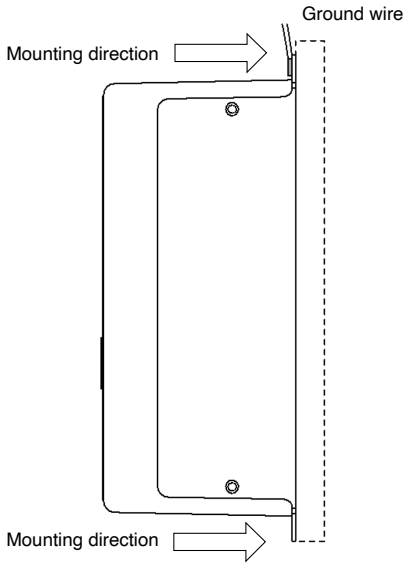
<Numerical data defined operation>
Sequence 1: Servo ON instruction
Sequence 2: Instruction to return to origin
Sequence 3: Specify step data No. 0 and turn ON the input instruction flag (position). Input 10 in the target position. Subsequently the start flag turns ON.
Sequence 4: Turn ON step data No. 0 and the input instruction flag (position) to change the target position to 100 while the start flag is ON.

The same operation can be performed with any operation command.



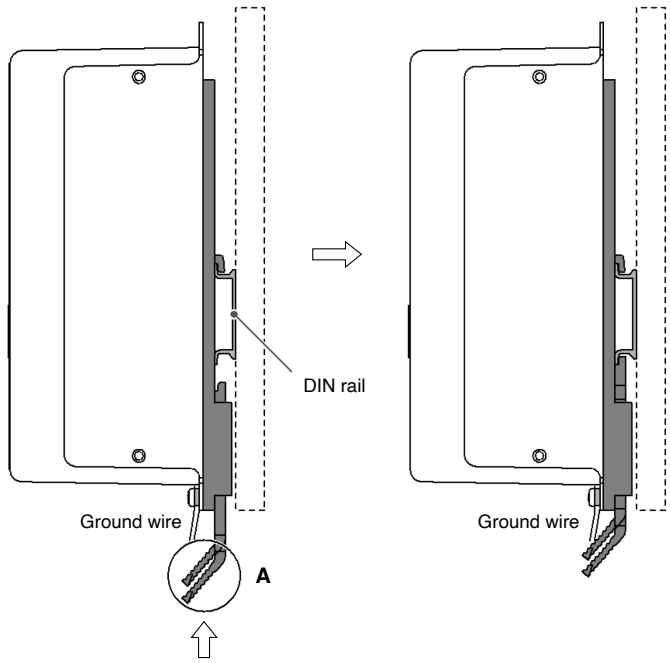
How to Mount

a) Screw mounting (JXC□17-□, JXC□F7-□)
(Installation with two M4 screws)



b) DIN rail mounting (JXC□18-□, JXC□F8-□)
(Installation with the DIN rail)

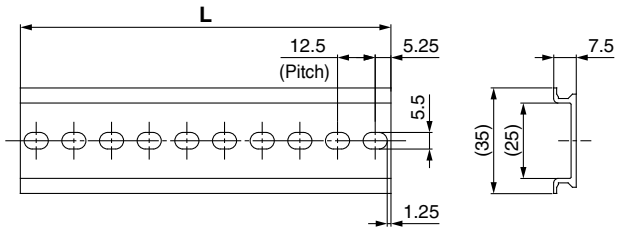
Before locked onto DIN rail **DIN rail is locked.**



∗ When size 25 or more of the LE series are used, the space between the controllers should be 10 mm or more.

DIN rail
AXT100-DR-□

∗ For □, enter a number from the No. line in the table below.
Refer to the dimension drawings on page 8 for the mounting dimensions.



L Dimensions [mm]

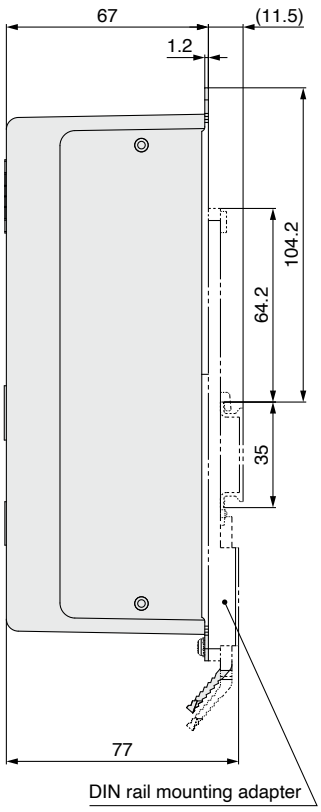
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5

No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
L	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

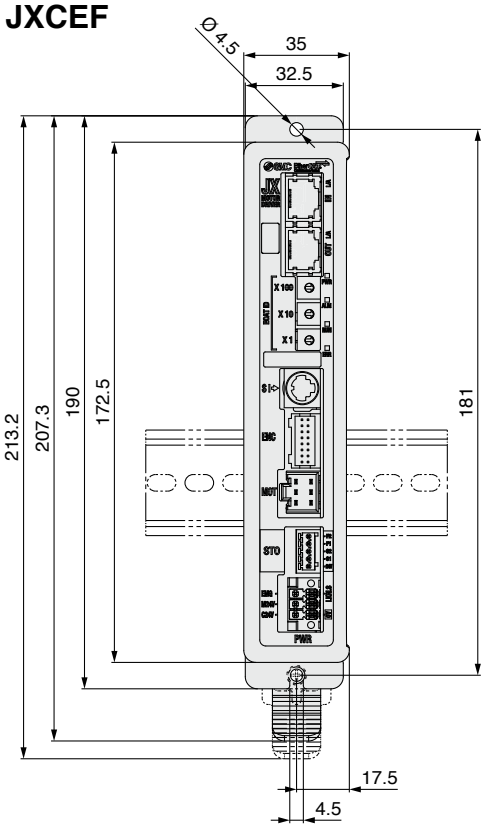
DIN rail mounting adapter
LEC-3-D0 (with 2 mounting screws)

This should be used when the DIN rail mounting adapter is mounted onto a screw mounting type controller afterward.

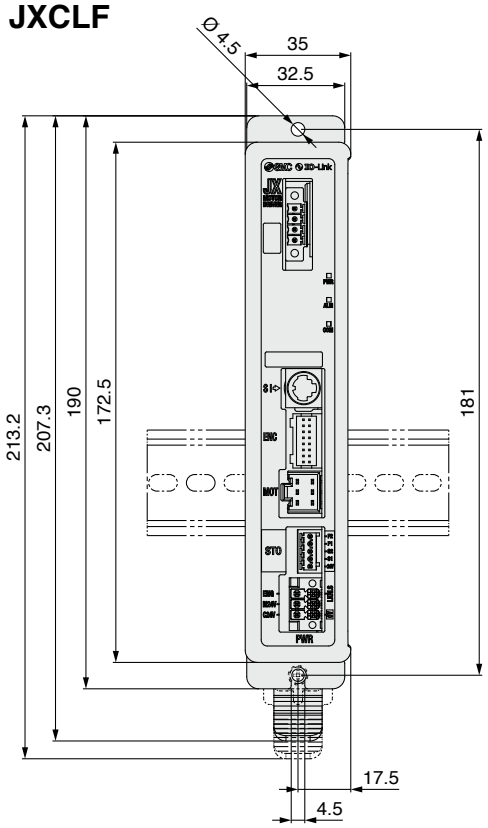
Dimensions

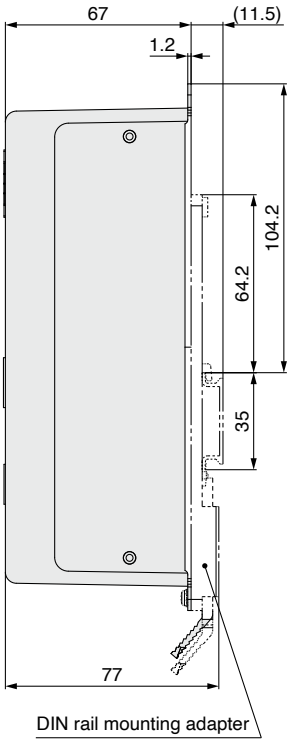


JXCEF

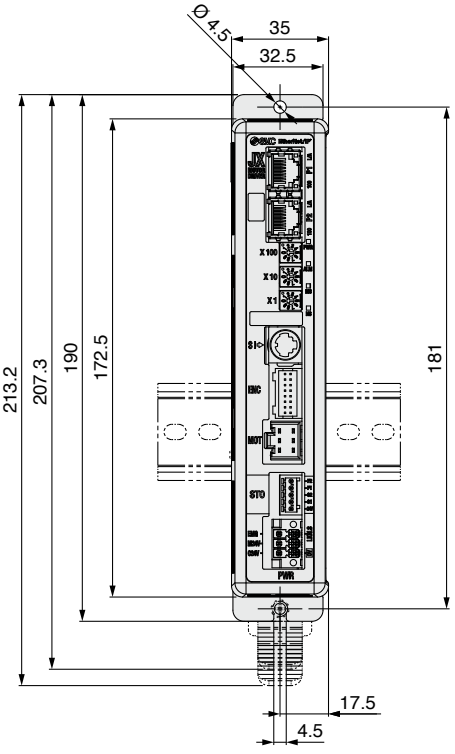


JXCLF

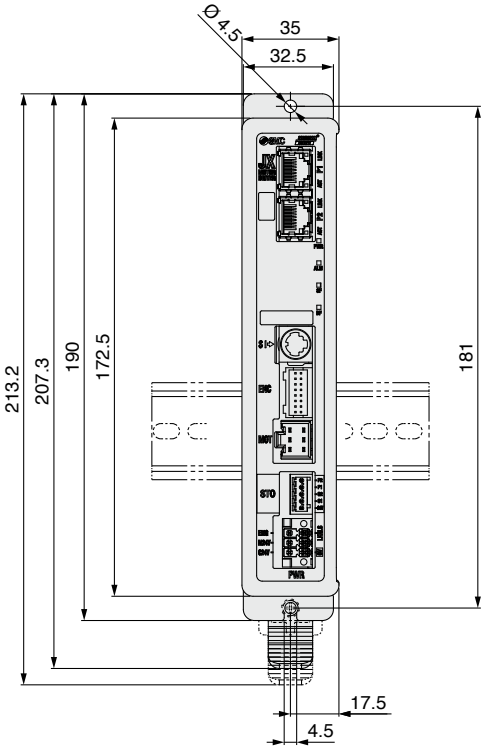




JXC9F



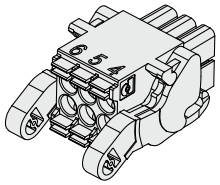
JXCPF

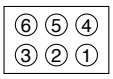


Options

■ Power supply plug JXC-CPW

* The power supply plug is an accessory.





① C24V ④ 0V
② M24V ⑤ N.C.
③ EMG ⑥ LK RLS

Power supply plug

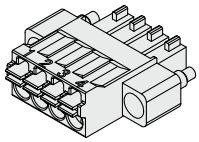
Terminal name	Function	Details
0V	Common supply (–)	The M24V terminal, C24V terminal, EMG terminal, and LK RLS terminal are common (–).
M24V	Motor power supply (+)	Motor power supply (+) of the controller
C24V	Control power supply (+)	Control power supply (+) of the controller
EMG	Stop (+)	Connection terminal of the external stop circuit
LK RLS	Lock release (+)	Connection terminal of the lock release switch

■ Communication plug connector

For IO-Link

Straight type
JXC-CL-S

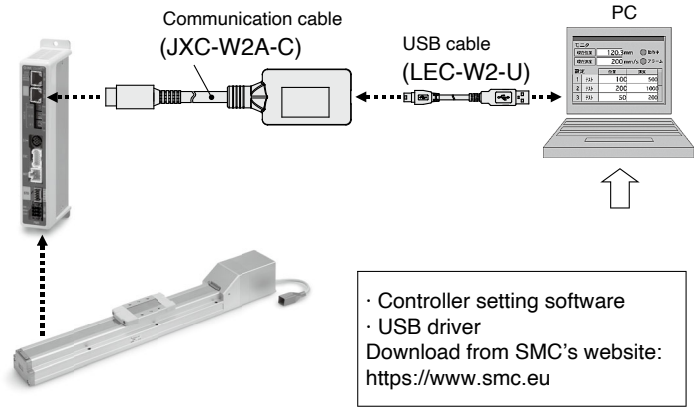
* The communication plug connector for IO-Link is an accessory.



Communication plug connector for IO-Link

Terminal no.	Terminal name	Details
1	L+	+24 V
2	NC	N/A
3	L–	0 V
4	C/Q	IO-Link signal

■ Communication cable for controller setting



· Controller setting software
· USB driver
Download from SMC's website:
https://www.smc.eu

■ STO signal plug JXC-CSTO

* Included with the JXC□F

STO signal plug

Pin no.	Signal name	Details
1	24V	+24 V output (Max. 100 mA)
2	STO1	STO input 1
3	STO2	STO input 2
4	Feedback 1	STO1 feedback signal
5	Feedback 2	STO2 feedback signal

■ DIN rail mounting adapter LEC-3-D0

* With 2 mounting screws

This should be used when the DIN rail mounting adapter is mounted onto a screw mounting type controller afterward.

■ DIN rail AXT100-DR-□

* For □, enter a number from the No. line in the table on page 7. Refer to the dimension drawings on page 8 for the mounting dimensions.

How to Order

JXC Series **JXC – W2A – C**

* For JXC□ series

C: Communication cable

LEC – W2 – U

U: USB cable

Controller setting kit JXC-W2A

A set which includes a communication cable (JXC-W 2 A-C) and a USB cable (LEC-W2-U)

Compatible controllers

JXC□F

Actuator Cable 1

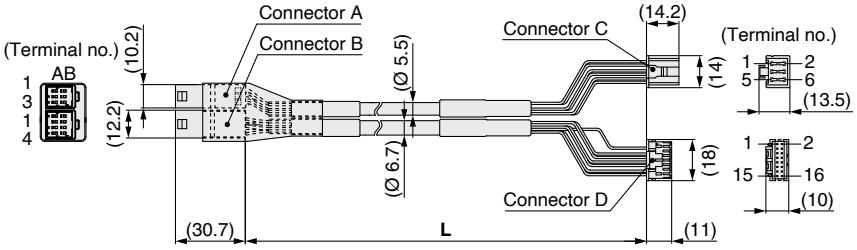
[Robotic cable for battery-less absolute (Step motor 24 VDC)]

LE − CE − 1

Cable length (L) [m]

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

*1 Produced upon receipt of order



Weight

Product no.	Weight [g]	Note
LE-CE-1	190	Robotic cable
LE-CE-3	360	
LE-CE-5	570	
LE-CE-8	900	
LE-CE-A	1120	
LE-CE-B	1680	
LE-CE-C	2210	

Signal	Connector A terminal no.	Cable colour	Connector C terminal no.
A	B-1	Brown	2
$\overline{A}$	A-1	Red	1
B	B-2	Orange	6
$\overline{B}$	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/—	A-3	Blue	4

Signal	Connector B terminal no.	Cable colour	Connector D terminal no.
Vcc	B-1	Brown	12
GND	A-1	Black	13
$\overline{A}$	B-2	Red	7
A	A-2	Black	6
$\overline{B}$	B-3	Orange	9
B	A-3	Black	8
SD+ (RX)	B-4	Yellow	11
SD− (TX)	A-4	Black	10
		Black	3

Shield

[Robotic cable with lock for battery-less absolute (Step motor 24 VDC)]

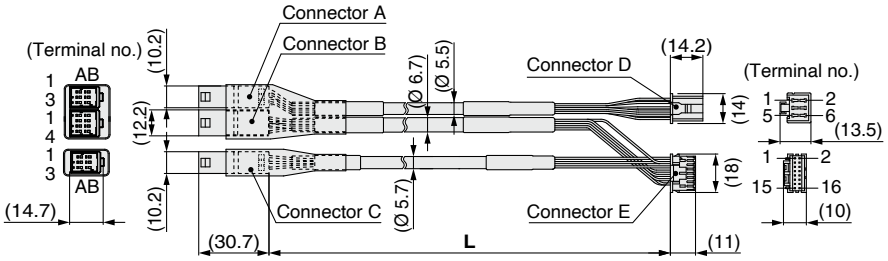
LE − CE − 1 − B

Cable length (L) [m]

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

*1 Produced upon receipt of order

With lock and sensor



Weight

Product no.	Weight [g]	Note
LE-CE-1-B	240	Robotic cable
LE-CE-3-B	460	
LE-CE-5-B	740	
LE-CE-8-B	1170	
LE-CE-A-B	1460	
LE-CE-B-B	2120	
LE-CE-C-B	2890	

Signal	Connector A terminal no.	Cable colour	Connector D terminal no.
A	B-1	Brown	2
$\overline{A}$	A-1	Red	1
B	B-2	Orange	6
$\overline{B}$	A-2	Yellow	5
COM-A/COM	B-3	Green	3
COM-B/—	A-3	Blue	4

Signal	Connector B terminal no.	Cable colour	Connector E terminal no.
Vcc	B-1	Brown	12
GND	A-1	Black	13
$\overline{A}$	B-2	Red	7
A	A-2	Black	6
$\overline{B}$	B-3	Orange	9
B	A-3	Black	8
SD+ (RX)	B-4	Yellow	11
SD− (TX)	A-4	Black	10
		Black	3

Shield

Signal	Connector C terminal no.		
Lock (+)	B-1	Red	4
Lock (−)	A-1	Black	5
Sensor (+)	B-3	Brown	1
Sensor (−)	A-3	Blue	2

Actuator Cable 2

[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*1
A	10*1
B	15*1
C	20*1

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

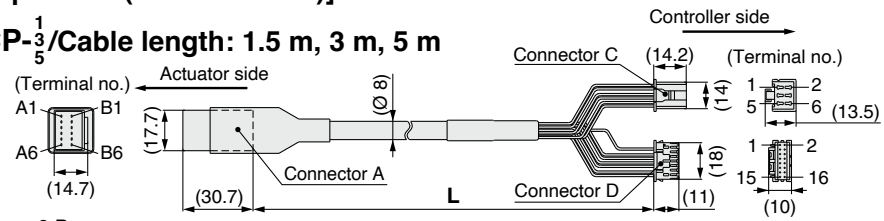
Cable type

–	Robotic cable (Flexible cable)
S	Standard cable

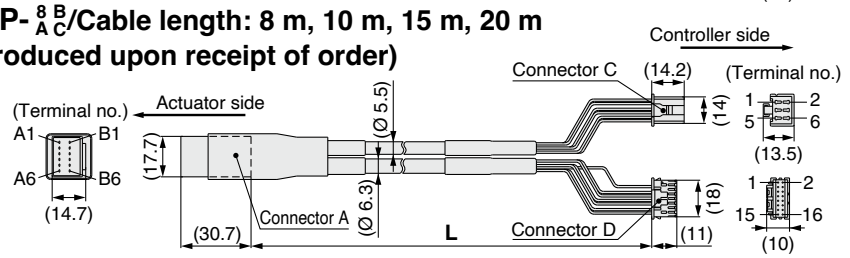
Weight

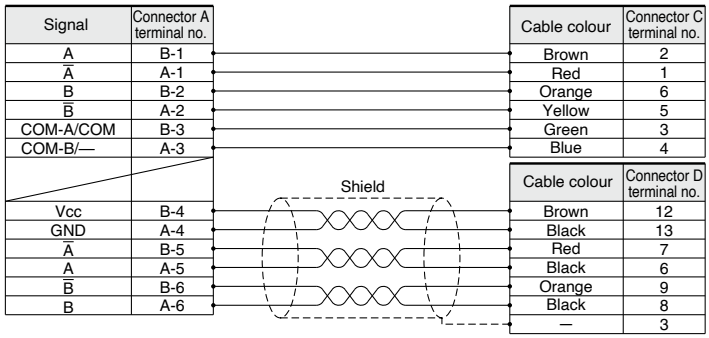
Product no.	Weight [g]	Note
LE-CP-1-S	190	Standard cable
LE-CP-3-S	280	
LE-CP-5-S	460	
LE-CP-1	140	Robotic cable
LE-CP-3	260	
LE-CP-5	420	
LE-CP-8	790	
LE-CP-A	980	
LE-CP-B	1460	
LE-CP-C	1940	

LE-CP-1/3/5/Cable length: 1.5 m, 3 m, 5 m



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





[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*1
A	10*1
B	15*1
C	20*1

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

With lock and sensor

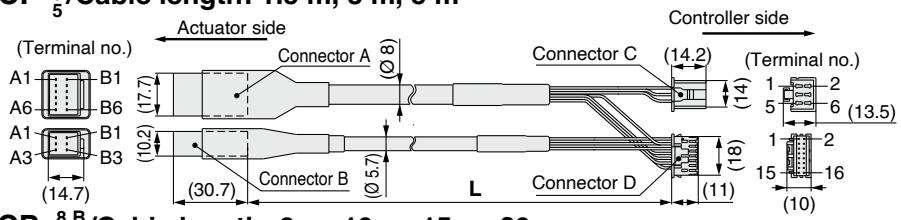
Cable type

–	Robotic cable (Flexible cable)
S	Standard cable

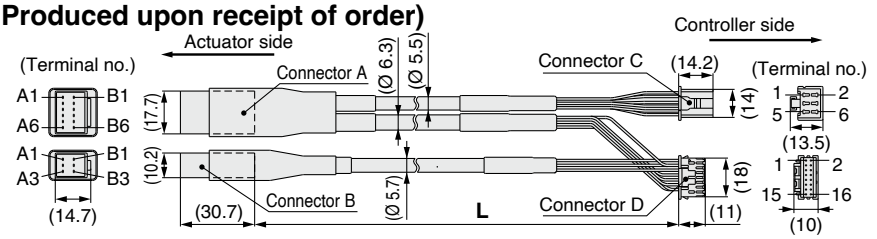
Weight

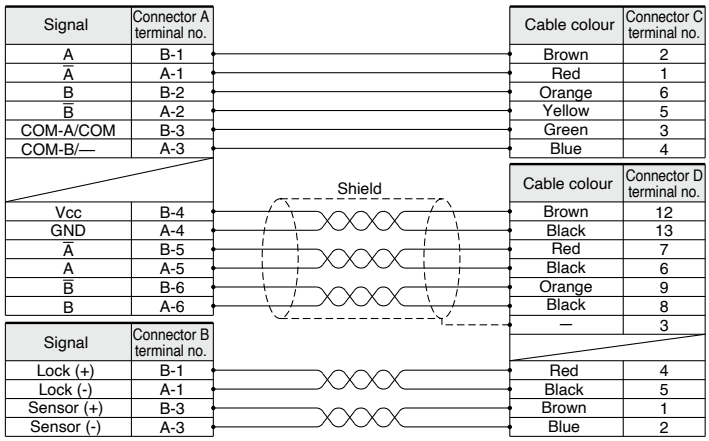
Product no.	Weight [g]	Note
LE-CP-1-B-S	240	Standard cable
LE-CP-3-B-S	380	
LE-CP-5-B-S	630	
LE-CP-1-B	190	Robotic cable
LE-CP-3-B	360	
LE-CP-5-B	590	
LE-CP-8-B	1060	
LE-CP-A-B	1320	
LE-CP-B-B	1920	
LE-CP-C-B	2620	

LE-CP-1/3/5/Cable length: 1.5 m, 3 m, 5 m



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





Compatible controllers

JXC□F

LEC-T1
Teaching Box

How to Order

LEC – T1 – 3 J G □

Teaching box

Cable length [m]

3	3

Initial language

J	Japanese
E	English

Stop switch

G	Equipped with stop switch

Enable switch

—	None
S	Equipped with enable switch

∗ Interlock switch for jog and test function

∗ The displayed language can be changed to English or Japanese.

Standard functions
- **Chinese character display**
- **Stop switch is provided.**

Option
- **Enable switch is provided.**

Specifications

Item	Description
Switch	Stop switch, Enable switch (Option)
Cable length [m]	3
Enclosure	IP64 (Except connector)
Operating temperature range [°C]	5 to 50
Operating humidity range [%RH]	90 or less (No condensation)
Weight [g]	350 (Except cable)

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

Easy Mode

Function	Details
Step data	• Setting of step data
Jog	• Jog operation • Return to origin
Test	• 1 step operation • Return to origin
Monitor	• Display of axis and step data no. • Display of two items selected from Position, Speed, Force.
ALM	• Active alarm display • Alarm reset
TB setting	• Reconnection of axis (Ver. 1.∗∗) • Displayed language setting (Ver. 2.∗∗) • Setting of easy/normal mode • Setting step data and selection of items from easy mode monitor

Menu Operations Flowchart

Menu
- Data
- Monitor
- Jog
- Test
- ALM
- TB setting

Data
Step data no.
Setting of two items selected below
Ver. 1.∗∗:
Position, Speed, Force, Acceleration, Deceleration
Ver. 2.∗∗:
Position, Speed, Pushing force, Acceleration, Deceleration, Movement MOD, Trigger LV, Pushing speed, Moving force, Area 1, Area 2, In position

Monitor
Display of step no.
Display of two items selected below
(Position, Speed, Force)

Jog
Return to origin
Jog operation

Test
1 step operation

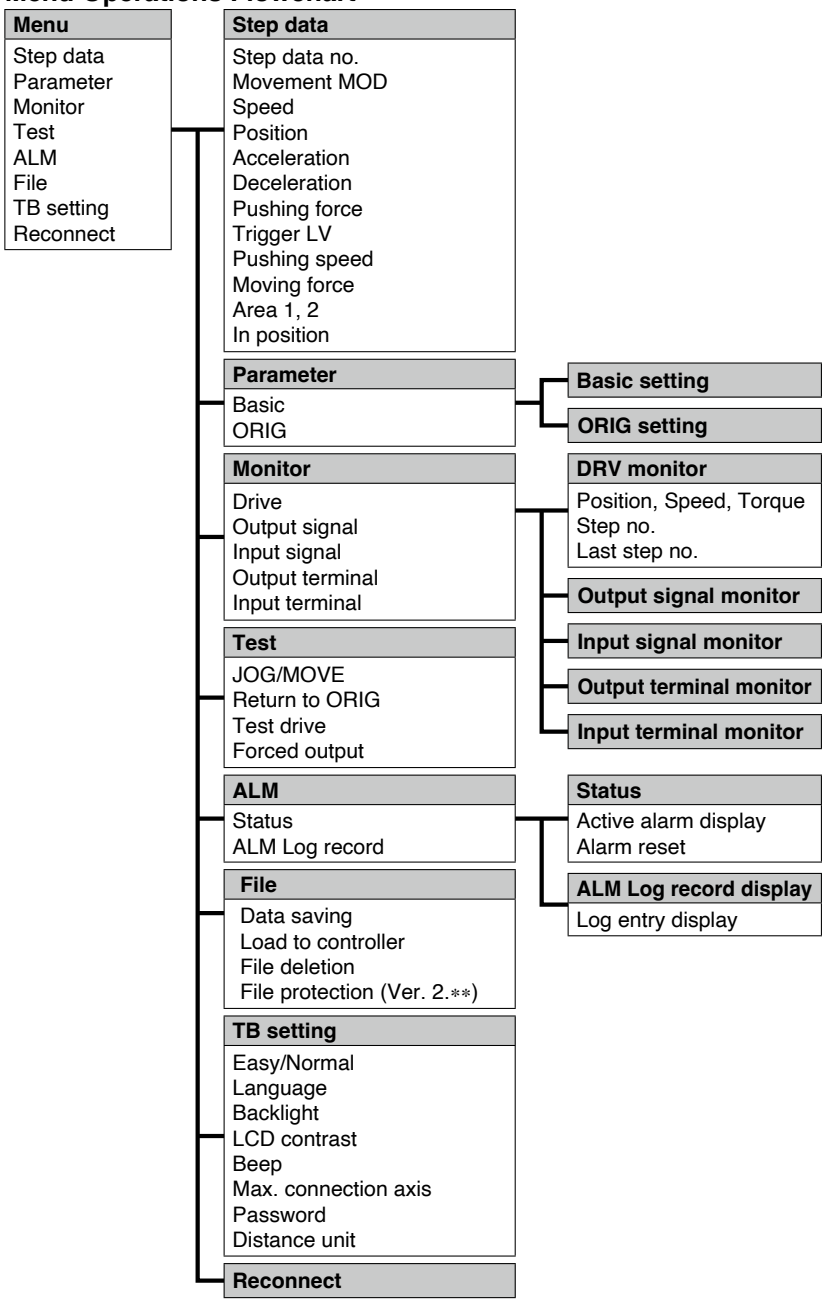
ALM
Active alarm display
Alarm reset

TB setting
Reconnect (Ver. 1.∗∗)
Japanese/English (Ver. 2.∗∗)
Easy/Normal
Set item

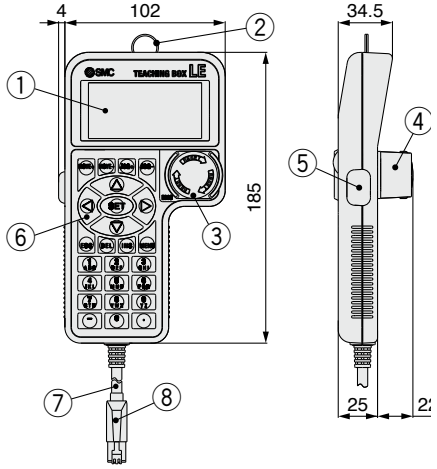
Normal Mode

Function	Details
Step data	• Step data setting
Parameter	• Parameters setting
Test	• Jog operation/Constant rate movement • Return to origin • Test drive (Specify a maximum of 5 step data and operate.) • Forced output (Forced signal output, Forced terminal output)
Monitor	• Drive monitor • Output signal monitor • Input signal monitor • Output terminal monitor • Input terminal monitor
ALM	• Active alarm display (Alarm reset) • Alarm log record display
File	• Data saving Save the step data and parameters of the controller which is being used for communication (it is possible to save four files, with one set of step data and parameters defined as one file). • Load to controller Loads the data which is saved in the teaching box to the controller which is being used for communication. • Delete the saved data. • File protection (Ver. 2.∗∗)
TB setting	• Display setting (Easy/Normal mode) • Language setting (Japanese/English) • Backlight setting • LCD contrast setting • Beep sound setting • Max. connection axis • Distance unit (mm/inch)
Reconnect	• Reconnection of axis

Menu Operations Flowchart



Dimensions



No.	Description	Function
1	**LCD**	A screen of liquid crystal display (with backlight)
2	**Ring**	A ring for hanging the teaching box
3	**Stop switch**	When switch is pushed in, the switch locks and stops. The lock is released when it is turned to the right.
4	**Stop switch guard**	A guard for the stop switch
5	**Enable switch (Option)**	Prevents unintentional operation (unexpected operation) of the jog test function. Other functions such as data change are not covered.
6	**Key switch**	Switch for each input
7	**Cable**	Length: 3 meters
8	**Connector**	A connector connected to CN4 of the controller

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) [1], and other safety regulations.

⚠ **Danger:**	**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
⚠ **Warning:**	**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Caution:**	**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

1) ISO 4414: Pneumatic fluid power – General rules and safety requirements for systems and their components.
ISO 4413: Hydraulic fluid power – General rules and safety requirements for systems and their components.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Our products cannot be used beyond their specifications.
Our products are not developed, designed, and manufactured to be used under the following conditions or environments.
Use under such conditions or environments is not covered.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogues and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

⚠ Caution

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.
Use in non-manufacturing industries is not covered.
Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.
The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. [2] Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

SMC Corporation (Europe)

Austria	+43 (0)2262622800	www.smc.at	office.at@smc.com
Belgium	+32 (0)33551464	www.smc.be	info@smc.be
Bulgaria	+359 (0)2807670	www.smc.bg	sales.bg@smc.com
Croatia	+385 (0)13707288	www.smc.hr	sales.hr@smc.com
Czech Republic	+420 541424611	www.smc.cz	office.at@smc.com
Denmark	+45 70252900	www.smcdk.com	smc.dk@smc.com
Estonia	+372 651 0370	www.smcee.ee	info.ee@smc.com
Finland	+358 207513513	www.smc.fi	smc.fi@smc.com
France	+33 (0)164761000	www.smc-france.fr	supportclient.fr@smc.com
Germany	+49 (0)61034020	www.smc.de	info.de@smc.com
Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office.hu@smc.com
Ireland	+353 (0)14039000	www.smcautomation.ie	technical.ie@smc.com
Italy	+39 03990691	www.smcitalia.it	mailbox.it@smc.com
Latvia	+371 67817700	www.smc.lv	info.lv@smc.com
Lithuania	+370 5 2308118	www.smclt.lt	info.lt@smc.com
Netherlands	+31 (0)205318888	www.smc.nl	info@smc.nl
Norway	+47 67129020	www.smc-norge.no	post.no@smc.com
Poland	+48 22 344 40 00	www.smc.pl	office.pl@smc.com
Portugal	+351 214724500	www.smc.eu	apoiocliente.pt@smc.com
Romania	+40 213205111	www.smcromania.ro	office.ro@smc.com
Russia	+7 (812)3036600	www.smc.eu	sales@smcru.com
Slovakia	+421 (0)413213212	www.smc.sk	sales.sk@smc.com
Slovenia	+386 (0)73885412	www.smc.si	office.si@smc.com
Spain	+34 945184100	www.smc.eu	post.es@smc.com
Sweden	+46 (0)86031240	www.smc.nu	order.se@smc.com
Switzerland	+41 (0)523963131	www.smc.ch	helpcenter.ch@smc.com
Turkey	+90 212 489 0 440	www.smcturkey.com.tr	satis.tr@smc.com
UK	+44 (0)845 121 5122	www.smc.uk	sales.gb@smc.com
South Africa	+27 10 900 1233	www.smcza.co.za	Sales.za@smc.com

Printing DV 00 Printed in Spain