

Electric Actuator

High Rigidity

Slider Type

New



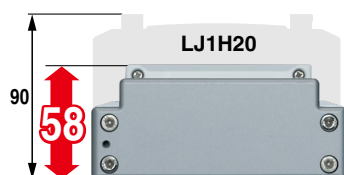
Low-profile/
Low center of gravity

NEW

Clean room specification (ISO Class 4) and leads added

- Clean room specification/11-LEJS
- Lead: 24 mm (LEJS40), 30 mm (LEJS63)

Height dimension reduced by approx. **36%** (Reduced by 32 mm)



LEJS40

| Series | Work load (kg) | Speed (mm/s) | Motor output (W) |
|-------------------------|----------------|--------------|------------------|
| New LEJS40 | 55 | 600 | 100 |
| (Existing model) LJ1H20 | 30 | 500 | 100 |



AC Servo Motor Type

Ball Screw Drive Series LEJS

Size: 40, 63

Work load: **85** kg

Positioning repeatability: **± 0.02** mm

Max. speed: **1,800** mm/s

Max. acceleration/deceleration: **20,000** mm/s²

*1 ISO14644-1

*2 The particle generation characteristics change depending on the suction flow rate.
Refer to page 22 for details.



Clean Room Specification

11-LEJS
ISO Class 4^{*1,2}

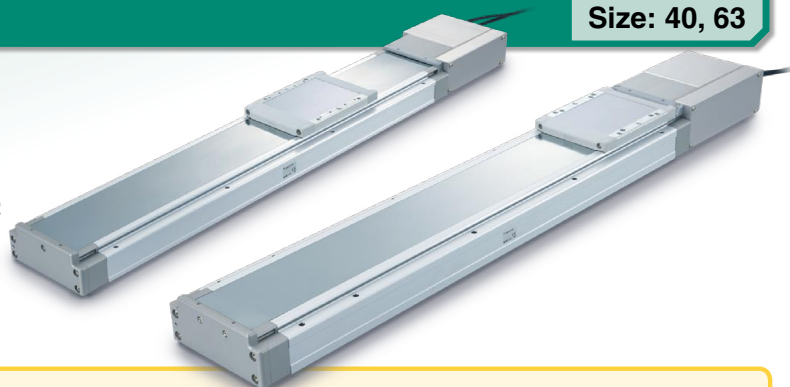
Belt Drive Series LEJB

Size: 40, 63

Max. stroke: **3,000** mm

Max. speed: **3,000** mm/s

Max. acceleration/deceleration: **20,000** mm/s²



AC Servo Motor Driver

Incremental Type

Absolute Type

Pulse input type/
Positioning type
Series LECSA



Pulse input type
Series LECSB



CC-Link
direct input type
Series LECSC



SSCNET III type
Series LECSS



Series LEJ

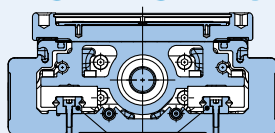


CAT.ES100-104C ^A

Series LEJ

●High precision/High rigidity

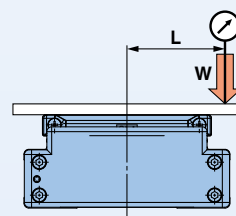
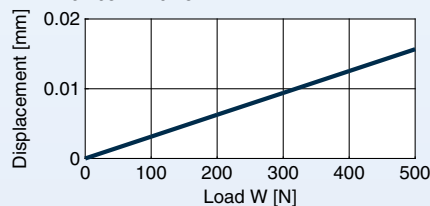
Double axis linear guide reduces deflection



Linear guide (Double axis)

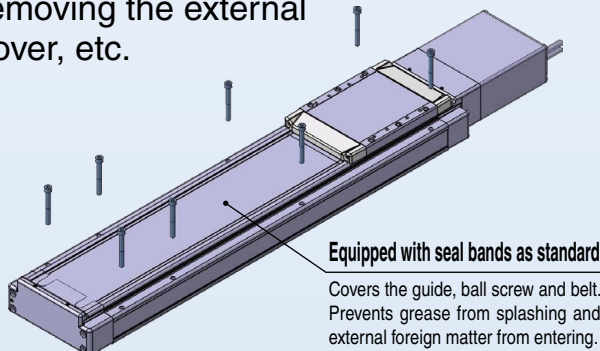
Table displacement

* LEJ□63: L = 64.5 mm



●Reduction of the installation labor

Possible to mount the main body without removing the external cover, etc.



Equipped with seal bands as standard

Covers the guide, ball screw and belt. Prevents grease from splashing and external foreign matter from entering.

●Weight reduction

Weight reduced by approx. **37%**

* Stroke: 600 mm

LJ1H30

24.0 kg

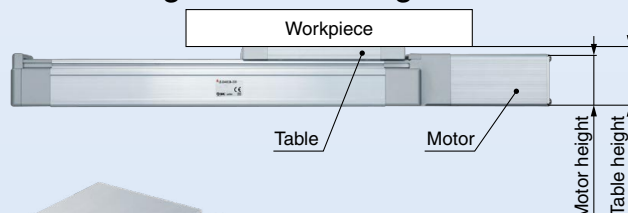
LEJS63

15.2 kg

37%

●Workpiece does not interfere with the motor

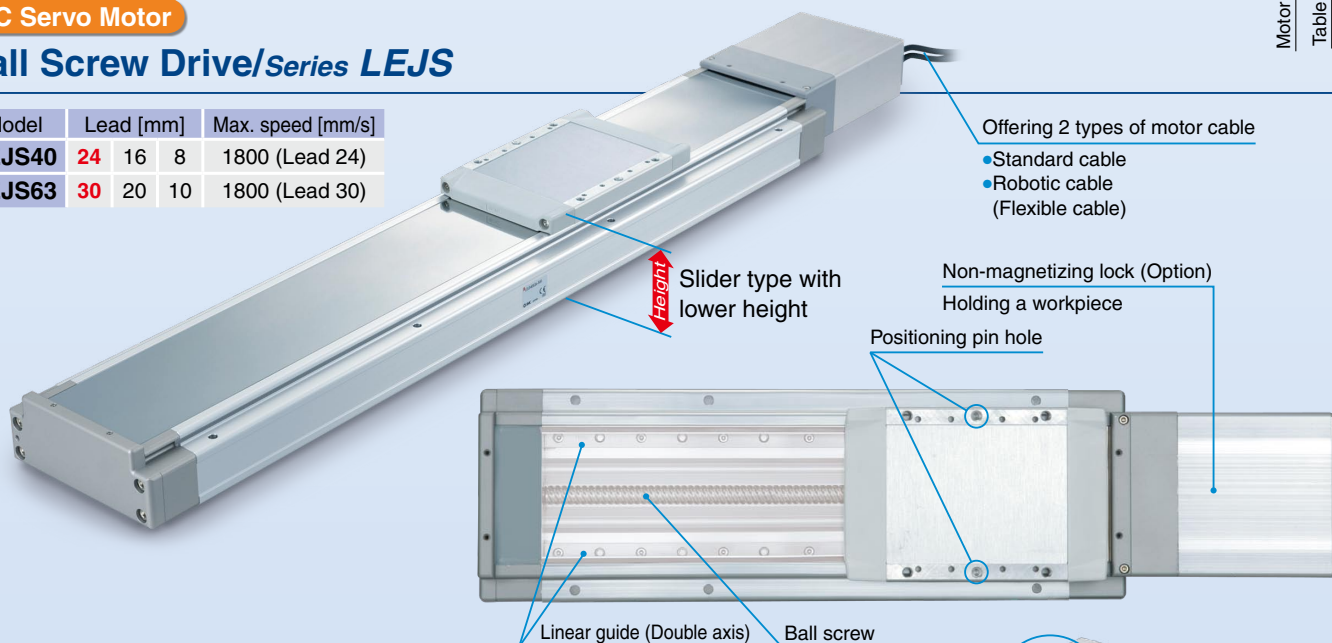
Table height > Motor height



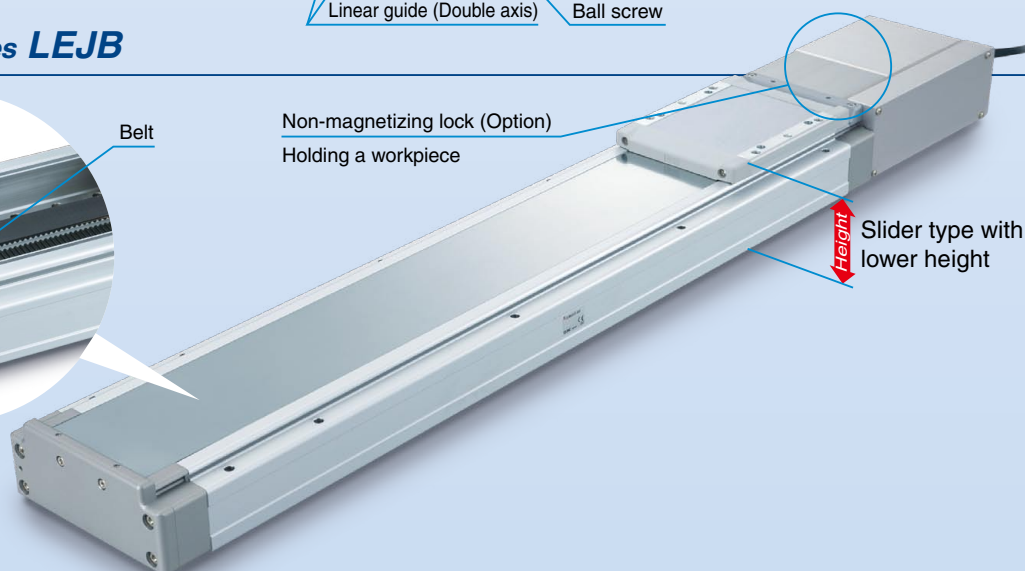
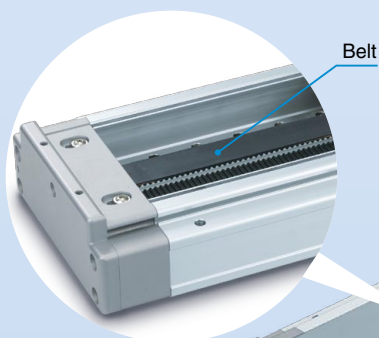
AC Servo Motor

Ball Screw Drive/Series LEJS

| Model | Lead [mm] | Max. speed [mm/s] |
|--------|-----------|----------------------|
| LEJS40 | 24 | 16 8 1800 (Lead 24) |
| LEJS63 | 30 | 20 10 1800 (Lead 30) |



Belt Drive/Series LEJB



Electric Actuator/High Rigidity Slider Type

●Solid state auto switch can be mounted (For checking the limit and intermediate signal)

- Switch wiring can be placed in the body
- D-M9□W (2-color indication), D-M9□

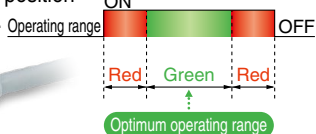


2-color indication solid state auto switch

Appropriate setting of the mounting position can be performed without mistakes.

A green light

lights up at the optimum operating range.



Clean Room Specification

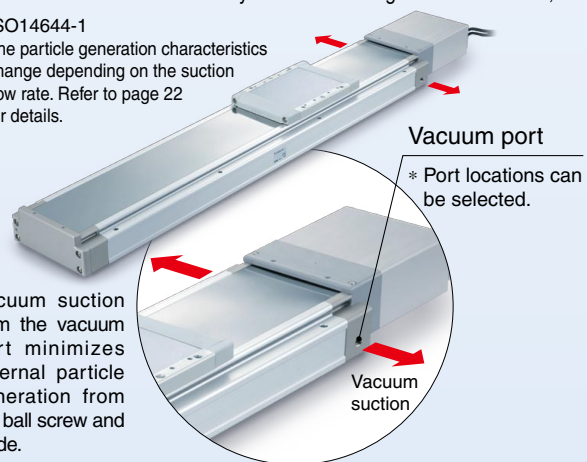
Ball Screw Drive Series 11-LEJS Size: 40, 63

ISO Class 4^{*1, *2}

- Built-in vacuum piping
- Possible to mount the main body without removing the external cover, etc.

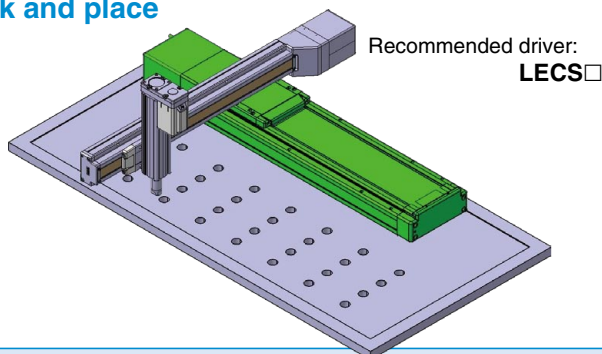
^{*1} ISO14644-1

^{*2} The particle generation characteristics change depending on the suction flow rate. Refer to page 22 for details.

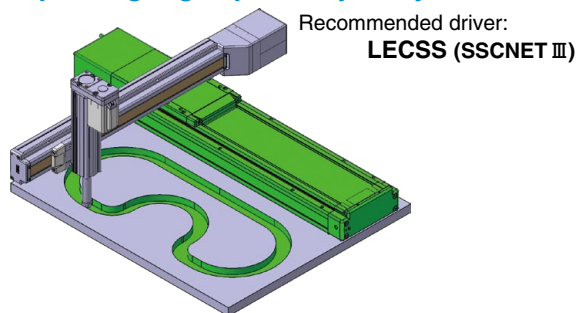


Application Examples

Pick and place



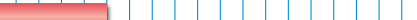

















Glue dispensing/High speed trajectory is available



Series Variations

Ball Screw Drive/Series LEJS Clean room compatible^{*2}

| Size | Lead (mm) | Stroke (mm)*1 | Work load: Horizontal (kg) | | | | | | | | | Work load: Vertical (kg) | | | | Speed (mm/s) | | | | | | | | | Page |
|------|-----------|---|---|----|----|----|----|----|----|----|----|---|----|----|-----|---|-----|-----|------|------|------|------|------|--|---------|
| | | | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 10 | 20 | 30 | 200 | 400 | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | | |
| 40 | 8 | 200, 300, 400 500, 600, 700 800, 900 1000, 1200 |  | | | | | | | | |  | | | |  | | | | | | | | | Page 25 |
| | 16 | |  | | | | | | | | |  | | | |  | | | | | | | | | |
| | 24 | |  | | | | | | | | |  | | | |  | | | | | | | | | |
| 63 | 10 | 300, 400, 500 600, 700, 800 900, 1000 1200, 1500 |  | | | | | | | | |  | | | |  | | | | | | | | | |
| | 20 | |  | | | | | | | | |  | | | |  | | | | | | | | | |
| | 30 | |  | | | | | | | | |  | | | |  | | | | | | | | | |

^{*1} Consult with SMC for non-standard strokes as they are produced as special orders.

^{*2} Except lead 24 and 30 mm

Belt Drive/Series LEJB


| Size | Equivalent lead (mm) | Stroke (mm) ^{*1} | Work load: Horizontal (kg) ^{*2} | | | | | | Speed (mm/s) | | | | | | Page |
|------|----------------------|-----------------------------------|--|----|----|----|----|----|--------------|------|------|------|------|------|---------|
| | | | 5 | 10 | 15 | 20 | 25 | 30 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | |
| 40 | 27 | 200, 300, 400, 500, 600, 700, 800 | | | | | | | | | | | | | Page 34 |
| | | 900, 1000, 1200, 1500, 2000 | | | | | | | | | | | | | |
| 63 | 42 | 300, 400, 500, 600, 700, 800 | | | | | | | | | | | | | |
| | | 900, 1000, 1200, 1500, 2000, 3000 | | | | | | | | | | | | | |

^{*1} Consult with SMC for non-standard strokes as they are produced as special orders.

^{*2} The belt drive actuator cannot be used vertically for applications.

AC Servo Motor Driver

Series **LECS**□ list

| | | Compatible motor (100/200 VAC) | | Control method | | | Application/ Function | Compatible option |
|------------------|--|-----------------------------------|-------|--------------------------|-------|----------------------------|--------------------------|-----------------------------------|
| | | 100 W | 200 W | Note 1) Positioning | Pulse | Network direct input | Note 2) Synchronous | Setup software LEC-MR-SETUP221 |
| Incremental Type |  LECSA (Pulse input type/ Positioning type) | ● | ● | Up to 7 points ● | ● | | | ● |
| | | ● | ● | | ● | | | ● |
| Absolute Type |  LECSB (Pulse input type) | ● | ● | | ● | | | ● |
| |  LECSC (CC-Link direct input type) | ● | ● | Up to 255 points ● | | CC-Link Ver. 1.10 ● | | ● |
| |  LECSS (SSCNET Ⅲ type) Compatible with Mitsubishi Electric's servo system controller network | ● | ● | | | SSCNET Ⅲ ● | ● | ● |

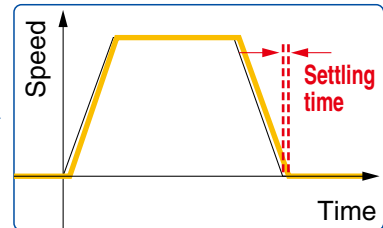
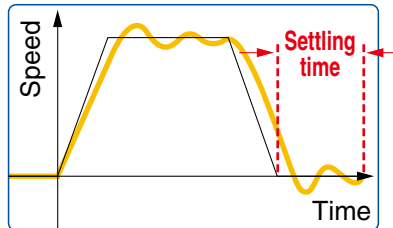
Note 1) For positioning type, setting needs to be changed to use with maximum set values.
Setup software (MR Configurator) LEC-MR-SETUP221 is required.

Note 2) Available when the Mitsubishi motion controller is used for the master equipment.

Servo adjustment using auto gain tuning

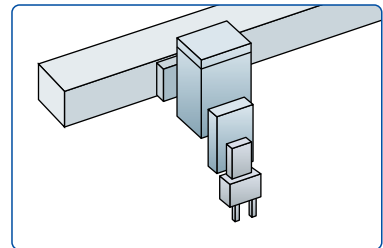
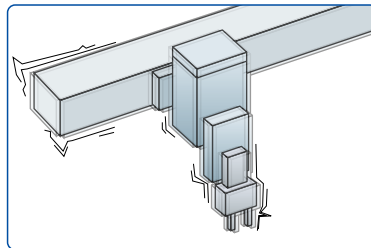
Auto resonant filter function

- Control the difference between command value and actual action
- * High-speed positioning is possible since gains etc. are adjusted automatically!



Auto damping control function

- Automatically suppress low frequency machine vibrations (up to 100 Hz)
- * Can be set automatically by auto tuning.



With display setting function

One-touch adjustment button

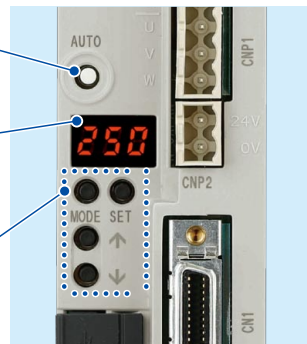
One-touch servo adjustment

Display

Display the monitor, parameter and alarm.

Settings

Set parameters and monitor display, etc. with push buttons.



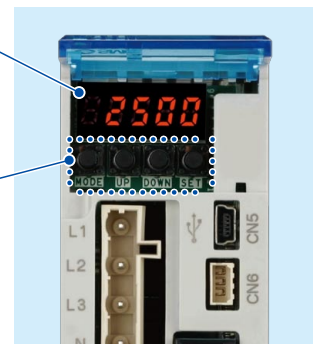
LECSA

Display

Display the monitor, parameter and alarm.

Settings

Set parameters and monitor display, etc. with push buttons.



(With the front cover opened)

LECSB

Display

Display the communication status with the driver, the alarm and the point table No.

Settings

Control Baud rate, station number and the occupied station count.



(With the front cover opened)

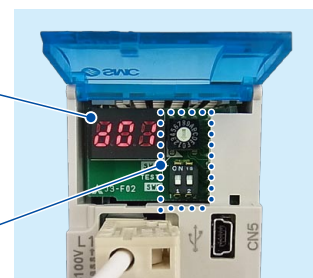
LECSB

Display

Display the communication status with the driver and the alarm.

Settings

Switches for selecting axis and switching to the test operation



(With the front cover opened)

LECSB

System Construction

Incremental encoder compatible **Series LECSA**

(Pulse input type/Positioning type)

Provided by customer

Power supply

Single phase 100 to 120 VAC (50/60 Hz)
200 to 230 VAC (50/60 Hz)

Option

Regeneration option

Part no.: LEC-MR-RB-□

Motor cable

| Standard cable | Robotic cable |
|----------------|---------------|
| LE-CSM-S□□ | LE-CSM-R□□ |

Lock cable

| Standard cable | Robotic cable |
|----------------|---------------|
| LE-CSB-S□□ | LE-CSB-R□□ |

Electric actuator

High rigidity slider type
Series LEJ

Encoder cable

| Standard cable | Robotic cable |
|----------------|---------------|
| LE-CSE-S□□ | LE-CSE-R□□ |

Main circuit power supply connector (Accessory)

Driver



Provided by customer

Control circuit power supply

24 VDC

Control circuit power supply connector (Accessory)

Option

I/O connector

Part no.: LE-CSNA

Provided by customer

PLC (Positioning unit)

Power supply for I/O signal
24 VDC

Setup software

(MR Configurator™)

Part no.: LEC-MR-SETUP221□



PC

* Order USB cable (Part no.: LEC-MR-J3USB) separately to use this software.

USB cable

Part no.: LEC-MR-J3USB

Absolute encoder compatible **Series LECSB**

(Pulse input type)

Provided by customer

Power supply

Single phase 100 to 120 VAC (50/60 Hz)
200 to 230 VAC (50/60 Hz)

Three phase 200 to 230 VAC (50/60 Hz)

Option

Regeneration option

Part no.: LEC-MR-RB-□

Motor cable

| Standard cable | Robotic cable |
|----------------|---------------|
| LE-CSM-S□□ | LE-CSM-R□□ |

Lock cable

| Standard cable | Robotic cable |
|----------------|---------------|
| LE-CSB-S□□ | LE-CSB-R□□ |

Electric actuator

High rigidity slider type
Series LEJ

Encoder cable

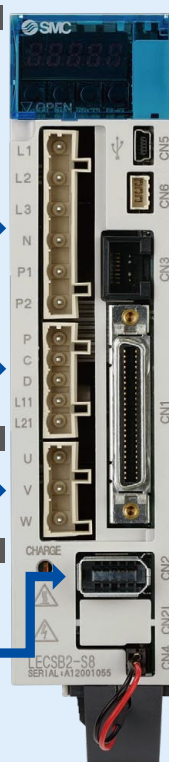
| Standard cable | Robotic cable |
|----------------|---------------|
| LE-CSE-S□□ | LE-CSE-R□□ |

Main circuit power supply connector (Accessory)

Control circuit power supply connector (Accessory)

Motor connector (Accessory)

Driver



USB cable

Part no.: LEC-MR-J3USB

Analog monitor output

RS-422 communication

Option

I/O connector

Part no.: LE-CSNB

Provided by customer

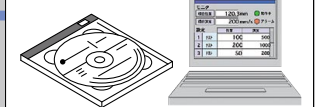
PLC (Positioning unit)

Power supply for I/O signal
24 VDC

Setup software

(MR Configurator™)

Part no.: LEC-MR-SETUP221□



PC

* Order USB cable (Part no.: LEC-MR-J3USB) separately to use this software.

Battery (Accessory) Part no.: (LEC-MR-J3BAT)

System Construction

Absolute encoder compatible **Series LECSC**

(CC-Link direct input type)

Provided by customer

Power supply

Single phase 100 to 120 VAC (50/60 Hz)
200 to 230 VAC (50/60 Hz)
Three phase 200 to 230 VAC (50/60 Hz)

◎ Option

Regeneration option

Part no.: LEC-MR-RB-□

Motor cable

Standard cable

Robotic cable

LE-CSM-S□□

LE-CSM-R□□

Lock cable

Standard cable

Robotic cable

LE-CSB-S□□

LE-CSB-R□□

Electric actuator

Encoder cable

Standard cable

Robotic cable

LE-CSE-S□□

LE-CSE-R□□

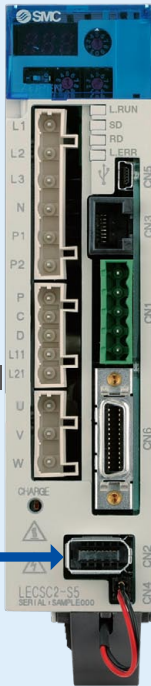
Main circuit power supply connector (Accessory)

Control circuit power supply connector (Accessory)

Motor connector (Accessory)

Battery (Accessory) Page 57
Part no.: (LEC-MR-J3BAT)

Driver



USB cable

Part no.: LEC-MR-J3USB

◎ Option

Setup software

(MR Configurator™)

Part no.: LEC-MR-SETUP221□



PC

RS-422 communication

CC-Link connector (Accessory)

◎ Option

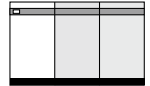
I/O connector

Part no.: LE-CSNA

Provided by customer

PLC (CC-Link master unit)

Power supply for I/O signal
24 VDC

Absolute encoder compatible **Series LECSS**

(SSCNET III type)

Provided by customer

Power supply

Single phase 100 to 120 VAC (50/60 Hz)
200 to 230 VAC (50/60 Hz)
Three phase 200 to 230 VAC (50/60 Hz)

◎ Option

Regeneration option

Part no.: LEC-MR-RB-□

Motor cable

Standard cable

Robotic cable

LE-CSM-S□□

LE-CSM-R□□

Lock cable

Standard cable

Robotic cable

LE-CSB-S□□

LE-CSB-R□□

Electric actuator

Encoder cable

Standard cable

Robotic cable

LE-CSE-S□□

LE-CSE-R□□

Main circuit power supply connector (Accessory)

Control circuit power supply connector (Accessory)

Motor connector (Accessory)

Battery (Accessory) Page 57
Part no.: (LEC-MR-J3BAT)

Driver



USB cable

Part no.: LEC-MR-J3USB

◎ Option

Setup software

(MR Configurator™)

Part no.: LEC-MR-SETUP221□



PC

◎ Option

I/O connector

Part no.: LE-CSNS

◎ Option

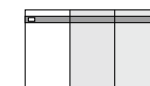
SSCNET III optical cable

Part no.: LE-CSS-□

Provided by customer

PLC (Positioning unit/ Motion controller)

Power supply for I/O signal
24 VDC



SMC Electric Actuators

Slider Type Step Motor (Servo/24 VDC) Servo Motor (24 VDC) AC Servo Motor

Ball screw drive Series LEFS

Clean room compatible



Series LEFS

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 16 | 10 | Up to 400 |
| 25 | 20 | Up to 600 |
| 32 | 45 | Up to 800 |
| 40 | 60 | Up to 1000 |

Belt drive Series LEFB



Series LEFB

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 16 | 1 | Up to 1000 |
| 25 | 5 | Up to 2000 |
| 32 | 14 | Up to 2000 |

Ball screw drive Series LEFS

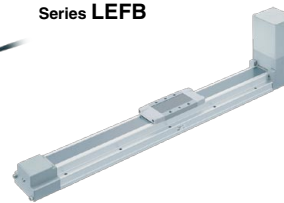
Clean room compatible



Series LEFS

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 25 | 20 | Up to 600 |
| 32 | 45 | Up to 800 |
| 40 | 60 | Up to 1000 |

Belt drive Series LEFB



Series LEFB

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 25 | 5 | Up to 2000 |
| 32 | 15 | Up to 2500 |
| 40 | 25 | Up to 3000 |



CAT.E102

High Rigidity Slider Type AC Servo Motor

Ball screw drive Series LEJS

Clean room compatible



Series LEJS

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 40 | 55 | 200 to 1200 |
| 63 | 85 | 300 to 1500 |

Belt drive Series LEJB



Series LEJB

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 40 | 20 | 200 to 2000 |
| 63 | 30 | 300 to 3000 |



CAT.ES100-104

Guide Rod Slider Step Motor (Servo/24 VDC)

Belt drive Series LEL



Series LEL25M Sliding bearing

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 25 | 3 | Up to 1000 |

Series LEL25L Ball bushing bearing

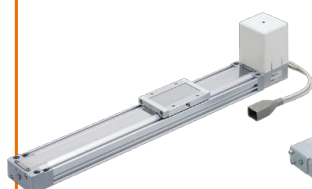
| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 25 | 5 | Up to 1000 |



CAT.E102

Low Profile Slider Type Step Motor (Servo/24 VDC)

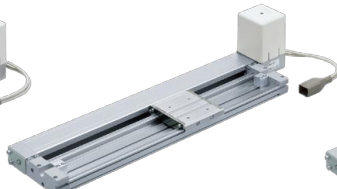
Basic type Series LEMB



Series LEMB

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 25 | 6 | Up to 2000 |
| 32 | 11 | Up to 2000 |

Cam follower guide type Series LEMC



Series LEMC

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 25 | 10 | Up to 2000 |
| 32 | 20 | Up to 2000 |

Linear guide single axis type Series LEMH



Series LEMH

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 25 | 10 | Up to 1000 |
| 32 | 20 | Up to 1500 |

Linear guide double axis type Series LEMHT



Series LEMHT

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 25 | 10 | Up to 1000 |
| 32 | 20 | Up to 1500 |



CAT.ES100-98

SMC Electric Actuators

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

Basic type Series LEY

Dust/Drip proof compatible



Series LEY

| Size | Pushing force (N) | Stroke (mm) |
|------|-------------------|-------------|
| 16 | 141 | Up to 300 |
| 25 | 452 | Up to 400 |
| 32 | 707 | Up to 500 |
| 40 | 1058 | Up to 500 |

In-line motor type Series LEY□D

Dust/Drip proof compatible



Guide rod type Series LEYG



Series LEYG

| Size | Pushing force (N) | Stroke (mm) |
|------|-------------------|-------------|
| 16 | 141 | Up to 200 |
| 25 | 452 | Up to 300 |
| 32 | 707 | Up to 300 |
| 40 | 1058 | Up to 300 |

Guide rod type /In-line motor type Series LEYG□D



CAT.E102

AC Servo Motor

Basic type Series LEY

Dust/Drip proof compatible



Series LEY

| Size | Pushing force (N) | Stroke (mm) |
|------|-------------------|-------------|
| 25 | 485 | Up to 400 |
| 32 | 588 | Up to 500 |

In-line motor type Series LEY□D

Dust/Drip proof compatible



Series LEY

| Size | Pushing force (N) | Stroke (mm) |
|------|-------------------|-------------|
| 25 | 485 | Up to 400 |
| 32 | 736 | Up to 500 |
| 63 | 1910 | Up to 800 |

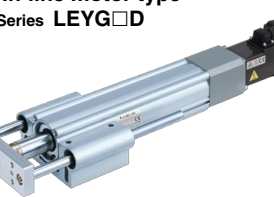
Guide rod type Series LEYG



Series LEYG

| Size | Pushing force (N) | Stroke (mm) |
|------|-------------------|-------------|
| 25 | 485 | 300 |
| 32 | 588 | 300 |

Guide rod type /In-line motor type Series LEYG□D



Series LEYG

| Size | Pushing force (N) | Stroke (mm) |
|------|-------------------|-------------|
| 25 | 485 | 300 |
| 32 | 736 | 300 |

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

Series LES

Basic type/R type Series LES□R



| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|---------------------------|
| 8 | 1 | 30, 50, 75 |
| 16 | 3 | 30, 50, 75, 100 |
| 25 | 5 | 30, 50, 75, 100, 125, 150 |

Symmetrical type/L type Series LES□L



In-line motor type/D type Series LES□D



Series LESH

Basic type/R type Series LESH□R



| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|--------------|
| 8 | 2 | 50, 75 |
| 16 | 6 | 50, 100 |
| 25 | 9 | 50, 100, 150 |

Symmetrical type/L type Series LESH□L



In-line motor type/D type Series LESH□D



CAT.E102

Miniature Step Motor (Servo/24 VDC)

Rod type Series LEPY



Series LEPY

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 6 | 1 | 25, 50, 75 |
| 10 | 2 | |

Slide table type Series LEPS



Series LEPS

| Size | Max. work load (kg) | Stroke (mm) |
|------|---------------------|-------------|
| 6 | 1 | 25 |
| 10 | 2 | 50 |



CAT.E102

Rotary Table Step Motor (Servo/24 VDC)

Basic type Series LER



Series LER

| Size | Rotating torque (N-m) | | Max. speed (°/s) | |
|------|-----------------------|-------------|------------------|-------------|
| | Basic | High torque | Basic | High torque |
| 10 | 0.22 | 0.32 | 420 | 280 |
| 30 | 0.8 | 1.2 | | |
| 50 | 6.6 | 10 | | |

High precision type Series LERH



CAT.E102

SMC Electric Actuators

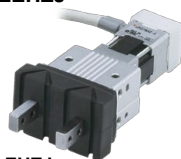
Gripper (Step Motor (Servo/24 VDC))

2-finger type
Series LEHZ



| Size | Max. gripping force (N) | | Stroke/both sides (mm) |
|------|-------------------------|---------|------------------------|
| | Basic | Compact | |
| 10 | 14 | 6 | 4 |
| 16 | | 8 | 6 |
| 20 | | 28 | 10 |
| 25 | 40 | 28 | 14 |
| 32 | | | 22 |
| 40 | 210 | — | 30 |

2-finger type
With dust cover
Series LEHZJ



| Size | Max. gripping force (N) | | Stroke/both sides (mm) |
|------|-------------------------|---------|------------------------|
| | Basic | Compact | |
| 10 | 14 | 6 | 4 |
| 16 | | 8 | 6 |
| 20 | | 28 | 10 |
| 25 | 40 | 28 | 14 |

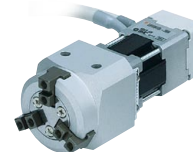
2-finger type
Long stroke
Series LEHF



| Size | Max. gripping force (N) | | Stroke/both sides (mm) |
|------|-------------------------|---------|------------------------|
| | Basic | Compact | |
| 10 | 7 | 16 (32) | 16 (32) |
| 20 | | 24 (48) | |
| 32 | | 32 (64) | |
| 40 | 180 | 40 (80) | 40 (80) |

Note) () : Long stroke

3-finger type
Series LEHS



| Size | Max. gripping force (N) | | Stroke/diameter (mm) |
|------|-------------------------|---------|----------------------|
| | Basic | Compact | |
| 10 | 5.5 | 3.5 | 4 |
| 20 | 22 | 17 | 6 |
| 32 | 90 | — | 8 |
| 40 | 130 | — | 12 |



CAT.E102

Controllers/Driver

Controller

Step data input type
For step motor
Series LECP6



Control motor
Step motor
(Servo/24 VDC)

Step data input type
For servo motor
Series LECA6



Control motor
Servo motor
(24 VDC)

Programless type
Series LECP1



Control motor
Step motor
(Servo/24 VDC)

Programless type
(With stroke study)
Series LECP2



Control motor
Step motor
(Servo/24 VDC)

Driver

Pulse input type
Series LECPA



Control motor
Step motor
(Servo/24 VDC)

Fieldbus Network

CC-Link direct input type
Series LECPMJ



Applicable Fieldbus protocols
CC-Link

Max. number of connectable controllers* 42/32/16

Gateway (GW) unit
Series LEC-G



Applicable Fieldbus protocols
CC-Link V2

Max. number of connectable controllers 12

Applicable Fieldbus protocols
DeviceNet

8

Applicable Fieldbus protocols
PROFI BUS

5

Applicable Fieldbus protocols
EtherNet/IP

12

* Depending on the mode setting

Drivers

AC Servo Motor Driver

**Pulse input type/
Positioning type**
Series LECSA
(Incremental type)



Control motor
AC servo motor
(100/200/400 W)

Pulse input type
Series LECSB
(Absolute type)



Control motor
AC servo motor
(100/200/400 W)

CC-Link direct input type
Series LECSA
(Absolute type)



Control motor
AC servo motor
(100/200/400 W)

SSCNET III type
Series LECSA
(Absolute type)

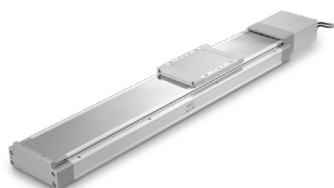


Control motor
AC servo motor
(100/200/400 W)

Electric Actuator AC Servo Motor Type

◎Electric Actuator/High Rigidity Slider Type Ball Screw Drive

Series LEJS

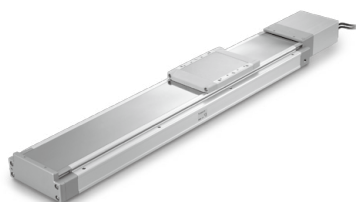


| | |
|-----------------------|---------|
| Model Selection | Page 11 |
| How to Order | Page 25 |
| Specifications | Page 26 |
| Construction | Page 27 |
| Dimensions | Page 28 |

◎Electric Actuator/High Rigidity Slider Type Ball Screw Drive

Clean Room Specification

Series 11-LEJS



| | |
|---|---------|
| Particle Generation Characteristics | Page 21 |
| How to Order | Page 30 |
| Specifications | Page 31 |
| Dimensions | Page 32 |

◎Electric Actuator/High Rigidity Slider Type Belt Drive

Series LEJB



| | |
|-----------------------|---------|
| Model Selection | Page 11 |
| How to Order | Page 34 |
| Specifications | Page 35 |
| Construction | Page 36 |
| Dimensions | Page 37 |

| | |
|-------------------|---------|
| Auto Switch | Page 39 |
|-------------------|---------|

| | |
|------------------------------------|---------|
| Specific Product Precautions | Page 41 |
|------------------------------------|---------|

◎AC Servo Motor Driver/

| | |
|--------------------------------------|---------|
| Series LECSA/LECSB/LECSC/LECSS | Page 44 |
|--------------------------------------|---------|



| | |
|------------------------------------|---------|
| Specific Product Precautions | Page 58 |
|------------------------------------|---------|

Electric Actuator/High Rigidity Slider Type **AC Servo Motor** Ball Screw Drive/Series **LEJS** Belt Drive/Series **LEJB** Model Selection



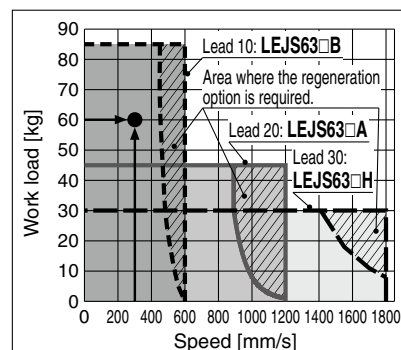
Selection Procedure

- Step 1** Check the speed-work load. → **Step 2** Check the cycle time. → **Step 3** Check the allowable moment.

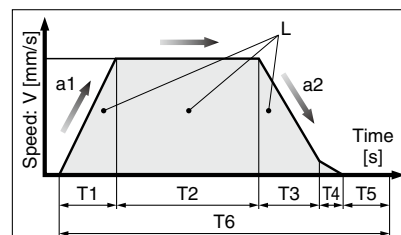
Selection Example

Operating conditions

- Work load: 60 [kg]
 - Speed: 300 [mm/s]
 - Acceleration/Deceleration: 3000 [mm/s²]
 - Stroke: 300 [mm]
 - Mounting orientation: Horizontal
 - Motor type: Incremental encoder
 - External force: 10 [N]
- Workpiece mounting condition:
-



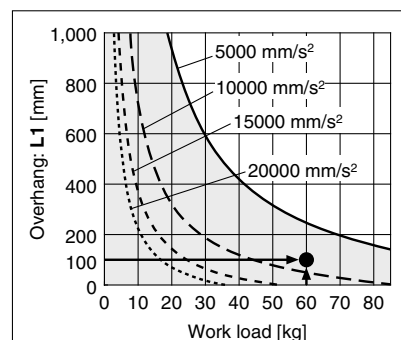
<Speed-Work load graph>
(LEJS63)



L : Stroke [mm]
V : Speed [mm/s]
a1 : Acceleration [mm/s²]
a2 : Deceleration [mm/s²]

- T1: Acceleration time [s]
Time until reaching the set speed
T2: Constant speed time [s]
Time while the actuator is operating at a constant speed
T3: Deceleration time [s]
Time from the beginning of the constant speed operation to stop
T4: Settling time [s]
Time until in position is completed
T5: Resting time [s]
Time the product is not running
T6: Total time [s]
Total time from T1 to T5

Duty ratio: Ratio of T to T6
 $T \div T6 \times 100$



<Dynamic allowable moment>
(LEJS63)

Step 1 Check the speed-work load.

Select the product by referring to "Speed-Work Load Graph" (Page 12).
Selection example) The **LEJS63S3B-300** is temporarily selected based on the graph shown on the right side.

The regeneration option may be necessary.
Refer to page 12 for "Required Conditions for Regeneration Option".

Step 2 Check the cycle time.

Refer to method 1 for a rough estimate, and method 2 for a more precise value.

Method 1: Check the cycle time graph (Page 13)

The graph is based on the maximum speed of each size.

Method 2: Calculation

Cycle time T can be found from the following equation.

$$T = T1 + T2 + T3 + T4 \text{ [s]}$$

- T1 and T3 can be obtained by the following equation.

$$T1 = V/a1 \text{ [s]} \quad T3 = V/a2 \text{ [s]}$$

The acceleration and deceleration values have upper limits depending on the workpiece mass and the duty ratio.

Check that they do not exceed the upper limit, by referring to "Work load-Acceleration/Deceleration Graph (Guide)" (Pages 15 to 17).

For the ball screw type, there is an upper limit of the speed depending on the stroke. Check that it does not exceed the upper limit, by referring to the specifications (Page 26).

- T2 can be found from the following equation.

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} \text{ [s]}$$

- T4 varies depending on the motor type and load. The value below is recommended.

$$T4 = 0.05 \text{ [s]}$$

Calculation example)

T1 to T4 can be calculated as follows.

$$T1 = V/a1 = 300/3000 = 0.1 \text{ [s]}$$

$$T3 = V/a2 = 300/3000 = 0.1 \text{ [s]}$$

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{300 - 0.5 \cdot 300 \cdot (0.1 + 0.1)}{300} = 0.90 \text{ [s]}$$

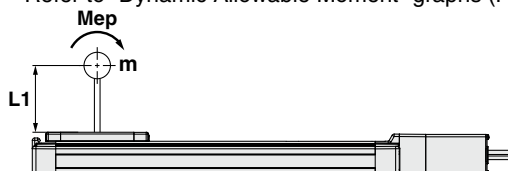
$$T4 = 0.05 \text{ [s]}$$

Therefore, the cycle time can be obtained as follows.

$$T = T1 + T2 + T3 + T4 = 0.1 + 0.90 + 0.1 + 0.05 = 1.15 \text{ [s]}$$

Step 3 Check the allowable moment.

Refer to "Dynamic Allowable Moment" graphs (Pages 18 and 19).



Selection example) Select the **LEJS63S3B-300** from the graph on the right side.

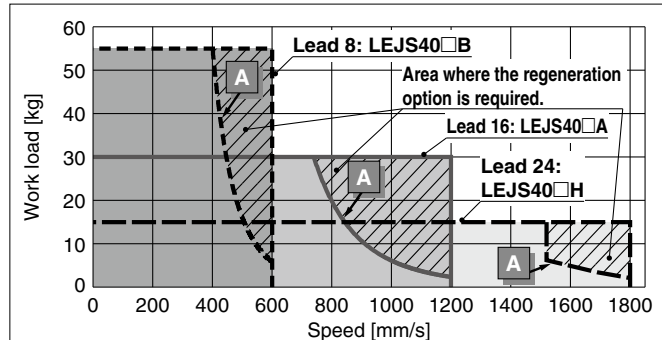
Confirm that the external force is 20 [N] or less.

(The external force is the resistance due to cable duct, flexible trunking or air tubing.)

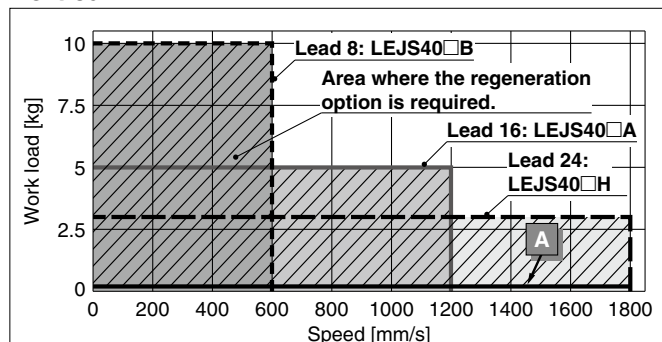
Speed–Work Load Graph/Required Conditions for “Regeneration Option”(Guide)

LEJS40/Ball Screw Drive

Horizontal

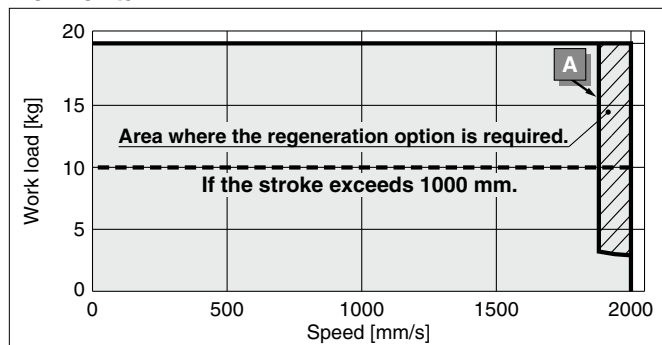


Vertical



LEJB40/Belt Drive

Horizontal



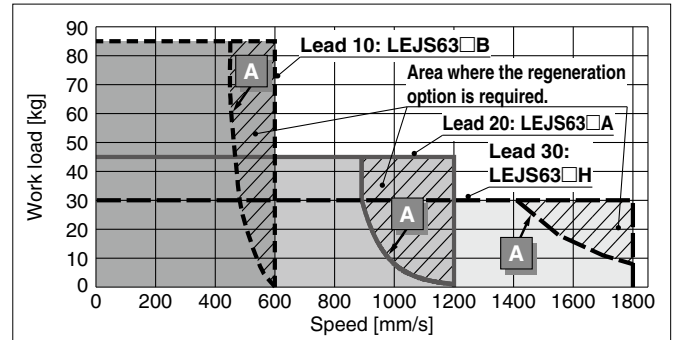
* When the stroke of the LEJB40 series exceeds 1000 mm, the work load is 10 kg.

Required conditions for “Regeneration option”

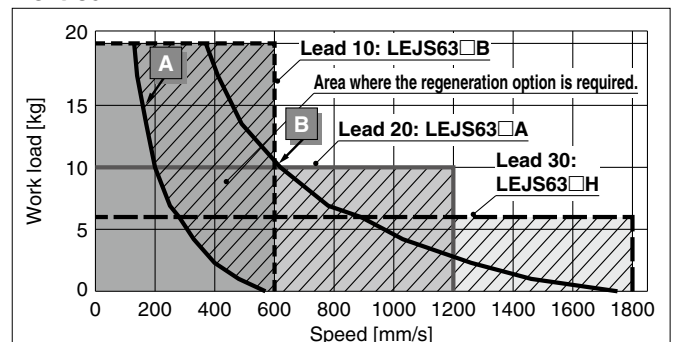
* Regeneration option required when using product above “Regeneration” line in graph.
(Order separately)

LEJS63/Ball Screw Drive

Horizontal

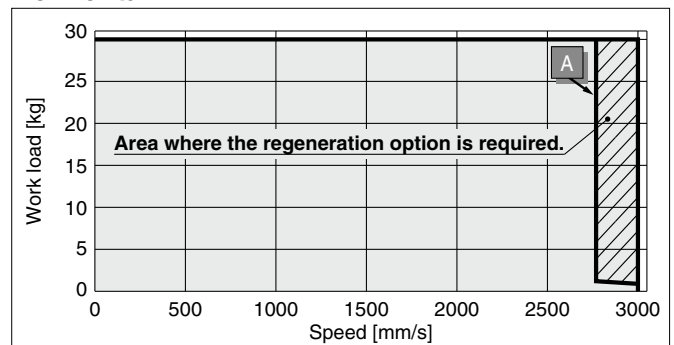


Vertical



LEJB63/Belt Drive

Horizontal



“Regeneration Option” Models

| Operating condition | Regenerative condition | Regeneration option |
|---------------------|------------------------|---------------------|
| A | Duty ratio | LEC-MR-RB-032 |
| B | 100% | LEC-MR-RB-12 |

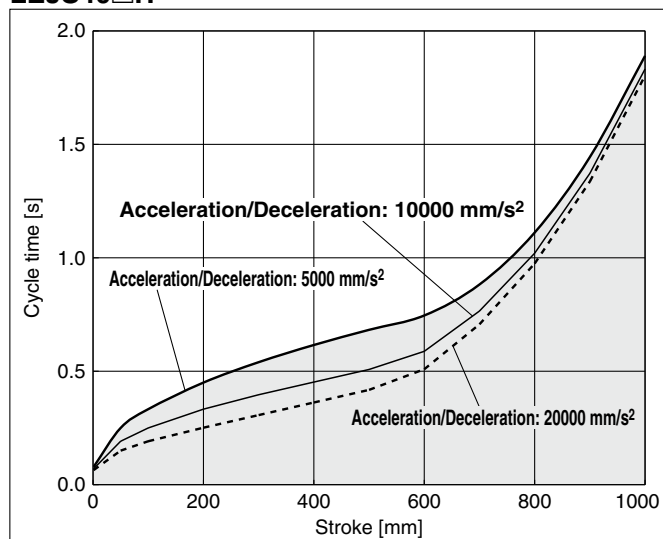
Allowable Stroke Speed

| [mm/s] | | | | | | | | | | | | | | | | | |
|--------|----------------|------------------------|------|-------------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Model | AC servo motor | Lead | | Stroke [mm] | | | | | | | | | | | | | |
| | | Symbol | [mm] | Up to 200 | Up to 300 | Up to 400 | Up to 500 | Up to 600 | Up to 700 | Up to 800 | Up to 900 | Up to 1000 | Up to 1100 | Up to 1200 | Up to 1300 | Up to 1400 | Up to 1500 |
| LEJS40 | 100W/ □40 | H | 24 | 1800 | | | | 1580 | 1170 | 910 | 720 | 580 | 480 | 410 | — | — | — |
| | | A | 16 | 1200 | | | | 1050 | 780 | 600 | 480 | 390 | 320 | 270 | — | — | — |
| | | B | 8 | 600 | | | | 520 | 390 | 300 | 240 | 190 | 160 | 130 | — | — | — |
| | | (Motor rotation speed) | | (4500 rpm) | | | | (3938 rpm) | (2925 rpm) | (2250 rpm) | (1800 rpm) | (1463 rpm) | (1200 rpm) | (1013 rpm) | — | — | — |
| LEJS63 | 200W/ □60 | H | 30 | — | 1800 | | | | 1390 | 1110 | 900 | 750 | 630 | 540 | 470 | 410 | |
| | | A | 20 | — | 1200 | | | | 930 | 740 | 600 | 500 | 420 | 360 | 310 | 270 | |
| | | B | 10 | — | 600 | | | | 460 | 370 | 300 | 250 | 210 | 180 | 150 | 130 | |
| | | (Motor rotation speed) | — | (3600 rpm) | | | | (2790 rpm) | (2220 rpm) | (1800 rpm) | (1500 rpm) | (1260 rpm) | (1080 rpm) | (930 rpm) | (810 rpm) | | |

Cycle Time Graph (Guide)

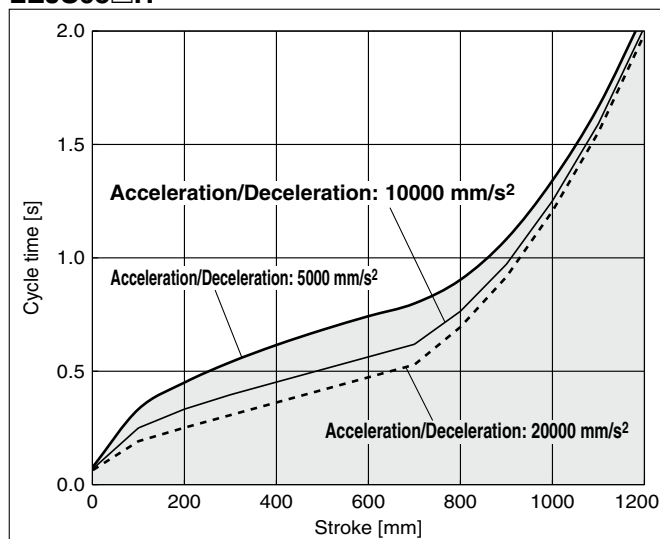
LEJS40/Ball Screw Drive

LEJS40□H

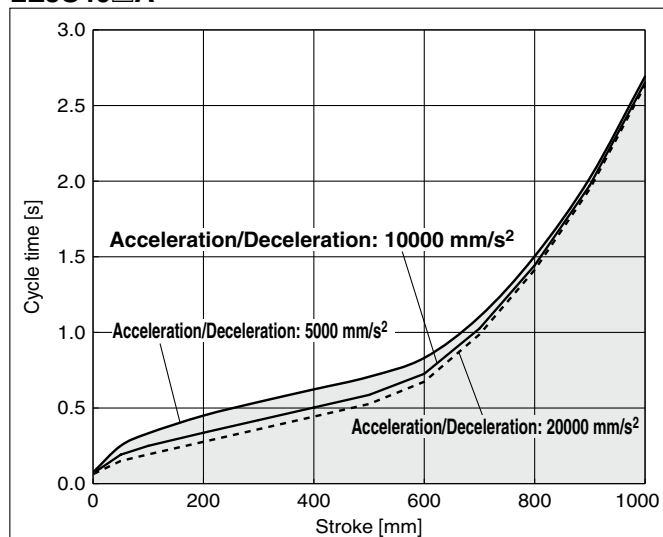


LEJS63/Ball Screw Drive

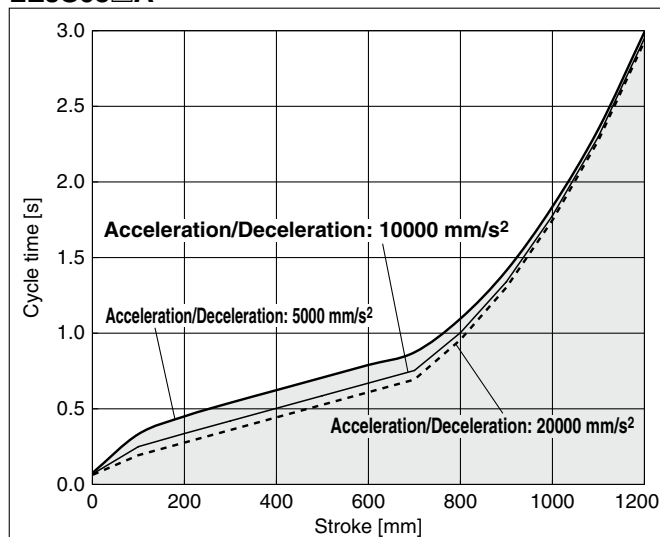
LEJS63□H



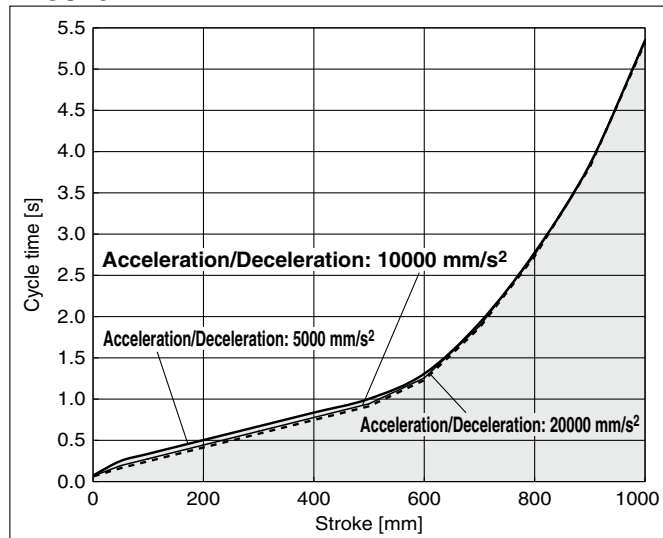
LEJS40□A



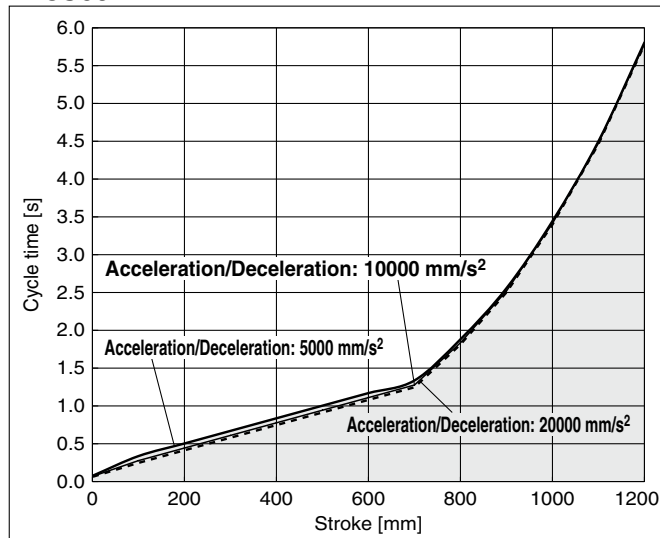
LEJS63□A



LEJS40□B



LEJS63□B

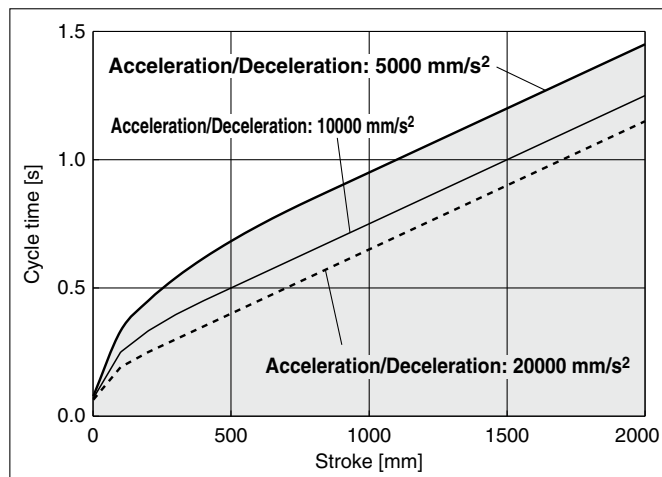


* Work load/acceleration/deceleration graph

* Maximum speed/acceleration/deceleration values graph for each stroke

Cycle Time Graph (Guide)

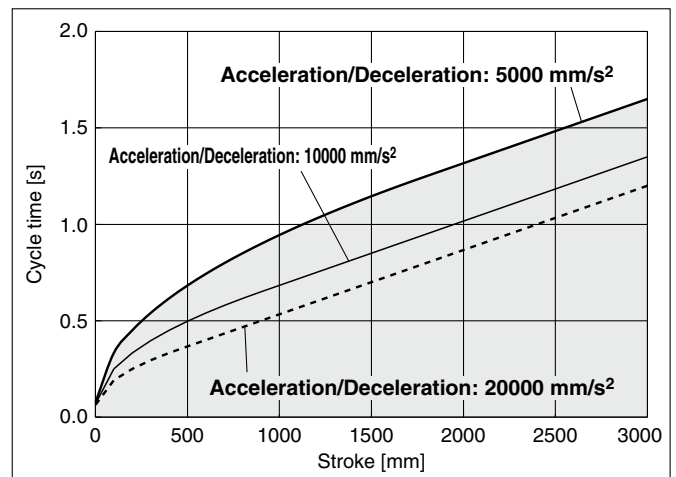
LEJB40/Belt Drive



* Work load/acceleration/deceleration graph

* Maximum speed/acceleration/deceleration values graph for each stroke

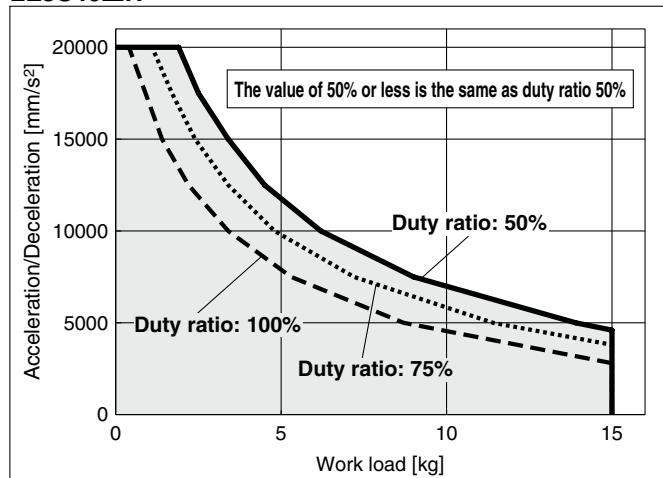
LEJB63/Belt Drive



Work Load–Acceleration/Deceleration Graph (Guide)

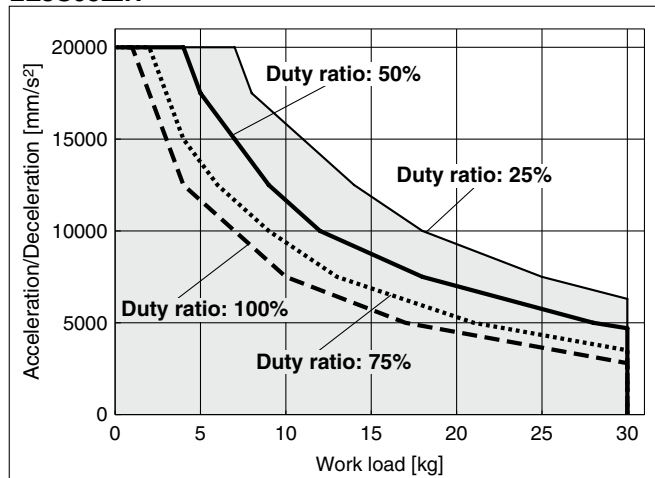
LEJS40/Ball Screw Drive: Horizontal

LEJS40□H

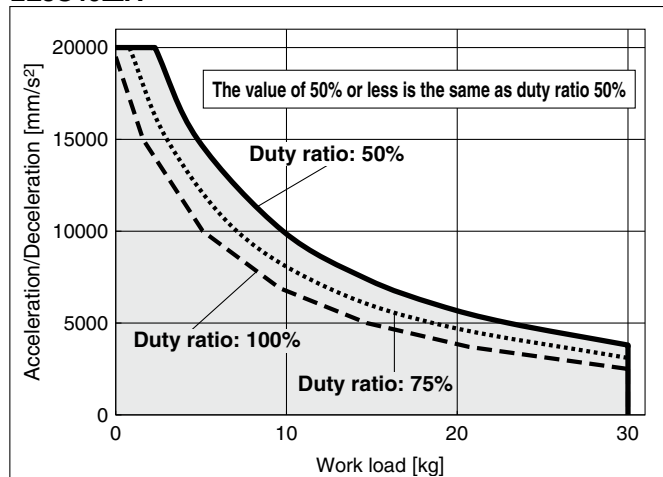


LEJS63/Ball Screw Drive: Horizontal

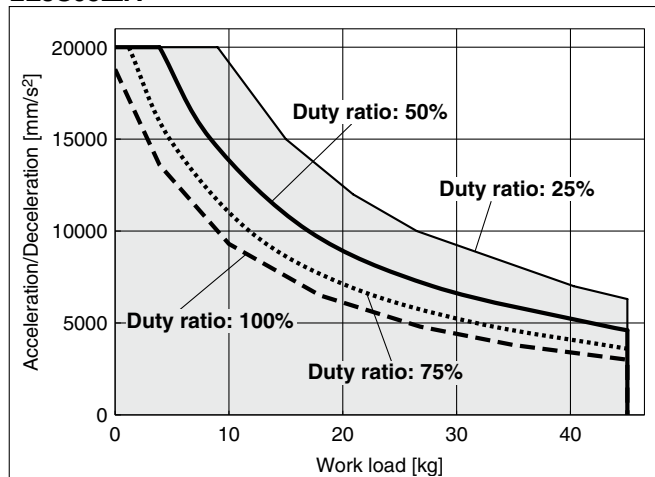
LEJS63□H



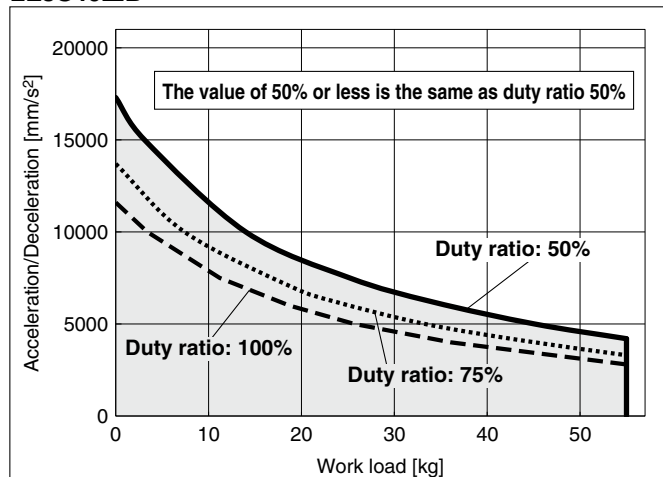
LEJS40□A



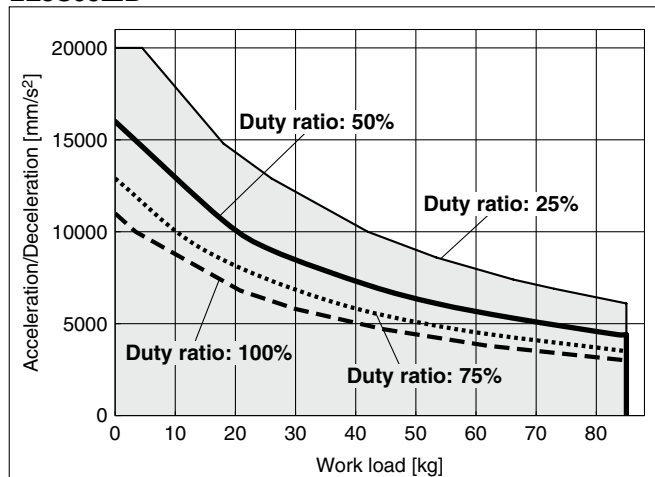
LEJS63□A



LEJS40□B



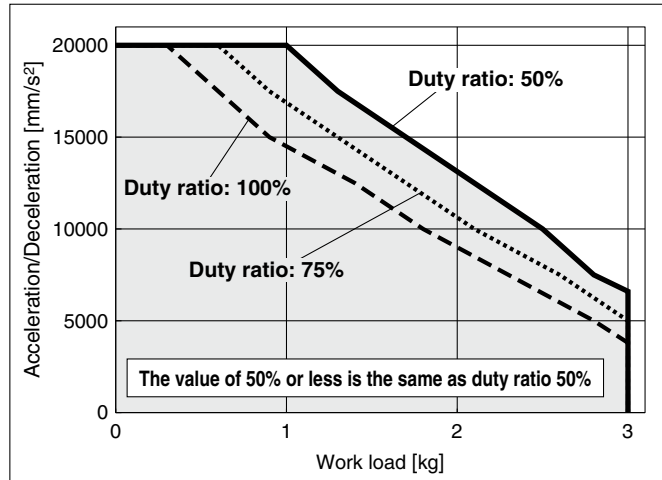
LEJS63□B



Work Load–Acceleration/Deceleration Graph (Guide)

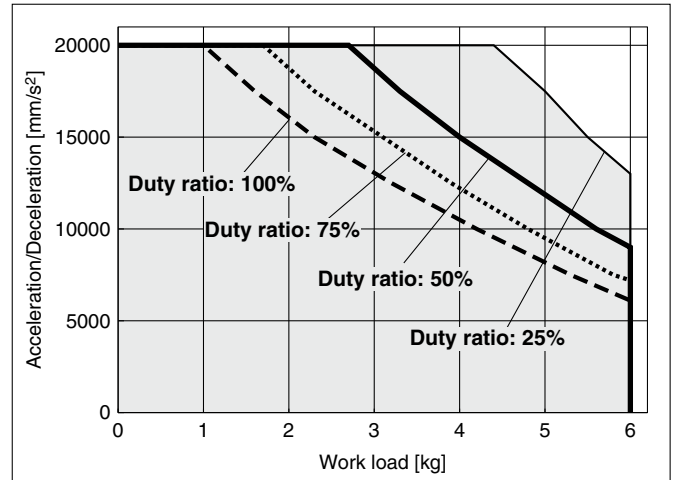
LEJS40/Ball Screw Drive: Vertical

LEJS40□H

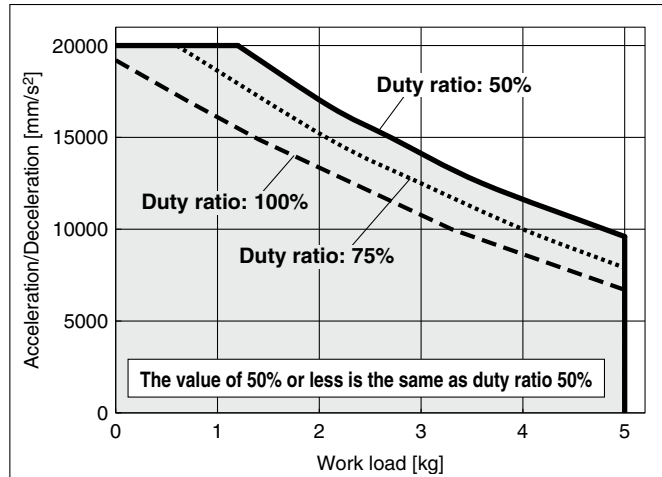


LEJS63/Ball Screw Drive: Vertical

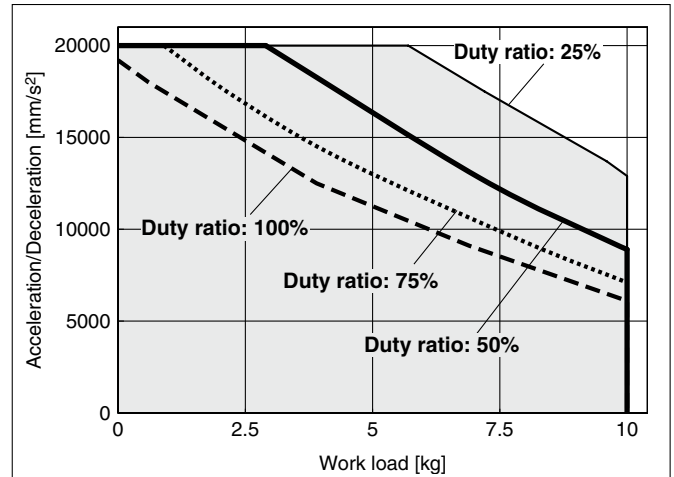
LEJS63□H



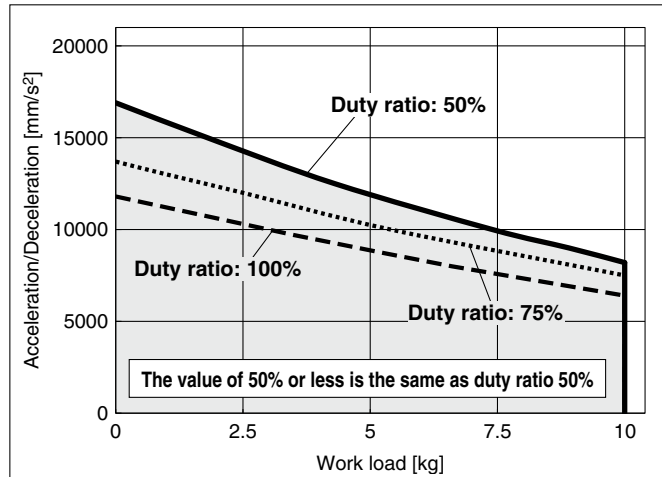
LEJS40□A



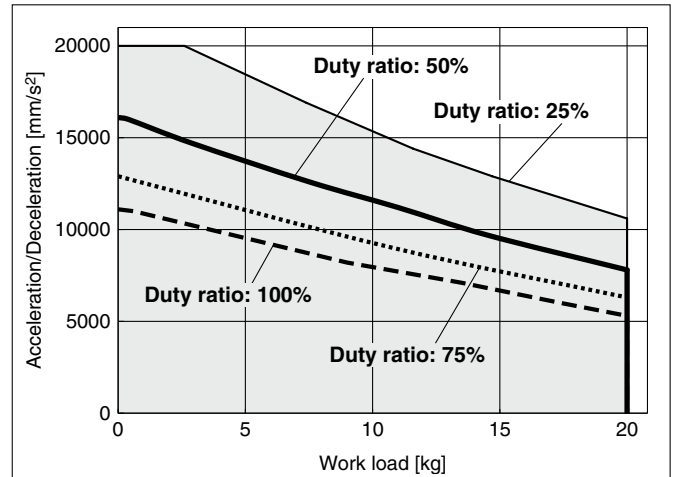
LEJS63□A



LEJS40□B

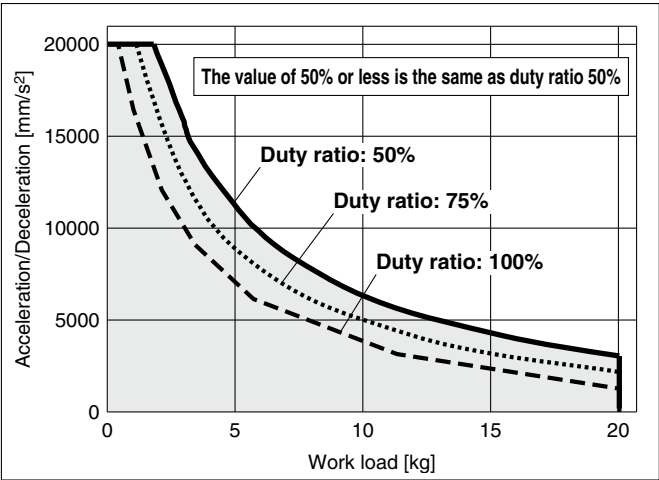


LEJS63□B

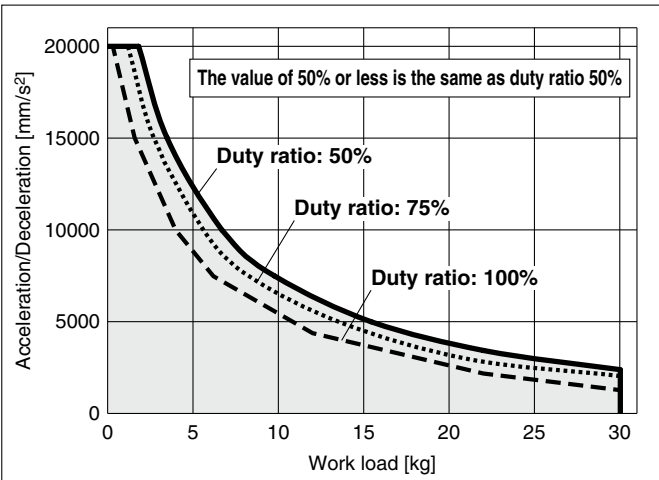


Work Load–Acceleration/Deceleration Graph (Guide)

LEJB40/Belt Drive: Horizontal



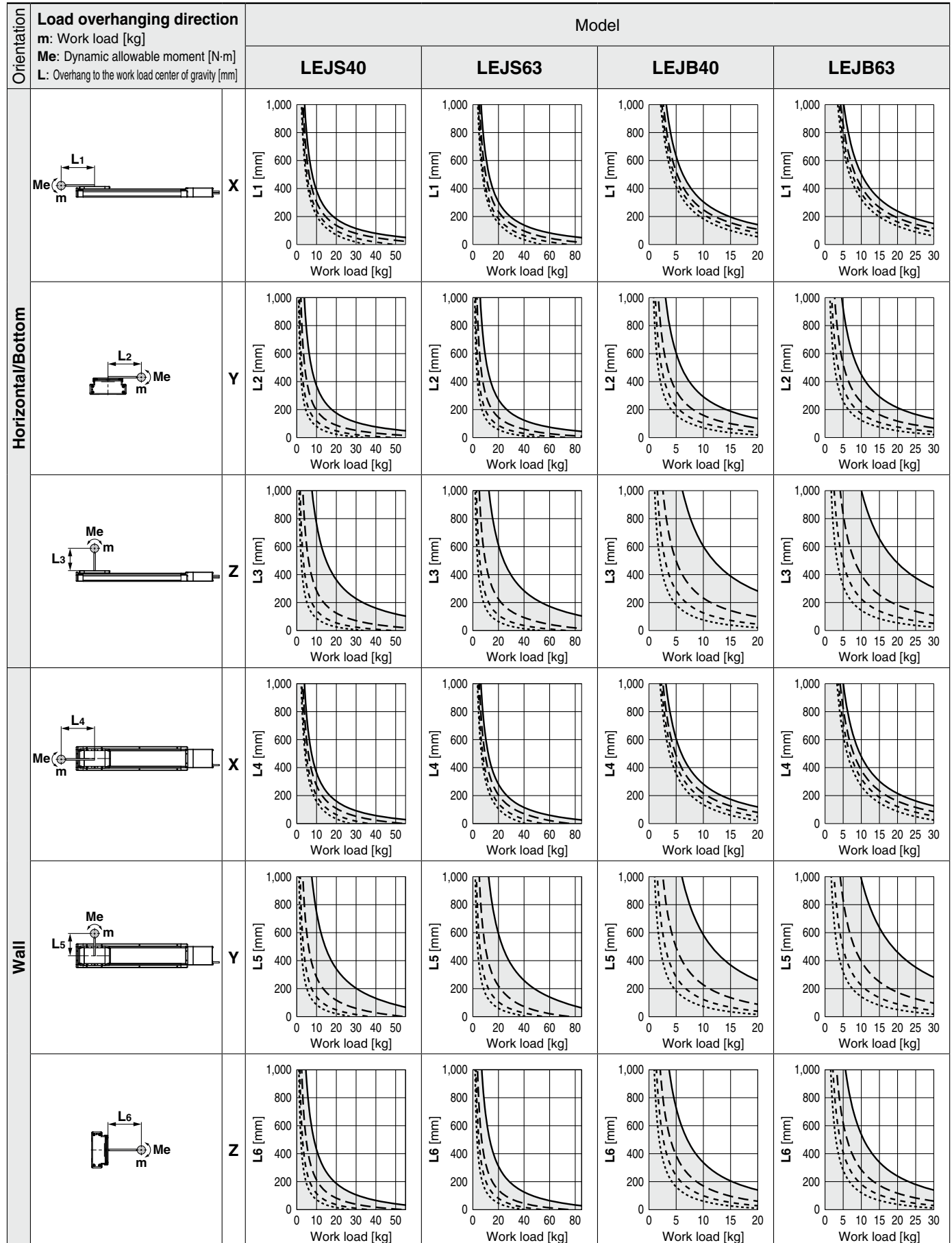
LEJB63/Belt Drive: Horizontal



Dynamic Allowable Moment

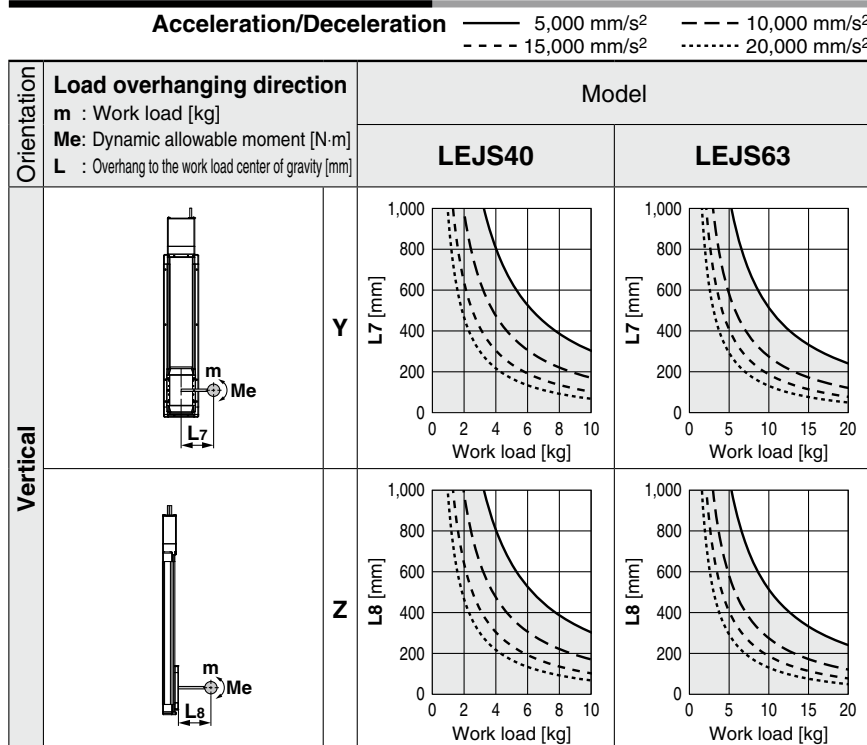
* This graph shows the amount of allowable overhang when the center of gravity of the workpiece overhangs in one direction. When the center of gravity of the workpiece overhangs in two directions, refer to the Electric Actuator Selection Software for confirmation. <http://www.smcworld.com>

Acceleration/Deceleration — 5,000 mm/s² - - - 10,000 mm/s²
 - - - 15,000 mm/s² 20,000 mm/s²



Dynamic Allowable Moment

* This graph shows the amount of allowable overhang when the center of gravity of the workpiece overhangs in one direction. When the center of gravity of the workpiece overhangs in two directions, refer to the Electric Actuator Selection Software for confirmation. <http://www.smcworld.com>



Calculation of Guide Load Factor

- Decide operating conditions.

Model: LEJS/LEJB

Size: 40/63

Mounting orientation: Horizontal/Bottom/Wall/Vertical

Acceleration [mm/s²]: a

Work load [kg]: m

Work load center position [mm]: Xc/Yc/Zc

- Select the target graph with reference to the model, size and mounting orientation.

- Based on the acceleration and work load, obtain the overhang [mm]: Lx/Ly/Lz from the graph.

- Calculate the load factor for each direction.

$$\alpha x = Xc/Lx, \alpha y = Yc/Ly, \alpha z = Zc/Lz$$

- Confirm the total of αx , αy and αz is 1 or less.

$$\alpha x + \alpha y + \alpha z \leq 1$$

When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load center position and series.

Example

- Operating conditions

Model: LEJS

Size: 40

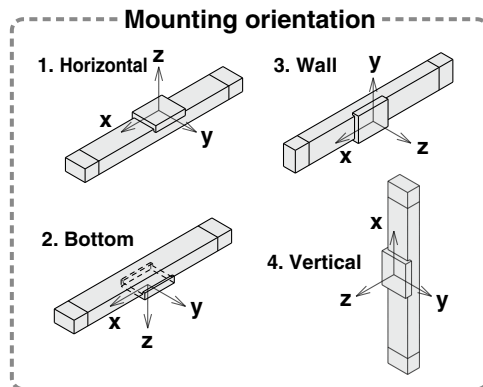
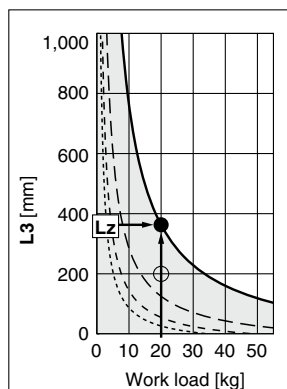
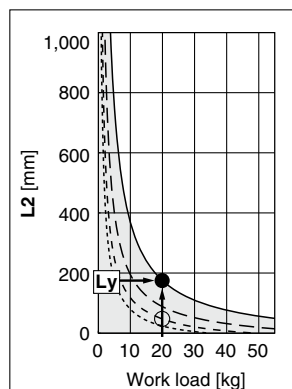
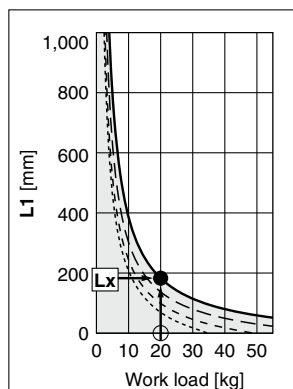
Mounting orientation: Horizontal

Acceleration [mm/s²]: 5000

Work load [kg]: 20

Work load center position [mm]: Xc = 0, Yc = 50, Zc = 200

- Select the graph on page 18, top and left side first row.



- Lx = 180 mm, Ly = 170 mm, Lz = 360 mm

- The load factor for each direction can be obtained as follows.

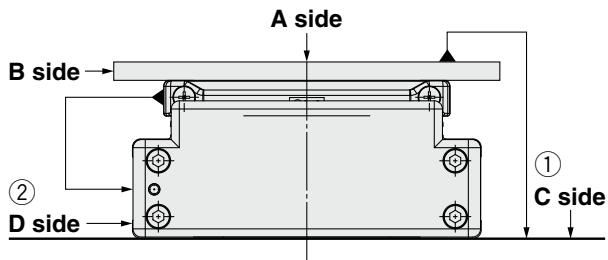
$$\alpha x = 0/180 = 0$$

$$\alpha y = 50/170 = 0.29$$

$$\alpha z = 200/360 = 0.56$$

- $\alpha x + \alpha y + \alpha z = 0.85 \leq 1$

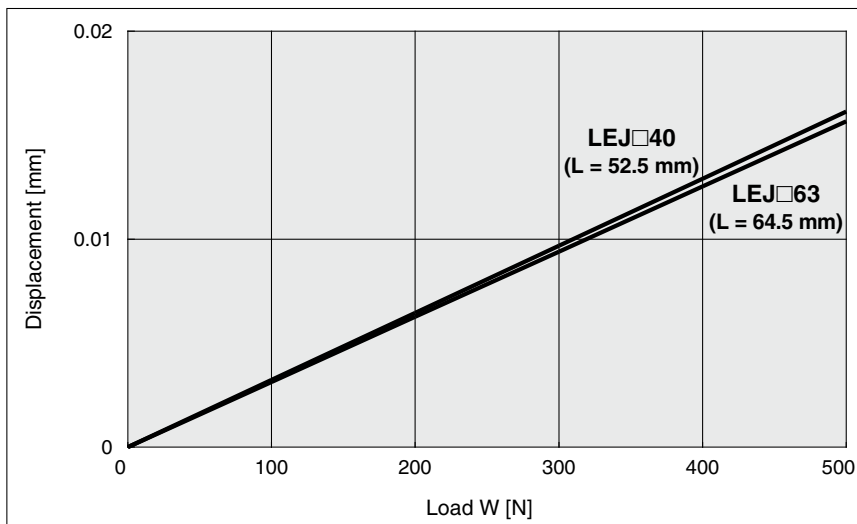
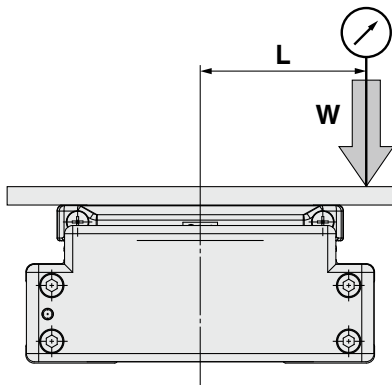
Table Accuracy (Reference Value)



| Model | Traveling parallelism [mm] (Every 300 mm) | |
|---------------|---|--|
| | ① C side traveling parallelism to A side | ② D side traveling parallelism to B side |
| LEJ□40 | 0.05 | 0.03 |
| LEJ□63 | 0.05 | 0.03 |

Note) Traveling parallelism does not include the mounting surface accuracy.

Table Displacement (Reference Value)



Note) This displacement is measured when a 15 mm aluminum plate is mounted and fixed on the table. (Table clearance is included.)

Particle Generation Characteristics

Particle Generation Measuring Method

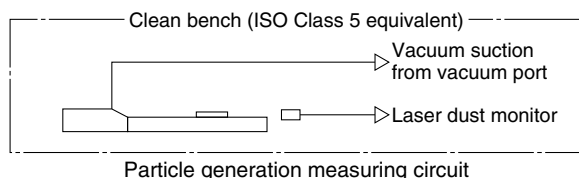
The particle generation data for 11-LEJS series are measured in the following test method.

Test Method (Example)

Operate the specimen that is placed in an ISO Class 5 equivalent clean bench, and measure the changes of the particle concentration over time until the number of cycles reaches the specified point.

Measuring Conditions

| | | |
|----------------------|--------------------------------------|---|
| Measuring instrument | Description | Laser dust monitor (Automatic particle counter by lightscattering method) |
| | Minimum measurable particle diameter | 0.1 μm |
| | Suction flow rate | 28.3 L/min (ANR) |
| Setting conditions | Sampling time | 5 min |
| | Interval time | 55 min |
| | Sampling air flow | 141.5 L (ANR) |



Test Conditions

| Size | Speed [mm/s] | Model | Workpiece mass [kg] | Acceleration [mm/s ²] | Duty ratio [%] |
|------|--------------|-----------------|---------------------|-----------------------------------|----------------|
| 40 | 1200 | 11-LEJS40□A-200 | 4 | 13000 | 100 |
| | 600 | 11-LEJS40□B-200 | | 10000 | |
| 63 | 1200 | 11-LEJS63□A-300 | | 13000 | |
| | 600 | 11-LEJS63□B-300 | | 10000 | |

* Mounting position: Horizontal

Evaluation Method

To obtain the measured values of particle concentration, the accumulated value ^{Note 1)} of particles captured every 5 minutes, by the laser dust monitor, is converted into the particle concentration in every 1 m³.

When determining particle generation grades, the 95% upper confidence limit of the average particle concentration (average value), when each specimen is operated at a specified number of cycles ^{Note 2)} is considered.

The plots in the graphs indicate the 95% upper confidence limit of the average particle concentration of particles with a diameter within the horizontal axis range.

Note 1) Sampling air flow rate: Number of particles contained in 141.5 L (ANR) of air

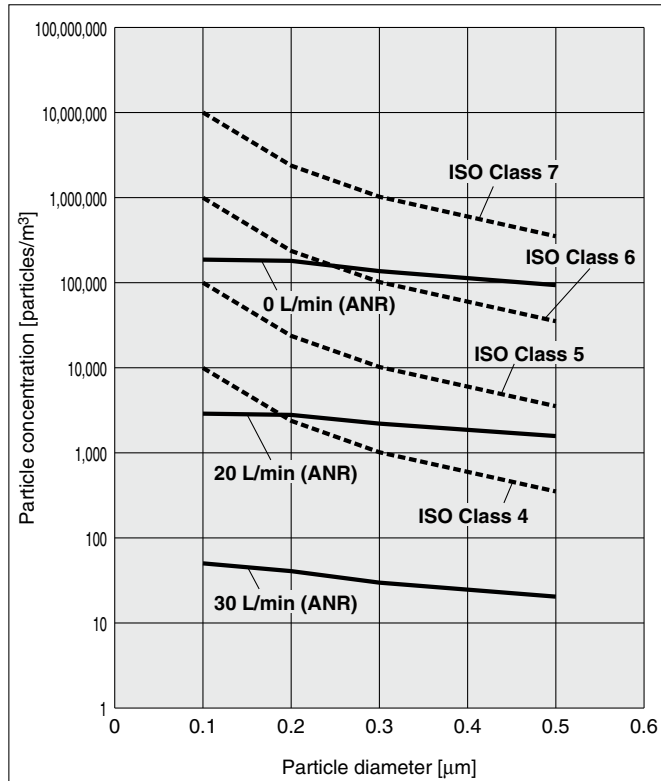
Note 2) Actuator: 1 million cycles

Note 3) The particle generation characteristics (Page 22) provide a guide for selection but is not guaranteed.

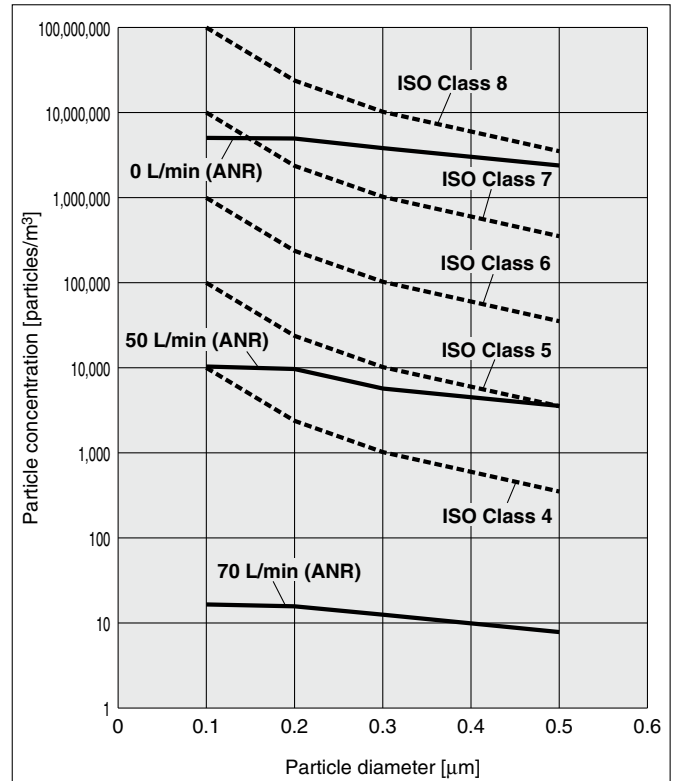
Particle Generation Characteristics

11-LEJS40/Ball Screw Drive

Speed 600 mm/s

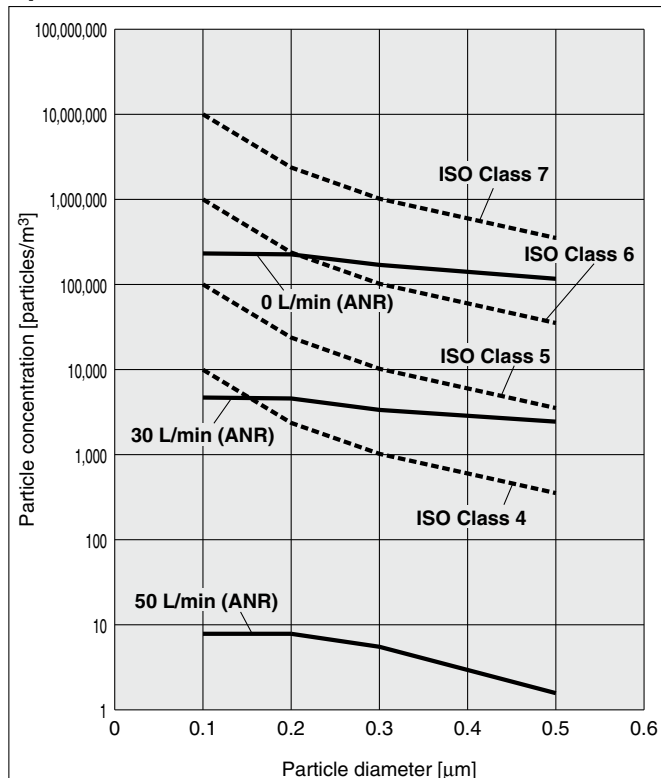


Speed 1,200 mm/s

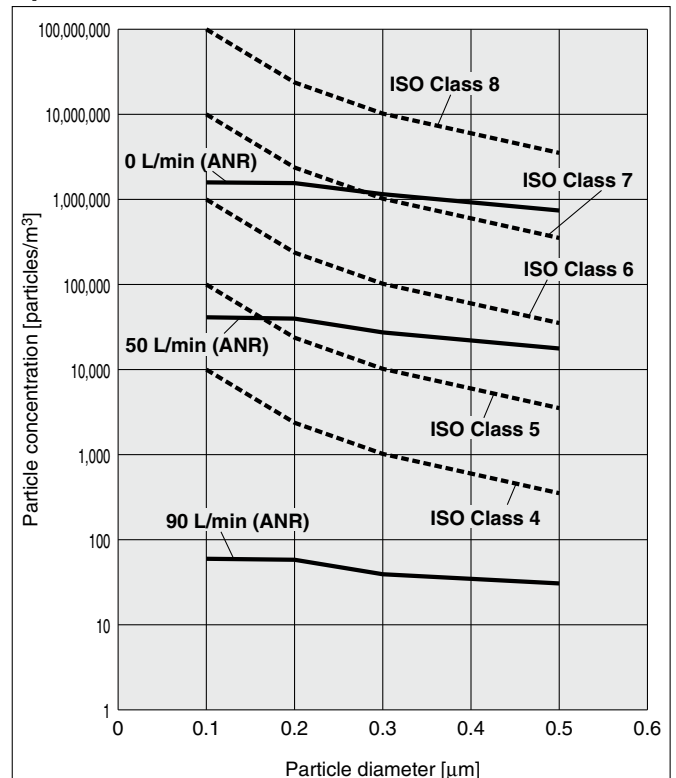


11-LEJS63/Ball Screw Drive

Speed 600 mm/s



Speed 1,200 mm/s



Electric Actuator/High Rigidity Slider Type Ball Screw Drive AC Servo Motor

Series *LEJS*



How to Order

LEJS **H** **40** **S2** **A** - **500**

1 2 3 4 5 6 7 8 9 10

1 Accuracy

| | |
|------------|---------------------|
| Nil | Basic type |
| H | High precision type |

2 Size

| |
|-----------|
| 40 |
| 63 |

3 Motor type^{*1}

| Symbol | Type | Output [W] | Actuator size | Compatible drivers ^{*2} |
|-----------|--------------------------------------|------------|---------------|-------------------------------------|
| S2 | AC servo motor (Incremental encoder) | 100 | 40 | LECSA□-S1 |
| S3 | AC servo motor (Incremental encoder) | 200 | 63 | LECSA□-S3 |
| S6 | AC servo motor (Absolute encoder) | 100 | 40 | LECSB□-S5 LECSC□-S5 LECSS□-S5 |
| S7 | AC servo motor (Absolute encoder) | 200 | 63 | LECSB□-S7 LECSC□-S7 LECSS□-S7 |

*1: For motor type S2 and S6, the compatible driver part number suffixes are S1 and S5 respectively.

*2: For details of the driver, refer to page 44.

4 Lead [mm]

| Symbol | LEJS40 | LEJS63 |
|----------|--------|--------|
| H | 24 | 30 |
| A | 16 | 20 |
| B | 8 | 10 |

5 Stroke [mm]^{*3}

| |
|-------------|
| 200 |
| to |
| 1500 |

*3: Refer to the table below for details.

6 Motor option

| | |
|------------|----------------|
| Nil | Without option |
| B | With lock |

7 Cable type^{*5, *6, *7}

| | |
|------------|--------------------------------|
| Nil | Without cable |
| S | Standard cable |
| R | Robotic cable (Flexible cable) |

*6: The motor and encoder cables are included. (The lock cable is included when the motor with lock option is selected.)

*7: Standard cable entry direction is "(A) Axis side". (Refer to page 56 for details.)

8 Cable length [m]^{*5, *8}

| | |
|------------|---------------|
| Nil | Without cable |
| 2 | 2 m |
| 5 | 5 m |
| A | 10 m |

*8: The length of the motor, encoder and lock cables are the same.

9 Driver type^{*5}

| | Compatible drivers | Power supply voltage (V) |
|------------|--------------------|--------------------------|
| Nil | Without driver | — |
| A1 | LECSA1-S□ | 100 to 120 |
| A2 | LECSA2-S□ | 200 to 230 |
| B1 | LECSB1-S□ | 100 to 120 |
| B2 | LECSB2-S□ | 200 to 230 |
| C1 | LECSC1-S□ | 100 to 120 |
| C2 | LECSC2-S□ | 200 to 230 |
| S1 | LECSC1-S□ | 100 to 120 |
| S2 | LECSC2-S□ | 200 to 230 |

10 I/O cable length [m]^{*9}

| | |
|------------|--------------------------------|
| Nil | Without cable |
| H | Without cable (Connector only) |
| 1 | 1.5 |

*9: When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected. Refer to page 56-1 if I/O cable is required. (Options are shown on page 56-1.)

Applicable stroke table^{*4}

| Model | Stroke (mm) | ●Standard | | | | | | | | | | |
|--------|----------------|-----------|-----|-----|-----|-----|-----|-----|------|------|------|--|
| | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1500 | |
| LEJS40 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | — | |
| LEJS63 | | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | |

*4: Consult with SMC for non-standard strokes as they are produced as special orders.

*5: When the driver type is selected, the cable is included. Select cable type and cable length.
Example)
S2S2: Standard cable (2 m) + Driver (LECSC2)
S2 : Standard cable (2 m)
Nil : Without cable and driver

For auto switches, refer to pages 39 and 40.

Compatible Drivers

| Driver type | Pulse input type /Positioning type | Pulse input type | CC-Link direct input type | SSCNET III type |
|---------------------------------|--|--|--|-------------------------|
| | | | | |
| Series | LECSA | LECSB | LECSC | LECSC |
| Number of point tables | Up to 7 | — | Up to 255 | — |
| Pulse input | ○ | ○ | — | — |
| Applicable network | — | — | CC-Link | SSCNET III |
| Control encoder | Incremental 17-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder |
| Communication function | USB communication | USB communication, RS422 communication | USB communication, RS422 communication | USB communication |
| Power supply voltage (V) | 100 to 120 VAC (50/60 Hz) 200 to 230 VAC (50/60 Hz) | | | |
| Reference page | Page 44 | | | |

Specifications

LEJS40/63 AC Servo Motor (100/200 W)

| Model | | | LEJS40S ² ₆ | | | LEJS63S ³ ₇ | | | |
|--|---|---|---|--------------|------|---|------|------|-----|
| Actuator specifications | Stroke [mm] ^{Note 1)} | | 200, 300, 400, 500, 600, 700, 800 900, 1000, 1200 | | | 300, 400, 500, 600, 700, 800, 900 1000, 1200, 1500 | | | |
| | Work load [kg] ^{Note 2)} | | Horizontal | 15 | 30 | 55 | 30 | 45 | 85 |
| | | | Vertical | 3 | 5 | 10 | 6 | 10 | 20 |
| | Speed ^{Note 3)} [mm/s] | Stroke range | Up to 500 | 1800 | 1200 | 600 | 1800 | 1200 | 600 |
| | | | 501 to 600 | 1580 | 1050 | 520 | 1800 | 1200 | 600 |
| | | | 601 to 700 | 1170 | 780 | 390 | 1800 | 1200 | 600 |
| | | | 701 to 800 | 910 | 600 | 300 | 1390 | 930 | 460 |
| | | | 801 to 900 | 720 | 480 | 240 | 1110 | 740 | 370 |
| | | | 901 to 1000 | 580 | 390 | 190 | 900 | 600 | 300 |
| | | | 1001 to 1100 | 480 | 320 | 160 | 750 | 500 | 250 |
| | | | 1101 to 1200 | 410 | 270 | 130 | 630 | 420 | 210 |
| | | | 1201 to 1300 | — | — | — | 540 | 360 | 180 |
| | | | 1301 to 1400 | — | — | — | 470 | 310 | 150 |
| | 1401 to 1500 | — | — | — | 410 | 270 | 130 | | |
| | Max. acceleration/deceleration [mm/s ²] | | 20000 (Refer to page 15 for limit according to work load and duty ratio.) | | | | | | |
| | Positioning repeatability [mm] ^{Note 4)} | | Basic type | ±0.02 | | | | | |
| | | | High precision type | ±0.01 | | | | | |
| | Lost motion [mm] ^{Note 5)} | | Basic type | 0.1 or less | | | | | |
| | | | High precision type | 0.05 or less | | | | | |
| Lead [mm] | | 24 | 16 | 8 | 30 | 20 | 10 | | |
| Impact/Vibration resistance [m/s ²] ^{Note 6)} | | 50/20 | | | | | | | |
| Actuation type | | Ball screw | | | | | | | |
| Guide type | | Linear guide | | | | | | | |
| Operating temperature range [°C] | | 5 to 40 | | | | | | | |
| Operating humidity range [%RH] | | 90 or less (No condensation) | | | | | | | |
| Regeneration option | | May be required depending on speed and work load. (Refer to page 56.) | | | | | | | |
| Electric specifications | Motor output [W]/Size [mm] | | 100/□40 | | | 200/□60 | | | |
| | Motor type | | AC servo motor (100/200 VAC) | | | | | | |
| | Encoder | | Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute 18-bit encoder (Resolution: 262144 p/rev) | | | | | | |
| | Power consumption [W] ^{Note 7)} | Horizontal | 65 | | | 80 | | | |
| | | Vertical | 165 | | | 235 | | | |
| | Standby power consumption when operating [W] ^{Note 8)} | Horizontal | 2 | | | 2 | | | |
| | | Vertical | 10 | | | 12 | | | |
| | Max. instantaneous power consumption [W] ^{Note 9)} | | 445 | | | 725 | | | |
| Lock unit specifications | Type ^{Note 10)} | | Non-magnetizing lock | | | | | | |
| | Holding force [N] | | 67 | 101 | 203 | 220 | 330 | 660 | |
| | Power consumption at 20°C [W] ^{Note 11)} | | 6.3 | | | 7.9 | | | |
| | Rated voltage [V] | | 24 VDC ⁰ _{-10%} | | | | | | |

Note 1) Consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) Check "Speed-Work Load Graph (Guide)" on page 12.

Note 3) The allowable speed changes according to the stroke.

Note 4) Conforming to JIS B 6191-1999

Note 5) A reference value for correcting an error in reciprocal operation.

Note 6) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

Note 7) The power consumption (including the driver) is for when the actuator is operating.

Note 8) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 9) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 10) Only when motor option "With lock" is selected.

Note 11) For an actuator with lock, add the power consumption for the lock.

Note 12) Sensor magnet position is located in the table center. For detailed dimensions, refer to "Auto Switch Mounting Position" on page 43.

Note 13) Do not allow collisions at either end of the table traveling distance. Additionally, when running the positioning operation, do not set within 2 mm of both ends.

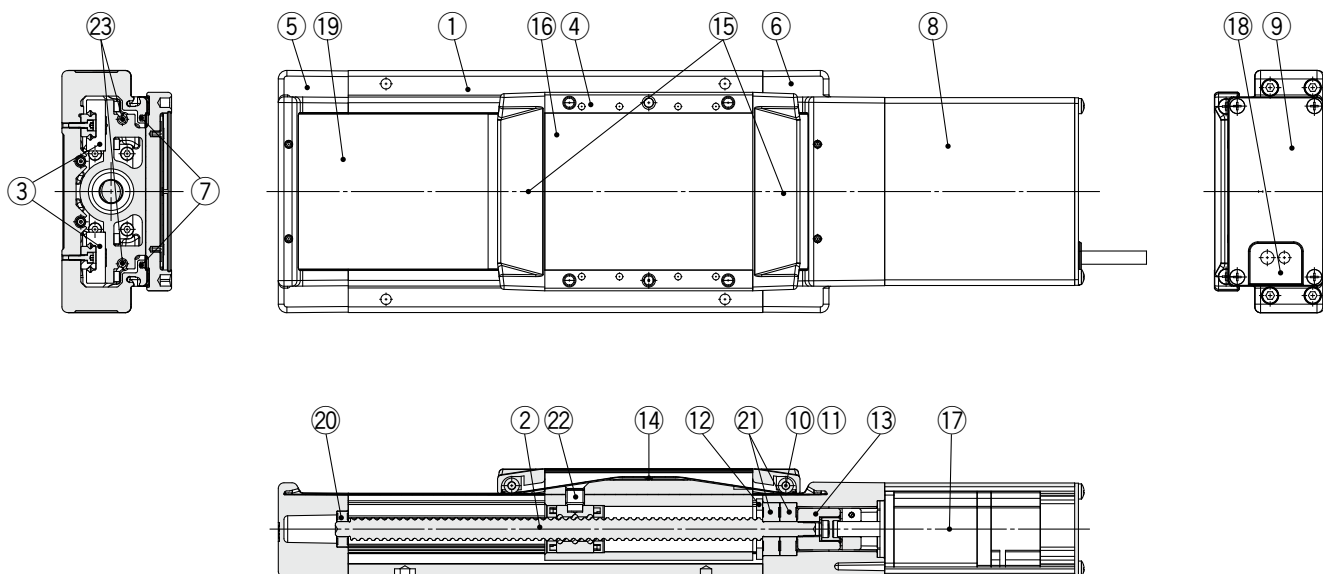
Note 14) For "Manufacture of Intermediate Strokes", please contact SMC. (LEJS40/Manufacturable stroke range: 200 to 1200 mm, LEJS63/Manufacturable stroke range: 300 to 1500 mm)

Weight

| Model | LEJS40 | | | | | | | | | |
|----------------------------------|--|-----|-----|-----|-----|-----|------|------|------|------|
| Stroke [mm] | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
| Product weight [kg] | 5.6 | 6.4 | 7.1 | 7.9 | 8.7 | 9.4 | 10.2 | 11.0 | 11.7 | 13.3 |
| Additional weight with lock [kg] | 0.2 (Incremental encoder)/0.3 (Absolute encoder) | | | | | | | | | |

| Model | LEJS63 | | | | | | | | | |
|----------------------------------|--|------|------|------|------|------|------|------|------|------|
| Stroke [mm] | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1500 |
| Product weight [kg] | 11.4 | 12.7 | 13.9 | 15.2 | 16.4 | 17.7 | 18.9 | 20.1 | 22.6 | 26.4 |
| Additional weight with lock [kg] | 0.4 (Incremental encoder)/0.7 (Absolute encoder) | | | | | | | | | |

Construction



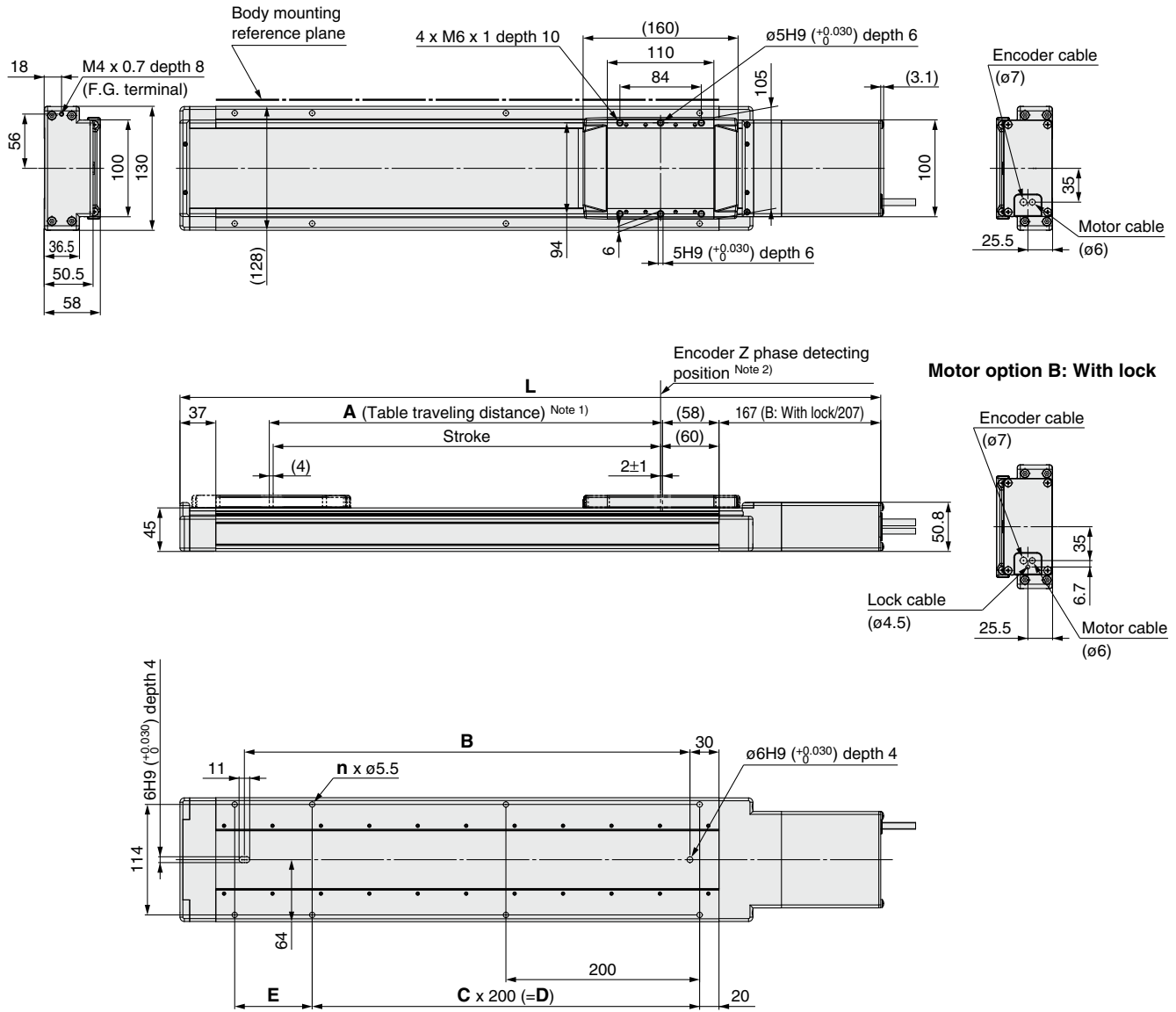
Component Parts

| No | Description | Material | Note |
|----|------------------------------|-----------------|----------|
| 1 | Body | Aluminum alloy | Anodized |
| 2 | Ball screw assembly | — | |
| 3 | Linear guide assembly | — | |
| 4 | Table | Aluminum alloy | Anodized |
| 5 | Housing A | Aluminum alloy | Coating |
| 6 | Housing B | Aluminum alloy | Coating |
| 7 | Seal magnet | — | |
| 8 | Motor cover | Aluminum alloy | Anodized |
| 9 | End cover A | Aluminum alloy | Anodized |
| 10 | Roller shaft | Stainless steel | |
| 11 | Roller | Synthetic resin | |
| 12 | Bearing stopper | Carbon steel | |

| No | Description | Material | Note |
|----|--------------------------|-----------------|----------|
| 13 | Coupling | — | |
| 14 | Table cap | Synthetic resin | |
| 15 | Seal band stopper | Synthetic resin | |
| 16 | Blanking plate | Aluminum alloy | Anodized |
| 17 | Motor | — | |
| 18 | Grommet | NBR | |
| 19 | Dust seal band | Stainless steel | |
| 20 | Bearing | — | |
| 21 | Bearing | — | |
| 22 | Nut fixing pin | Carbon steel | |
| 23 | Magnet | — | |

Dimensions: Ball Screw Drive

LEJS40



Note 1) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.

Note 2) The Z phase first detecting position from the stroke end of the motor side.

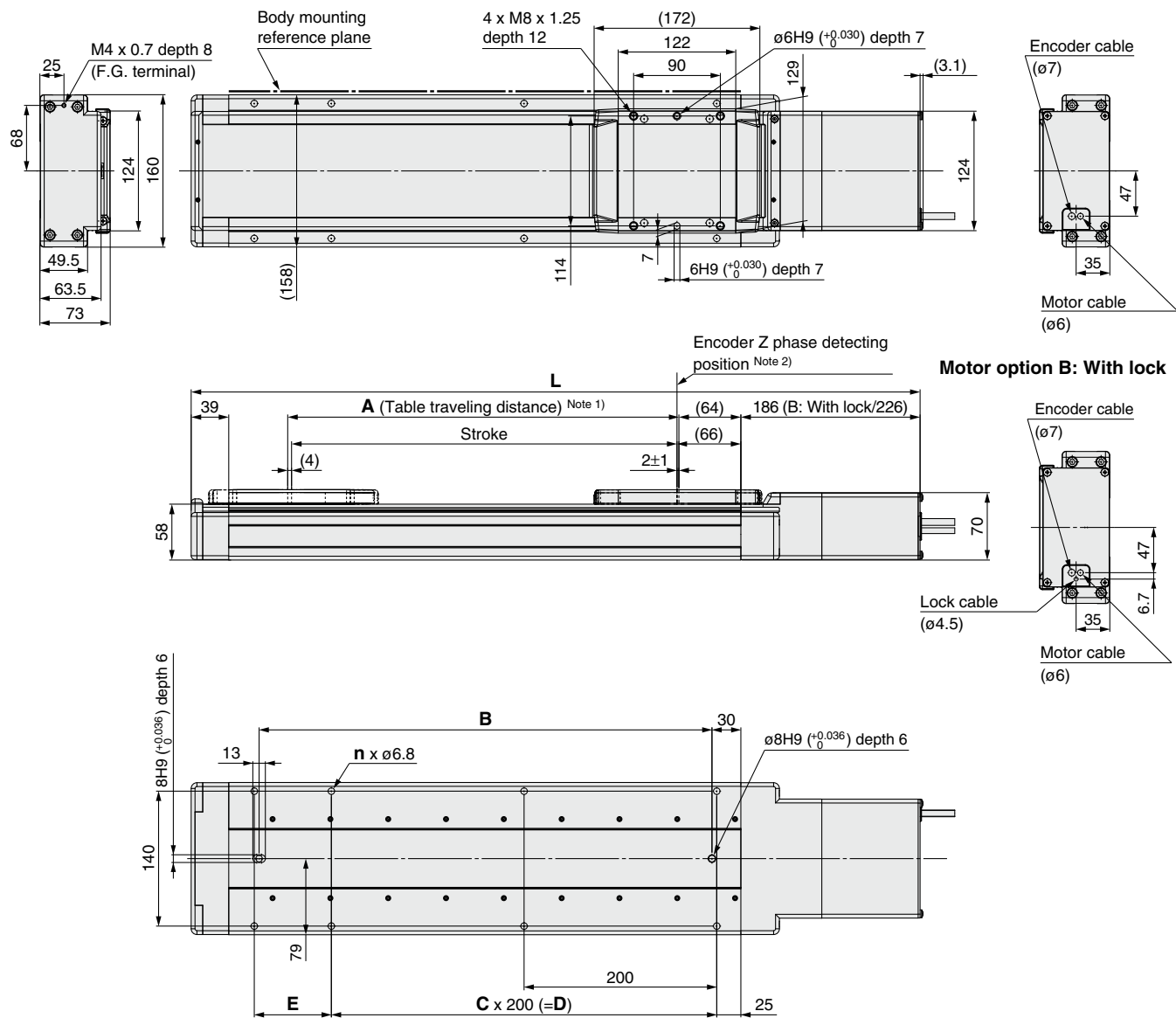
Note 3) Auto switch magnet is located in the table center.

| Model | L | | A | B | n | C | D | E |
|----------------------|--------------|-----------|------|------|----|---|------|-----|
| | Without lock | With lock | | | | | | |
| LEJS40S□□-200□-□□□□ | 523.5 | 563.5 | 206 | 260 | 6 | 1 | 200 | 80 |
| LEJS40S□□-300□-□□□□ | 623.5 | 663.5 | 306 | 360 | 6 | 1 | 200 | 180 |
| LEJS40S□□-400□-□□□□ | 723.5 | 763.5 | 406 | 460 | 8 | 2 | 400 | 80 |
| LEJS40S□□-500□-□□□□ | 823.5 | 863.5 | 506 | 560 | 8 | 2 | 400 | 180 |
| LEJS40S□□-600□-□□□□ | 923.5 | 963.5 | 606 | 660 | 10 | 3 | 600 | 80 |
| LEJS40S□□-700□-□□□□ | 1023.5 | 1063.5 | 706 | 760 | 10 | 3 | 600 | 180 |
| LEJS40S□□-800□-□□□□ | 1123.5 | 1163.5 | 806 | 860 | 12 | 4 | 800 | 80 |
| LEJS40S□□-900□-□□□□ | 1223.5 | 1263.5 | 906 | 960 | 12 | 4 | 800 | 180 |
| LEJS40S□□-1000□-□□□□ | 1323.5 | 1363.5 | 1006 | 1060 | 14 | 5 | 1000 | 80 |
| LEJS40S□□-1200□-□□□□ | 1523.5 | 1563.5 | 1206 | 1260 | 16 | 6 | 1200 | 80 |

Series LEJS

Dimensions: Ball Screw Drive

LEJS63



Note 1) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.

Note 2) The Z phase first detecting position from the stroke end of the motor side.

Note 3) Auto switch magnet is located in the table center.

| Model | L | | A | B | n | C | D | E |
|----------------------|--------------|-----------|------|------|----|---|------|-----|
| | Without lock | With lock | | | | | | |
| LEJS63S□□-300□-□□□□ | 656.5 | 696.5 | 306 | 370 | 6 | 1 | 200 | 180 |
| LEJS63S□□-400□-□□□□ | 756.5 | 796.5 | 406 | 470 | 8 | 2 | 400 | 80 |
| LEJS63S□□-500□-□□□□ | 856.5 | 896.5 | 506 | 570 | 8 | 2 | 400 | 180 |
| LEJS63S□□-600□-□□□□ | 956.5 | 996.5 | 606 | 670 | 10 | 3 | 600 | 80 |
| LEJS63S□□-700□-□□□□ | 1056.5 | 1096.5 | 706 | 770 | 10 | 3 | 600 | 180 |
| LEJS63S□□-800□-□□□□ | 1156.5 | 1196.5 | 806 | 870 | 12 | 4 | 800 | 80 |
| LEJS63S□□-900□-□□□□ | 1256.5 | 1296.5 | 906 | 970 | 12 | 4 | 800 | 180 |
| LEJS63S□□-1000□-□□□□ | 1356.5 | 1396.5 | 1006 | 1070 | 14 | 5 | 1000 | 80 |
| LEJS63S□□-1200□-□□□□ | 1556.5 | 1596.5 | 1206 | 1270 | 16 | 6 | 1200 | 80 |
| LEJS63S□□-1500□-□□□□ | 1856.5 | 1896.5 | 1506 | 1570 | 18 | 7 | 1400 | 180 |

Electric Actuator/High Rigidity Slider Type Ball Screw Drive

AC Servo Motor

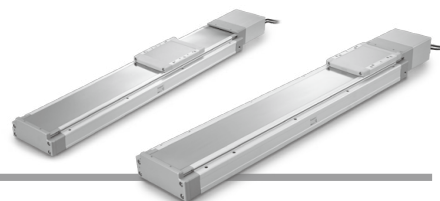
Clean Room Specification



RoHS

Series 11-LEJS

LEJS40, 63



How to Order

11-LEJS **H** **40** **S2** **A** - **500** **□** **□** - **□** **□** **□** **□**

1 2 3 4 5 6 7 8 9 10 11

Clean series ●

11 Vacuum type

1 Accuracy

| | |
|-----|---------------------|
| Nil | Basic type |
| H | High precision type |

2 Size

| |
|----|
| 40 |
| 63 |

3 Motor type*1

| Symbol | Type | Output [W] | Actuator size | Compatible drivers*2 |
|--------|--------------------------------------|------------|---------------|-------------------------------------|
| S2 | AC servo motor (Incremental encoder) | 100 | 40 | LECSA□-S1 |
| S3 | AC servo motor (Incremental encoder) | 200 | 63 | LECSA□-S3 |
| S6 | AC servo motor (Absolute encoder) | 100 | 40 | LECSB□-S5 LECSC□-S5 LECSC□-S5 |
| S7 | AC servo motor (Absolute encoder) | 200 | 63 | LECSB□-S7 LECSC□-S7 LECSC□-S7 |

*1: For motor type S2 and S6, the compatible driver part number suffixes are S1 and S5 respectively.

*2: For details of the driver, refer to page 44.

4 Lead [mm]

| Symbol | LEJS40 | LEJS63 |
|--------|--------|--------|
| A | 16 | 20 |
| B | 8 | 10 |

5 Stroke [mm]*3

| |
|------|
| 200 |
| to |
| 1500 |

*3: Refer to the table below for details.

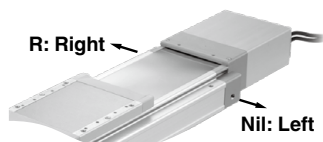
6 Motor option

| | |
|-----|----------------|
| Nil | Without option |
| B | With lock |

7 Vacuum port*5

| | |
|-----|---------------------|
| Nil | Left |
| R | Right |
| D | Both left and right |

*5: Select "D" for the vacuum port for suction of 50 L/min (ANR) or more.



8 Cable type*6, *7, *8

| | |
|-----|--------------------------------|
| Nil | Without cable |
| S | Standard cable |
| R | Robotic cable (Flexible cable) |

*6: When the driver type is selected, the cable is included. Select cable type and cable length.

Example)

S2S2: Standard cable (2 m) + Driver (LECSC2)

S2: Standard cable (2 m)

Nil: Without cable and driver

*7: The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)

*8: Standard cable entry direction is "(A) Axis side".

9 Cable length [m]*6, *9

| | |
|-----|---------------|
| Nil | Without cable |
| 2 | 2 m |
| 5 | 5 m |
| A | 10 m |

*9: The length of the encoder, motor and lock cables are the same.

10 Driver type*6

| | Compatible drivers | Power supply voltage (V) |
|-----|--------------------|--------------------------|
| Nil | Without driver | — |
| A1 | LECSA1-S□ | 100 to 120 |
| A2 | LECSA2-S□ | 200 to 230 |
| B1 | LECSB1-S□ | 100 to 120 |
| B2 | LECSB2-S□ | 200 to 230 |
| C1 | LECSC1-S□ | 100 to 120 |
| C2 | LECSC2-S□ | 200 to 230 |
| S1 | LECSC1-S□ | 100 to 120 |
| S2 | LECSC2-S□ | 200 to 230 |

11 I/O cable length [m]*10

| | |
|-----|--------------------------------|
| Nil | Without cable |
| H | Without cable (Connector only) |
| 1 | 1.5 |

*10: When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected.

Refer to page 56-1 if I/O cable is required. (Options are shown on page 56-1.)

Applicable stroke table*4

| Model | Stroke (mm) | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1500 |
|--------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| LEJS40 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | — |
| LEJS63 | | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

*4: Consult with SMC for non-standard strokes as they are produced as special orders.

Compatible Drivers

For auto switches, refer to pages 39 and 40.

| Driver type | Pulse input type/ Positioning type | Pulse input type | CC-Link direct input type | SSCNET III type |
|--------------------------|--|---|---|-------------------------|
| | | | | |
| Series | LECSA | LECSB | LECSC | LECSC |
| Number of point tables | Up to 7 | — | Up to 255 | — |
| Pulse input | ○ | ○ | — | — |
| Applicable network | — | — | CC-Link | SSCNET III |
| Control encoder | Incremental 17-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder |
| Communication function | USB communication | USB communication, RS422 communication | USB communication, RS422 communication | USB communication |
| Power supply voltage (V) | 100 to 120 VAC (50/60 Hz), 200 to 230 VAC (50/60 Hz) | | | |
| Reference page | Page 44 | | | |

Series 11-LEJS

Specifications

11-LEJS40, 63 AC Servo Motor

| Model | | | 11-LEJS40S ⁸ | | 11-LEJS63S ⁹ | |
|--------------------------|--|---------------------|---|-----|---|-----|
| Actuator specifications | Stroke [mm] ^{Note 1)} | | 200, 300, 400, 500, 600, 700, 800 900, 1000, 1200 | | 300, 400, 500, 600, 700, 800, 900 1000, 1200, 1500 | |
| | Work load [kg] ^{Note 2)} | Horizontal | 30 | 55 | 45 | 85 |
| | | Vertical | 5 | 10 | 10 | 20 |
| | Speed [mm/s] ^{Note 3)} | Up to 500 | 1200 | 600 | 1200 | 600 |
| | | 501 to 600 | 1050 | 520 | 1200 | 600 |
| | | 601 to 700 | 780 | 390 | 1200 | 600 |
| | | 701 to 800 | 600 | 300 | 930 | 460 |
| | | 801 to 900 | 480 | 240 | 740 | 370 |
| | | 901 to 1000 | 390 | 190 | 600 | 300 |
| | | 1001 to 1100 | 320 | 160 | 500 | 250 |
| | | 1101 to 1200 | 270 | 130 | 420 | 210 |
| | | 1201 to 1300 | — | — | 360 | 180 |
| | | 1301 to 1400 | — | — | 310 | 150 |
| | | 1401 to 1500 | — | — | 270 | 130 |
| | Max. acceleration/deceleration [mm/s ²] | | 20,000 (Refer to page 15 for limit according to work load and duty ratio.) | | | |
| | Positioning repeatability [mm] ^{Note 4)} | Basic type | ±0.02 | | | |
| | | High precision type | ±0.01 | | | |
| | Lost motion [mm] ^{Note 5)} | Basic type | 0.1 or less | | | |
| | | High precision type | 0.05 or less | | | |
| Electric specifications | Lead [mm] | | 16 | 8 | 20 | 10 |
| | Impact/Vibration resistance [m/s ²] ^{Note 6)} | | 50/20 | | | |
| | Actuation type | | Ball screw | | | |
| | Guide type | | Linear guide | | | |
| | Grease | | Low particle generation grease | | | |
| | Cleanliness class ^{Note 7)} | | ISO Class 4 (ISO14644-1) | | | |
| | Allowable external force [N] | | 20 | | | |
| | Operating temperature range [°C] | | 5 to 40 | | | |
| | Operating humidity range [%RH] | | 90 or less (No condensation) | | | |
| | Regeneration option | | May be required depending on speed and work load. (Refer to page 56.) | | | |
| | Motor output [W]/Size [mm] | | 100/□40 | | 200/□60 | |
| | Motor type | | AC servo motor (100/200 VAC) | | | |
| | Encoder | | Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute 18-bit encoder (Resolution: 262144 p/rev) | | | |
| | Power consumption [W] ^{Note 8)} | Horizontal | 65 | | 80 | |
| | | Vertical | 165 | | 235 | |
| Lock unit specifications | Standby power consumption when operating [W] ^{Note 9)} | Horizontal | 2 | | 2 | |
| | | Vertical | 10 | | 12 | |
| | Max. instantaneous power consumption [W] ^{Note 10)} | | 445 | | 725 | |
| | Type ^{Note 11)} | | Non-magnetizing lock | | | |
| Lock unit specifications | Holding force [N] | | 101 | 203 | 330 | 660 |
| | Power consumption [W] at 20°C ^{Note 12)} | | 6.3 | | 7.9 | |
| | Rated voltage [V] | | 24 VDC ⁰ / _{-10%} | | | |

Note 1) Consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) Refer to "Speed-Work Load Graph (Guide)" on page 12 for details.

Note 3) The allowable speed changes according to the stroke.

Note 4) Conforming to JIS B 6191-1999

Note 5) A reference value for correcting an error in reciprocal operation.

Note 6) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

Note 7) The amount of particle generation changes according to the operating conditions and suction flow rate. Refer to the particle generation characteristics for details.

Note 8) The power consumption (including the driver) is for when the actuator is operating.

Note 9) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 10) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating. This value can be used for the selection of the power supply.

Note 11) Only when motor option "With lock" is selected.

Note 12) For an actuator with lock, add the power consumption for the lock.

Note 13) Sensor magnet position is located in the table center.

For detailed dimensions, refer to "Auto Switch Mounting Position" on page 43.

Note 14) Do not allow collisions at either end of the table traveling distance. Additionally, when running the positioning operation, do not set within 2 mm of both ends.

Note 15) For "Manufacture of Intermediate Strokes", please contact SMC. (LEJS40/Manufacturable stroke range: 200 to 1200 mm, LEJS63/Manufacturable stroke range: 300 to 1500 mm)

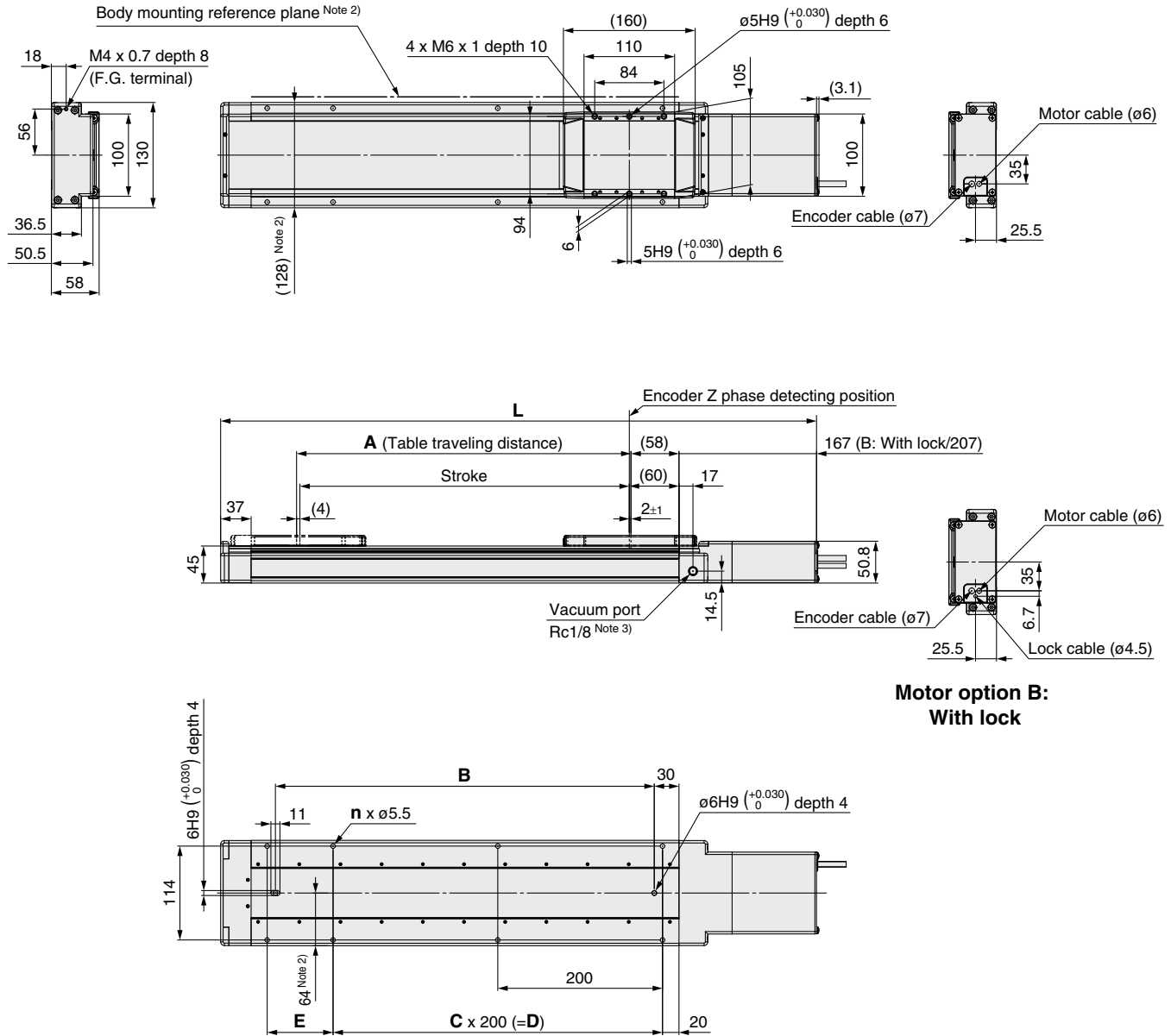
Weight

| Model | 11-LEJS40 | | | | | | | | | |
|----------------------------------|--|-----|-----|-----|-----|-----|------|------|------|------|
| Stroke [mm] | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
| Product weight [kg] | 5.6 | 6.4 | 7.1 | 7.9 | 8.7 | 9.4 | 10.2 | 11.0 | 11.7 | 13.3 |
| Additional weight with lock [kg] | 0.2 (Incremental encoder)/0.3 (Absolute encoder) | | | | | | | | | |

| Model | 11-LEJS63 | | | | | | | | | |
|----------------------------------|--|------|------|------|------|------|------|------|------|------|
| Stroke [mm] | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1500 |
| Product weight [kg] | 11.4 | 12.7 | 13.9 | 15.2 | 16.4 | 17.7 | 18.9 | 20.1 | 22.6 | 26.4 |
| Additional weight with lock [kg] | 0.4 (Incremental encoder)/0.7 (Absolute encoder) | | | | | | | | | |

Dimensions: Ball Screw Drive

11-LEJS40



Note 1) Consult with SMC for adjusting the Z phase detecting position at the stroke end of the end side.

Note 2) When mounting the actuator using the body mounting reference plane, use a pin. Set the height of the pin to be 5 mm or more because of chamfering. (Recommended height 6 mm)

Note 3) This drawing shows the left type.

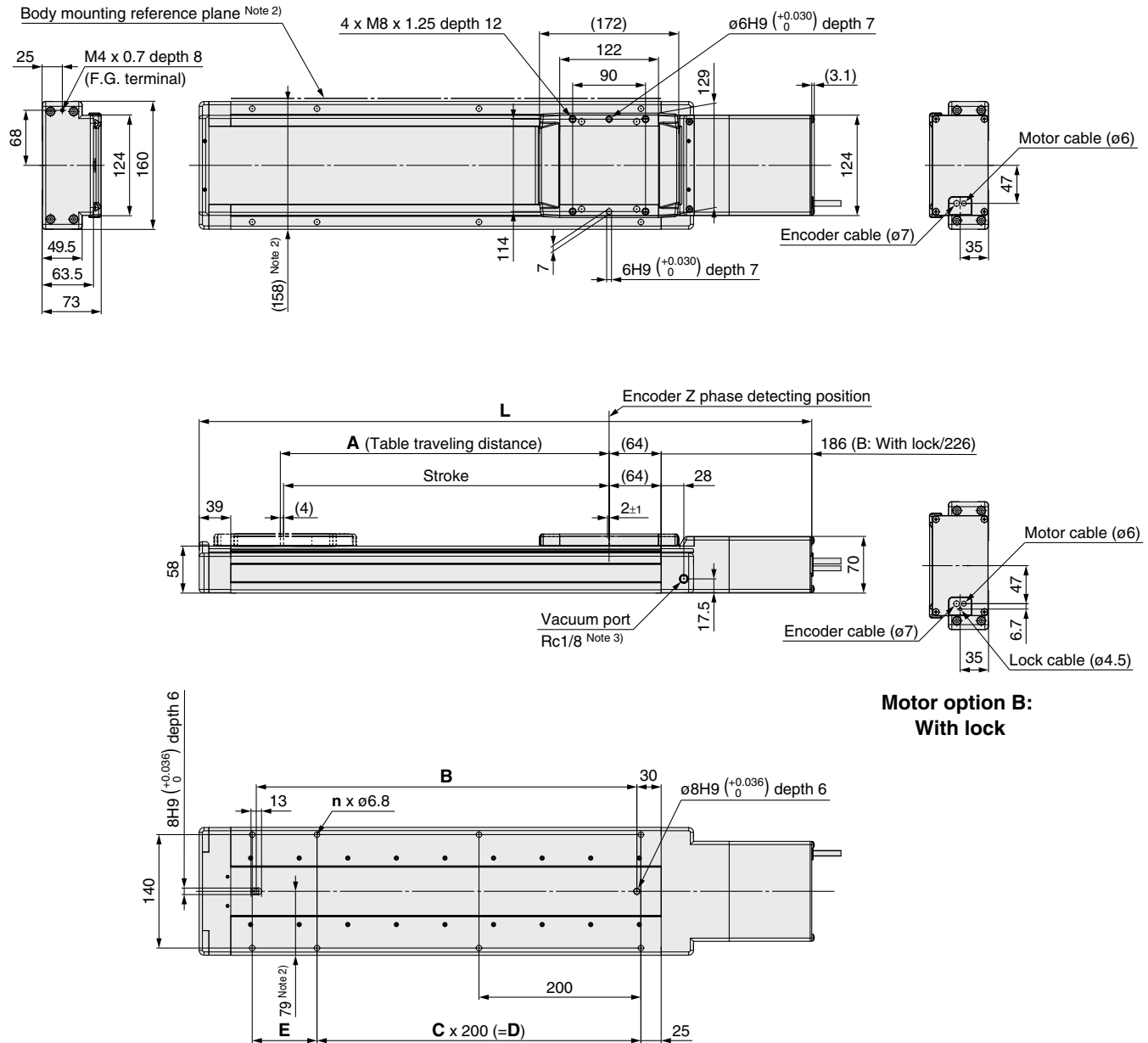
Note 4) The amount of particle generation changes according to the operating conditions and suction flow rate.

| Model | L | | A | B | n | C | D | E |
|--------------------------|--------------|-----------|------|------|----|---|------|-----|
| | Without lock | With lock | | | | | | |
| 11-LEJS40S□□-200□□-□□□□ | 523.5 | 563.5 | 206 | 260 | 6 | 1 | 200 | 80 |
| 11-LEJS40S□□-300□□-□□□□ | 623.5 | 663.5 | 306 | 360 | 6 | 1 | 200 | 180 |
| 11-LEJS40S□□-400□□-□□□□ | 723.5 | 763.5 | 406 | 460 | 8 | 2 | 400 | 80 |
| 11-LEJS40S□□-500□□-□□□□ | 823.5 | 863.5 | 506 | 560 | 8 | 2 | 400 | 180 |
| 11-LEJS40S□□-600□□-□□□□ | 923.5 | 963.5 | 606 | 660 | 10 | 3 | 600 | 80 |
| 11-LEJS40S□□-700□□-□□□□ | 1023.5 | 1063.5 | 706 | 760 | 10 | 3 | 600 | 180 |
| 11-LEJS40S□□-800□□-□□□□ | 1123.5 | 1163.5 | 806 | 860 | 12 | 4 | 800 | 80 |
| 11-LEJS40S□□-900□□-□□□□ | 1223.5 | 1263.5 | 906 | 960 | 12 | 4 | 800 | 180 |
| 11-LEJS40S□□-1000□□-□□□□ | 1323.5 | 1363.5 | 1006 | 1060 | 14 | 5 | 1000 | 80 |
| 11-LEJS40S□□-1200□□-□□□□ | 1523.5 | 1563.5 | 1206 | 1260 | 16 | 6 | 1200 | 80 |

Series 11-LEJS

Dimensions: Ball Screw Drive

11-LEJS63

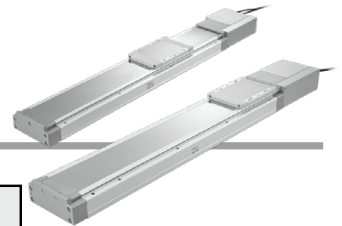


- Note 1) Consult with SMC for adjusting the Z phase detecting position at the stroke end of the end side.
 Note 2) When mounting the actuator using the body mounting reference plane, use a pin. Set the height of the pin to be 5 mm or more because of chamfering. (Recommended height 6 mm)
 Note 3) This drawing shows the left type.
 Note 4) The amount of particle generation changes according to the operating conditions and suction flow rate.

| Model | L | | A | B | n | C | D | E |
|--------------------------|--------------|-----------|------|------|----|---|------|-----|
| | Without lock | With lock | | | | | | |
| 11-LEJS63S□□-300□□-□□□□ | 656.5 | 696.5 | 306 | 370 | 6 | 1 | 200 | 180 |
| 11-LEJS63S□□-400□□-□□□□ | 756.5 | 796.5 | 406 | 470 | 8 | 2 | 400 | 80 |
| 11-LEJS63S□□-500□□-□□□□ | 856.5 | 896.5 | 506 | 570 | 8 | 2 | 400 | 180 |
| 11-LEJS63S□□-600□□-□□□□ | 956.5 | 996.5 | 606 | 670 | 10 | 3 | 600 | 80 |
| 11-LEJS63S□□-700□□-□□□□ | 1056.5 | 1096.5 | 706 | 770 | 10 | 3 | 600 | 180 |
| 11-LEJS63S□□-800□□-□□□□ | 1156.5 | 1196.5 | 806 | 870 | 12 | 4 | 800 | 80 |
| 11-LEJS63S□□-900□□-□□□□ | 1256.5 | 1296.5 | 906 | 970 | 12 | 4 | 800 | 180 |
| 11-LEJS63S□□-1000□□-□□□□ | 1356.5 | 1396.5 | 1006 | 1070 | 14 | 5 | 1000 | 80 |
| 11-LEJS63S□□-1200□□-□□□□ | 1556.5 | 1596.5 | 1206 | 1270 | 16 | 6 | 1200 | 80 |
| 11-LEJS63S□□-1500□□-□□□□ | 1856.5 | 1896.5 | 1506 | 1570 | 18 | 7 | 1400 | 180 |

Electric Actuator/High Rigidity Slider Type Belt Drive AC Servo Motor

Series *LEJB* C € RoHS



How to Order

LEJB 40 S2 T - 500

1
2
3
4
5
6
7
8
9

1 Size

| |
|----|
| 40 |
| 63 |

2 Motor type^{*1}

| Symbol | Type | Output [W] | Actuator size | Compatible drivers |
|-----------|--------------------------------------|------------|---------------|-------------------------------------|
| S2 | AC servo motor (Incremental encoder) | 100 | 40 | LECSA□-S1 |
| S3 | AC servo motor (Incremental encoder) | 200 | 63 | LECSA□-S3 |
| S6 | AC servo motor (Absolute encoder) | 100 | 40 | LECSB□-S5 LECSC□-S5 LECSS□-S5 |
| S7 | AC servo motor (Absolute encoder) | 200 | 63 | LECSB□-S7 LECSC□-S7 LECSS□-S7 |

*1: For motor type S2 and S6, the compatible driver part number suffixes are S1 and S5 respectively.

3 Lead [mm]

| Symbol | LEJB40 | LEJB63 |
|----------|--------|--------|
| T | 27 | 42 |

4 Stroke [mm]^{*2}

| |
|------|
| 200 |
| to |
| 3000 |

*2: Refer to the table below for details.

5 Motor option

| | |
|------------|----------------|
| Nil | Without option |
| B | With lock |

6 Cable type^{*4, *5, *6}

| | |
|------------|--------------------------------|
| Nil | Without cable |
| S | Standard cable |
| R | Robotic cable (Flexible cable) |

*5: The motor and encoder cables are included. (The lock cable is included when the motor with lock option is selected.)

*6: Standard cable entry direction is "A" Axis side". (Refer to page 56 for details.)

7 Cable length [m]^{*4, *7}

| | |
|------------|---------------|
| Nil | Without cable |
| 2 | 2 m |
| 5 | 5 m |
| A | 10 m |

*7: The length of the motor, encoder and lock cables are the same.

8 Driver type^{*4}

| | Compatible drivers | Power supply voltage (V) |
|------------|--------------------|--------------------------|
| Nil | Without driver | — |
| A1 | LECSA1 | 100 to 120 |
| A2 | LECSA2 | 200 to 230 |
| B1 | LECSB1 | 100 to 120 |
| B2 | LECSB2 | 200 to 230 |
| C1 | LECSC1 | 100 to 120 |
| C2 | LECSC2 | 200 to 230 |
| S1 | LECSS1 | 100 to 120 |
| S2 | LECSS2 | 200 to 230 |

9 I/O cable length [m]^{*8}

| | |
|------------|--------------------------------|
| Nil | Without cable |
| H | Without cable (Connector only) |
| 1 | 1.5 |

*8: When "Without driver" is selected for driver type, only "Nil: Without cable" can be selected. Refer to page 56-1 if I/O cable is required. (Options are shown on page 56-1.)

Applicable stroke table^{*3}

| Model | Stroke (mm) | ●Standard | | | | | | | | | | | | |
|---------------|-------------|-----------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| | | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1500 | 2000 | 3000 |
| LEJB40 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | — |
| LEJB63 | | — | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

*3: Consult with SMC for non-standard strokes as they are produced as special orders.

*4: When the driver type is selected, the cable is included. Select cable type and cable length.





Example)

S2S2: Standard cable (2 m) + Driver (LECSS2)

S2 : Standard cable (2 m)

Nil : Without cable and driver

Compatible Drivers

| Driver type | Pulse input type /Positioning type | Pulse input type | CC-Link direct input type | SSCNET Ⅲ type |
|---------------------------------|---|---|---|---|
| |  |  |  |  |
| Series | LECSA | LECSB | LECSC | LECSS |
| Number of point tables | Up to 7 | — | Up to 255 | — |
| Pulse input | ○ | ○ | — | — |
| Applicable network | — | — | CC-Link | SSCNET Ⅲ |
| Control encoder | Incremental 17-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder | Absolute 18-bit encoder |
| Communication function | USB communication | USB communication, RS422 communication | USB communication, RS422 communication | USB communication |
| Power supply voltage (V) | 100 to 120 VAC (50/60 Hz) 200 to 230 VAC (50/60 Hz) | | | |
| Reference page | Page 44 | | | |

For auto switches, refer to pages 39 and 40.

Specifications

LEJB40/63 AC Servo Motor

| Model | | | LEJB40S ² ₆ | LEJB63S ³ ₇ |
|--------------------------|--|------------|---|---|
| Actuator specifications | Stroke [mm] ^{Note 1)} | | 200, 300, 400, 500, 600, 700, 800 900, 1000, 1200, 1500, 2000 | 300, 400, 500, 600, 700, 800 900, 1000, 1200, 1500, 2000, 3000 |
| | Work load [kg] | Horizontal | 20 (If the stroke exceeds 1000 mm: 10) | 30 |
| | Speed [mm/s] ^{Note 2)} | | 2000 | 3000 |
| | Max. acceleration/deceleration [mm/s ²] | | 20000 (Refer to page 17 for limit according to work load and duty ratio.) | |
| | Positioning repeatability [mm] ^{Note 3)} | | ±0.04 | |
| | Lost motion [mm] ^{Note 4)} | | 0.1 or less | |
| | Lead [mm] | | 27 | 42 |
| | Impact/Vibration resistance [m/s ²] ^{Note 5)} | | 50/20 | |
| | Actuation type | | Belt | |
| | Guide type | | Linear guide | |
| | Allowable external force [N] | | 20 | |
| | Operating temperature range [°C] | | 5 to 40 | |
| | Operating humidity range [%RH] | | 90 or less (No condensation) | |
| | Regeneration option | | May be required depending on speed and work load. (Refer to page 56.) | |
| Electric specifications | Motor output [W]/Size [mm] | | 100/□40 | 200/□60 |
| | Motor type | | AC servo motor (100/200 VAC) | |
| | Encoder | | Motor type S2, S3: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7: Absolute 18-bit encoder (Resolution: 262144 p/rev) | |
| | Power consumption [W] ^{Note 6)} | Horizontal | 65 | 190 |
| | | Vertical | — | — |
| | Standby power consumption when operating [W] ^{Note 7)} | Horizontal | 2 | 2 |
| | | Vertical | — | — |
| | Max. instantaneous power consumption [W] ^{Note 8)} | | 445 | 725 |
| Lock unit specifications | Type ^{Note 9)} | | Non-magnetizing lock | |
| | Holding force [N] | | 60 | 157 |
| | Power consumption at 20°C [W] ^{Note 10)} | | 6.3 | 7.9 |
| | Rated voltage [V] | | 24 VDC ⁰ _{-10%} | |

Note 1) Consult with SMC for non-standard strokes as they are produced as special orders.

Note 2) Check "Speed-Work Load Graph (Guide)" on page 12.

Note 3) Conforming to JIS B 6191-1999

Note 4) A reference value for correcting an error in reciprocal operation.

Note 5) Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. Test was performed in both an axial direction and a perpendicular direction to the lead screw. (Test was performed with the actuator in the initial state.)

Note 6) The power consumption (including the driver) is for when the actuator is operating.

Note 7) The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.

Note 8) The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.

Note 9) Only when motor option "With lock" is selected.

Note 10) For an actuator with lock, add the power consumption for the lock.

Note 11) Sensor magnet position is located in the table center.

For detailed dimensions, refer to "Auto Switch Mounting Position" on page 43.

Note 12) Do not allow collisions at either end of the table traveling distance. Additionally, when running the positioning operation, do not set within 2 mm of both ends.

Note 13) For "Manufacture of Intermediate Strokes", please contact SMC.

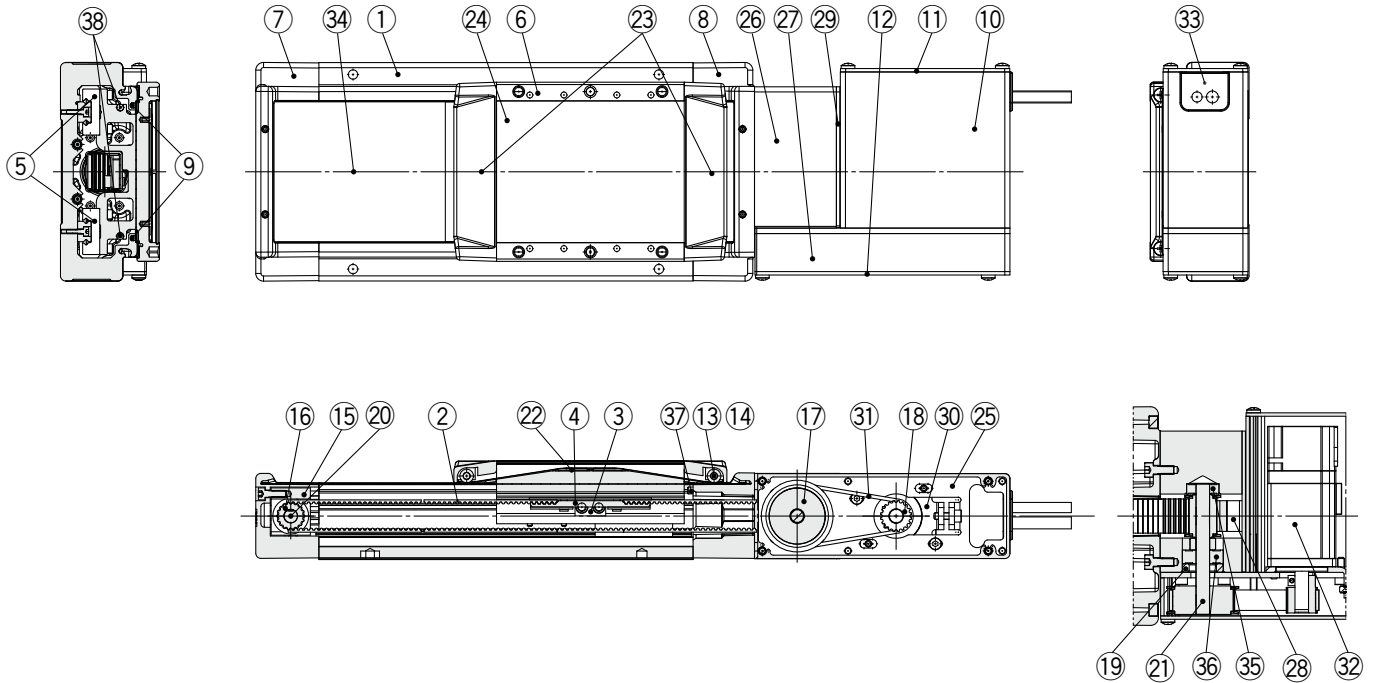
(LEJB40/Manufacturable stroke range: 200 to 2000 mm, LEJB63/Manufacturable stroke range: 300 to 3000 mm)

Weight

| Model | LEJB40 | | | | | | | | | | | |
|----------------------------------|--|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| Stroke [mm] | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1500 | 2000 |
| Product weight [kg] | 5.7 | 6.4 | 7.1 | 7.7 | 8.4 | 9.1 | 9.8 | 10.5 | 11.2 | 12.6 | 14.7 | 18.1 |
| Additional weight with lock [kg] | 0.2 (Incremental encoder)/0.3 (Absolute encoder) | | | | | | | | | | | |

| Model | LEJB63 | | | | | | | | | | | |
|----------------------------------|--|------|------|------|------|------|------|------|------|------|------|------|
| Stroke [mm] | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1500 | 2000 | 3000 |
| Product weight [kg] | 11.5 | 12.7 | 13.8 | 15.0 | 16.2 | 17.4 | 18.6 | 19.7 | 22.1 | 25.7 | 31.6 | 43.4 |
| Additional weight with lock [kg] | 0.4 (Incremental encoder)/0.7 (Absolute encoder) | | | | | | | | | | | |

Construction



Motor details

Component Parts

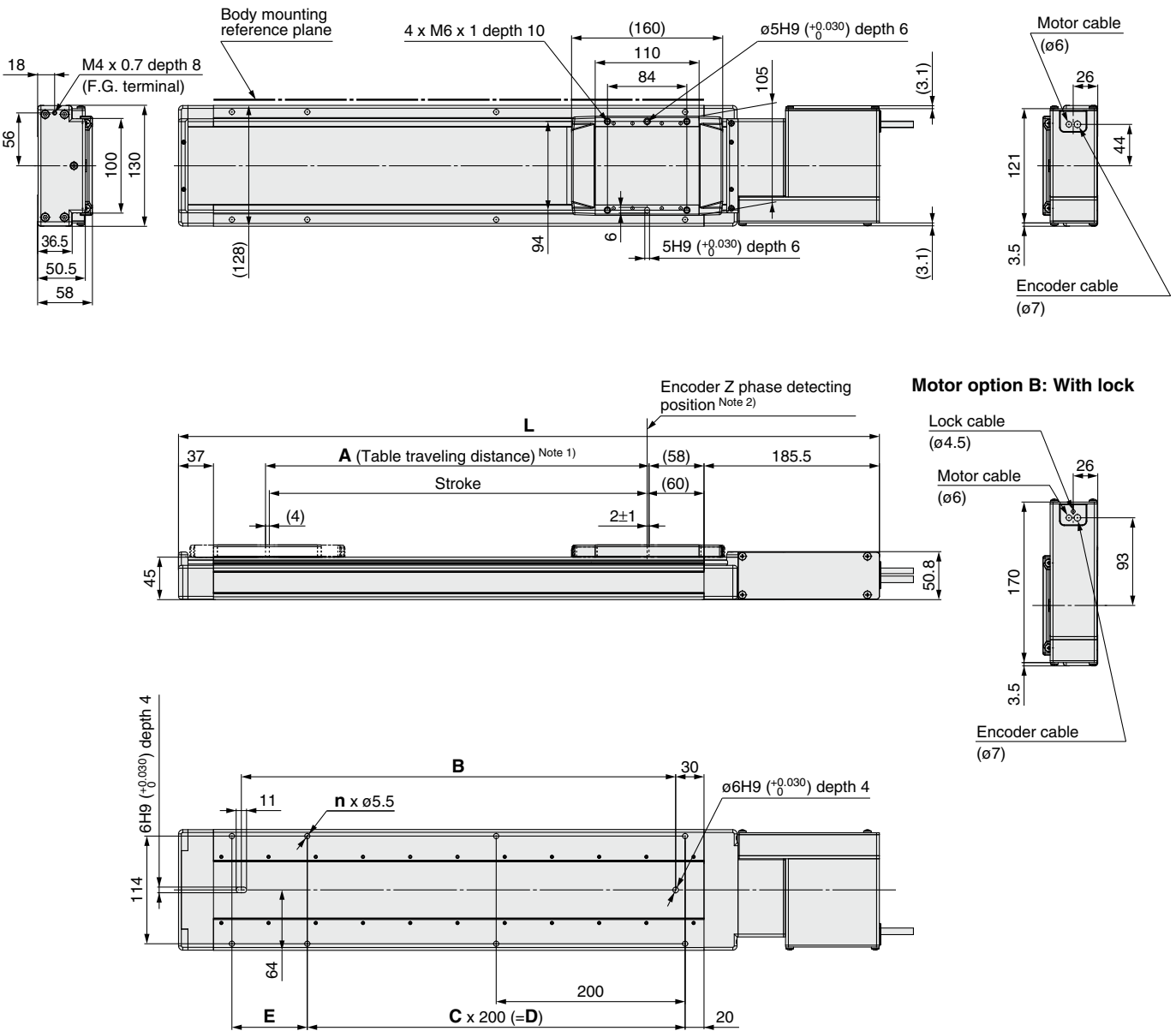
| No. | Description | Material | Note |
|-----|------------------------|-----------------|----------|
| 1 | Body | Aluminum alloy | Anodized |
| 2 | Belt | — | |
| 3 | Belt holder | Carbon steel | |
| 4 | Belt stopper | Aluminum alloy | |
| 5 | Linear guide assembly | — | |
| 6 | Table | Aluminum alloy | Anodized |
| 7 | Housing A | Aluminum alloy | Coating |
| 8 | Housing B | Aluminum alloy | Coating |
| 9 | Seal magnet | — | |
| 10 | Motor cover | Aluminum alloy | Anodized |
| 11 | End cover A | Aluminum alloy | Anodized |
| 12 | End cover B | Aluminum alloy | Anodized |
| 13 | Roller shaft | Stainless steel | |
| 14 | Roller | Synthetic resin | |
| 15 | Pulley holder | Aluminum alloy | |
| 16 | Drive pulley | Aluminum alloy | |
| 17 | Speed reduction pulley | Aluminum alloy | |
| 18 | Motor pulley | Aluminum alloy | |
| 19 | Spacer | Aluminum alloy | |

| No. | Description | Material | Note |
|-----|-------------------|-----------------|----------|
| 20 | Pulley shaft A | Stainless steel | |
| 21 | Pulley shaft B | Stainless steel | |
| 22 | Table cap | Synthetic resin | |
| 23 | Seal band stopper | Synthetic resin | |
| 24 | Blanking plate | Aluminum alloy | Anodized |
| 25 | Motor mount plate | Carbon steel | |
| 26 | Pulley block | Aluminum alloy | Anodized |
| 27 | Pulley cover | Aluminum alloy | Anodized |
| 28 | Belt stopper | Aluminum alloy | |
| 29 | Side plate | Aluminum alloy | Anodized |
| 30 | Motor plate | Carbon steel | |
| 31 | Belt | — | |
| 32 | Motor | — | |
| 33 | Grommet | NBR | |
| 34 | Dust seal band | Stainless steel | |
| 35 | Bearing | — | |
| 36 | Bearing | — | |
| 37 | Stopper pin | Stainless steel | |
| 38 | Magnet | — | |

Series **LEJB**

Dimensions: Belt Drive

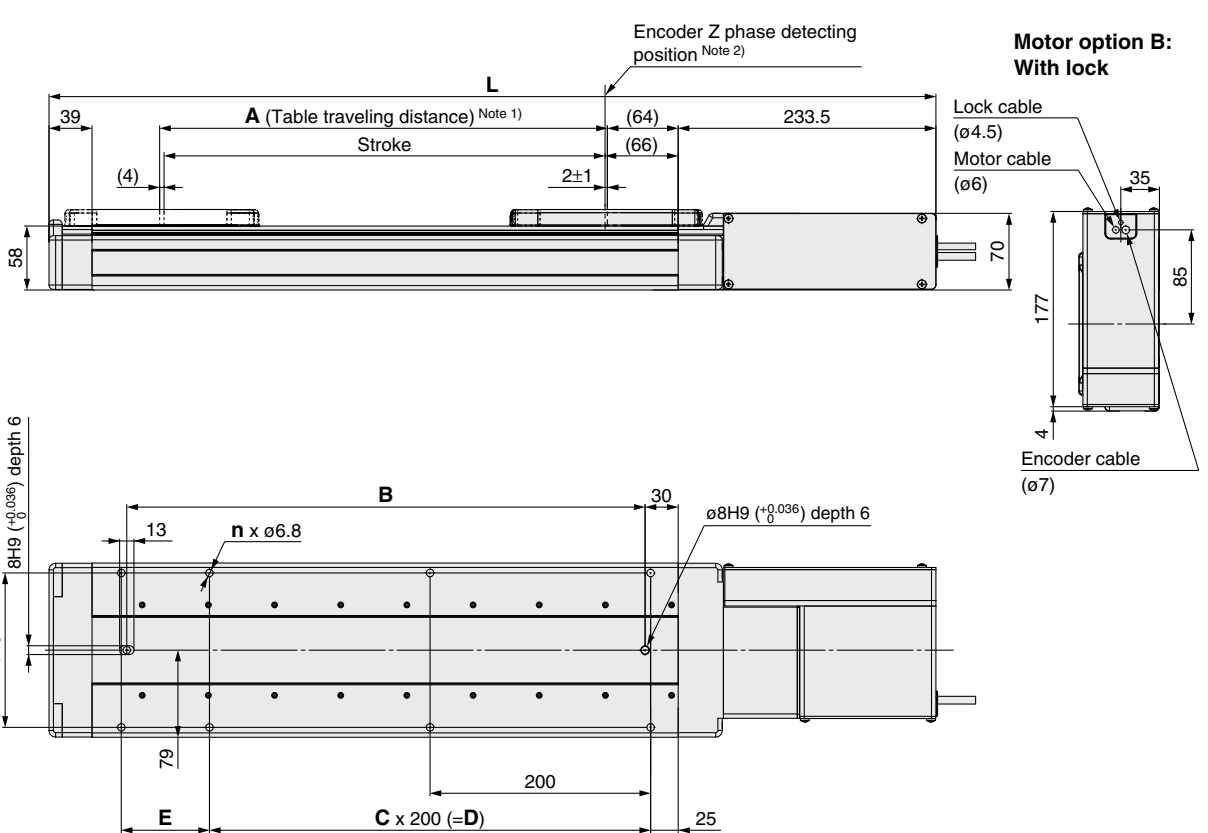
LEJB40



Note 1) Distance within which the table can move when it returns to origin. Make sure a workpiece mounted on the table does not interfere with the workpieces and facilities around the table.
Note 2) The Z phase first detecting position from the stroke end of the motor side.
Note 3) Auto switch magnet is located in the table center.

| Model | L | A | B | n | C | D | E |
|----------------------|------|------|------|----|----|------|-----|
| LEJB40S□□-200□-□□□□ | 542 | 206 | 260 | 6 | 1 | 200 | 80 |
| LEJB40S□□-300□-□□□□ | 642 | 306 | 360 | 6 | 1 | 200 | 180 |
| LEJB40S□□-400□-□□□□ | 742 | 406 | 460 | 8 | 2 | 400 | 80 |
| LEJB40S□□-500□-□□□□ | 842 | 506 | 560 | 8 | 2 | 400 | 180 |
| LEJB40S□□-600□-□□□□ | 942 | 606 | 660 | 10 | 3 | 600 | 80 |
| LEJB40S□□-700□-□□□□ | 1042 | 706 | 760 | 10 | 3 | 600 | 180 |
| LEJB40S□□-800□-□□□□ | 1142 | 806 | 860 | 12 | 4 | 800 | 80 |
| LEJB40S□□-900□-□□□□ | 1242 | 906 | 960 | 12 | 4 | 800 | 180 |
| LEJB40S□□-1000□-□□□□ | 1342 | 1006 | 1060 | 14 | 5 | 1000 | 80 |
| LEJB40S□□-1200□-□□□□ | 1542 | 1206 | 1260 | 16 | 6 | 1200 | 80 |
| LEJB40S□□-1500□-□□□□ | 1842 | 1506 | 1560 | 18 | 7 | 1400 | 180 |
| LEJB40S□□-2000□-□□□□ | 2342 | 2006 | 2060 | 24 | 10 | 2000 | 80 |

LEJB63



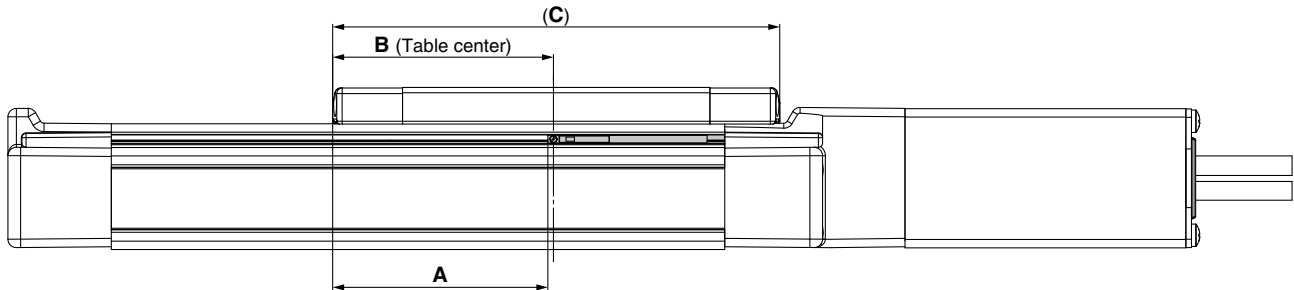
Note 2) The Z phase first detecting position from the stroke end of the motor side.

Note 3) Auto switch magnet is located in the table center.

| | | | | | | | [mm] |
|----------------------|------|------|------|----|----|------|------|
| Model | L | A | B | n | C | D | E |
| LEJB63S□□-300□-□□□□ | 704 | 306 | 370 | 6 | 1 | 200 | 180 |
| LEJB63S□□-400□-□□□□ | 804 | 406 | 470 | 8 | 2 | 400 | 80 |
| LEJB63S□□-500□-□□□□ | 904 | 506 | 570 | 8 | 2 | 400 | 180 |
| LEJB63S□□-600□-□□□□ | 1004 | 606 | 670 | 10 | 3 | 600 | 80 |
| LEJB63S□□-700□-□□□□ | 1104 | 706 | 770 | 10 | 3 | 600 | 180 |
| LEJB63S□□-800□-□□□□ | 1204 | 806 | 870 | 12 | 4 | 800 | 80 |
| LEJB63S□□-900□-□□□□ | 1304 | 906 | 970 | 12 | 4 | 800 | 180 |
| LEJB63S□□-1000□-□□□□ | 1404 | 1006 | 1070 | 14 | 5 | 1000 | 80 |
| LEJB63S□□-1200□-□□□□ | 1604 | 1206 | 1270 | 16 | 6 | 1200 | 80 |
| LEJB63S□□-1500□-□□□□ | 1904 | 1506 | 1570 | 18 | 7 | 1400 | 180 |
| LEJB63S□□-2000□-□□□□ | 2404 | 2006 | 2070 | 24 | 10 | 2000 | 80 |
| LEJB63S□□-3000□-□□□□ | 3404 | 3006 | 3070 | 34 | 15 | 3000 | 80 |

Series *LEJS* Auto Switch Mounting

Auto Switch Mounting Position



(mm)

| Model | Size | A | B | C | Operating range |
|-------|------|----|----|-----|-----------------|
| LEJS | 40 | 77 | 80 | 160 | 5.5 |
| LEJB | | | | | 5.0 |
| LEJS | 63 | 83 | 86 | 172 | 7.0 |
| LEJB | | | | | 6.5 |

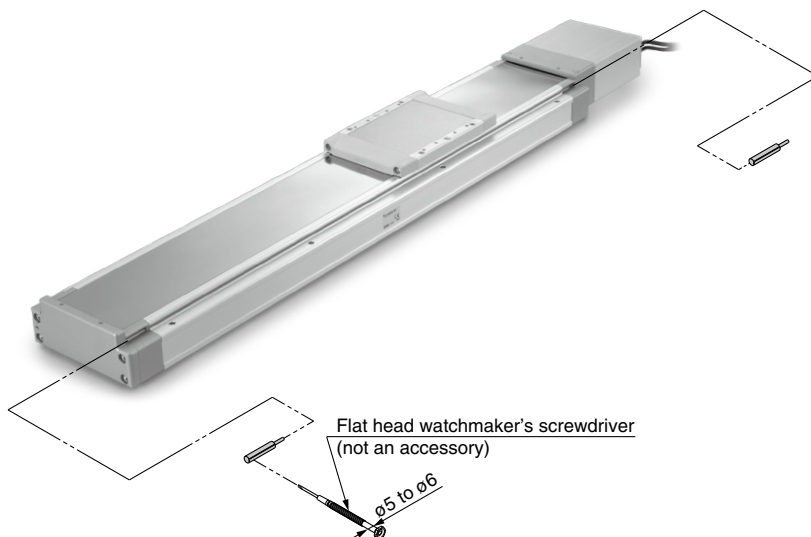
Note) The operating range is a guideline including hysteresis, not meant to be guaranteed. There may be large variations (as much as $\pm 30\%$) depending on the ambient environment.

Auto Switch Mounting

When mounting the auto switches, they should be inserted into the actuator's auto switches mounting groove from the direction shown in the drawing on the below. Once in the mounting position, use a flat head watchmaker's screwdriver to tighten the included auto switch mounting screw.

Auto Switch Mounting Screw Tightening Torque (N·m)

| Auto switch model | Tightening torque |
|-----------------------|-------------------|
| D-M9□(V) D-M9□W(V) | 0.10 to 0.15 |



Note) When tightening the auto switch mounting screw, use a watchmaker's screwdriver with a handle diameter of about 5 to 6 mm.

Solid State Auto Switch Direct Mounting Style D-M9N(V)/D-M9P(V)/D-M9B(V)



Refer to SMC website for the details about products conforming to the international standards.

Auto Switch Specifications

PLC: Programmable Logic Controller

| D-M9□, D-M9□V (With indicator light) | | | | | | |
|--------------------------------------|---|---------------|---------|---------------|-----------------------|---------------|
| Auto switch model | D-M9N | D-M9NV | D-M9P | D-M9PV | D-M9B | D-M9BV |
| Electrical entry | In-line | Perpendicular | In-line | Perpendicular | In-line | Perpendicular |
| Wiring type | 3-wire | | | | 2-wire | |
| Output type | NPN | | PNP | | — | |
| Applicable load | IC circuit, Relay, PLC | | | | 24 VDC relay, PLC | |
| Power supply voltage | 5, 12, 24 VDC (4.5 to 28 V) | | | | — | |
| Current consumption | 10 mA or less | | | | — | |
| Load voltage | 28 VDC or less | | — | | 24 VDC (10 to 28 VDC) | |
| Load current | 40 mA or less | | | | 2.5 to 40 mA | |
| Internal voltage drop | 0.8 V or less at 10 mA (2 V or less at 40 mA) | | | | 4 V or less | |
| Leakage current | 100 μA or less at 24 VDC | | | | 0.8 mA or less | |
| Indicator light | Red LED lights up when turned ON. | | | | | |
| Standards | CE marking, RoHS | | | | | |

Oilproof Heavy-duty Lead Wire Specifications

| Auto switch model | | D-M9N□ | D-M9P□ | D-M9B□ |
|---|-----------------------------------|----------------------------|--------|----------------------|
| Sheath | Outside diameter [mm] | 2.7 x 3.2 (ellipse) | | |
| Insulator | Number of cores | 3 cores (Brown/Blue/Black) | | 2 cores (Brown/Blue) |
| | Outside diameter [mm] | ø0.9 | | |
| Conductor | Effective area [mm ²] | 0.15 | | |
| | Strand diameter [mm] | ø0.05 | | |
| Minimum bending radius [mm] (Reference value) | | 20 | | |

Note 1) Refer to the Best Pneumatics No. 2 for solid state auto switch common specifications.

Note 2) Refer to the Best Pneumatics No. 2 for lead wire lengths.

Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard.



Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Weight

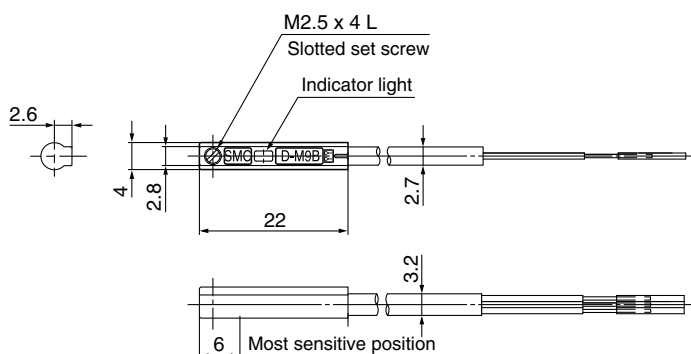
(g)

| Auto switch model | | D-M9N(V) | D-M9P(V) | D-M9B(V) |
|-------------------|-------------|----------|----------|----------|
| Lead wire length | 0.5 m (Nil) | 8 | | 7 |
| | 1 m (M) | 14 | | 13 |
| | 3 m (L) | 41 | | 38 |
| | 5 m (Z) | 68 | | 63 |

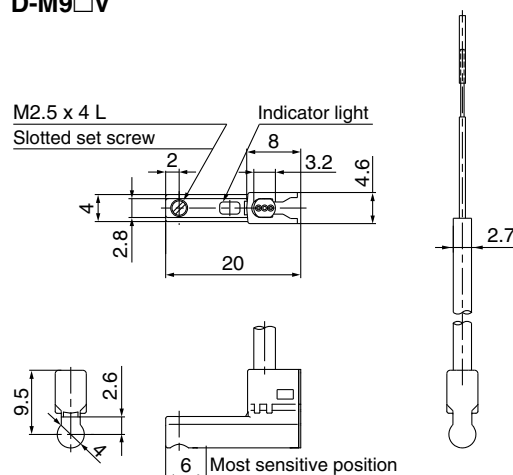
Dimensions

(mm)

D-M9□



D-M9□V



2-Color Indication Solid State Auto Switch Direct Mounting Style

D-M9NW(V)/D-M9PW(V)/D-M9BW(V)



RoHS

Refer to SMC website for the details about products conforming to the international standards.

Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard.
- The optimum operating range can be determined by the color of the light. (Red → Green ← Red)



Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

PLC: Programmable Logic Controller

| D-M9□W, D-M9□WV (With indicator light) | | | | | | |
|--|--|---------------|---------|---------------|-----------------------|---------------|
| Auto switch model | D-M9NW | D-M9NWV | D-M9PW | D-M9PWV | D-M9BW | D-M9BWV |
| Electrical entry | In-line | Perpendicular | In-line | Perpendicular | In-line | Perpendicular |
| Wiring type | 3-wire | | | | 2-wire | |
| Output type | NPN | | PNP | | — | |
| Applicable load | IC circuit, Relay, PLC | | | | 24 VDC relay, PLC | |
| Power supply voltage | 5, 12, 24 VDC (4.5 to 28 V) | | | | — | |
| Current consumption | 10 mA or less | | | | — | |
| Load voltage | 28 VDC or less | | — | | 24 VDC (10 to 28 VDC) | |
| Load current | 40 mA or less | | | | 2.5 to 40 mA | |
| Internal voltage drop | 0.8 V or less at 10 mA (2 V or less at 40 mA) | | | | 4 V or less | |
| Leakage current | 100 μA or less at 24 VDC | | | | 0.8 mA or less | |
| Indicator light | Operating range Red LED lights up. Optimum operating range Green LED lights up. | | | | | |
| Standards | CE marking, RoHS | | | | | |

Oilproof Flexible Heavy-duty Lead Wire Specifications

| Auto switch model | | D-M9NW□ | D-M9PW□ | D-M9BW□ |
|---|-----------------------------------|----------------------------|---------|----------------------|
| Sheath | Outside diameter [mm] | 2.7 x 3.2 (ellipse) | | |
| Insulator | Number of cores | 3 cores (Brown/Blue/Black) | | 2 cores (Brown/Blue) |
| | Outside diameter [mm] | ø0.9 | | |
| Conductor | Effective area [mm ²] | 0.15 | | |
| | Strand diameter [mm] | ø0.05 | | |
| Minimum bending radius [mm] (Reference value) | | 20 | | |

Note 1) Refer to the Best Pneumatics No. 2 for solid state auto switch common specifications.

Note 2) Refer to the Best Pneumatics No. 2 for lead wire lengths.

Weight

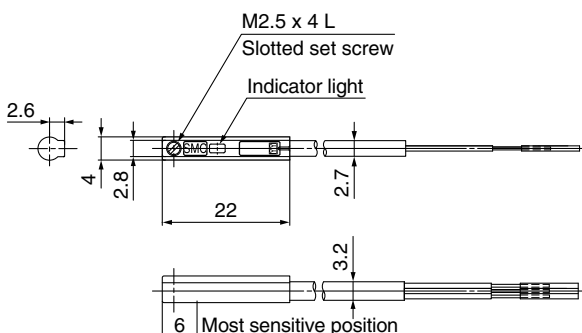
(g)

| Auto switch model | | D-M9NW(V) | D-M9PW(V) | D-M9BW(V) |
|-------------------|-------------|-----------|-----------|-----------|
| Lead wire length | 0.5 m (Nil) | 8 | | 7 |
| | 1 m (M) | 14 | | 13 |
| | 3 m (L) | 41 | | 38 |
| | 5 m (Z) | 68 | | 63 |

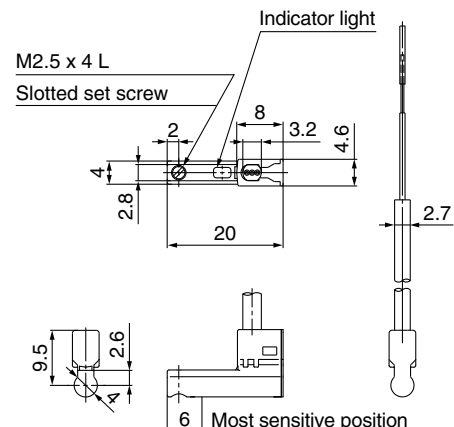
Dimensions

(mm)

D-M9□W



D-M9□WV





Electric Actuator/ Specific Product Precautions 1

Be sure to read before handling. Refer to back cover for Safety Instructions.

For Electric Actuator Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

Design

⚠ Caution

1. Do not apply a load in excess of the operating limit.

Select a suitable actuator by work load and allowable moment. If the product is used outside of the operating limit, the eccentric load applied to the guide will be excessive and have adverse effects such as creating play on the guide, degrading accuracy and shortening the life of the product.

2. Do not use the product in applications where excessive external force or impact force is applied to it.

The product can be damaged.

The components including the motor are manufactured to precise tolerances. So that even a slight deformation may cause a malfunction or seizure.

Selection

⚠ Warning

1. Do not increase the speed in excess of the operating limit.

Select a suitable actuator by the relationship of the allowable work load and speed, and the allowable speed of each stroke. If the product is used outside of the operating limit, it will have adverse effects such as creating noise, degrading accuracy and shortening the life of the product.

2. When the product repeatedly cycles with partial strokes (100 mm or less), lubrication can run out. Operate it at a full stroke at least once a day or every 1000 strokes.

3. When external force is applied to the table, it is necessary to add external force to the work load as the total carried load for the sizing.

When a cable duct or flexible moving tube is attached to the actuator, the sliding resistance of the table increases and may lead to operational failure of the product.

Handling

⚠ Caution

1. Do not allow the table to hit the end of stroke.

When incorrect instructions are inputted, such as using the product outside of the operating limit or operation outside of actual stroke through changes in the controller/driver setting and/or origin position, the table may collide against the stroke end of the actuator. Please check these points before use.

If the table collides against the stroke end of the actuator, the guide, belt or internal stopper can be broken. This may lead to abnormal operation.



Handle the actuator with care when it is used in the vertical direction as the workpiece will fall freely from its own weight.

2. The actual speed of this actuator is affected by the work load and stroke.

Check specifications with reference to the model selection section of the catalog.

3. Do not apply a load, impact or resistance in addition to the transferred load during return to origin.

4. Do not dent, scratch or cause other damage to the body and table mounting surfaces.

This may cause unevenness in the mounting surface, play in the guide or an increase in the sliding resistance.

5. Do not apply strong impact or an excessive moment while mounting the product or a workpiece.

If an external force over the allowable moment is applied, it may cause play in the guide or an increase in the sliding resistance.

6. Keep the flatness of mounting surface 0.1 mm or less.

Unevenness of a workpiece or base mounted on the body of the product may cause play in the guide and an increase in the sliding resistance.

In the case of overhang mounting (including cantilever), to avoid deflection of the actuator body, use a support plate or support guide.

7. When mounting the actuator, use all mounting holes.

If all mounting holes are not used, it influences the specifications, e.g., the amount of displacement of the table increases.

8. Do not hit the table with the workpiece in the positioning operation and positioning range.

9. Do not apply external force to the dust seal band.

Particularly during the transportation.



Series LEJ

Electric Actuator/ Specific Product Precautions 2

Be sure to read before handling. Refer to back cover for Safety Instructions.
For Electric Actuator Precautions, refer to “Handling Precautions for SMC Products”
and the Operation Manual on SMC website, <http://www.smcworld.com>

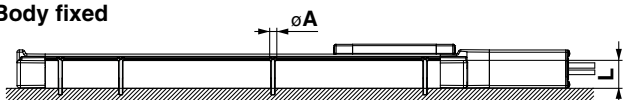
Handling

⚠ Caution

10. When mounting the product, use screws with adequate length and tighten them with adequate torque.

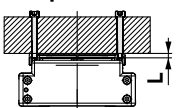
Tightening the screws with a higher torque than recommended may cause a malfunction, whilst the tightening with a lower torque can cause the displacement of the mounting position or in extreme conditions the actuator could become detached from its mounting position.

Body fixed



| Model | Bolt | Max. tightening torque (N·m) | ϕA (mm) | L (mm) |
|--------|------|------------------------------|---------------|--------|
| LEJ□40 | M5 | 3.0 | 5.5 | 36.5 |
| LEJ□63 | M6 | 5.2 | 6.8 | 49.5 |

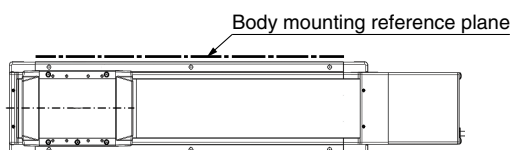
Workpiece fixed



| Model | Bolt | Max. tightening torque (N·m) | L (Max. screw-in depth) (mm) |
|--------|-----------|------------------------------|------------------------------|
| LEJ□40 | M6 x 1 | 5.2 | 10 |
| LEJ□63 | M8 x 1.25 | 12.5 | 12 |

To prevent the workpiece fixing bolts from touching the body, use bolts that are 0.5 mm or shorter than the maximum screw-in depth. If long bolts are used, they can touch the body and cause a malfunction, etc.

11. Do not operate by fixing the table and moving the actuator body.
12. The belt drive actuator cannot be used vertically for applications.
13. Vibration may occur during operation, this could be caused by the operating conditions.
If it occurs, adjust response value of auto tuning of driver to be lower.
During the first auto tuning noise may occur, the noise will stop when the tuning is complete.
14. When mounting the actuator using the body mounting reference plane, use a pin. Set the height of the pin to be 5 mm or more because of chamfering. (Recommended height 6 mm)



Maintenance

⚠ Warning

Maintenance frequency

Perform maintenance according to the table below.

| Frequency | Appearance check | Internal check | Belt check |
|--|------------------|----------------|------------|
| Inspection before daily operation | ○ | — | — |
| Inspection every 6 months/1000 km/ 5 million cycles* | ○ | ○ | ○ |

* Select whichever comes sooner.

• Items for visual appearance check

1. Loose set screws, Abnormal dirt
2. Check of flaw and cable joint
3. Vibration, Noise

• Items for internal check

1. Lubricant condition on moving parts.
* For lubrication, use lithium grease No. 2.
2. Loose or mechanical play in fixed parts or fixing screws.

• Items for belt check

Stop operation immediately and replace the belt when belt appear to be below. Further, ensure your operating environment and conditions satisfy the requirements specified for the product.

a. Tooth shape canvas is worn out.

Canvas fiber becomes fuzzy. Rubber is removed and the fiber becomes whitish. Lines of fibers become unclear.

b. Peeling off or wearing of the side of the belt

Belt corner becomes round and frayed thread sticks out.

c. Belt partially cut

Belt is partially cut. Foreign matter caught in teeth other than cut part causes flaw.

d. Vertical line of belt teeth

Flaw which is made when the belt runs on the flange.

e. Rubber back of the belt is softened and sticky.

f. Crack on the back of the belt

AC Servo Motor Driver

Series **LECS**□

Pulse Input Type/
Positioning Type



Incremental Type
Series LECSA

Pulse Input Type



Absolute Type
Series LECSB

CC-Link Direct Input Type



Absolute Type
Series LECSA

SSCNET Ⅲ Type



Absolute Type
Series LECSB

AC Servo Motor Driver

Series LECS□

| | |
|----------------------|----------------------------------|
| Power supply voltage | 100 to 120 VAC 200 to 230 VAC |
|----------------------|----------------------------------|

| | |
|----------------|---------------|
| Motor capacity | 100/200/400 W |
|----------------|---------------|

Incremental Type

Series LECSA (Pulse input type/Positioning type)



- Up to 7 positioning points by point table
- Input type: Pulse input
- Control encoder: Incremental 17-bit encoder (Resolution: 131072 pulse/rev)
- Parallel input: 6 inputs
output: 4 outputs

Series LECSB (Pulse input type)



- Input type: Pulse input
- Control encoder: Absolute 18-bit encoder (Resolution: 262144 pulse/rev)
- Parallel input: 10 inputs
output: 6 outputs

Series LECSC (CC-Link direct input type)



CC-Link

- Position data/speed data setting and operation start/stop
- Positioning by up to 255 point tables (when 2 stations occupied)
- Up to 32 drivers connectable (when 2 stations occupied)
with CC-Link communication
- Applicable Fieldbus protocol: CC-Link (Ver. 1.10, max. communication speed: 10 Mbps)
- Control encoder: Absolute 18-bit encoder (Resolution: 262144 pulse/rev)

Series LECSS (SSCNET III type)



- Compatible with Mitsubishi Electric's servo system controller network
- Reduced wiring and SSCNET III optical cable for one-touch connection
- SSCNET III optical cable provides enhanced noise resistance
- Up to 16 drivers connectable with SSCNET III communication
- Applicable Fieldbus protocol: SSCNET III
(High-speed optical communication, max. one-way communication speed: 100 Mbps)
- Control encoder: Absolute 18-bit encoder (Resolution: 262144 pulse/rev)

AC Servo Motor Driver

Incremental Type

Series LECSA (Pulse Input Type/Positioning Type)

Absolute Type

Series LECSB/LECSA/LECSS

(Pulse Input Type)

(CC-Link Direct Input Type)

(SSCNET III Type)



RoHS

How to Order

Driver

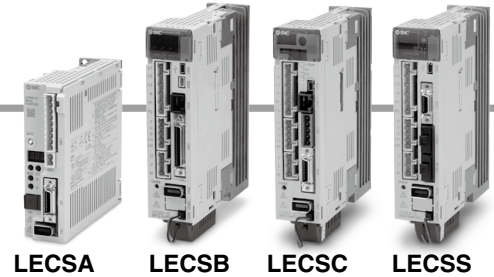
LECSA 1-S1

Driver type

| | |
|---|--|
| A | Pulse input type/Positioning type (For incremental encoder) |
| B | Pulse input type (For absolute encoder) |
| C | CC-Link direct input type (For absolute encoder) |
| S | SSCNET III type (For absolute encoder) |

Power supply voltage

| | |
|---|--------------------------|
| 1 | 100 to 120 VAC, 50/60 Hz |
| 2 | 200 to 230 VAC, 50/60 Hz |



LECSA

LECSB

LECSA

LECSA

Compatible motor type

| Symbol | Type | Capacity | Encoder |
|--------|----------------------|----------|-------------|
| S1 | AC servo motor (S2) | 100 W | Incremental |
| S3 | AC servo motor (S3) | 200 W | |
| S4 | AC servo motor (S4)* | 400 W | |
| S5 | AC servo motor (S6) | 100 W | Absolute |
| S7 | AC servo motor (S7) | 200 W | |
| S8 | AC servo motor (S8)* | 400 W | |

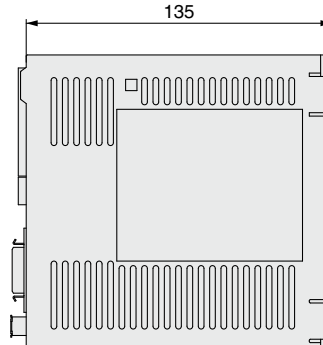
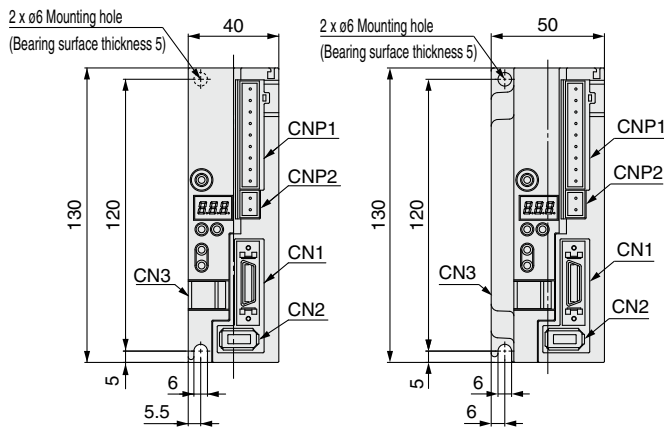
* Only available for power supply voltage "200 to 230 VAC".

Dimensions

LECSA

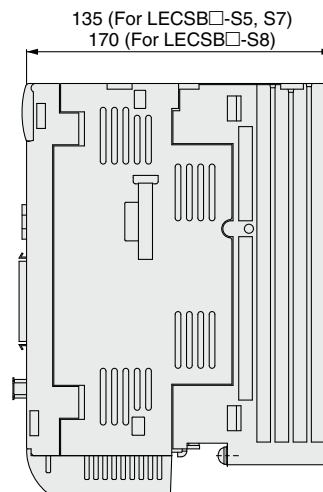
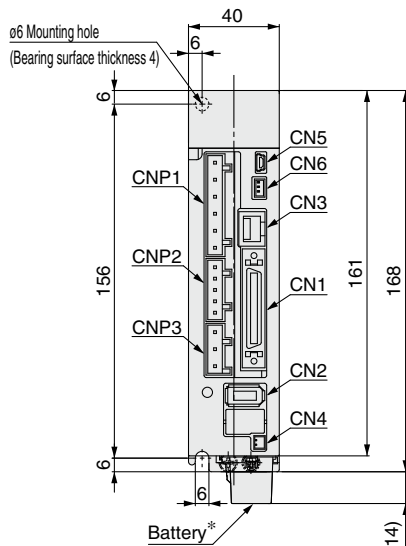
For LECSA-S1, S3

For LECSA-S4



| Connector name | Description |
|----------------|--|
| CN1 | I/O signal connector |
| CN2 | Encoder connector |
| CN3 | USB communication connector |
| CNP1 | Main circuit power supply connector |
| CNP2 | Control circuit power supply connector |

LECSB



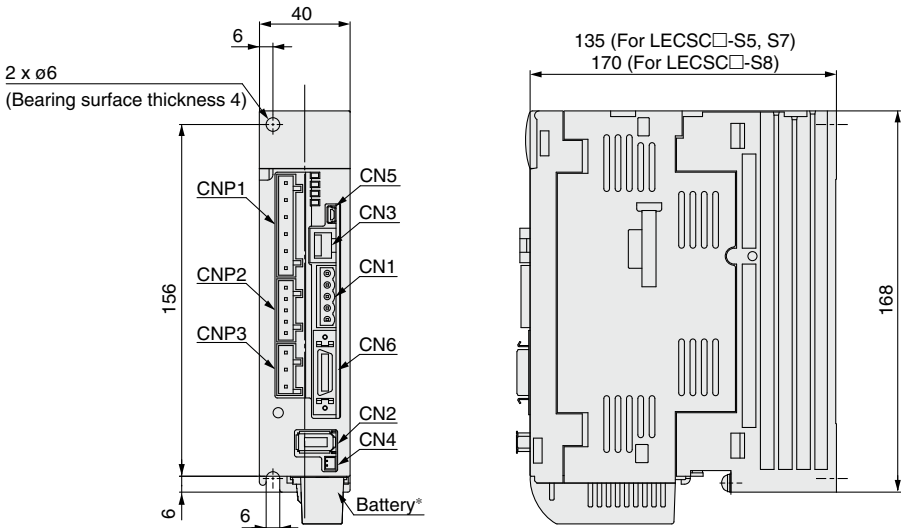
| Connector name | Description |
|----------------|--|
| CN1 | I/O signal connector |
| CN2 | Encoder connector |
| CN3 | RS-422 communication connector |
| CN4 | Battery connector |
| CN5 | USB communication connector |
| CN6 | Analog monitor connector |
| CNP1 | Main circuit power supply connector |
| CNP2 | Control circuit power supply connector |
| CNP3 | Servo motor power connector |

*Battery included.

Series **LECS**□

Dimensions

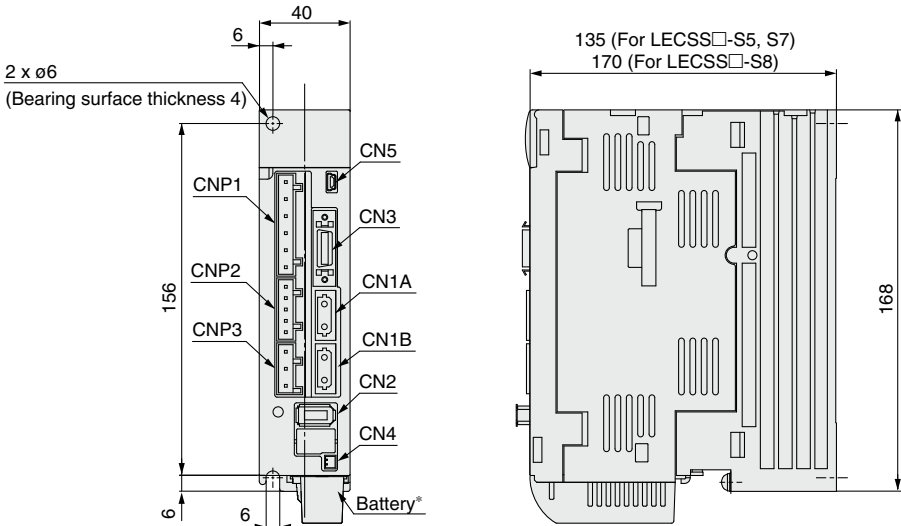
LECS□



* Battery included.

| Connector name | Description |
|----------------|--|
| CN1 | CC-Link connector |
| CN2 | Encoder connector |
| CN3 | RS-422 communication connector |
| CN4 | Battery connector |
| CN5 | USB communication connector |
| CN6 | I/O signal connector |
| CNP1 | Main circuit power supply connector |
| CNP2 | Control circuit power supply connector |
| CNP3 | Servo motor power connector |

LECS□



* Battery included.

| Connector name | Description |
|----------------|---|
| CN1A | Front axis connector for SSCNET III optical cable |
| CN1B | Rear axis connector for SSCNET III optical cable |
| CN2 | Encoder connector |
| CN3 | I/O signal connector |
| CN4 | Battery connector |
| CN5 | USB communication connector |
| CNP1 | Main circuit power supply connector |
| CNP2 | Control circuit power supply connector |
| CNP3 | Servo motor power connector |

Specifications

Series LECSA

| Model | | LECSA1-S1 | LECSA1-S3 | LECSA2-S1 | LECSA2-S3 | LECSA2-S4 |
|----------------------------------|-----------------------------------|---|-----------|--|-----------|-----------|
| Compatible motor capacity [W] | | 100 | 200 | 100 | 200 | 400 |
| Compatible encoder | | Incremental 17-bit encoder (Resolution: 131072 p/rev) | | | | |
| Main power supply | Power voltage [V] | Single phase 100 to 120 VAC (50/60 Hz) | | Single phase 200 to 230 VAC (50/60 Hz) | | |
| | Allowable voltage fluctuation [V] | Single phase 85 to 132 VAC | | Single phase 170 to 253 VAC | | |
| | Rated current [A] | 3.0 | 5.0 | 1.5 | 2.4 | 4.5 |
| Control power supply | Control power supply voltage [V] | 24 VDC | | | | |
| | Allowable voltage fluctuation [V] | 21.6 to 26.4 VDC | | | | |
| | Rated current [A] | 0.5 | | | | |
| Parallel input | | 6 inputs | | | | |
| Parallel output | | 4 outputs | | | | |
| Max. input pulse frequency [pps] | | 1 M (for differential receiver), 200 k (for open collector) | | | | |
| Function | In-position range setting [pulse] | 0 to ±65535 (Command pulse unit) | | | | |
| | Error excessive | ±3 rotations | | | | |
| | Torque limit | Parameter setting | | | | |
| | Communication | USB communication | | | | |
| Operating temperature range [°C] | | 0 to 55 (No freezing) | | | | |
| Operating humidity range [%RH] | | 90 or less (No condensation) | | | | |
| Storage temperature range [°C] | | -20 to 65 (No freezing) | | | | |
| Storage humidity range [%RH] | | 90 or less (No condensation) | | | | |
| Insulation resistance [MΩ] | | Between the housing and SG: 10 (500 VDC) | | | | |
| Weight [g] | | 600 | | | | 700 |

Series LECSB

| Model | | LECSB1-S5 | LECSB1-S7 | LECSB2-S5 | LECSB2-S7 | LECSB2-S8 |
|----------------------------------|-----------------------------------|--|-----------|---|-----------|-----------|
| Compatible motor capacity [W] | | 100 | 200 | 100 | 200 | 400 |
| Compatible encoder | | Absolute 18-bit encoder (Resolution: 262144 p/rev) | | | | |
| Main power supply | Power voltage [V] | Single phase 100 to 120 VAC (50/60 Hz) | | Three phase 200 to 230 VAC (50/60 Hz) Single phase 200 to 230 VAC (50/60 Hz) | | |
| | Allowable voltage fluctuation [V] | Single phase 85 to 132 VAC | | Three phase 170 to 253 VAC Single phase 170 to 253 VAC | | |
| | Rated current [A] | 3.0 | 5.0 | 0.9 | 1.5 | 2.6 |
| Control power supply | Control power supply voltage [V] | Single phase 100 to 120 VAC (50/60 Hz) | | Single phase 200 to 230 VAC (50/60 Hz) | | |
| | Allowable voltage fluctuation [V] | Single phase 85 to 132 VAC | | Single phase 170 to 253 VAC | | |
| | Rated current [A] | 0.4 | | 0.2 | | |
| Parallel input | | 10 inputs | | | | |
| Parallel output | | 6 outputs | | | | |
| Max. input pulse frequency [pps] | | 1 M (for differential receiver), 200 k (for open collector) | | | | |
| Function | In-position range setting [pulse] | 0 to ±10000 (Command pulse unit) | | | | |
| | Error excessive | ±3 rotations | | | | |
| | Torque limit | Parameter setting or external analog input setting (0 to 10 VDC) | | | | |
| | Communication | USB communication, RS422 communication*1 | | | | |
| Operating temperature range [°C] | | 0 to 55 (No freezing) | | | | |
| Operating humidity range [%RH] | | 90 or less (No condensation) | | | | |
| Storage temperature range [°C] | | -20 to 65 (No freezing) | | | | |
| Storage humidity range [%RH] | | 90 or less (No condensation) | | | | |
| Insulation resistance [MΩ] | | Between the housing and SG: 10 (500 VDC) | | | | |
| Weight [g] | | 800 | | | | 1000 |

*1 USB communication and RS422 communication cannot be performed at the same time.

Specifications

Series LECSC

| Model | | LECSC1-S5 | LECSC1-S7 | LECSC2-S5 | LECSC2-S7 | LECSC2-S8 | |
|----------------------------------|--|--|---|---|-----------|-----------|------|
| Compatible motor capacity [W] | | 100 | 200 | 100 | 200 | 400 | |
| Compatible encoder | | Absolute 18-bit encoder (Resolution: 262144 p/rev) | | | | | |
| Main power supply | Power voltage [V] | Single phase 100 to 120 VAC (50/60 Hz) | | Three phase 200 to 230 VAC (50/60 Hz) Single phase 200 to 230 VAC (50/60 Hz) | | | |
| | Allowable voltage fluctuation [V] | Single phase 85 to 132 VAC | | Three phase 170 to 253 VAC Single phase 170 to 253 VAC | | | |
| | Rated current [A] | 3.0 | 5.0 | 0.9 | 1.5 | 2.6 | |
| Control power supply | Control power supply voltage [V] | Single phase 100 to 120 VAC (50/60 Hz) | | Single phase 200 to 230 VAC (50/60 Hz) | | | |
| | Allowable voltage fluctuation [V] | Single phase 85 to 132 VAC | | Single phase 170 to 253 VAC | | | |
| | Rated current [A] | 0.4 | | 0.2 | | | |
| Communication specifications | Applicable Fieldbus protocol (Version) | | CC-Link communication (Ver. 1.10) | | | | |
| | Connection cable | | CC-Link Ver. 1.10 compliant cable (Shielded 3-core twisted pair cable)*1 | | | | |
| | Remote station number | | 1 to 64 | | | | |
| | Cable length | Communication speed [bps] | 16 k | 625 k | 2.5 M | 5 M | 10 M |
| | | Maximum overall cable length [m] | 1200 | 900 | 400 | 160 | 100 |
| | | Cable length between stations [m] | 0.2 or more | | | | |
| | I/O occupation area (Inputs/Outputs) | | 1 station occupied (Remote I/O 32 points/32 points)/(Remote register 4 words/4 words) 2 stations occupied (Remote I/O 64 points/64 points)/(Remote register 8 words/8 words) | | | | |
| | Number of connectable drivers | | Up to 42 (when 1 station is occupied by 1 driver), Up to 32 (when 2 stations are occupied by 1 driver), when there are only remote device stations. | | | | |
| | Remote register input | | Available with CC-Link communication (2 stations occupied) | | | | |
| Command method | Point table No. input | Available with CC-Link communication, RS422 communication CC-Link communication (1 station occupied): 31 points CC-Link communication (2 stations occupied): 255 points RS422 communication: 255 points | | | | | |
| | Indexer positioning input | Available with CC-Link communication CC-Link communication (1 station occupied): 31 points CC-Link communication (2 stations occupied): 255 points | | | | | |
| Communication function | | USB communication, RS422 communication*2 | | | | | |
| Operating temperature range [°C] | | 0 to 55 (No freezing) | | | | | |
| Operating humidity range [%RH] | | 90 or less (No condensation) | | | | | |
| Storage temperature range [°C] | | -20 to 65 (No freezing) | | | | | |
| Storage humidity range [%RH] | | 90 or less (No condensation) | | | | | |
| Insulation resistance [MΩ] | | Between the housing and SG: 10 (500 VDC) | | | | | |
| Weight [g] | | 800 | | | | 1000 | |

*1 If the system comprises of both CC-Link Ver. 1.00 and Ver. 1.10 compliant cables, Ver. 1.00 specifications are applied to the overall cable length and the cable length between stations.

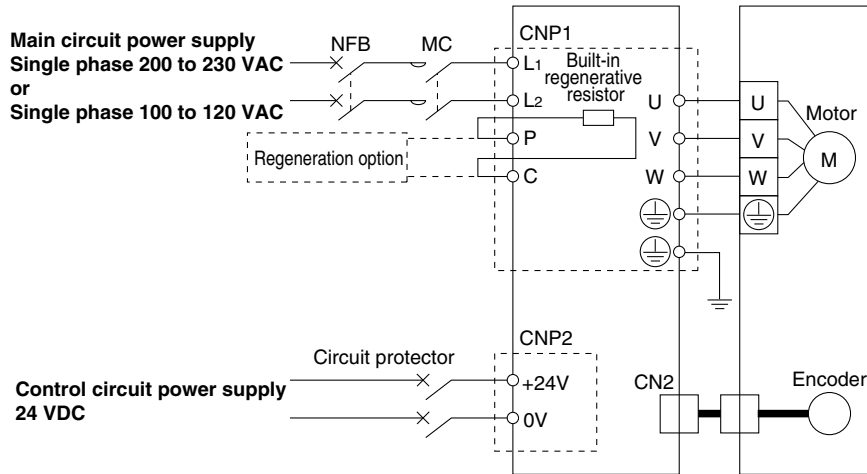
*2 USB communication and RS422 communication cannot be performed at the same time.

Series LECSS

| Model | | LECSS1-S5 | LECSS1-S7 | LECSS2-S5 | LECSS2-S7 | LECSS2-S8 |
|----------------------------------|-----------------------------------|---|-----------|---|-----------|-----------|
| Compatible motor capacity [W] | | 100 | 200 | 100 | 200 | 400 |
| Compatible encoder | | Absolute 18-bit encoder (Resolution: 262144 p/rev) | | | | |
| Main power supply | Power voltage [V] | Single phase 100 to 120 VAC (50/60 Hz) | | Three phase 200 to 230 VAC (50/60 Hz) Single phase 200 to 230 VAC (50/60 Hz) | | |
| | Allowable voltage fluctuation [V] | Single phase 85 to 132 VAC | | Three phase 170 to 253 VAC Single phase 170 to 253 VAC | | |
| | Rated current [A] | 3.0 | 5.0 | 0.9 | 1.5 | 2.6 |
| Control power supply | Control power supply voltage [V] | Single phase 100 to 120 VAC (50/60 Hz) | | Single phase 200 to 230 VAC (50/60 Hz) | | |
| | Allowable voltage fluctuation [V] | Single phase 85 to 132 VAC | | Single phase 170 to 253 VAC | | |
| | Rated current [A] | 0.4 | | 0.2 | | |
| Applicable Fieldbus protocol | | SSCNET Ⅲ (High-speed optical communication) | | | | |
| Communication function | | USB communication | | | | |
| Operating temperature range [°C] | | 0 to 55 (No freezing) | | | | |
| Operating humidity range [%RH] | | 90 or less (No condensation) | | | | |
| Storage temperature range [°C] | | -20 to 65 (No freezing) | | | | |
| Storage humidity range [%RH] | | 90 or less (No condensation) | | | | |
| Insulation resistance [MΩ] | | Between the housing and SG: 10 (500 VDC) | | | | |
| Weight [g] | | 800 | | | | 1000 |

Power Supply Wiring Example: LECSA

LECSA-□-□

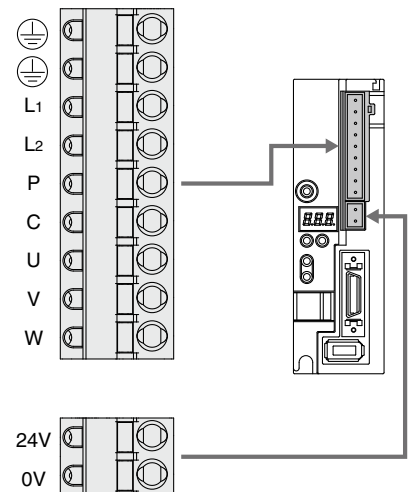


Main Circuit Power Supply Connector: CNP1 * Accessory

| Terminal name | Function | Details |
|---------------|---------------------------|--|
| | Protective earth (PE) | Should be grounded by connecting the servo motor's earth terminal and the control panel's protective earth (PE). |
| L1 | Main circuit power supply | Connect the main circuit power supply. LECSA1: Single phase 100 to 120 VAC, 50/60 Hz LECSA2: Single phase 200 to 230 VAC, 50/60 Hz |
| L2 | | |
| P | Regeneration option | Terminal to connect regeneration option LECSA□-S1: Not connected at time of shipping. LECSA□-S3, S4: Connected at time of shipping. * If regeneration option is required for "Model Selection", connect to this terminal. |
| C | | |
| U | Servo motor power (U) | Connect to motor cable (U, V, W). |
| V | Servo motor power (V) | |
| W | Servo motor power (W) | |

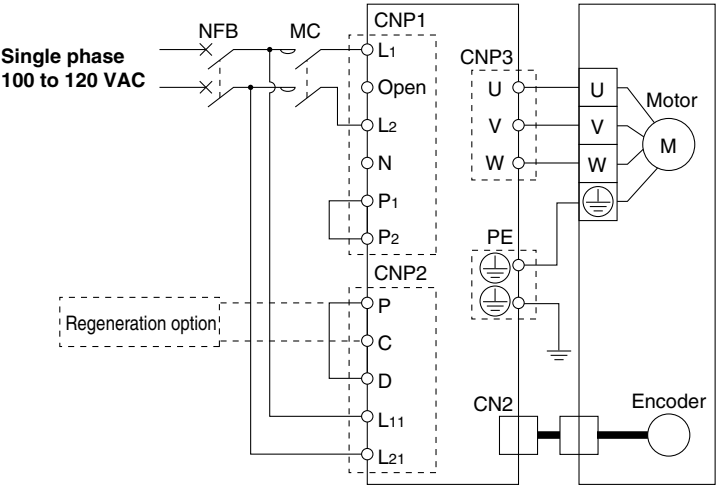
Control Circuit Power Supply Connector: CNP2 * Accessory

| Terminal name | Function | Details |
|---------------|-------------------------------------|---|
| 24V | Control circuit power supply (24 V) | 24 V side of the control circuit power supply (24 VDC) supplied to the driver |
| 0V | Control circuit power supply (0 V) | 0 V side of the control circuit power supply (24 VDC) supplied to the driver |



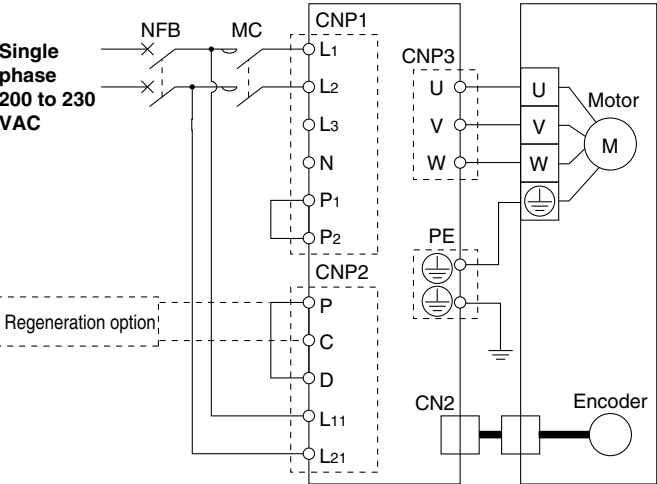
Power Supply Wiring Example: LECSB, LECS, LECS

LECSB1-□
LECS1-□
LECS1-□

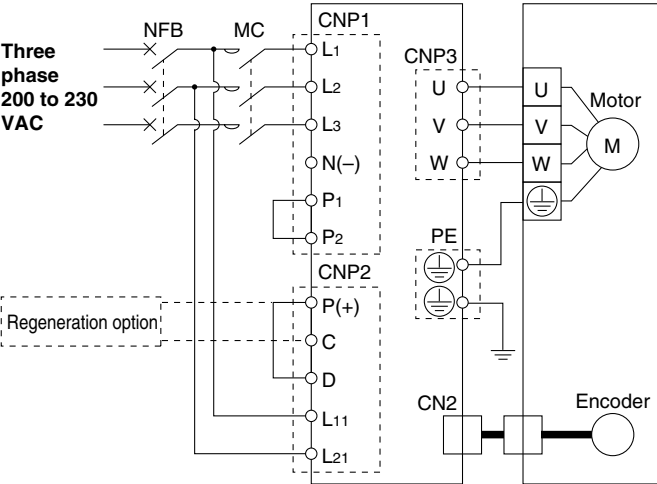


LECSB2-□
LECS2-□
LECS2-□

For single phase 200 VAC



For three phase 200 VAC



Note) For single phase 200 to 230 VAC, power supply should be connected to L1 and L2 terminals, with nothing connected to L3.

Main Circuit Power Supply Connector: CNP1 * Accessory

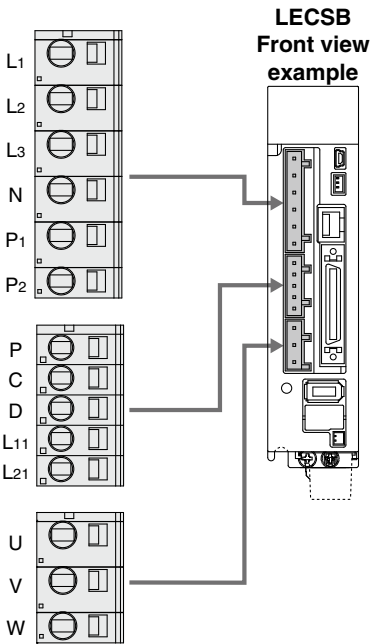
| Terminal name | Function | Details |
|---------------|---------------------------|---|
| L1 | Main circuit power supply | Connect the main circuit power supply. LECSB1/LECS1/LECS1: Single phase 100 to 120 VAC, 50/60 Hz Connection terminal: L1,L2 LECSB2/LECS2/LECS2: Single phase 200 to 230 VAC, 50/60 Hz Connection terminal: L1,L2,L3 Three phase 200 to 230 VAC, 50/60 Hz Connection terminal: L1,L2,L3 |
| L2 | | |
| L3 | | |
| N | | Do not connect. |
| P1 | | Connect between P1 and P2. (Connected at time of shipping.) |
| P2 | | |

Control Circuit Power Supply Connector: CNP2 * Accessory

| Terminal name | Function | Details |
|---------------|------------------------------|--|
| P | Regeneration option | Connect between P and D. (Connected at time of shipping.) * If regeneration option is required for "Model Selection", connect to this terminal. |
| C | | |
| D | | |
| L11 | Control circuit power supply | Connect the control circuit power supply. LECSB1/LECS1/LECS1: Single phase 100 to 120 VAC, 50/60 Hz Connection terminal: L11,L21 LECSB2/LECS2/LECS2: Single phase 200 to 230 VAC, 50/60 Hz Connection terminal: L11,L21 Three phase 200 to 230 VAC, 50/60 Hz Connection terminal: L11,L21 |
| L21 | | |

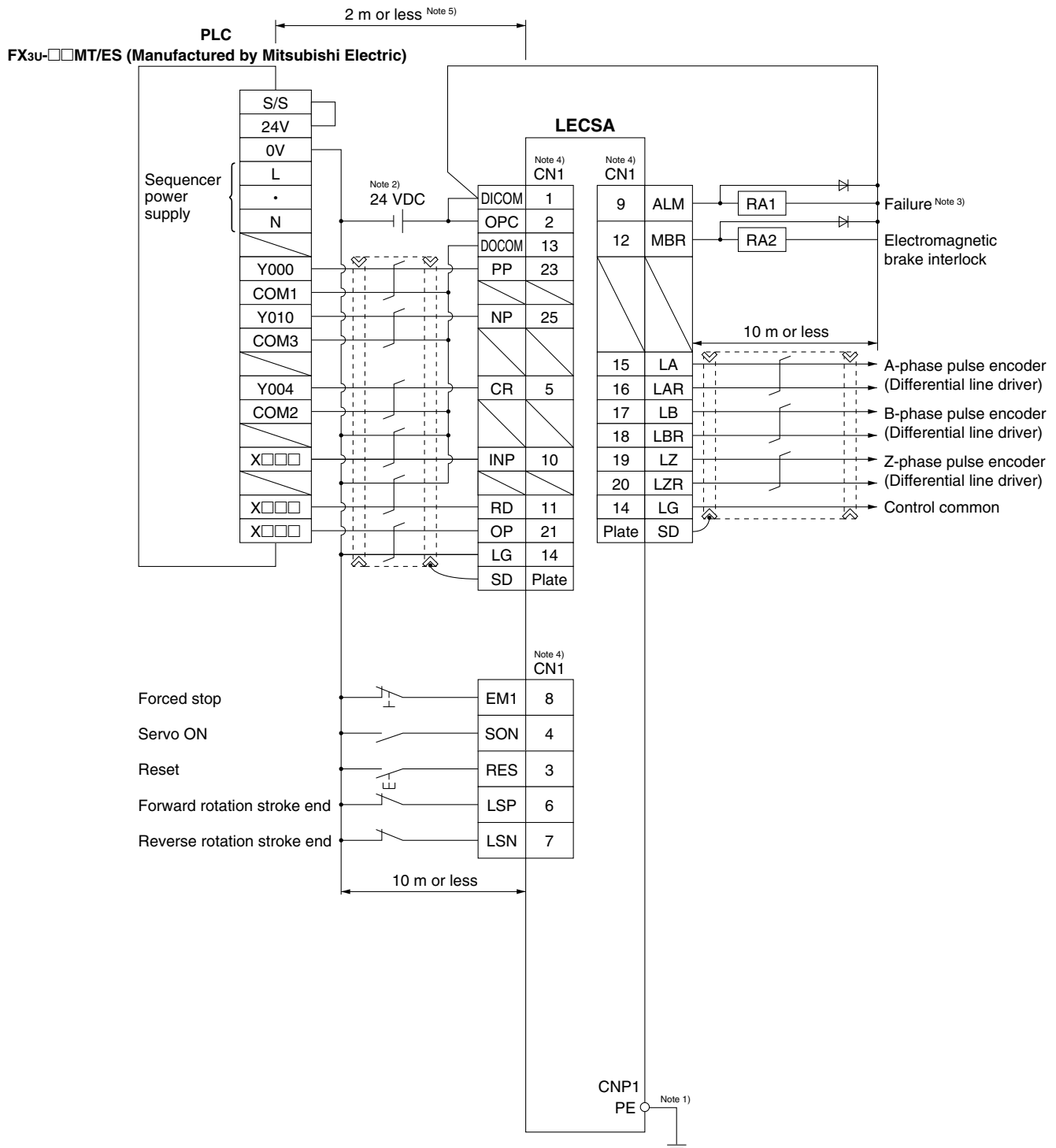
Motor Connector: CNP3 * Accessory

| Terminal name | Function | Details |
|---------------|-----------------------|----------------------------------|
| U | Servo motor power (U) | Connect to motor cable (U, V, W) |
| V | Servo motor power (V) | |
| W | Servo motor power (W) | |



Control Signal Wiring Example: LECSA

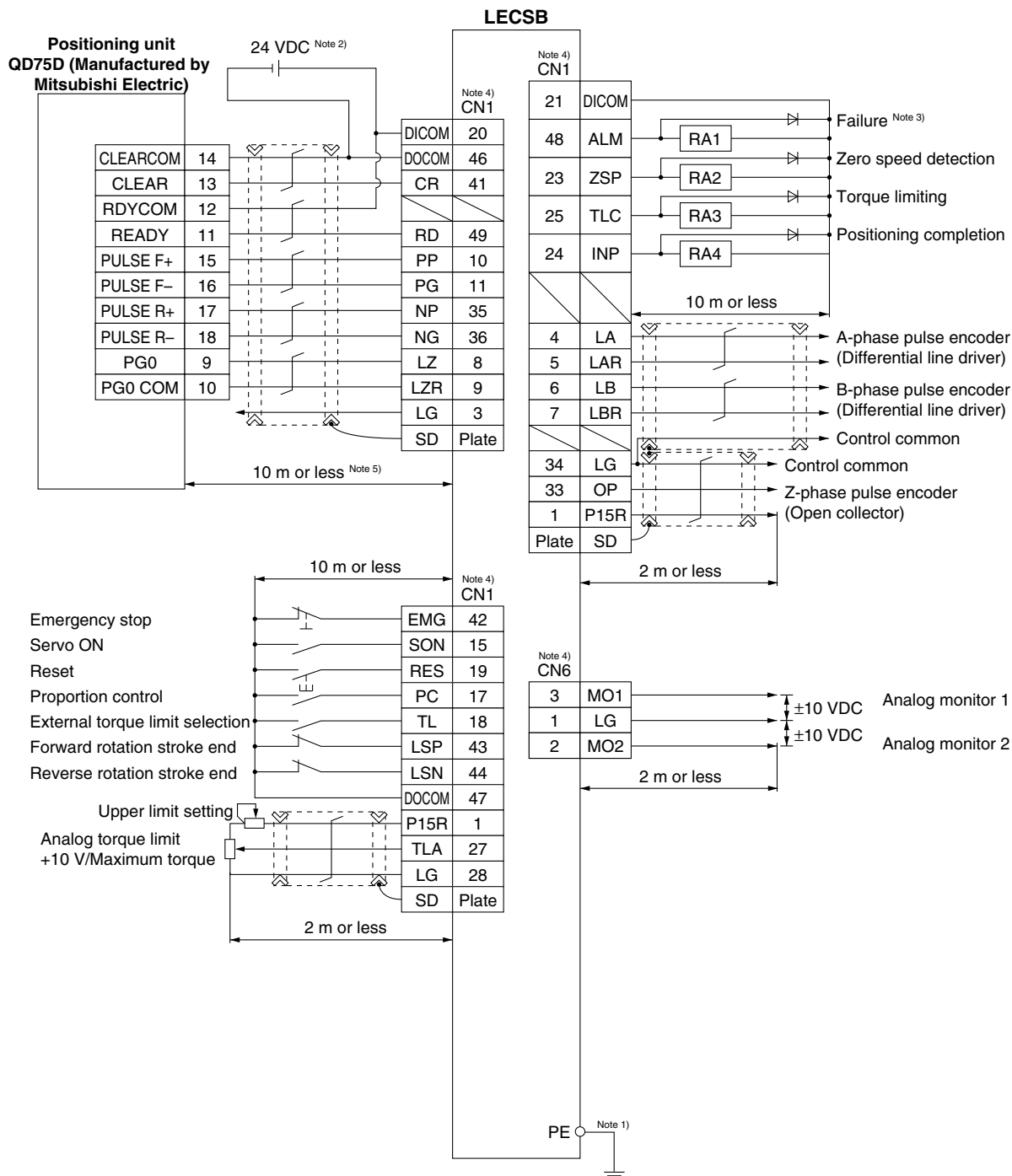
This wiring example shows connection with a PLC (FX3U-□□MT/ES) manufactured by Mitsubishi Electric as when used in position control mode. Refer to the LECSA operation manual and any technical literature or operation manuals for your PLC and positioning unit before connecting to another PLC or positioning unit.



- Note 1) For preventing electric shock, be sure to connect the driver circuit power supply connector (CNP1)'s protective earth (PE) terminal (marked ⊕) to the control panel's protective earth (PE).
- Note 2) For interface use, supply 24 VDC $\pm 10\%$ 200 mA using an external source. 200 mA is the value when all I/O command signals are used and reducing the number of inputs/outputs can decrease current capacity. Refer to "Operation Manual" for required current for interface.
- Note 3) The failure (ALM) is ON during normal conditions. When it is OFF (alarm occurs), stop the sequencer signal using the sequence program.
- Note 4) The same name signals are connected inside the driver.
- Note 5) For command pulse input with an open collector method. When a positioning unit loaded with a differential line driver method is used, it is 10 m or less.

Control Signal Wiring Example: LECSB

This wiring example shows connection with a positioning unit (QD75D) manufactured by Mitsubishi Electric as when used in position control mode. Refer to the LECSB operation manual and any technical literature or operation manuals for your PLC and positioning unit before connecting to another PLC or positioning unit.



Note 1) For preventing electric shock, be sure to connect the driver's protective earth (PE) terminal (marked \oplus) to the control panel's protective earth (PE).

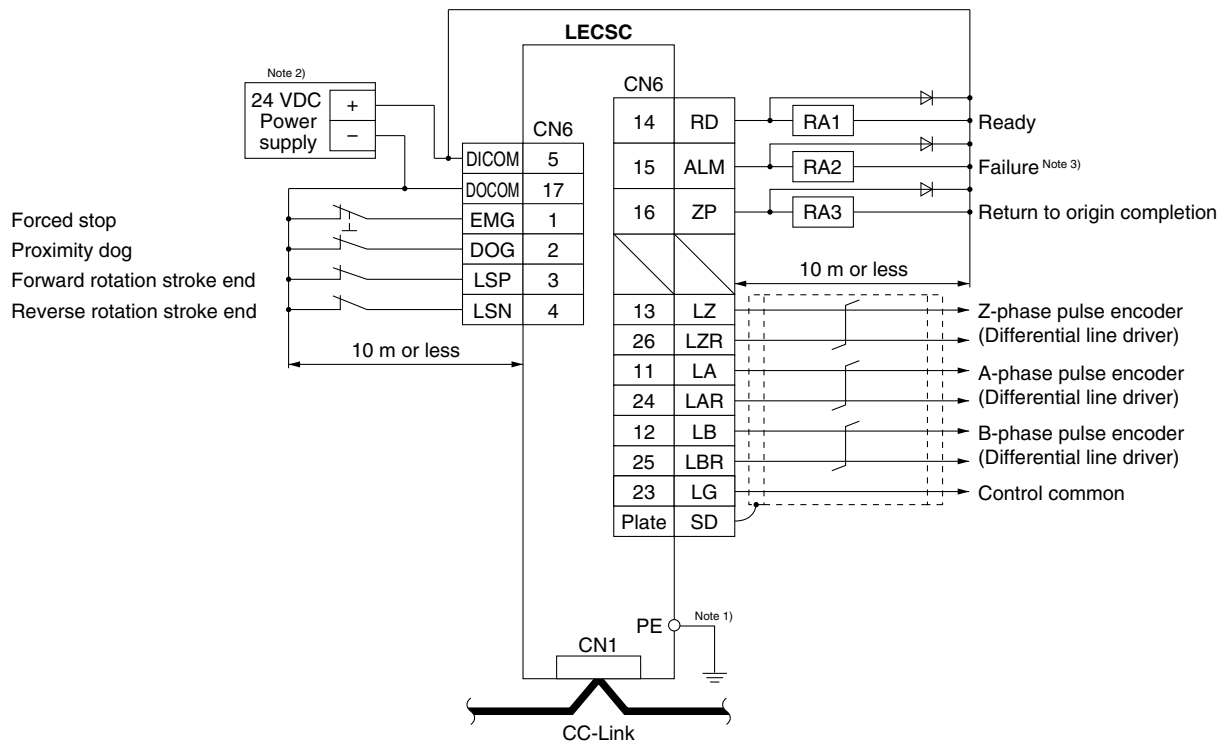
Note 2) For interface use, supply 24 VDC $\pm 10\%$ 300 mA using an external source.

Note 3) The failure (ALM) is ON during normal conditions. When it is OFF (alarm occurs), stop the sequencer signal using the sequence program.

Note 4) The same name signals are connected inside the driver.

Note 5) For command pulse input with a differential line driver method, it is 2 m or less.

Control Signal Wiring Example: LECS

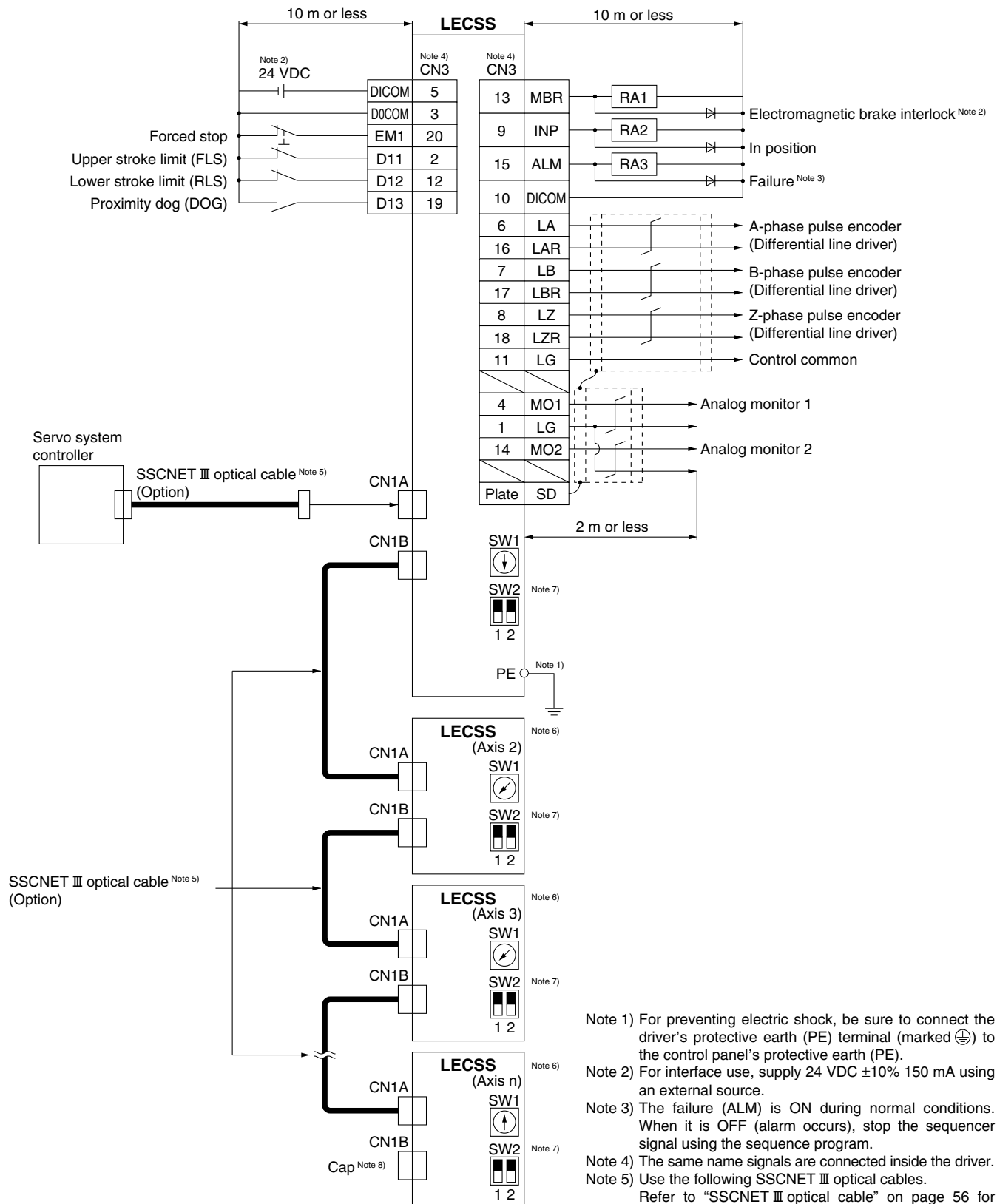


Note 1) For preventing electric shock, be sure to connect the driver's protective earth (PE) terminal (marked \oplus) to the control panel's protective earth (PE).

Note 2) For interface use, supply 24 VDC $\pm 10\%$ 150 mA using an external source.

Note 3) The failure (ALM) is ON during normal conditions. When it is OFF (alarm occurs), stop the sequencer signal using the sequence program.

Control Signal Wiring Example: LECSS



| Cable | Cable model | Cable length |
|--------------------------|-------------------------------------|---------------|
| SSCNET III optical cable | LE-CSS- <input type="text"/> | 0.15 m to 3 m |

Note 6) Connections from Axis 2 onward are omitted.

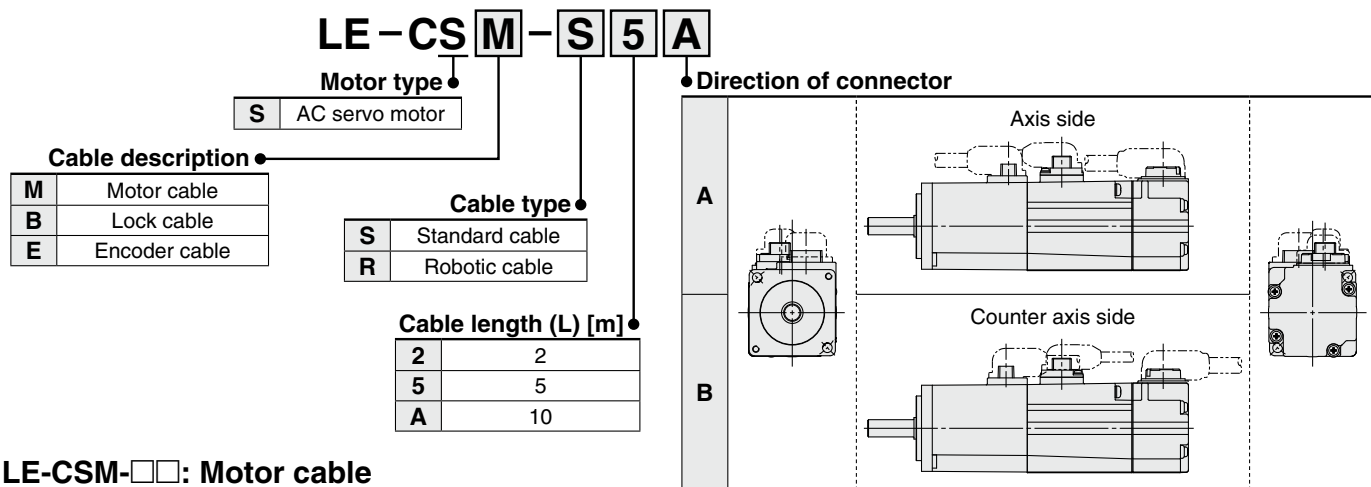
Note 7) Up to 16 axes can be set.

Note 8) Be sure to place a cap on unused CN1A/CN1B.

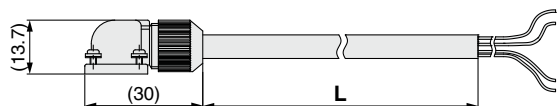
Series LECS□

Options

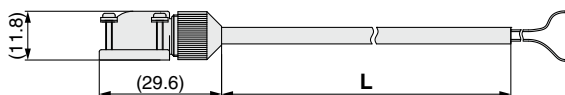
Motor cable, Lock cable, Encoder cable (LECS□ common)



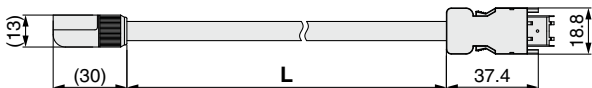
LE-CSM-□□: Motor cable



LE-CSB-□□: Lock cable

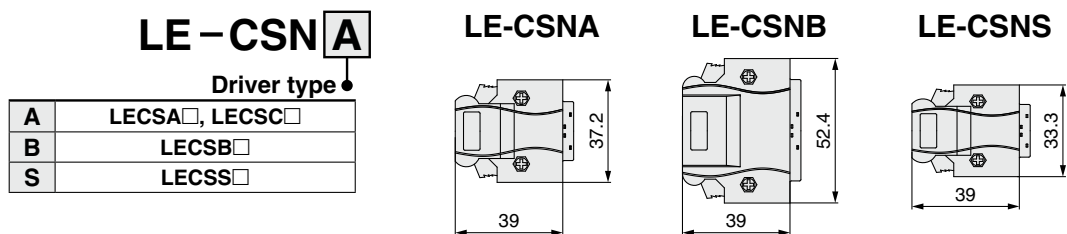


LE-CSE-□□: Encoder cable



* LE-CSM-S□□ is MR-PWS1CBL□M-A□-L manufactured by Mitsubishi Electric.
LE-CSB-S□□ is MR-BKS1CBL□M-A□-L manufactured by Mitsubishi Electric.
LE-CSE-S□□ is MR-J3ENCBL□M-A□-L manufactured by Mitsubishi Electric.
LE-CSM-R□□ is MR-PWS1CBL□M-A□-H manufactured by Mitsubishi Electric.
LE-CSB-R□□ is MR-BKS1CBL□M-A□-H manufactured by Mitsubishi Electric.
LE-CSE-R□□ is MR-J3ENCBL□M-A□-H manufactured by Mitsubishi Electric.

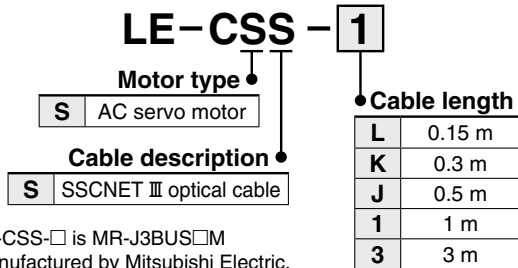
I/O connector (Without cable, Connector only)



* LE-CSNA: 10126-3000PE (connector)/10326-52F0-008 (shell kit) manufactured by Sumitomo 3M Limited or equivalent item.
LE-CSNB: 10150-3000PE (connector)/10350-52F0-008 (shell kit) manufactured by Sumitomo 3M Limited or equivalent item.
LE-CSNS: 10120-3000PE (connector)/10320-52F0-008 (shell kit) manufactured by Sumitomo 3M Limited or equivalent item.
* Applicable conductor size: AWG24 to 30

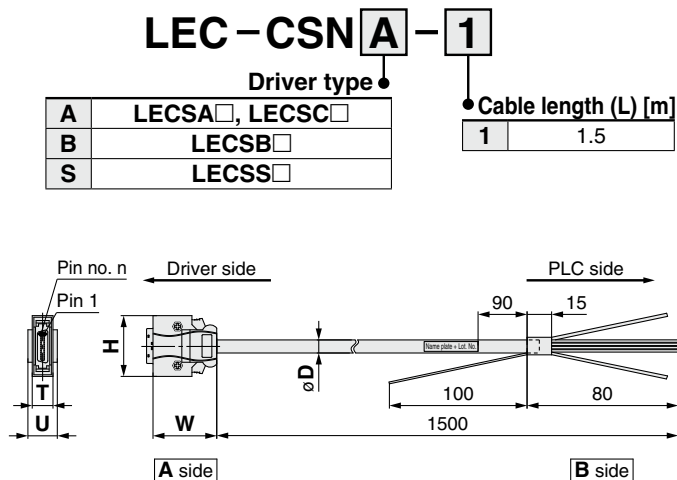
Options

SSCNET III optical cable



* LE-CSS-□ is MR-J3BUS□M
manufactured by Mitsubishi Electric.



























I/O cable



















- * LEC-CSNA-1: 10126-3000PE (connector)/10326-52F0-008 (shell kit)
manufactured by Sumitomo 3M Limited or equivalent item.
- LEC-CSNB-1: 10150-3000PE (connector)/10350-52F0-008 (shell kit)
manufactured by Sumitomo 3M Limited or equivalent item.
- LEC-CSNS-1: 10120-3000PE (connector)/10320-52F0-008 (shell kit)
manufactured by Sumitomo 3M Limited or equivalent item.
- * Conductor size: AWG24

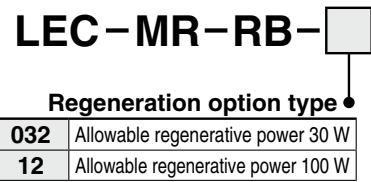
Wiring

LEC-CSNA-1: Pin no. 1 to 26
LEC-CSNB-1: Pin no. 1 to 50
LEC-CSNS-1: Pin no. 1 to 20

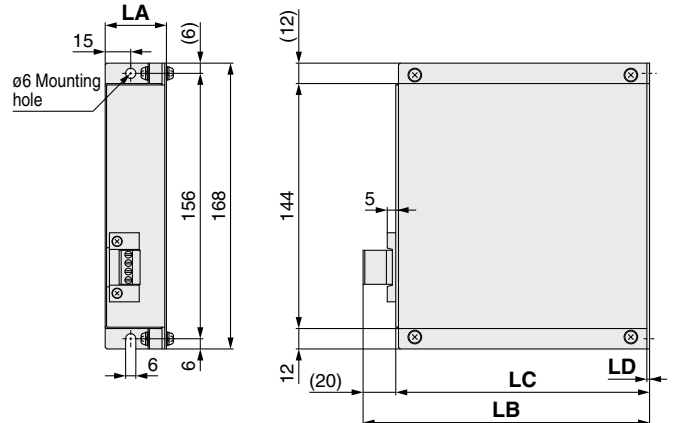
| Connector pin no. | | Pair no. of wire | Insulation color | Dot mark | Dot color |
|----------------------|----|---------------------|---------------------|---|--------------|
| A side | 1 | 1 | Orange |  | Red |
| | 2 | | |  | Black |
| | 3 | 2 | Light gray |  | Red |
| | 4 | | |  | Black |
| | 5 | 3 | White |  | Red |
| | 6 | | |  | Black |
| | 7 | 4 | Yellow |  | Red |
| | 8 | | |  | Black |
| | 9 | 5 | Pink |  | Red |
| | 10 | | |  | Black |
| | 11 | 6 | Orange |   | Red |
| | 12 | | |   | Black |
| | 13 | 7 | Light gray |   | Red |
| | 14 | | |   | Black |
| | 15 | 8 | White |   | Red |
| | 16 | | |   | Black |
| | 17 | 9 | Yellow |   | Red |
| | 18 | | |   | Black |

| Connector pin no. | | Pair no. of wire | Insulation color | Dot mark | Dot color |
|-------------------|----|------------------|------------------|---|-----------|
| A side | 19 | 10 | Pink |  | Red |
| | 20 | | |  | Black |
| | 21 | 11 | Orange |  | Red |
| | 22 | | |  | Black |
| | 23 | 12 | Light gray |  | Red |
| | 24 | | |  | Black |
| | 25 | 13 | White |  | Red |
| | 26 | | |  | Black |
| | 27 | 14 | Yellow |  | Red |
| | 28 | | |  | Black |
| | 29 | 15 | Pink |  | Red |
| | 30 | | |  | Black |
| | 31 | 16 | Orange |  | Red |
| | 32 | | |  | Black |
| | 33 | 17 | Light gray |  | Red |
| | 34 | | |  | Black |

Regeneration option (LECS□ common)



* Confirm regeneration option to be used in "Model Selection".



Dimensions [mm]

| Model | LA | LB | LC | LD |
|---------------|----|-----|-----|-----|
| LEC-MR-RB-032 | 30 | 119 | 99 | 1.6 |
| LEC-MR-RB-12 | 40 | 169 | 149 | 2 |

* MR-RB-□ manufactured by Mitsubishi Electric.

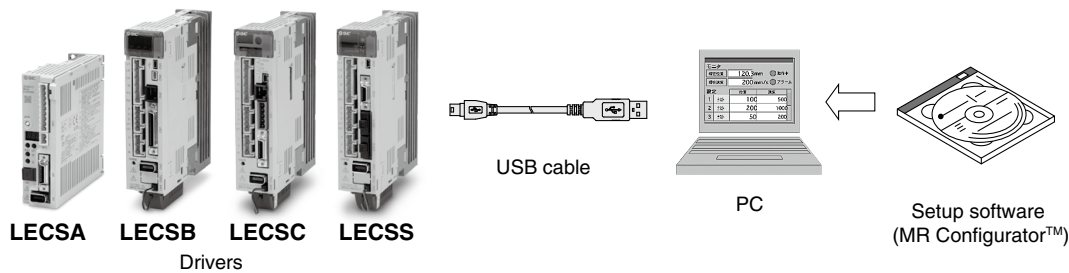
Cable O.D.

| Product no. | øD |
|-------------|------|
| LEC-CSNA-1 | 11.1 |
| LEC-CSNB-1 | 13.8 |
| LEC-CSNS-1 | 9.1 |

Dimensions/Pin No.

| Product no. | W | H | T | U | Pin no. n |
|-------------|----|------|------|----|-----------|
| LEC-CSNA-1 | 39 | 37.2 | 12.7 | 14 | 14 |
| LEC-CSNB-1 | | 52.4 | | 18 | 26 |
| LEC-CSNS-1 | | 33.3 | | 14 | 21 |

Options



Setup software (MR Configurator™) (LECSA, LECSB, LECS, LECS common)

LEC – MR – SETUP221□

● Display language

| | |
|-----|------------------|
| Nil | Japanese version |
| E | English version |

* MRZJW3-SETUP221 manufactured by Mitsubishi Electric.
Refer to Mitsubishi Electric's website for operating environment and version upgrade information.
MR Configurator™ is a registered trademark or trademark of Mitsubishi Electric.

Adjustment, waveform display, diagnostics, parameter read/write, and test operation can be performed upon a PC.

Compatible PC

When using setup software (MR Configurator™), use an IBM PC/AT compatible PC that meets the following operating conditions.

Hardware Requirements

| Equipment | | Setup software (MR Configurator™) LEC-MR-SETUP221□ |
|---------------------------------------|-------------------------|--|
| PC <small>Note 1) 2) 3) 4)</small> | OS | Windows®98, Windows®Me, Windows®2000 Professional, Windows®XP Professional / Home Edition, Windows Vista® Home Basic / Home Premium / Business / Ultimate / Enterprise Windows®7 Starter / Home Premium / Professional / Ultimate / Enterprise |
| | Available HD space | 130 MB or more |
| | Communication interface | Use USB port |
| Display | | Resolution 1024 x 768 or more Must be capable of high color (16-bit) display. The connectable with the above PC |
| Keyboard | | The connectable with the above PC |
| Mouse | | The connectable with the above PC |
| Printer | | The connectable with the above PC |
| USB cable | | LEC-MR-J3USB <small>Note 5)</small> |

Note 1) Before using a PC for setting LECSA point table method/program method or LECS point table No. input, upgrade to version C5 (Japanese version) /version C4 (English version). Refer to Mitsubishi Electric's website for version upgrade information.
Note 2) Windows, Windows Vista, Windows 7 are registered trademarks of Microsoft Corporation in the United States and/or other countries.
Note 3) This software may not run correctly depending on the PC that you are using.
Note 4) Not compatible with 64-bit Windows®XP, 64-bit Windows Vista® and 64-bit Windows®7.
Note 5) Order USB cable separately.

USB cable (3 m)

LEC – MR – J3USB

* MR-J3USB manufactured by Mitsubishi Electric.

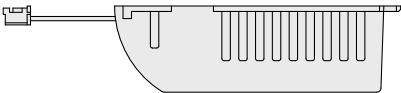
Cable for connecting PC and driver when using the setup software (MR Configurator™).
Do not use any cable other than this cable.

Battery (only for LECSB, LECS or LECS)

LEC – MR – J3BAT

* MR-J3BAT manufactured by Mitsubishi Electric.

Battery for replacement.
Absolute position data is maintained by installing the battery to the driver.





Specific Product Precautions 1

Be sure to read before handling. Refer to back cover for Safety Instructions.

For Electric Actuator Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

Design/Selection

Warning

1. Use the specified voltage.

If the applied voltage is higher than the specified voltage, malfunction and damage to the driver may result. If the applied voltage is lower than the specified voltage, there is a possibility that the load cannot be moved due to internal voltage drop. Check the operating voltage prior to start. Also, confirm that the operating voltage does not drop below the specified voltage during operation.

2. Do not use the products outside the specifications.

Otherwise, fire, malfunction or damage to the driver/actuator can result. Check the specifications prior to use.

3. Install an emergency stop circuit.

Install an emergency stop outside the enclosure in easy reach to the operator so that the operator can stop the system operation immediately and intercept the power supply.

4. To prevent danger and damage due to a breakdown or malfunction of these products, which may occur at a certain probability, a backup system should be arranged in advance by using a multiple-layered structure or by making a fail-safe equipment design, etc.

5. If there is a risk of fire or personal injury due to abnormal heat generation, sparking, smoke generated by the product, etc., cut off the power supply from this product and the system immediately.

6. The parameters of the driver are set to initial values. Please change parameters according to the specifications of the customer's equipment before use. Refer to the operation manual for details of parameters.

Handling

Warning

1. Never touch the inside of the driver and its peripheral devices.

Otherwise, electric shock or failure can result.

2. Do not operate or set up this equipment with wet hands.

Otherwise, electric shock can result.

3. Do not use a product that is damaged or missing any components.

Electric shock, fire or injury can result.

4. Use only the specified combination between the electric actuator and driver.

Otherwise, it may cause damage to the driver or to the other equipment.

5. Be careful not to touch, get caught or hit by the workpiece while the actuator is moving.

An injury can result.

6. Do not connect the power supply or power up the product until it is confirmed that the workpiece can be moved safely within the area that can be reached by the workpiece.

Otherwise, the movement of the workpiece may cause an accident.

7. Do not touch the product when it is energized and for some time after the power has been disconnected, as it is very hot.

Otherwise, it may cause burns due to the high temperature.

8. Check the voltage using a tester at least 5 minutes after power-off when performing installation, wiring and maintenance.

Otherwise, electric shock, fire or injury can result.

Handling

Warning

9. Static electricity may cause a malfunction or damage the driver. Do not touch the driver while power is supplied to it.

Take sufficient safety measures to eliminate static electricity when it is necessary to touch the driver for maintenance.

10. Do not use the products in an area where they could be exposed to dust, metallic powder, machining chips or splashes of water, oil or chemicals.

Otherwise, a failure or malfunction can result.

11. Do not use the products in a magnetic field.

Otherwise, a malfunction or failure can result.

12. Do not use the products in an environment where flammable, explosive or corrosive gases, liquids or other substances are present.

Otherwise, fire, explosion or corrosion can result.

13. Avoid heat radiation from strong heat sources, such as direct sunlight or a hot furnace.

Otherwise, it will cause a failure to the driver or its peripheral devices.

14. Do not use the products in an environment with cyclic temperature changes.

Otherwise, it will cause a failure to the driver or its peripheral devices.

15. Do not use the products in an environment where surges are generated.

Devices (solenoid type lifters, high frequency induction furnaces, motors, etc.) that generate a large amount of surge around the product may lead to deterioration or damage to the internal circuits of the products. Avoid supplies of surge generation and crossed lines.

16. Do not install these products in a place subject to vibration and impact.

Otherwise, a malfunction or failure can result.

17. When a surge generating load such as a relay or solenoid valve is directly driven, use a product that incorporates a surge absorption element.

Mounting

Warning

1. Install the driver and its peripheral devices on fireproof material.

Direct installation on or near flammable material may cause fire.

2. Do not install these products in a place subject to vibration and impact.

Otherwise, a malfunction or failure can result.

3. The driver should be mounted on a vertical wall in a vertical direction.

Also, do not cover the driver's suction/exhaust ports.

4. Install the driver and its peripheral devices on a flat surface.

If the mounting surface is not flat or uneven, excessive force may be applied to the housing and other parts resulting in a malfunction.



Series LECS□

Specific Product Precautions 2

Be sure to read before handling. Refer to back cover for Safety Instructions.

For Electric Actuator Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on SMC website, <http://www.smcworld.com>

Power Supply

⚠ Caution

1. Use a power supply with low noise between lines and between power and ground.
In cases where noise is high, use an isolation transformer.
2. Take appropriate measures to prevent surges from lightning. Ground the surge absorber for lightning separately from the grounding of the driver and its peripheral devices.

Wiring

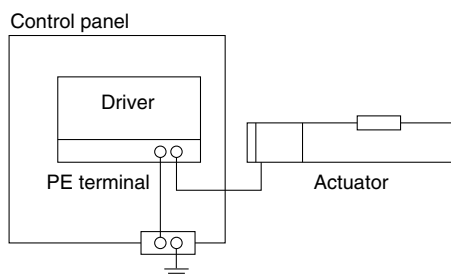
⚠ Warning

1. The driver will be damaged if a commercial power supply (100V/200V) is added to the driver's servo motor power (U, V, W). Be sure to check wiring such as wiring mistakes when the power supply is turned on.
2. Connect the ends of the U, V, W wires from the motor cable correctly to the phases (U, V, W) of the servo motor power. If these wires do not match up, it is unable to control the servo motor.

Grounding

⚠ Warning

1. For grounding actuator, connect the copper wire of the actuator to the driver's protective earth (PE) terminal and connect the copper wire of the driver to the earth via the control panel's protective earth (PE) terminal.
Do not connect them directly to the control panel's protective earth (PE) terminal.



2. In the unlikely event that malfunction is caused by the ground, it may be disconnected.




Maintenance

⚠ Warning

1. Perform maintenance checks periodically.
Confirm wiring and screws are not loose.
Loose screws or wires may cause unexpected malfunction.
2. Conduct an appropriate functional inspection and test after completed maintenance.
In case of any abnormalities (if the actuator does not move or the equipment does not operate properly, etc.), stop the operation of the system.
Otherwise, unexpected malfunction may occur and safety cannot be assured.
Conduct a test of the emergency stop to confirm the safety of the equipment.
3. Do not disassemble, modify or repair the driver or its peripheral devices.
4. Do not put anything conductive or flammable inside the driver.
Otherwise, fire can result.
5. Do not conduct an insulation resistance test or insulation withstand voltage test.
6. Reserve sufficient space for maintenance.
Design the system so that it allows required space for maintenance.

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.

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

- *1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots – Safety.
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 catalog 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. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
 3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
 4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

- 1. The product is provided for use in manufacturing industries.**
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

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 catalog 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.

Revision history

| | | |
|------------------|---|----|
| Edition B | * Cover: Height dimension changed from 62 to 58. * Model Selection: Stroke changed from 200 to 300. | RP |
| Edition C | * Addition of clean room specification (11- Series) * Addition of leads * Replacement of the Speed–Work load graph * Correction of errors: Pages 22, 31, 35, 49, 52, 53, 54, 55, 56, 58 * Number of pages from 52 to 64 | SP |

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.