

# Step Motor Controller



- 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**

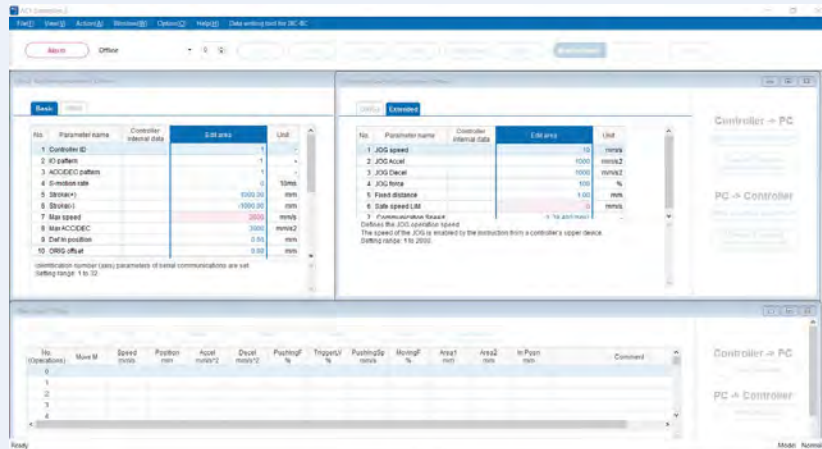


**ACT 2** Controller Setting Software ACT Controller 2

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

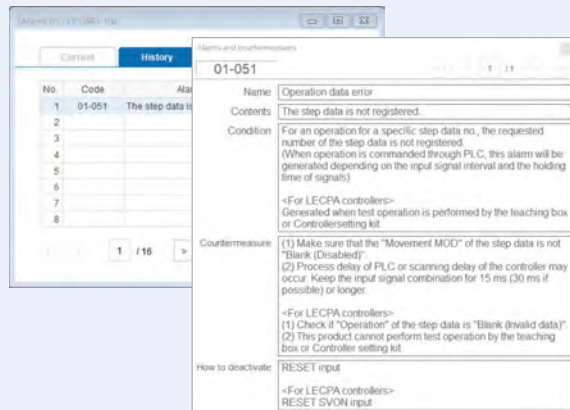
Various functions available in normal mode (Compared with the existing ACT Controller)

● Parameter and step data setting

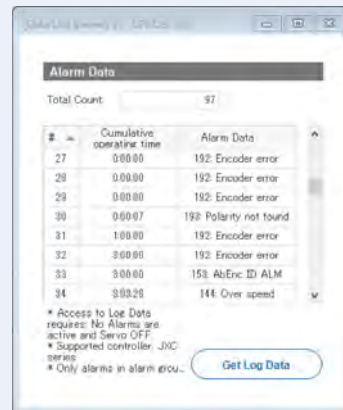


\* Customers operating computers with specifications other than Windows 10/64 bit should use the existing ACT Controller.

● Alarm confirmation

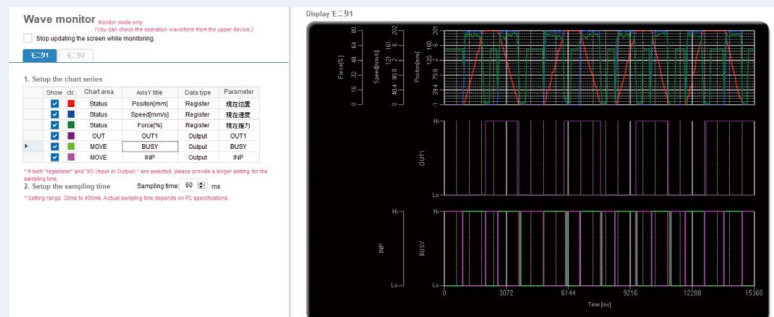


When an alarm is generated, the alarm details and countermeasures can be confirmed.



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.

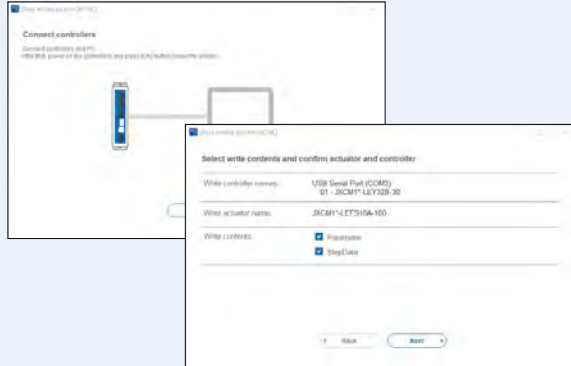
Step Data Input Type JXC51/61 Series **p. 8**



**ACT 2**

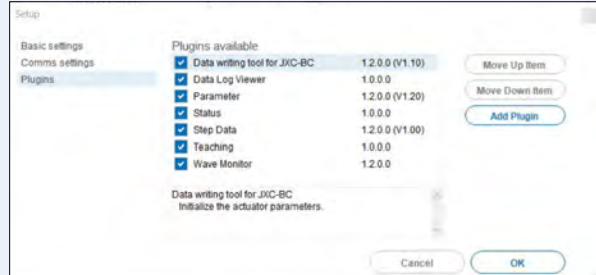
**Controller Setting Software ACT Controller 2**

• **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.

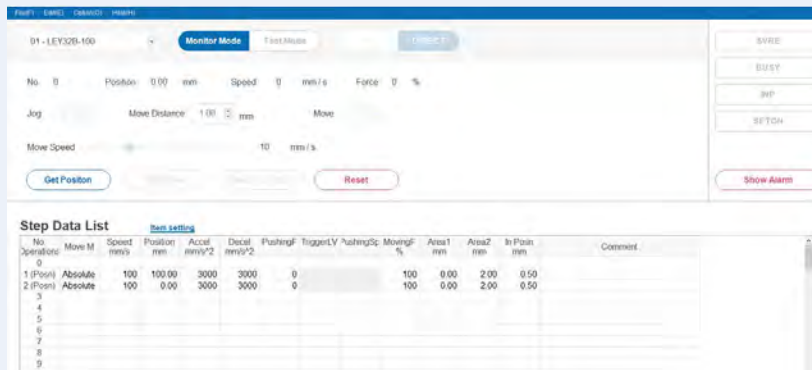
• **Customizable plug-in functions**



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)

**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

**Caution**

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

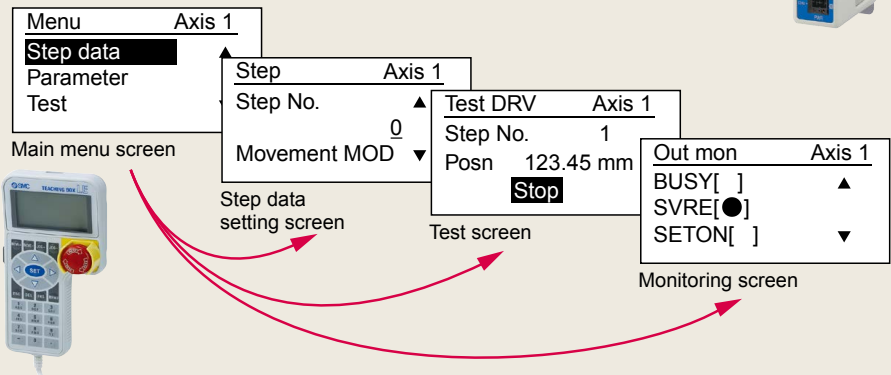
Step Data Input Type JXC51/61 Series p. 8



**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**

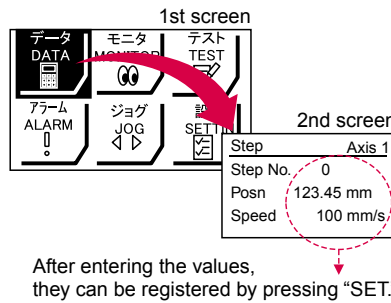
- Each function (step data setting, test drive, monitoring, etc.) can be selected from the main menu.

◎ **Easy Mode**

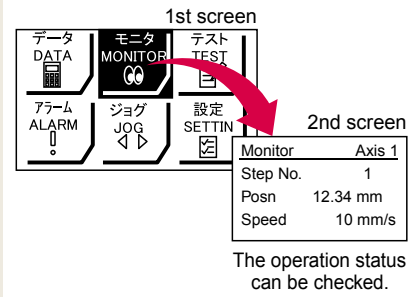
- The simple screen without scrolling promotes ease of setting and operation.
- Choose an icon from the first screen to select a function.
- Set the step data and check the monitor on the second screen.



**Example of setting the step data**

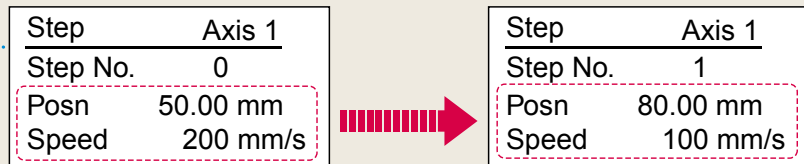


**Example of checking the operation status**



**Teaching box screen**

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

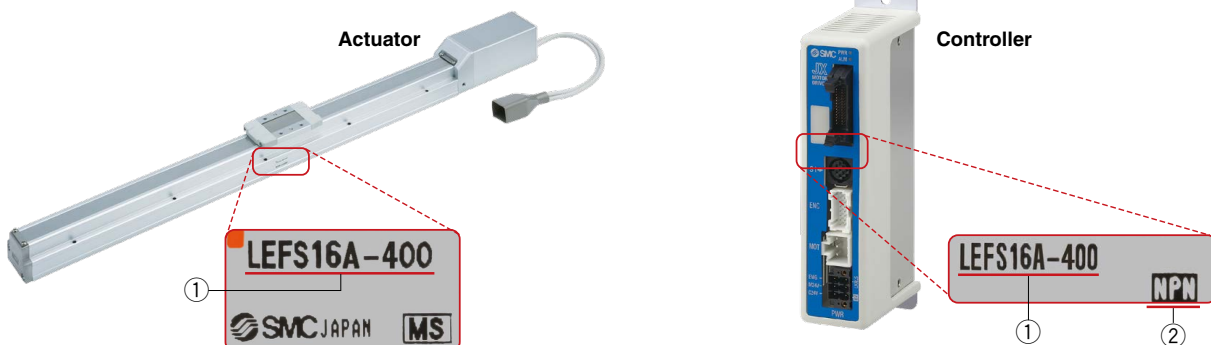


**The actuator and controller are provided as a set.** (They can be ordered separately as well.)

Confirmation 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



○ **Two types of operation command**

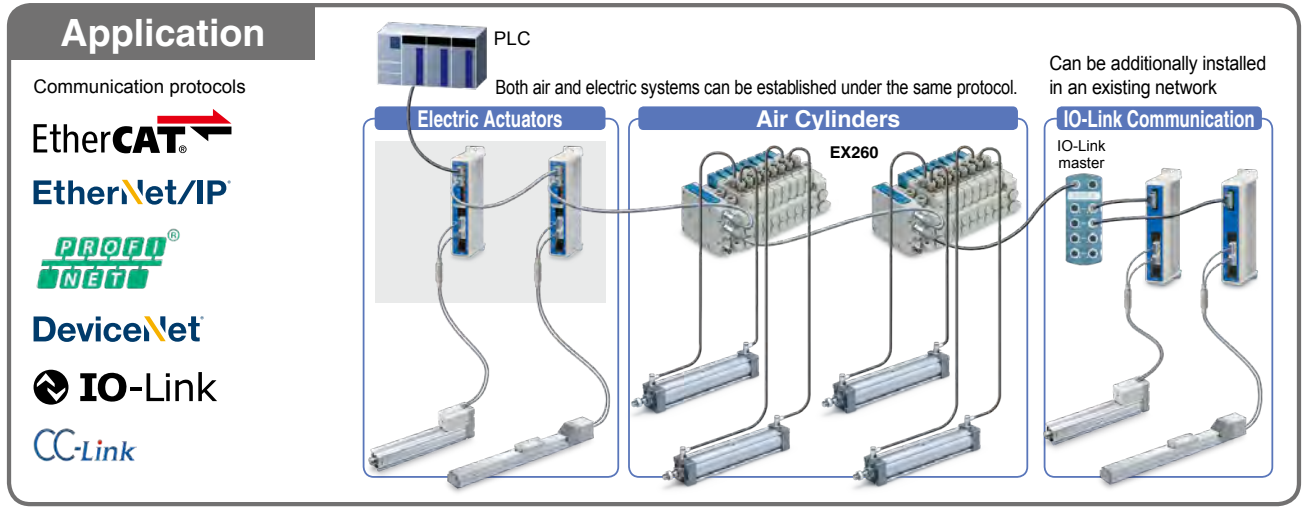
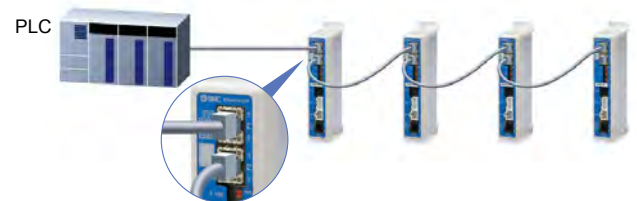
**Step no. defined operation:** Operate using the preset step data in the controller.  
**Numerical data defined operation:** The actuator operates using values such as position and speed from the PLC.

○ **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



**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 configuration
- Waveform monitoring
- The JXC-BC writing tool
- Customizable plug-in functions

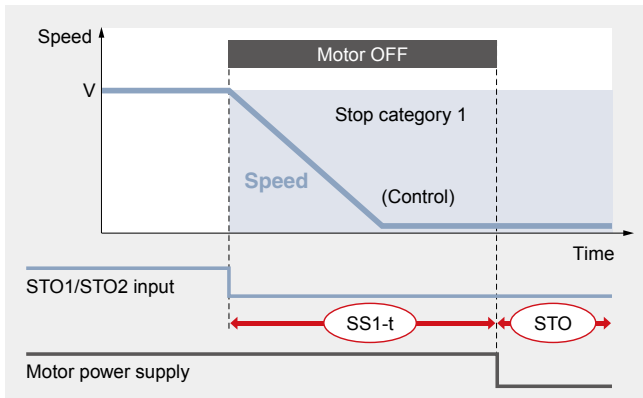
\* Customers operating computers with specifications other than Windows 10/64 bit should use the existing ACT Controller

# 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)

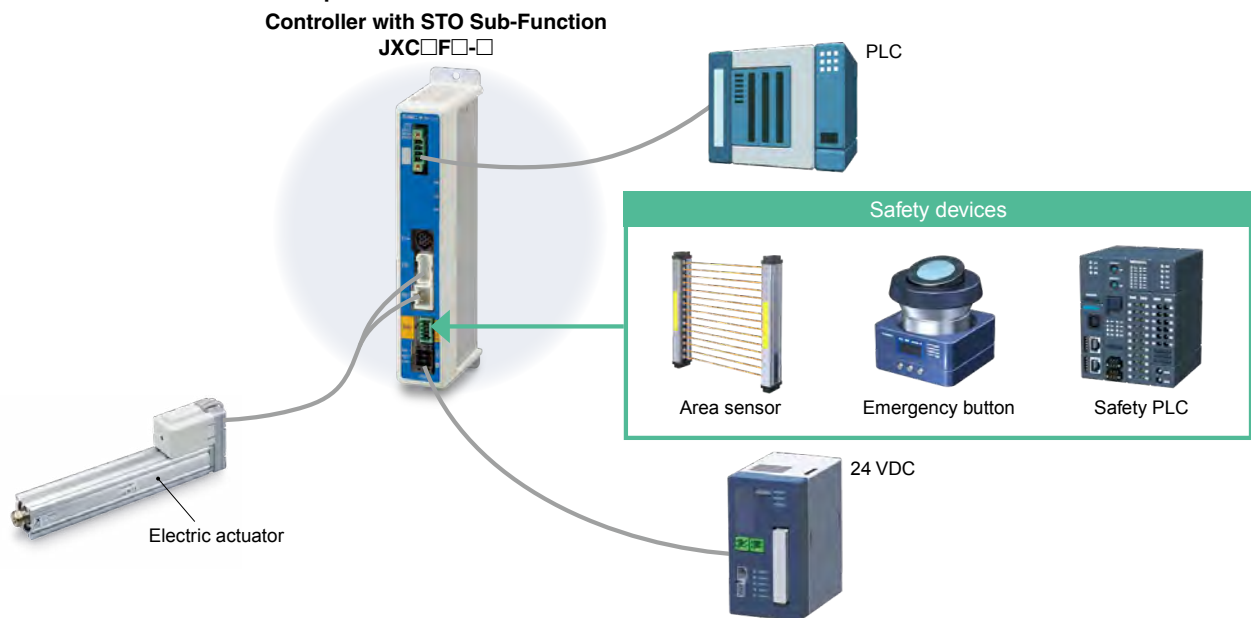
When the STO signal is input from the safety device, after the SS1-t operation is completed, the unit shifts to the STO operation and the power supply of the motor is turned OFF.



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)

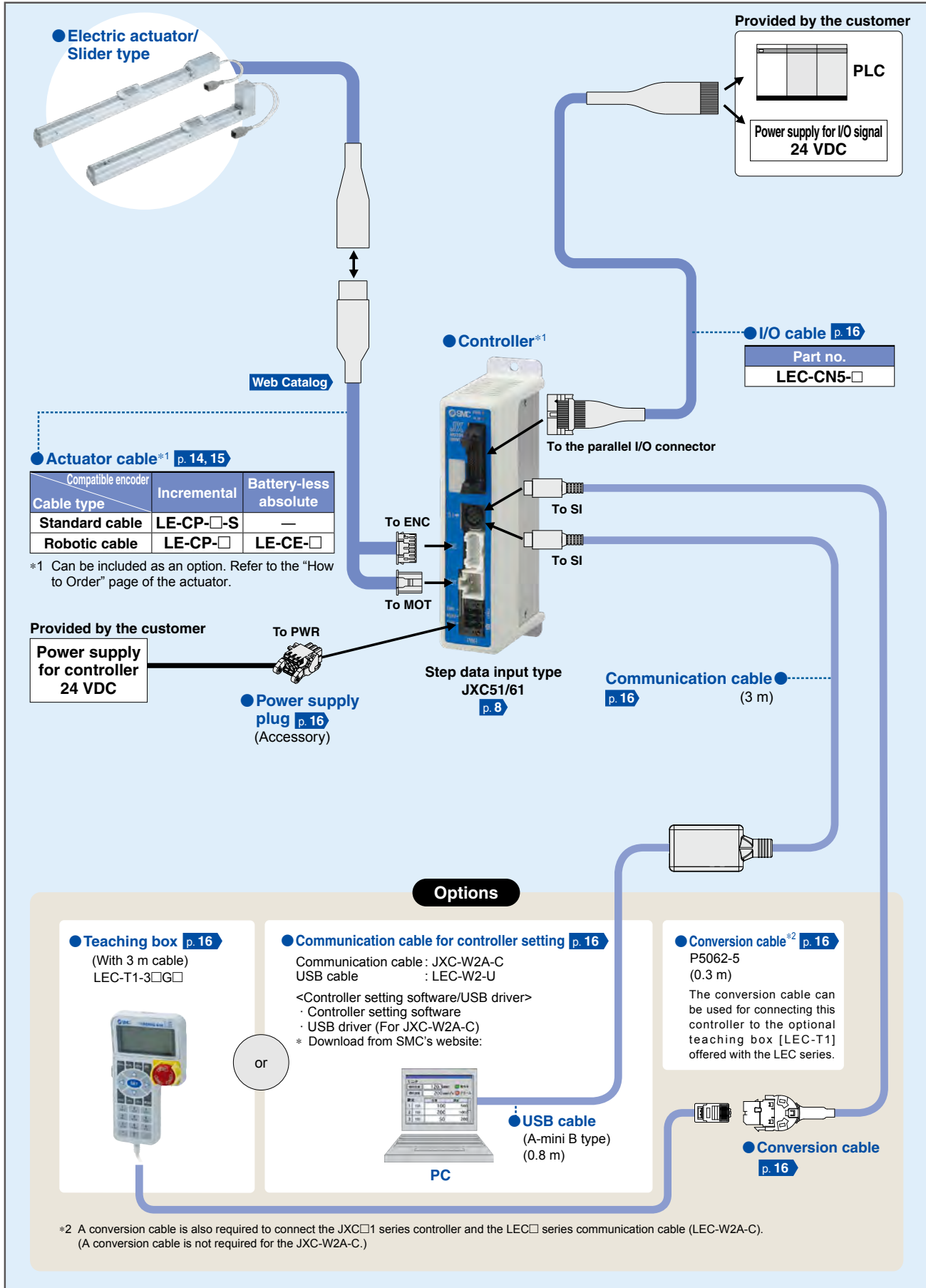
A safety integrity level as defined by international standard IEC 61508/62061. There are 4 levels of safety, with the lowest being SIL 1 and the highest being SIL 4.

### PL (Performance Level)

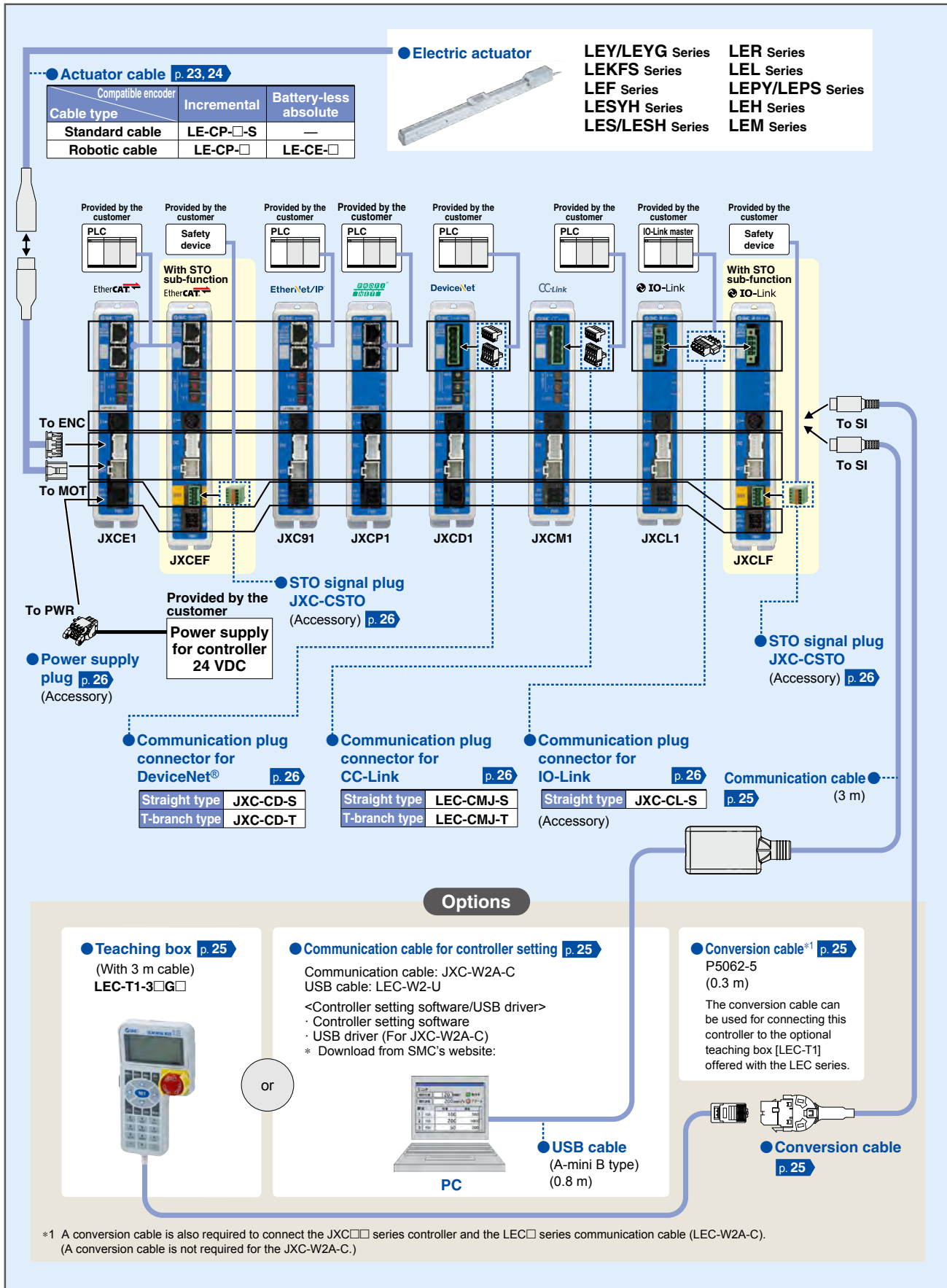
A scale used to define the capability of safety-related parts to perform a safety function as defined by international standard ISO 13849. There are 5 levels of safety function, with the lowest being PL a and the highest being PL e.

\*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.

**System Construction/General Purpose I/O**



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





Pages refer to full catalog. Scan to view.



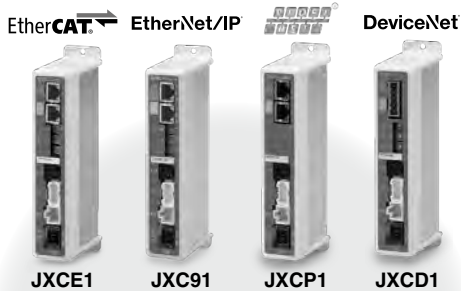
## Controller (Step Data Input Type) JXC51/61 Series



JXC51/61

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



JXCE1

JXC91

JXCP1

JXCD1

IO-Link CC-Link IO-Link

With STO sub-function



JXCL1

JXCM1

JXCLF

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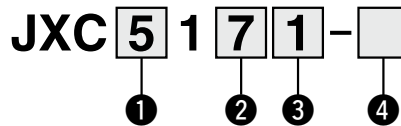
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# Controller (Step Data Input Type)

## JXC51/61 Series



### How to Order



#### 1 Parallel I/O type

5	NPN
6	PNP

#### 2 Mounting

7	Screw mounting
8*1	DIN rail

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

#### 3 I/O cable length [m]

Nil	None
1	1.5
3	3
5	5

#### 4 Actuator part number

Without cable specifications and actuator option  
Example: Enter "LEFS25B-100" for the  
LEFS25B-100B-R1□□.

BC	Blank controller*1
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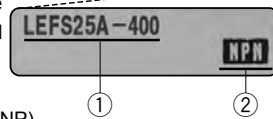
\*1 Requires dedicated software (JXC-BCW)

### 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:

### 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.

## 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



### How to Order

JXC **D** **1** **7** **T** -

#### Communication protocol

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

#### Number of axes, Special specification

<b>1</b>	1 axis, Standard
<b>F</b>	1 axis, With STO sub-function

#### Mounting

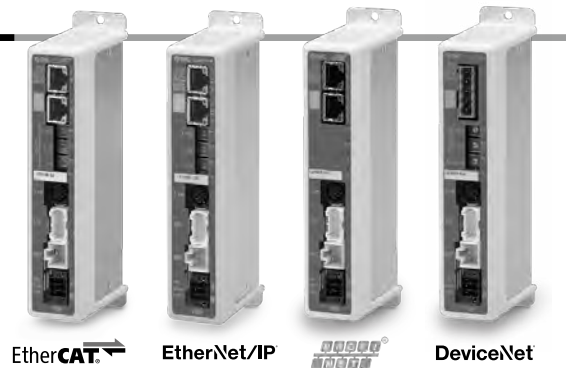
<b>7</b>	Screw mounting
<b>8*1</b>	DIN rail

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

#### Option

<b>Nil</b>	Without option
<b>S</b>	With straight type communication plug
<b>T</b>	With T-branch type communication plug

\* Select "Nil" for anything other than JXCD1 and JXCM1.



EtherCAT EtherNet/IP DeviceNet



IO-Link CC-Link IO-Link With STO sub-function

#### 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)

JXC51/61 Series

JXCE1/91/P1/D1/L□/M1 Series

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

LEFS16B-400

①



\* Refer to the operation manual for using the products. Please download it via our website

### 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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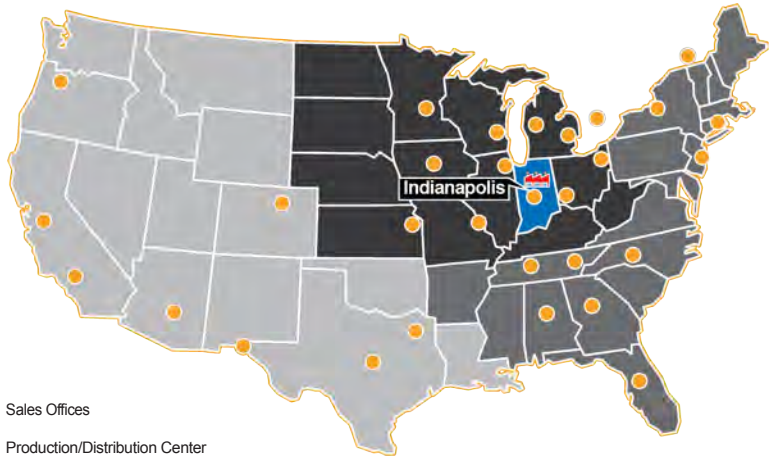
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BP RRD 2.5M

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