SMC
Automation - Controls - Process

Step Motor Controller

* Excluding the JXCLF

- Parallel I/O
- Step motor (Servo/24 VDC)
- Number of step data: 64 points

Step data input type

JXC51/61 Series

- Step motor (Servo/24 VDC)
- Number of step data: 64 points

New A controller with STO sub-function has been added.

- Product certification obtained by a third party (EN 61508 SIL 3, EN 62061 SIL CL 3, EN ISO 13849-1 Cat. 3 PL e)
- EN 61800-5-2 STO (Safe Torque Off) function

EtherCAT
JXCEF Series

IO-Link
JXCLF Series

EtherCAT direct input type

JXCE1 Series

Applicable network
EtherCAT

EtherNet/IP™ direct input type

JXC91 Series

Applicable network
EtherNet/IP

PROFINET direct input type

JXCP1 Series

Applicable network
PROFINET

DeviceNet® direct input type

JXCD1 Series

Applicable network
DeviceNet

IO-Link direct input type

JXCL1 Series

Applicable network
IO-Link

CC-Link direct input type

JXCM1 Series

Applicable network
CC-Link

JXC Series

www.smcusa.com www.smcworld.com

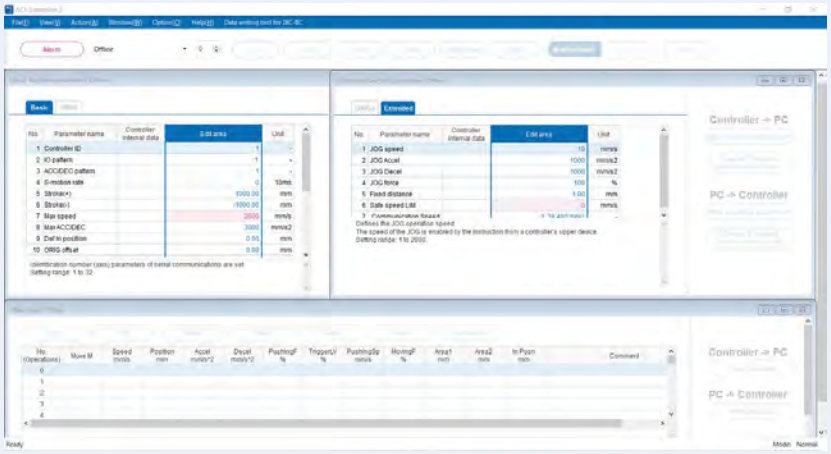
Step Data Input Type JXC51/61 Series p. 8

ACT 2 Controller Setting Software ACT Controller 2

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

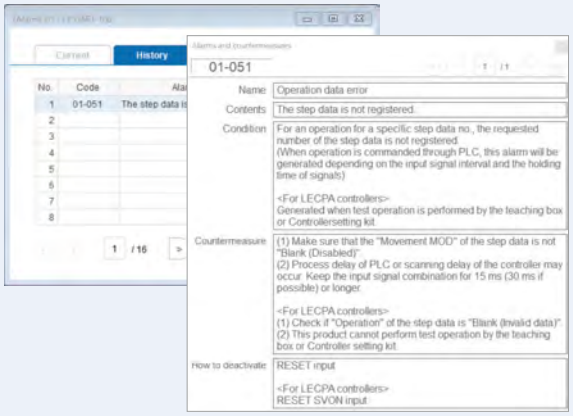
Various functions available in normal mode (Compared with the existing ACT Controller)

- **Parameter and step data setting**



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

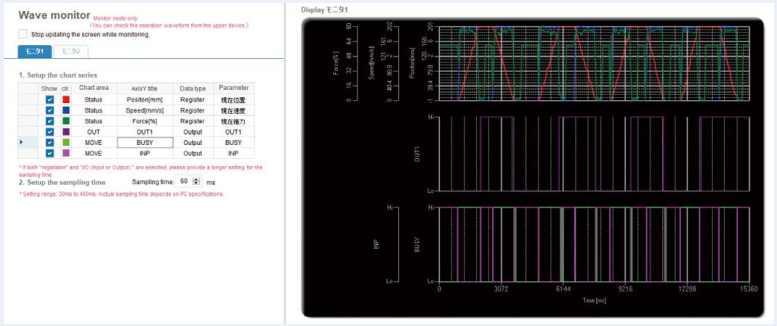
- **Alarm confirmation**



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

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

- **Waveform monitoring**



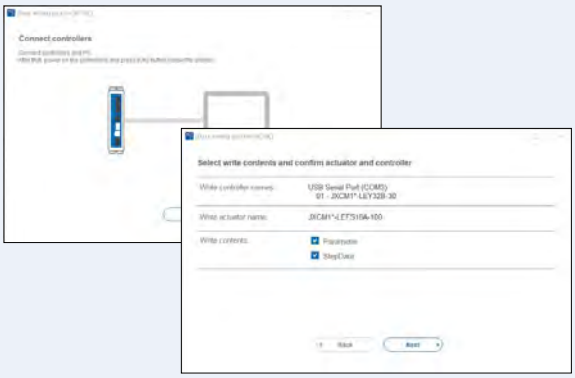
The position, speed, force, and input/output signals' waveform data during operation can be measured.

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

Step Data Input Type JXC51/61 Series p. 8

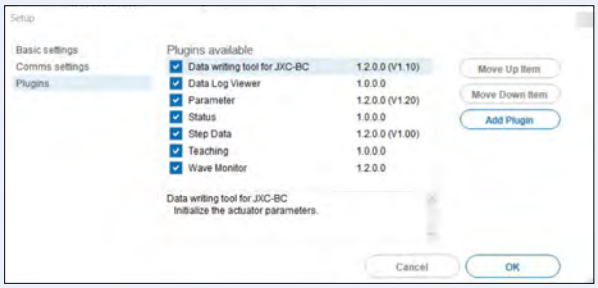
ACT 2 Controller Setting Software ACT Controller 2

● 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.

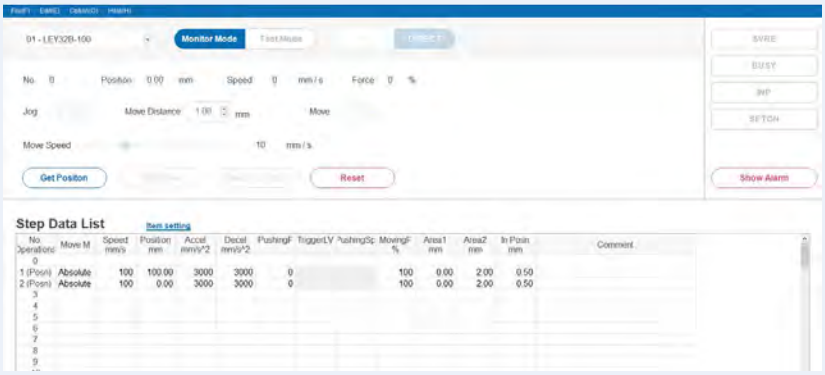
● Customizable plug-in functions



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.

Applicable controllers

Step motor controller **JXC□1 Series**

Controller with STO sub-function **JXC□F Series**

Step data input type **LECA6 Series**

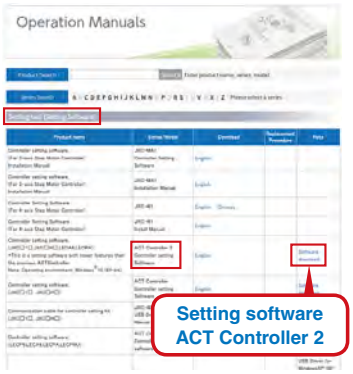
Pulse input type **LECPA Series**

Hardware Requirements Windows®10 (64 bit)

⚠Caution
Customers using a controller other than those listed above should use the existing controller setting software ACT Controller.

How to download the setting software

Click here for details.



From the SMC website

Documents/Download
↓
Operation Manuals
↓
Electric Actuators
↓
Setting tool (Setting Software)

Setting software ACT Controller 2

Step Data Input Type JXC51/61 Series p. 8

Teaching Box

◎Normal Mode

- Multiple step data can be stored in the teaching box and transferred to the controller.
- Continuous test drive by up to 5 step data

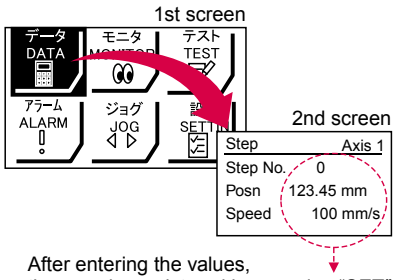
Teaching box screen

- Each function (step data setting, test drive, monitoring, etc.) can be selected from the main menu.

◎Easy Mode

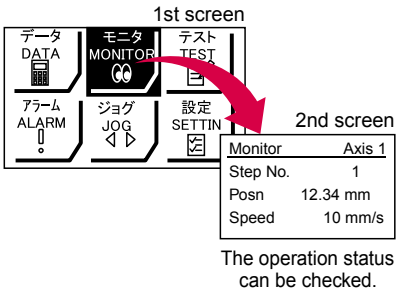
- The simple screen without scrolling promotes ease of setting and operation.
- Choose an icon from the first screen to select a function.
- Set the step data and check the monitor on the second screen.

Example of setting the step data



After entering the values, they can be registered by pressing "SET."

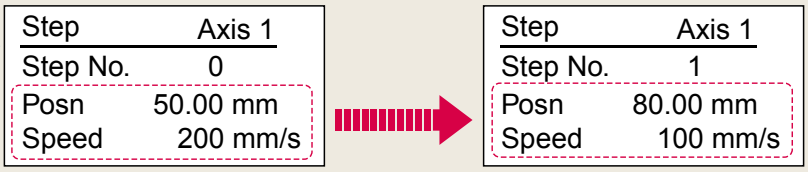
Example of checking the operation status



The operation status can be checked.

Teaching box screen

- **Data can be set by inputting only the position and speed.** (Other conditions are preset.)



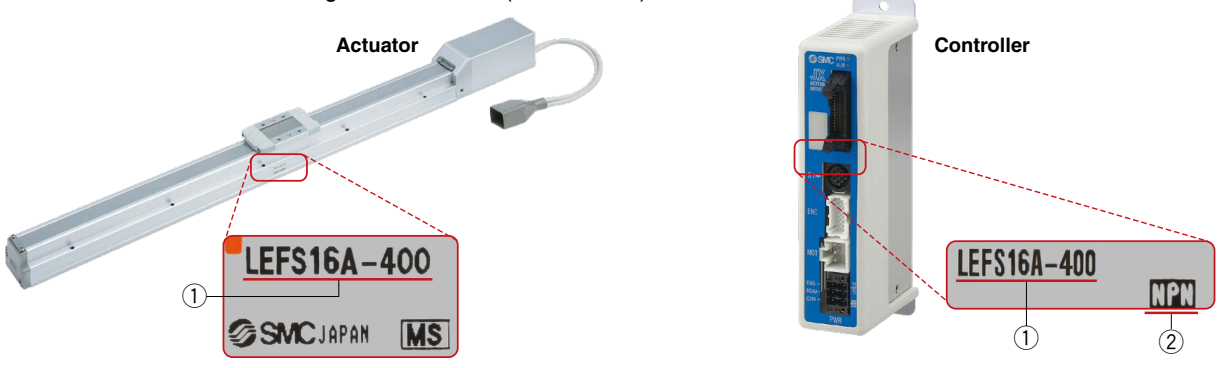
The actuator and controller are provided as a set. (They can be ordered separately as well.)

Confi m that the combination of the controller and actuator is correct.

<Check the following before use.>

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

② Check that the Parallel I/O configuration matches (NPN or PNP)



Fieldbus Network

EtherCAT/EtherNet/IP™/PROFINET/ DeviceNet®/IO-Link/CC-Link Direct Input Type Step Motor Controller/JXC□ Series p. 18

ACT 2 **Controller Setting Software ACT Controller 2**

EtherCAT

JXCE1 JXCEF

With STO sub-function

EtherNet/IP

JXC91

PROFINET

JXCP1

DeviceNet

JXCD1

IO-Link

JXCL1 JXCLF

With STO sub-function

CC-Link

JXCM1

◎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.

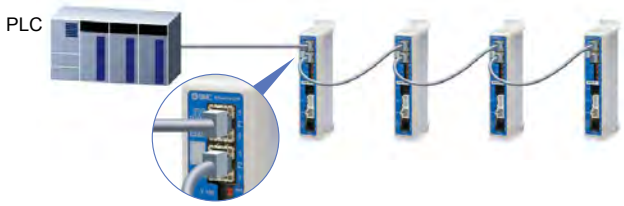
◎Numerical monitoring available

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.

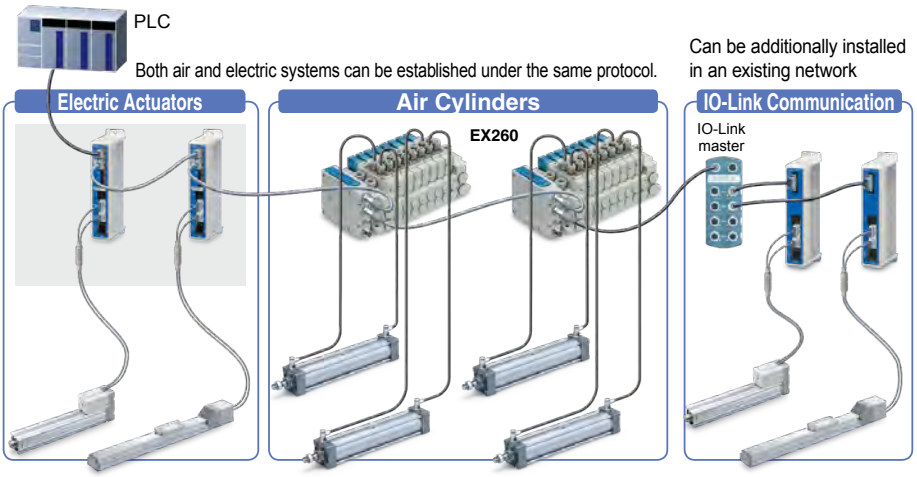
* For the DeviceNet® type and CC-Link type, transition wiring is possible using a branch connector.
* 1 to 1 in the case of IO-Link



Application

Communication protocols

EtherCAT
EtherNet/IP
PROFINET
DeviceNet
IO-Link
CC-Link



ACT 2 **Controller Setting Software ACT Controller 2** From p. 1

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
- Alarm confi mation
- Waveform monitoring
- The JXC-BC writing tool
- Customizable plug-in functions

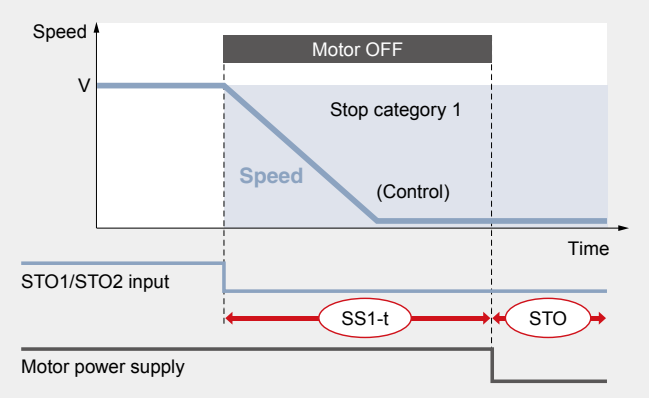
* Customers operating computers with specifications other than Windows 10/64 bit should use the existing ACT Controller

Controller with STO Sub-Function JXC□F Series

ACT 2 Controller Setting Software
ACT Controller 2

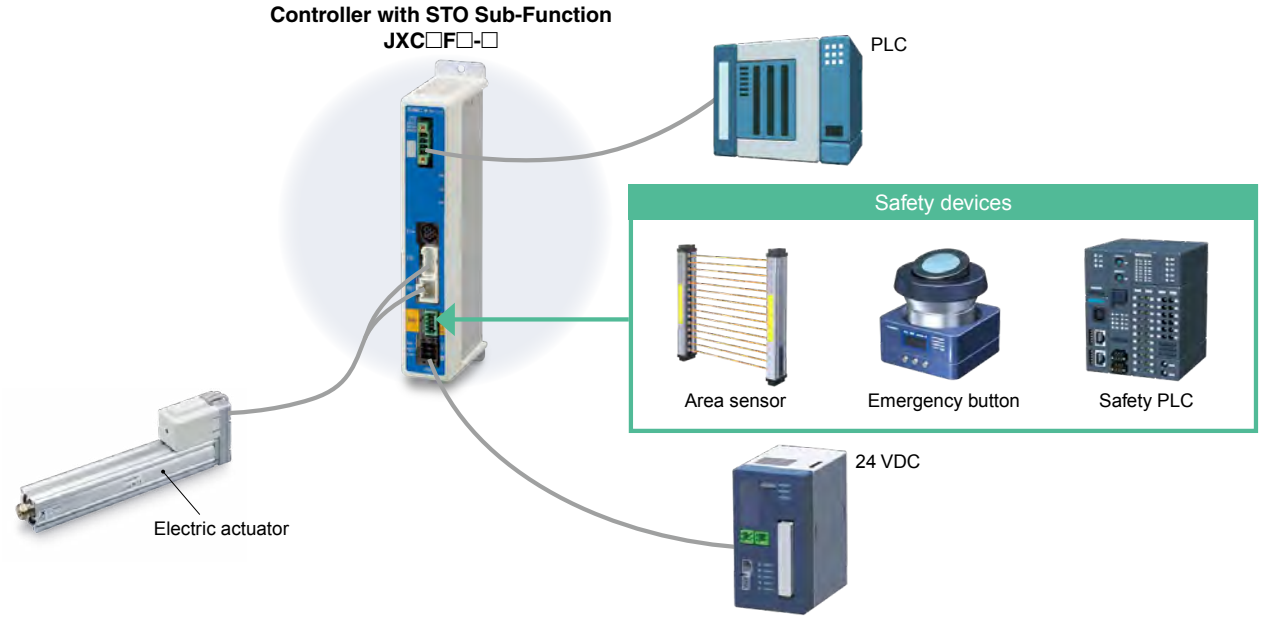
Safety function/STO, SS1-t (EN 61800-5-2)

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)

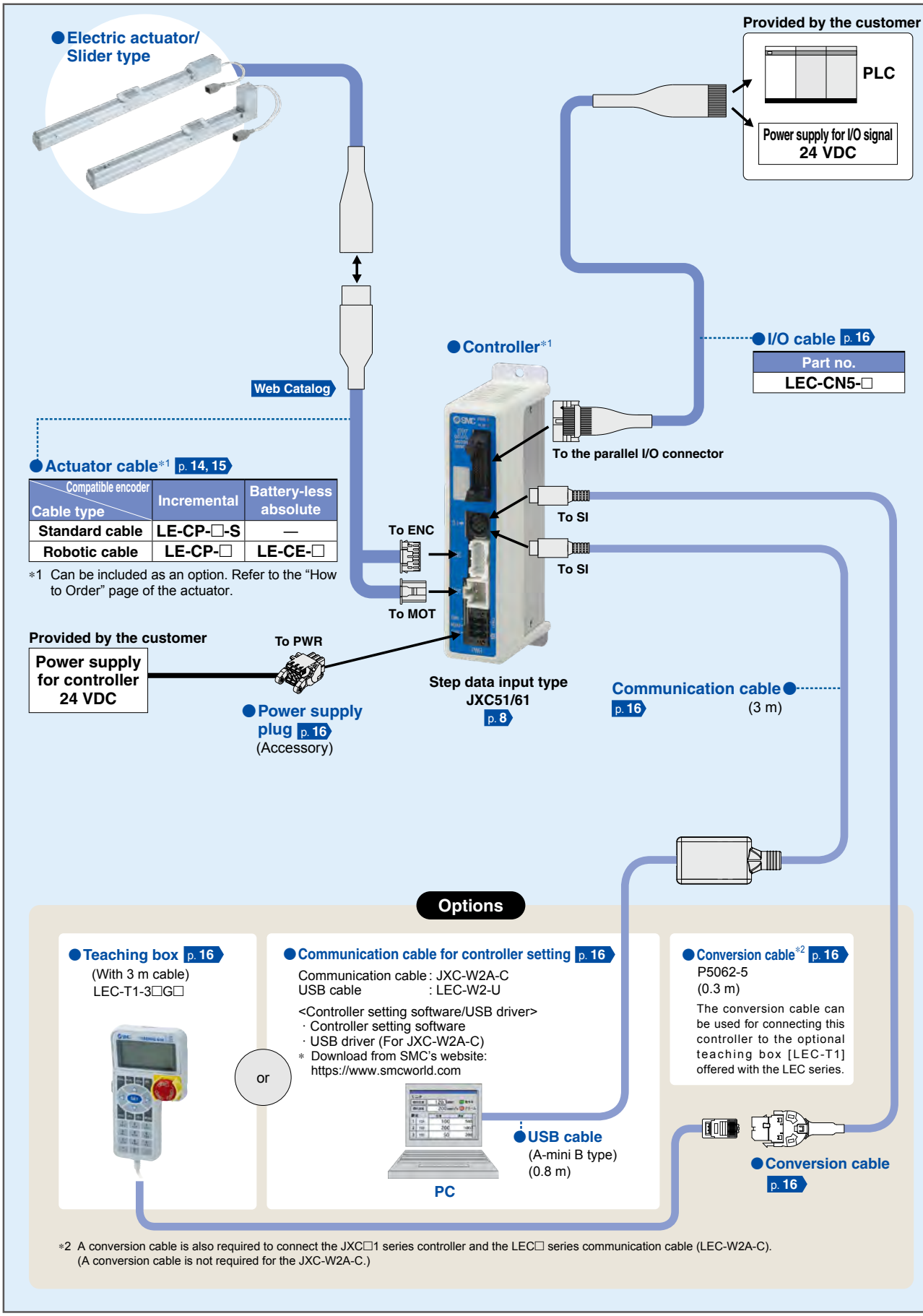
EN 61508 SIL 3*1
EN 62061 SIL CL 3*1
EN ISO 13849-1 Cat. 3 PL e
EN 61800-5-2 STO, SS1-t

SIL (Safety Integrity Level)
A safety integrity level as defined y 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 y 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.

System Construction/General Purpose I/O



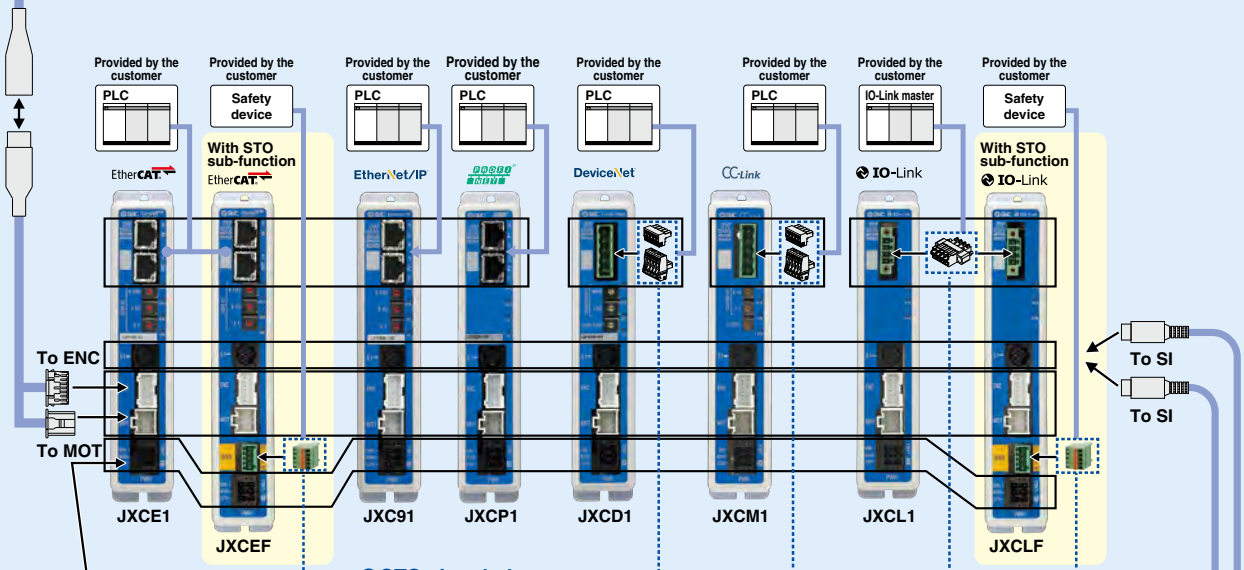
System Construction/Fieldbus Network
(EtherCAT/EtherNet/IP™/PROFINET/DeviceNet®/IO-Link/CC-Link Direct Input Type)

Actuator cable p. 23, 24

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

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



STO signal plug JXC-CSTO (Accessory) p. 26

To PWR

Provided by the customer: Power supply for controller 24 VDC

Power supply plug p. 26 (Accessory)

STO signal plug JXC-CSTO (Accessory) p. 26

Communication plug connector for DeviceNet® p. 26

Straight type	JXC-CD-S
T-branch type	JXC-CD-T

Communication plug connector for CC-Link p. 26

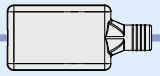
Straight type	LEC-CMJ-S
T-branch type	LEC-CMJ-T

Communication plug connector for IO-Link p. 26

Straight type	JXC-CL-S

(Accessory)

Communication cable p. 25 (3 m)



Options

Teaching box p. 25
(With 3 m cable)
LEC-T1-3□G□

or

Communication cable for controller setting p. 25

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.smcworld.com

PC

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

Conversion cable∗1 p. 25
P5062-5
(0.3 m)
The conversion cable can be used for connecting this controller to the optional teaching box [LEC-T1] offered with the LEC series.

Conversion cable p. 25

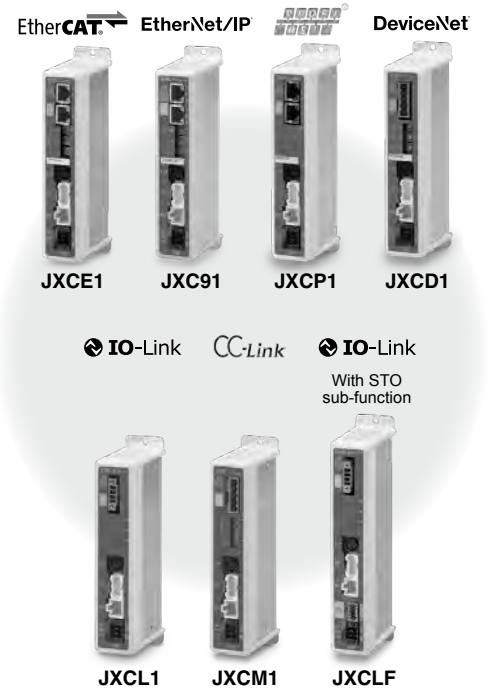
∗1 A conversion cable is also required to connect the JXC□□ series controller and the LEC□ series communication cable (LEC-W2A-C). (A conversion cable is not required for the JXC-W2A-C.)

Pages refer to full catalog. Scan to view.

Controller (Step Data Input Type) JXC51/61 Series

JXC51/61

Step Motor Controller JXCE1/91/P1/D1/L□/M1 Series



JXCE1 JXC91 JXCP1 JXCD1

JXCL1 JXCM1 JXCLF

Controller (Step Data Input Type)

JXC51/61 Series

How to Order

JXC **5** 1 **7** **1** – □

❶ ❷ ❸ ❹

❶ Parallel I/O type

5	NPN
6	PNP

❷ Mounting

7	Screw mounting
8∗1	DIN rail

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

❸ I/O cable length [m]

Nil	None
1	1.5
3	3
5	5

❹ Actuator part number

Without cable specifications and actuator option Example: Enter "LEFS25B-100" for the LEFS25B-100B-R1□□.	
BC	Blank controller∗1

∗1 Requires dedicated software (JXC-BCW)

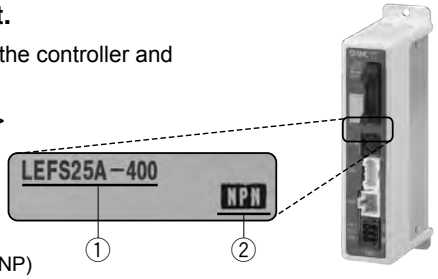
The controller is sold as single unit after the compatible actuator is set.

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

<Check the following before use.>

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

② Check that the Parallel I/O configuration matches (NPN or PNP)



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

Precautions for blank controllers (JXC□1□□-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. Use the dedicated software (JXC-BCW) for data writing.

- Please download the dedicated software (JXC-BCW) via our website.
- Order the communication cable for controller setting (JXC-W2A-C) and USB cable (LEC-W2-U) separately to use this software.

SMC website
https://www.smcworld.com

Specifications

Model	JXC51 JXC61
Compatible motor	Step motor (Servo/24 VDC)
Power supply	Power voltage: 24 VDC ±10%
Current consumption (Controller)	100 mA or less
Compatible encoder	Incremental/Battery-less absolute
Parallel input	11 inputs (Photo-coupler isolation)
Parallel output	13 outputs (Photo-coupler isolation)
Serial communication	RS485 (Only for the LEC-T1 and JXC-W2)
Memory	EEPROM
LED indicator	PWR, ALM
Cable length [m]	Actuator cable: 20 or less
Cooling system	Natural air cooling
Operating temperature range [°C]	0 to 55°C (No freezing)
Operating humidity range [%RH]	90 or less (No condensation)
Insulation resistance [MΩ]	Between all external terminals and the case: 50 (500 VDC)
Weight [g]	150 (Screw mounting), 170 (DIN rail mounting)

Step Motor Controller

JXCE1/91/P1/D1/L□/M1 Series

∗ Excluding the JXCLF

How to Order

JXC D 1 7 T –

Communication protocol

		Standard	With STO sub-function
E	EtherCAT	●	—
9	EtherNet/IP™	●	—
P	PROFINET	●	—
D	DeviceNet®	●	—
L	IO-Link	●	●
M	CC-Link	●	—

Number of axes, Special specification

1	1 axis, Standard
F	1 axis, With STO sub-function

Mounting

7	Screw mounting
8∗1	DIN rail

∗1 The DIN rail is not included. It must be ordered separately. (Refer to page 25.)

Option

Nil	Without option
S	With straight type communication plug
T	With T-branch type communication plug

∗ Select "Nil" for anything other than JXCD1 and JXCM1.

Actuator part number

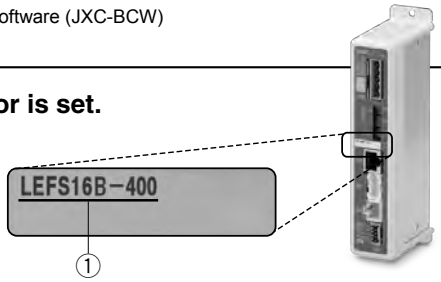
Without cable specifications and actuator options Example: Enter "**LEFS16B-100**" for the LEFS16B-100B-S1□□.	
BC	Blank controller∗1

∗1 Requires dedicated software (JXC-BCW)

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.smcworld.com

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. Use the dedicated software (JXC-BCW) for data writing.

- Please download the dedicated software (JXC-BCW) via our website.
- Order the communication cable for controller setting (JXC-W2A-C) and USB cable (LEC-W2-U) separately to use this software.

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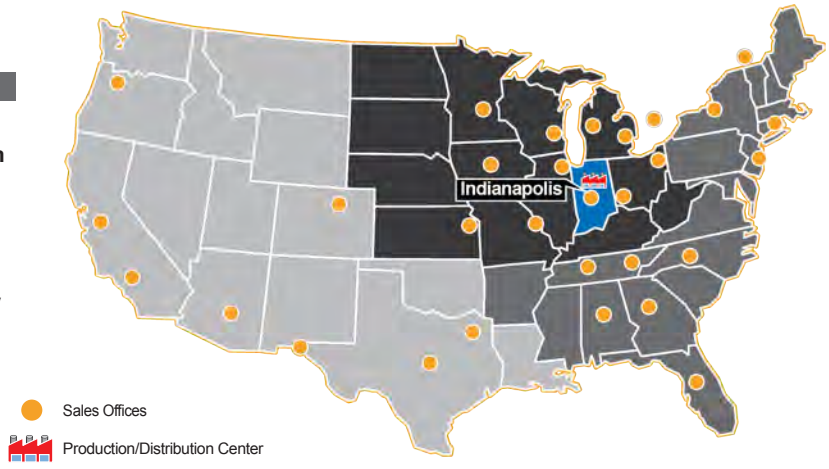

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BP RRD 2.5M

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