Electric Actuator

Slider Type

NEW

- An option without grease applied to the seal band part has been added. (Excludes the LEFB)
- Auto switches and mounting brackets have been added.
- Positioning pin holes (Body bottom, 2 locations) have been added.
- The JXC series step motor controller has been added.

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

Ball Screw Drive *LEFS Series*

Size: 16, 25, 32, 40 ▸p. 35

Max. work load: **65** kg Max. speed: **1200** mm/s

Positioning repeatability: **±0.015** mm (High-precision type)

Clean room specification also available

Motor parallel type

Clean room specification ▸p. 35

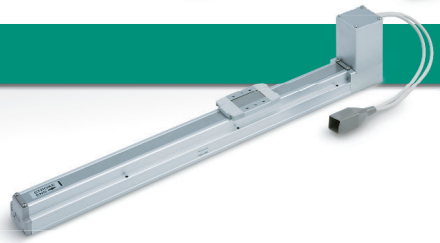
11-LEFS

Belt Drive *LEFB Series*

Size: 16, 25, 32 ▸p. 35

Max. stroke: **2000** mm

Max. speed: **2000** mm/s



AC Servo Motor Type ＊ Not compliant with UL

Ball Screw Drive *LEFS Series*

Size: 25, 32, 40 ▸p. 43, 51

Positioning repeatability: **±0.01** mm (High-precision type)

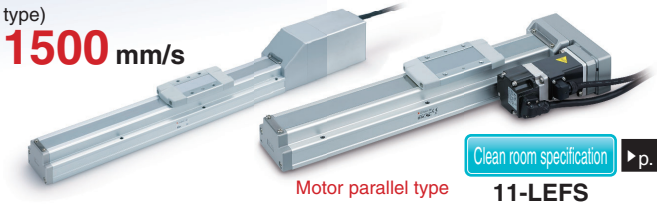
Improved high-speed transfer ability Max. speed: **1500** mm/s

High acceleration/deceleration: 20000 mm/s²

Pulse input type

With internal absolute encoder (For the LECSB/C/S)

Clean room specification also available



Motor parallel type

Clean room specification ▸p. 43

11-LEFS

Belt Drive *LEFB Series*

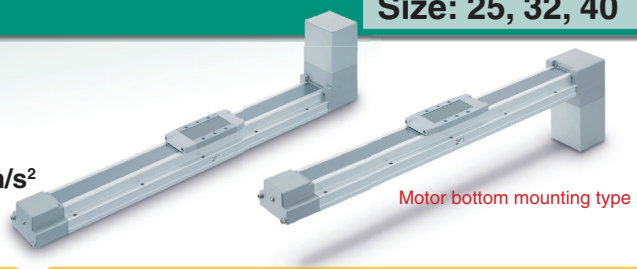
Size: 25, 32, 40 ▸p. 53

Max. speed: **2000** mm/s

Max. stroke: **3000** mm

Max. acceleration/deceleration: **20000** mm/s²

Motor bottom mounting type also available



Motor bottom mounting type

Step Motor (Servo/24 VDC) **Servo Motor (24 VDC)** Controller/Driver

▸p. 204

- **Step data input type**
  LECA6 Series (64 positioning points)
- **EtherCAT®/EtherNet/IP™/PROFINET/DeviceNet™/IO-Link direct input type**
  JXCE1/91/P1/D1/L1 Series
- **Programless type**
  LECP1 Series (14 positioning points)
- **Pulse input type**
  LECPA Series

AC Servo Motor Driver

▸p. 268

＊ Not compliant with UL

For absolute encoder

- Pulse input type
  LECSB(-T) Series
- CC-Link direct input type
  LECSC(-T) Series
- SSCNETⅢ type
  LECSS Series
- SSCNETⅢ/H type
  LECSS-T Series
- MECHATROLINK type
  LECY□ Series

For incremental encoder

- Pulse input type/Positioning type
  LECSA Series

LEF Series

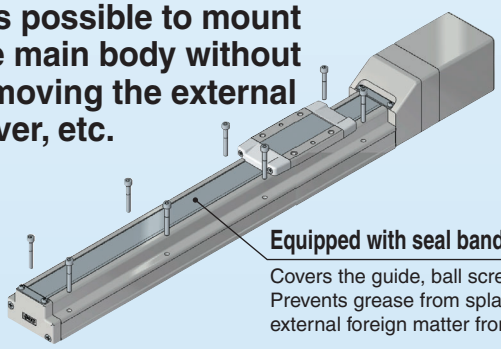
SMC

CAT.EUS100-87F-UK

LEF Series

●Easy mounting of the body/Reduction in installation labour

It is possible to mount the main body without removing the external cover, etc.

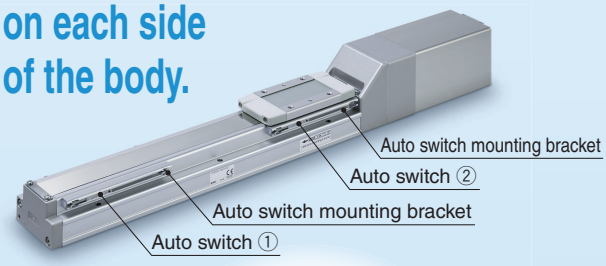


Equipped with seal bands as standard

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

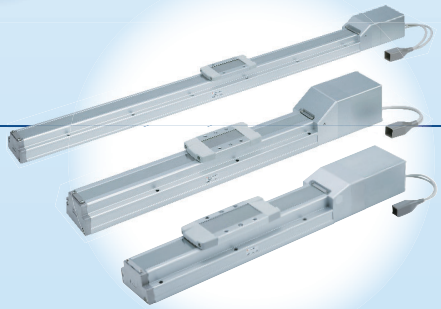
●The auto switch can be used to detect the position of the table.

●Up to 2 auto switches can be mounted on each side of the body.



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

Ball Screw Drive/*LEFS* Series Size: 16, 25, 32, 40

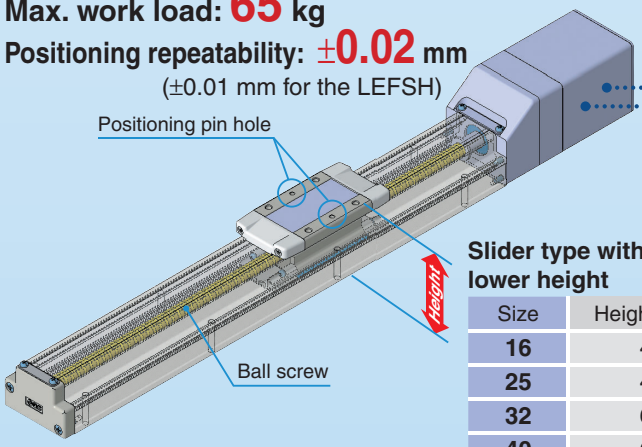


Model	Lead [mm]			Max. speed [mm/s]*1
				Step motor (Servo/24 VDC)
LEFS16	—	10	5	700 (For 10 mm lead)
LEFS25	20	12	6	1100 (For 20 mm lead)
LEFS32	24	16	8	1200 (For 24 mm lead)
LEFS40	30	20	10	1200 (For 30 mm lead)

*1 Excludes the LECPA

Max. work load: 65 kg

Positioning repeatability: ±0.02 mm
(±0.01 mm for the LEFSH)



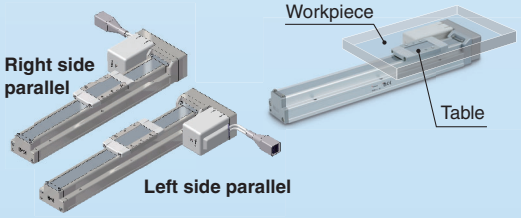
Slider type with lower height

Size	Height [mm]
16	40
25	48
32	60
40	68

Motor parallel type available!

◎Motor mounting position can be selected from two directions (Right or Left).

◎The top surface of the table and motor are level.



Non-magnetising lock mechanism (Option)

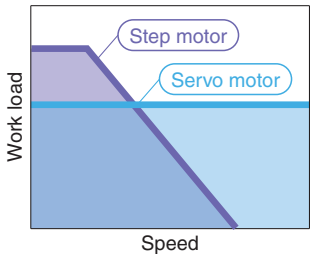
For drop prevention in the case of a power failure (Maintained)*1

*1 The LEFB belt drive actuator cannot be used for vertical applications.

Compatible motors

●**Step motor (Servo/24 VDC)**
Ideal for the low-speed transfer of heavy loads

●**Servo motor (24 VDC)**
Stable at high speeds
Silent operation



Slider type with lower height

Belt Drive/*LEFB* Series Size: 16, 25, 32

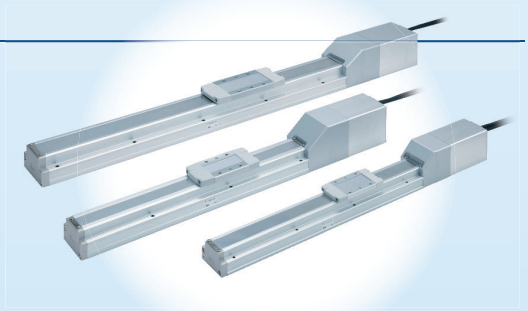
Max. stroke: 2000 mm

Max. speed: 2000 mm/s

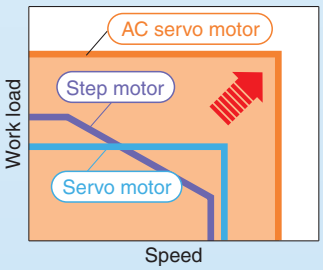
AC Servo Motor

Ball Screw Drive/*LEFS* Series Size: 25, 32, 40

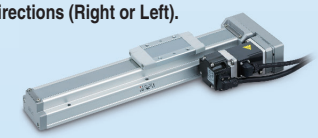
Model	Lead [mm]			Max. speed [mm/s] AC servo motor
LEFS25	20	12	6	1500
LEFS32	24	16	8	1500
LEFS40	30	20	10	1500



High-output motor (100/200/400 W)
Improved high-speed transfer ability
High acceleration/deceleration compatible: 20000 mm/s²
Pulse input type
With internal absolute encoder (For the LECSB/C/S and LECY)

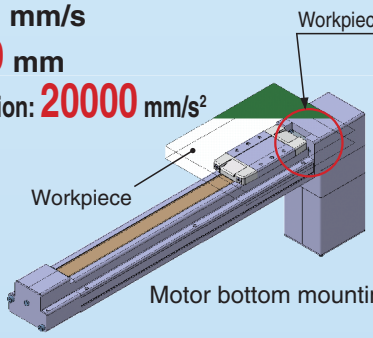


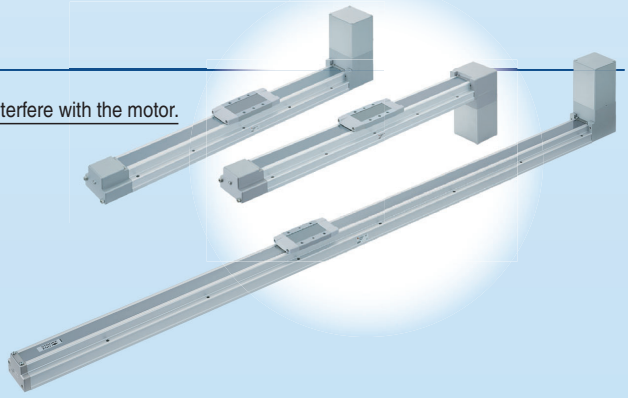
Motor parallel type available!
◎Motor mounting position can be selected from two directions (Right or Left).



Belt Drive/*LEFB* Series Size: 25, 32, 40

Max. speed: 2000 mm/s
Max. stroke: 3000 mm
Max. acceleration/deceleration: 20000 mm/s²





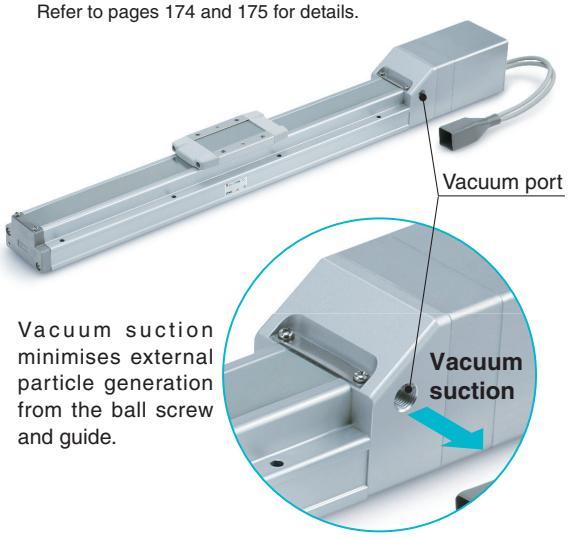
Clean Room Specification

Ball Screw Drive/*11-LEFS* Series

ISO Class 4*1 (ISO 14644-1)

- Built-in vacuum piping
- It is possible to mount the main body without removing the external cover, etc.
- Body-integrated linear guide specification

*1 Changes depending on the suction flow rate
Refer to pages 174 and 175 for details.



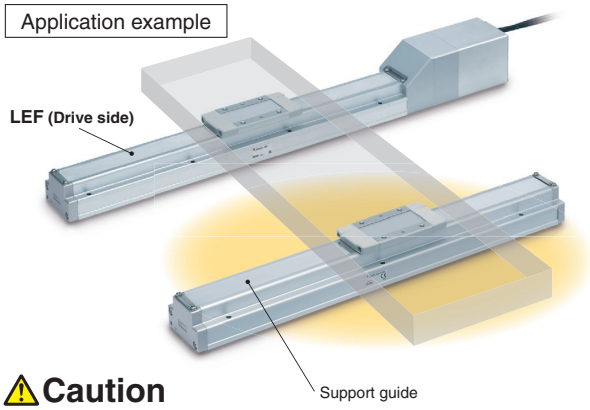
Vacuum suction minimises external particle generation from the ball screw and guide.

Support Guide/*LEFG* Series

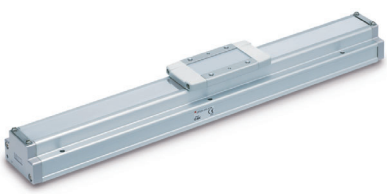
The support guide was designed to support workpieces with significant overhang.

- As the dimensions are the same as the LEF series body, installation is simple and contributes to a reduction in installation and assembly labour.
- The standard-equipped seal bands prevent grease from splashing and external foreign matter from entering.

Application example



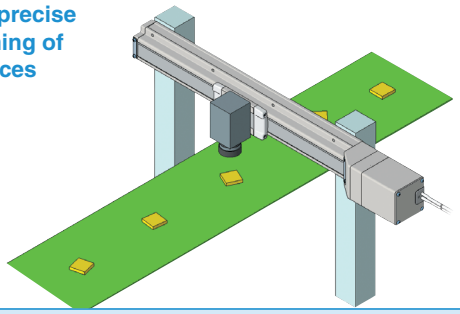
⚠Caution
After installing the actuator on the drive side, align it with the support guide. If the mounting flatness exceeds 0 . 1 , install a floating mechanism separately on the workpiece installation surface (table).



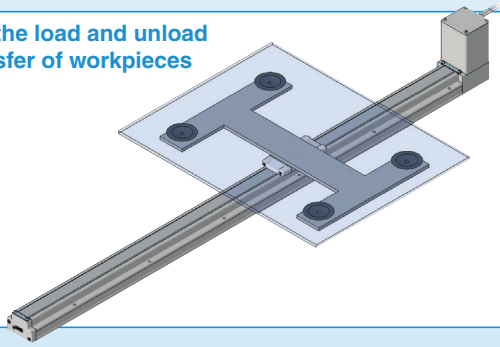
For details, refer to page 58.

Application Examples

For the precise positioning of workpieces



For the load and unload transfer of workpieces



Series Variations

Ball Screw Drive/*LEFS* Series

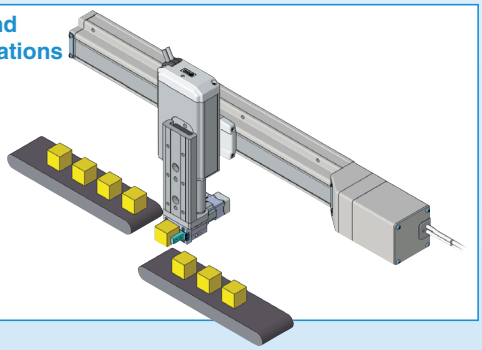
Type	Size*1	Lead [mm]	Stroke [mm]*2
Step motor (Servo/24 VDC) *3 Clean room compatible	16	5	50, 100, 150, 200, 250, 300, 350, 400, 450, 500
		10	
	25	6	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800
		12	
		20	
	32	8	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000
		16	
		24	
	40	10	150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1100, 1200
		20	
		30	
Servo motor (24 VDC) *3 Clean room compatible	16	5	50, 100, 150, 200, 250, 300, 350, 400, 450, 500
		10	
	25	6	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800
		12	
		20	
AC servo motor *3 Clean room compatible	25	6	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800
		12	
		20	
	32	8	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000
		16	
		24	
	40	10	150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1100, 1200
		20	
		30	

*1 The size corresponds to the bore of the air cylinder with an equivalent force. (For the ball screw drive)
*2 Please consult with SMC for non-standard strokes as they are produced as special orders.
*3 For the clean room specification, refer to page 173. Excludes 20, 24, and 30 mm leads

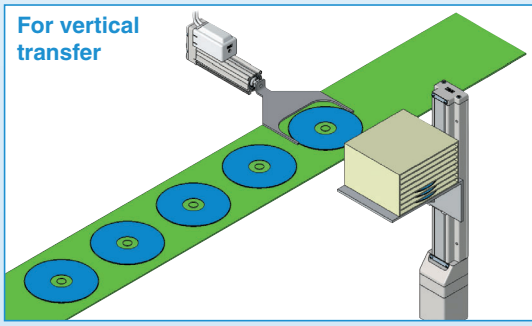
Belt Drive/*LEFB* Series

Type	Size*1	Equivalent lead [mm]	Stroke [mm]*2
Step motor (Servo/24 VDC)	16	48	300, 500, 600, 700, 800, 900, 1000
	25	48	300, 500, 600, 700, 800, 900, 1000, 1200, 1500, 1800, 2000
	32	48	300, 500, 600, 700, 800, 900, 1000, 1200, 1500, 1800, 2000
Servo motor (24 VDC)	16	48	300, 500, 600, 700, 800, 900, 1000
	25	48	300, 500, 600, 700, 800, 900, 1000, 1200, 1500, 1800, 2000
AC servo motor	25	54	300, 400, 500, 600, 700, 800, 900, 1000, (1100), 1200, (1300), (1400), 1500, (1600), (1700), (1800), (1900), 2000
	32	54	300, 400, 500, 600, 700, 800, 900, 1000, (1100), 1200, (1300), (1400), 1500, (1600), (1700), (1800), (1900), 2000, 2500
	40	54	300, 400, 500, 600, 700, 800, 900, 1000, (1100), 1200, (1300), (1400), 1500, (1600), (1700), (1800), (1900), 2000, 2500, 3000

For pick and place operations



For vertical transfer



	Work load: Horizontal [kg]	Work load: Vertical [kg]	Speed [mm/s]	Page
	10 20 30 40 50 60	10 20 30	200 400 600 800 1000 1200 1400	
				35*3
				43, 51*3

	Work load: Horizontal [kg]*3	Speed [mm/s]	Page
	5 10 15 20 25	500 1000 1500 2000	
			35
			53

*1 The nominal size based on force (equivalent to the air cylinder) during operation with ball screws
*2 Please consult with SMC for non-standard strokes as they are produced as special orders.
*3 The belt drive actuator cannot be used for vertical applications.

Simple setting allows for immediate use!

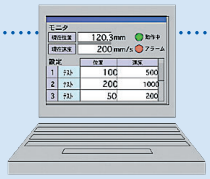
◎"Easy Mode" for simple setting

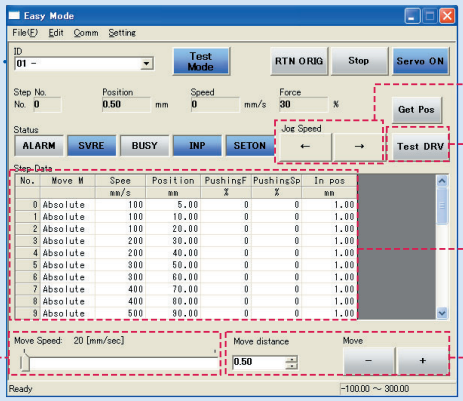
For immediate use, select "Easy Mode."

Servo motor
(24 VDC)
LECA6

<When a PC is used>
Controller setting software

- Step data setting, test drive, jogging, and move for the constant rate can be set and operated on one screen.

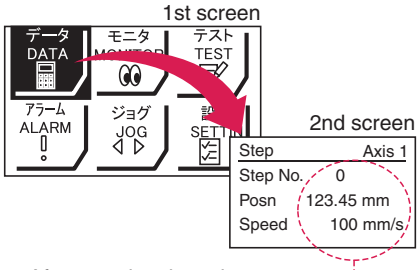




<When a TB (teaching box) is used>

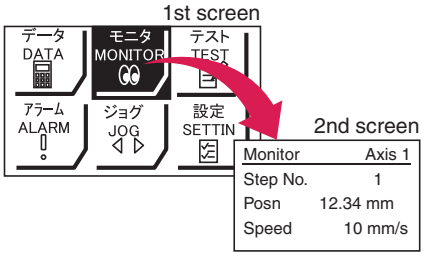
- The simple screen without scrolling promotes ease of setting and operation.
- Choose an icon from the first screen to select a function.
- Set the step data and check the monitor on the second screen.

Example of setting the step data



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

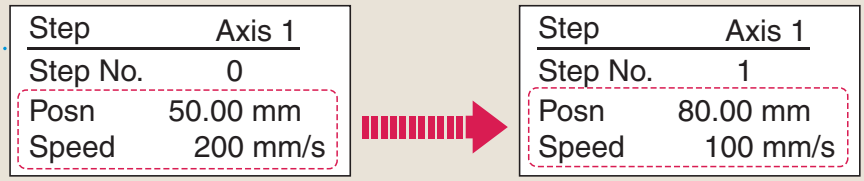
Example of checking the operation status



The operation status can be checked.

Teaching box screen

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



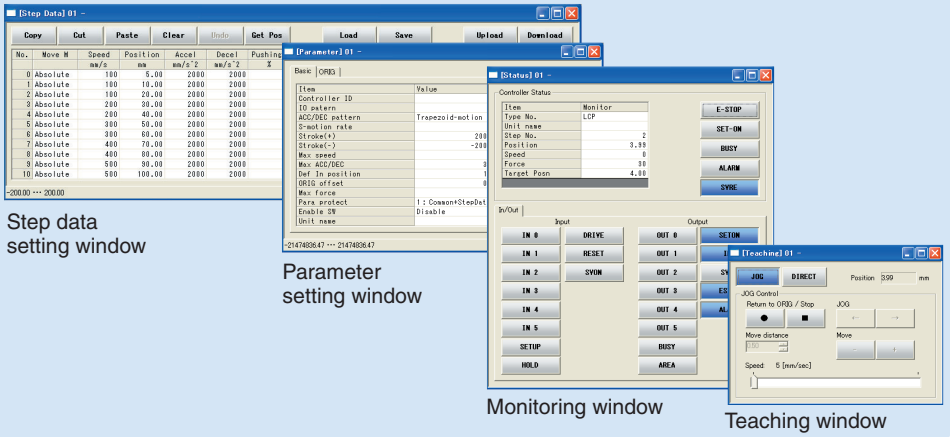
◎"Normal Mode" for detailed setting

Select "Normal Mode" when detailed setting is required.

- Step data can be set in detail.
- Parameters can be set.
- Signals and terminal status can be monitored.
- JOG and constant rate movement, return to origin, test drive, and testing of forced output can be performed.

<When a PC is used> Controller setting software

- Step data setting, parameter setting, monitoring, teaching, etc., are displayed in different windows.



Step data setting window

Parameter setting window

Monitoring window

Teaching window

<When a TB (teaching box) is used>

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

Teaching box screen

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

Main menu screen

Step data setting screen

Test screen

Monitoring screen

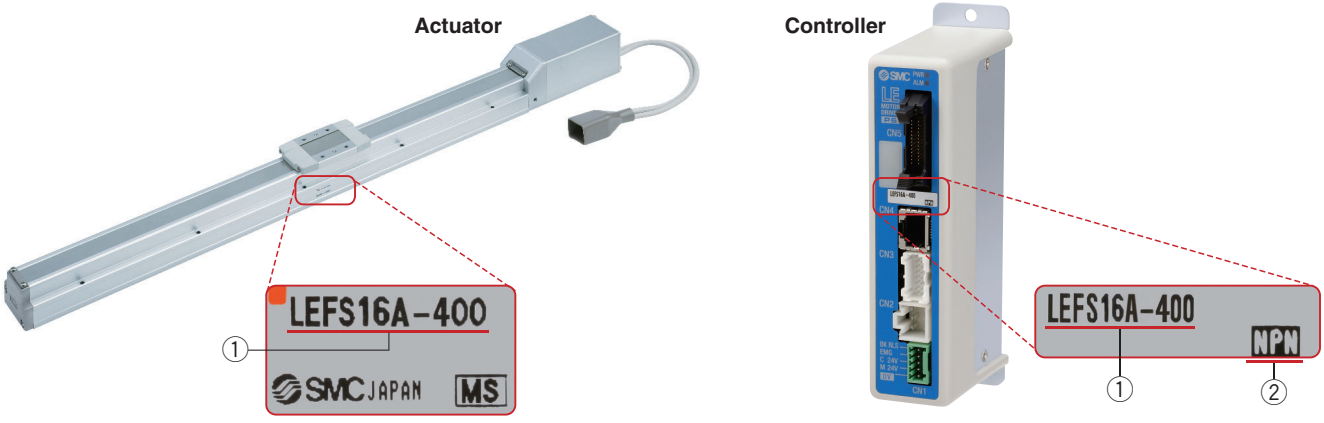
The actuator and controller are provided as a set. (They can be ordered separately as well.)

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

<Check the following before use.>

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

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



Fieldbus-compatible Gateway (GW) Unit

LEC-G Series ▸p. 217

◎ **Conversion unit for Fieldbus network and LEC serial communication**

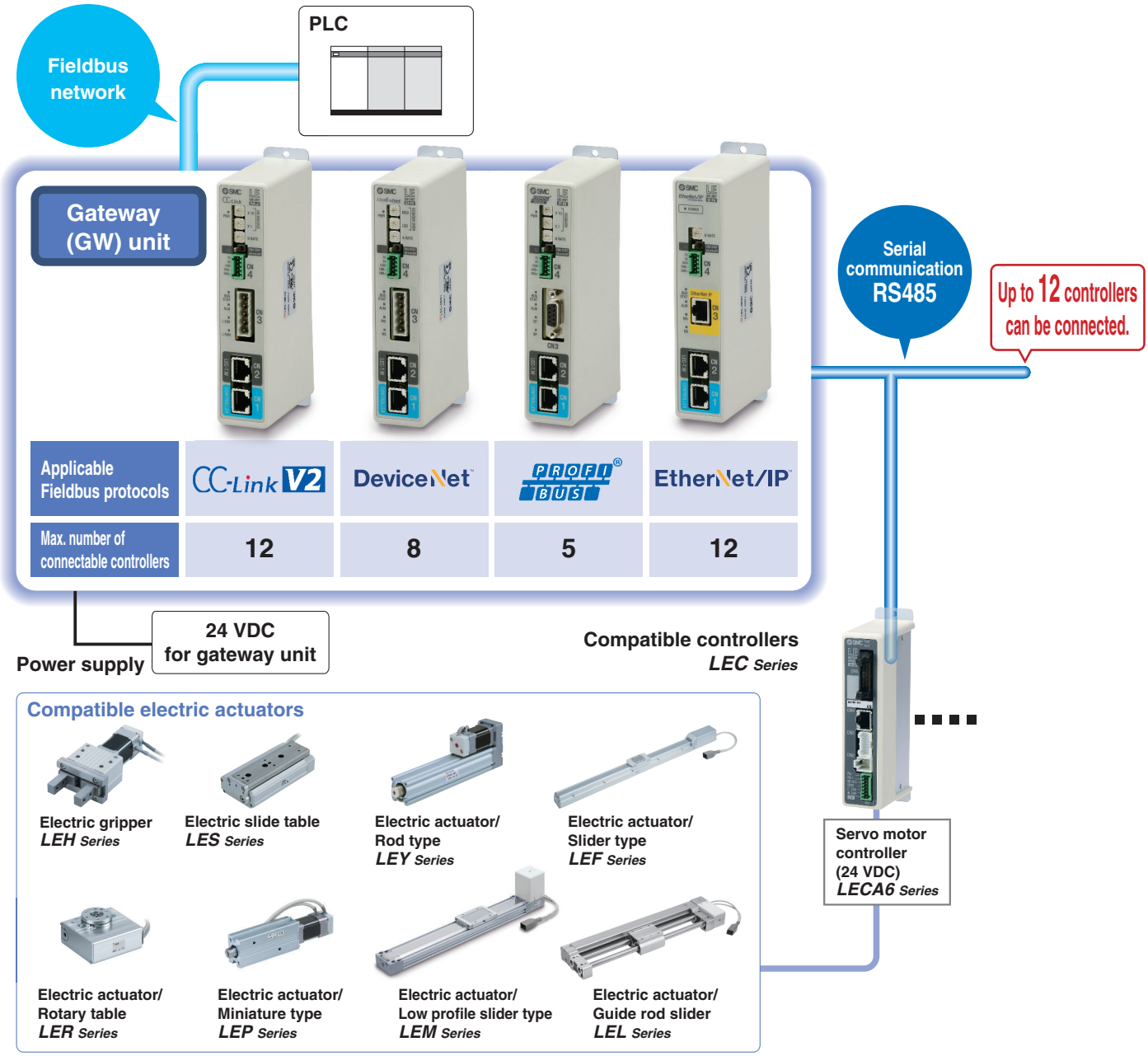
Applicable Fieldbus protocols: CC-Link V2 DeviceNet PROFIBUS EtherNet/IP

◎ **Two methods of operation**

Step data input: Operate using preset step data in the controller.

Numerical data input: The actuator operates using values such as position and speed from the PLC.

◎ **Values such as position and speed can be checked on the PLC.**



Programless Type *LECP1 Series* ▶p. 221

Step motor
(Servo/24 VDC)
LECP1

No programming required!

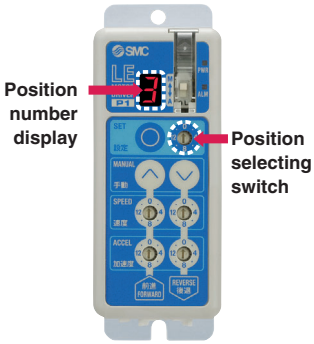
Allows for the setting up of electric actuator operation without using a PC or teaching box

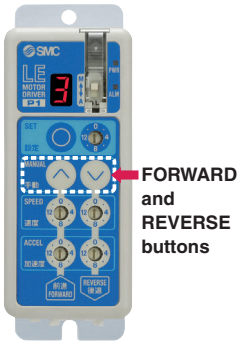
1 Setting the position number → **2 Setting the stop position** → **3 Registration**

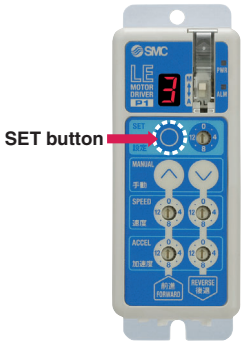
Set a registered number for the stop position.
Max. 14 points

Move the actuator to the desired stop position using the FORWARD and REVERSE buttons.

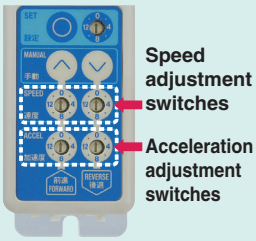
Register the stop position using the SET button.





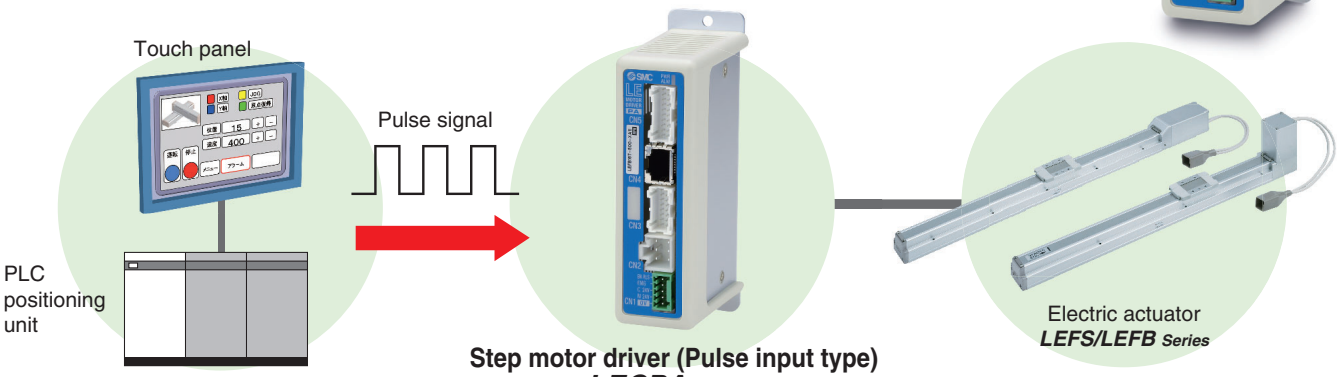


Speed/Acceleration 16-level adjustment



Pulse Input Type *LECPA Series* ▶p. 228

- **This driver uses pulse signals to allow positioning at any position. The actuator can be controlled from the customers' positioning unit.**



Step motor driver (Pulse input type)
LECPA Series

- **Return-to-origin command signal**
  Enables automatic return-to-origin action

- **With force limit function (Pushing force/Gripping force operation available)**
  Pushing force/Positioning operation is possible by switching signals.

Function

Item	Step data input type LECA6	Programless type LECP1	Pulse input type LECPA
Step data and parameter setting	• Input from controller setting software (PC) • Input from teaching box	• Selected using controller operation buttons	• Input from controller setting software (PC) • Input from teaching box
Step data "position" setting	• Numerical value input from controller setting software (PC) or teaching box • Input numerical value • Direct teaching • JOG teaching	• Direct teaching • JOG teaching	• No "Position" setting required Position and speed set by pulse signal
Number of step data	64 points	14 points	—
Operation command (I/O signal)	Step No. [IN*] input ⇒ [DRIVE] input	Step No. [IN*] input only	Pulse signal
Completion signal	[INP] output	[OUT*] output	[INP] output

Setting Items

TB: Teaching box PC: Controller setting software

Item		Contents	Easy Mode		Normal Mode	Step data input type LECA6	Pulse input type LECPA	Programless type LECP1*1
			TB	PC	TB/PC			
Step data setting (Excerpt)	**Movement MOD**	Selection of "absolute position" and "relative position"	△	●	●	Set at ABS/INC	No setting required	Fixed value (ABS)
	Speed	**Transfer speed**	●	●	●	Set in units of 1 mm/s		Select from 16 levels
	Position	[Position]: Target position [Pushing]: Pushing start position	●	●	●	Set in units of 0.01 mm		Direct teaching JOG teaching
	Acceleration/Deceleration	Acceleration/deceleration during movement	●	●	●	Set in units of 1 mm/s²		Select from 16 levels
	Pushing force	Rate of force during pushing operation	●	●	●	Set in units of 1 %	Set in units of 1 %	Select from 3 levels (weak, medium, and strong)
	Trigger LV	Target force during pushing operation	△	●	●	Set in units of 1 %	Set in units of 1 %	No setting required (same value as pushing force)
	Pushing speed	Speed during pushing operation	△	●	●	Set in units of 1 mm/s	Set in units of 1 mm/s	No setting required
	Moving force	Force during positioning operation	△	●	●	Set to 100 %	Set to (Different values for each actuator) %	
	Area output	Conditions for area output signal to turn ON	△	●	●	Set in units of 0.01 mm	Set in units of 0.01 mm	
	In position	[Position]: Width to the target position [Pushing]: How much it moves during pushing	△	●	●	Set to 0.5 mm or more (Units: 0.01 mm)	Set to (Different values for each actuator) or more (Units: 0.01 mm)	
Parameter setting (Excerpt)	**Stroke (+)**	**+ side position limit**	×	×	●	Set in units of 0.01 mm	Set in units of 0.01 mm	
	Stroke (–)	**– side position limit**	×	×	●	Set in units of 0.01 mm	Set in units of 0.01 mm	
	ORIG direction	Direction of the return to origin can be set.	×	×	●	Compatible	Compatible	Compatible
	ORIG speed	**Speed during return to origin**	×	×	●	Set in units of 1 mm/s	Set in units of 1 mm/s	No setting required
	ORIG ACC	Acceleration during return to origin	×	×	●	Set in units of 1 mm/s²	Set in units of 1 mm/s²	
Test	**JOG**		●	●	●	Continuous operation at the set speed can be tested while the switch is being pressed.	Continuous operation at the set speed can be tested while the switch is being pressed.	Hold down the MANUAL button (⌃⌄) for uniform sending (speed is a specified value).
	MOVE		×	●	●	Operation at the set distance and speed from the current position can be tested.	Operation at the set distance and speed from the current position can be tested.	Press the MANUAL button (⌃⌄) once for sizing operation (speed and sizing amount are specified values).
	Return to ORIG		●	●	●	Compatible	Compatible	Compatible
	Test drive	**Operation of the specified step data**	●	●	● (Continuous operation)	Compatible	Not compatible	Compatible
	Forced output	ON/OFF of the output terminal can be tested.	×	×	●	Compatible	Compatible	Not compatible
Monitor	**DRV mon**	**Current position, speed, force, and the specified step data can be monitored.**	●	●	●	Compatible	Compatible	
	In/Out mon	**Current ON/OFF status of the input and output terminal can be monitored.**	×	×	●	Compatible	Compatible	
ALM	**Status**	Alarm currently being generated can be confirmed.	●	●	●	Compatible	Compatible	Compatible (display alarm group)
	ALM Log record	Alarms generated in the past can be confirmed.	×	×	●	Compatible	Compatible	Not compatible
File	**Save/Load**	**Step data and parameters can be saved, forwarded, and deleted.**	×	×	●	Compatible	Compatible	
Other	**Language**	Can be changed to Japanese or English	●	●	●	Compatible	Compatible	

△: Can be set from TB Ver. 2.** (The version information is displayed on the initial screen.)

*1 The LECP1 programless type cannot be used with the teaching box and controller setting kit.

EtherCAT®/EtherNet/IP™/PROFINET/ DeviceNet™/IO-Link Direct Input Type Step Motor Controller/JXC□ Series ▶p. 238

IO-Link EtherCAT PROFINET DeviceNet EtherNet/IP

◎Two types of operation command

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

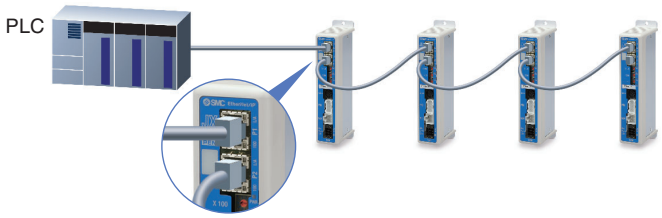
◎Numerical monitoring available

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

◎Transition wiring of communication cables

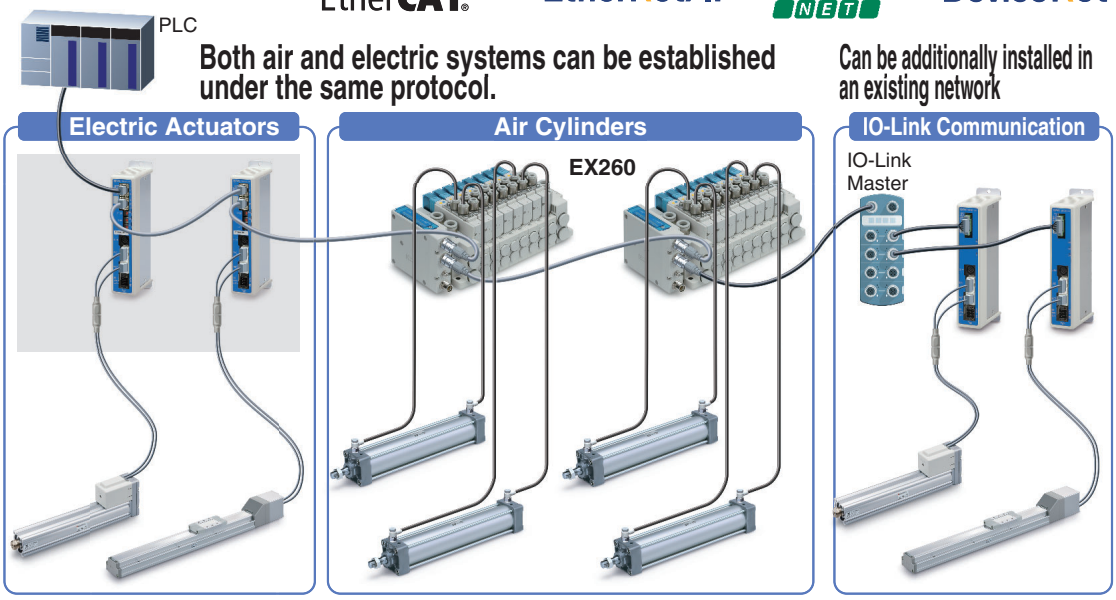
Two communication ports are provided.

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



Application

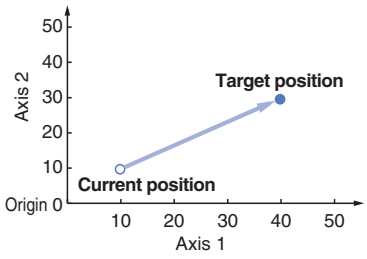
Communication protocols: EtherCAT EtherNet/IP PROFINET DeviceNet IO-Link



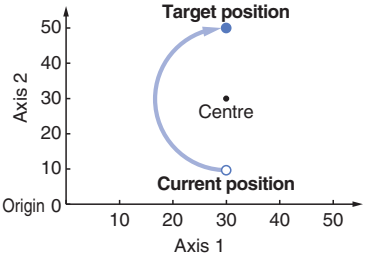
Multi-Axis Step Motor Controller

- Speed tuning control*1
  (3 Axes: JXC92 4 Axes: JXC73/83/93)
- Linear/circular interpolation

Linear interpolation



Circular interpolation



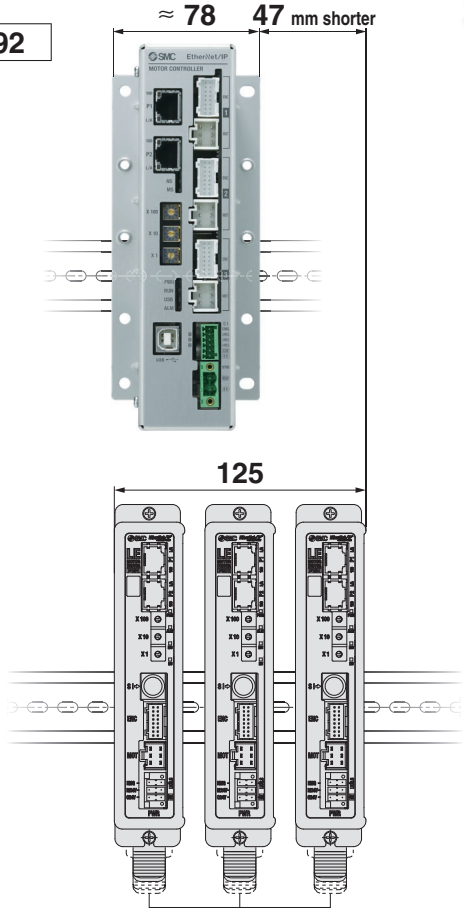
- Positioning/pushing operation
- Step data input
  (Max. 2048 points)
- Space saving, reduced wiring
- Absolute/relative position
  coordinate instructions

*1 This controls the speed of the following axis when the speed of the primary axis drops due to the effects of an external force and when a speed difference with the following axis occurs. This control is not for synchronizing the position of the primary axis and following axis.

For 3 Axes *JXC92 Series*

- EtherNet/IP™ Type
- Width: Approx. 38 % reduction

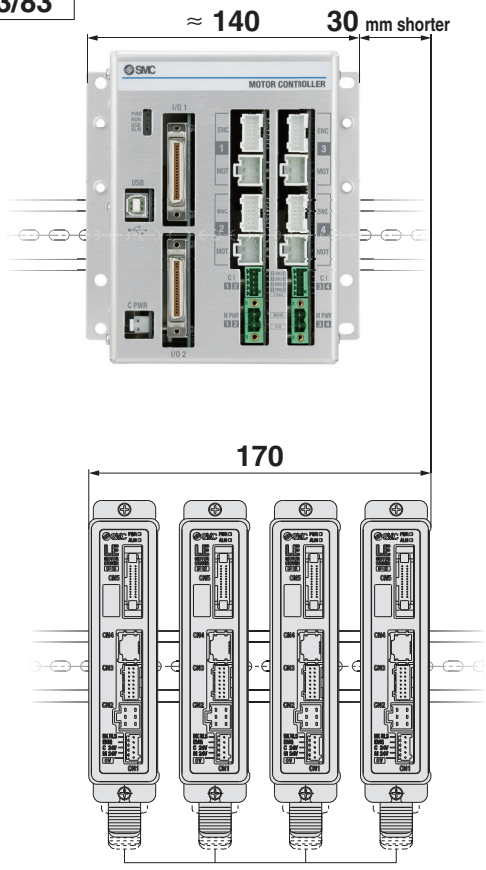
JXC92



For 4 Axes *JXC73/83/93 Series*

- Parallel I/O/
  EtherNet/IP™ Type
- Width: Approx. 18 % reduction

JXC73/83



* For LE□, size 25 or larger

SMC

Step Data Input: Max. 2048 points

For 3 Axes

3-axis operation can be set collectively in one step.

Step	Axis	Movement mode	Speed	Position	Acceleration	Deceleration	Pushing force	Trigger LV	Pushing speed	Moving force	Area 1	Area 2	In position	Comments
			mm/s	mm	mm/s²	mm/s²					mm	mm	mm	
0	Axis 1	ABS	500	100.00	3000	3000	0	85.0	50	100.0	10.0	30.0	0.5	
	Axis 2	ABS	500	100.00	3000	3000	0	85.0	50	100.0	10.0	30.0	0.5	
	Axis 3	ABS	500	100.00	3000	3000	0	85.0	50	100.0	10.0	30.0	0.5	
1	Axis 1	INC	500	200.00	3000	3000	0	85.0	50	100.0	0	0	0.5	
	Axis 2	INC	500	200.00	3000	3000	0	85.0	50	100.0	0	0	0.5	
	Axis 3	INC	500	200.00	3000	3000	0	85.0	50	100.0	0	0	0.5	
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	
2046	Axis 1	SYN-I	500	100.00	3000	3000	0	0	0	100.0	0	0	0.5	
	Axis 2	SYN-I	0	0.00	0	0	0	0	0	100.0	0	0	0.5	
	Axis 3	SYN-I	0	0.00	0	0	0	0	0	100.0	0	0	0.5	
2047	Axis 1	CIR-R	500	0.00	3000	3000	0	0	0	100.0	0	0	0.5	
	Axis 2	CIR-R	0	50.00	0	0	0	0	0	100.0	0	0	0.5	
	Axis 3*1		0	0.00	0	0	0	0	0	100.0	0	0	0.5	
	Axis 4*1		0	25.00	0	0	0	0	0	100.0	0	0	0.5	

*1 When circular interpolation (CIR-R, CIR-L, CIR-3) is selected in the movement mode, input the X and Y coordinates in the rotation centre position or input the X and Y coordinates in the passing position.

Movement mode	Pushing operation	Details
Blank	×	Invalid data (Invalid process)
ABS	○	Moves to the absolute coordinate position based on the origin of the actuator
INC	○	Moves to the relative coordinate position based on the current position
LIN-A	×	Moves to the absolute coordinate position based on the origin of the actuator by linear interpolation
LIN-I	×	Moves to the relative coordinate position based on the current position by linear interpolation
CIR-R*2	×	With Axis 1 assigned to the X-axis and Axis 2 to the Y-axis, it moves in the clockwise direction by circular interpolation. The target position and rotation centre position are specified according to the relative coordinates from the current position. The position data is assigned as follows. Axis 1: Target position X Axis 2: Target position Y Axis 3*1: Rotation centre position X Axis 4*1: Rotation centre position Y
CIR-L*2	×	With Axis 1 assigned to the X-axis and Axis 2 to the Y-axis, it moves in the counter-clockwise direction by circular interpolation. The target position and rotation centre position are specified according to the relative coordinates from the current position. The position data is assigned as follows. Axis 1: Target position X Axis 2: Target position Y Axis 3*1: Rotation centre position X Axis 4*1: Rotation centre position Y
SYN-I	×	Moves to the relative coordinate position based on the current position by speed tuning control*3
CIR-3*2	×	With Axis 1 assigned to the X-axis and Axis 2 to the Y-axis, it moves based on the three specified points by circular interpolation. The target position and passing position are specified according to the relative coordinates from the current position. The position data is assigned as follows. Axis 1: Target position X Axis 2: Target position Y Axis 3*1: Passing position X Axis 4*1: Passing position Y

*2 Performs a circular operation on a plane using Axis 1 and Axis 2

*3 This controls the speed of the following axis when the speed of the primary axis drops due to the effects of an external force and when a speed difference with the following axis occurs. This control is not for synchronizing the position of the primary axis and following axis.

For 4 Axes

4-axis operation can be set collectively in one step.

Step	Axis	Movement mode	Speed	Position	Acceleration	Deceleration	Positioning/ Pushing	Area 1	Area 2	In position	Comments
			mm/s	mm	mm/s²	mm/s²		mm	mm	mm	
0	Axis 1	ABS	100	200.00	1000	1000	0	6.0	12.0	0.5	
	Axis 2	ABS	50	100.00	1000	1000	0	6.0	12.0	0.5	
	Axis 3	ABS	50	100.00	1000	1000	0	6.0	12.0	0.5	
	Axis 4	ABS	50	100.00	1000	1000	0	6.0	12.0	0.5	
1	Axis 1	INC	500	250.00	1000	1000	1	0	0	20.0	
	Axis 2	INC	500	250.00	1000	1000	1	0	0	20.0	
	Axis 3	INC	500	250.00	1000	1000	1	0	0	20.0	
	Axis 4	INC	500	250.00	1000	1000	1	0	0	20.0	
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	
2046	Axis 4	ABS	200	700	500	500	0	0	0	0.5	
2047	Axis 1	ABS	500	0.00	3000	3000	0	0	0	0.5	
	Axis 2	ABS	500	0.00	3000	3000	0	0	0	0.5	
	Axis 3	ABS	500	0.00	3000	3000	0	0	0	0.5	
	Axis 4	ABS	500	0.00	3000	3000	0	0	0	0.5	

Movement mode	Pushing operation	Details
Blank	×	Invalid data (Invalid process)
ABS	○	Moves to the absolute coordinate position based on the origin of the actuator
INC	○	Moves to the relative coordinate position based on the current position
LIN-A	×	Moves to the absolute coordinate position based on the origin of the actuator by linear interpolation
LIN-I	×	Moves to the relative coordinate position based on the current position by linear interpolation
CIR-R*1	×	With Axis 1 assigned to the X-axis and Axis 2 to the Y-axis, it moves in the clockwise direction by circular interpolation. The target position and rotation centre position are specified according to the relative coordinates from the current position. The position data is assigned as follows. Axis 1: Target position X Axis 2: Target position Y Axis 3: Rotation centre position X Axis 4: Rotation centre position Y
CIR-L*1	×	With Axis 1 assigned to the X-axis and Axis 2 to the Y-axis, it moves in the counter-clockwise direction by circular interpolation. The target position and rotation centre position are specified according to the relative coordinates from the current position. The position data is assigned as follows. Axis 1: Target position X Axis 2: Target position Y Axis 3: Rotation centre position X Axis 4: Rotation centre position Y
SYN-I	×	Moves to the relative coordinate position based on the current position by speed tuning control*2

*1 Performs a circular operation on a plane using Axis 1 and Axis 2

*2 This controls the speed of the following axis when the speed of the primary axis drops due to the effects of an external force and when a speed difference with the following axis occurs. This control is not for synchronizing the position of the primary axis and following axis.

● Controller Setting Software (Connection with a PC)

For 3 Axes	For 4 Axes
JXC92	JXC73/83/93

Easy file management

Load	The step data is loaded from the file.
Save	The step data is saved in a file.
Upload	The step data is loaded from the controller.
Download	The step data is written in the controller.

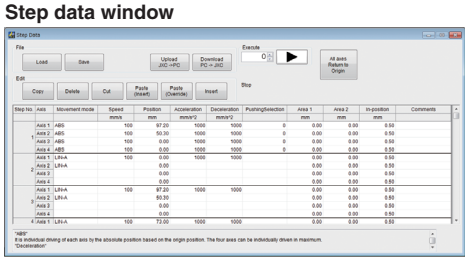
Abundant edit functions

Copy	The selected step data is copied to the clipboard.
Delete	The selected step data is deleted.
Cut	The selected step data is cut.
Paste (Insert)	The step data copied to the clipboard is inserted into the cursor's position.
Paste (Overwrite)	The step data copied to the clipboard overwrites the data at the cursor position.
Insert	A blank line is inserted in the selected step data line.

Operation confirmation of entered step data

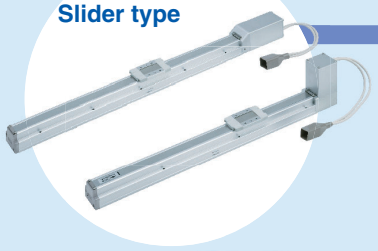
0	Enter the step number to be executed.
▶	Executes the specified step number.
Stop	Displays whether the step number is being executed or stopped.
All axes return to origin	Performs a return to origin of all the valid axes.

Step data window



System Construction/General Purpose I/O

● Electric actuator/ Slider type



Provided by the customer

PLC

Power supply for I/O signal 24 VDC*1

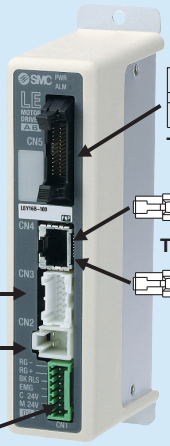
● I/O cable p. 213, 227

Controller type	Part no.
LECA6	LEC-CN5-□
LECP1 (Programless)	LEC-CK4-□

Programless type
LECP1
p. 221

* The teaching box, controller setting kit, and Touch Operator Interface/Human-Machine Interface cannot be connected.

● Controller*2



To CN5

To CN4

To CN3

To CN2

To CN1

Provided by the customer

Power supply for controller 24 VDC*1

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

● Power supply plug (Accessory)
<Applicable cable size>
AWG20 (0.5 mm²)

Step data input type
LECA6
p. 205

● Actuator cable*2 p. 211, 226

Controller type	Standard cable	Robotic cable
LECA6 (Step data input type)	—	LE-CA-□
LECP1 (Programless type)	LE-CP-□-S	LE-CP-□

*2 Can be included as an option. Refer to the "How to Order" page of the actuator.

● Touch Operator Interface/Human-Machine Interface (Provided by the customer)

GP4501T/GP3500T
Schneider Electric Japan Holdings Ltd.

Pro-face for the best interface

Cockpit parts can be downloaded for free via the Pro-face web-site.
By using the cockpit parts, adjustments can be made from the Touch Operator Interface.

GOT2000 Series
Mitsubishi Electric Corporation

GOT2000 Graphic Operation Terminal

Sample screens for monitoring and changing the current value and set value of the electric actuator can be downloaded for free via the Mitsubishi Electric website.

Options

● Teaching box p. 215
(With 3 m cable)
LEC-T1-3JG□

or

● Communication cable for controller setting p. 214
Communication cable: LEC-W2A-C
USB cable: LEC-W2-U
Controller setting software
USB driver
* Download from SMC's website:
https://www.smc.eu

Communication cable (3 m)

● USB cable

PC

* Cannot be used with the programless type (LECP1)

System Construction/Fieldbus Network

PLC
(Provided by the customer)

Power supply for gateway unit
24 VDC*1

Power supply

Fieldbus network

Gateway (GW) unit p. 217

Applicable Fieldbus protocols
CC-Link Ver. 2.0
DeviceNet™
PROFIBUS DP
EtherNet/IP™

● Power supply connector
(Accessory)
To CN4

● Communication connector
(Accessory)*2
To CN3

*2 CC-Link Ver. 2.0
DeviceNet™

To CN2

To CN1

● Communication cable p. 217
LEC-CG1-□

Options

● Communication cable p. 216 for controller setting
Communication cable: LEC-W2A-C
USB cable: LEC-W2-U

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

● Communication cable
USB cable ●

PC
(Provided by the customer)

or

● Teaching box p. 217
(With 3 m cable)
LEC-T1-3JG□

● Cable between branches p. 217
LEC-CG2-□

● Terminating resistor connector 120 Ω
LEC-CGR

● Branch connector p. 217
LEC-CGD

● Communication cable p. 217
LEC-CG1-□

● Controller p. 205

To CN4

● Power supply connector
(Accessory)

To CN1

Controller input power supply*1

● Controller p. 205

● Power supply connector
(Accessory)

To CN1

Controller input power supply*1

Applicable Fieldbus protocols	Max. number of connectable controllers
CC-Link Ver. 2.0	12
DeviceNet™	8
PROFIBUS DP	5
EtherNet/IP™	12

Compatible Controllers

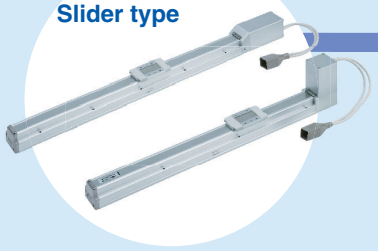
Servo motor controller (24 VDC)	**LECA6** Series

*1 Connect the 0 V terminals for both the controller input power supply and the gateway unit power supply.
When compliance with UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

● Electric actuator/
Slider type

System Construction/Pulse Signal

● Electric actuator/
Slider type



● Current limiting resistor p. 234
LEC-PA-R-□

＊ The current limiting resistor is used when the pulse signal output of the positioning unit is open collector output. For details, refer to page 231.

Provided by the customer

PLC

Power supply for I/O signal
24 VDC*1

*1 When compliance with UL is required, the electric actuator and driver should be used with a UL1310 Class 2 power supply.

● Driver*2

● I/O cable p. 234

Driver type	Part no.
LECPA	LEC-CL5-□

To CN5

To CN4

To CN3

To CN2

To CN1

Provided by the customer

Power supply for driver
24 VDC*1

*1 When compliance with UL is required, the electric actuator and driver should be used with a UL1310 Class 2 power supply.

● Power supply plug (Accessory)
<Applicable cable size>
AWG20 (0.5 mm²)

Pulse input type
LECPA
p. 230

● Actuator cable*2 p. 233

Driver type	Standard cable	Robotic cable
LECPA (Pulse input type)	LE-CP-□-S	LE-CP-□

*2 Can be included as an option. Refer to the "How to Order" page of the actuator.

Options

● Teaching box p. 236
(With 3 m cable)
LEC-T1-3JG□

or

● Communication cable for controller setting p. 235
Communication cable: LEC-W2A-C
USB cable: LEC-W2-U

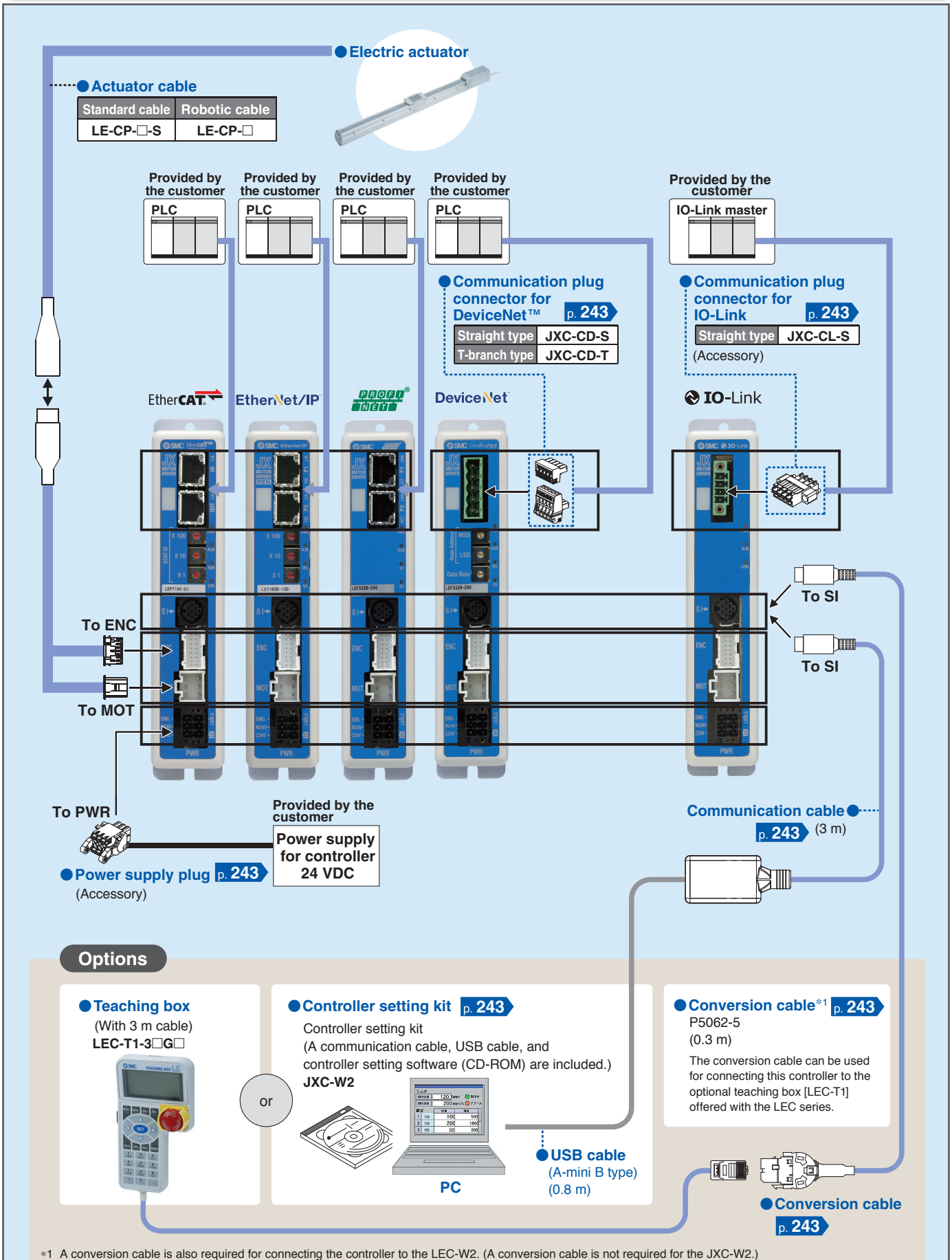
Controller setting software
USB driver
＊ Download from SMC's website:
https://www.smc.eu

Communication cable

USB cable

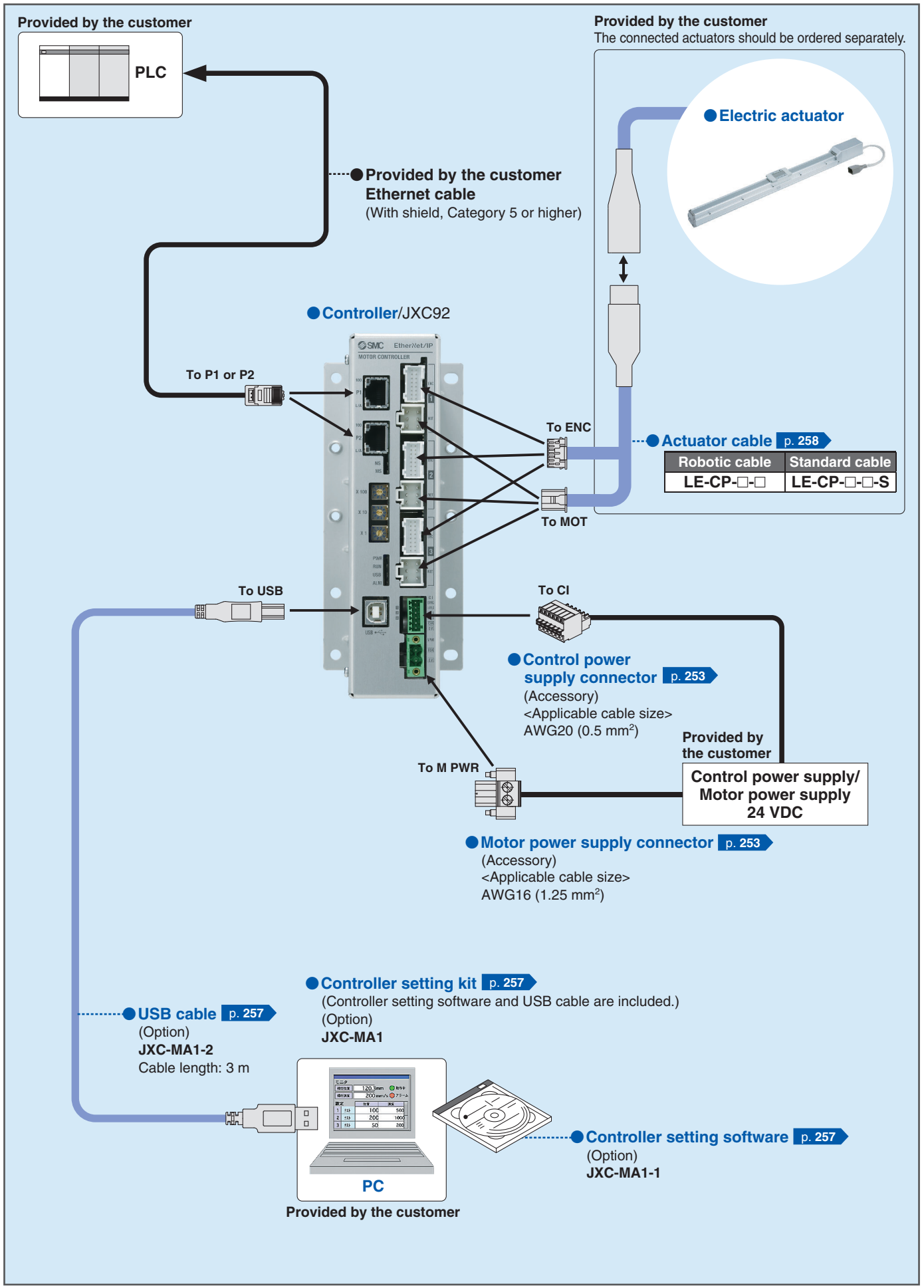
PC

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



*1 A conversion cable is also required for connecting the controller to the LEC-W2. (A conversion cable is not required for the JXC-W2.)

System Construction/EtherNet/IP™ Type (JXC92)



System Construction/Parallel I/O (JXC73/83)

Provided by the customer

PLC

Power supply for I/O signal 24 VDC

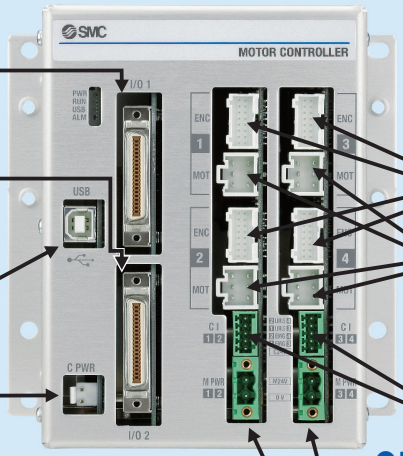
●I/O cable p. 256
(Option)

Part no.
JXC-C2-□

Provided by the customer
The connected actuators should be ordered separately.

●Electric actuator

●Controller/JXC73/83



To I/O

To USB

To C PWR

To ENC

To MOT

To CI

●Actuator cable p. 258

Robotic cable	Standard cable
LE-CP-□	LE-CP-□-S

●Motor control power supply connector p. 253
(Accessory)
<Applicable cable size>
AWG20 (0.5 mm²)

●Cable with main control power supply connector p. 256
Cable length: 1.5 m (Accessory)

Part no.
JXC-C1

Provided by the customer

Motor control power supply/ Motor power supply 24 VDC

To M PWR

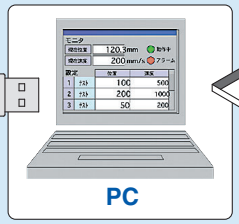
Provided by the customer

Main control power supply 24 VDC

●Motor power supply connector p. 253
(Accessory)
<Applicable cable size>
AWG16 (1.25 mm²)

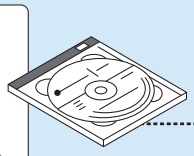
●Controller setting kit p. 257
(Controller setting software and USB cable are included.)
(Option)
JXC-W1

●USB cable p. 257
(Option)
JXC-W1-2
Cable length: 3 m



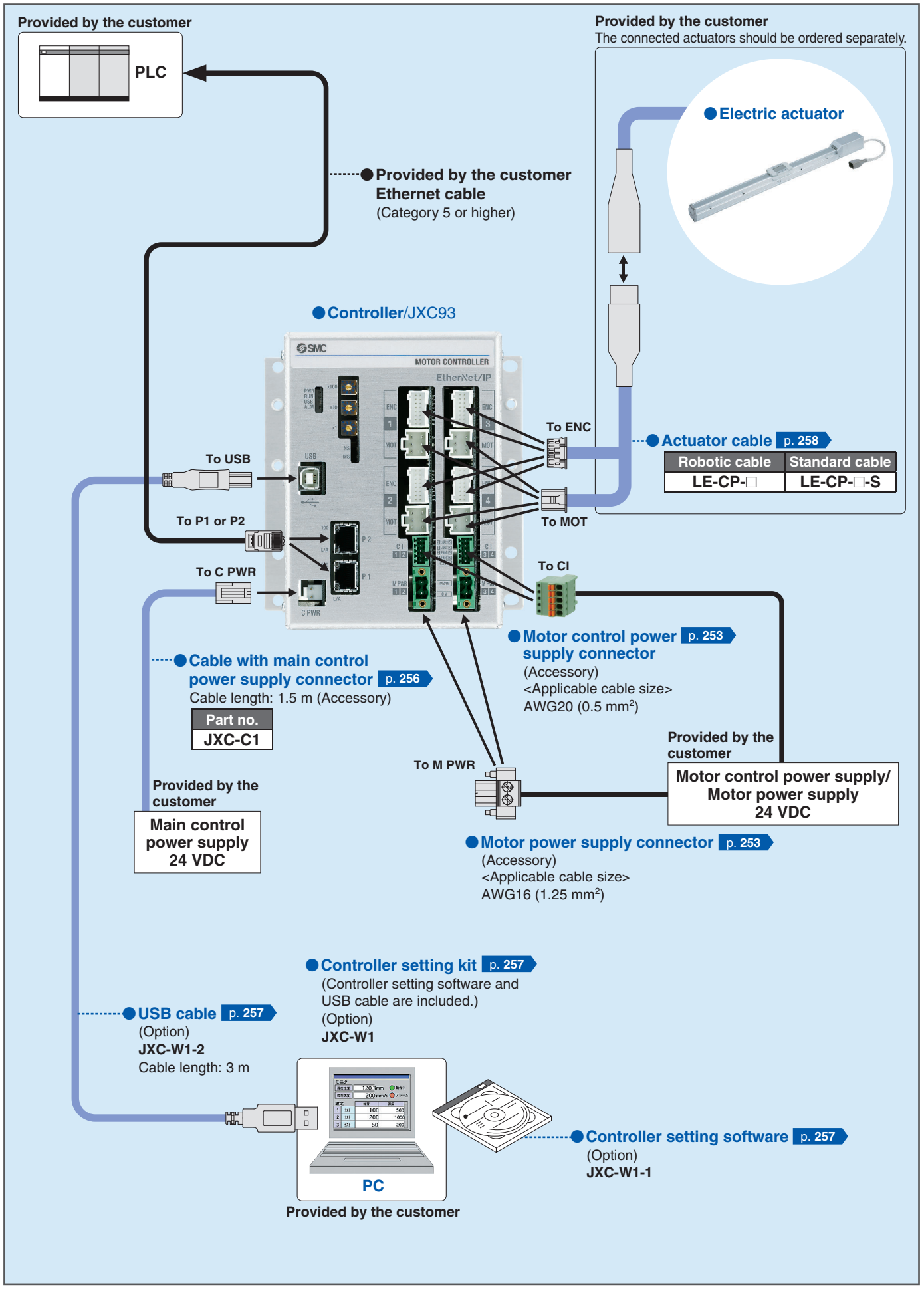
PC

Provided by the customer

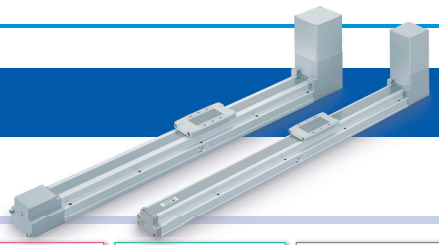


●Controller setting software p. 257
(Option)
JXC-W1-1

System Construction/EtherNet/IP™ Type (JXC93)



AC Servo Motor Driver



LECS□/LECS□-T/LECY□ Series List

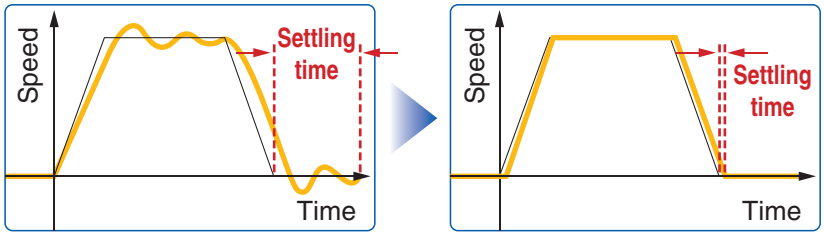
	Series	Compatible motor			Control method			Application/ Function		Compatible option
		100 W	200 W	400 W	Positioning ∗1	Pulse	Network direct input	∗2 Synchronous	Pushing operation ∗4	Setup software
Incremental Type	**LECSA** (Pulse input type/ Positioning type)	●	●	●	Up to 7 points ●	●				LEC-MRC2 ●
Absolute Type	**LECSB** (Pulse input type)	●	●	●		●				LEC-MRC2 ●
	CC-Link **LECSC** (CC-Link direct input type)	●	●	●	Up to 255 points ●		CC-Link Ver.1.10 ●			LEC-MRC2 ●
	SSCNETⅢ SERVO SYSTEM CONTROLLER NETWORK **LECSS** (SSCNETⅢ type) Compatible with Mitsubishi Electric's servo system controller network	●	●	●			SSCNETⅢ ●	∗2 ○	∗4 ○	LEC-MRC2 ●
	LECSB-T (Pulse input type/ Positioning type)	●	●	●	Up to 255 points ●	●			∗4 ○	LEC-MRC2 ●
	CC-Link **LECSC-T** (CC-Link direct input type)	●	●	●	Up to 255 points ●		CC-Link Ver.1.10 ●			LEC-MRC2 ●
	SSCNETⅢ/H SERVO SYSTEM CONTROLLER NETWORK **LECSS-T** (SSCNETⅢ/H type) Compatible with Mitsubishi Electric's servo system controller network	●	●	●			SSCNETⅢ/H ●	∗2 ○	∗4 ○	LEC-MRC2 ●
	MECHATROLINK-Ⅱ **LECYM**	●	●	●			MECHATRO LINK-Ⅱ ●	∗3 ○		SigmaWin+™ ●
	MECHATROLINK-Ⅲ **LECYU**	●	●	●			MECHATRO LINK-Ⅲ ●	∗3 ○		SigmaWin+™ ●

∗1 For positioning types, the settings need to be changed in order to use the max. set values. Setup software (MR Configurator2™) LEC-MRC2 is required.
∗2 Available when a Mitsubishi motion controller is used as the master
∗3 Available when a motion controller is used as the master
∗4 The LECSB2-T is only applicable when the control method is positioning. The point table is used to set the pushing operation settings.
To set the pushing operation settings, an additional dedicated file (pushing operation extension file) must be downloaded separately to be used with the setup software (MR Configurator2™: LEC-MRC2□). Please download this dedicated file from the SMC website: https://www.smc.eu
When selecting the LECSS or LECSS2-T, combine it with a master station (such as the Simple Motion module manufactured by Mitsubishi Electric Corporation) which has a pushing operation function.
∗ For customer-provided PLC and motion controller setting and usage instructions, confirm with the retailer or manufacturer.

Gain adjustment using auto tuning

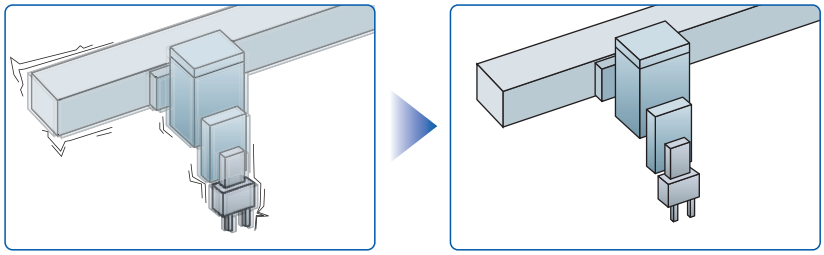
Auto-tuning function

- Controls the difference between the command value and the actual action



Vibration suppression control function

- Automatically suppresses low-frequency machine vibrations (1 to 100 Hz)



AC Servo Motor Driver

With display setting function

One-touch adjustment button

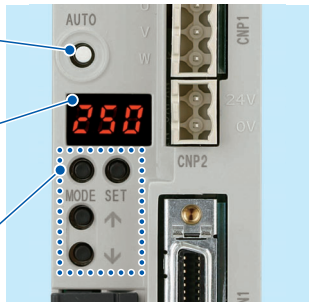
One-touch servo adjustment

Display

Display the monitor, parameters, and alarm.

Settings

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



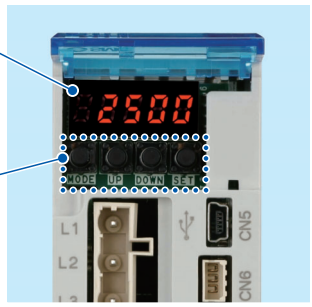
LECSA

Display

Display the monitor, parameters, and alarm.

Settings

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



(With the front cover opened)

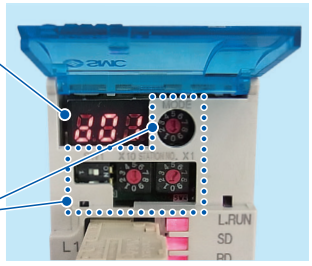
LECSB

Display

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

Settings

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



(With the front cover opened)

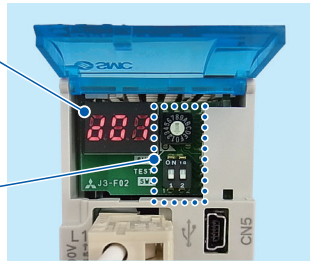
LECSC

Display

Display the communication status with the driver and the alarm.

Settings

Switches for selecting the axis and switching to the test operation



(With the front cover opened)

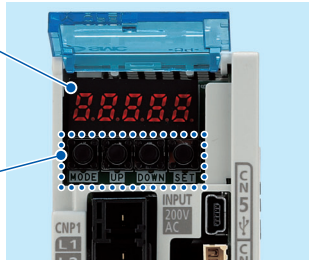
LECSS

Display

Display the monitor, parameters, and alarm.

Settings

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



(With the front cover opened)

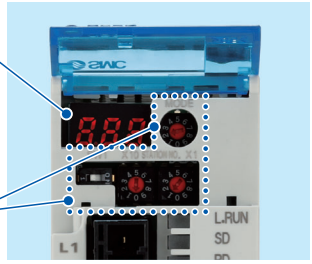
LECSB-T

Display

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

Settings

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



(With the front cover opened)

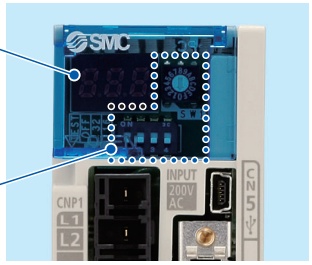
LECSC-T

Display

Display the communication status with the driver and the alarm.

Settings

Switches for axis setting, control axis deactivation, switching to the test operation, etc.



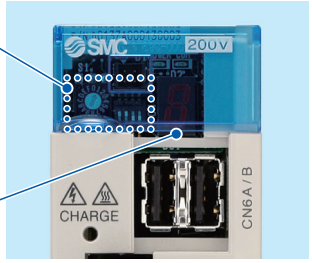
LECSS2-T

Settings

Switches for station address, communication speed, number of transmission bytes, etc.

Display

Display the driver status and alarm.



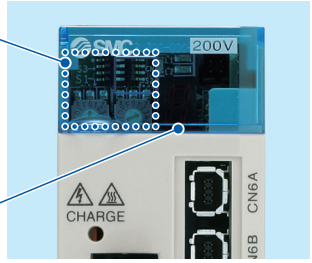
LECYM

Settings

Switches for station address, number of transmission bytes, etc.

Display

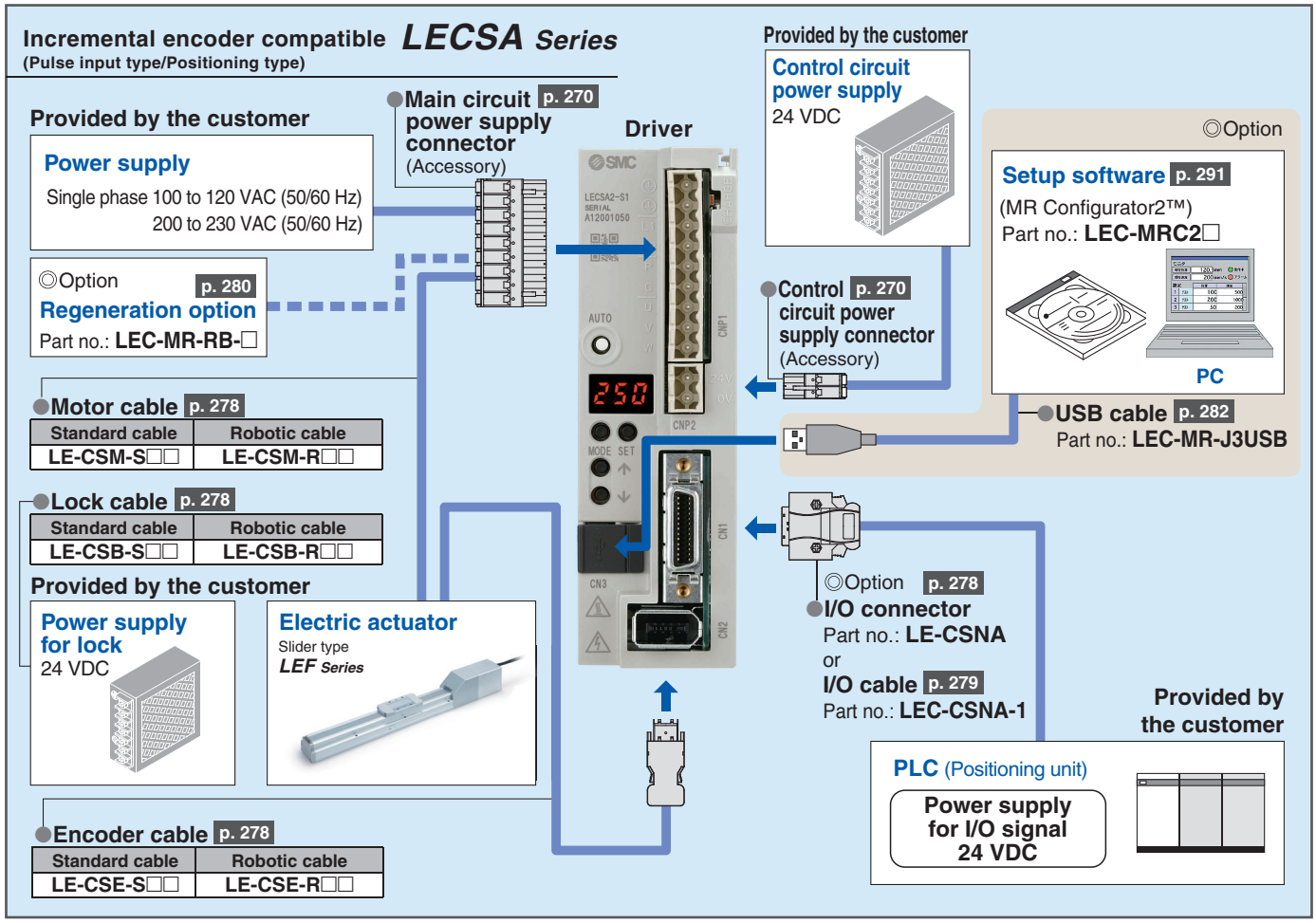
Display the driver status and alarm.



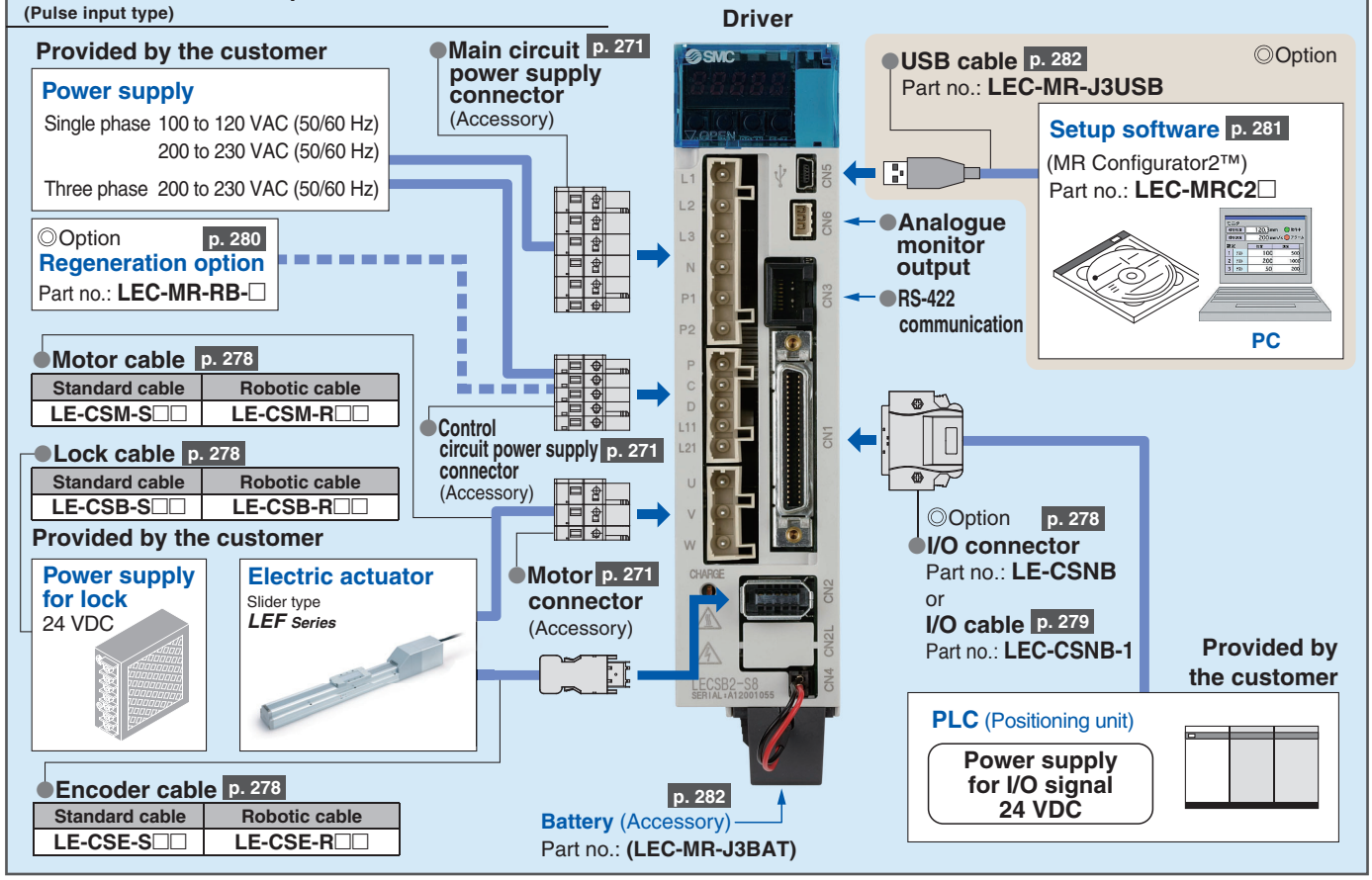
LECYU

System Construction

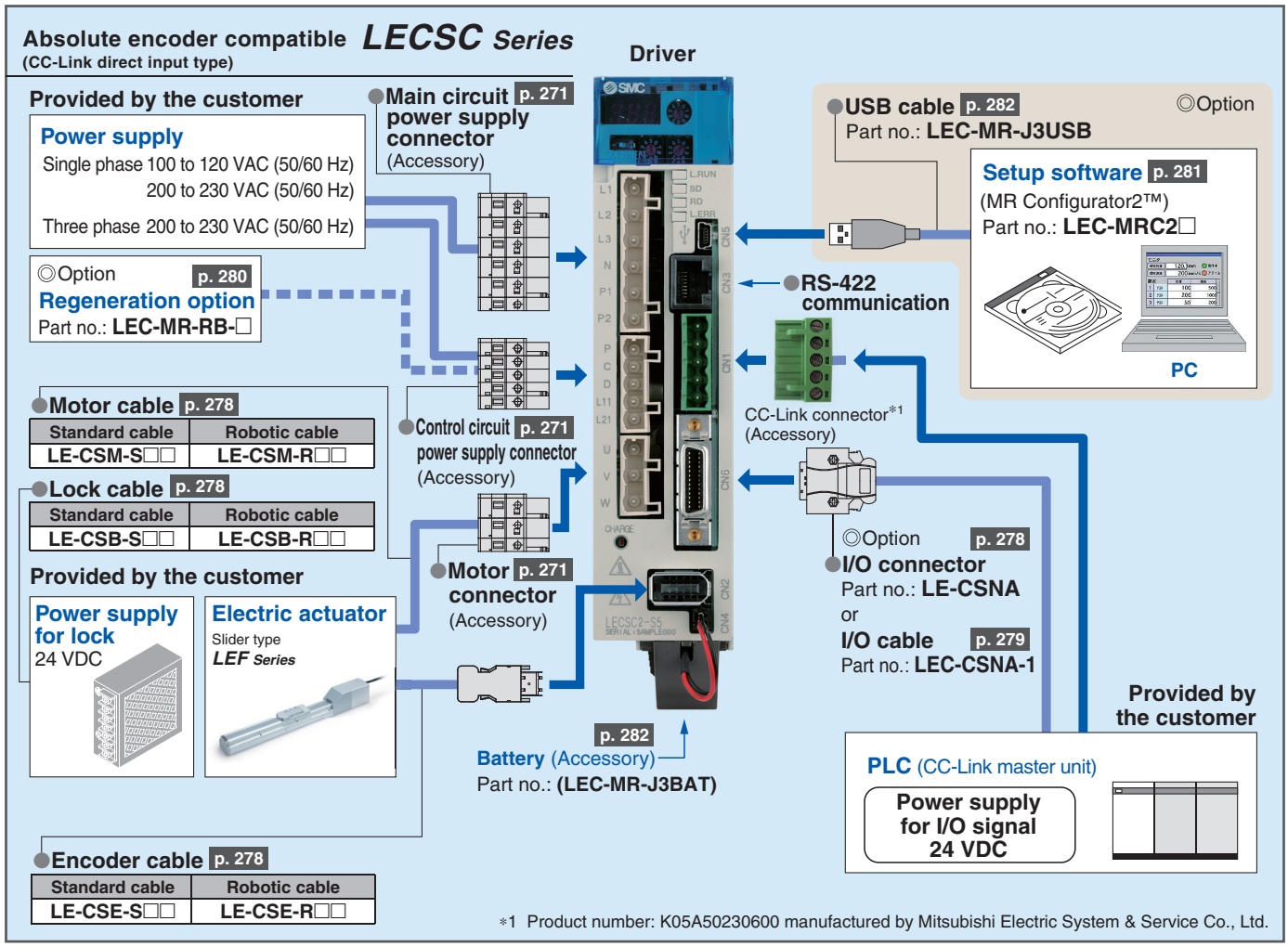
Incremental encoder compatible *LECSA Series*
(Pulse input type/Positioning type)



Absolute encoder compatible *LECSB Series*
(Pulse input type)



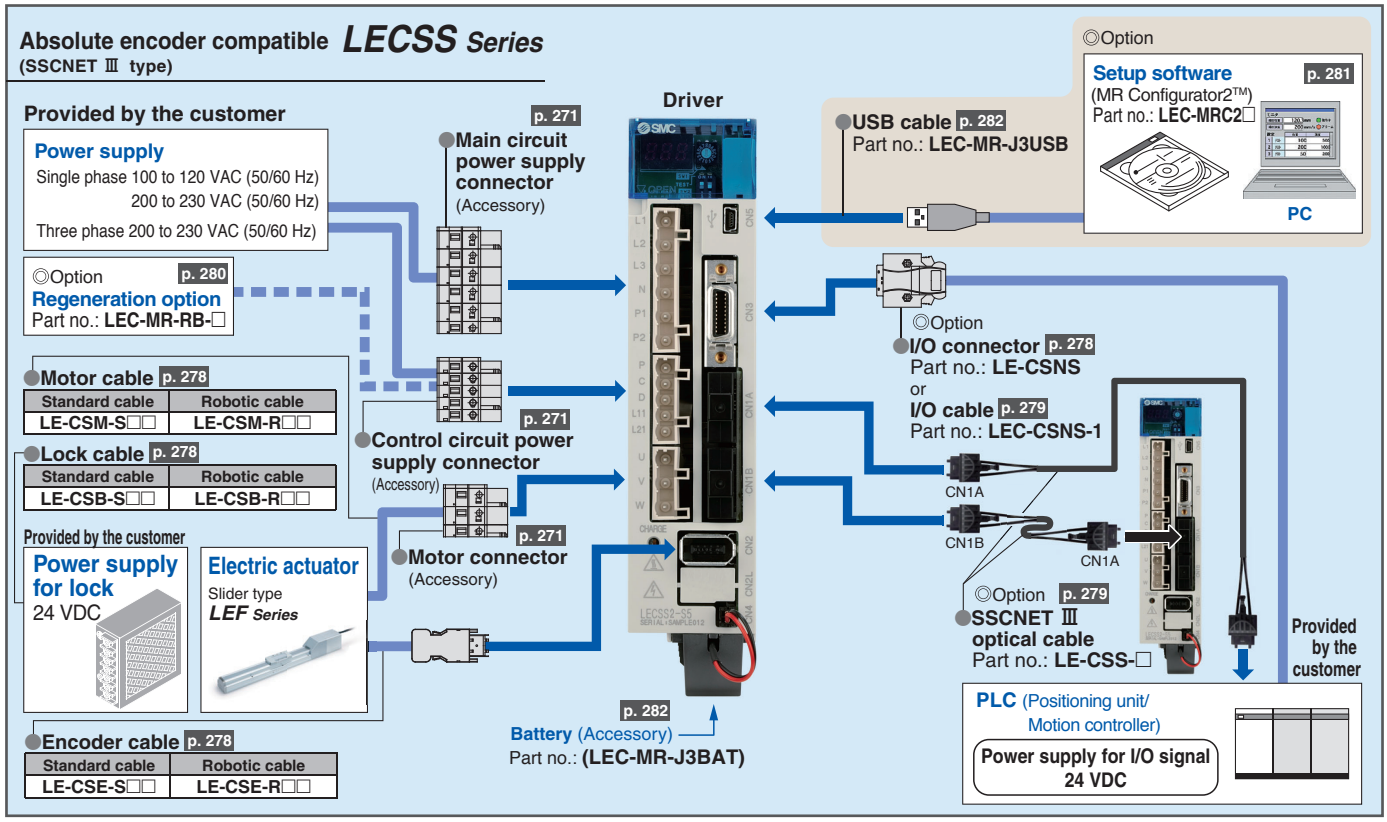
System Construction



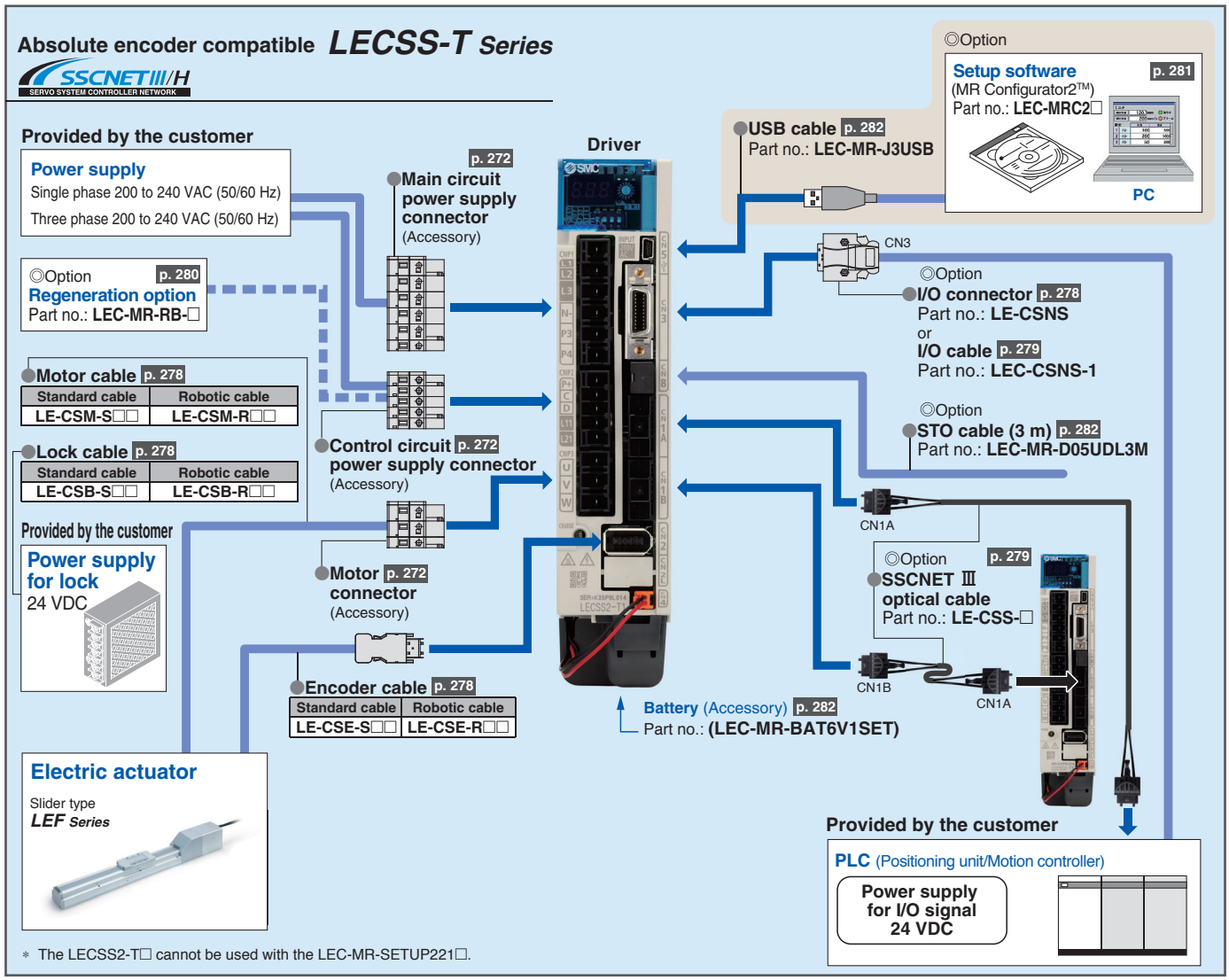
*1 Product number: K05A50230600 manufactured by Mitsubishi Electric System & Service Co., Ltd.

System Construction

Absolute encoder compatible *LECSS Series*
(SSCNET Ⅲ type)



Absolute encoder compatible *LECSS-T Series*
SSCNET Ⅲ/H
SERVO SYSTEM CONTROLLER NETWORK



* The LECSS2-T□ cannot be used with the LEC-MR-SETUP221□.

System Construction

Absolute encoder compatible LECYM Series
MECHATROLINK-Ⅱ type

Provided by the customer

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

Provided by the customer

External regenerative resistor p. 288

＊ If an external regenerative resistor is required, it should be provided by the customer. For external regenerative resistor selection, refer to the compatible actuator catalogue.

Main circuit power supply connector (Accessory) p. 288

Driver

◎Option
MECHATROLINK-Ⅱ cable p. 293
Part no.: LEC-CYM-□

2nd driver

Provided by the customer
PLC (Positioning unit/Motion controller)
Power supply for I/O signal 24 VDC

Motor cable p. 291

Standard cable	Robotic cable
LE-CYM-S□A-□	LE-CYM-R□A-□

Motor cable for lock option p. 191

Standard cable	Robotic cable
LE-CYB-S□A-□	LE-CYB-R□A-□

Provided by the customer
Power supply for lock
24 VDC

Electric actuator
Slider type
LEF Series

Motor p. 288 connector (Accessory)

◎Option
USB cable p. 294
Part no.: LEC-JZ-CVUSB

Setup software p. 294
(SigmaWin+™)
Please download it via our website:
https://www.smc.eu

PC

◎Option
I/O p. 292 connector
Part no.: LE-CYNA
or
I/O cable p. 292
Part no.: LEC-CSNA-1

Encoder cable p. 291

Standard cable	Robotic cable
LE-CYE-S□A	LE-CYE-R□A

Cable for safety function device (3 m) p. 294
Part no.: LEC-JZ-CVSAF

＊ Order the USB cable (Part no.: **LEC-JZ-CVUSB**) separately to use this software.

Absolute encoder compatible LECYU Series
MECHATROLINK-Ⅲ type

Provided by the customer

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

Provided by the customer

External regenerative resistor p. 288

＊ If an external regenerative resistor is required, it should be provided by the customer. For external regenerative resistor selection, refer to the compatible actuator catalogue.

Main circuit power supply connector (Accessory) p. 288

Driver

◎Option
MECHATROLINK-Ⅲ cable p. 293
Part no.: LEC-CYU-□

2nd driver

Provided by the customer
PLC (Positioning unit/Motion controller)
Power supply for I/O signal 24 VDC

Motor cable p. 291

Standard cable	Robotic cable
LE-CYM-S□A-□	LE-CYM-R□A-□

Motor cable for lock option p. 291

Standard cable	Robotic cable
LE-CYB-S□A-□	LE-CYB-R□A-□

Provided by the customer
Power supply for lock
24 VDC

Electric actuator
Slider type
LEF Series

Motor p. 288 connector (Accessory)

◎Option
USB cable p. 294
Part no.: LEC-JZ-CVUSB

Setup software p. 294
(SigmaWin+™)
Please download it via our website:
https://www.smc.eu

PC

◎Option
I/O p. 292 connector
Part no.: LE-CYNA
or
I/O cable p. 292
Part no.: LEC-CSNA-1

Encoder cable p. 291

Standard cable	Robotic cable
LE-CYE-S□A	LE-CYE-R□A

Cable for safety function device (3 m) p. 294
Part no.: LEC-JZ-CVSAF

＊ Order the USB cable (Part no.: **LEC-JZ-CVUSB**) separately to use this software.

SMC Electric Actuator

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

p. 34

Ball screw drive
***LEFS* Series**

Clean room compatible

LEFS Series

Size	Max. work load [kg]	Stroke [mm]
16	15	Up to 500
25	30	Up to 800
32	50	Up to 1000
40	65	Up to 1200

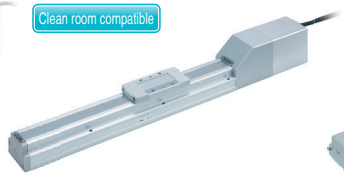
Belt drive
***LEFB* Series**

LEFB Series

Size	Max. work load [kg]	Stroke [mm]
16	1	Up to 1000
25	10	Up to 2000
32	19	Up to 2000

Ball screw drive
***LEFS* Series**

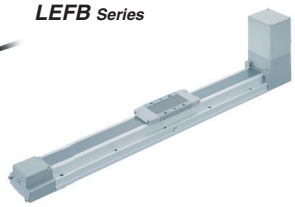
Clean room compatible



LEFS Series

Size	Max. work load [kg]	Stroke [mm]
25	20	Up to 800
32	45	Up to 1000
40	60	Up to 1200

Belt drive
***LEFB* Series**

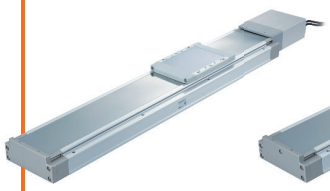


LEFB Series

Size	Max. work load [kg]	Stroke [mm]
25	5	Up to 2000
32	15	Up to 2500
40	25	Up to 3000

High Rigidity Slider Type
AC Servo Motor

Ball screw drive
***LEJS* Series**



LEJS Series

Size	Max. work load [kg]	Stroke [mm]
40	55	200 to 1200
63	85	300 to 1500

Belt drive
***LEJB* Series**

LEJB Series

Size	Max. work load [kg]	Stroke [mm]
40	20	200 to 2000
63	30	300 to 3000

Guide Rod Slider
Step Motor (Servo/24 VDC)

Belt drive
***LEL* Series**

LEL25M Series
Sliding bearing

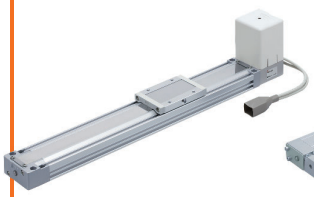
Size	Max. work load [kg]	Stroke [mm]
25	3	Up to 1000

LEL25L Series
Ball bushing bearing

Size	Max. work load [kg]	Stroke [mm]
25	5	Up to 1000

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

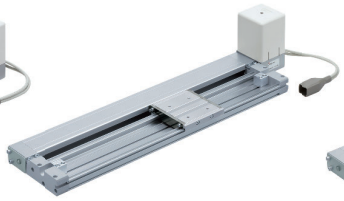
Basic type
***LEMB* Series**



LEMB Series

Size	Max. work load [kg]	Stroke [mm]
25	6	Up to 2000
32	11	Up to 2000

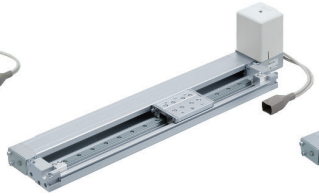
Cam follower guide type
***LEMC* Series**



LEMC Series

Size	Max. work load [kg]	Stroke [mm]
25	10	Up to 2000
32	20	Up to 2000

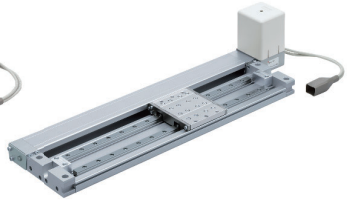
Linear guide single axis type
***LEMH* Series**



LEMH Series

Size	Max. work load [kg]	Stroke [mm]
25	10	Up to 1000
32	20	Up to 1500

Linear guide double axis type
***LEMHT* Series**



LEMHT Series

Size	Max. work load [kg]	Stroke [mm]
25	10	Up to 1000
32	20	Up to 1500

SMC Electric Actuator

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

Basic type
***LEY* Series**

Dust-tight/Water-jet-proof

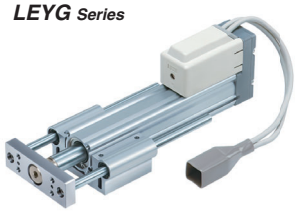
LEY Series

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
***LEY□D* Series**

Dust-tight/Water-jet-proof

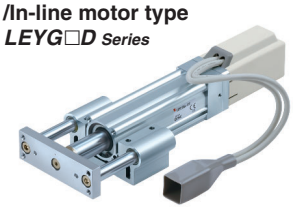
Guide rod type
***LEYG* Series**



LEYG Series

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
***LEYG□D* Series**



AC Servo Motor

Basic type
***LEY* Series**

Dust-tight/Water-jet-proof

LEY Series

Size	Pushing force [N]	Stroke [mm]
25	485	Up to 400
32	588	Up to 500
63	3343	Up to 800

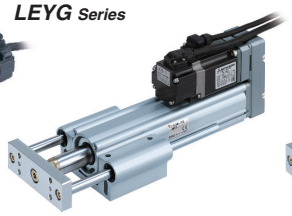
In-line motor type
***LEY□D* Series**

Dust-tight/Water-jet-proof

LEY Series

Size	Pushing force [N]	Stroke [mm]
25	485	Up to 400
32	736	Up to 500
63	1910	Up to 800

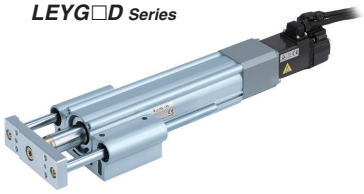
Guide rod type
***LEYG* Series**



LEYG Series

Size	Pushing force [N]	Stroke [mm]
25	485	Up to 300
32	588	

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



LEYG Series

Size	Pushing force [N]	Stroke [mm]
25	485	Up to 300
32	736	

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

LES Series

Basic type/R type
***LES□R* Series**

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
***LES□L* Series**

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

LESH Series

Basic type/R type
***LESH□R* Series**

Size	Max. work load [kg]	Stroke [mm]
8	2	50, 75
16	6	50, 100
25	9	50, 100 150

Symmetrical type/L type
***LESH□L* Series**

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

Miniature Step Motor (Servo/24 VDC)

Rod type
***LEPY* Series**

LEPY Series

Size	Max. work load [kg]	Stroke [mm]
6	1	25, 50, 75
10	2	

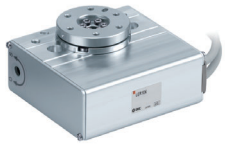
Slide table type
***LEPS* Series**

LEPS Series

Size	Max. work load [kg]	Stroke [mm]
6	1	25
10	2	50

Rotary Table Step Motor (Servo/24 VDC)

Basic type
***LER* Series**



High-precision type
***LERH* Series**

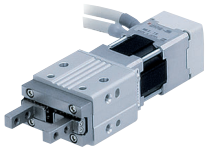
LER Series

Size	Rotating torque [N·m]		Max. speed [°/s]	
	Basic	High torque	Basic	High torque
10	0.2	0.3	420	280
30	0.8	1.2		
50	6.6	10		

SMC Electric Actuator

Gripper Step Motor (Servo/24 VDC)

2-finger type
***LEHZ* Series**



LEHZ Series

Size	Max. gripping force [N]		Stroke/both sides [mm]
	Basic	Compact	
10	14	6	4
16		8	6
20	40	28	10
25			14
32	130	—	22
40	210	—	30

2-finger type
With dust cover
***LEHZJ* Series**

LEHZJ Series

Size	Max. gripping force [N]		Stroke/both sides [mm]
	Basic	Compact	
10	14	6	4
16		8	6
20	40	28	10
25			14

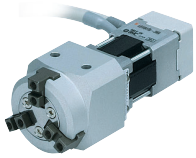
2-finger type
Long stroke
***LEHF* Series**

LEHF Series

Size	Max. gripping force [N]	Stroke/both sides [mm]
10	7	16 (32)
20	28	24 (48)
32	120	32 (64)
40	180	40 (80)

∗ ( ): Long stroke

3-finger type
***LEHS* Series**



LEHS Series

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

Controller/Driver p. 204

Single Axis Controller

Step data input type
Servo motor
(24 VDC)
***LECA6* Series**

Gateway unit
***LEC-G* Series**

Programless type
Step motor
(Servo/24 VDC)
***LECP1* Series**

Pulse input type
Step motor
(Servo/24 VDC)
***LECPA* Series**

EtherCAT®/EtherNet/IP™/PROFINET/DeviceNet™/IO-Link direct input type
***JXC□* Series**

EtherCAT

EtherNet/IP

PROFINET

DeviceNet

IO-Link

Multi-Axis Controller

EtherNet/IP™ direct input type

For 3 axes ***JXC92* Series**

Parallel I/O/EtherNet/IP™ direct input type

For 4 axes ***JXC73* Series**
***JXC83* Series**

***JXC93* Series**
EtherNet/IP

Driver p. 260

AC Servo Motor Driver

Pulse input type
***LECSA* Series**
***LECSB* Series**
- Absolute encoder (LECSB)
- Built-in positioning function (LECSA)

***LECSA* Series**

***LECSB* Series**

CC-Link
direct input type
***LECSC* Series**
CC-Link

SSCNET Ⅲ type
***LECSS* Series**
SSCNETⅢ

Pulse input type/
Positioning type
***LECSB-T* Series**

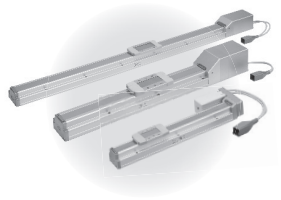
CC-Link
direct input type
***LECSC-T* Series**
CC-Link

SSCNET Ⅲ/H type
***LECSS-T* Series**
SSCNETⅢ/H

MECHATROLINK-Ⅱ type
***LECYM* Series**
MECHATROLINK-Ⅱ

MECHATROLINK-Ⅲ type
***LECYU* Series**
MECHATROLINK-Ⅲ

Electric Actuator/Slider Type Ball Screw Drive *LEFS Series*



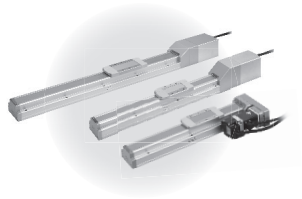
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

◎**Ball Screw Drive *LEFS Series***

◎**Support Guide/*LEFG Series***

AC Servo Motor

LECS□ Series

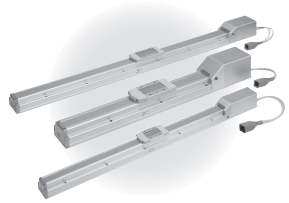


◎**Ball Screw Drive *LEFS Series***

LECY□ Series

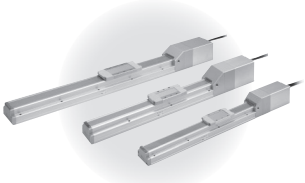
◎**Ball Screw Drive *LEFS Series***

Environment



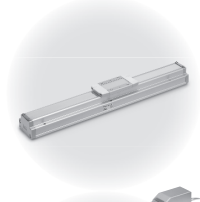
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

◎**Ball Screw Drive *11-LEFS Series*** Clean Room Specification

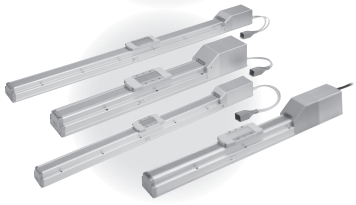


AC Servo Motor

◎**Ball Screw Drive *11-LEFS Series*** Clean Room Specification



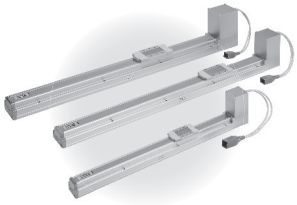
◎**Support Guide/*11-LEFG Series*** Clean Room Specification



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

◎**Ball Screw Drive *25A-LEFS Series*** Secondary Battery Compatible ..... p. 197

Electric Actuator/Slider Type Belt Drive *LEFB Series*



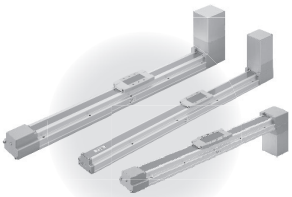
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

◎Belt Drive *LEFB Series*

◎Support Guide/*LEFG Series*

AC Servo Motor

LECS□ Series



◎Belt Drive *LEFB Series*

LECY□ Series

◎Belt Drive *LEFB Series*

◎Step Motor (Servo/24 VDC)/ Servo Motor (24 VDC) Controller/Driver

◎3-Axis Step Motor Controller

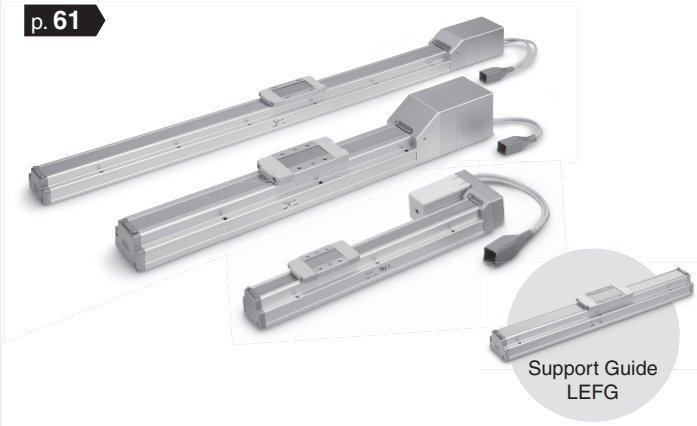
◎4-Axis Step Motor (Servo/24 VDC) Controller

◎AC Servo Motor Driver

Ball Screw Drive LEFS Series

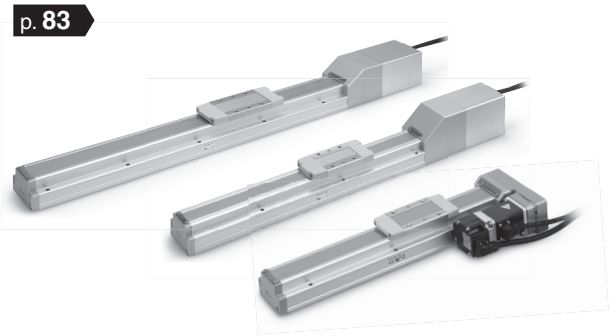
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

p. 61



AC Servo Motor

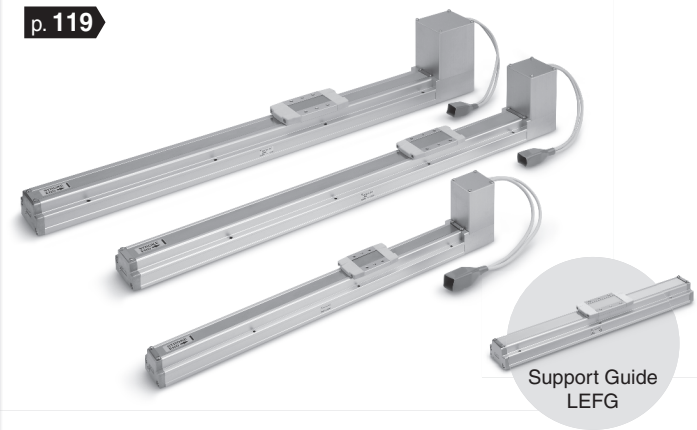
p. 83



Belt Drive LEFB Series

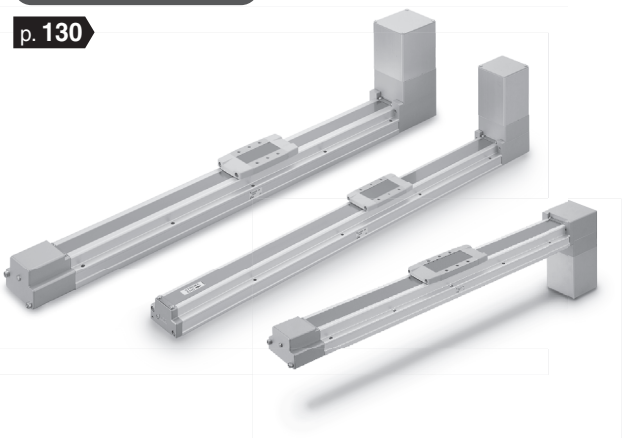
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

p. 119



AC Servo Motor

p. 130

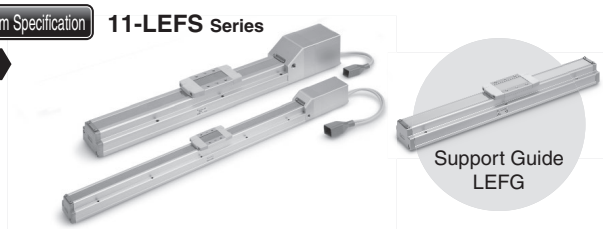


Environment

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

Clean Room Specification **11-LEFS Series**

p. 177



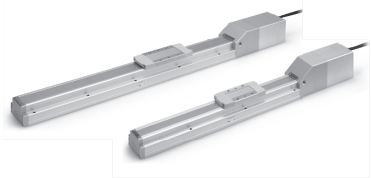
Secondary Battery Compatible **25A-LEFS Series**

p. 197

AC Servo Motor

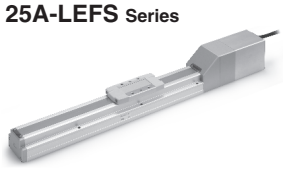
Clean Room Specification **11-LEFS Series**

p. 186



Secondary Battery Compatible **25A-LEFS Series**

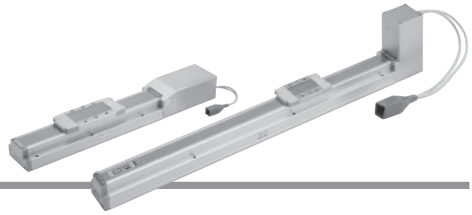
p. 200



Step Motor/Servo Motor Controller/Driver p. 205
AC Servo Motor Driver p. 260

Model Selection

LEFS Series ▶ p. 61 LEFB Series ▶ p. 119 11-LEFS Series ▶ p. 177 25A-LEFS Series ▶ p. 197



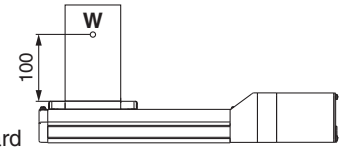
Selection Procedure

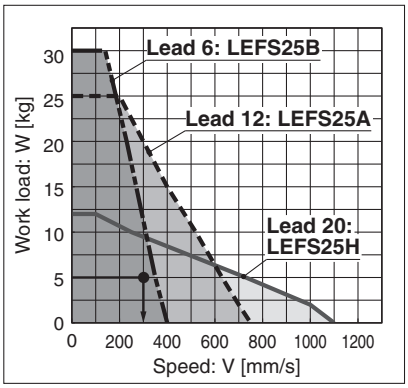
Step 1 Check the work load–speed. → **Step 2** Check the cycle time. → **Step 3** Check the allowable moment.

Selection Example

Operating conditions

- Workpiece mass: 5 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s^2]
- Stroke: 200 [mm]
- Mounting orientation: Horizontal upward
- Workpiece mounting condition:





<Speed–Work load graph> (LEFS25/Step motor)

Step 1 **Check the work load–speed. <Speed–Work load graph>** (Pages 36 to 39)

Select the target model based on the workpiece mass and speed with reference to the <Speed–Work load graph>.

Selection example) The **LEFS25A-200** is temporarily selected based on the graph shown on the right side.

Step 2 **Check the cycle time.**

Calculate the cycle time using the following calculation method.

Cycle time:

T can be found from the following equation.

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

- T1: Acceleration time and T3: Deceleration time can be obtained by the following equation.

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

- T2: Constant speed time can be found from the following equation.

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

- T4: Settling time varies depending on the conditions such as motor types, load and in position of the step data. Therefore, calculate the settling time with reference to the following value.

$$T4 = 0.2 \text{ [s]}$$

Calculation example)
T1 to T4 can be calculated as follows.

$T1 = V/a1 = 300/3000 = 0.1$ [s],

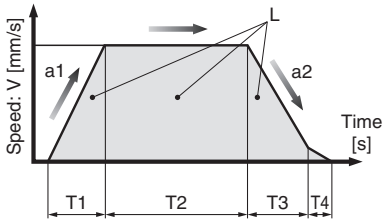
$T3 = V/a2 = 300/3000 = 0.1$ [s]

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{200 - 0.5 \cdot 300 \cdot (0.1 + 0.1)}{300} = 0.57 \text{ [s]}$$

$T4 = 0.2$ [s]

Therefore, the cycle time can be obtained as follows.

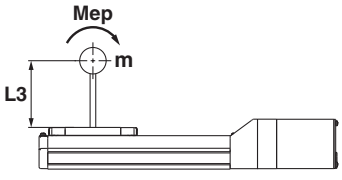
$T = T1 + T2 + T3 + T4$
$= 0.1 + 0.57 + 0.1 + 0.2$
$=$ **0.97 [s]**

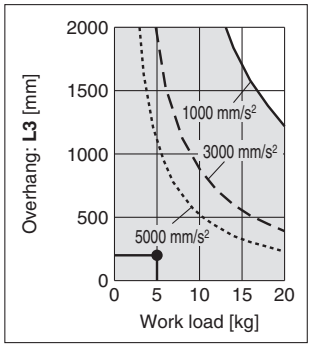


L : Stroke [mm]
··· (Operating condition)
V : Speed [mm/s]
··· (Operating condition)
a1: Acceleration [mm/s^2]
··· (Operating condition)
a2: Deceleration [mm/s^2]
··· (Operating condition)

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 positioning is completed

Step 3 **Check the guide moment.**





Based on the above calculation result, the LEFS25A-200 is selected.

∗ If the step motor and servo motors do not meet your specifications, also consider the AC servo specification (page 43).

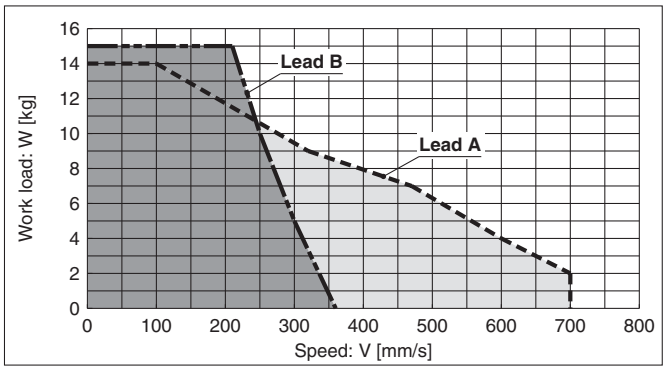
For the LECPA and JXC□$^{2}_{3}$, refer to page 37.

Speed–Work Load Graph (Guide)
For Step Motor (Servo/24 VDC) LECP1, JXC□1

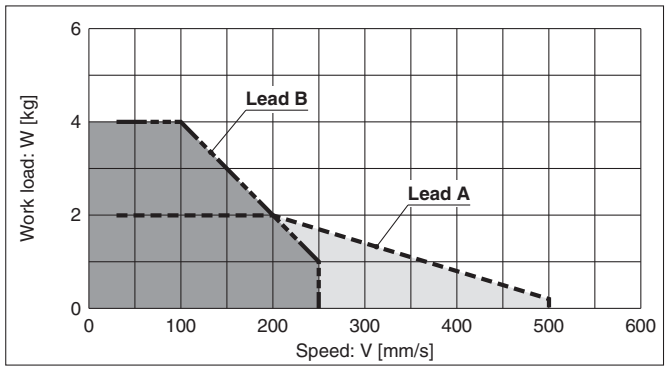
∗ The following graphs show the values when moving force is 100 %.

LEFS16/Ball Screw Drive

Horizontal

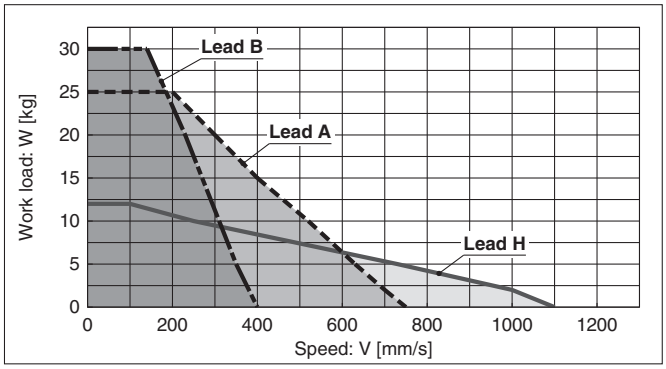


Vertical

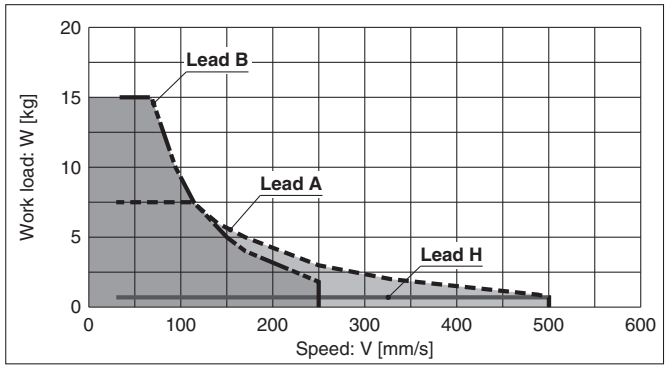


LEFS25/Ball Screw Drive

Horizontal

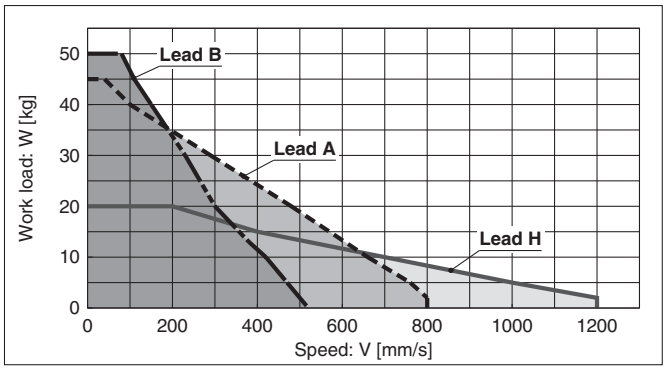


Vertical

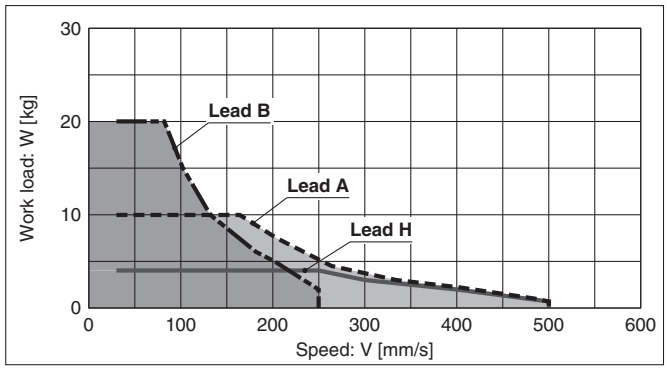


LEFS32/Ball Screw Drive

Horizontal

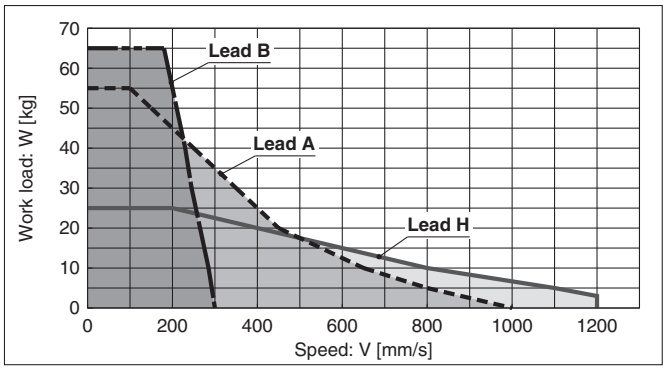


Vertical

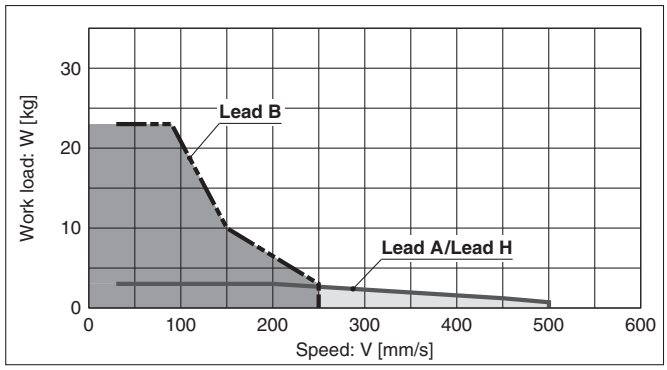


LEFS40/Ball Screw Drive

Horizontal



Vertical



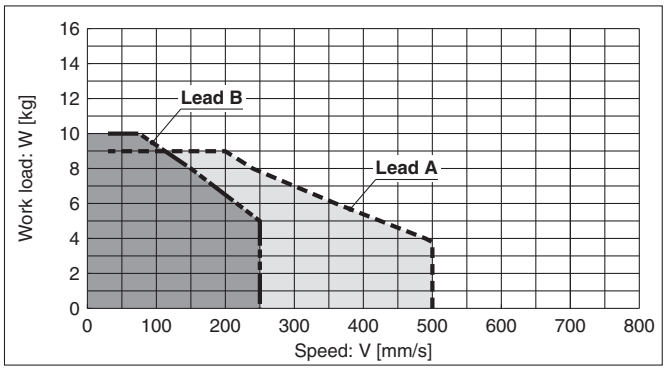
For the LECP1 and JXC□1, refer to page 36.

Speed–Work Load Graph (Guide)
For Step Motor (Servo/24 VDC) LECPA, JXC□ 2 3

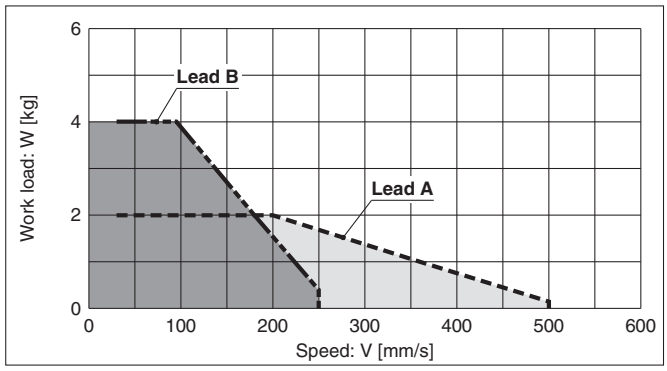
∗ The following graphs show the values when moving force is 100 %.

LEFS16/Ball Screw Drive

Horizontal

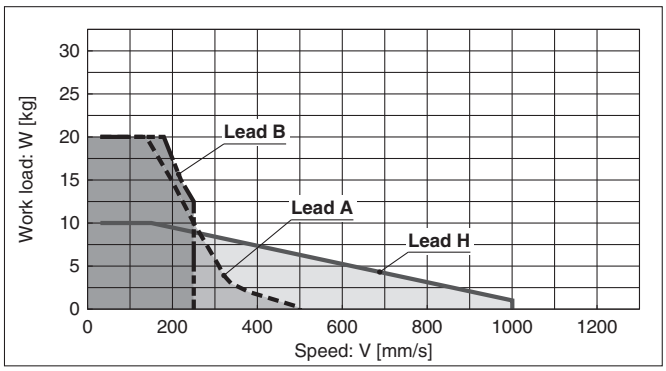


Vertical

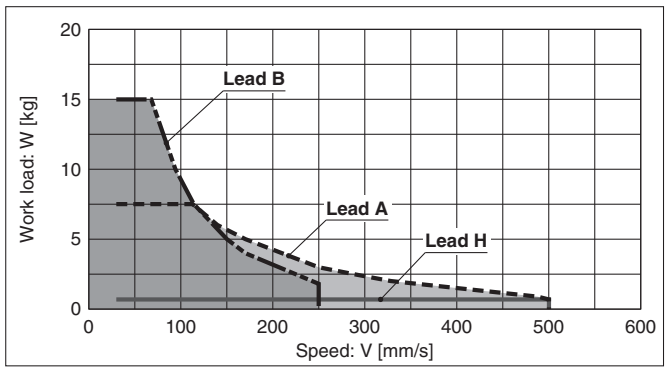


LEFS25/Ball Screw Drive

Horizontal

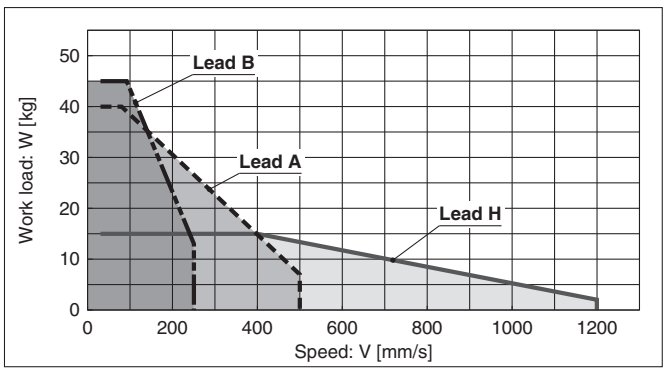


Vertical

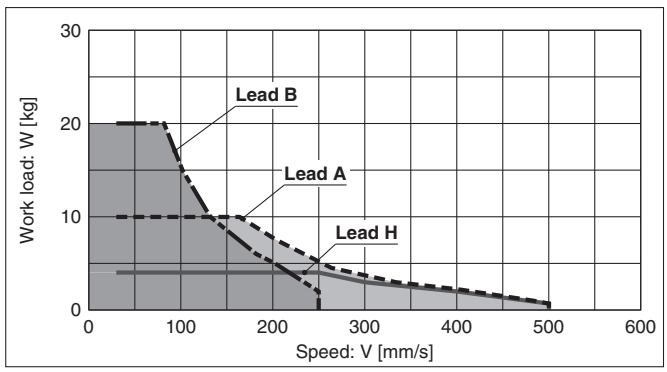


LEFS32/Ball Screw Drive

Horizontal

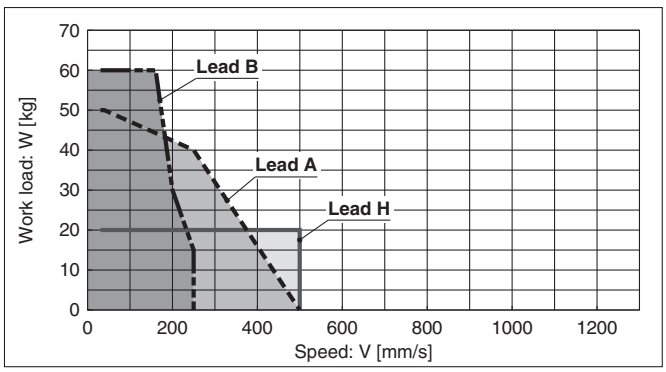


Vertical

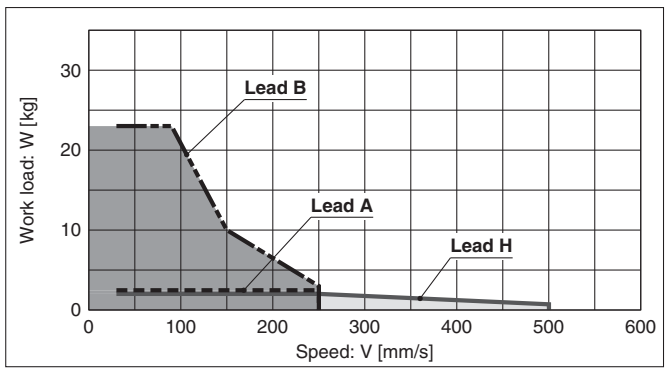


LEFS40/Ball Screw Drive

Horizontal



Vertical

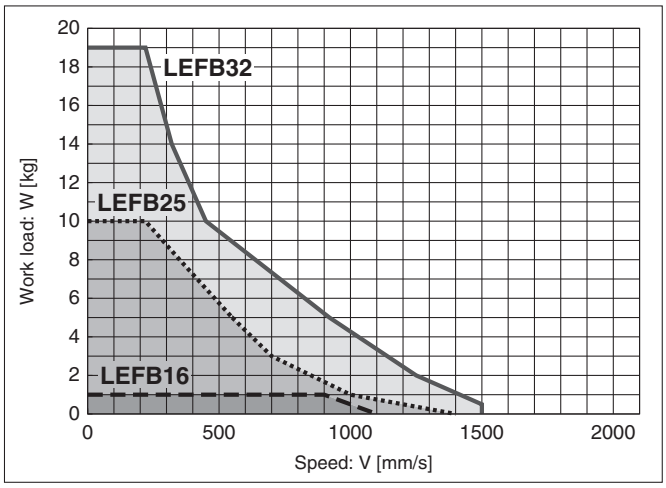


Speed–Work Load Graph (Guide)
For Step Motor (Servo/24 VDC) LECP1, JXC□1

∗ The following graph shows the values when moving force is 100 %.

LEFB/Belt Drive

Horizontal

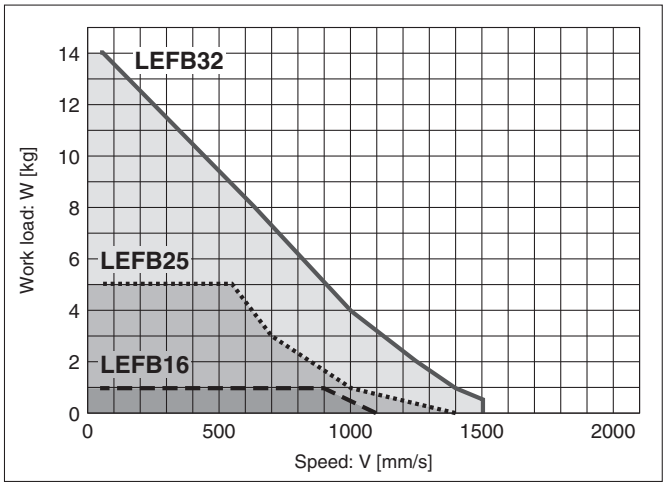


For Step Motor (Servo/24 VDC) LECPA, JXC□ $^{2}_{3}$

∗ The following graph shows the values when moving force is 100 %.

LEFB/Belt Drive

Horizontal

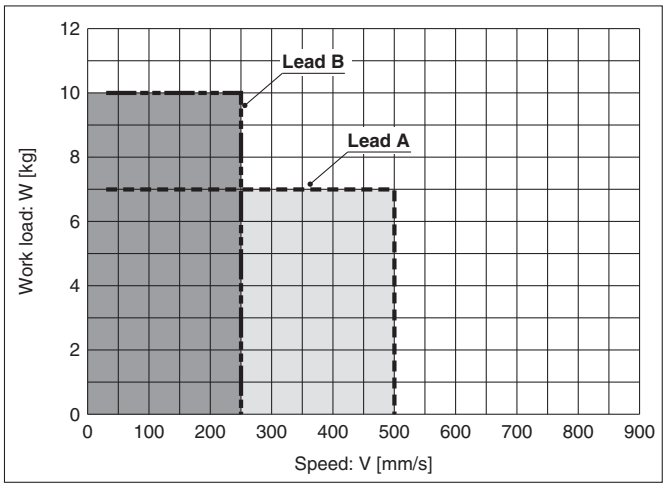


Speed–Work Load Graph (Guide)
Servo Motor (24 VDC)

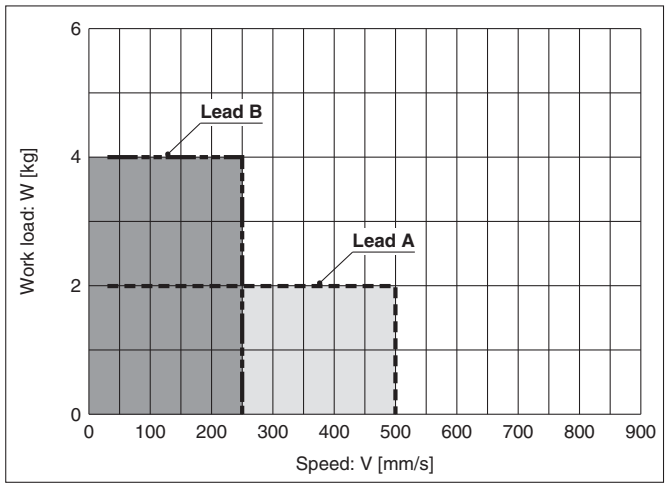
∗ The following graphs show the values when moving force is 250 %.

LEFS16A/Ball Screw Drive

Horizontal

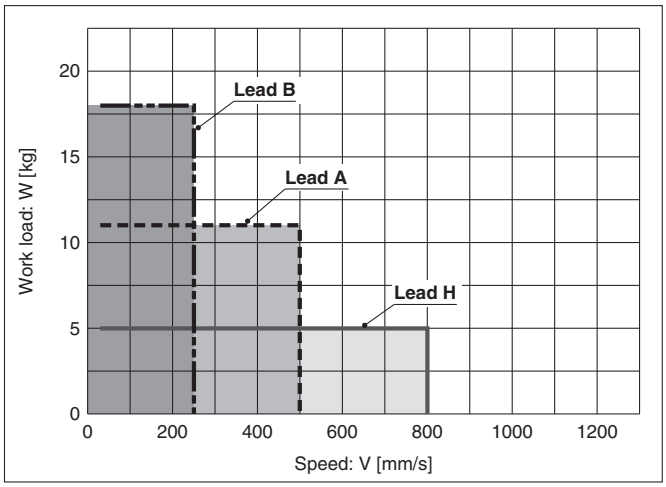


Vertical



LEFS25A/Ball Screw Drive

Horizontal



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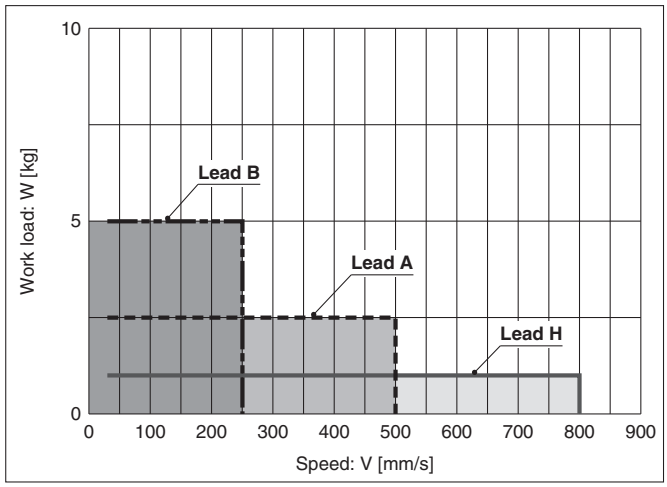
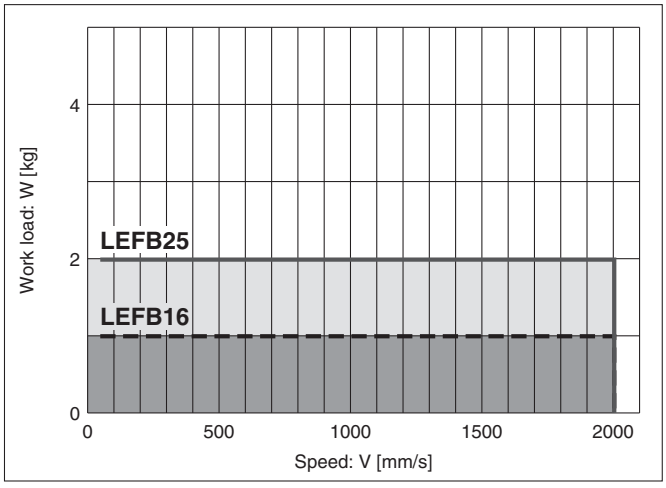


Servo Motor (24 VDC)

∗ The following graph shows the values when moving force is 250 %.

LEFB/Belt Drive

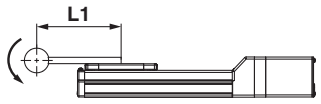
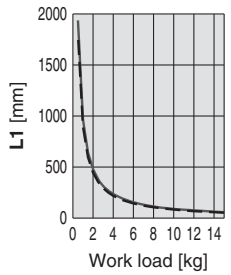
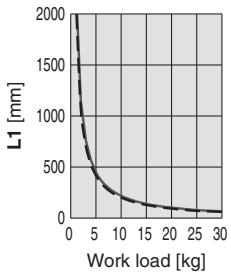
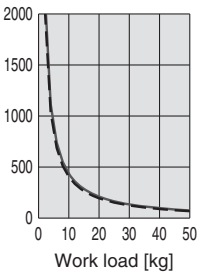
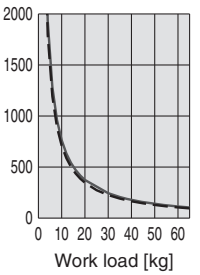
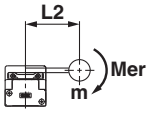
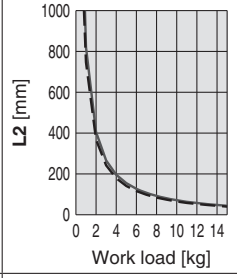
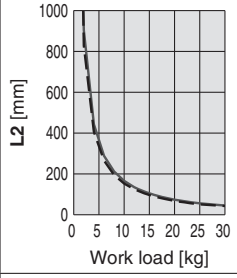
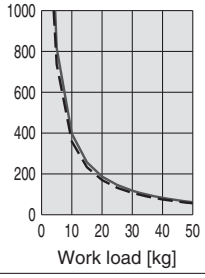
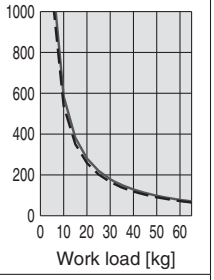
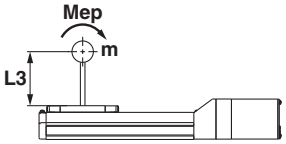
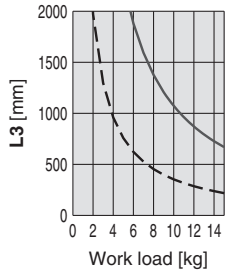
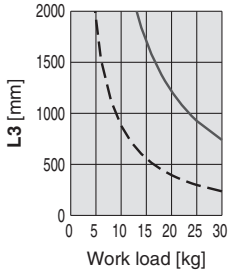
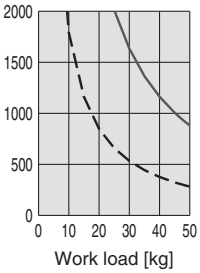
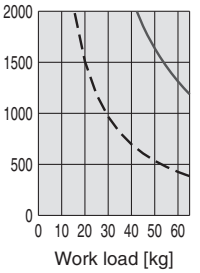
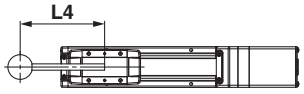
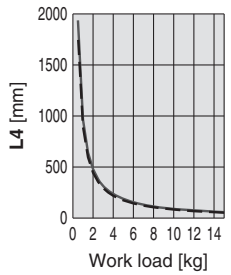
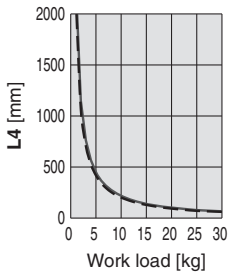
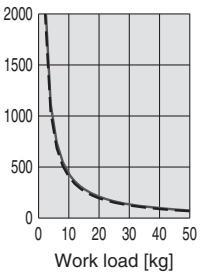
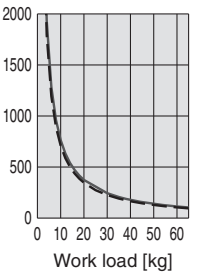
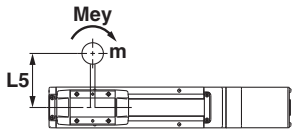
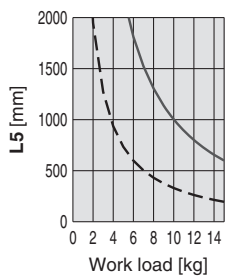
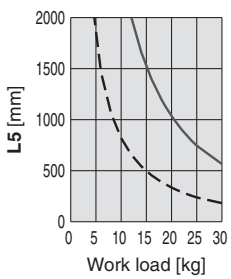
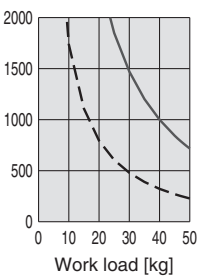
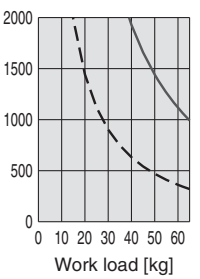
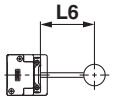
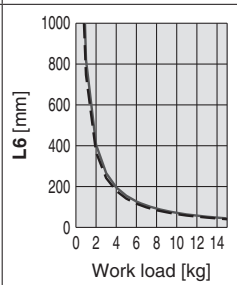
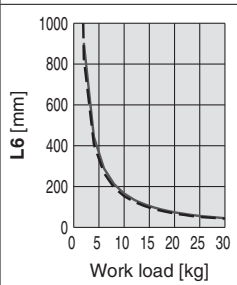
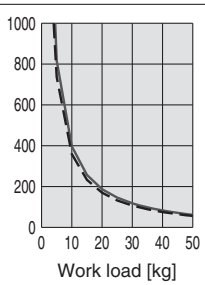
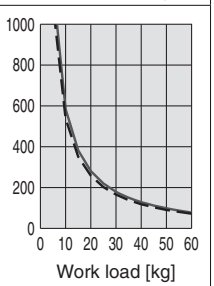
Horizontal



Dynamic Allowable Moment

* This graph shows the amount of allowable overhang (guide unit) when the centre of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation, https://www.smc.eu

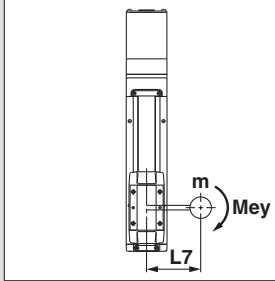
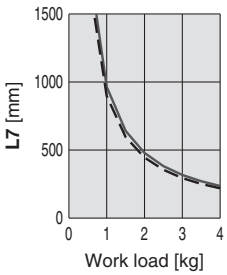
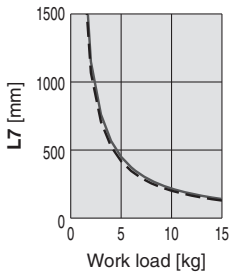
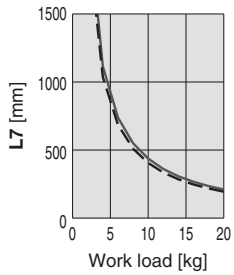
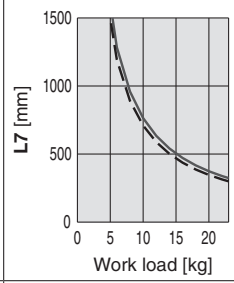
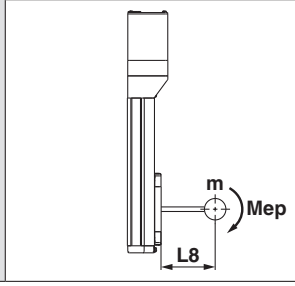
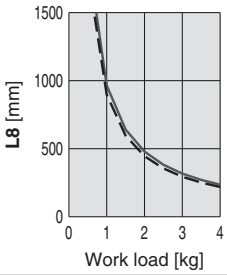
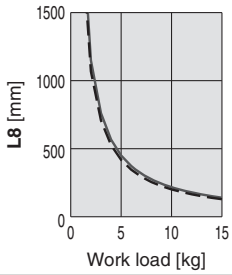
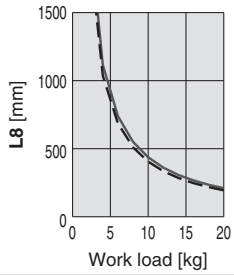
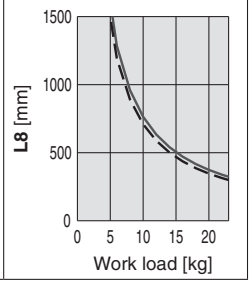
Acceleration/Deceleration ——1000 mm/s² – – –3000 mm/s²

Orientation	Load overhanging direction **m** : Work load [kg] **Me**: Dynamic allowable moment [N·m] **L** : Overhang to the work load centre of gravity [mm]		Model			
			LEF16	**LEF25**	**LEF32**	**LEF40**
Horizontal/Bottom		**X**				
		**Y**				
		**Z**				
Wall		**X**				
		**Y**				
		**Z**				

Dynamic Allowable Moment

* This graph shows the amount of allowable overhang (guide unit) when the centre of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation, https://www.smc.eu

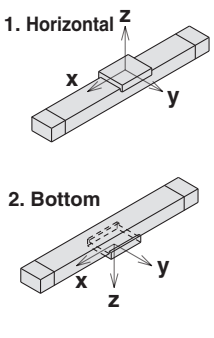
Acceleration/Deceleration ——1000 mm/s² — — —3000 mm/s²

Orientation	Load overhanging direction		Model			
	m : Work load [kg] **Me**: Dynamic allowable moment [N·m] **L** : Overhang to the work load centre of gravity [mm]		**LEF16**	**LEF25**	**LEF32**	**LEF40**
Vertical		Y				
		Z				

Calculation of Guide Load Factor

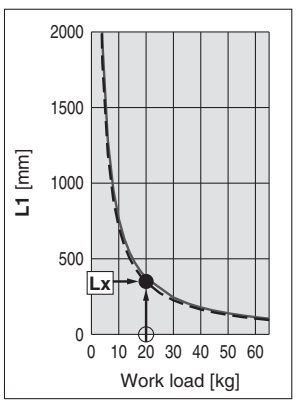
1. Decide operating conditions.
   Model: LEFS/LEFB
   Size: 16/25/32/40
   Mounting orientation: Horizontal/Bottom/Wall/Vertical
   Acceleration [mm/s²]: **a**
   Work load [kg]: **m**
   Work load centre position [mm]: **Xc/Yc/Zc**
2. Select the target graph with reference to the model, size, and mounting orientation.
3. Based on the acceleration and work load, obtain the overhang [mm]: **Lx/Ly/Lz** from the graph.
4. Calculate the load factor for each direction.
   α**x = Xc/Lx**, α**y = Yc/Ly**, α**z = Zc/Lz**
5. Confirm the total of α**x**, α**y**, and α**z** is 1 or less.
   α**x** + α**y** + α**z** ≤ **1**
   When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load centre position and series.

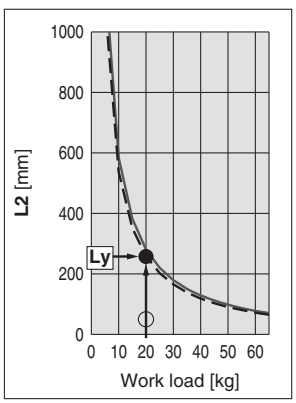
Mounting orientation



Example

1. Operating conditions
   Model: LEFS40
   Size: 40
   Mounting orientation: Horizontal
   Acceleration [mm/s²]: 3000
   Work load [kg]: 20
   Work load centre position [mm]: **Xc = 0**, **Yc = 50**, **Zc = 200**
2. Select the graphs for horizontal of the LEF40 on page 40.
3. **Lx = 400 mm**, **Ly = 250 mm**, **Lz = 1500 mm**
4. The load factor for each direction can be obtained as follows.
   α**x = 0/400 = 0**
   α**y = 50/250 = 0.2**
   α**z = 200/1500 = 0.13**
5. α**x** + α**y** + α**z = 0.33** ≤ **1**





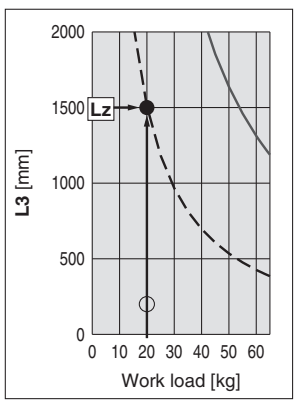
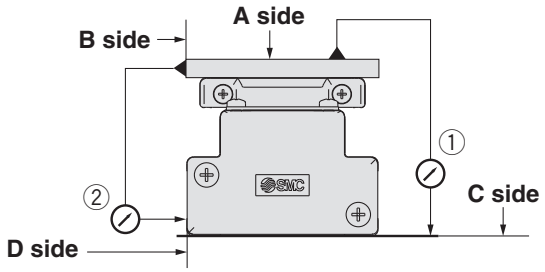


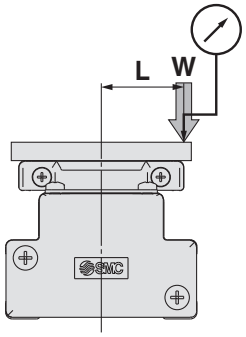
Table Accuracy (Reference Value)

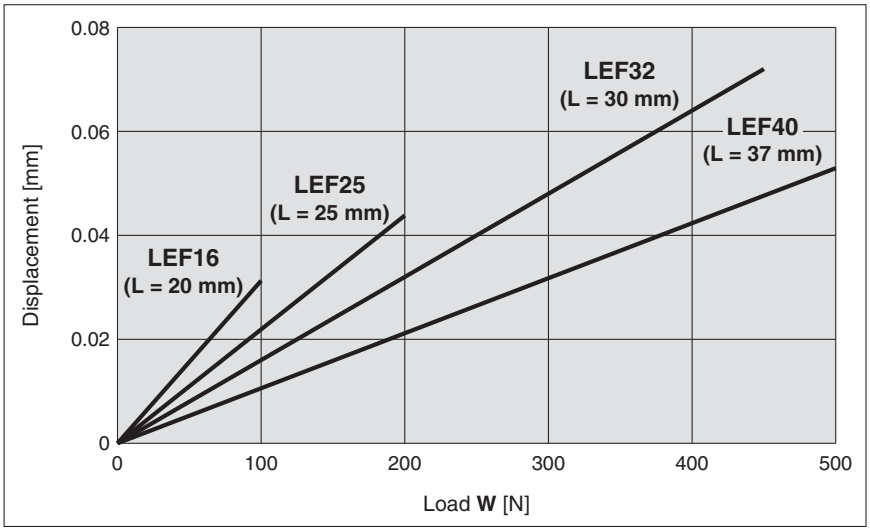


Model	Travelling parallelism [mm] (Every 300 mm)	
	① C side travelling parallelism to A side	② D side travelling parallelism to B side
LEF16	0.05	0.03
LEF25	0.05	0.03
LEF32	0.05	0.03
LEF40	0.05	0.03

∗ Travelling parallelism does not include the mounting surface accuracy. (Excludes when the stroke exceeds 2000 mm)

Table Displacement (Reference Value)

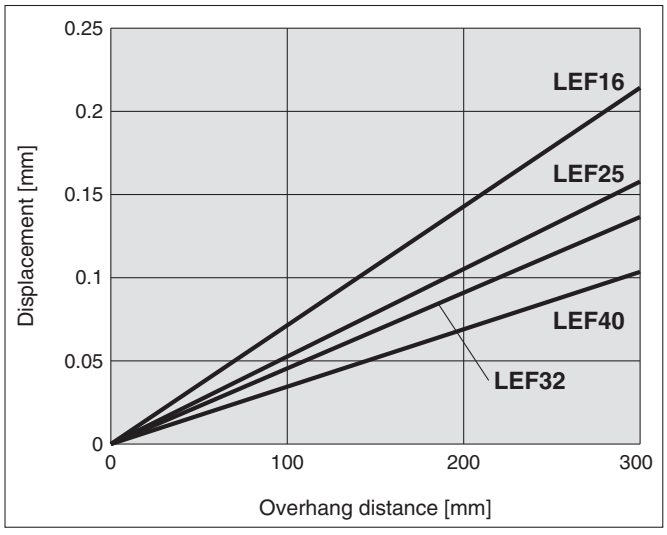




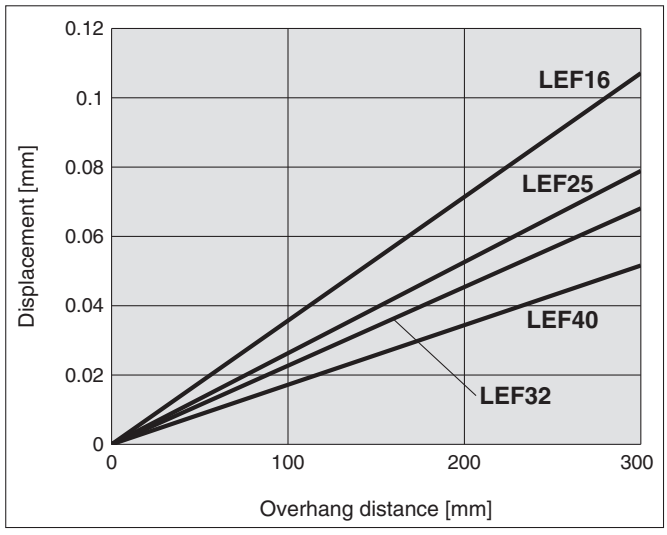
∗ This displacement is measured when a 15 mm aluminium plate is mounted and fixed on the table.
∗ Check the clearance and play of the guide separately.

Overhang Displacement Due to Table Clearance (Reference Value)

Basic type

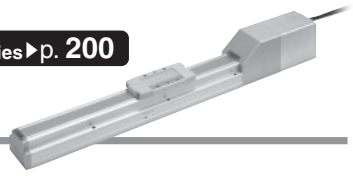


High-precision type



Model Selection

LEFS Series ▶ p. 83 | LECY□ Series ▶ p. 99 | 11-LEFS Series ▶ p. 186 | 25A-LEFS Series ▶ p. 200



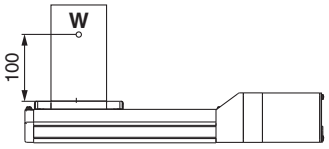
Selection Procedure

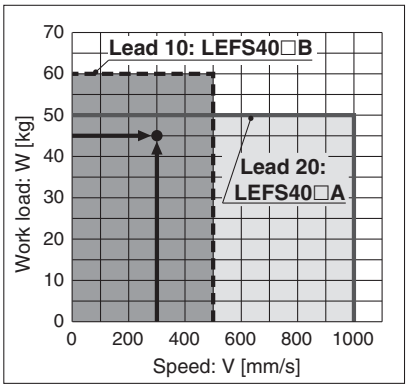
Step 1 Check the work load–speed. → **Step 2** Check the cycle time. → **Step 3** Check the allowable moment.

Selection Example

Operating conditions

- Workpiece mass: 45 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s²]
- Stroke: 200 [mm]
- Mounting position: Horizontal upward
- Workpiece mounting condition:





<Speed–Work load graph> (LEFS40)

Step 1 **Check the work load–speed. <Speed–Work load graph>** (Page 44)

Select the target model based on the workpiece mass and speed with reference to the <Speed–Work load graph>.

Selection example) The **LEFS40S4B-200** is temporarily selected based on the graph shown on the right side.

Step 2 **Check the cycle time.**

Calculate the cycle time using the following calculation method.

Cycle time:

T can be found from the following equation.

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

- T1: Acceleration time and T3: Deceleration time can be obtained by the following equation.

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

- T2: Constant speed time can be found from the following equation.

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

- T4: Settling time 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.

$T1 = V/a1 = 300/3000 = 0.1$ [s],

$T3 = V/a2 = 300/3000 = 0.1$ [s]

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{200 - 0.5 \cdot 300 \cdot (0.1 + 0.1)}{300} = 0.57 \text{ [s]}$$

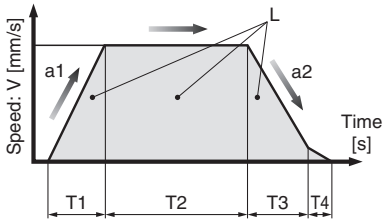
$T4 = 0.05$ [s]

Therefore, the cycle time can be obtained as follows.

$T = T1 + T2 + T3 + T4$

$= 0.1 + 0.57 + 0.1 + 0.05$

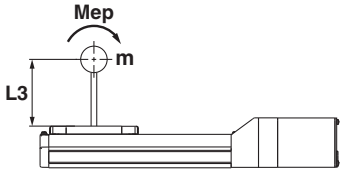
$=$ **0.82 [s]**

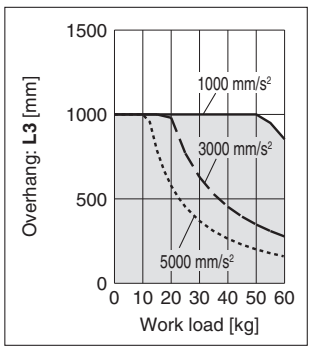


L : Stroke [mm]
··· (Operating condition)
V : Speed [mm/s]
··· (Operating condition)
a1: Acceleration [mm/s²]
··· (Operating condition)
a2: Deceleration [mm/s²]
··· (Operating condition)

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 positioning is completed

Step 3 **Check the guide moment.**





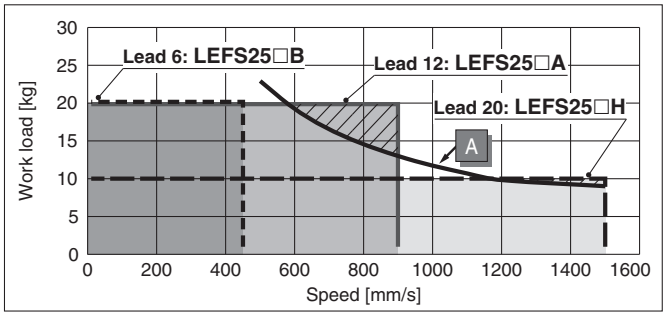
Based on the above calculation result, the LEFS40S4B-200 is selected.

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

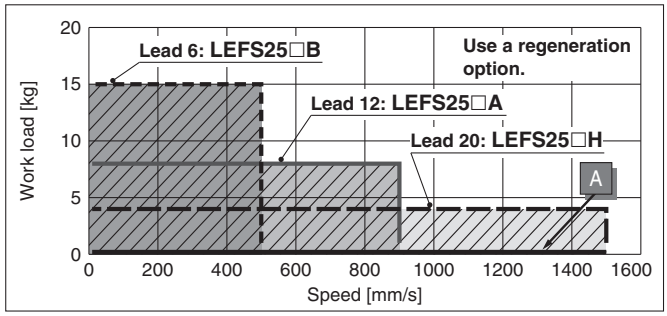
* The allowable speed is restricted depending on the stroke. Select it by referring to "Allowable Stroke Speed" below.

LEFS25/Ball Screw Drive

Horizontal

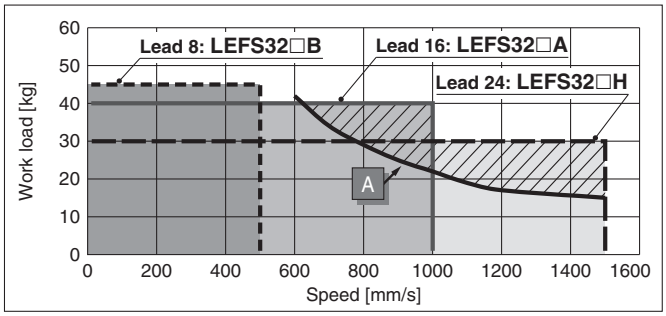


Vertical

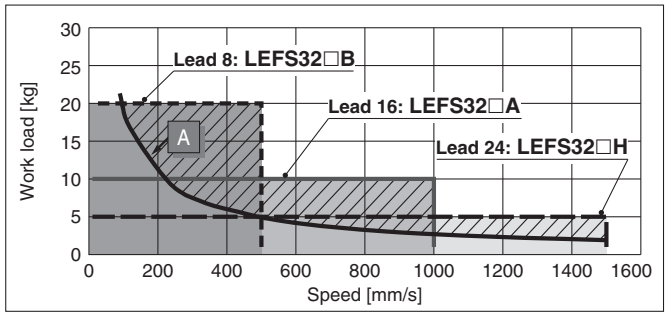


LEFS32/Ball Screw Drive

Horizontal

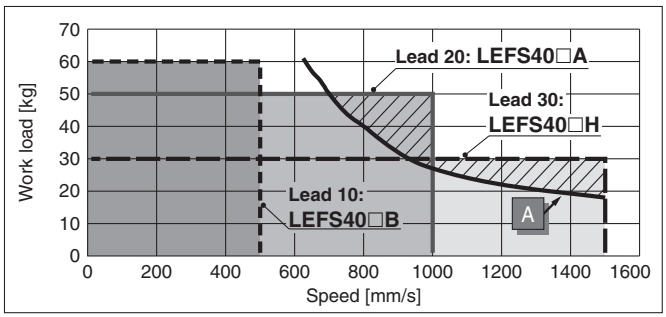


Vertical

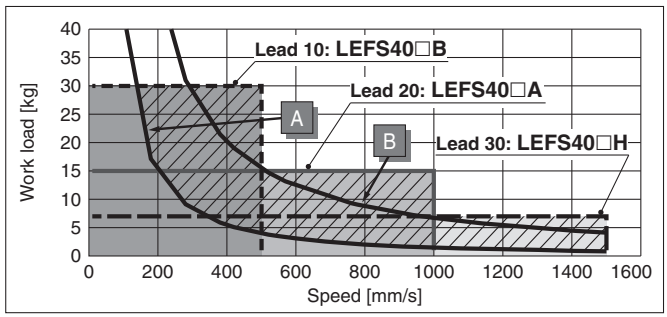


LEFS40/Ball Screw Drive

Horizontal



Vertical



Required conditions for "Regeneration option"

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

"Regeneration Option" Models

Operating condition	Model
A	LEC-MR-RB-032
B	LEC-MR-RB-12

Allowable Stroke Speed

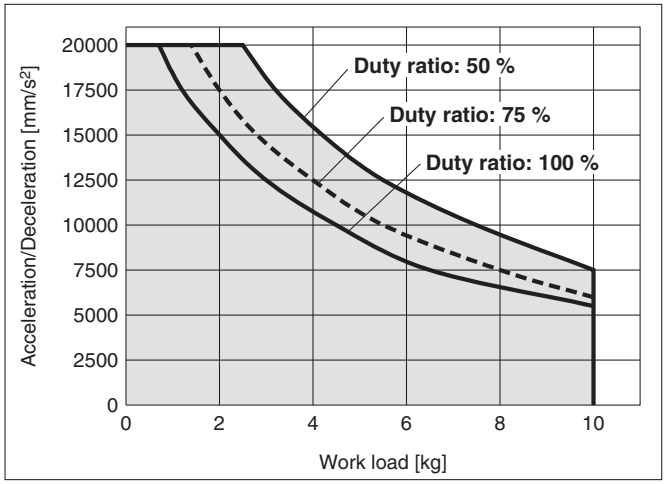
[mm/s]

Model	AC servo motor	Lead		Stroke [mm]											
		Symbol	[mm]	Up to 100	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
LEFS25	100 W /□40	H	20	1500				1200	900	700	550	—	—	—	—
		A	12	900				720	540	420	330	—	—	—	—
		B	6	450				360	270	210	160	—	—	—	—
		(Motor rotation speed)		(4500 rpm)				(3650 rpm)	(2700 rpm)	(2100 rpm)	(1650 rpm)	—	—	—	—
LEFS32	200 W /□60	H	24	1500					1200	930	750	610	510	—	—
		A	16	1000					800	620	500	410	340	—	—
		B	8	500					400	310	250	200	170	—	—
		(Motor rotation speed)		(3750 rpm)					(3000 rpm)	(2325 rpm)	(1875 rpm)	(1537 rpm)	(1275 rpm)	—	—
LEFS40	400 W /□60	H	30	—	1500					1410	1140	930	780	500	500
		A	20	—	1000					940	760	620	520	440	380
		B	10	—	500					470	380	310	260	220	190
		(Motor rotation speed)		—	(3000 rpm)					(2820 rpm)	(2280 rpm)	(1860 rpm)	(1560 rpm)	(1320 rpm)	(1140 rpm)

Work Load–Acceleration/Deceleration Graph (Guide)

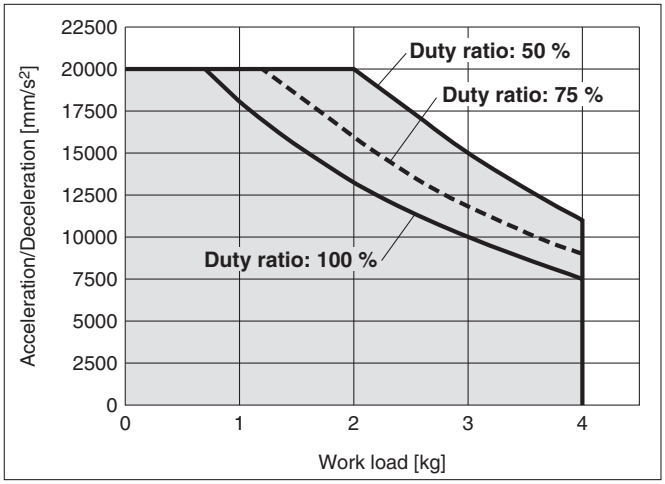
LEFS25□□H/Ball Screw Drive

Horizontal



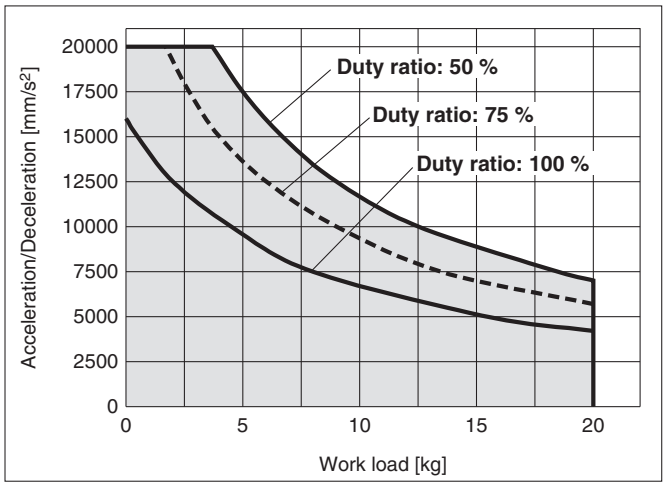
LEFS25□□H/Ball Screw Drive

Vertical



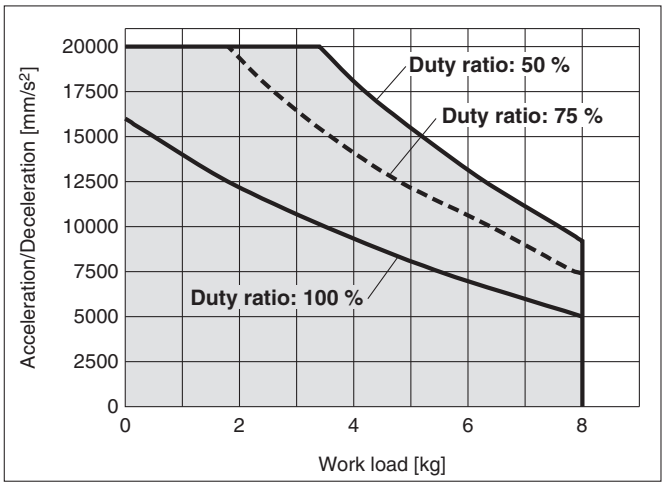
LEFS25□□A/Ball Screw Drive

Horizontal



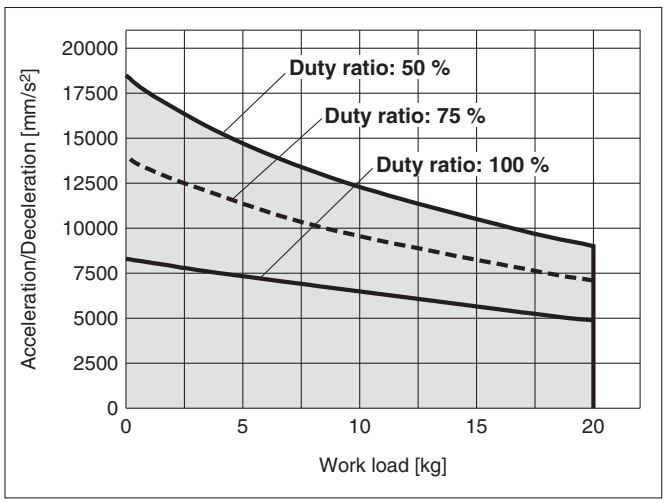
LEFS25□□A/Ball Screw Drive

Vertical



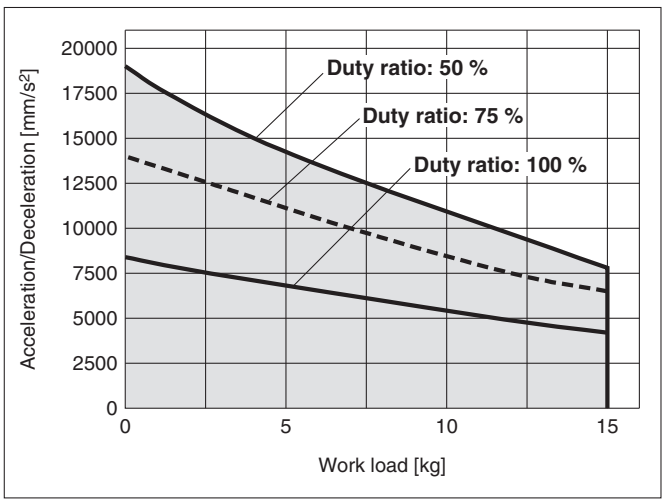
LEFS25□□B/Ball Screw Drive

Horizontal



LEFS25□□B/Ball Screw Drive

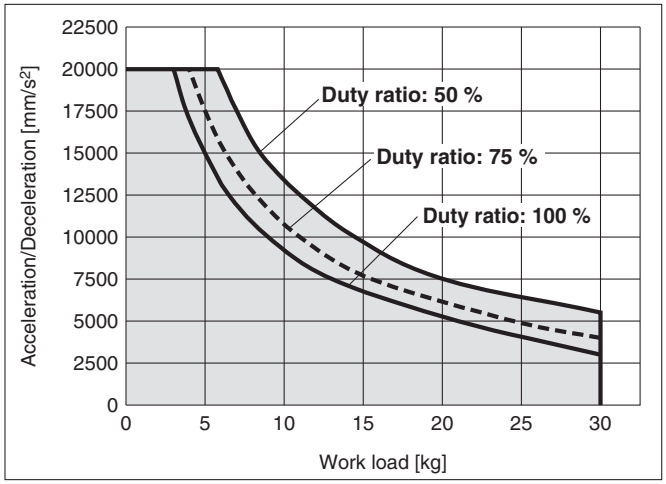
Vertical



Work Load–Acceleration/Deceleration Graph (Guide)

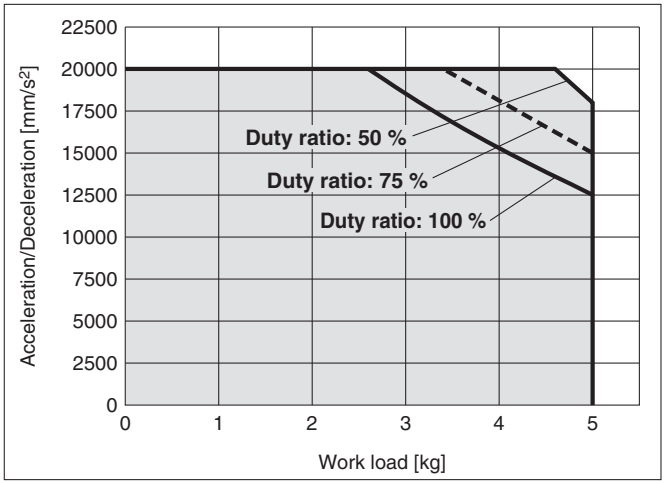
LEFS32□□H/Ball Screw Drive

Horizontal



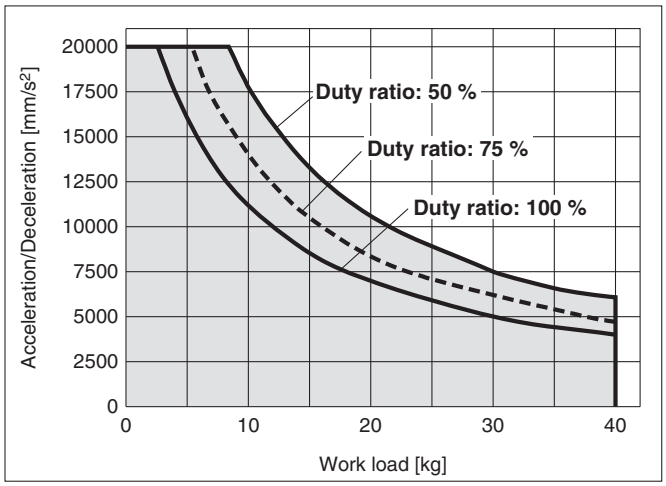
LEFS32□□H/Ball Screw Drive

Vertical



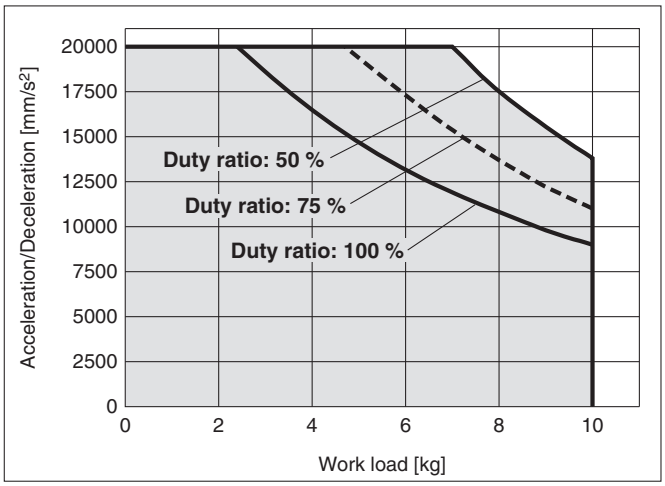
LEFS32□□A/Ball Screw Drive

Horizontal



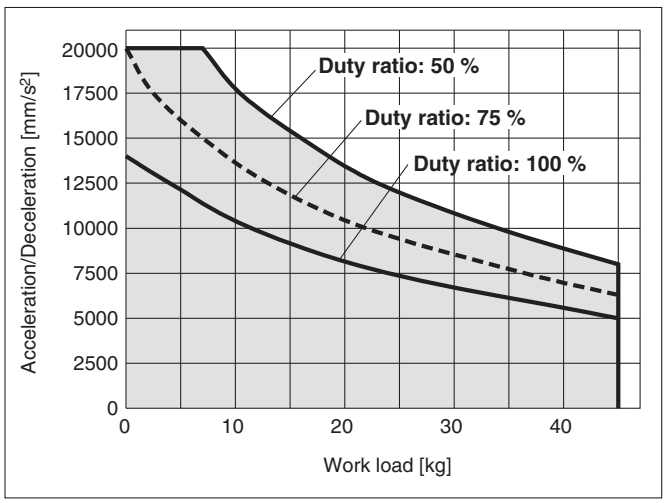
LEFS32□□A/Ball Screw Drive

Vertical



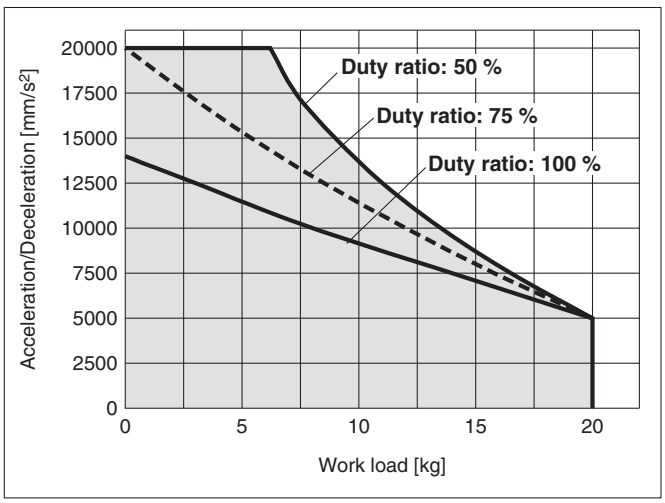
LEFS32□□B/Ball Screw Drive

Horizontal



LEFS32□□B/Ball Screw Drive

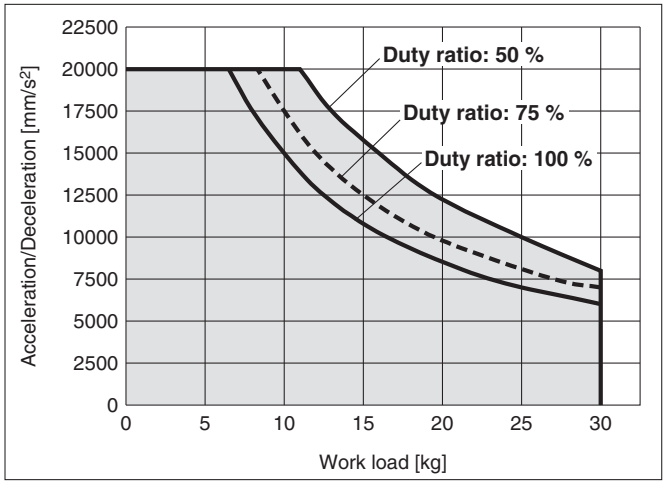
Vertical



Work Load–Acceleration/Deceleration Graph (Guide)

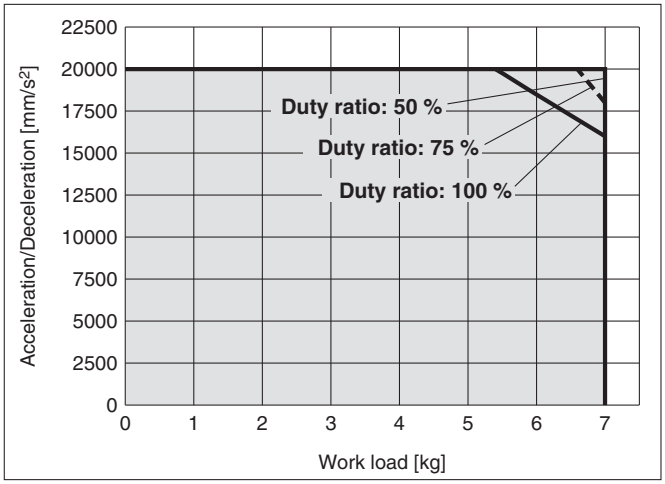
LEFS40□□H/Ball Screw Drive

Horizontal



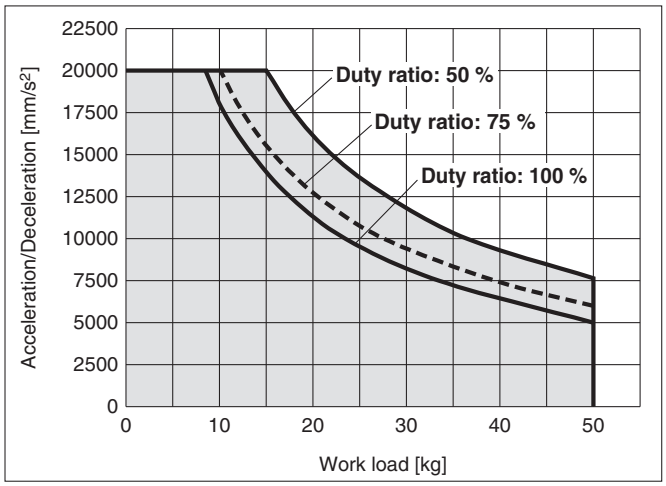
LEFS40□□H/Ball Screw Drive

Vertical



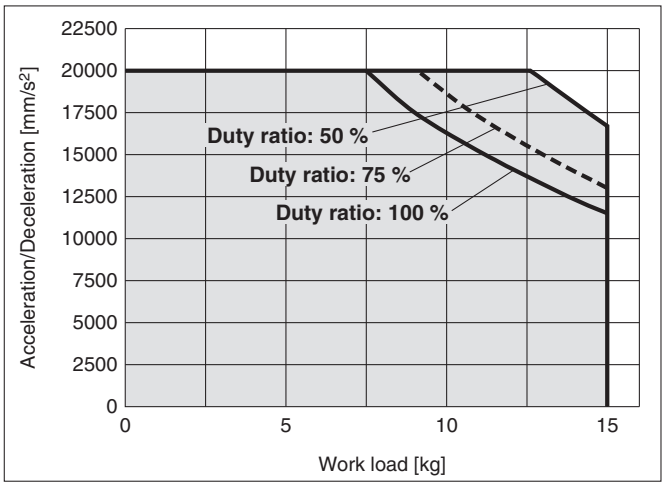
LEFS40□□A/Ball Screw Drive

Horizontal



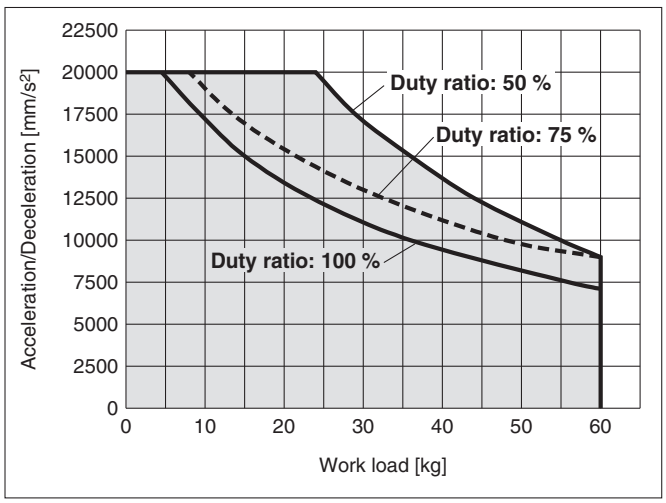
LEFS40□□A/Ball Screw Drive

Vertical



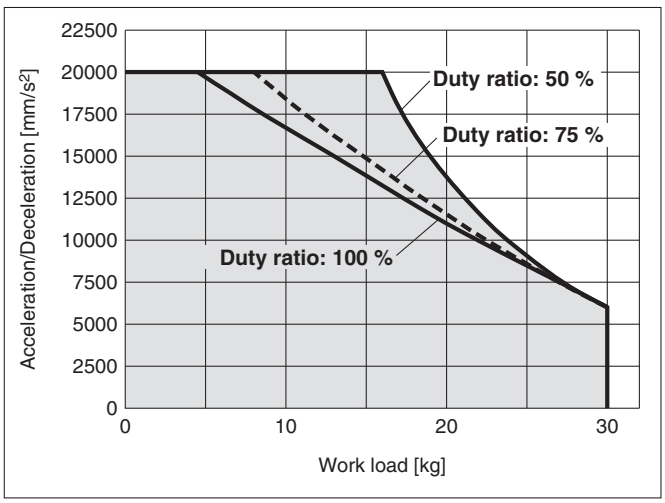
LEFS40□□B/Ball Screw Drive

Horizontal



LEFS40□□B/Ball Screw Drive

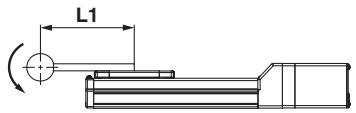
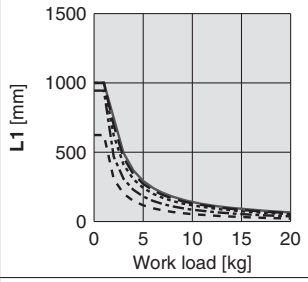
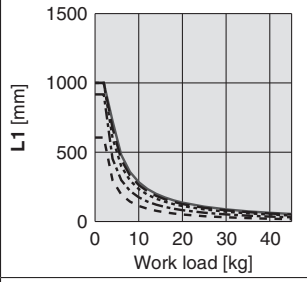
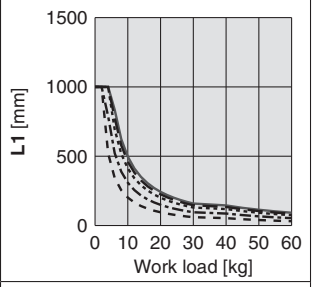
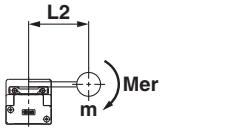
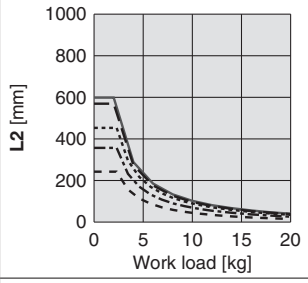
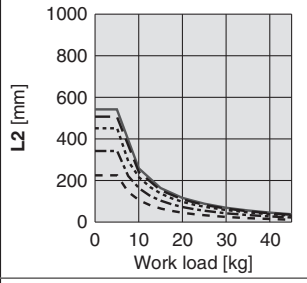
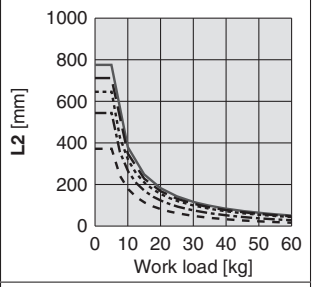
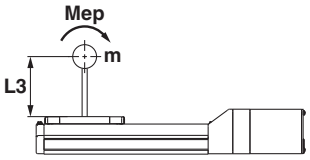
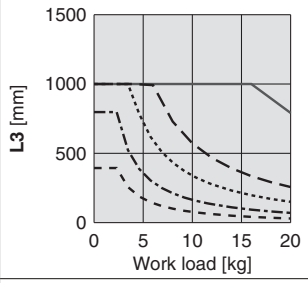
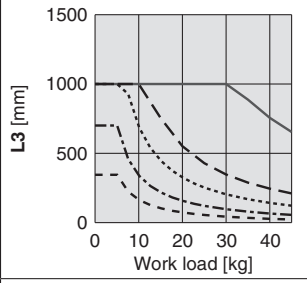
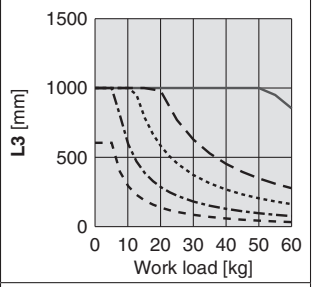
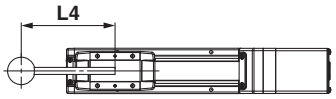
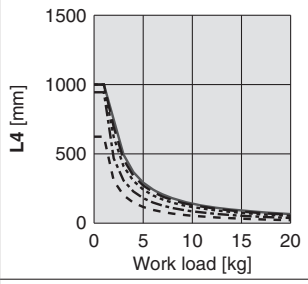
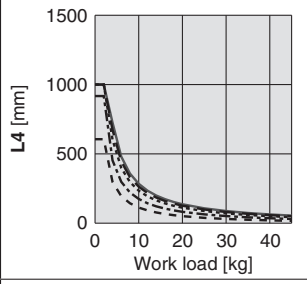
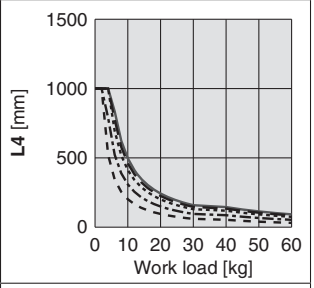
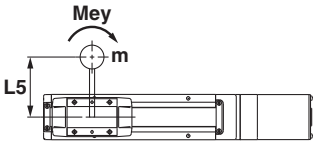
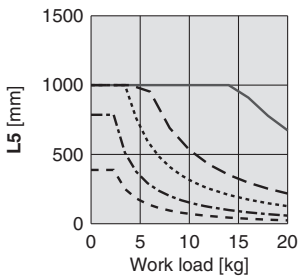
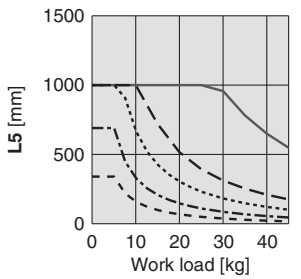
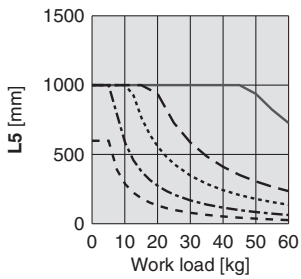
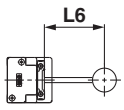
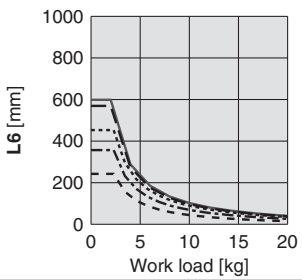
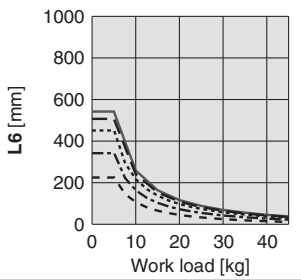
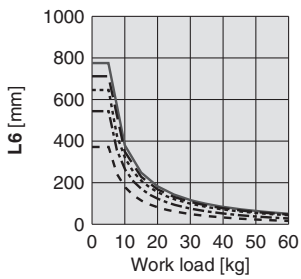
Vertical



Dynamic Allowable Moment

* This graph shows the amount of allowable overhang (guide unit) when the centre of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation, https://www.smc.eu

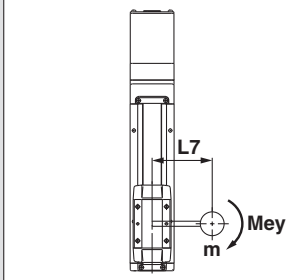
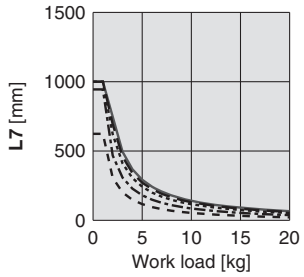
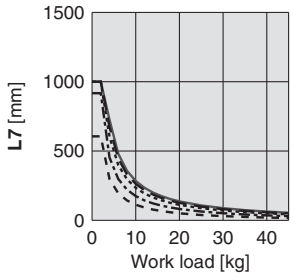
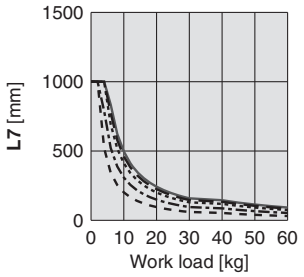
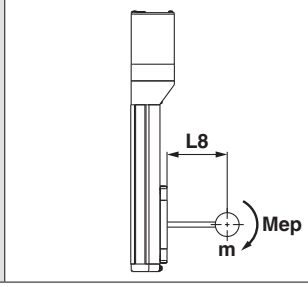
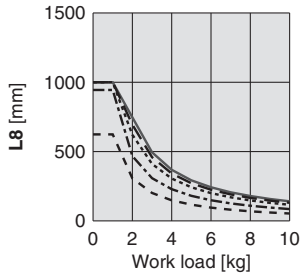
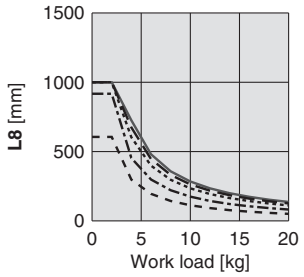
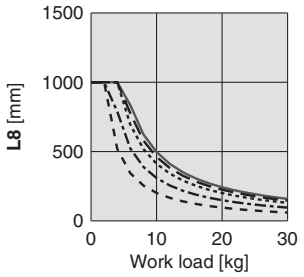
Acceleration/Deceleration ——1000 mm/s² — — —3000 mm/s² ·····5000 mm/s² —·—·—10000 mm/s² - - - - 20000 mm/s²

Orientation	Load overhanging direction **m** : Work load [kg] **Me**: Dynamic allowable moment [N·m] **L** : Overhang to the work load centre of gravity [mm]		Model		
			LEFS25	**LEFS32**	**LEFS40**
Horizontal/Bottom		X			
		Y			
		Z			
Wall		X			
		Y			
		Z			

Dynamic Allowable Moment

* This graph shows the amount of allowable overhang (guide unit) when the centre of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation, https://www.smc.eu

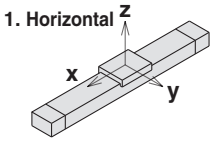
Acceleration/Deceleration ——1000 mm/s² — — —3000 mm/s² ·····5000 mm/s² —·—·—10000 mm/s² - - - - 20000 mm/s²

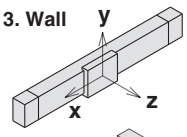
Orientation	Load overhanging direction **m** : Work load [kg] **Me**: Dynamic allowable moment [N·m] **L** : Overhang to the work load centre of gravity [mm]		Model: LEFS25	Model: LEFS32	Model: LEFS40
Vertical		Y			
		Z			

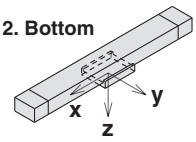
Calculation of Guide Load Factor

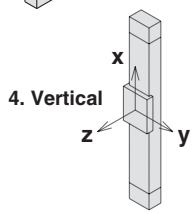
1. Decide operating conditions.
   Model: LEFS
   Size: 25/32/40
   Mounting orientation: Horizontal/Bottom/Wall/Vertical
   Acceleration [mm/s²]: **a**
   Work load [kg]: **m**
   Work load centre position [mm]: **Xc/Yc/Zc**
2. Select the target graph with reference to the model, size, and mounting orientation.
3. Based on the acceleration and work load, obtain the overhang [mm]: **Lx/Ly/Lz** from the graph.
4. Calculate the load factor for each direction.
   $\alpha x = Xc/Lx$, $\alpha y = Yc/Ly$, $\alpha z = Zc/Lz$
5. 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 centre position and series.

Mounting orientation



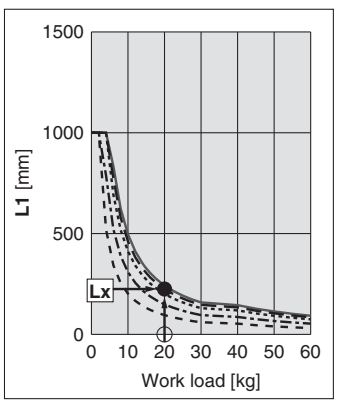


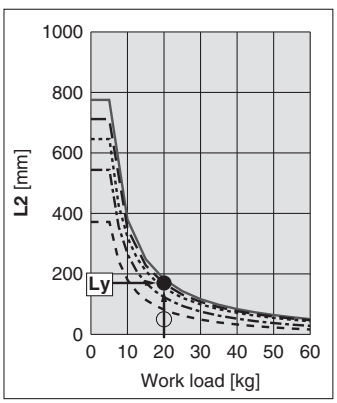




Example

1. Operating conditions
   Model: LEFS40
   Size: 40
   Mounting orientation: Horizontal
   Acceleration [mm/s²]: 3000
   Work load [kg]: 20
   Work load centre position [mm]: **Xc = 0**, **Yc = 50**, **Zc = 200**
2. Select the graphs for horizontal of the LEFS40 on page 48.
3. **Lx = 250 mm**, **Ly = 180 mm**, **Lz = 1000 mm**
4. The load factor for each direction can be obtained as follows.
   $\alpha x = 0/250 = 0$
   $\alpha y = 50/180 = 0.27$
   $\alpha z = 200/1000 = 0.2$
5. $\alpha x + \alpha y + \alpha z = 0.47 \leq 1$





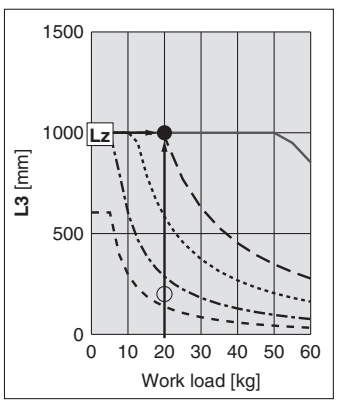
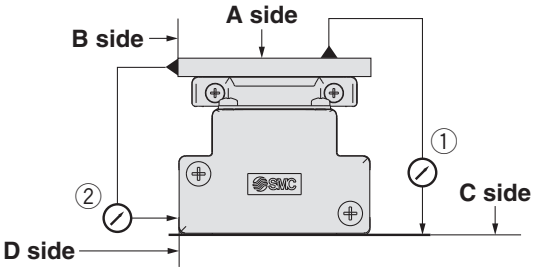


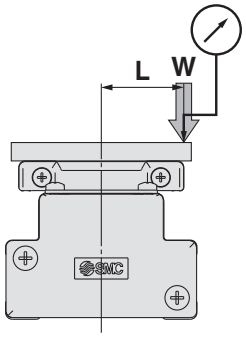
Table Accuracy (Reference Value)

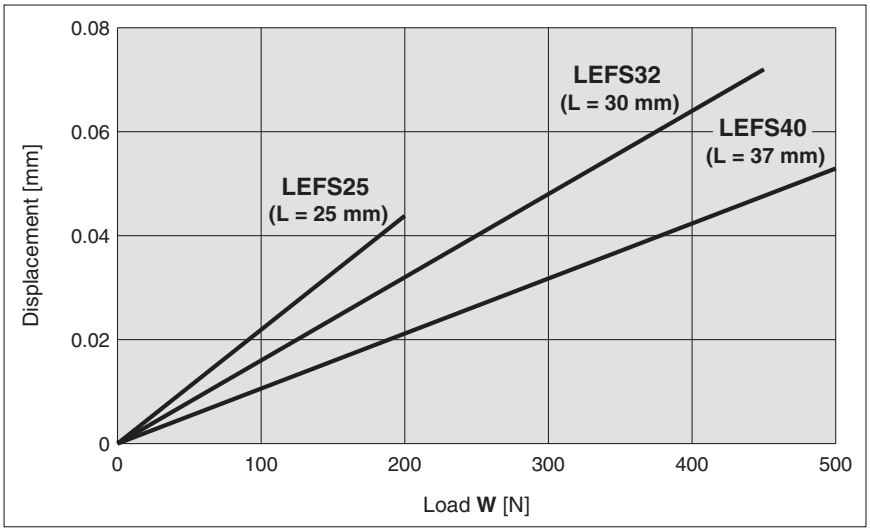


Model	Travelling parallelism [mm] (Every 300 mm)	
	① C side travelling parallelism to A side	② D side travelling parallelism to B side
LEFS25	0.05	0.03
LEFS32	0.05	0.03
LEFS40	0.05	0.03

∗ Travelling parallelism does not include the mounting surface accuracy.

Table Displacement (Reference Value)

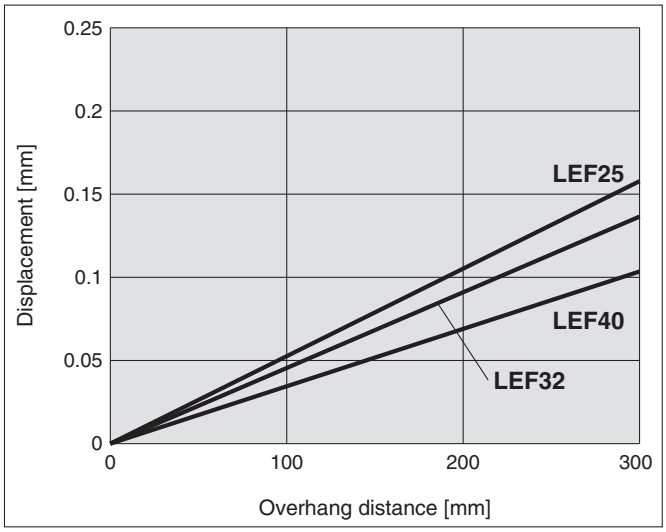




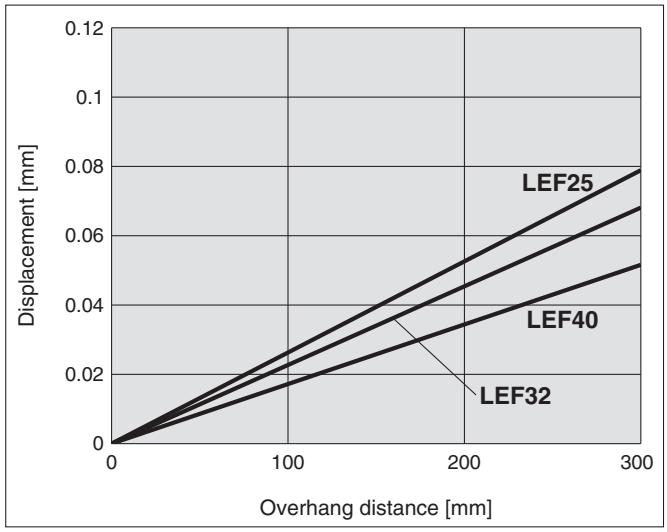
∗ This displacement is measured when a 15 mm aluminium plate is mounted and fixed on the table.
∗ Check the clearance and play of the guide separately.

Overhang Displacement Due to Table Clearance (Reference Value)

Basic type

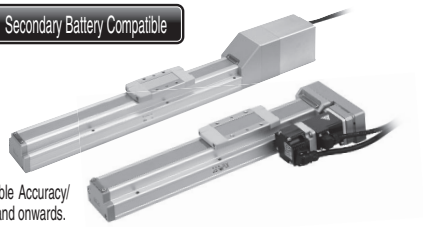


High-precision type



Model Selection

LECS□ Series ▶p. 83 LEFS Series ▶p. 99 11-LEFS Series ▶p. 188 25A-LEFS Series ▶p. 201



Selection Procedure

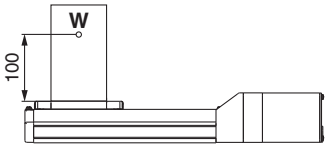
* The Work Load-Acceleration/Deceleration Graph, Dynamic Allowable Moment, Calculation of Guide Load Factor, and Table Accuracy/Displacement/Overhang Displacement are the same as those of the LECS□ AC servo motor. For details, refer to page 45 and onwards.

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

Selection Example

Operating conditions

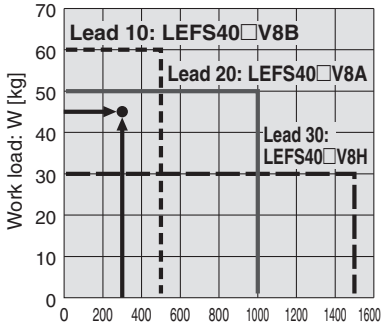
- Workpiece mass: 45 [kg]
- Speed: 300 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s²]
- Stroke: 200 [mm]
- Mounting position: Horizontal upward
- Workpiece mounting condition:



Step 1 Check the work load–speed. <Speed–Work load graph> (Page 52)

Select the target model based on the workpiece mass and speed with reference to the <Speed–Work load graph>.

Selection example) The **LEFS40V8B-200** is temporarily selected based on the graph shown on the right side.



<Speed–Work load graph> (LEFS40)

Step 2 Check the cycle time.

Calculate the cycle time using the following calculation method.

Cycle time:

T can be found from the following equation.

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

- T1: Acceleration time and T3: Deceleration time can be obtained by the following equation.

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

- T2: Constant speed time can be found from the following equation.

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

- T4: Settling time 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.

$T1 = V/a1 = 300/3000 = 0.1$ [s],

$T3 = V/a2 = 300/3000 = 0.1$ [s]

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{200 - 0.5 \cdot 300 \cdot (0.1 + 0.1)}{300} = 0.57 \text{ [s]}$$

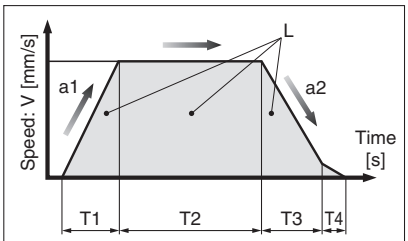
$T4 = 0.05$ [s]

Therefore, the cycle time can be obtained as follows.

$T = T1 + T2 + T3 + T4$

$= 0.1 + 0.57 + 0.1 + 0.05$

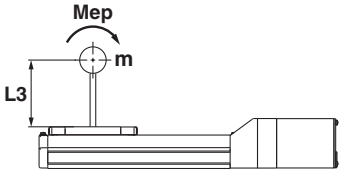
$= \mathbf{0.82}$ **[s]**

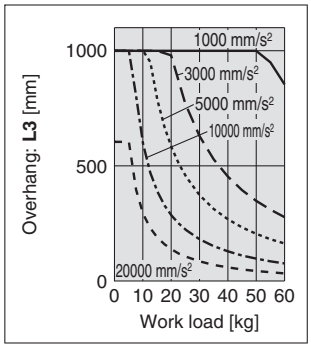


L : Stroke [mm]
··· (Operating condition)
V : Speed [mm/s]
··· (Operating condition)
a1: Acceleration [mm/s²]
··· (Operating condition)
a2: Deceleration [mm/s²]
··· (Operating condition)

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 positioning is completed

Step 3 Check the guide moment.





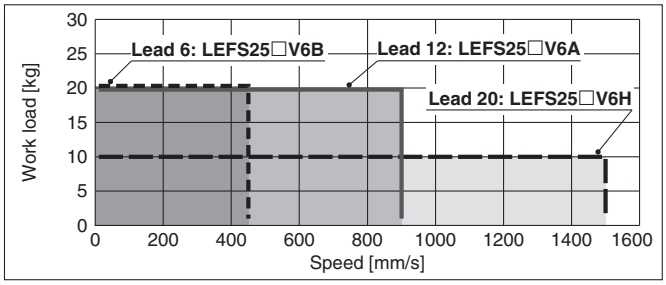
Based on the above calculation result, the LEFS40V8B-200 is selected.

Speed–Work Load Graph/Conditions for "Regenerative Resistor" (Guide)

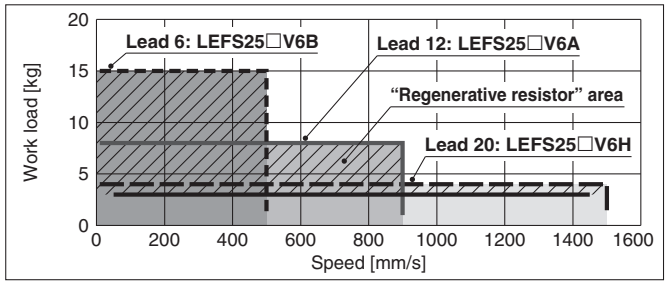
* The allowable speed is restricted depending on the stroke. Select it by referring to "Allowable Stroke Speed" below.

LEFS25/Ball Screw Drive

Horizontal

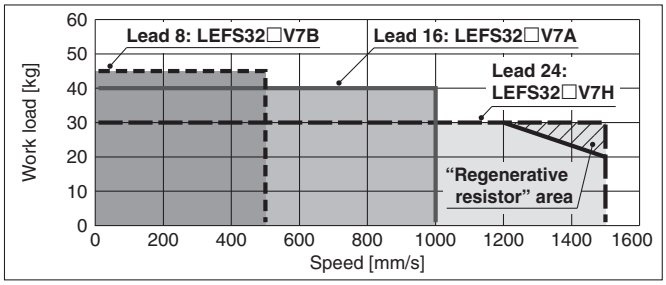


Vertical

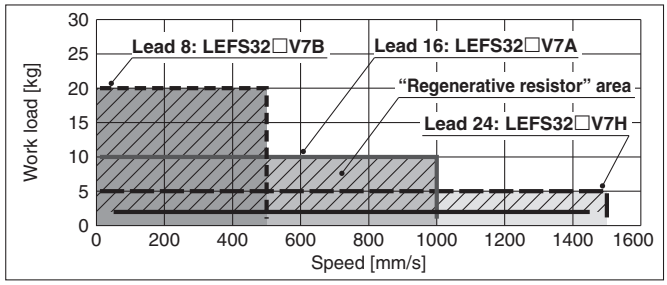


LEFS32/Ball Screw Drive

Horizontal

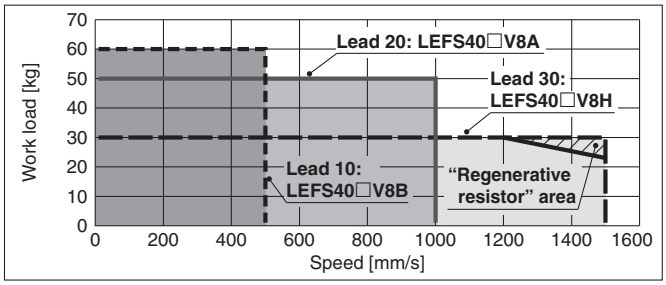


Vertical

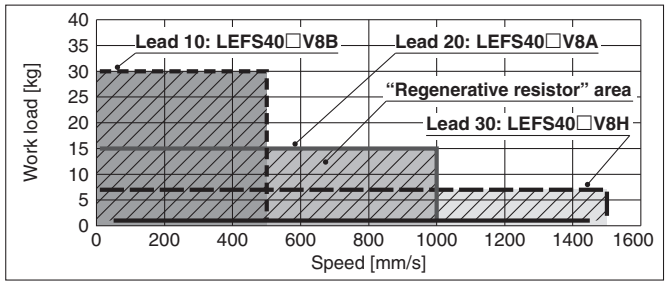


LEFS40/Ball Screw Drive

Horizontal



Vertical



"Regenerative resistor" area

* When using the actuator in the "Regenerative resistor" area, download the "AC servo drive capacity selection program/SigmaJunmaSize+" from the SMC website: https://www.smc.eu. Then, calculate the necessary regenerative resistor capacity to prepare an appropriate external regenerative resistor.
* Regenerative resistor should be provided by the customer.

Applicable Motor/Driver

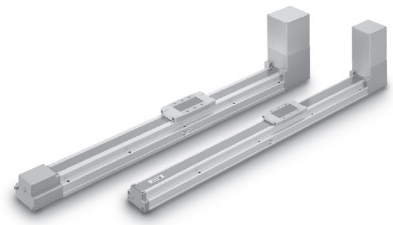
Model	Applicable model	
	Motor	Servopack (SMC driver)
LEFS25□	SGMJV-01A3A	SGDV-R90A11□ (LECYM2-V5) SGDV-R90A21□ (LECYU2-V5)
LEFS32□	SGMJV-02A3A	SGDV-1R6A11□ (LECYM2-V7) SGDV-1R6A21□ (LECYU2-V7)
LEFS40□	SGMJV-04A3A	SGDV-2R8A11□ (LECYM2-V8) SGDV-2R8A21□ (LECYU2-V8)

Allowable Stroke Speed

[mm/s]

Model	AC servo motor	Lead		Stroke [mm]												
		Symbol	[mm]	Up to 100	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
LEFS25	100 W /□40	H	20	1500				1200	900	700	550	—	—	—	—
		A	12	900				720	540	420	330	—	—	—	—
		B	6	450				360	270	210	160	—	—	—	—
		(Motor rotation speed)		(4500 rpm)				(3650 rpm)	(2700 rpm)	(2100 rpm)	(1650 rpm)	—	—	—	—
LEFS32	200 W /□60	H	24	1500					1200	930	750	610	510	—	—
		A	16	1000					800	620	500	410	340	—	—
		B	8	500					400	310	250	200	170	—	—
		(Motor rotation speed)		(3750 rpm)					(3000 rpm)	(2325 rpm)	(1875 rpm)	(1537 rpm)	(1275 rpm)	—	—
LEFS40	400 W /□60	H	30	—	1500					1410	1140	930	780	500	500
		A	20	—	1000					940	760	620	520	440	380
		B	10	—	500					470	380	310	260	220	190
		(Motor rotation speed)		—	(3000 rpm)					(2820 rpm)	(2280 rpm)	(1860 rpm)	(1560 rpm)	(1320 rpm)	(1140 rpm)

Model Selection



LECS□ Series ▶ p. 130 LECY□ Series ▶ p. 146

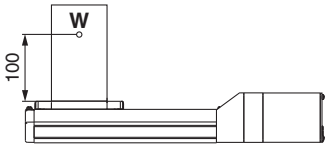
Selection Procedure

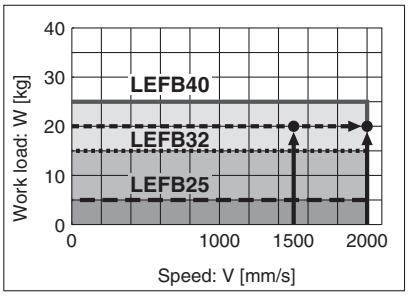
Step 1 Check the work load–speed. → **Step 2** Check the cycle time. → **Step 3** Check the allowable moment.

Selection Example

Operating conditions

- Workpiece mass: 20 [kg]
- Speed: 1500 [mm/s]
- Acceleration/Deceleration: 3000 [mm/s²]
- Stroke: 2000 [mm]
- Mounting position: Horizontal upward
- Workpiece mounting condition:





<Speed–Work load graph> (LEFB40)

Step 1 **Check the work load–speed. <Speed–Work load graph>** (Page 54)

Select the target model based on the workpiece mass and speed with reference to the <Speed–Work load graph>.

Selection example) The **LEFB40S4S-2000** is temporarily selected based on the graph shown on the right side.

Step 2 **Check the cycle time.**

Calculate the cycle time using the following calculation method.

Cycle time:

T can be found from the following equation.

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

- T1: Acceleration time and T3: Deceleration time can be obtained by the following equation.

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

- T2: Constant speed time can be found from the following equation.

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

- T4: Settling time 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.

$T1 = V/a1 = 1500/3000 = 0.5$ [s],

$T3 = V/a2 = 1500/3000 = 0.5$ [s]

$$T2 = \frac{L - 0.5 \cdot V \cdot (T1 + T3)}{V} = \frac{2000 - 0.5 \cdot 1500 \cdot (0.5 + 0.5)}{1500} = 0.83 \text{ [s]}$$

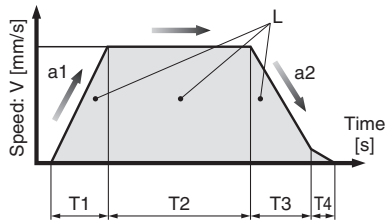
$T4 = 0.05$ [s]

Therefore, the cycle time can be obtained as follows.

$T = T1 + T2 + T3 + T4$

$= 0.5 + 0.83 + 0.5 + 0.05$

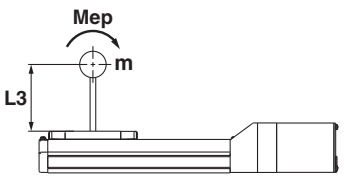
$=$ **1.88 [s]**

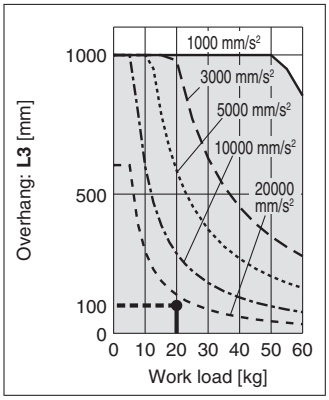


L : Stroke [mm]
··· (Operating condition)
V : Speed [mm/s]
··· (Operating condition)
a1: Acceleration [mm/s²]
··· (Operating condition)
a2: Deceleration [mm/s²]
··· (Operating condition)

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 positioning is completed

Step 3 **Check the guide moment.**

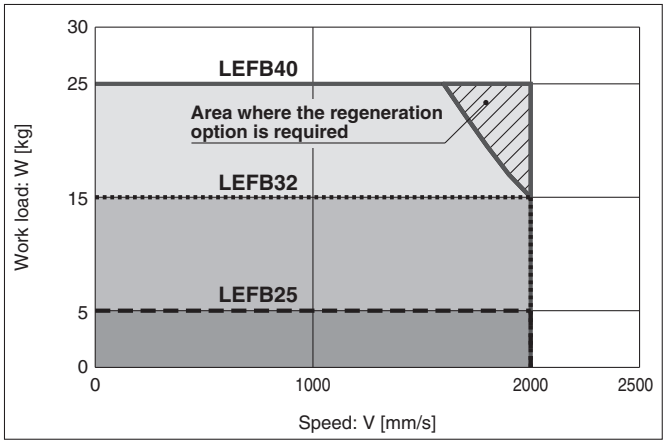




Based on the above calculation result, the LEFB40S4S-2000 is selected.

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

LEFB□/Belt Drive

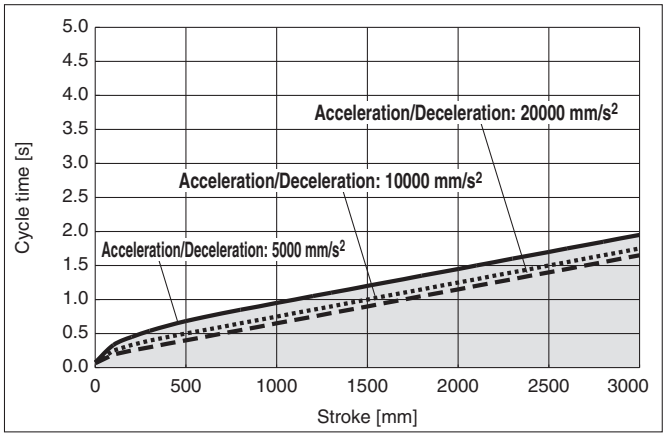


∗ The shaded area in the graph requires the regeneration option (LEC-MR-RB-032).

Cycle Time Graph (Guide)

LEFB□/Belt Drive

LEFB25/32/40



∗ Cycle time is for when maximum speed.
∗ Maximum stroke: LEFB25: 2000 mm
LEFB32: 2500 mm
LEFB40: 3000 mm

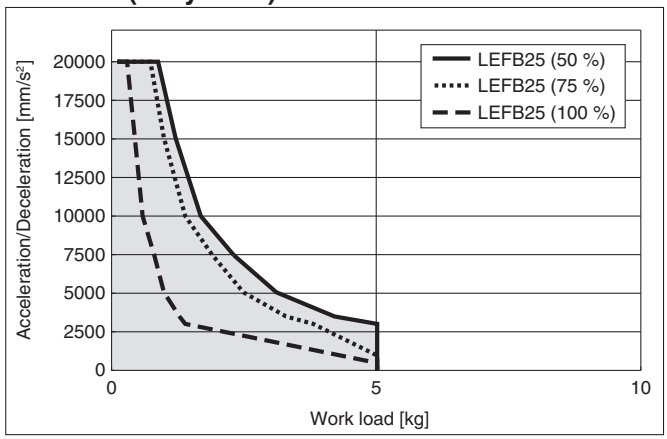
"Regenerative resistor" area

∗ When using the actuator in the "Regenerative resistor" area, download the "AC servo drive capacity selection program/SigmaJunmaSize+" from the SMC website: https://www.smc.eu. Then, calculate the necessary regenerative resistor capacity to prepare an appropriate external regenerative resistor.
∗ Regenerative resistor should be provided by the customer.

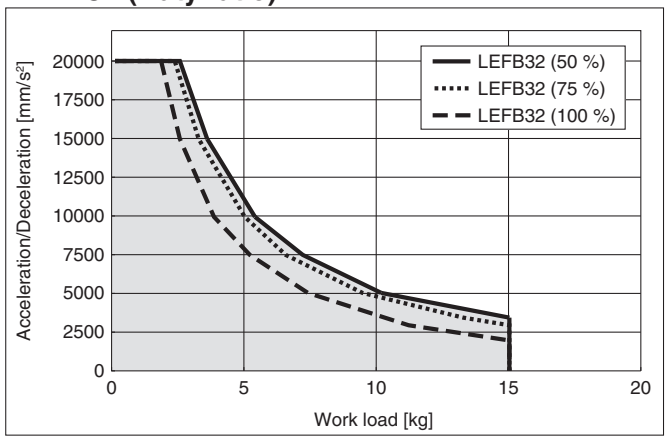
Work Load–Acceleration/Deceleration Graph (Guide)

LEFB□/Belt Drive

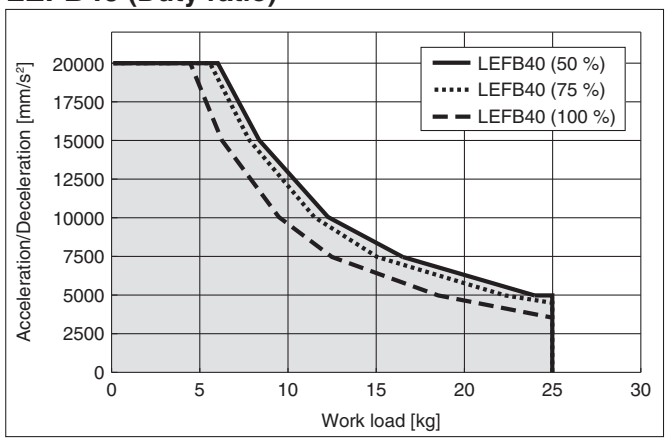
LEFB25 (Duty ratio)



LEFB32 (Duty ratio)



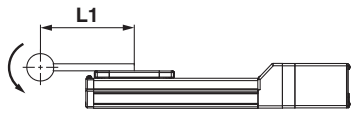
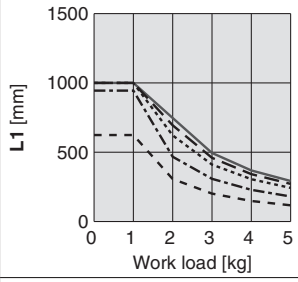
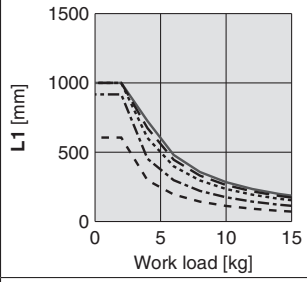
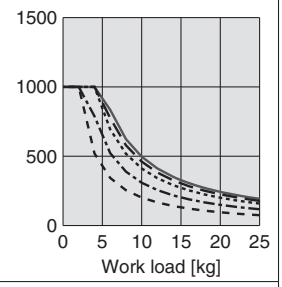
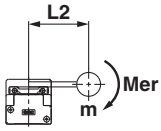
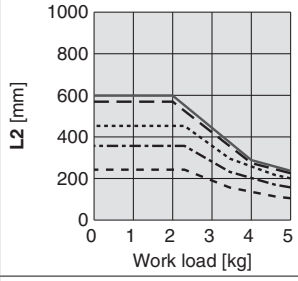
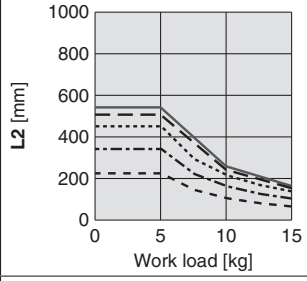
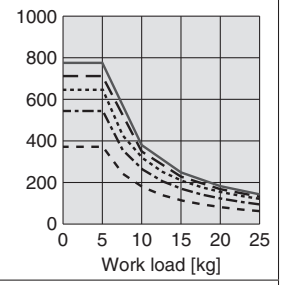
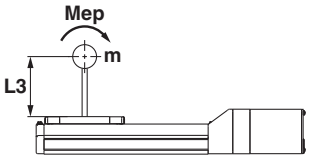
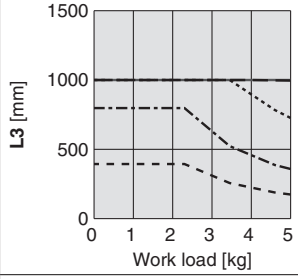
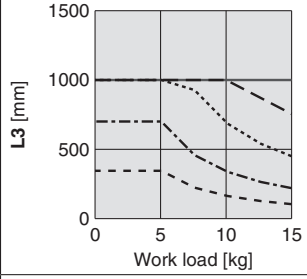
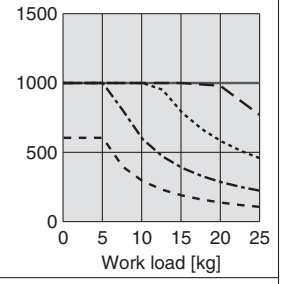
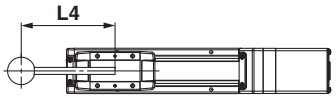
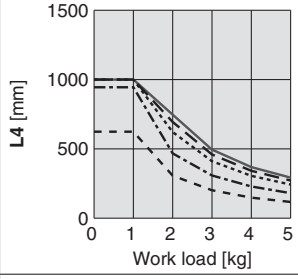
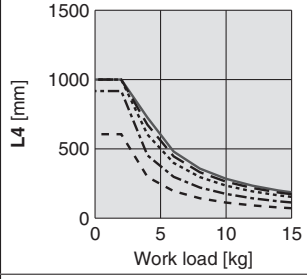
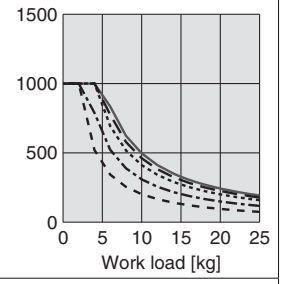
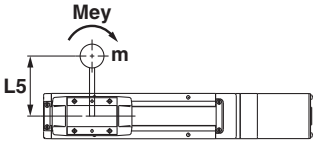
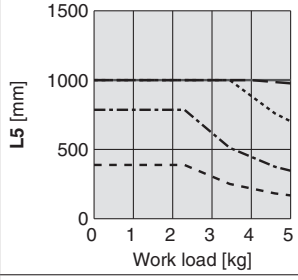
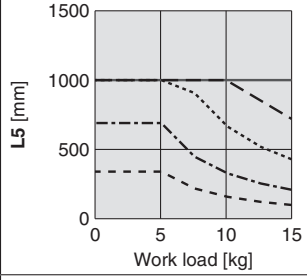
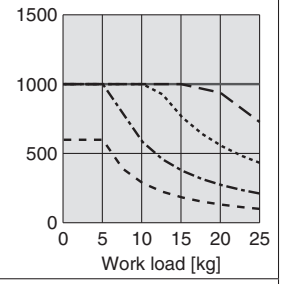
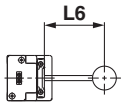
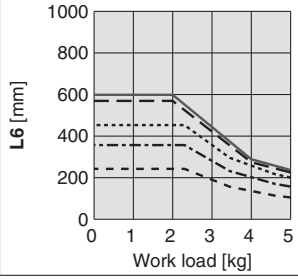
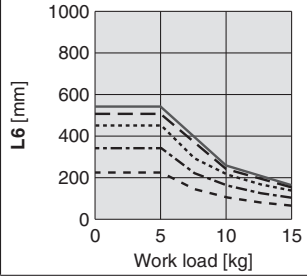
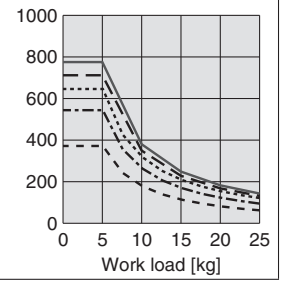
LEFB40 (Duty ratio)



Dynamic Allowable Moment

* This graph shows the amount of allowable overhang (guide unit) when the centre of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation, https://www.smc.eu

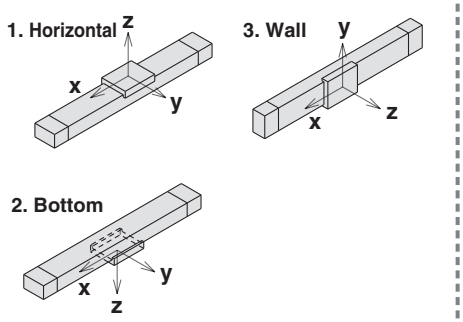
Acceleration/Deceleration ——1000 mm/s² – – –3000 mm/s² ·····5000 mm/s² –·–·–10000 mm/s² - - - - 20000 mm/s²

Orientation	Load overhanging direction **m** : Work load [kg] **Me**: Dynamic allowable moment [N·m] **L** : Overhang to the work load centre of gravity [mm]		Model LEFB25	Model LEFB32	Model LEFB40
Horizontal/Bottom		X			
		Y			
		Z			
Wall		X			
		Y			
		Z			

Calculation of Guide Load Factor

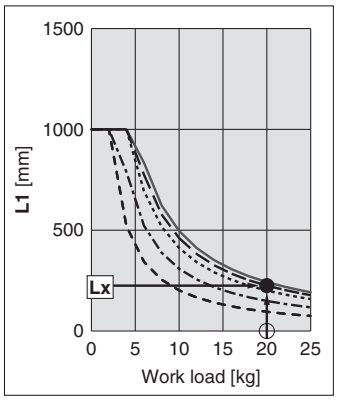
1. Decide operating conditions.
   Model: LEFB
   Size: 25/32/40
   Mounting orientation: Horizontal/Bottom/Wall
   Acceleration [mm/s²]: **a**
   Work load [kg]: **m**
   Work load centre position [mm]: **Xc/Yc/Zc**
2. Select the target graph with reference to the model, size, and mounting orientation.
3. Based on the acceleration and work load, obtain the overhang [mm]: **Lx/Ly/Lz** from the graph.
4. Calculate the load factor for each direction.
   α**x = Xc/Lx**, α**y = Yc/Ly**, α**z = Zc/Lz**
5. Confirm the total of α**x**, α**y**, and α**z** is 1 or less.
   α**x + αy + αz ≤ 1**
   When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load centre position and series.

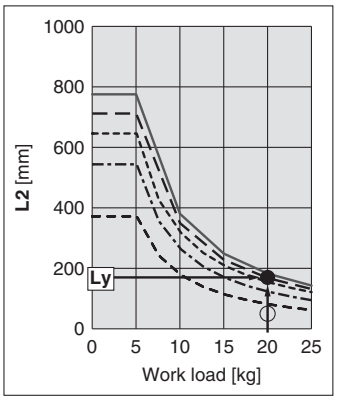
Mounting orientation



Example

1. Operating conditions
   Model: LEFB40
   Size: 40
   Mounting orientation: Horizontal
   Acceleration [mm/s²]: 3000
   Work load [kg]: 20
   Work load centre position [mm]: **Xc = 0**, **Yc = 50**, **Zc = 200**
2. Select the graphs for horizontal of the LEFB40 on page 55.
3. **Lx = 250 mm**, **Ly = 180 mm**, **Lz = 1000 mm**
4. The load factor for each direction can be obtained as follows.
   αx = 0/250 = 0
   αy = 50/180 = 0.27
   αz = 200/1000 = 0.2
5. **αx + αy + αz = 0.47 ≤ 1**





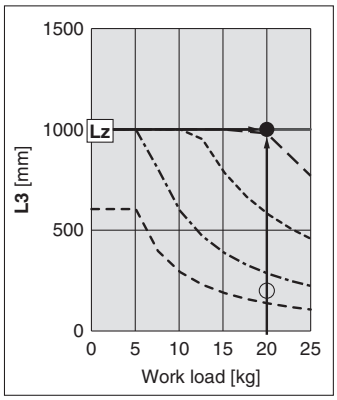
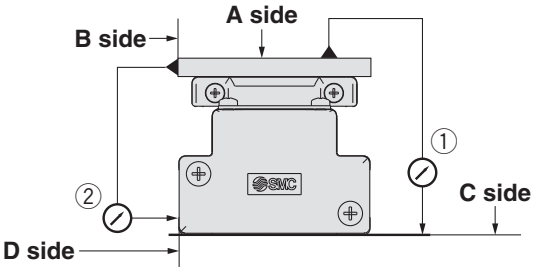


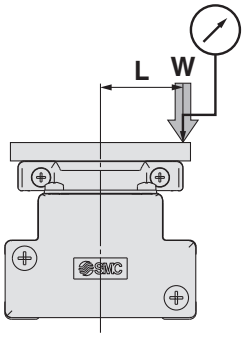
Table Accuracy (Reference Value)

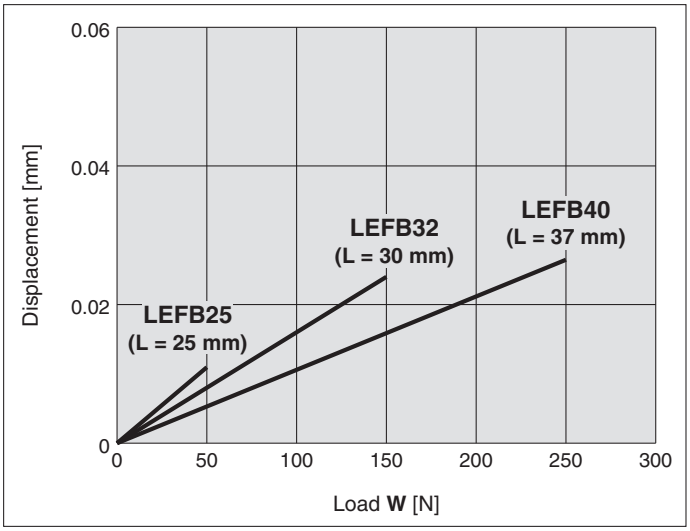


Model	Travelling parallelism [mm] (Every 300 mm)	
	① C side travelling parallelism to A side	② D side travelling parallelism to B side
LEFB25	0.05	0.03
LEFB32	0.05	0.03
LEFB40	0.05	0.03

∗ Travelling parallelism does not include the mounting surface accuracy. (Excludes when the stroke exceeds 2000 mm)

Table Displacement (Reference Value)

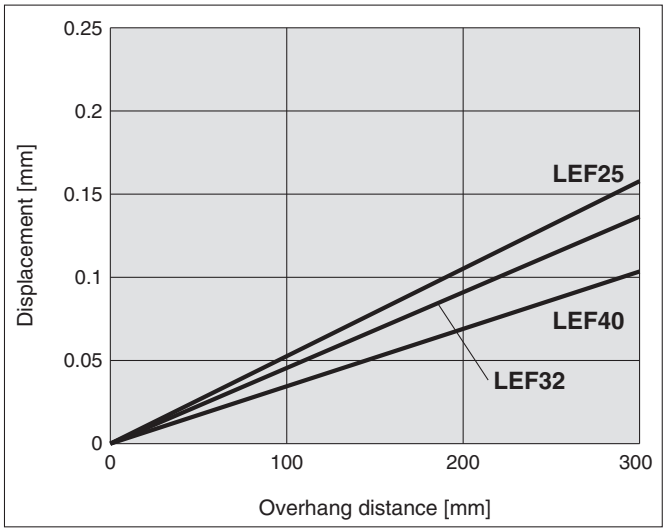




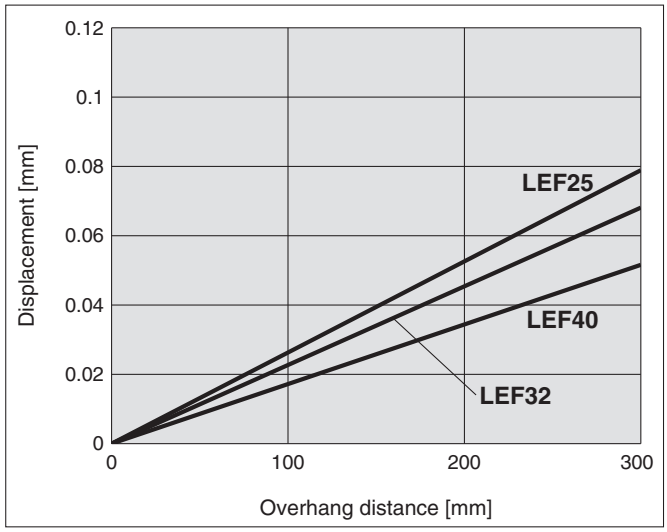
∗ This displacement is measured when a 15 mm aluminium plate is mounted and fixed on the table.
∗ Check the clearance and play of the guide separately.

Overhang Displacement Due to Table Clearance (Reference Value)

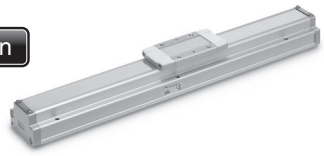
Basic type



High-precision type



Model Selection



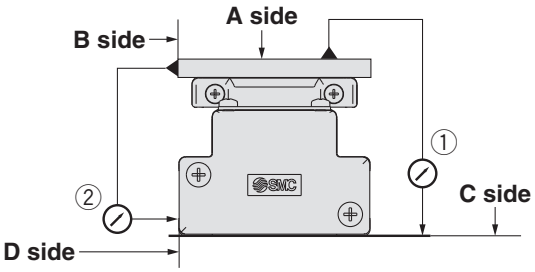
LEFG Series ▶p. 115, 162 11-LEFG Series ▶p. 193

Rated Load

Unit: N

Rated load	LEFG16	LEFG25	LEFG32	LEFG40
Basic dynamic rated load	6250	8950	16500	22700
Basic static rated load	8350	13900	22000	34500

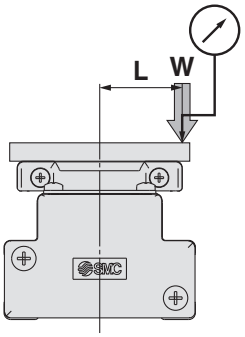
Table Accuracy (Reference Value)

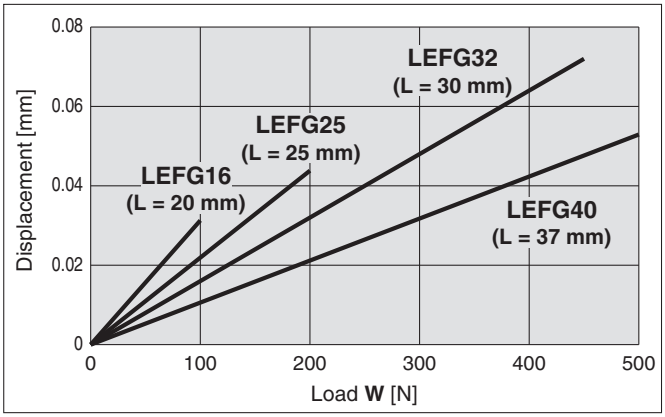


Model	Travelling parallelism [mm] (Every 300 mm)	
	① C side travelling parallelism to A side	② D side travelling parallelism to B side
LEFG16	0.05	0.03
LEFG25	0.05	0.03
LEFG32	0.05	0.03
LEFG40	0.05	0.03

∗ Travelling parallelism does not include the mounting surface accuracy. (Excludes when the stroke exceeds 2000 mm)

Table Displacement (Reference Value)



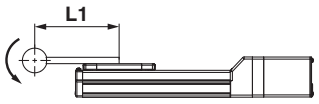
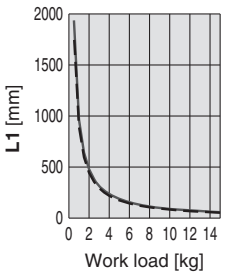
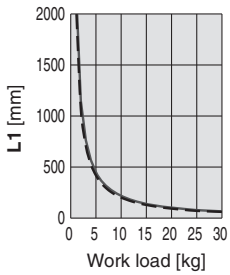
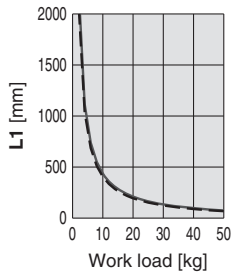
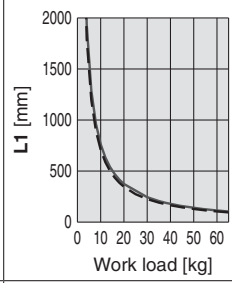
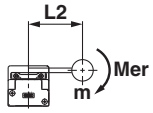
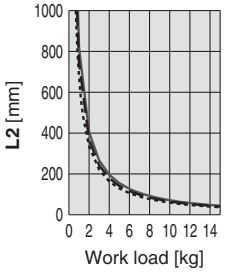
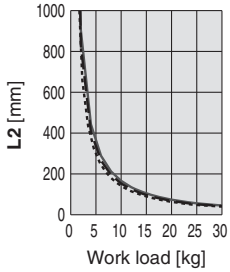
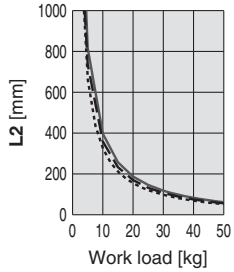
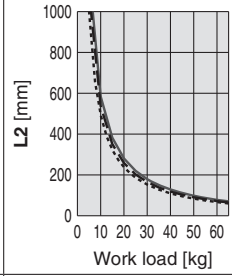
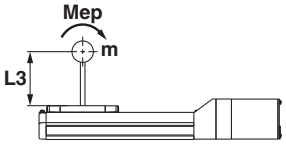
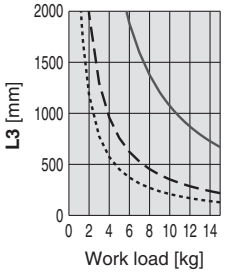
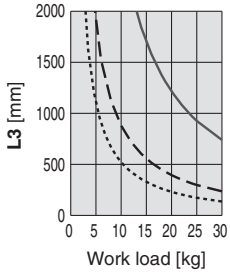
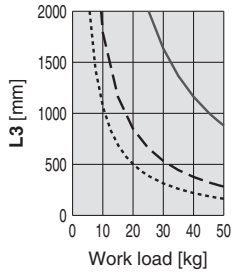
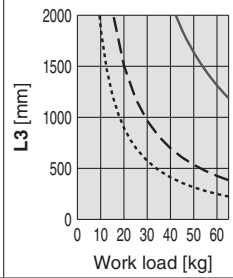
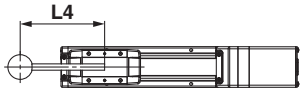
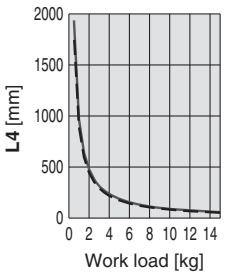
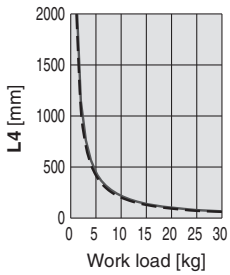
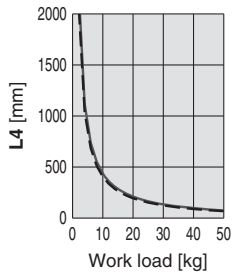
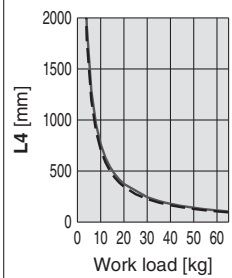
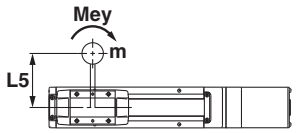
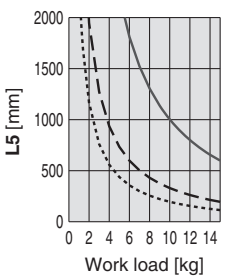
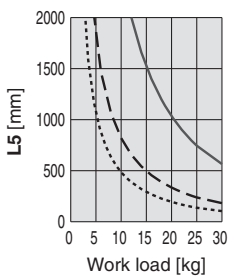
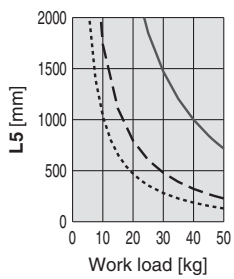
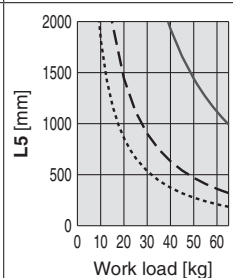
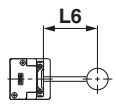
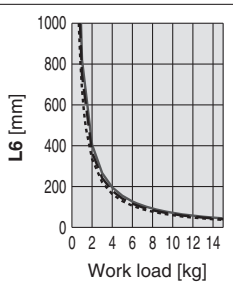
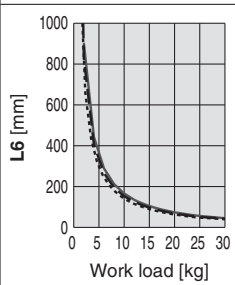
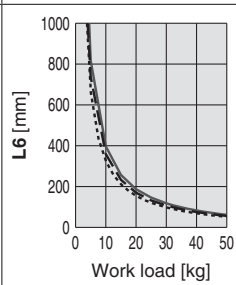
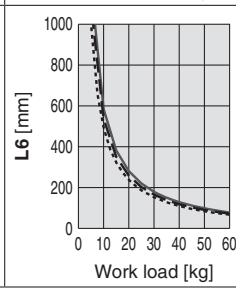


∗ This displacement is measured when a 15 mm aluminium plate is mounted and fixed on the table.
∗ Check the clearance and play of the guide separately.

Dynamic Allowable Moment

* This graph shows the amount of allowable overhang (guide unit) when the centre of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation, https://www.smc.eu

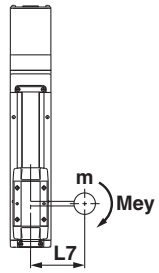
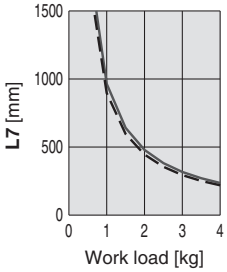
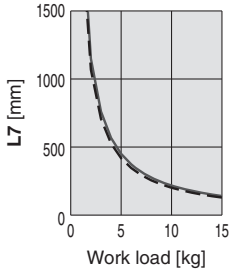
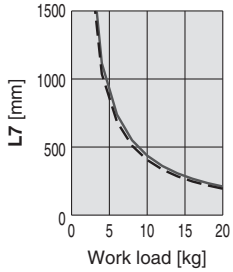
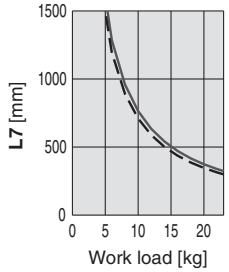
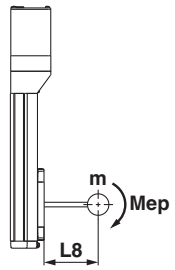
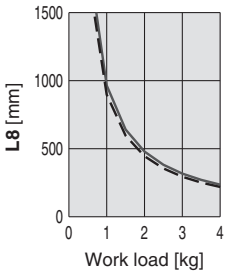
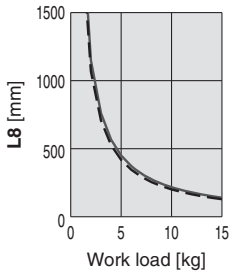
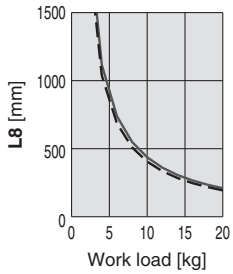
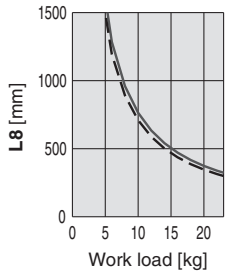
Acceleration/Deceleration ——1000 mm/s² — — —3000 mm/s² ·····5000 mm/s²

Orientation	Load overhanging direction **m** : Work load [kg] **Me**: Dynamic allowable moment [N·m] **L** : Overhang to the work load centre of gravity [mm]		Model (11-)LEFG16	(11-)LEFG25	(11-)LEFG32	(11-)LEFG40
Horizontal/Bottom		X				
		Y				
		Z				
Wall		X				
		Y				
		Z				

Dynamic Allowable Moment

* This graph shows the amount of allowable overhang (guide unit) when the centre of gravity of the workpiece overhangs in one direction. When selecting the overhang, refer to "Calculation of Guide Load Factor" or the Electric Actuator Model Selection Software for confirmation, https://www.smc.eu

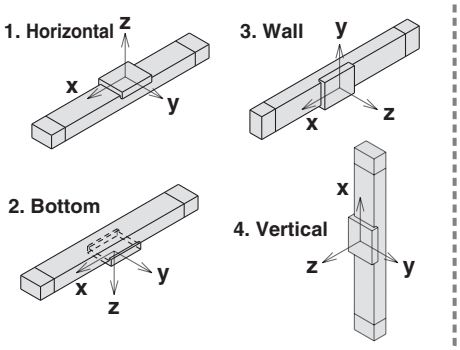
Acceleration/Deceleration ——1000 mm/s² — — —3000 mm/s² ·····5000 mm/s²

Orientation	Load overhanging direction		Model			
	m : Work load [kg] **Me**: Dynamic allowable moment [N·m] **L** : Overhang to the work load centre of gravity [mm]		(11-)LEFG16	(11-)LEFG25	(11-)LEFG32	(11-)LEFG40
Vertical		Y				
		Z				

Calculation of Guide Load Factor

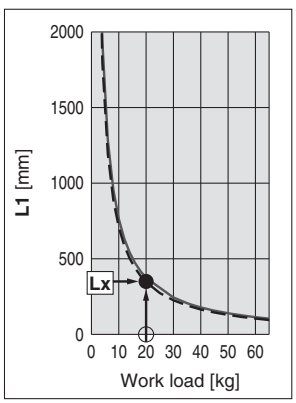
1. Decide operating conditions.
   Model: LEFG
   Size: 16/25/32/40
   Mounting orientation: Horizontal/Bottom/Wall/Vertical
   Acceleration [mm/s²]: **a**
   Work load [kg]: **m**
   Work load centre position [mm]: **Xc/Yc/Zc**
2. Select the target graph with reference to the model, size, and mounting orientation.
3. Based on the acceleration and work load, obtain the overhang [mm]: **Lx/Ly/Lz** from the graph.
4. Calculate the load factor for each direction.
   α**x = Xc/Lx**, α**y = Yc/Ly**, α**z = Zc/Lz**
5. Confirm the total of α**x**, α**y**, and α**z** is 1 or less.
   α**x + αy + αz ≤ 1**
   When 1 is exceeded, please consider a reduction of acceleration and work load, or a change of the work load centre position and series.

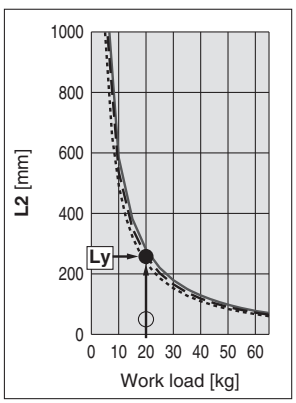
Mounting orientation

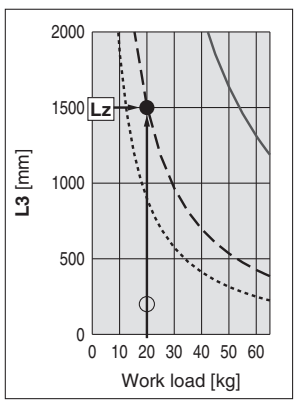


Example

1. Operating conditions
   Model: LEFG40
   Size: 40
   Mounting orientation: Horizontal
   Acceleration [mm/s²]: 3000
   Work load [kg]: 20
   Work load centre position [mm]: **Xc = 0**, **Yc = 50**, **Zc = 200**
2. Select the graphs for horizontal of the (11-)LEFG40 on page 59.
3. **Lx = 400 mm**, **Ly = 250 mm**, **Lz = 1500 mm**
4. The load factor for each direction can be obtained as follows.
   α**x = 0/400 = 0**
   α**y = 50/250 = 0.2**
   α**z = 200/1500 = 0.13**
5. α**x + αy + αz = 0.33 ≤ 1**







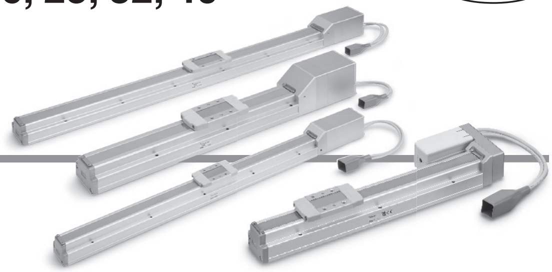
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Electric Actuator/Slider Type Ball Screw Drive

LEFS Series LEFS16, 25, 32, 40

RoHS

Clean Room Specification ▸p. 177 Secondary Battery Compatible ▸p. 197



How to Order

LEFS **H** **25** **R** **A** **B** - **200** ☐ **C** **N** **K** - **S1**

❶ H ❷ 25 ❸ R ❹ A ❺ B ❻ 200 ❼ ☐ ❽ C ❾ N ❿ K ⓫ S1

LEC☐ *Series*: ⓬ 6P ⓭ 1 ⓮ ☐

JXC☐ *Series*: ⓬ CD17T

For details on controllers, refer to page 62.

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

16
25
32
40

❸ Motor mounting position

—	In-line
R	Right side parallel
L	Left side parallel

❹ Motor type

Symbol	Type	Applicable size				Compatible controller/driver
		LEFS16	LEFS25	LEFS32	LEFS40	
—	Step motor (Servo/24 VDC)	●	●	●	●	LECP1 LECPA JXCE1 JXC91 JXCP1 JXCD1 JXCL1
A	Servo motor (24 VDC)	●	●	—	—	LECA6

❺ Lead [mm]

Symbol	LEFS16	LEFS25	LEFS32	LEFS40
H	—	20	24	30
A	10	12	16	20
B	5	6	8	10

❻ Stroke*1 [mm]

Stroke	Note	
	Size	Applicable stroke
50 to 500	16	50, 100, 150, 200, 250, 300, 350, 400, 450, 500
50 to 800	25	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800
50 to 1000	32	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000
150 to 1200	40	150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1100, 1200

❼ Motor option

—	Without option
B	With lock

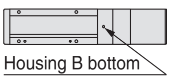
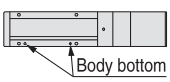
❽ Auto switch compatibility*2 *3 *4 *5

—	None
C	With (Includes 1 mounting bracket)

❾ Grease application (Seal band part)

—	With
N	Without (Roller specification)

❿ Positioning pin hole

—	Housing B bottom*6	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

⓫ Actuator cable type/length*8

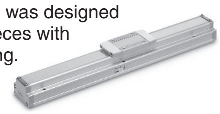
Standard cable [m]

—	None
S1	1.5*10
S3	3*10
S5	5*10

Robotic cable [m]

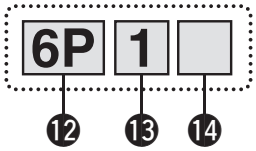
R1	1.5	RA	10*7
R3	3	RB	15*7
R5	5	RC	20*7
R8	8*7		

Support Guide/*LEFG* Series
The support guide was designed to support workpieces with significant overhang.
p. 115



For auto switches, refer to pages 167 to 170.

LEC□ Series (For details, refer to page 63.)



⑫ Controller/Driver type*9

—	Without controller/driver	
6N	**LECA6** (Step data input type)	NPN
6P		PNP
1N	**LECP1***10 (Programless type)	NPN
1P		PNP
AN	**LECPA***10 *11 (Pulse input type)	NPN
AP		PNP

⑬ I/O cable length*12, Communication plug

—	Without cable (Without communication plug connector)
1	1.5 m
3	3 m*13
5	5 m*13
S	Straight type communication plug connector
T	T-branch type communication plug connector

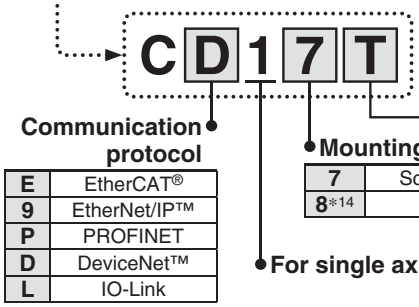
⑭ Controller/Driver mounting

—	Screw mounting
D	DIN rail*14

JXC□ Series (For details, refer to page 63.)

⑫ Controller

—	Without controller
C□1□□	With controller



*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 Excluding the LEF16
*3 If 2 or more are required, please order them separately. (Part no.: LEF-D-2-1 For details, refer to page 167.)
*4 Order auto switches separately. (For details, refer to pages 168 to 170.)
*5 When "—" is selected, the product will not come with a built-in magnet for an auto switch, and so a mounting bracket cannot be secured. Be sure to select an appropriate model initially as the product cannot be changed to have auto switch compatibility after purchase.
*6 Refer to the body mounting example on page 203 for the mounting method.
*7 Produced upon receipt of order (Robotic cable only)
*8 The standard cable should only be used on fixed parts. For use on moving parts, select the robotic cable.
*9 For details on controllers/drivers and compatible motors, refer to the compatible controller/driver on the next page.
*10 Only available for the motor type "Step motor"
*11 When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-□) on page 234 separately.
*12 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 213 (For LECA6), page 227 (For LECP1), or page 234 (For LECPA) if I/O cable is required.
*13 When "Pulse input type" is selected for controller/driver types, pulse input usable only with differential. Only 1.5 m cables usable with open collector
*14 The DIN rail is not included. Order it separately.
*15 Select "—" for anything other than DeviceNet™.

⚠Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEF series and the controller LEC/JXC series.
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.

② For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 213 for the noise filter set. Refer to the LECA series Operation Manual for installation.

[UL-compliant products (For the LEC series)]

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

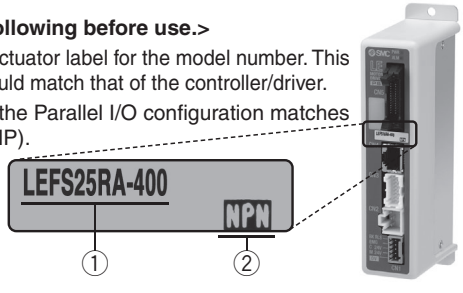
The actuator and controller/driver are sold as a package.

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

<Check the following before use.>

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

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



* Refer to the Operation Manual for using the products. Please download it via our website, https://www.smc.eu

Compatible Controller/Driver

LEC□ Series

Type	Step data input type 	Programless type 	Pulse input type 
Series	**LECA6**	**LECP1**	**LECPA**
Features	Value (Step data) input Standard controller	Capable of setting up operation (step data) without using a PC or teaching box	Operation by pulse signals
Compatible motor	Servo motor (24 VDC)	Step motor (Servo/24 VDC)	
Max. number of step data	64 points	14 points	—
Power supply voltage	24 VDC		
Reference page	205	221	228

JXC□ Series

Type	EtherCAT® direct input type 	EtherNet/IP™ direct input type 	PROFINET direct input type 	DeviceNet™ direct input type 	IO-Link direct input type 
Series	**JXCE1**	**JXC91**	**JXCP1**	**JXCD1**	**JXCL1**
Features	EtherCAT® direct input	EtherNet/IP™ direct input	PROFINET direct input	DeviceNet™ direct input	IO-Link direct input
Compatible motor	Step motor (Servo/24 VDC)				
Max. number of step data	64 points				
Power supply voltage	24 VDC				
Reference page	246				

Specifications

Step Motor (Servo/24 VDC)

Model					LEFS16		LEFS25			LEFS32			LEFS40		
Actuator specifications	Stroke [mm]*1				50 to 500		50 to 800			50 to 1000			150 to 1200		
	Work load [kg]*2	Horizontal	LECP1 JXCE1/91/P1/D1/L1		14	15	12	25	30	20	45	50	25	55	65
			LECPA/JXC□2 3		9	10	10	20	20	15	40	45	20	50	60
		Vertical			2	4	0.5	7.5	15	4	10	20	2	2	23
	Controller type: LECP1, JXC□1	Speed*2 [mm/s]	Stroke range	Up to 500	10 to 700	5 to 360	20 to 1100	12 to 750	6 to 400	24 to 1200	16 to 800	8 to 520	30 to 1200	20 to 1000	10 to 300
				501 to 600	—	—	20 to 900	12 to 540	6 to 270	24 to 1200	16 to 800	8 to 400	30 to 1200	20 to 1000	10 to 300
				601 to 700	—	—	20 to 630	12 to 420	6 to 230	24 to 930	16 to 620	8 to 310	30 to 1200	20 to 900	10 to 300
				701 to 800	—	—	20 to 550	12 to 330	6 to 180	24 to 750	16 to 500	8 to 250	30 to 1140	20 to 760	10 to 300
				801 to 900	—	—	—	—	—	24 to 610	16 to 410	8 to 200	30 to 930	20 to 620	10 to 300
				901 to 1000	—	—	—	—	—	24 to 500	16 to 340	8 to 170	30 to 780	20 to 520	10 to 250
				1001 to 1100	—	—	—	—	—	—	—	—	30 to 660	20 to 440	10 to 220
				1101 to 1200	—	—	—	—	—	—	—	—	30 to 570	20 to 380	10 to 190
	Driver type: LECPA, JXC□2 3	Speed*2 [mm/s]	Stroke range	Up to 500	10 to 500	5 to 250	20 to 1000	12 to 500	6 to 250	24 to 1200	16 to 500	8 to 250	30 to 500	20 to 500	10 to 250
				501 to 600	—	—	20 to 900	12 to 500	6 to 250	24 to 1200	16 to 500	8 to 250	30 to 500	20 to 500	10 to 250
				601 to 700	—	—	20 to 630	12 to 420	6 to 230	24 to 930	16 to 500	8 to 250	30 to 500	20 to 500	10 to 250
				701 to 800	—	—	20 to 550	12 to 330	6 to 180	24 to 750	16 to 500	8 to 250	30 to 500	20 to 500	10 to 250
				801 to 900	—	—	—	—	—	24 to 610	16 to 410	8 to 200	30 to 500	20 to 500	10 to 250
				901 to 1000	—	—	—	—	—	24 to 500	16 to 340	8 to 170	30 to 500	20 to 500	10 to 250
				1001 to 1100	—	—	—	—	—	—	—	—	30 to 500	20 to 440	10 to 220
				1101 to 1200	—	—	—	—	—	—	—	—	30 to 500	20 to 380	10 to 190
	Max. acceleration/deceleration [mm/s²]				3000										
	Positioning repeatability [mm]			Basic type	±0.02										
				High-precision type	±0.015 (Lead H: ±0.02)										
	Lost motion [mm]*3			Basic type	0.1 or less										
				High-precision type	0.05 or less										
	Lead [mm]				10	5	20	12	6	24	16	8	30	20	10
	Impact/Vibration resistance [m/s²]*4				50/20										
	Actuation type				Ball screw (LEFS□), Ball screw + Belt (LEFS□R L)										
	Guide type				Linear guide										
	Operating temperature range [°C]				5 to 40										
	Operating humidity range [%RH]				90 or less (No condensation)										
Electric specifications	Motor size				□28		□42			□56.4					
	Motor type				Step motor (Servo/24 VDC)										
	Encoder				Incremental A/B phase (800 pulse/rotation)										
	Rated voltage [V]				24 VDC ±10 %										
	Power consumption [W]*5				22		38			50			100		
	Standby power consumption when operating [W]*6				18		16			44			43		
	Max. instantaneous power consumption [W]*7				51		57			123			141		
Lock unit specifications	Type*8				Non-magnetising lock										
	Holding force [N]				20	39	47	78	157	72	108	216	75	113	225
	Power consumption [W]*9				2.9		5			5			5		
	Rated voltage [V]				24 VDC ±10 %										

∗1 Please consult with SMC for non-standard strokes as they are produced as special orders.
∗2 Speed changes according to the controller/driver type and work load. Check “Speed–Work Load Graph (Guide)” on pages 36 and 37.
Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10 % for each 5 m.
∗3 A reference value for correcting an error in reciprocal operation
∗4 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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
∗5 The power consumption (including the controller) is for when the actuator is operating.
∗6 The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation.
∗7 The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.
∗8 With lock only
∗9 For an actuator with lock, add the power consumption for the lock.

Specifications

Servo Motor (24 VDC)

Model			LEFS16A		LEFS25A		
Actuator specifications	Stroke [mm]*1		50 to 500		50 to 800		
	Work load*2 [kg]	Horizontal	7	10	5	11	18
		Vertical	2	4	1	2.5	5
	Speed*2 [mm/s] Stroke range	Up to 500	1 to 500	1 to 250	2 to 800	2 to 500	1 to 250
		501 to 600	—	—			
		601 to 700	—	—	2 to 630	2 to 420	1 to 230
		701 to 800	—	—	2 to 550	2 to 330	1 to 180
	Max. acceleration/deceleration [mm/s²]		3000				
	Positioning repeatability [mm]	Basic type	±0.02				
		High-precision type	±0.015 (Lead H: ±0.02)				
	Lost motion*3 [mm]	Basic type	0.1 or less				
		High-precision type	0.05 or less				
	Lead [mm]		10	5	20	12	6
	Impact/Vibration resistance [m/s²]*4		50/20				
	Actuation type		Ball screw (LEFS□), Ball screw + Belt (LEFS□R/L)				
	Guide type		Linear guide				
	Operating temperature range [°C]		5 to 40				
	Operating humidity range [%RH]		90 or less (No condensation)				
Electric specifications	Motor size		□28		□42		
	Motor output [W]		30		36		
	Motor type		Servo motor (24 VDC)				
	Encoder		Incremental A/B (800 pulse/rotation)/Z phase				
	Rated voltage [V]		24 VDC ±10 %				
	Power consumption [W]*5		63		102		
	Standby power consumption when operating [W]*6		Horizontal 4/Vertical 9				
	Max. instantaneous power consumption [W]*7		70		113		
Lock unit specifications	Type*8		Non-magnetising lock				
	Holding force [N]		20	39	47	78	157
	Power consumption [W]*9		2.9		5		
	Rated voltage [V]		24 VDC ±10 %				

∗1 Please consult with SMC for non-standard strokes as they are produced as special orders.
∗2 Check "Speed–Work Load Graph (Guide)" on page 39 for details.
Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10 % for each 5 m.
∗3 A reference value for correcting an error in reciprocal operation
∗4 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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
∗5 The power consumption (including the controller) is for when the actuator is operating.
∗6 The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation.
∗7 The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.
∗8 With lock only
∗9 For an actuator with lock, add the power consumption for the lock.

Weight

Series	LEFS16									
Stroke [mm]	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	0.83	0.90	0.98	1.05	1.13	1.20	1.28	1.35	1.43	1.50
Additional weight with lock [kg]	0.12									

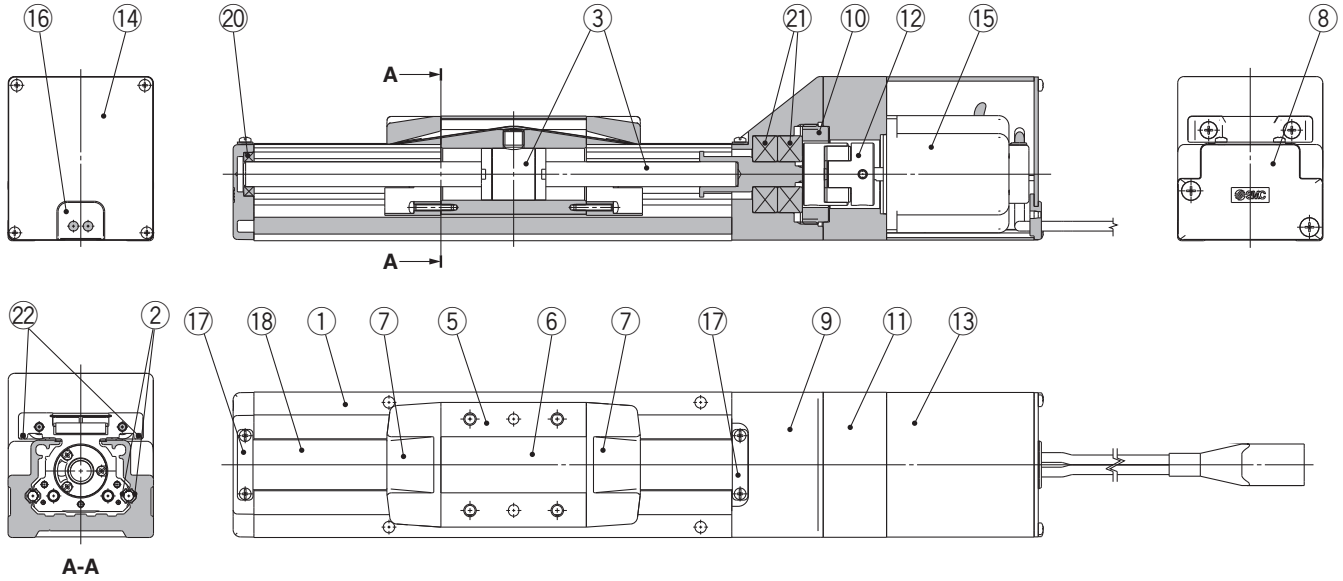
Series	LEFS25																
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
Product weight [kg]	1.70	1.84	1.98	2.12	2.26	2.40	2.54	2.68	2.82	2.96	3.10	3.24	3.38	3.52	3.66	3.80	
Additional weight with lock [kg]	0.26																

Series	LEFS32																				
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	
Product weight [kg]	3.15	3.35	3.55	3.75	3.95	4.15	4.35	4.55	4.75	4.95	5.15	5.35	5.55	5.75	5.95	6.15	6.35	6.55	6.75	6.95	
Additional weight with lock [kg]	0.53																				

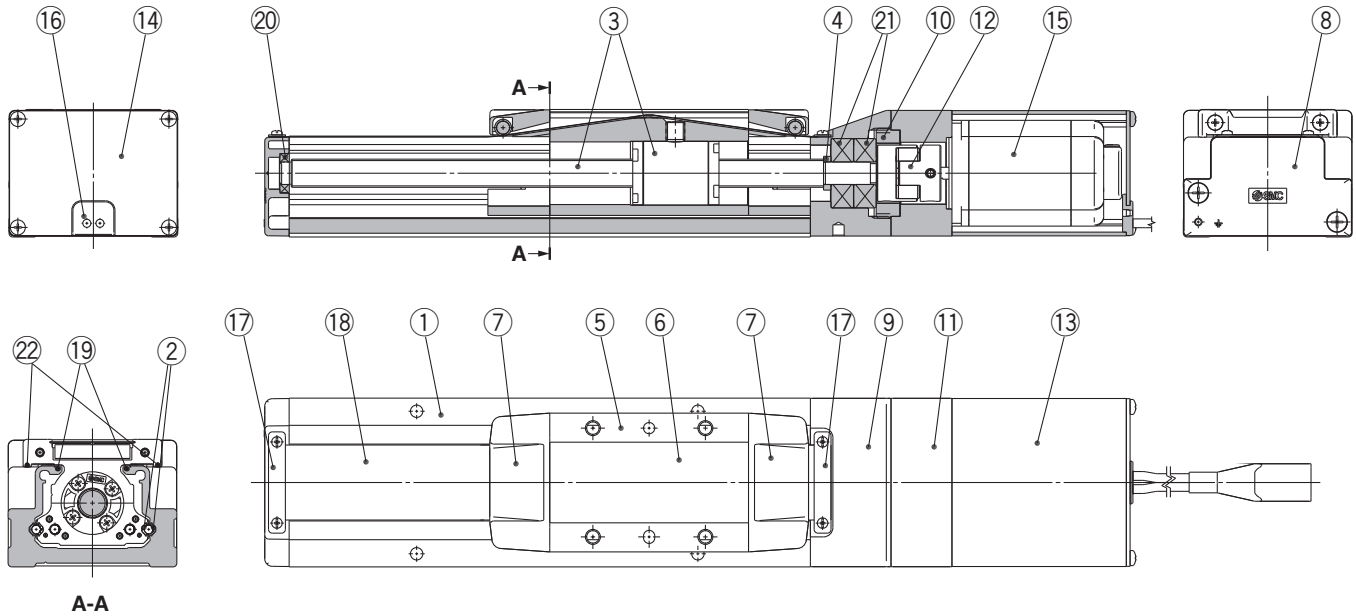
Series	LEFS40																				
Stroke [mm]	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	
Product weight [kg]	5.37	5.65	5.93	6.21	6.49	6.77	7.15	7.33	7.61	7.89	8.17	8.45	8.73	9.01	9.29	9.57	9.85	10.13	10.69	11.25	
Additional weight with lock [kg]	0.53																				

Construction: In-line Motor

LEFS16, 25, 32



LEFS40

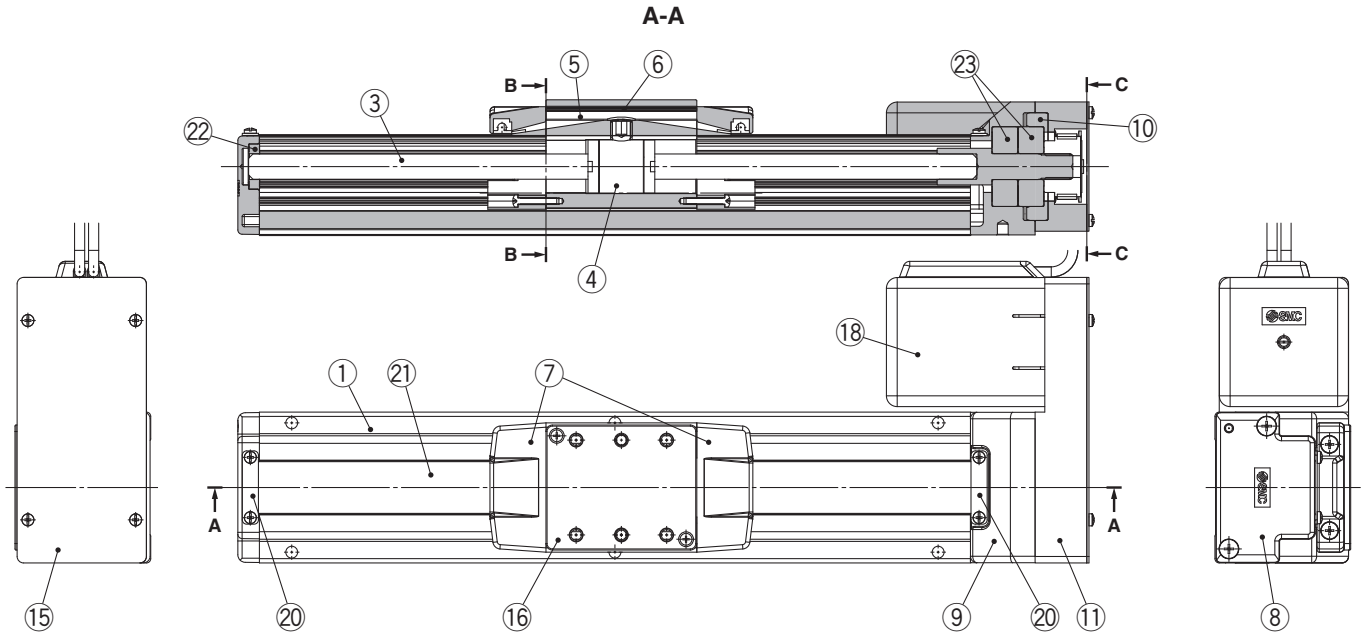


Component Parts

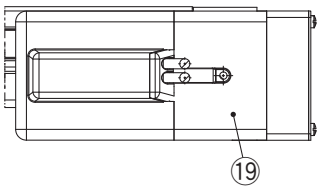
No.	Description		Material	Note
1	**Body**		Aluminium alloy	Anodised
2	**Rail guide**		—	
3	**Ball screw assembly**		—	
4	**Spacer**	**LEFS40**	—	
5	**Table**		Aluminium alloy	Anodised
6	**Blanking plate**		Aluminium alloy	Anodised
7	**Seal band holder**		Synthetic resin	
8	**Housing A**		Aluminium die-casted	Coating
9	**Housing B**		Aluminium die-casted	Coating
10	**Bearing stopper**		Aluminium alloy	
11	**Motor mount**		Aluminium alloy	Coating

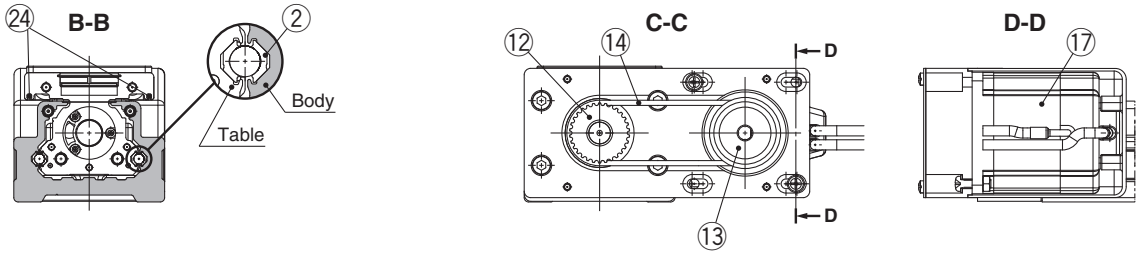
No.	Description	Material	Note
12	**Coupling**	—	
13	**Motor cover**	Aluminium alloy	Anodised
14	**End cover**	Aluminium alloy	Anodised
15	**Motor**	—	
16	**Rubber bushing**	NBR	
17	**Band stopper**	Stainless steel	
18	**Dust seal band**	Stainless steel	
19	**Seal magnet**	—	
20	**Bearing**	—	Stroke 250 mm or more
21	**Bearing**	—	
22	**Magnet**	—	With auto switch compatibility

Construction: Motor Parallel



With lock





Component Parts

No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**	—	
3	**Ball screw shaft**	—	
4	**Ball screw nut**	—	
5	**Table**	Aluminium alloy	Anodised
6	**Blanking plate**	Aluminium alloy	Anodised
7	**Seal band holder**	Synthetic resin	
8	**Housing A**	Aluminium die-casted	Coating
9	**Housing B**	Aluminium die-casted	Coating
10	**Bearing stopper**	Aluminium alloy	
11	**Return plate**	Aluminium alloy	Coating
12	**Pulley**	Aluminium alloy	
13	**Pulley**	Aluminium alloy	

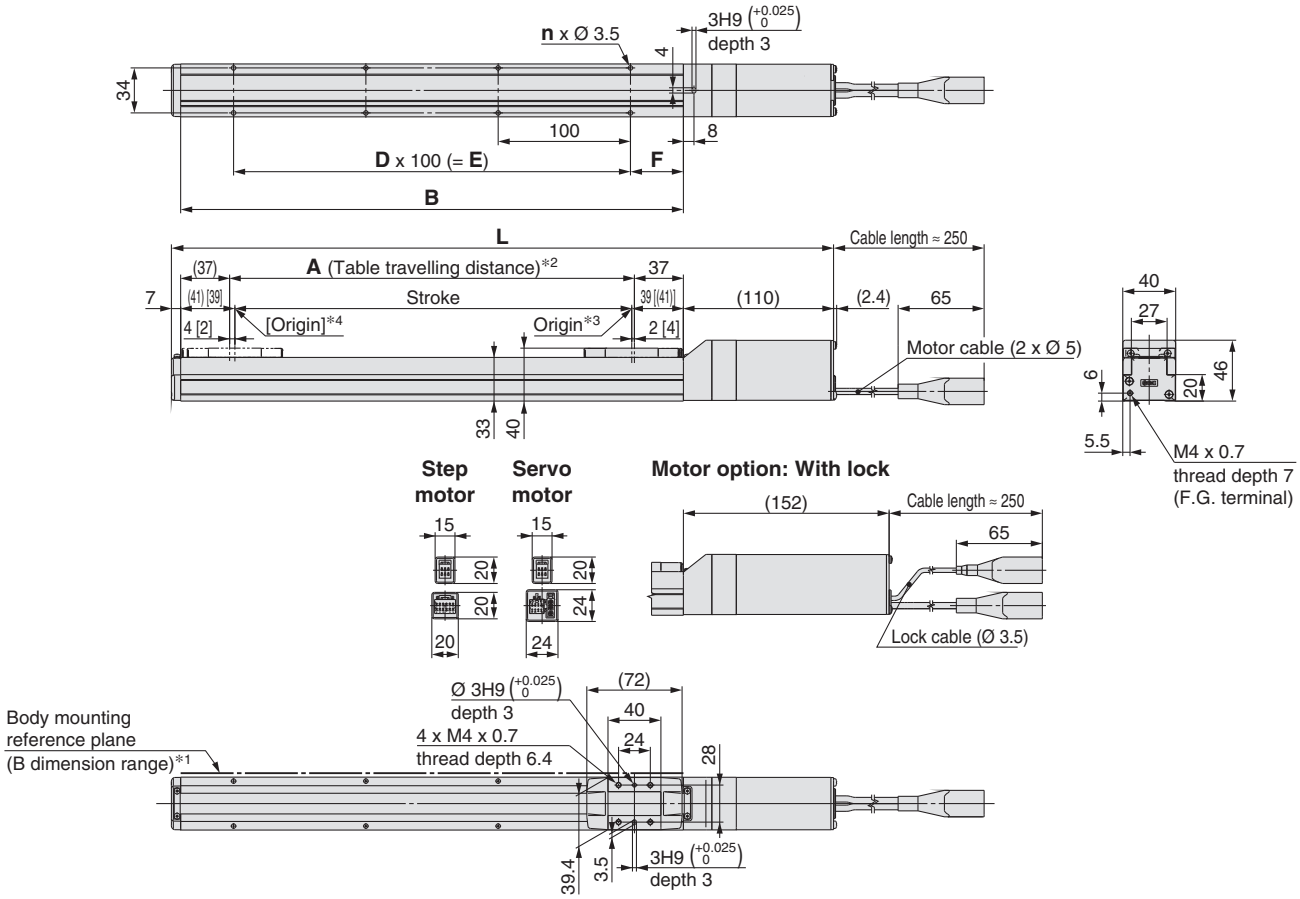
No.	Description	Material	Note
15	**Cover plate**	Aluminium alloy	Coating
16	**Table spacer**	Aluminium alloy	Coating (LEFS32 only)
17	**Motor**	—	
18	**Motor cover**	Synthetic resin	
19	**Motor cover with lock**	Aluminium alloy	Anodised
20	**Band stopper**	Stainless steel	
21	**Dust seal band**	Stainless steel	
22	**Bearing**	—	Stroke 250 mm or more
23	**Bearing**	—	
24	**Magnet**	—	With auto switch compatibility

Replacement Parts/Belt

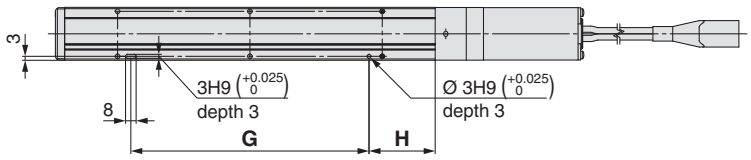
No.	Size	Order no.
14	16	LE-D-6-1
	25	LE-D-6-2
	32	LE-D-6-3
	40	LE-D-6-4

Dimensions: In-line Motor

LEFS16



Positioning pin hole*5 (Option): Body bottom



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 2 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 Position after return to origin
*4 [ ] for when the direction of return to origin has changed
*5 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

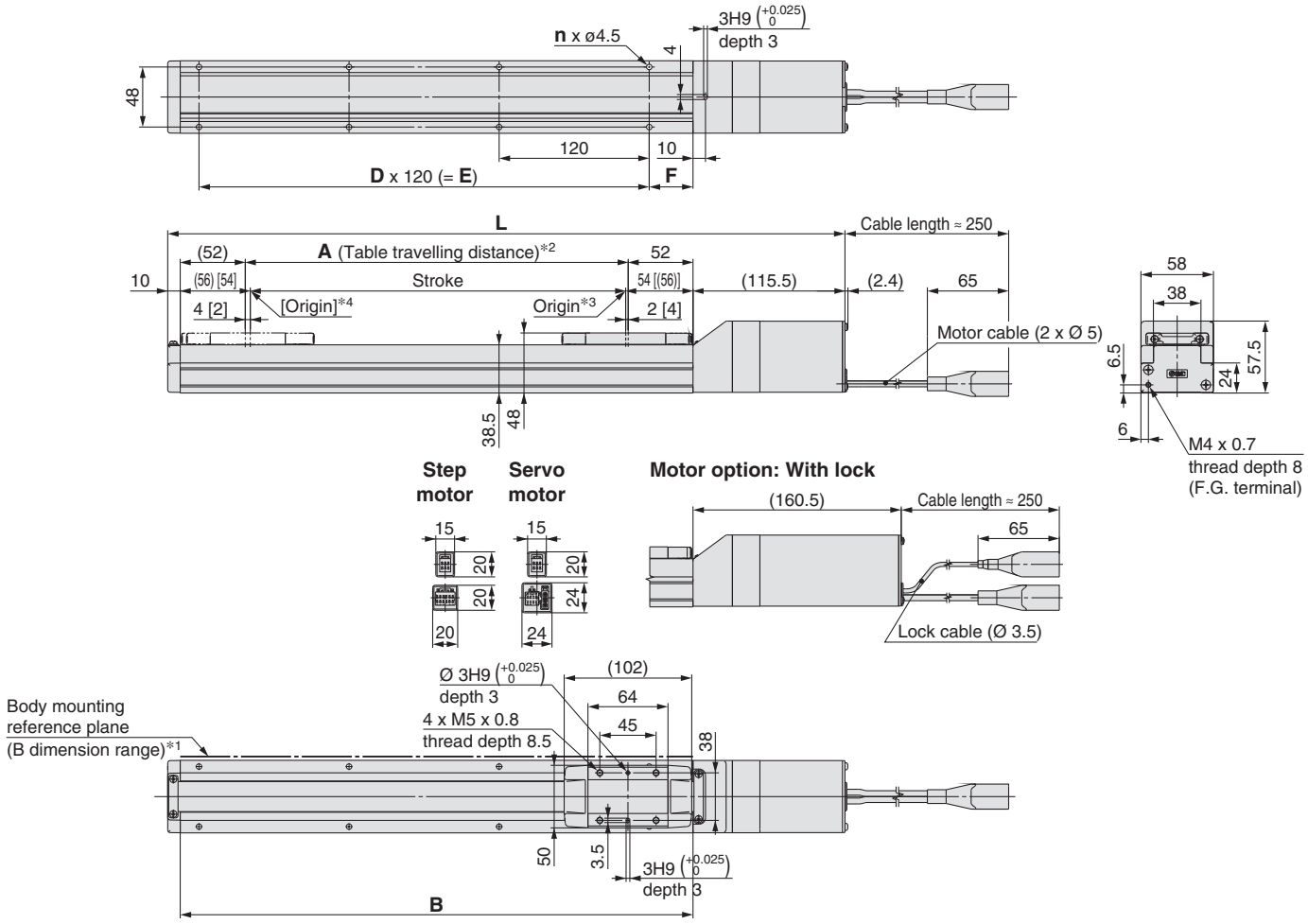
Dimensions

[mm]

Model	L		A	B	n	D	E	F	G	H
	Without lock	With lock								
LEFS16□-50□	247	289	56	130	4	—	—	15	80	25
LEFS16□-100□	297	339	106	180	4	—	—	40	80	50
LEFS16□-150□	347	389	156	230	4	—	—		80	50
LEFS16□-200□	397	439	206	280	6	2	200		180	50
LEFS16□-250□	447	489	256	330	6	2	200		180	50
LEFS16□-300□	497	539	306	380	8	3	300		280	50
LEFS16□-350□	547	589	356	430	8	3	300		280	50
LEFS16□-400□	597	639	406	480	10	4	400		380	50
LEFS16□-450□	647	689	456	530	10	4	400		380	50
LEFS16□-500□	697	739	506	580	12	5	500		480	50

Dimensions: In-line Motor

LEFS25



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 Position after return to origin
*4 [ ] for when the direction of return to origin has changed

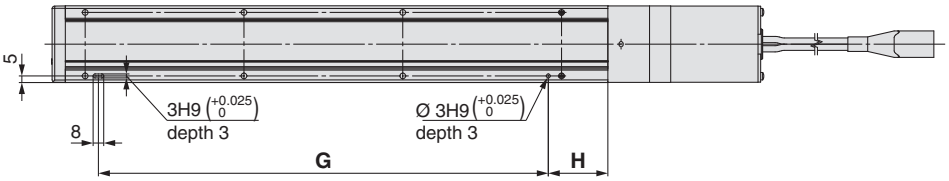
Dimensions [mm]

Model	L		A	B	n	D	E	F
	Without lock	With lock						
LEFS25□-50□	285.5	330.5	56	160	4	—	—	20
LEFS25□-100□	335.5	380.5	106	210	4	—	—	35
LEFS25□-150□	385.5	430.5	156	260	4	—	—	
LEFS25□-200□	435.5	480.5	206	310	6	2	240	
LEFS25□-250□	485.5	530.5	256	360	6	2	240	
LEFS25□-300□	535.5	580.5	306	410	8	3	360	
LEFS25□-350□	585.5	630.5	356	460	8	3	360	
LEFS25□-400□	635.5	680.5	406	510	8	3	360	
LEFS25□-450□	685.5	730.5	456	560	10	4	480	
LEFS25□-500□	735.5	780.5	506	610	10	4	480	
LEFS25□-550□	785.5	830.5	556	660	12	5	600	
LEFS25□-600□	835.5	880.5	606	710	12	5	600	
LEFS25□-650□	885.5	930.5	656	760	12	5	600	
LEFS25□-700□	935.5	980.5	706	810	14	6	720	
LEFS25□-750□	985.5	1030.5	756	860	14	6	720	
LEFS25□-800□	1035.5	1080.5	806	910	16	7	840	

Dimensions: In-line Motor

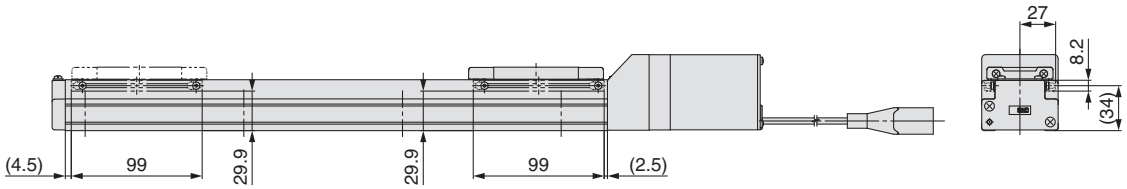
LEFS25

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)



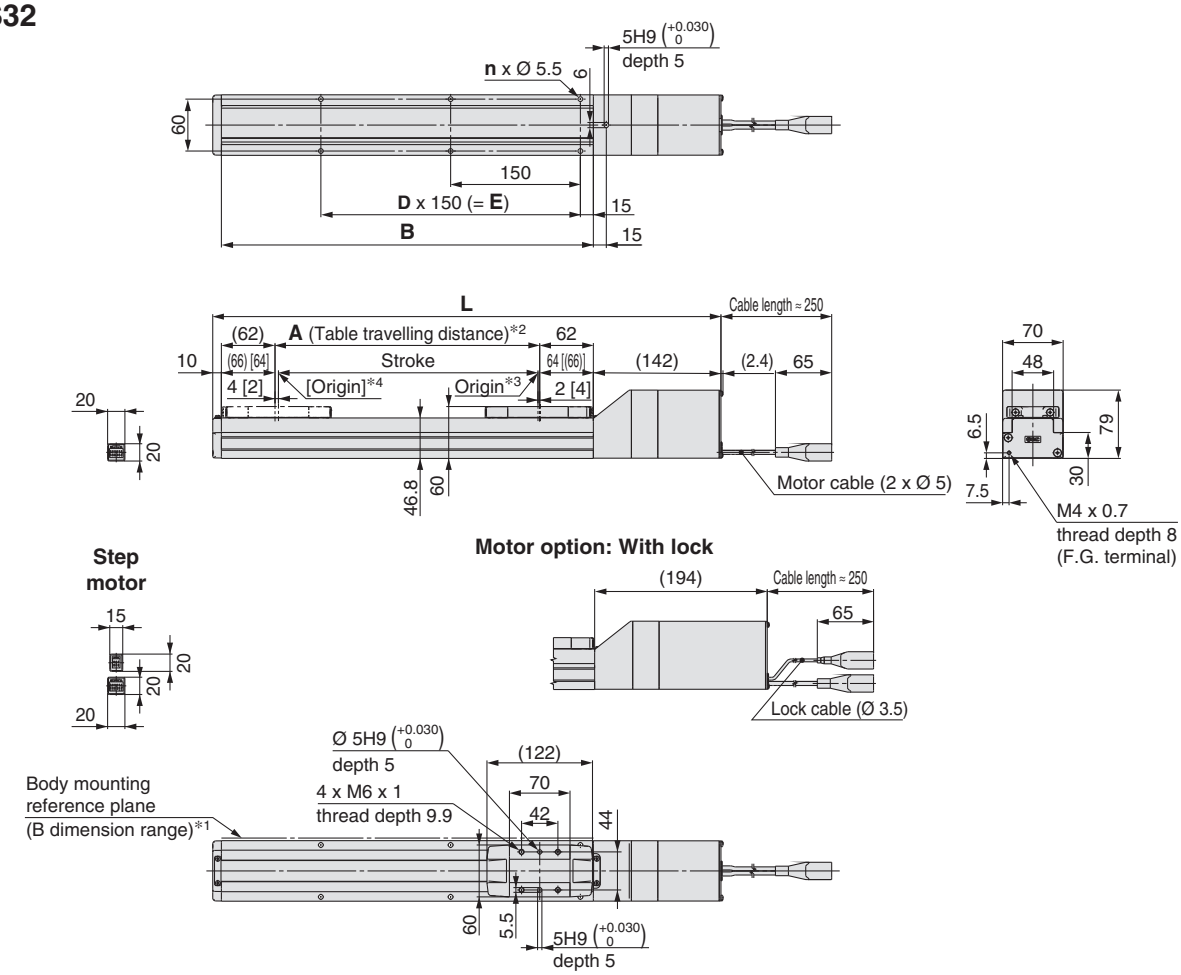
* For strokes of 99 mm or less, only 2 auto switch mounting brackets can be installed on the motor side.

Dimensions [mm]

Model	G	H
LEFS25□-50□	100	30
LEFS25□-100□	100	45
LEFS25□-150□	100	45
LEFS25□-200□	220	45
LEFS25□-250□	220	45
LEFS25□-300□	340	45
LEFS25□-350□	340	45
LEFS25□-400□	340	45
LEFS25□-450□	460	45
LEFS25□-500□	460	45
LEFS25□-550□	580	45
LEFS25□-600□	580	45
LEFS25□-650□	580	45
LEFS25□-700□	700	45
LEFS25□-750□	700	45
LEFS25□-800□	820	45

Dimensions: In-line Motor

LEFS32



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 Position after return to origin
*4 [ ] for when the direction of return to origin has changed

Dimensions

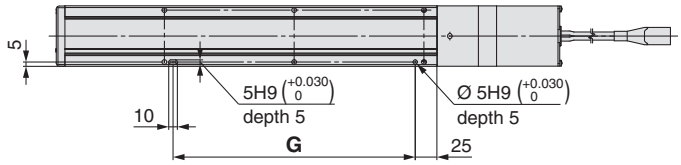
[mm]

Model	L		A	B	n	D	E
	Without lock	With lock					
LEFS32□-50□	332	384	56	180	4	—	—
LEFS32□-100□	382	434	106	230	4	—	—
LEFS32□-150□	432	484	156	280	4	—	—
LEFS32□-200□	482	534	206	330	6	2	300
LEFS32□-250□	532	584	256	380	6	2	300
LEFS32□-300□	582	634	306	430	6	2	300
LEFS32□-350□	632	684	356	480	8	3	450
LEFS32□-400□	682	734	406	530	8	3	450
LEFS32□-450□	732	784	456	580	8	3	450
LEFS32□-500□	782	834	506	630	10	4	600
LEFS32□-550□	832	884	556	680	10	4	600
LEFS32□-600□	882	934	606	730	10	4	600
LEFS32□-650□	932	984	656	780	12	5	750
LEFS32□-700□	982	1034	706	830	12	5	750
LEFS32□-750□	1032	1084	756	880	12	5	750
LEFS32□-800□	1082	1134	806	930	14	6	900
LEFS32□-850□	1132	1184	856	980	14	6	900
LEFS32□-900□	1182	1234	906	1030	14	6	900
LEFS32□-950□	1232	1284	956	1080	16	7	1050
LEFS32□-1000□	1282	1334	1006	1130	16	7	1050

Dimensions: In-line Motor

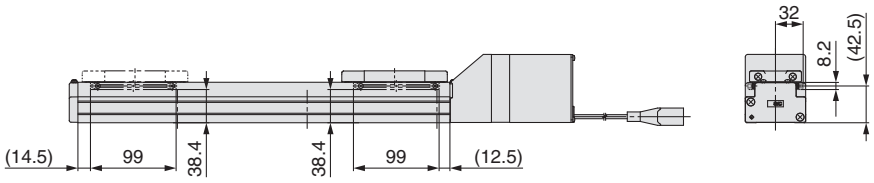
LEFS32

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)



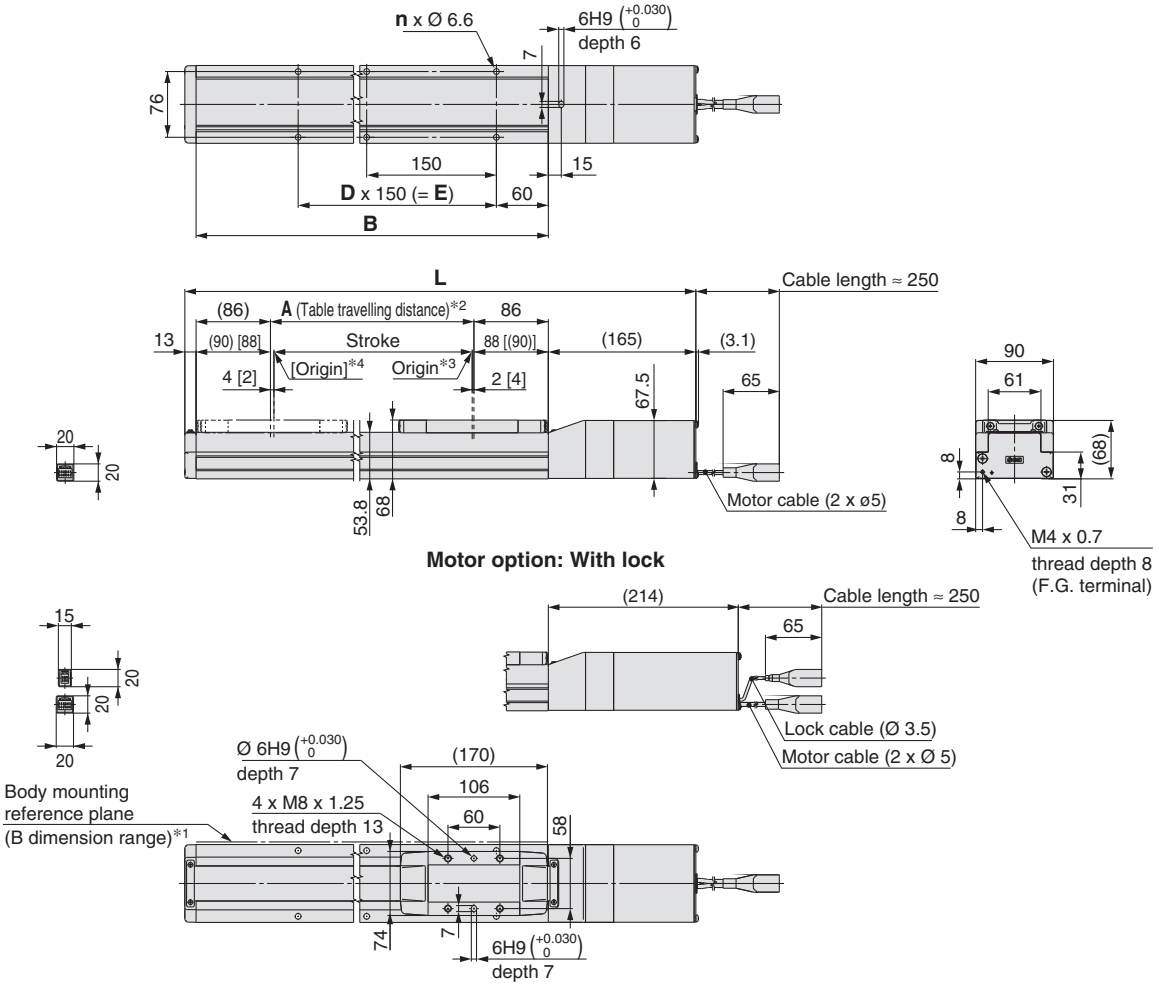
* For strokes of 99 mm or less, only 2 auto switch mounting brackets can be installed on the motor side.

Dimensions [mm]

Model	G
LEFS32□-50□	130
LEFS32□-100□	130
LEFS32□-150□	130
LEFS32□-200□	280
LEFS32□-250□	280
LEFS32□-300□	280
LEFS32□-350□	430
LEFS32□-400□	430
LEFS32□-450□	430
LEFS32□-500□	580
LEFS32□-550□	580
LEFS32□-600□	580
LEFS32□-650□	730
LEFS32□-700□	730
LEFS32□-750□	730
LEFS32□-800□	880
LEFS32□-850□	880
LEFS32□-900□	880
LEFS32□-950□	1030
LEFS32□-1000□	1030

Dimensions: In-line Motor

LEFS40



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 Position after return to origin
*4 [ ] for when the direction of return to origin has changed

Dimensions

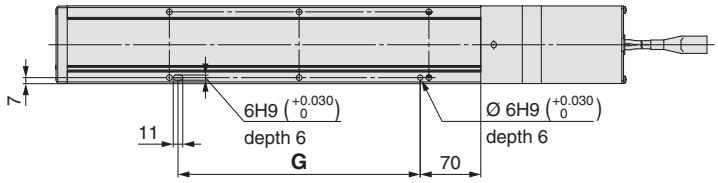
[mm]

Model	L		A	B	n	D	E
	Without lock	With lock					
LEFS40□-150□	506	555	156	328	4	—	150
LEFS40□-200□	556	605	206	378	6	2	300
LEFS40□-250□	606	655	256	428	6	2	300
LEFS40□-300□	656	705	306	478	6	2	300
LEFS40□-350□	706	755	356	528	8	3	450
LEFS40□-400□	756	805	406	578	8	3	450
LEFS40□-450□	806	855	456	628	8	3	450
LEFS40□-500□	856	905	506	678	10	4	600
LEFS40□-550□	906	955	556	728	10	4	600
LEFS40□-600□	956	1005	606	778	10	4	600
LEFS40□-650□	1006	1055	656	828	12	5	750
LEFS40□-700□	1056	1105	706	878	12	5	750
LEFS40□-750□	1106	1155	756	928	12	5	750
LEFS40□-800□	1156	1205	806	978	14	6	900
LEFS40□-850□	1206	1255	856	1028	14	6	900
LEFS40□-900□	1256	1305	906	1078	14	6	900
LEFS40□-950□	1306	1355	956	1128	16	7	1050
LEFS40□-1000□	1356	1405	1006	1178	16	7	1050
LEFS40□-1100□	1456	1505	1106	1278	18	8	1200
LEFS40□-1200□	1556	1605	1206	1378	18	8	1200

Dimensions: In-line Motor

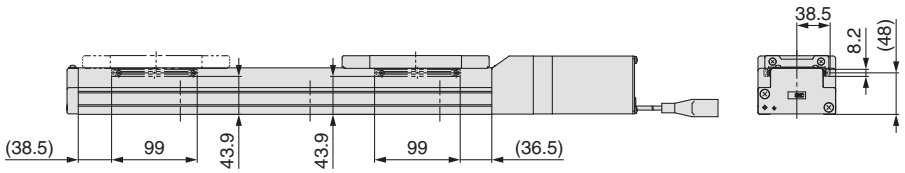
LEFS40

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

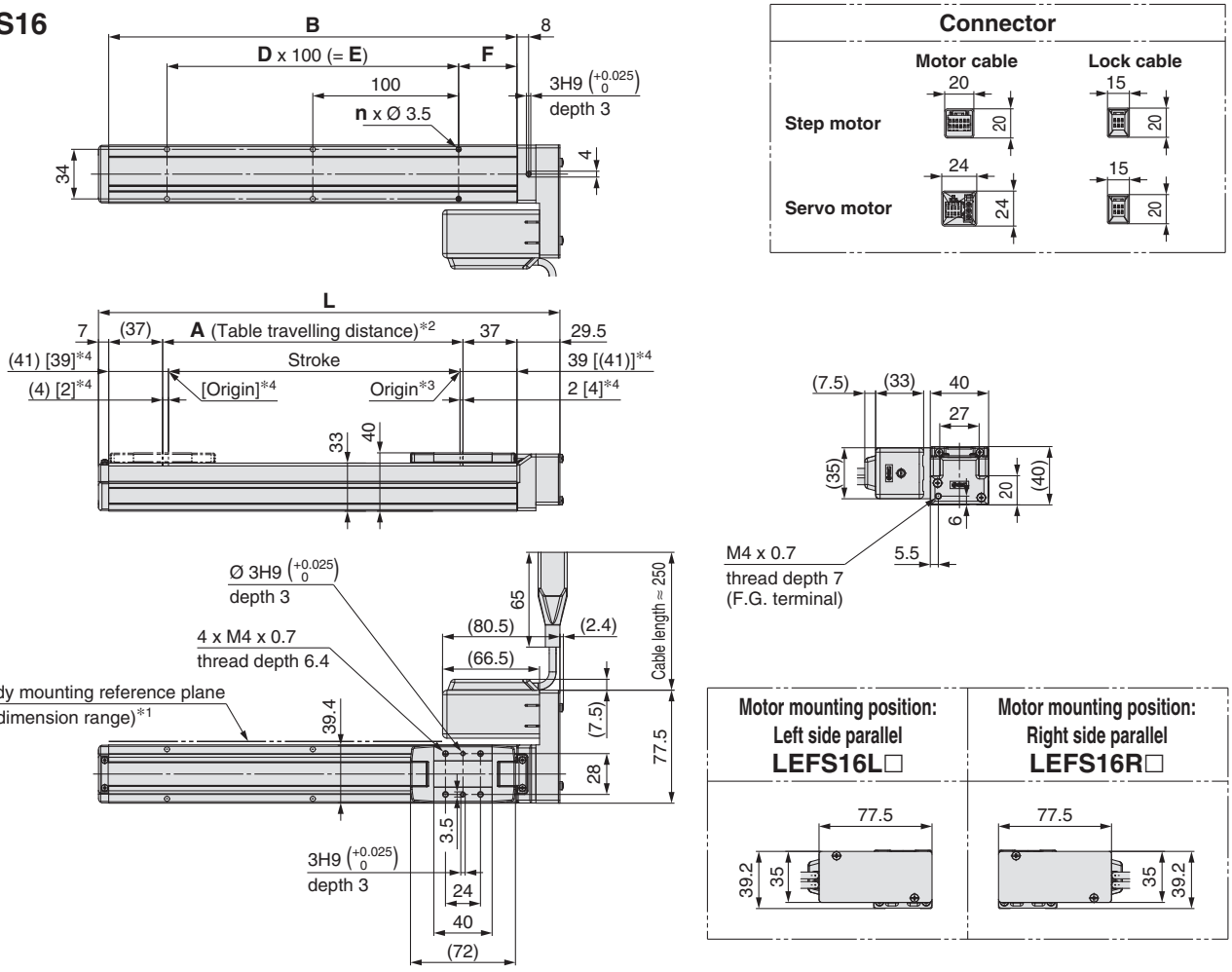


Dimensions [mm]

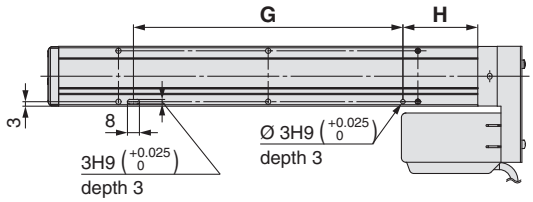
Model	G
LEFS40□-150□	130
LEFS40□-200□	280
LEFS40□-250□	280
LEFS40□-300□	280
LEFS40□-350□	430
LEFS40□-400□	430
LEFS40□-450□	430
LEFS40□-500□	580
LEFS40□-550□	580
LEFS40□-600□	580
LEFS40□-650□	730
LEFS40□-700□	730
LEFS40□-750□	730
LEFS40□-800□	880
LEFS40□-850□	880
LEFS40□-900□	880
LEFS40□-950□	1030
LEFS40□-1000□	1030
LEFS40□-1100□	1180
LEFS40□-1200□	1180

Dimensions: Motor Parallel

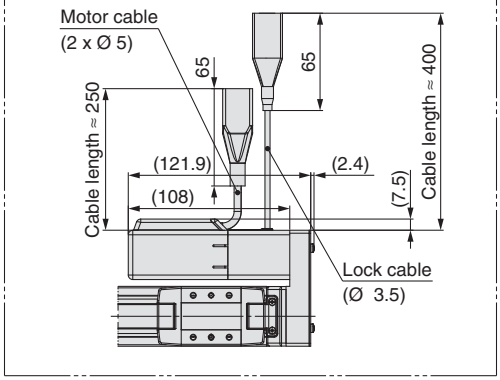
LEFS16



Positioning pin hole*5 (Option): Body bottom



With lock: LEFS16□□-□B



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 2 mm or more. (Recommended height 5 mm) In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 Position after return to origin

*4 [ ] for when the direction of return to origin has changed

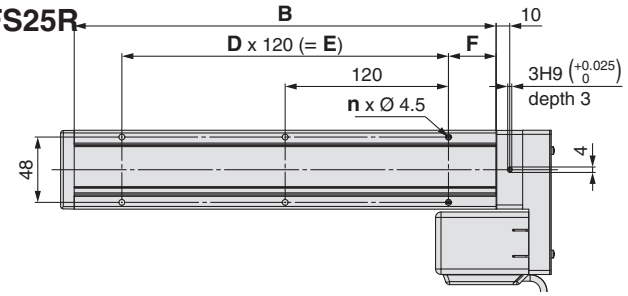
*5 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

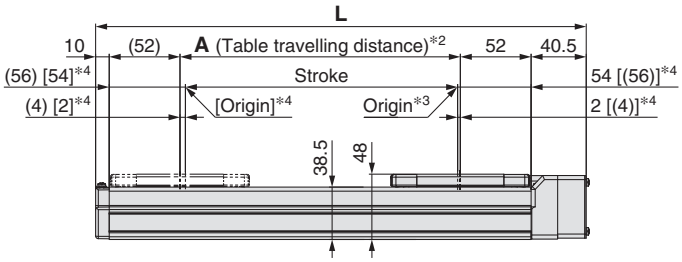
Dimensions [mm]

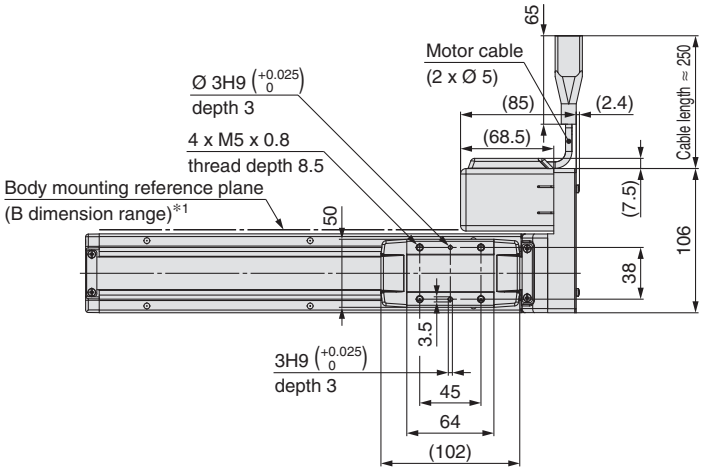
Model	L	A	B	n	D	E	F	G	H
LEFS16□□-50□	166.5	56	130	4	—	—	15	80	25
LEFS16□□-100□	216.5	106	180	4	—	—		80	50
LEFS16□□-150□	266.5	156	230	4	—	—		80	50
LEFS16□□-200□	316.5	206	280	6	2	200		180	50
LEFS16□□-250□	366.5	256	330	6	2	200		180	50
LEFS16□□-300□	416.5	306	380	8	3	300	40	280	50
LEFS16□□-350□	466.5	356	430	8	3	300		280	50
LEFS16□□-400□	516.5	406	480	10	4	400		380	50
LEFS16□□-450□	566.5	456	530	10	4	400		380	50
LEFS16□□-500□	616.5	506	580	12	5	500		480	50

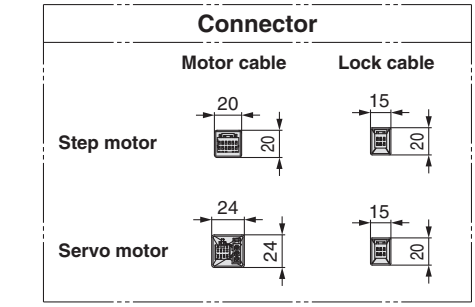
Dimensions: Motor Parallel

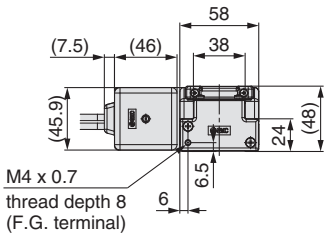
LEFS25R

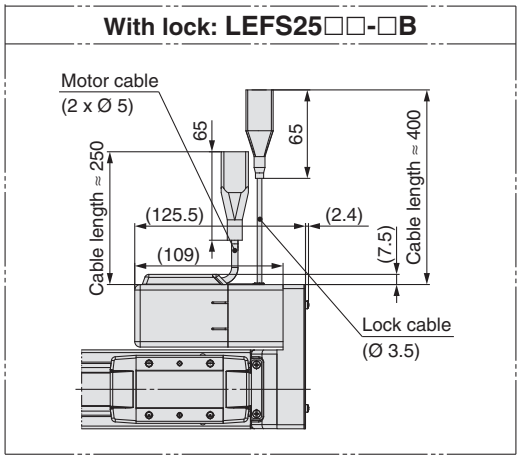


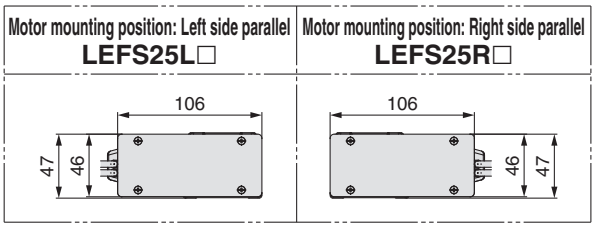












*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm) In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 Position after return to origin

*4 [ ] for when the direction of return to origin has changed

Dimensions [mm]

Model	L	A	B	n	D	E	F
LEFS25□□-50□	210.5	56	160	4	—	—	20
LEFS25□□-100□	260.5	106	210	4	—	—	35
LEFS25□□-150□	310.5	156	260	4	—	—	
LEFS25□□-200□	360.5	206	310	6	2	240	
LEFS25□□-250□	410.5	256	360	6	2	240	
LEFS25□□-300□	460.5	306	410	8	3	360	
LEFS25□□-350□	510.5	356	460	8	3	360	
LEFS25□□-400□	560.5	406	510	8	3	360	

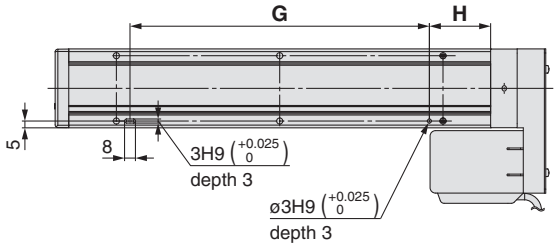
Dimensions [mm]

Model	L	A	B	n	D	E	F
LEFS25□□-450□	610.5	456	560	10	4	480	35
LEFS25□□-500□	660.5	506	610	10	4	480	
LEFS25□□-550□	710.5	556	660	12	5	600	
LEFS25□□-600□	760.5	606	710	12	5	600	
LEFS25□□-650□	810.5	656	760	12	5	600	
LEFS25□□-700□	860.5	706	810	14	6	720	
LEFS25□□-750□	910.5	756	860	14	6	720	
LEFS25□□-800□	960.5	806	910	16	7	840	

Dimensions: Motor Parallel

LEFS25R

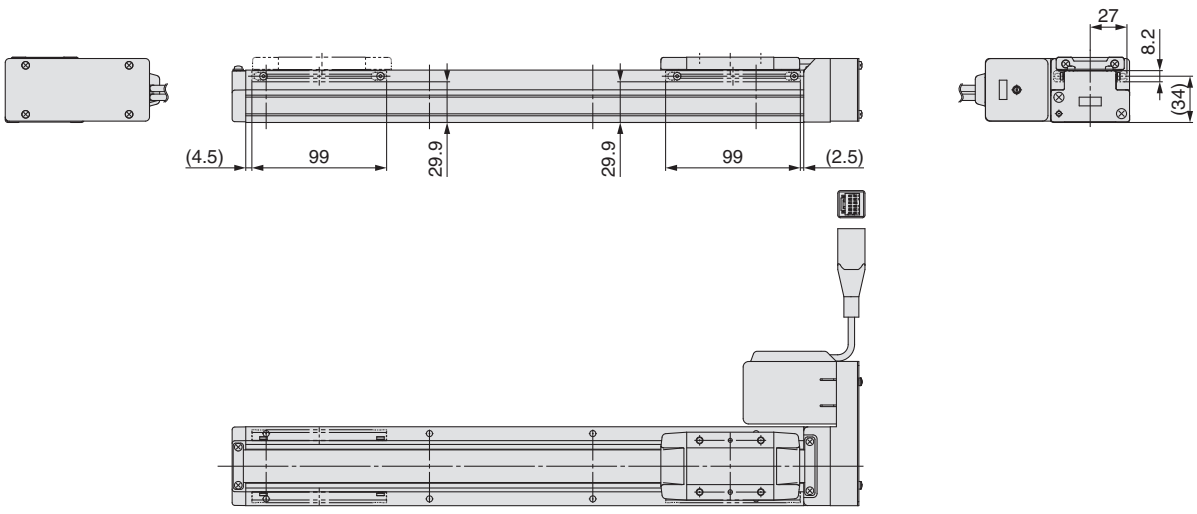
Positioning pin hole*1 (Option): Body bottom



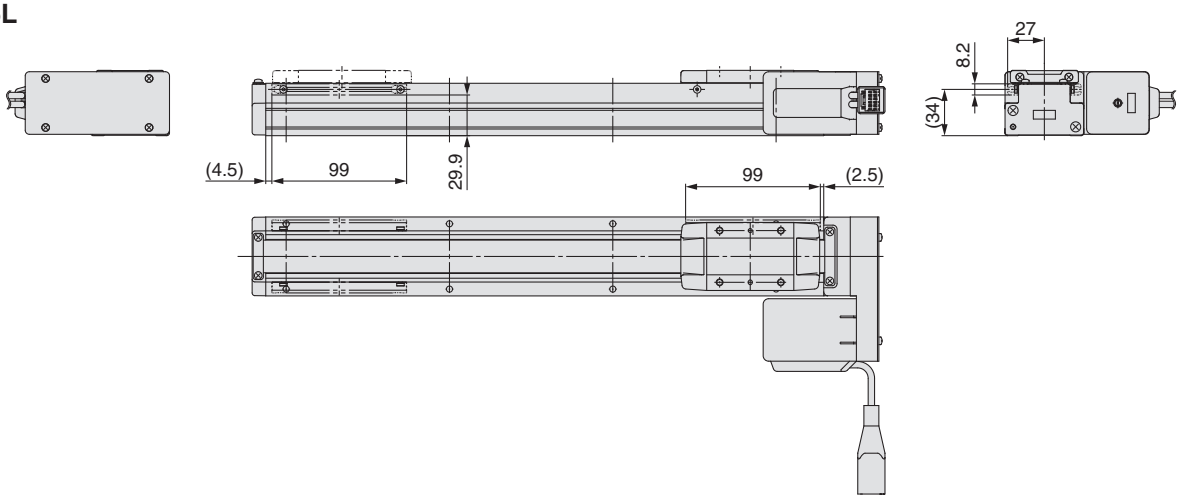
*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS25R



LEFS25L



Dimensions [mm]

Model	G	H
LEFS25□□-50□	100	30
LEFS25□□-100□	100	45
LEFS25□□-150□	100	45
LEFS25□□-200□	220	45
LEFS25□□-250□	220	45
LEFS25□□-300□	340	45
LEFS25□□-350□	340	45
LEFS25□□-400□	340	45

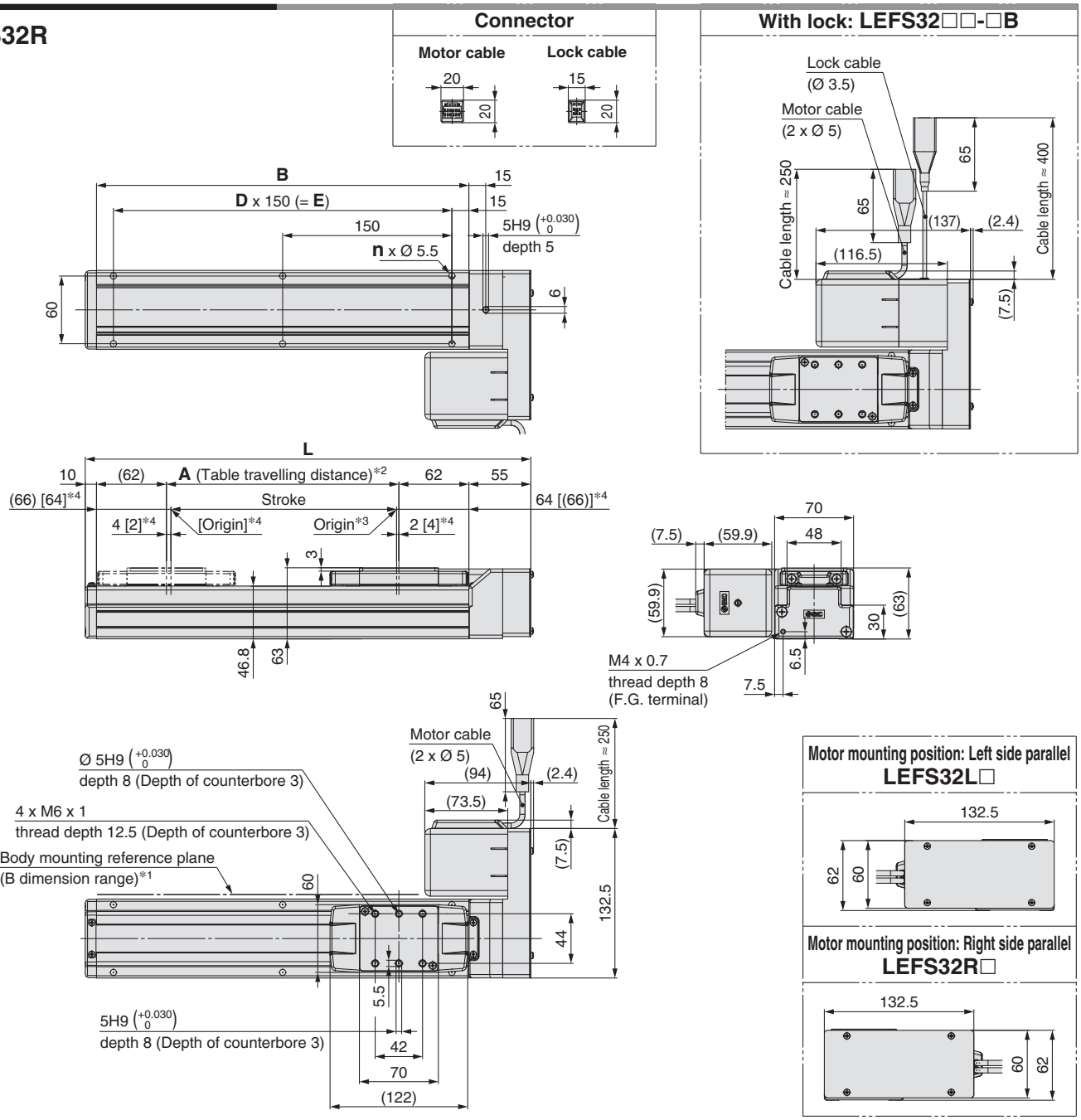
Dimensions [mm]

Model	G	H
LEFS25□□-450□	460	45
LEFS25□□-500□	460	45
LEFS25□□-550□	580	45
LEFS25□□-600□	580	45
LEFS25□□-650□	580	45
LEFS25□□-700□	700	45
LEFS25□□-750□	700	45
LEFS25□□-800□	820	45

* For strokes of 9 9 mm or less, only 1 auto switch mounting bracket can be installed on the motor side.

Dimensions: Motor Parallel

LEFS32R



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm) In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

∗2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

∗3 Position after return to origin

∗4 [ ] for when the direction of return to origin has changed

Dimensions [mm]

Model	L	A	B	n	D	E
LEFS32□□-50□	245	56	180	4	—	—
LEFS32□□-100□	295	106	230	4	—	—
LEFS32□□-150□	345	156	280	4	—	—
LEFS32□□-200□	395	206	330	6	2	300
LEFS32□□-250□	445	256	380	6	2	300
LEFS32□□-300□	495	306	430	6	2	300
LEFS32□□-350□	545	356	480	8	3	450
LEFS32□□-400□	595	406	530	8	3	450
LEFS32□□-450□	645	456	580	8	3	450
LEFS32□□-500□	695	506	630	10	4	600

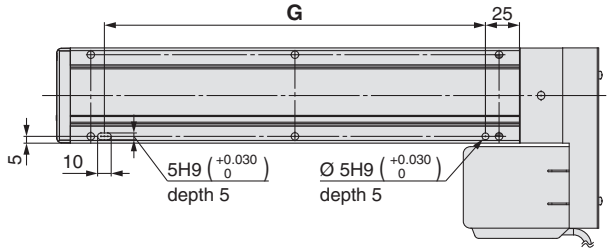
Dimensions [mm]

Model	L	A	B	n	D	E
LEFS32□□-550□	745	556	680	10	4	600
LEFS32□□-600□	795	606	730	10	4	600
LEFS32□□-650□	845	656	780	12	5	750
LEFS32□□-700□	895	706	830	12	5	750
LEFS32□□-750□	945	756	880	12	5	750
LEFS32□□-800□	995	806	930	14	6	900
LEFS32□□-850□	1045	856	980	14	6	900
LEFS32□□-900□	1095	906	1030	14	6	900
LEFS32□□-950□	1145	956	1080	16	7	1050
LEFS32□□-1000□	1195	1006	1130	16	7	1050

Dimensions: Motor Parallel

LEFS32R

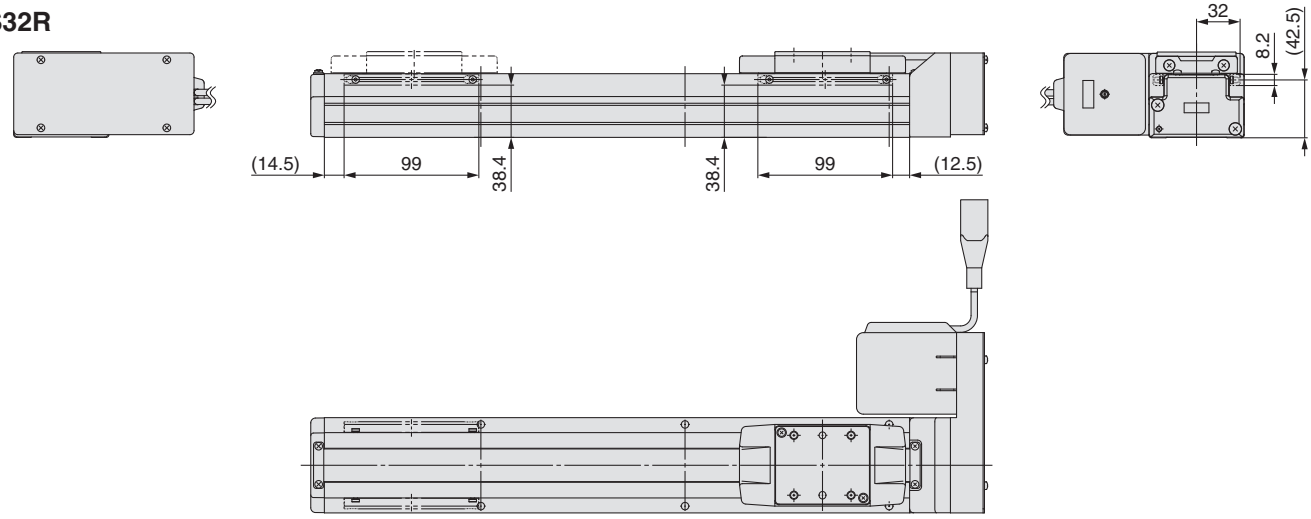
Positioning pin hole*1 (Option): Body bottom



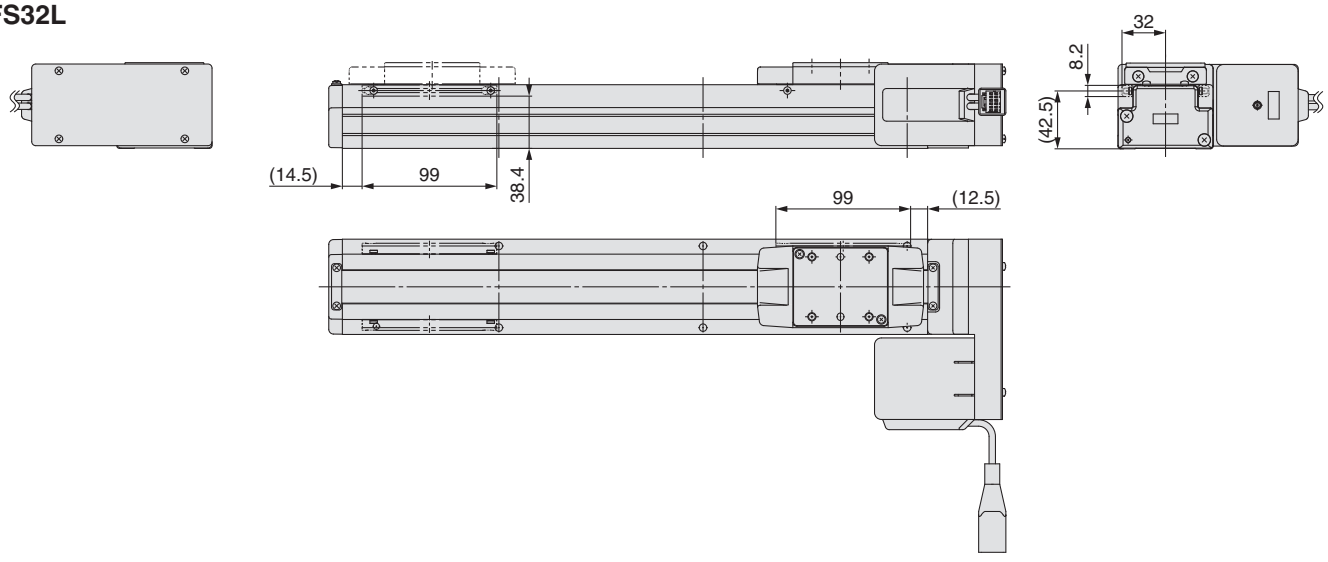
*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS32R



LEFS32L



Dimensions [mm]

Model	G
LEFS32□□-50□	130
LEFS32□□-100□	130
LEFS32□□-150□	130
LEFS32□□-200□	280
LEFS32□□-250□	280
LEFS32□□-300□	280
LEFS32□□-350□	430
LEFS32□□-400□	430
LEFS32□□-450□	430
LEFS32□□-500□	580

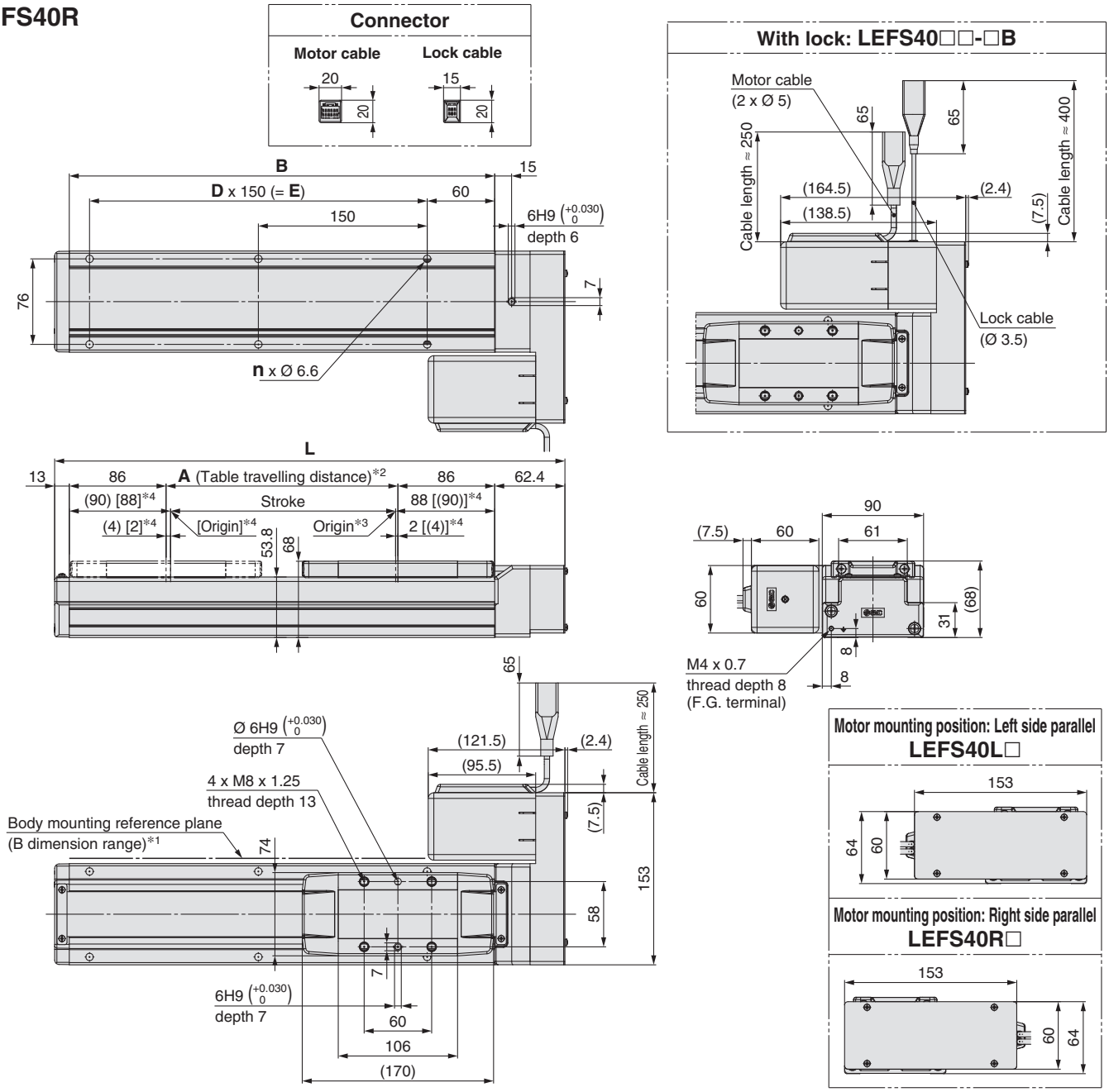
Dimensions [mm]

Model	G
LEFS32□□-550□	580
LEFS32□□-600□	580
LEFS32□□-650□	730
LEFS32□□-700□	730
LEFS32□□-750□	730
LEFS32□□-800□	880
LEFS32□□-850□	880
LEFS32□□-900□	880
LEFS32□□-950□	1030
LEFS32□□-1000□	1030

* For strokes of 9 9 mm or less, only 1 auto switch mounting bracket can be installed on the motor side.

Dimensions: Motor Parallel

LEFS40R



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm) In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 Position after return to origin

*4 [ ] for when the direction of return to origin has changed

Dimensions [mm]

Model	L	A	B	n	D	E
LEFS40□□-150□	403.4	156	328	4	—	150
LEFS40□□-200□	453.4	206	378	6	2	300
LEFS40□□-250□	503.4	256	428	6	2	300
LEFS40□□-300□	553.4	306	478	6	2	300
LEFS40□□-350□	603.4	356	528	8	3	450
LEFS40□□-400□	653.4	406	578	8	3	450
LEFS40□□-450□	703.4	456	628	8	3	450
LEFS40□□-500□	753.4	506	678	10	4	600
LEFS40□□-550□	803.4	556	728	10	4	600
LEFS40□□-600□	853.4	606	778	10	4	600

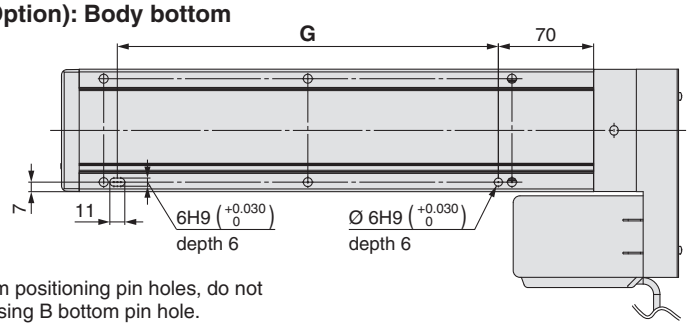
Dimensions [mm]

Model	L	A	B	n	D	E
LEFS40□□-650□	903.4	656	828	12	5	750
LEFS40□□-700□	953.4	706	878	12	5	750
LEFS40□□-750□	1003.4	756	928	12	5	750
LEFS40□□-800□	1053.4	806	978	14	6	900
LEFS40□□-850□	1103.4	856	1028	14	6	900
LEFS40□□-900□	1153.4	906	1078	14	6	900
LEFS40□□-950□	1203.4	956	1128	16	7	1050
LEFS40□□-1000□	1253.4	1006	1178	16	7	1050
LEFS40□□-1100□	1353.4	1106	1278	18	8	1200
LEFS40□□-1200□	1453.4	1206	1378	18	8	1200

Dimensions: Motor Parallel

LEFS40R

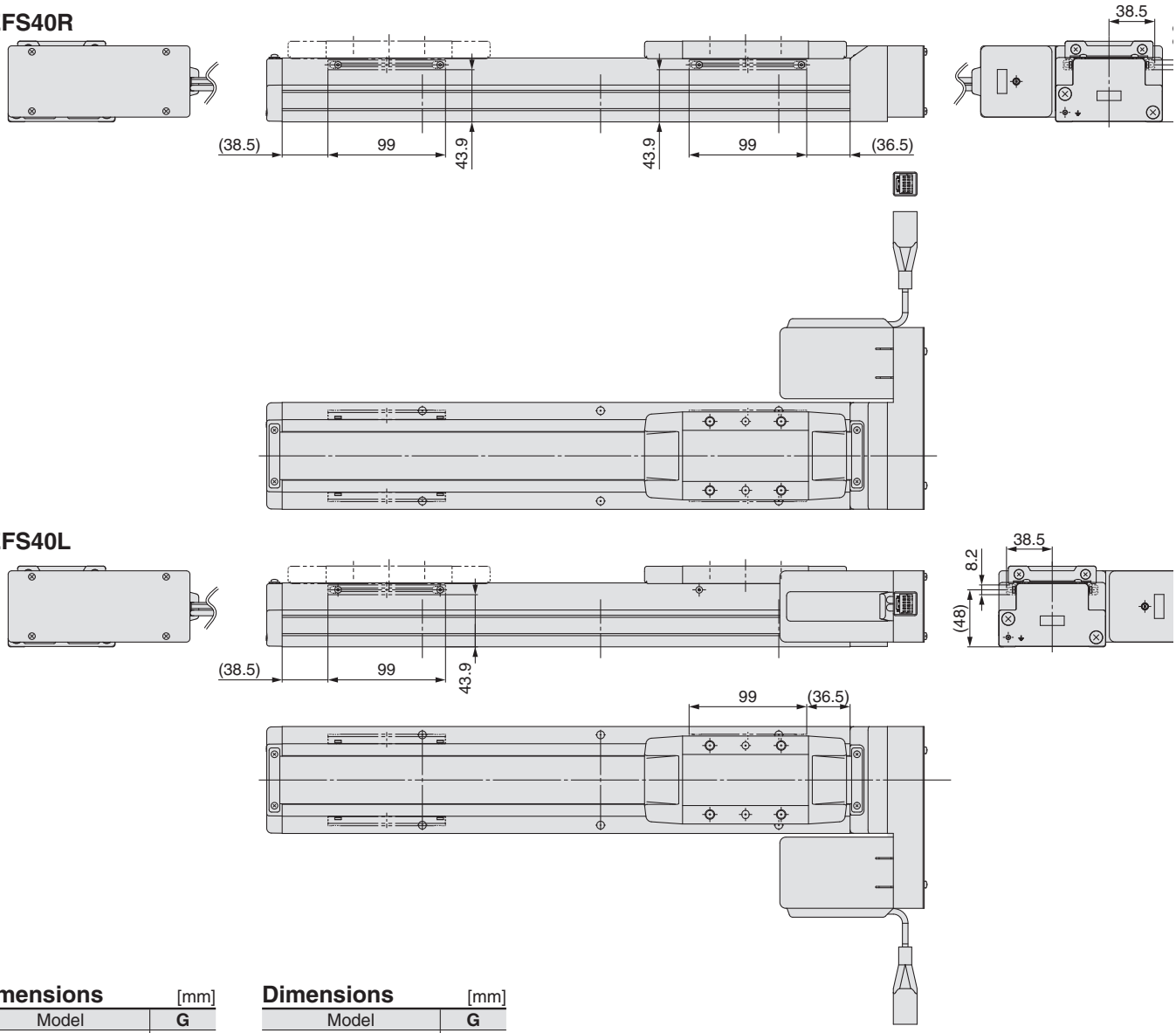
Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS40R



LEFS40L

Dimensions [mm]

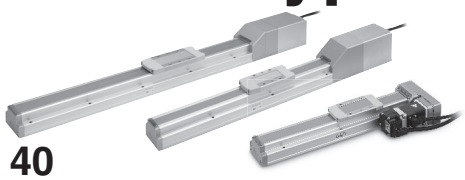
Model	G
LEFS40□□-150□	130
LEFS40□□-200□	280
LEFS40□□-250□	280
LEFS40□□-300□	280
LEFS40□□-350□	430
LEFS40□□-400□	430
LEFS40□□-450□	430
LEFS40□□-500□	580
LEFS40□□-550□	580
LEFS40□□-600□	580

Dimensions [mm]

Model	G
LEFS40□□-650□	730
LEFS40□□-700□	730
LEFS40□□-750□	730
LEFS40□□-800□	880
LEFS40□□-850□	880
LEFS40□□-900□	880
LEFS40□□-950□	1030
LEFS40□□-1000□	1030
LEFS40□□-1100□	1180
LEFS40□□-1200□	1180

Electric Actuator/Slider Type Ball Screw Drive

LEFS Series LEFS25, 32, 40



Clean Room Specification ▶p. 186 Secondary Battery Compatible ▶p. 200 LECY□ Series ▶p. 99

RoHS

∗ See tables ❹ and ⓭ below.

How to Order

LEFS H 32 R S3 B – 200 □ C N K – S 2 A2 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭ ⓮

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

25
32
40

❸ Motor mounting position

—	In-line
R	Right side parallel
L	Left side parallel

❺ Lead [mm]

Symbol	LEFS25	LEFS32	LEFS40
H	20	24	30
A	12	16	20
B	6	8	10

❻ Stroke [mm]

50	50
to	to
1200	1200

∗ For details, refer to the applicable stroke table below.

❼ Motor option

—	Without option
B	With lock

❹ Motor type

Symbol	Type	Output [W]	Actuator size	Compatible driver	UL-compliant
S2∗1	AC servo motor (Incremental encoder)	100	25	LECSA□-S1	—
S3		200	32	LECSA□-S3	—
S4		400	40	LECSA2-S4	—
S6∗1	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECSC□-S5 LECSS□-S5	—
S7		200	32	LECSB□-S7 LECSC□-S7 LECSS□-S7	—
S8		400	40	LECSB2-S8 LECSC2-S8 LECSS2-S8	—
T6∗2, ∗3		100	25	LECSB2-T5 LECSC2-T5	—
				LECSS2-T5	●∗3
T7∗3		200	32	LECSB2-T7 LECSC2-T7	—
				LECSS2-T7	●∗3
T8∗3		400	40	LECSB2-T8 LECSC2-T8	—
				LECSS2-T8	●∗3

∗1 For motor type S 2 and S 6 , the compatible driver part number suffixes are S1 and S5 respectively.
∗2 For motor type T6, the compatible driver part number suffix is T5.
∗3 The only compatible drivers complaint with UL standards are the LECSS2-T5, LECSS2-T7, and LECSS2-T8.

❽ Auto switch compatibility

—	None
C	With (Includes 1 mounting bracket)

∗ If 2 or more are required, please order them separately. (Part no.: LEF-D-2-1 For details, refer to page 167.)
∗ Order auto switches separately. (For details, refer to pages 168 to 170.)
∗ When "—" is selected, the product will not come with a built-in magnet for an auto switch, and so a mounting bracket cannot be secured. Be sure to select an appropriate model initially as the product cannot be changed to have auto switch compatibility after purchase.

❾ Grease application (Seal band part)

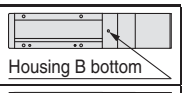
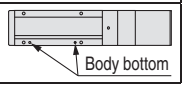
—	With
N	Without (Roller specification)

⓬ Cable length∗1 [m]

—	Without cable
2	2
5	5
A	10

∗1 The length of the encoder, motor and lock cables are the same.

❿ Positioning pin hole

—	Housing B bottom∗1	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

∗1 Refer to the body mounting example on page 203 for the mounting method.

⓫ Cable type∗1 ∗2

—	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

∗1 Motor cable and encoder cable are included. (Lock cable is also included if motor option "With lock" is selected.)
∗2 Standard cable entry direction is "(B) Counter axis side." For motor parallel type of the ball screw drive, the cable entry direction is "(A) Axis side."

⓭ Driver type

	Compatible driver	Power supply voltage [V]	Size 25	Size 32	Size 40	UL-compliant
—	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	●	●	●	—
	LECSB2-T□	200 to 240	●	●	●	—
C1	LECSC1-S□	100 to 120	●	●	—	—
C2	LECSC2-S□	200 to 230	●	●	●	—
	LECSC2-T□		●	●	●	—
S1	LECSS1-S□	100 to 120	●	●	—	—
S2	LECSS2-S□	200 to 230	●	●	●	—
	LECSS2-T□	200 to 240	●	●	●	●

∗ 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)
—: Without cable and driver

⓮ I/O cable length [m]∗1

—	Without cable
H	Without cable (Connector only)
1	1.5

∗1 When "Without driver" is selected for driver type, only "—: Without cable" can be selected. Refer to page 287 if I/O cable is required. (Options are shown on page 287.)

Support Guide/ *LEFG Series*

The support guide was designed to support workpieces with significant overhang.

p. 115

Applicable Stroke Table

●: Standard

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—
LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—
LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

∗ Please consult with SMC for non-standard strokes as they are produced as special orders.

For auto switches, refer to pages 167 to 170.

Compatible Driver

Driver type	Pulse input type /Positioning type	Pulse input type	CC-Link direct input type	SSCNET Ⅲ type	Pulse input type	CC-Link direct input type	SSCNETⅢ/H type
							
Series	**LECSA**	**LECSB**	**LECSC**	**LECSS**	**LECSB-T**	**LECSC-T**	**LECSS-T**
Number of point tables	Up to 7	—	Up to 255 (2 stations occupied)	—	Up to 255	Up to 255 (2 stations occupied)	—
Pulse input	○	○	—	—	○	—	—
Applicable network	—	—	CC-Link	SSCNET Ⅲ	—	CC-Link	SSCNET Ⅲ/H
Control encoder	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder
Communication function	USB communication	USB communication, RS422 communication		USB 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)				200 to 240 VAC (50/60Hz)	200 to 230 VAC (50/60Hz)	200 to 240 VAC (50/60 Hz)

SMC

Specifications

AC Servo Motor

Model			LEFS25S$^{2}_{6}$/T6			LEFS32S$^{3}_{7}$/T7			LEFS40S$^{4}_{8}$/T8		
Actuator specifications	Stroke [mm]*1		50 to 800			50 to 1000			150 to 1200		
	Work load [kg]*2	Horizontal	10	20	20	30	40	45	30	50	60
		Vertical	4	8	15	5	10	20	7	15	30
	Max. speed*3 [mm/s] (Stroke range)	Up to 400	1500	900	450	1500	1000	500	1500	1000	500
		401 to 500	1200	720	360	1500	1000	500	1500	1000	500
		501 to 600	900	540	270	1200	800	400	1500	1000	500
		601 to 700	700	420	210	930	620	310	1410	940	470
		701 to 800	550	330	160	750	500	250	1140	760	380
		801 to 900	—	—	—	610	410	200	930	620	310
		901 to 1000	—	—	—	510	340	170	780	520	260
		1001 to 1100	—	—	—	—	—	—	500	440	220
		1101 to 1200	—	—	—	—	—	—	500	380	190
	Max. acceleration/deceleration [mm/s^2]		20000 (Refer to pages 45 to 47 for limit according to work load and duty ratio.)								
	Positioning repeatability [mm]	Basic type	±0.02								
		High-precision type	±0.01								
	Lost motion [mm]*4	Basic type	0.1 or less								
		High-precision type	0.05 or less								
	Lead [mm]		20	12	6	24	16	8	30	20	10
	Impact/Vibration resistance [m/s^2]*5		50/20								
	Actuation type		Ball screw (LEFS□), Ball screw + Belt (LEFS□$^{R}_{L}$)								
	Guide type		Linear guide								
	Operating temperature range [°C]		5 to 40								
	Operating humidity range [%RH]		90 or less (No condensation)								
Electric specifications	Motor output/Size		100 W/□40			200 W/□60			400 W/□60		
	Motor type		AC servo motor (100/200 VAC)								
	Encoder*11		Motor type S2, S3, S4: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7, S8: Absolute 18-bit encoder (Resolution: 262144 p/rev) Motor type T6, T7, T8: Absolute 22-bit encoder (Resolution: 4194304 p/rev) (For LECSB2-T□, LECSS2-T□) Motor type T6, T7, T8: Absolute 18-bit encoder (Resolution: 262144 p/rev) (For LECSC2-T□)								
	Power consumption [W]*6	Horizontal	45			65			210		
		Vertical	145			175			230		
	Standby power consumption when operating [W]*7	Horizontal	2			2			2		
		Vertical	8			8			18		
	Max. instantaneous power consumption [W]*8		445			725			1275		
Lock unit specifications	Type*9		Non-magnetising lock								
	Holding force [N]		78	131	255	131	197	385	220	330	660
	Power consumption at 20°C [W]*10		6.3			7.9			7.9		
	Rated voltage [V]		24 VDC $^{0}_{-10}$ %								

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 For details, refer to "Speed–Work Load Graph (Guide)" on page 44.
*3 The allowable speed changes according to the stroke.
*4 A reference value for correcting an error in reciprocal operation
*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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*6 The power consumption (including the driver) is for when the actuator is operating.
*7 The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
*8 The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
*9 Only when motor option "With lock" is selected
*10 For an actuator with lock, add the power consumption for the lock.
*11 For motor type T6, T7, and T8, the resolution will change depending on the driver type.

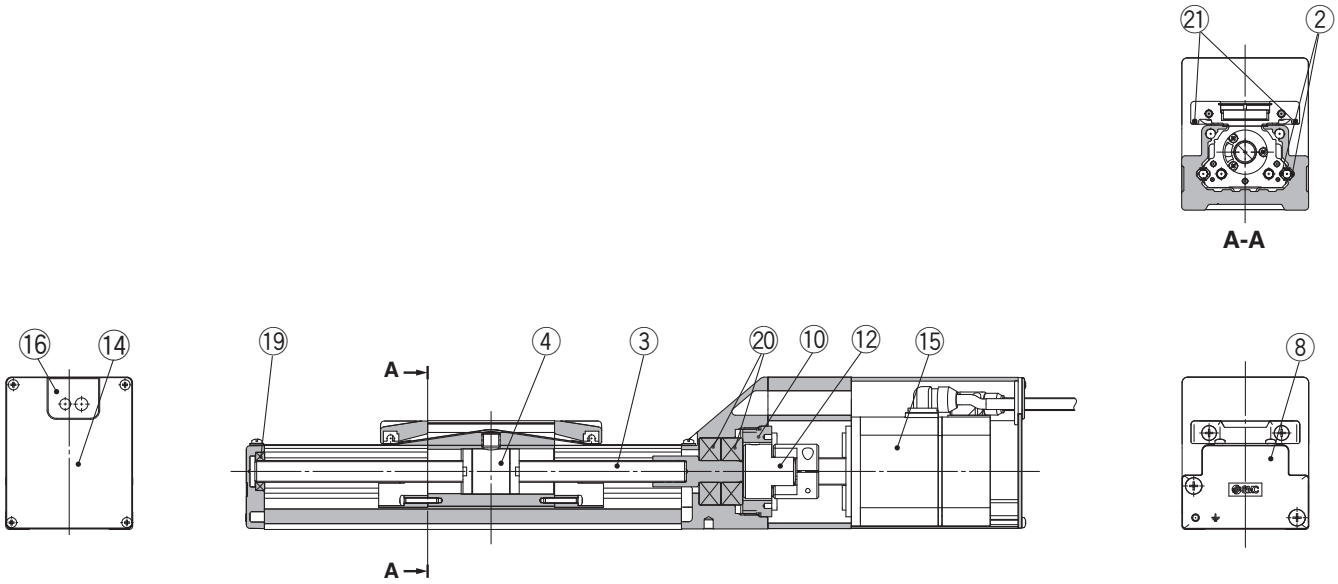
Weight

Series		LEFS25□□															
Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Motor type	S2	2.00	2.14	2.28	2.44	2.56	2.69	2.84	2.99	3.12	3.24	3.40	3.54	3.68	3.82	3.96	4.14
	S6	2.06	2.20	2.34	2.50	2.62	2.75	2.90	3.05	3.18	3.30	3.46	3.60	3.74	3.88	4.02	4.20
	T6	2.04	2.18	2.32	2.48	2.60	2.73	2.88	3.03	3.16	3.28	3.44	3.58	3.72	3.86	4.00	4.18
Additional weight with lock [kg]		S2: 0.2/S6: 0.3/T6: 0.3															

Series		LEFS32□□																				
Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Motor type	S3	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20
	S7	3.34	3.54	3.74	3.94	4.14	4.34	4.54	4.74	4.94	5.14	5.34	5.54	5.74	5.94	6.14	6.34	6.54	6.74	6.94	7.14
	T7	3.31	3.51	3.71	3.91	4.11	4.31	4.51	4.71	4.91	5.11	5.31	5.51	5.71	5.91	6.11	6.31	6.51	6.71	6.91	7.11
Additional weight with lock [kg]		S3: 0.4/S7: 0.7/T7: 0.5																			

Series		LEFS40□□																				
Stroke [mm]		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
Motor type	S4	5.82	6.10	6.38	6.65	6.95	7.25	7.51	7.80	8.07	8.25	8.63	8.90	9.20	9.45	9.76	10.05	10.32	10.60	11.16	11.72
	S8	5.92	6.20	6.48	6.75	7.05	7.35	7.61	7.90	8.17	8.35	8.73	9.00	9.30	9.55	9.86	10.15	10.42	10.70	11.26	11.82
	T8	5.91	6.19	6.47	6.74	7.04	7.34	7.60	7.89	8.16	8.34	8.72	8.99	9.29	9.54	9.85	10.14	10.41	10.69	11.25	11.81
Additional weight with lock [kg]		S4: 0.5/S8: 0.7/T8: 0.5																			

Construction: In-line Motor

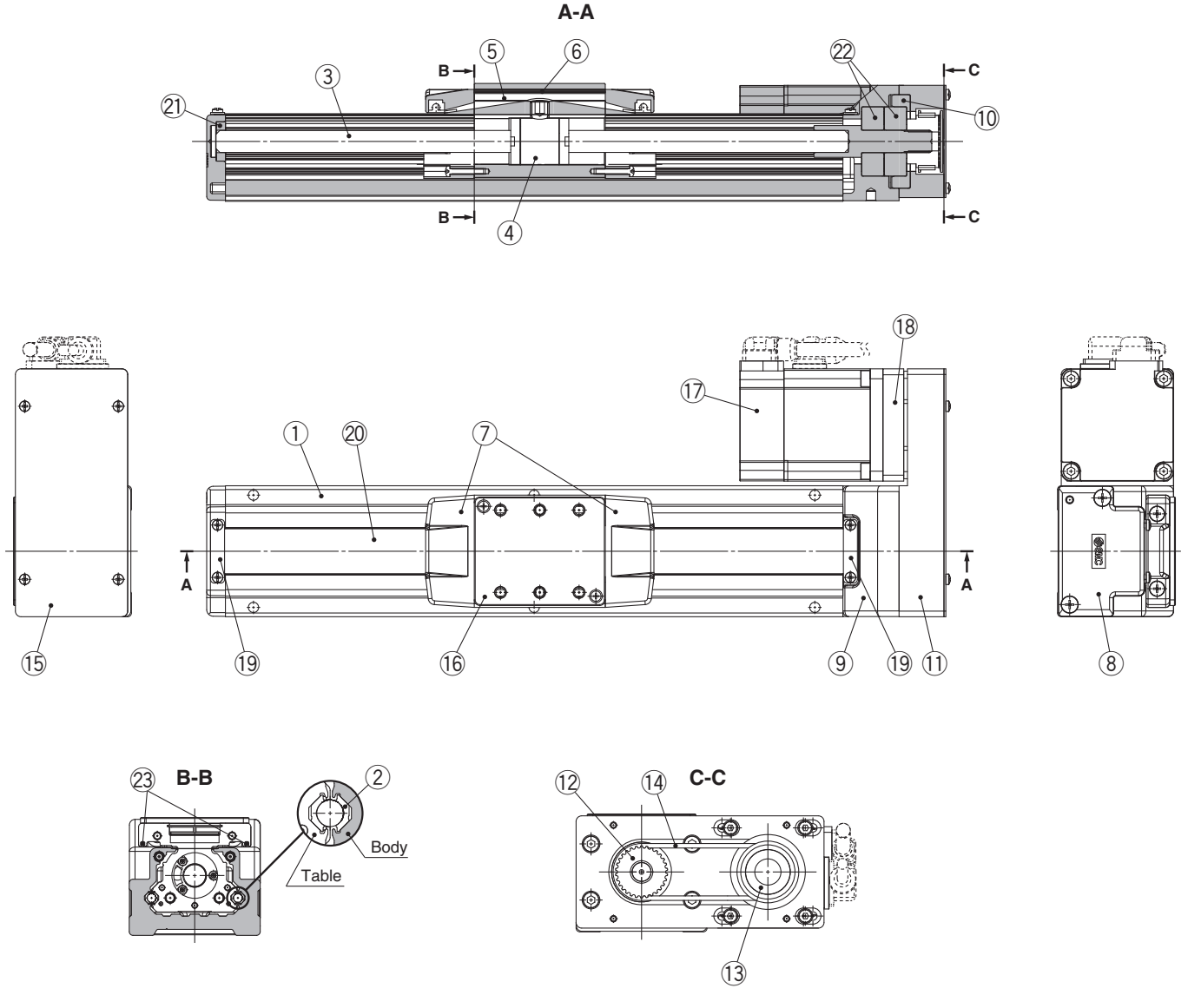


Component Parts

No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**	—	
3	**Ball screw shaft**	—	
4	**Ball screw nut**	—	
5	**Table**	Aluminium alloy	Anodised
6	**Blanking plate**	Aluminium alloy	Anodised
7	**Seal band holder**	Synthetic resin	
8	**Housing A**	Aluminium die-cast	Coating
9	**Housing B**	Aluminium die-cast	Coating
10	**Bearing stopper**	Aluminium alloy	
11	**Motor mount**	Aluminium alloy	Coating

No.	Description	Material	Note
12	**Coupling**	—	
13	**Motor cover**	Aluminium alloy	Anodised
14	**Motor end cover**	Aluminium alloy	Anodised
15	**Motor**	—	
16	**Grommet**	NBR	
17	**Band stopper**	Stainless steel	
18	**Dust seal band**	Stainless steel	
19	**Bearing**	—	Stroke 250 mm or more
20	**Bearing**	—	
21	**Magnet**	—	With auto switch compatibility

Construction: Motor Parallel



Component Parts

No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**	—	
3	**Ball screw shaft**	—	
4	**Ball screw nut**	—	
5	**Table**	Aluminium alloy	Anodised
6	**Blanking plate**	Aluminium alloy	Anodised
7	**Seal band holder**	Synthetic resin	
8	**Housing A**	Aluminium die-casted	Coating
9	**Housing B**	Aluminium die-casted	Coating
10	**Bearing stopper**	Aluminium alloy	
11	**Return plate**	Aluminium alloy	Coating
12	**Pulley**	Aluminium alloy	
13	**Pulley**	Aluminium alloy	
15	**Cover plate**	Aluminium alloy	Coating
16	**Table spacer**	Aluminium alloy	Coating (LEFS32 only)

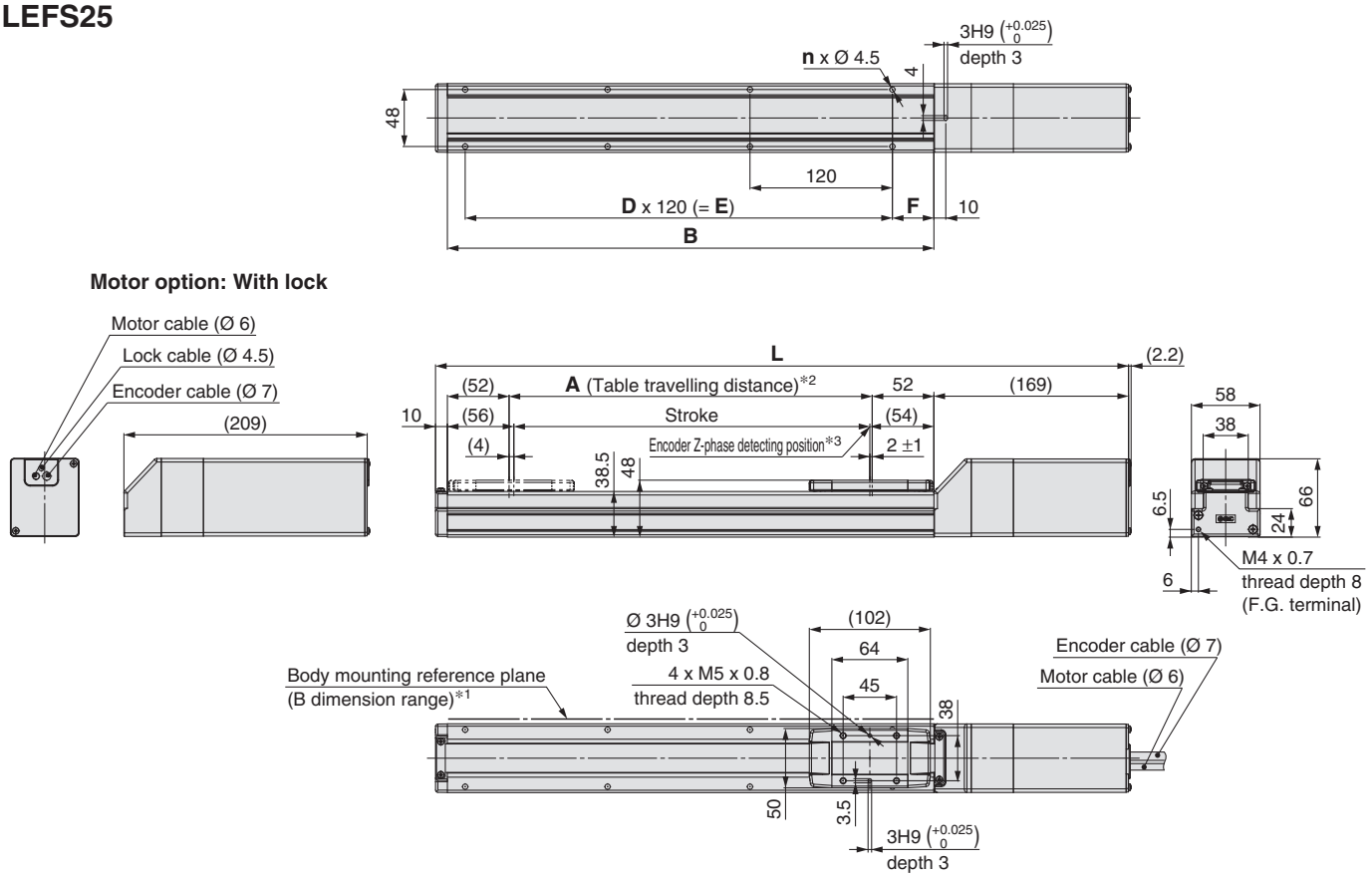
No.	Description	Material	Note
17	**Motor (Absolute encoder)**	—	
	Motor (Incremental encoder)		
18	**Motor adapter**	Aluminium alloy	Anodised
19	**Band stopper**	Stainless steel	
20	**Dust seal band**	Stainless steel	
21	**Bearing**	—	Stroke 250 mm or more
22	**Bearing**	—	
23	**Magnet**	—	With auto switch compatibility

Replacement Parts/Belt

No.	Size	Order no.
14	25	LE-D-6-2
	32	LE-D-6-3
	40	LE-D-6-4

Dimensions: In-line Motor

LEFS25



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
∗2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

Dimensions

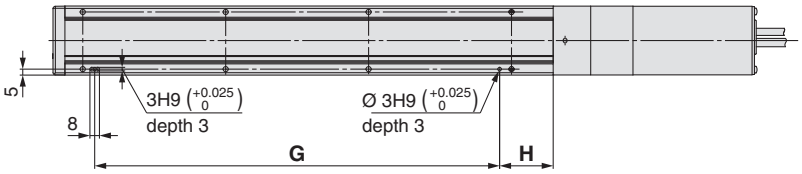
[mm]

Model	L		A	B	n	D	E	F
	Without lock	With lock						
LEFS25□□-50□	339	379	56	160	4	—	—	20
LEFS25□□-100□	389	429	106	210	4	—	—	35
LEFS25□□-150□	439	479	156	260	4	—	—	
LEFS25□□-200□	489	529	206	310	6	2	240	
LEFS25□□-250□	539	579	256	360	6	2	240	
LEFS25□□-300□	589	629	306	410	8	3	360	
LEFS25□□-350□	639	679	356	460	8	3	360	
LEFS25□□-400□	689	729	406	510	8	3	360	
LEFS25□□-450□	739	779	456	560	10	4	480	
LEFS25□□-500□	789	829	506	610	10	4	480	
LEFS25□□-550□	839	879	556	660	12	5	600	
LEFS25□□-600□	889	929	606	710	12	5	600	
LEFS25□□-650□	939	979	656	760	12	5	600	
LEFS25□□-700□	989	1029	706	810	14	6	720	
LEFS25□□-750□	1039	1079	756	860	14	6	720	
LEFS25□□-800□	1089	1129	806	910	16	7	840	

Dimensions: In-line Motor

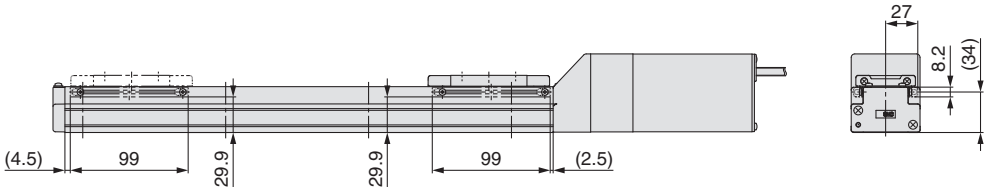
LEFS25

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)



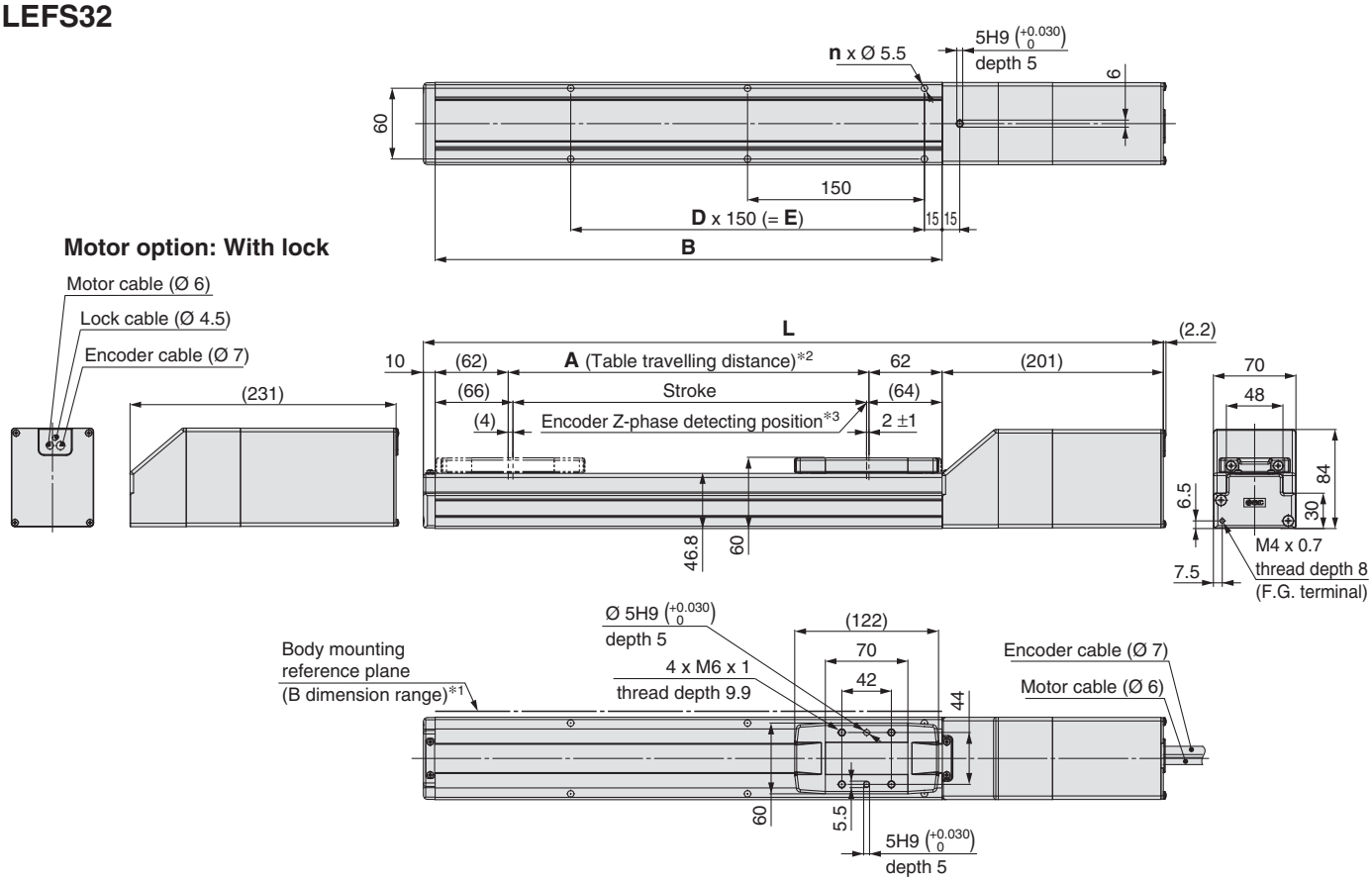
* For strokes of 99 mm or less, only 2 auto switch mounting brackets can be installed on the motor side.

Dimensions [mm]

Model	G	H
LEFS25□□-50□	100	30
LEFS25□□-100□	100	45
LEFS25□□-150□	100	45
LEFS25□□-200□	220	45
LEFS25□□-250□	220	45
LEFS25□□-300□	340	45
LEFS25□□-350□	340	45
LEFS25□□-400□	340	45
LEFS25□□-450□	460	45
LEFS25□□-500□	460	45
LEFS25□□-550□	580	45
LEFS25□□-600□	580	45
LEFS25□□-650□	580	45
LEFS25□□-700□	700	45
LEFS25□□-750□	700	45
LEFS25□□-800□	820	45

Dimensions: In-line Motor

LEFS32



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
∗2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

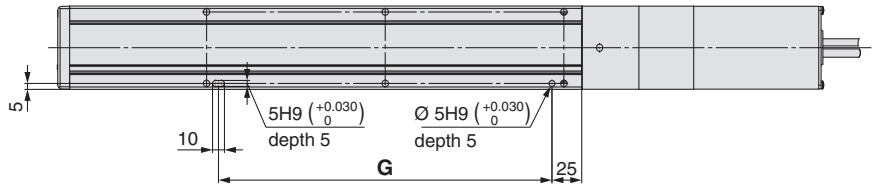
Dimensions [mm]

Model	L		A	B	n	D	E
	Without lock	With lock					
LEFS32□□-50□	391	421	56	180	4	—	—
LEFS32□□-100□	441	471	106	230	4	—	—
LEFS32□□-150□	491	521	156	280	4	—	—
LEFS32□□-200□	541	571	206	330	6	2	300
LEFS32□□-250□	591	621	256	380	6	2	300
LEFS32□□-300□	641	671	306	430	6	2	300
LEFS32□□-350□	691	721	356	480	8	3	450
LEFS32□□-400□	741	771	406	530	8	3	450
LEFS32□□-450□	791	821	456	580	8	3	450
LEFS32□□-500□	841	871	506	630	10	4	600
LEFS32□□-550□	891	921	556	680	10	4	600
LEFS32□□-600□	941	971	606	730	10	4	600
LEFS32□□-650□	991	1021	656	780	12	5	750
LEFS32□□-700□	1041	1071	706	830	12	5	750
LEFS32□□-750□	1091	1121	756	880	12	5	750
LEFS32□□-800□	1141	1171	806	930	14	6	900
LEFS32□□-850□	1191	1221	856	980	14	6	900
LEFS32□□-900□	1241	1271	906	1030	14	6	900
LEFS32□□-950□	1291	1321	956	1080	16	7	1050
LEFS32□□-1000□	1341	1371	1006	1130	16	7	1050

Dimensions: In-line Motor

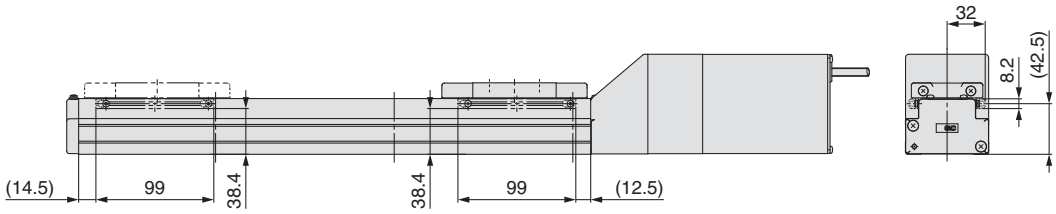
LEFS32

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)



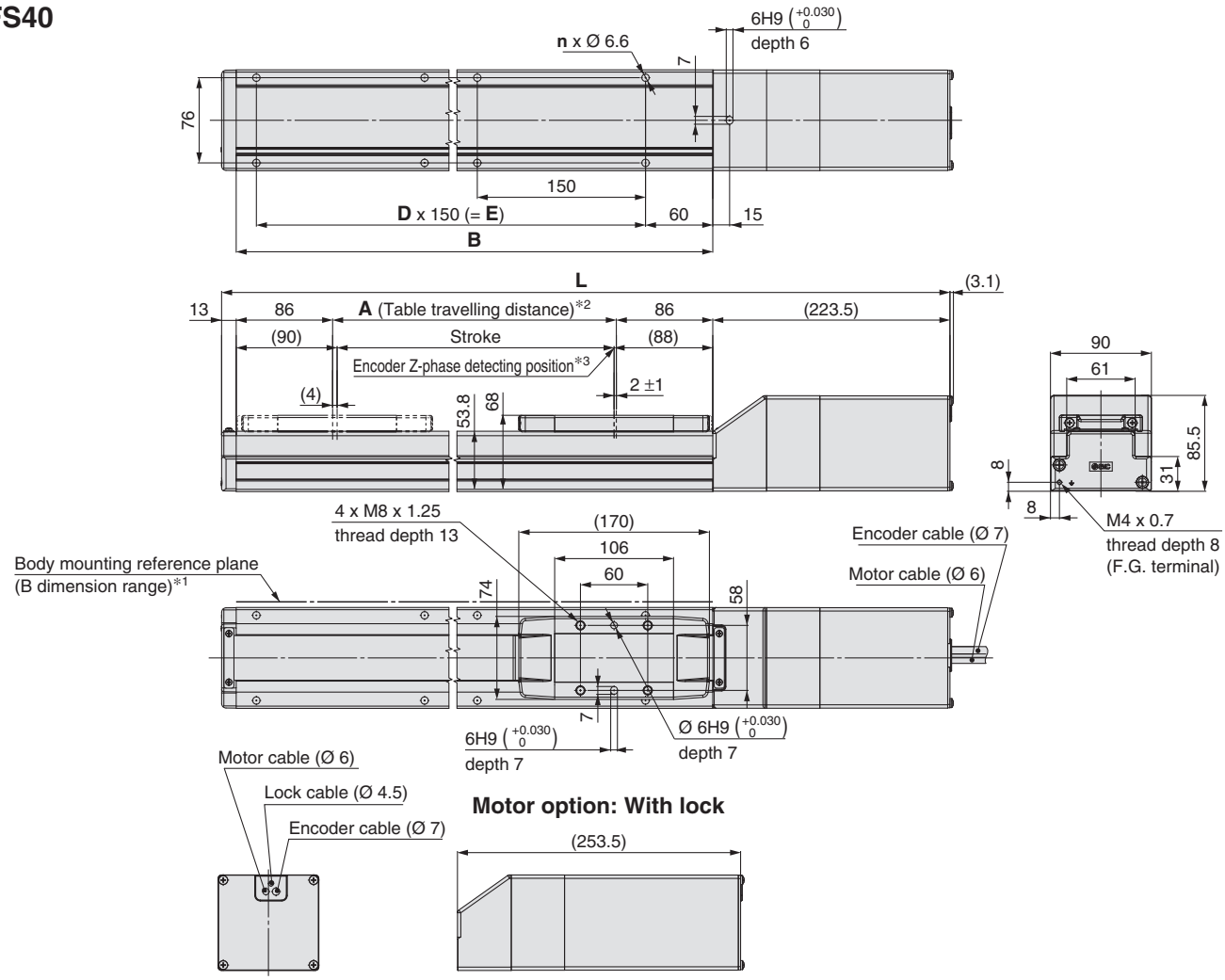
* For strokes of 99 mm or less, only 2 auto switch mounting brackets can be installed on the motor side.

Dimensions [mm]

Model	G
LEFS32□□-50□	130
LEFS32□□-100□	130
LEFS32□□-150□	130
LEFS32□□-200□	280
LEFS32□□-250□	280
LEFS32□□-300□	280
LEFS32□□-350□	430
LEFS32□□-400□	430
LEFS32□□-450□	430
LEFS32□□-500□	580
LEFS32□□-550□	580
LEFS32□□-600□	580
LEFS32□□-650□	730
LEFS32□□-700□	730
LEFS32□□-750□	730
LEFS32□□-800□	880
LEFS32□□-850□	880
LEFS32□□-900□	880
LEFS32□□-950□	1030
LEFS32□□-1000□	1030

Dimensions: In-line Motor

LEFS40



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 The Z-phase first detecting position from the stroke end of the motor side

Dimensions

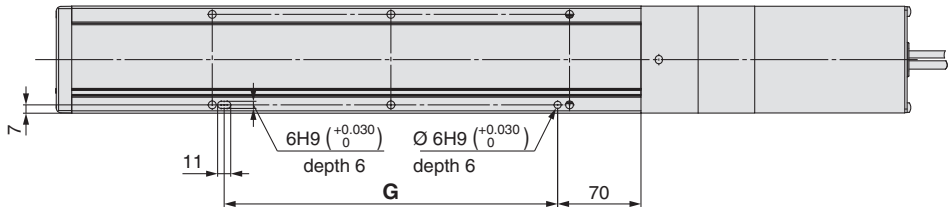
[mm]

Model	L		A	B	n	D	E
	Without lock	With lock					
LEFS40□□-150□	564.5	594.5	156	328	4	—	150
LEFS40□□-200□	614.5	644.5	206	378	6	2	300
LEFS40□□-250□	664.5	694.5	256	428	6	2	300
LEFS40□□-300□	714.5	744.5	306	478	6	2	300
LEFS40□□-350□	764.5	794.5	356	528	8	3	450
LEFS40□□-400□	814.5	844.5	406	578	8	3	450
LEFS40□□-450□	864.5	894.5	456	628	8	3	450
LEFS40□□-500□	914.5	944.5	506	678	10	4	600
LEFS40□□-550□	964.5	994.5	556	728	10	4	600
LEFS40□□-600□	1014.5	1044.5	606	778	10	4	600
LEFS40□□-650□	1064.5	1094.5	656	828	12	5	750
LEFS40□□-700□	1114.5	1144.5	706	878	12	5	750
LEFS40□□-750□	1164.5	1194.5	756	928	12	5	750
LEFS40□□-800□	1214.5	1244.5	806	978	14	6	900
LEFS40□□-850□	1264.5	1294.5	856	1028	14	6	900
LEFS40□□-900□	1314.5	1344.5	906	1078	14	6	900
LEFS40□□-950□	1364.5	1394.5	956	1128	16	7	1050
LEFS40□□-1000□	1414.5	1444.5	1006	1178	16	7	1050
LEFS40□□-1100□	1514.5	1544.5	1106	1278	18	8	1200
LEFS40□□-1200□	1614.5	1644.5	1206	1378	18	8	1200

Dimensions: In-line Motor

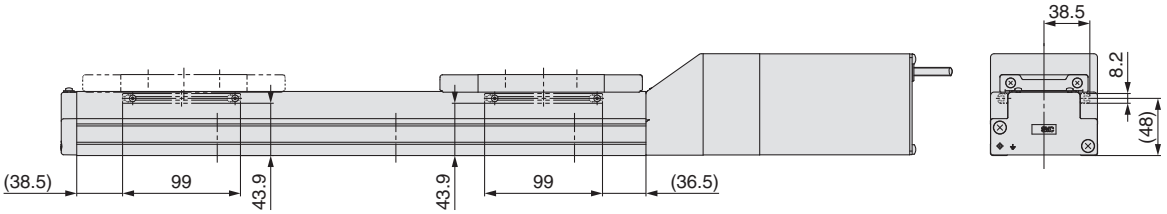
LEFS40

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

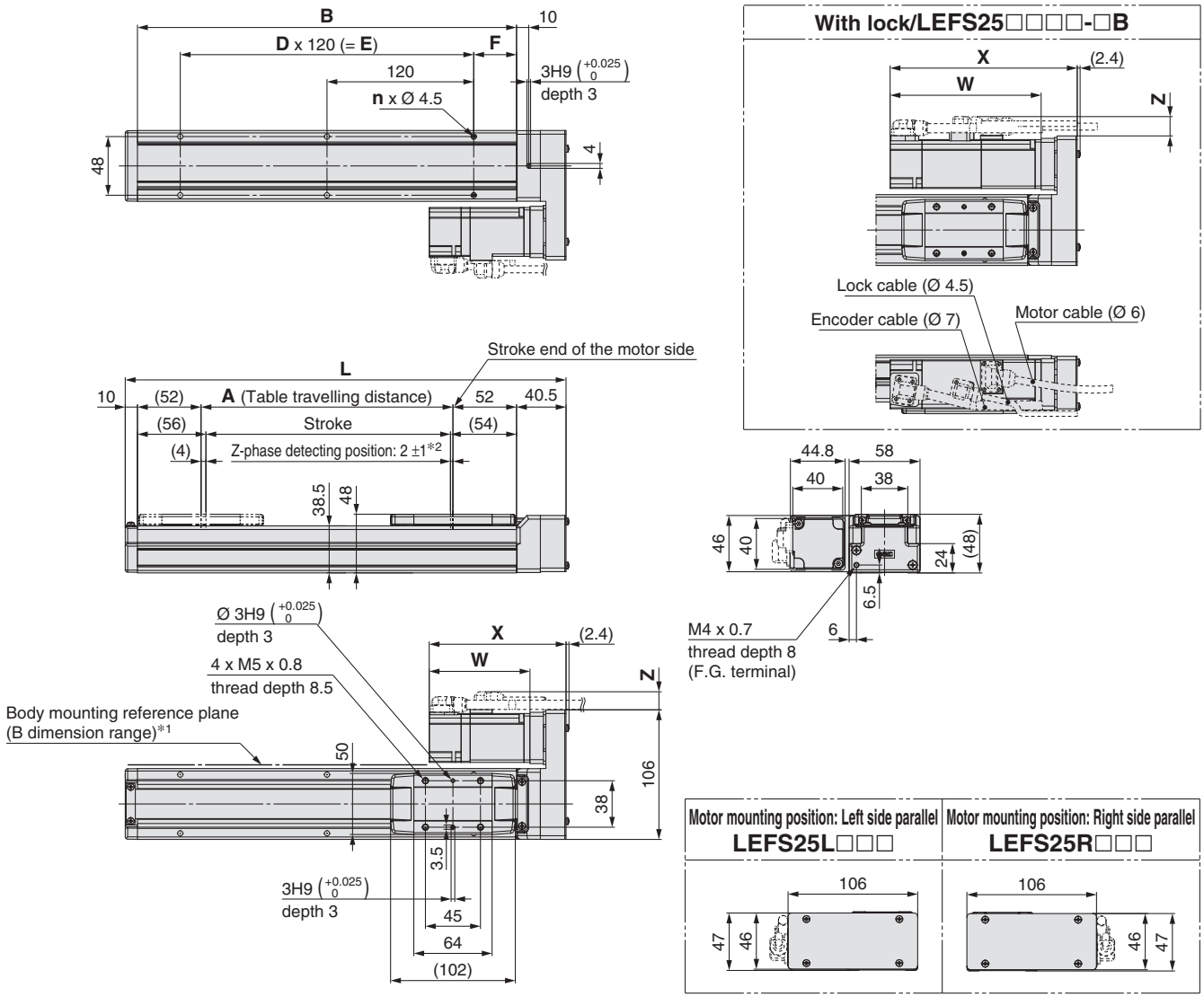


Dimensions [mm]

Model	G
LEFS40□□-150□	130
LEFS40□□-200□	280
LEFS40□□-250□	280
LEFS40□□-300□	280
LEFS40□□-350□	430
LEFS40□□-400□	430
LEFS40□□-450□	430
LEFS40□□-500□	580
LEFS40□□-550□	580
LEFS40□□-600□	580
LEFS40□□-650□	730
LEFS40□□-700□	730
LEFS40□□-750□	730
LEFS40□□-800□	880
LEFS40□□-850□	880
LEFS40□□-900□	880
LEFS40□□-950□	1030
LEFS40□□-1000□	1030
LEFS40□□-1100□	1180
LEFS40□□-1200□	1180

Dimensions: Motor Parallel

LEFS25R



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

∗2 The Z-phase first detecting position from the stroke end of the motor side
Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

Motor Dimensions

[mm]

Motor type	X		W		Z	
	Without lock	With lock	Without lock	With lock	Without lock	With lock
S2	116.5	153.4	87	123.9	14.1	15.8
S6	111.9	153	82.4	123.5	14.1	15.8
T6	111.9	152.5	82.4	123	14.1	15.8

Dimensions

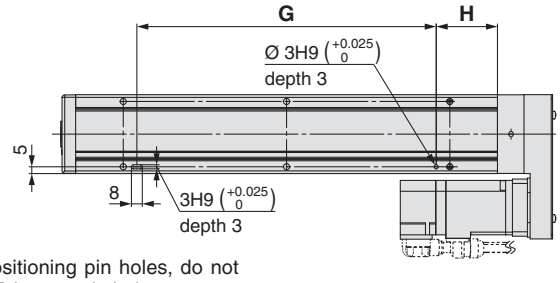
[mm]

Model	L	A	B	n	D	E	F
LEFS25□□□-50□	210.5	56	160	4	—	—	20
LEFS25□□□-100□	260.5	106	210	4	—	—	
LEFS25□□□-150□	310.5	156	260	4	—	—	
LEFS25□□□-200□	360.5	206	310	6	2	240	
LEFS25□□□-250□	410.5	256	360	6	2	240	
LEFS25□□□-300□	460.5	306	410	8	3	360	
LEFS25□□□-350□	510.5	356	460	8	3	360	
LEFS25□□□-400□	560.5	406	510	8	3	360	
LEFS25□□□-450□	610.5	456	560	10	4	480	35
LEFS25□□□-500□	660.5	506	610	10	4	480	
LEFS25□□□-550□	710.5	556	660	12	5	600	
LEFS25□□□-600□	760.5	606	710	12	5	600	
LEFS25□□□-650□	810.5	656	760	12	5	600	
LEFS25□□□-700□	860.5	706	810	14	6	720	
LEFS25□□□-750□	910.5	756	860	14	6	720	
LEFS25□□□-800□	960.5	806	910	16	7	840	

Dimensions: Motor Parallel

LEFS25R

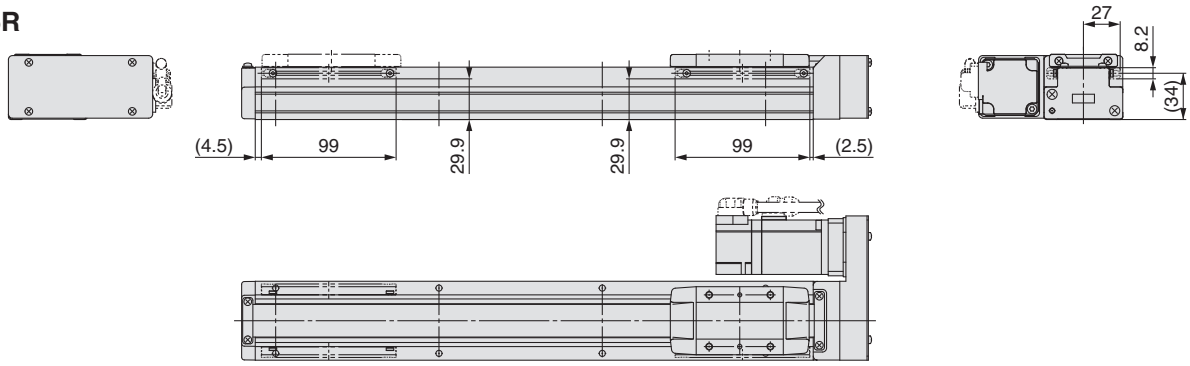
Positioning pin hole*1 (Option): Body bottom



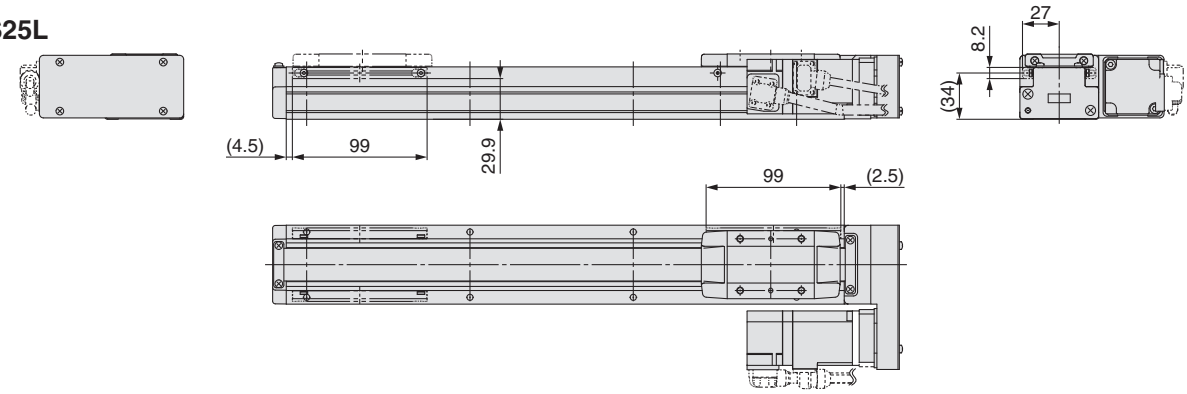
*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS25R



LEFS25L



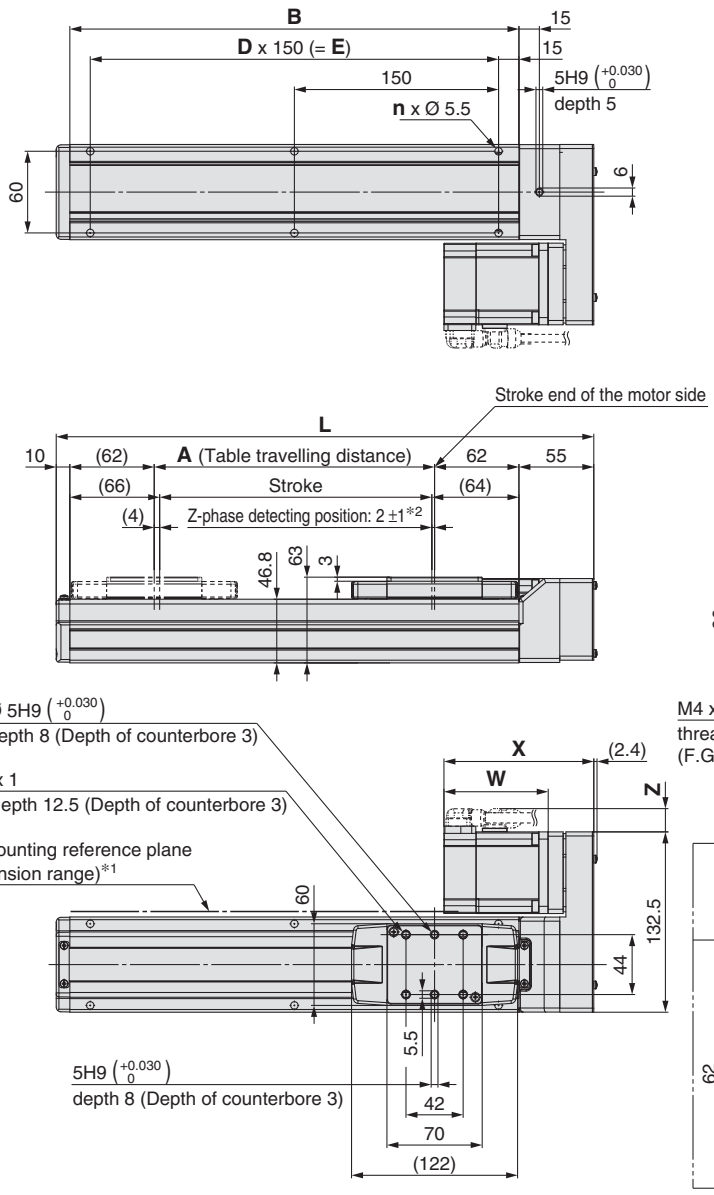
Dimensions [mm]

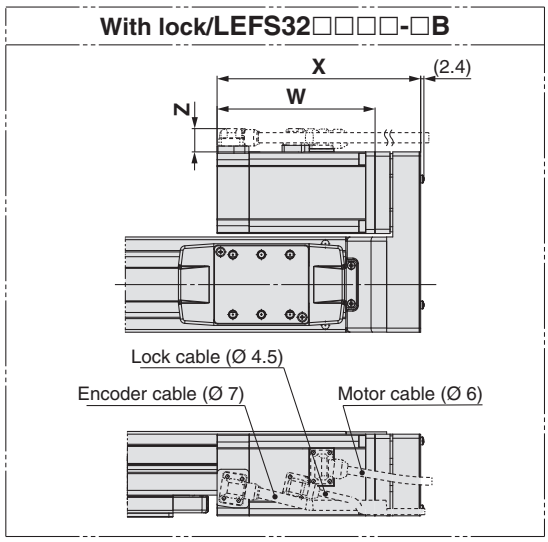
Model	G	H
LEFS25□□□-50□	100	30
LEFS25□□□-100□	100	45
LEFS25□□□-150□	100	45
LEFS25□□□-200□	220	45
LEFS25□□□-250□	220	45
LEFS25□□□-300□	340	45
LEFS25□□□-350□	340	45
LEFS25□□□-400□	340	45
LEFS25□□□-450□	460	45
LEFS25□□□-500□	460	45
LEFS25□□□-550□	580	45
LEFS25□□□-600□	580	45
LEFS25□□□-650□	580	45
LEFS25□□□-700□	700	45
LEFS25□□□-750□	700	45
LEFS25□□□-800□	820	45

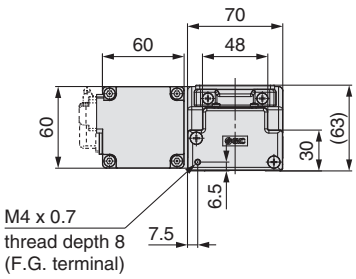
* For strokes of 99 mm or less, only 1 auto switch mounting bracket can be installed on the motor side.

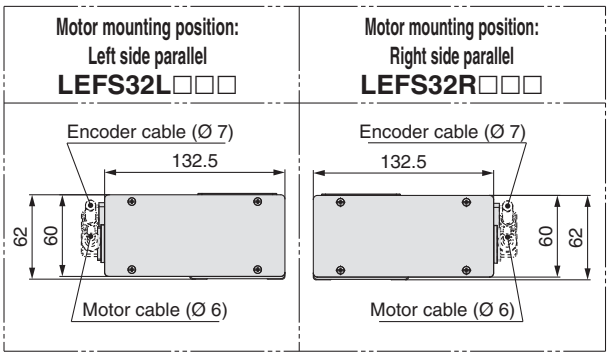
Dimensions: Motor Parallel

LEFS32R









Motor Dimensions

[mm]

Motor type	X		W		Z	
	Without lock	With lock	Without lock	With lock	Without lock	With lock
S3	121.7	150.3	88.2	116.8	17.1	17.1
S7	110.1	149.6	76.6	116.1	17.1	17.1
T7	110.1	146.9	76.6	113.4	17.1	17.1

∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm) In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

∗2 The Z-phase first detecting position from the stroke end of the motor side Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

Dimensions

[mm]

Model	L	A	B	n	D	E
LEFS32□□□-50□	245	56	180	4	—	—
LEFS32□□□-100□	295	106	230	4	—	—
LEFS32□□□-150□	345	156	280	4	—	—
LEFS32□□□-200□	395	206	330	6	2	300
LEFS32□□□-250□	445	256	380	6	2	300
LEFS32□□□-300□	495	306	430	6	2	300
LEFS32□□□-350□	545	356	480	8	3	450
LEFS32□□□-400□	595	406	530	8	3	450
LEFS32□□□-450□	645	456	580	8	3	450
LEFS32□□□-500□	695	506	630	10	4	600

Dimensions

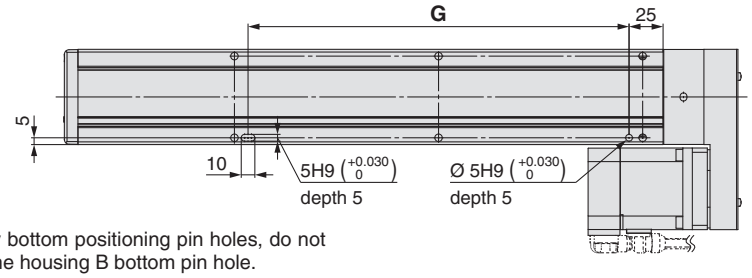
[mm]

Model	L	A	B	n	D	E
LEFS32□□□-550□	745	556	680	10	4	600
LEFS32□□□-600□	795	606	730	10	4	600
LEFS32□□□-650□	845	656	780	12	5	750
LEFS32□□□-700□	895	706	830	12	5	750
LEFS32□□□-750□	945	756	880	12	5	750
LEFS32□□□-800□	995	806	930	14	6	900
LEFS32□□□-850□	1045	856	980	14	6	900
LEFS32□□□-900□	1095	906	1030	14	6	900
LEFS32□□□-950□	1145	956	1080	16	7	1050
LEFS32□□□-1000□	1195	1006	1130	16	7	1050

Dimensions: Motor Parallel

LEFS32R

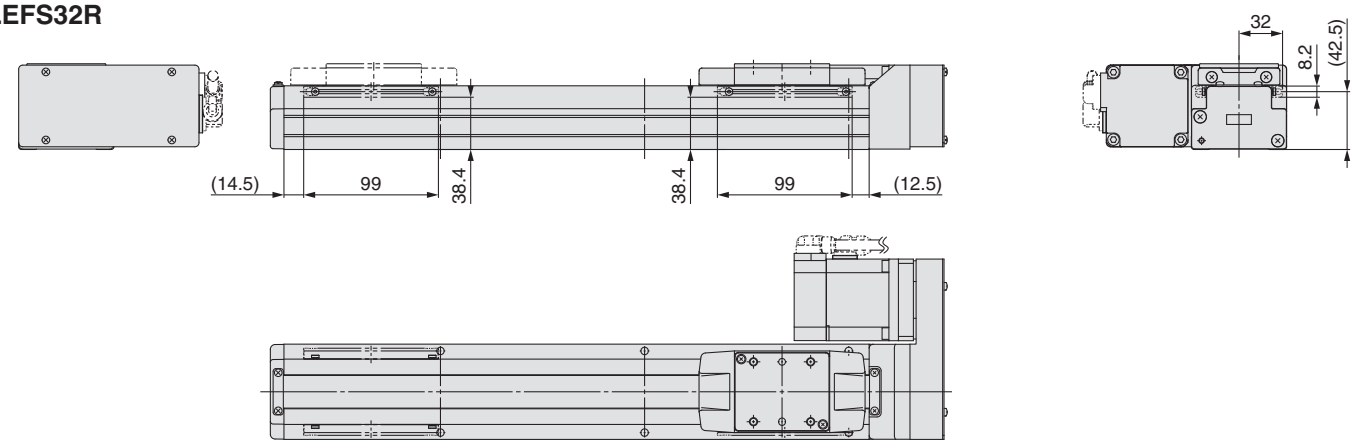
Positioning pin hole*1 (Option): Body bottom



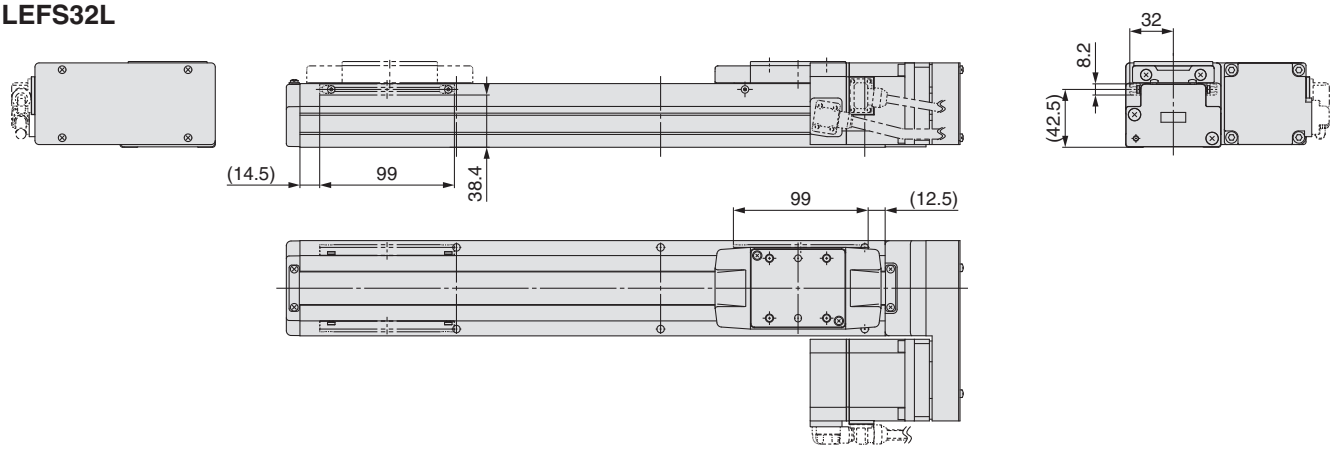
*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS32R



LEFS32L



* For strokes of 9 9 mm or less, only 1 auto switch mounting bracket can be installed on the motor side.

Dimensions [mm]

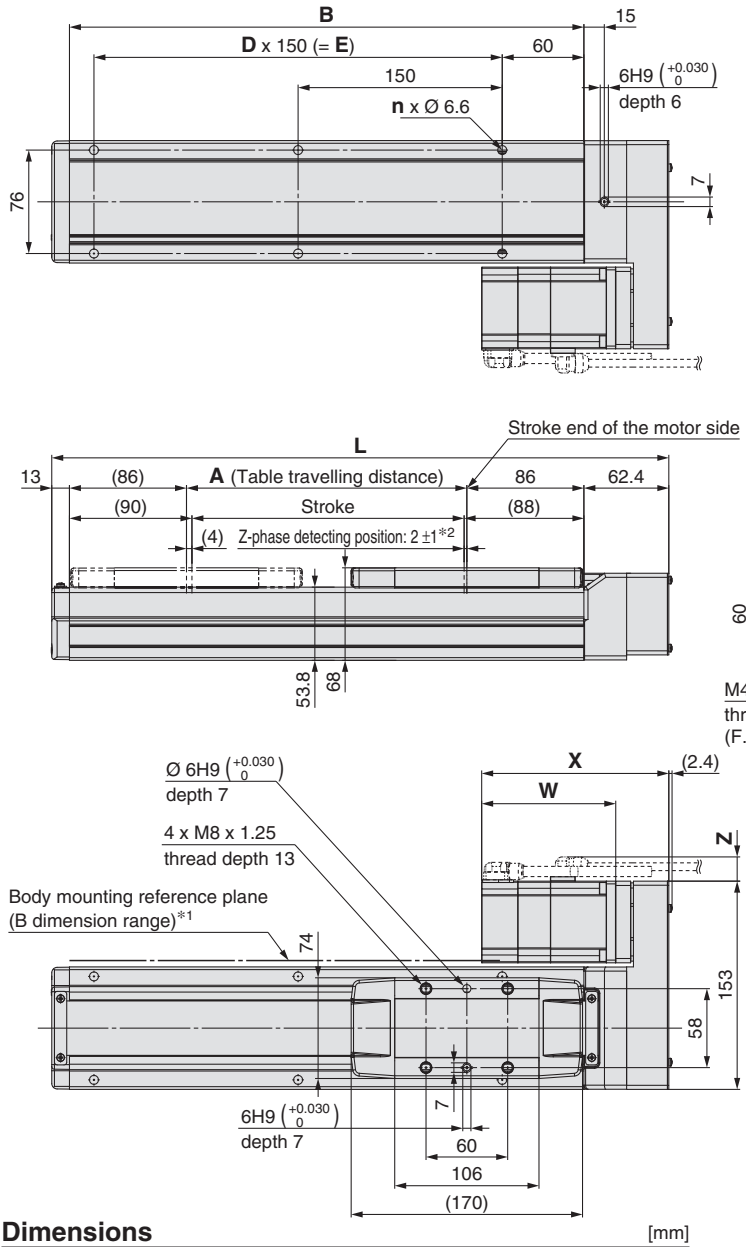
Model	G
LEFS32□□□-50□	130
LEFS32□□□-100□	130
LEFS32□□□-150□	130
LEFS32□□□-200□	280
LEFS32□□□-250□	280
LEFS32□□□-300□	280
LEFS32□□□-350□	430
LEFS32□□□-400□	430
LEFS32□□□-450□	430
LEFS32□□□-500□	580

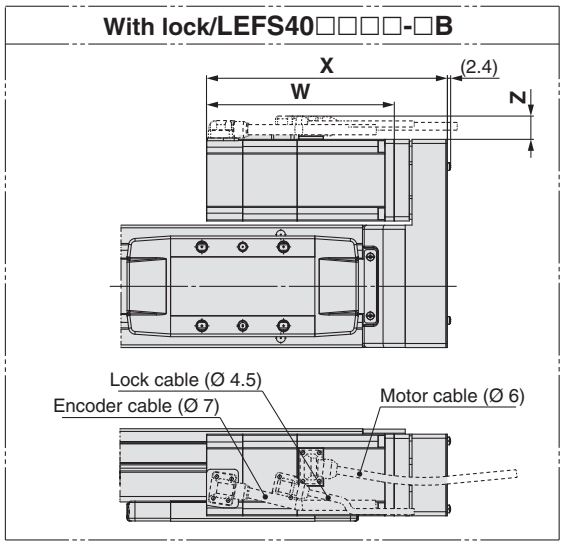
Dimensions [mm]

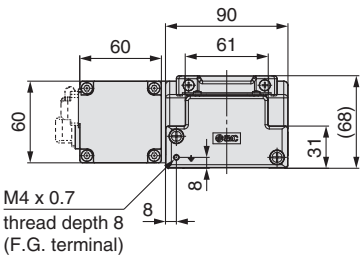
Model	G
LEFS32□□□-550□	580
LEFS32□□□-600□	580
LEFS32□□□-650□	730
LEFS32□□□-700□	730
LEFS32□□□-750□	730
LEFS32□□□-800□	880
LEFS32□□□-850□	880
LEFS32□□□-900□	880
LEFS32□□□-950□	1030
LEFS32□□□-1000□	1030

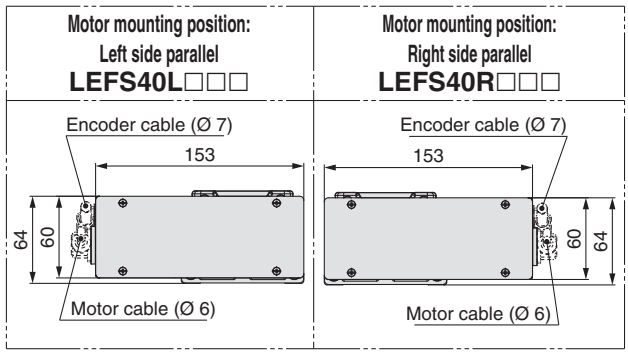
Dimensions: Motor Parallel

LEFS40R









Dimensions

[mm]

Model	L	A	B	n	D	E
LEFS40□□□-150□	403.4	156	328	4	—	150
LEFS40□□□-200□	453.4	206	378	6	2	300
LEFS40□□□-250□	503.4	256	428	6	2	300
LEFS40□□□-300□	553.4	306	478	6	2	300
LEFS40□□□-350□	603.4	356	528	8	3	450
LEFS40□□□-400□	653.4	406	578	8	3	450
LEFS40□□□-450□	703.4	456	628	8	3	450
LEFS40□□□-500□	753.4	506	678	10	4	600
LEFS40□□□-550□	803.4	556	728	10	4	600
LEFS40□□□-600□	853.4	606	778	10	4	600
LEFS40□□□-650□	903.4	656	828	12	5	750
LEFS40□□□-700□	953.4	706	878	12	5	750
LEFS40□□□-750□	1003.4	756	928	12	5	750
LEFS40□□□-800□	1053.4	806	978	14	6	900
LEFS40□□□-850□	1103.4	856	1028	14	6	900
LEFS40□□□-900□	1153.4	906	1078	14	6	900
LEFS40□□□-950□	1203.4	956	1128	16	7	1050
LEFS40□□□-1000□	1253.4	1006	1178	16	7	1050
LEFS40□□□-1100□	1353.4	1106	1278	18	8	1200
LEFS40□□□-1200□	1453.4	1206	1378	18	8	1200

*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 The Z-phase first detecting position from the stroke end of the motor side
Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

Motor Dimensions

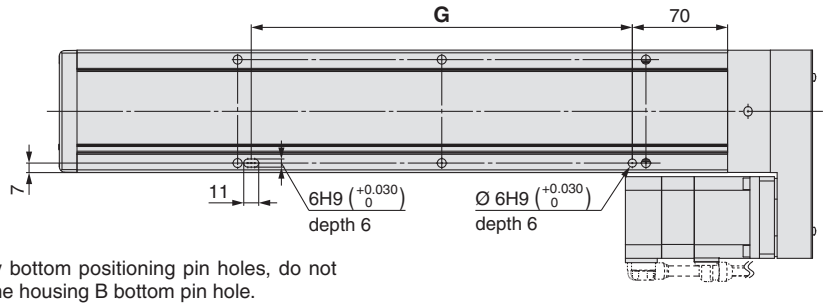
[mm]

Motor type	X		W		Z	
	Without lock	With lock	Without lock	With lock	Without lock	With lock
S4	149.2	177.8	110.2	138.8	17.1	17.1
S8	137.5	177	98.5	138	17.1	17.1
T8	137.3	174.1	98.3	135.1	17.1	17.1

Dimensions: Motor Parallel

LEFS40R

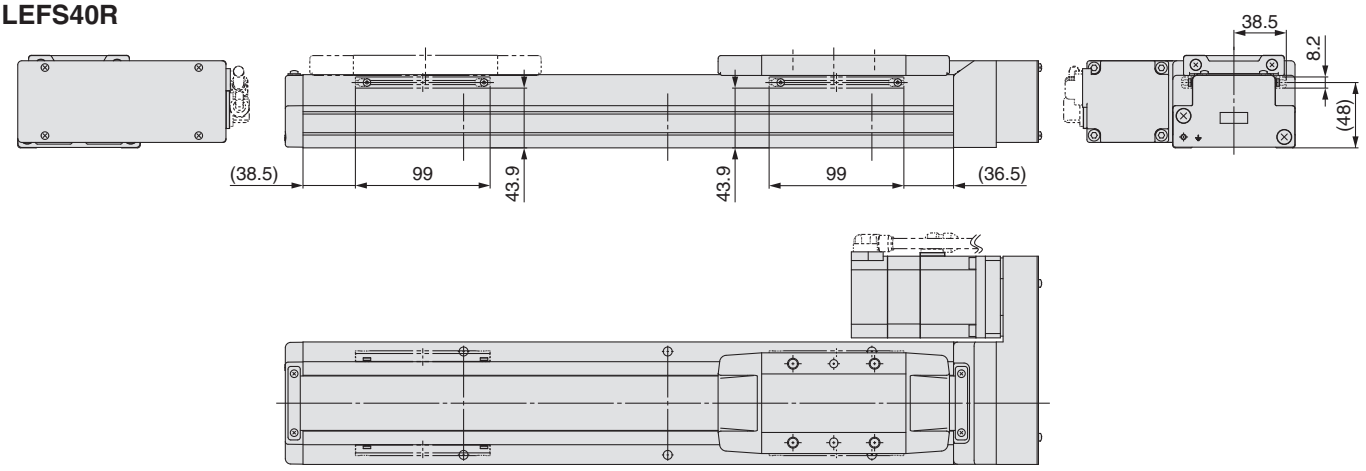
Positioning pin hole*1 (Option): Body bottom



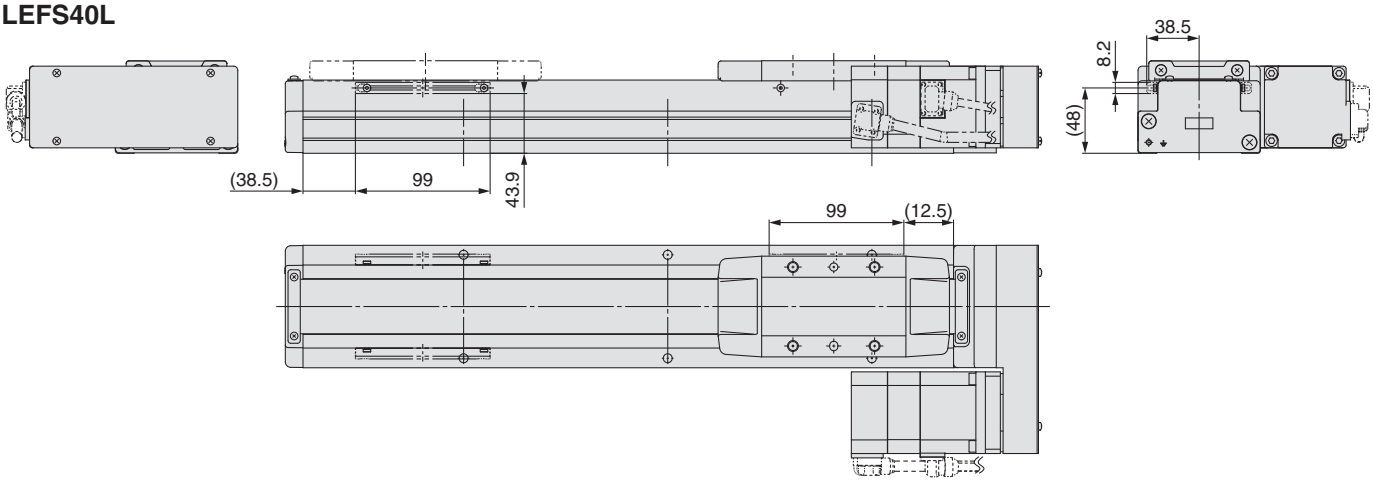
*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS40R



LEFS40L



Dimensions [mm]

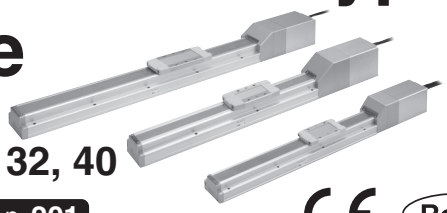
Model	G
LEFS40□□□-150□	130
LEFS40□□□-200□	280
LEFS40□□□-250□	280
LEFS40□□□-300□	280
LEFS40□□□-350□	430
LEFS40□□□-400□	430
LEFS40□□□-450□	430
LEFS40□□□-500□	580
LEFS40□□□-550□	580
LEFS40□□□-600□	580

Dimensions [mm]

Model	G
LEFS40□□□-650□	730
LEFS40□□□-700□	730
LEFS40□□□-750□	730
LEFS40□□□-800□	880
LEFS40□□□-850□	880
LEFS40□□□-900□	880
LEFS40□□□-950□	1030
LEFS40□□□-1000□	1030
LEFS40□□□-1100□	1180
LEFS40□□□-1200□	1180

Electric Actuator/Slider Type
Ball Screw Drive

LEFS Series LEFS25, 32, 40



LECS□ Series ▶ p. 83 | Clean Room Specification ▶ p. 188 | Secondary Battery Compatible ▶ p. 201

CE RoHS

How to Order

LEFS H 32 R V7 B – 200 B C N K – S 3 M2 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭ ⓮

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

25
32
40

❸ Motor mounting position

—	In-line
R	Right side parallel
L	Left side parallel

❹ Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6*1	AC servo motor (Absolute encoder)	100	25	LECYM2-V5/LECYU2-V5
V7		200	32	LECYM2-V7/LECYU2-V7
V8		400	40	LECYM2-V8/LECYU2-V8

*1 For motor type V6, the compatible driver part number suffix is V5.

❺ Lead [mm]

Symbol	LEFS25	LEFS32	LEFS40
H	20	24	30
A	12	16	20
B	6	8	10

❻ Stroke [mm]

50	50
to	to
1200	1200

❼ Motor option

—	Without option
B	With lock

❽ Auto switch compatibility

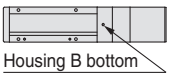
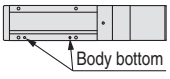
—	None
C	With (Includes 1 mounting bracket)

* If 2 or more are required, please order them separately. (Part no.: LEF-D-2-1 For details, refer to page 167.)
* Order auto switches separately. (For details, refer to pages 168 to 170.)
* When "—" is selected, the product will not come with a built-in magnet for an auto switch, and so a mounting bracket cannot be secured. Be sure to select an appropriate model initially as the product cannot be changed to have auto switch compatibility after purchase.

❾ Grease application (Seal band part)

—	With
N	Without (Roller specification)

❿ Positioning pin hole

—	Housing B bottom*1	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

*1 Refer to the body mounting example on page 203 for the mounting method.

⓫ Cable type

—	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

⓬ Actuator cable length [m]

—	Without cable
3	3
5	5
A	10
C	20

⓭ Driver type

	Compatible driver	Power supply voltage [V]
—	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

⓮ I/O cable length [m]*1

—	Without cable
H	Without cable (Connector only)
1	1.5

*1 When "Without driver" is selected for driver type, only "—: Without cable" can be selected. Refer to page 292 if I/O cable is required. (Options are shown on page 292.)

Applicable Stroke Table

●: Standard

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—
LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—
LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

* Please consult with SMC for non-standard strokes as they are produced as special orders.

For auto switches, refer to pages 167 to 170.

Compatible Driver

Driver type	MECHATROLINK-Ⅱ type 	MECHATROLINK-Ⅲ type 
Series	**LECYM**	**LECYU**
Applicable network	MECHATROLINK-Ⅱ	MECHATROLINK-Ⅲ
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage [V]	200 to 230 VAC (50/60 Hz)	
Reference page	285	

Specifications

AC Servo Motor

Model			LEFS25□V6			LEFS32□V7			LEFS40□V8		
Actuator specifications	Stroke [mm]*1		50 to 800			50 to 1000			150 to 1200		
	Work load [kg]*2	Horizontal	10	20	20	30	40	45	30	50	60
		Vertical	4	8	15	5	10	20	7	15	30
	Max. speed*3 [mm/s] Stroke range	Up to 400	1500	900	450	1500	1000	500	1500	1000	500
		401 to 500	1200	720	360	1500	1000	500	1500	1000	500
		501 to 600	900	540	270	1200	800	400	1500	1000	500
		601 to 700	700	420	210	930	620	310	1410	940	470
		701 to 800	550	330	160	750	500	250	1140	760	380
		801 to 900	—	—	—	610	410	200	930	620	310
		901 to 1000	—	—	—	510	340	170	780	520	260
		1001 to 1100	—	—	—	—	—	—	500	440	220
		1101 to 1200	—	—	—	—	—	—	500	380	190
	Max. acceleration/deceleration [mm/s²]		20000 (Refer to pages 45 to 47 for limit according to work load and duty ratio.)								
	Positioning repeatability [mm]	Basic type	±0.02								
		High-precision type	±0.01								
	Lost motion [mm]*4	Basic type	0.1 or less								
		High-precision type	0.05 or less								
	Lead [mm]		20	12	6	24	16	8	30	20	10
	Impact/Vibration resistance [m/s²]*5		50/20								
	Actuation type		Ball screw (LEFS□), Ball screw + Belt (LEFS□$^{R}_{L}$)								
	Guide type		Linear guide								
	Operating temperature range [°C]		5 to 40								
	Operating humidity range [%RH]		90 or less (No condensation)								
Electric specifications	Motor output/Size		100 W/□40			200 W/□60			400 W/□60		
	Motor type		AC servo motor (200 VAC)								
	Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)								
	Power consumption [W]*6	Horizontal	45			65			210		
		Vertical	145			175			230		
	Standby power consumption when operating [W]*7	Horizontal	2			2			2		
		Vertical	8			8			18		
	Max. instantaneous power consumption [W]*8		445			725			1275		
Lock unit specifications	Type*9		Non-magnetising lock								
	Holding force [N]		78	131	255	131	197	385	220	330	660
	Power consumption at 20°C [W]*10		5.5			6			6		
	Rated voltage [V]		24 VDC $^{+10\ \%}_{0}$								

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 For details, refer to "Speed–Work Load Graph (Guide)" on page 44.
*3 The allowable speed changes according to the stroke.
*4 A reference value for correcting an error in reciprocal operation
*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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*6 The power consumption (including the driver) is for when the actuator is operating.
*7 The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
*8 The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
*9 Only when motor option "With lock" is selected
*10 For an actuator with lock, add the power consumption for the lock.

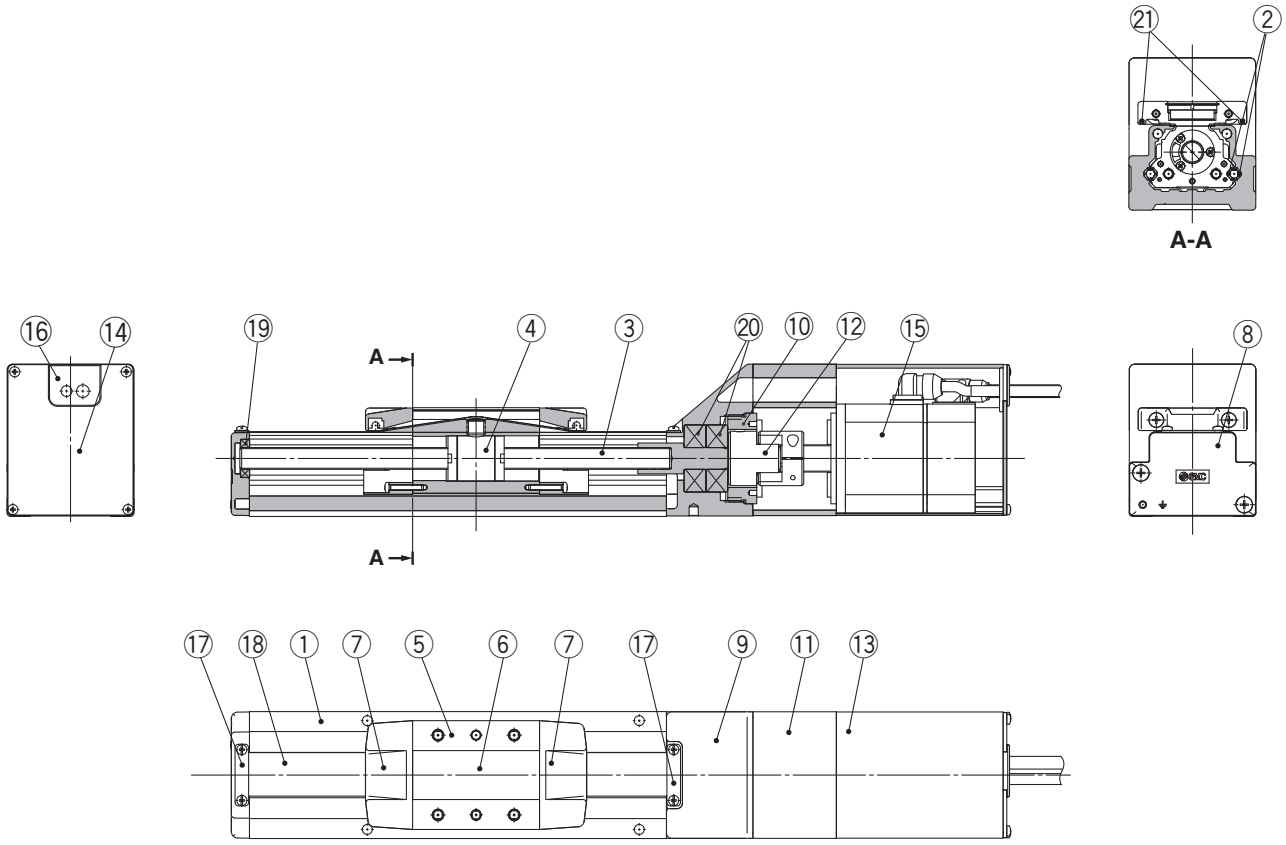
Weight

Series	LEFS25□V6															
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Product weight [kg]	2.06	2.20	2.34	2.50	2.62	2.75	2.90	3.05	3.18	3.30	3.46	3.60	3.74	3.88	4.02	4.20
Additional weight with lock [kg]	0.3															

Series	LEFS32□V7																				
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Product weight [kg]	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20
Additional weight with lock [kg]	0.7																			

Series	LEFS40□V8																				
Stroke [mm]	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
Product weight [kg]	5.92	6.20	6.48	6.75	7.05	7.35	7.61	7.90	8.17	8.35	8.73	9.00	9.30	9.55	9.86	10.15	10.42	10.70	11.26	11.82
Additional weight with lock [kg]	0.7																			

Construction



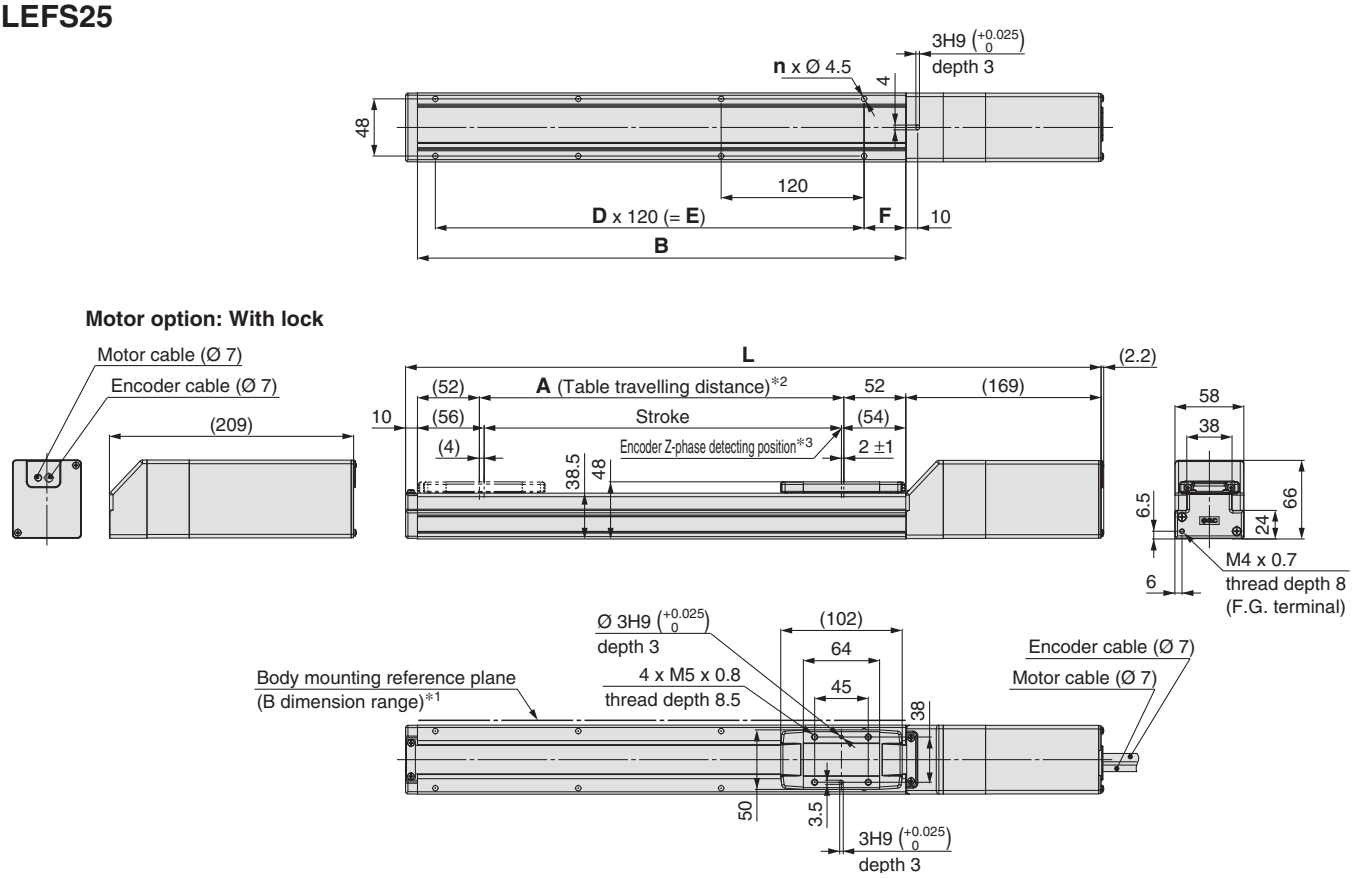
Component Parts

No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**	—	
3	**Ball screw shaft**	—	
4	**Ball screw nut**	—	
5	**Table**	Aluminium alloy	Anodised
6	**Blanking plate**	Aluminium alloy	Anodised
7	**Seal band holder**	Synthetic resin	
8	**Housing A**	Aluminium die-cast	Coating
9	**Housing B**	Aluminium die-cast	Coating
10	**Bearing stopper**	Aluminium alloy	
11	**Motor mount**	Aluminium alloy	Coating

No.	Description	Material	Note
12	**Coupling**	—	
13	**Motor cover**	Aluminium alloy	Anodised
14	**Motor end cover**	Aluminium alloy	Anodised
15	**Motor**	—	
16	**Grommet**	NBR	
17	**Band stopper**	Stainless steel	
18	**Dust seal band**	Stainless steel	
19	**Bearing**	—	Stroke 250 mm or more
20	**Bearing**	—	
21	**Magnet**	—	With auto switch compatibility

Dimensions: In-line Motor

LEFS25



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
∗2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

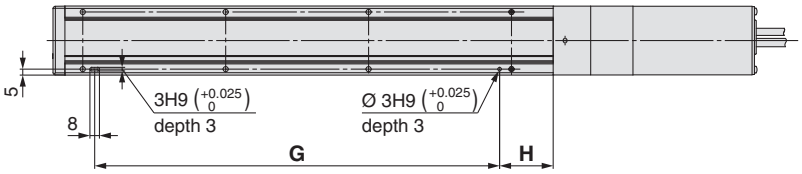
Dimensions [mm]

Model	L		A	B	n	D	E	F
	Without lock	With lock						
LEFS25□□-50□	339	379	56	160	4	—	—	20
LEFS25□□-100□	389	429	106	210	4	—	—	35
LEFS25□□-150□	439	479	156	260	4	—	—	
LEFS25□□-200□	489	529	206	310	6	2	240	
LEFS25□□-250□	539	579	256	360	6	2	240	
LEFS25□□-300□	589	629	306	410	8	3	360	
LEFS25□□-350□	639	679	356	460	8	3	360	
LEFS25□□-400□	689	729	406	510	8	3	360	
LEFS25□□-450□	739	779	456	560	10	4	480	
LEFS25□□-500□	789	829	506	610	10	4	480	
LEFS25□□-550□	839	879	556	660	12	5	600	
LEFS25□□-600□	889	929	606	710	12	5	600	
LEFS25□□-650□	939	979	656	760	12	5	600	
LEFS25□□-700□	989	1029	706	810	14	6	720	
LEFS25□□-750□	1039	1079	756	860	14	6	720	
LEFS25□□-800□	1089	1129	806	910	16	7	840	

Dimensions: In-line Motor

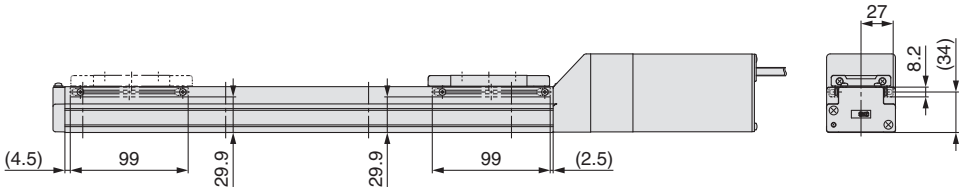
LEFS25

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)



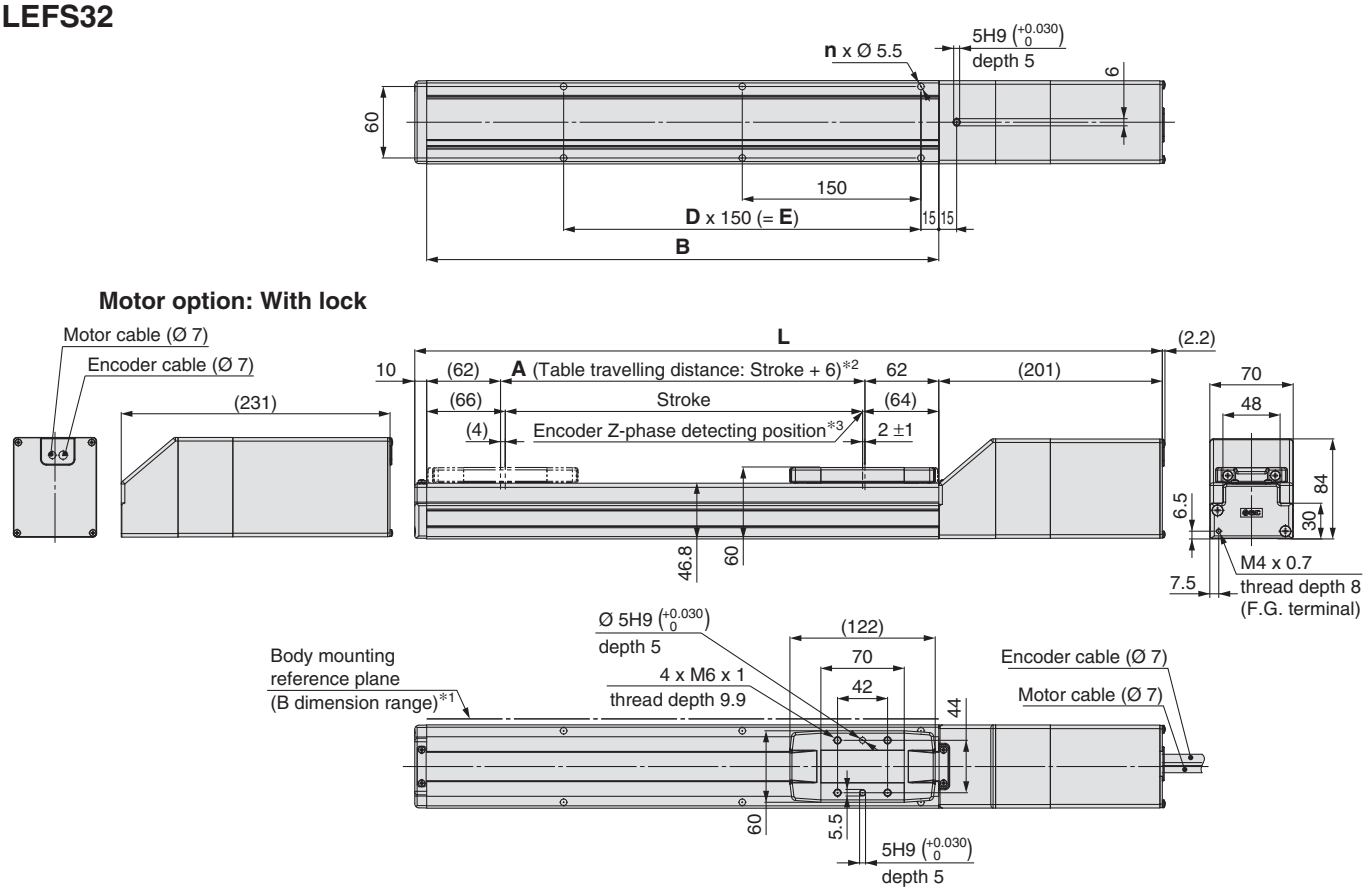
* For strokes of 99 mm or less, only 2 auto switch mounting brackets can be installed on the motor side.

Dimensions [mm]

Model	G	H
LEFS25□□-50□	100	30
LEFS25□□-100□	100	45
LEFS25□□-150□	100	45
LEFS25□□-200□	220	45
LEFS25□□-250□	220	45
LEFS25□□-300□	340	45
LEFS25□□-350□	340	45
LEFS25□□-400□	340	45
LEFS25□□-450□	460	45
LEFS25□□-500□	460	45
LEFS25□□-550□	580	45
LEFS25□□-600□	580	45
LEFS25□□-650□	580	45
LEFS25□□-700□	700	45
LEFS25□□-750□	700	45
LEFS25□□-800□	820	45

Dimensions: In-line Motor

LEFS32



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
∗2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

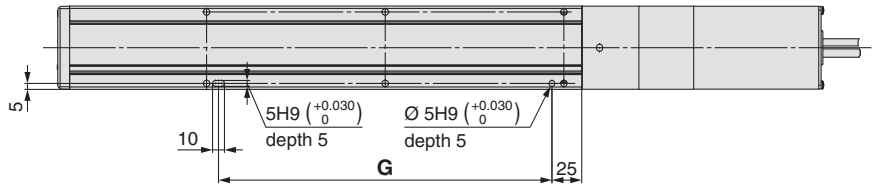
Dimensions [mm]

Model	L		A	B	n	D	E
	Without lock	With lock					
LEFS32□□-50□	391	421	56	180	4	—	—
LEFS32□□-100□	441	471	106	230	4	—	—
LEFS32□□-150□	491	521	156	280	4	—	—
LEFS32□□-200□	541	571	206	330	6	2	300
LEFS32□□-250□	591	621	256	380	6	2	300
LEFS32□□-300□	641	671	306	430	6	2	300
LEFS32□□-350□	691	721	356	480	8	3	450
LEFS32□□-400□	741	771	406	530	8	3	450
LEFS32□□-450□	791	821	456	580	8	3	450
LEFS32□□-500□	841	871	506	630	10	4	600
LEFS32□□-550□	891	921	556	680	10	4	600
LEFS32□□-600□	941	971	606	730	10	4	600
LEFS32□□-650□	991	1021	656	780	12	5	750
LEFS32□□-700□	1041	1071	706	830	12	5	750
LEFS32□□-750□	1091	1121	756	880	12	5	750
LEFS32□□-800□	1141	1171	806	930	14	6	900
LEFS32□□-850□	1191	1221	856	980	14	6	900
LEFS32□□-900□	1241	1271	906	1030	14	6	900
LEFS32□□-950□	1291	1321	956	1080	16	7	1050
LEFS32□□-1000□	1341	1371	1006	1130	16	7	1050

Dimensions: In-line Motor

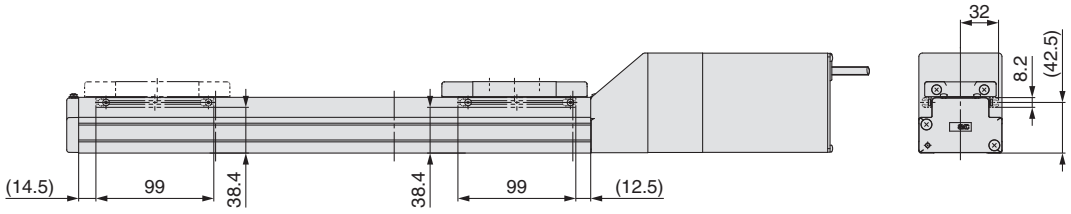
LEFS32

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)



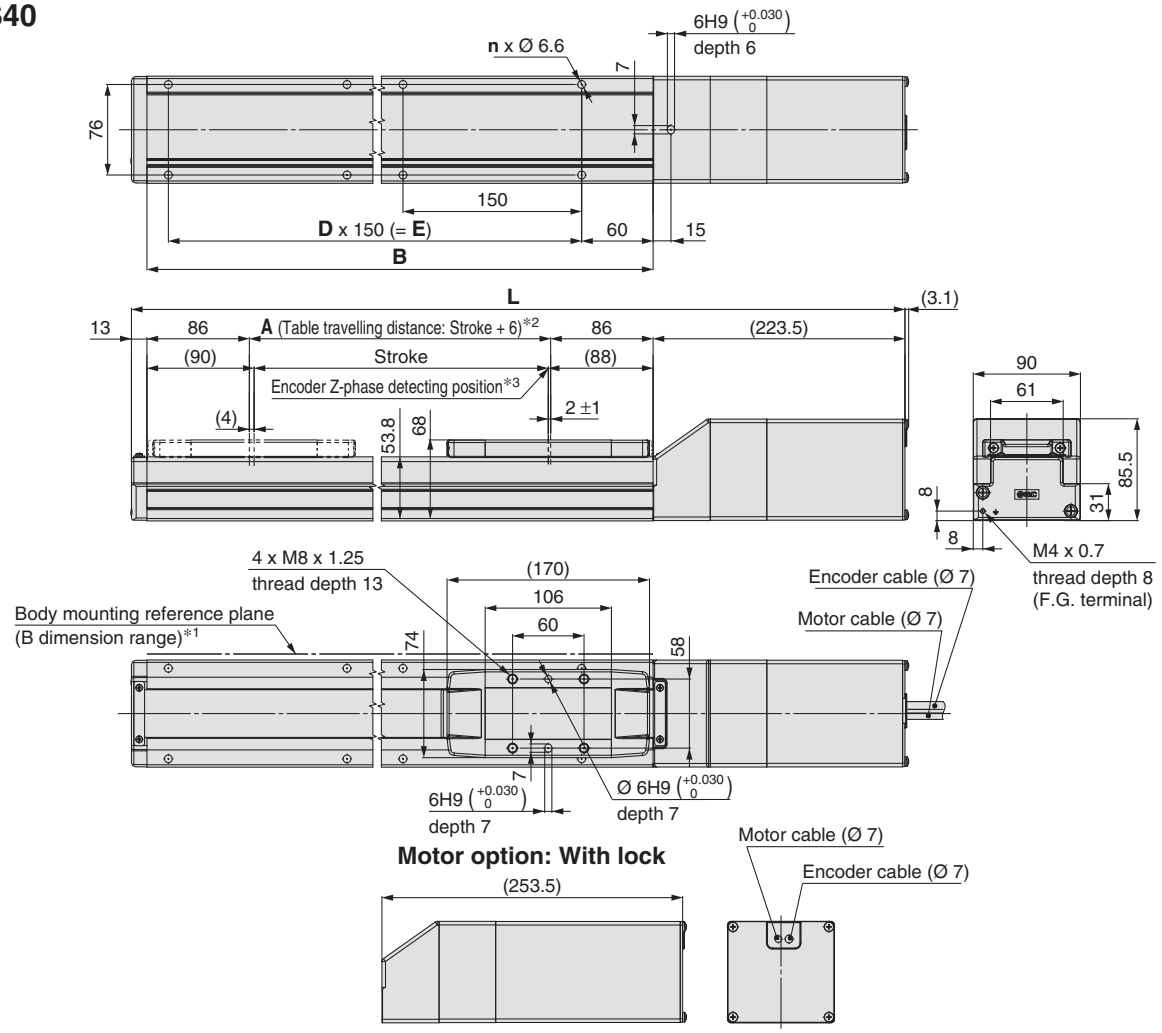
* For strokes of 99 mm or less, only 2 auto switch mounting brackets can be installed on the motor side.

Dimensions [mm]

Model	G
LEFS32□□-50□	130
LEFS32□□-100□	130
LEFS32□□-150□	130
LEFS32□□-200□	280
LEFS32□□-250□	280
LEFS32□□-300□	280
LEFS32□□-350□	430
LEFS32□□-400□	430
LEFS32□□-450□	430
LEFS32□□-500□	580
LEFS32□□-550□	580
LEFS32□□-600□	580
LEFS32□□-650□	730
LEFS32□□-700□	730
LEFS32□□-750□	730
LEFS32□□-800□	880
LEFS32□□-850□	880
LEFS32□□-900□	880
LEFS32□□-950□	1030
LEFS32□□-1000□	1030

Dimensions: In-line Motor

LEFS40



Motor option: With lock

*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 The Z-phase first detecting position from the stroke end of the motor side

Dimensions

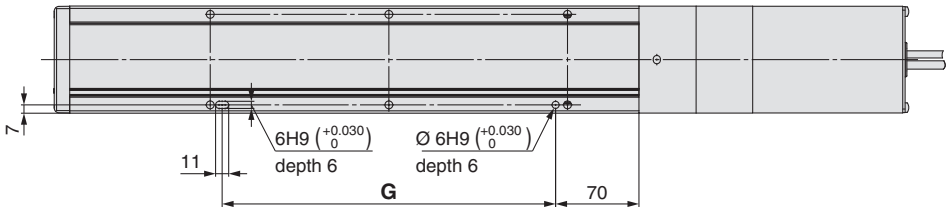
[mm]

Model	L		A	B	n	D	E
	Without lock	With lock					
LEFS40□□-150□	564.5	594.5	156	328	4	—	150
LEFS40□□-200□	614.5	644.5	206	378	6	2	300
LEFS40□□-250□	664.5	694.5	256	428	6	2	300
LEFS40□□-300□	714.5	744.5	306	478	6	2	300
LEFS40□□-350□	764.5	794.5	356	528	8	3	450
LEFS40□□-400□	814.5	844.5	406	578	8	3	450
LEFS40□□-450□	864.5	894.5	456	628	8	3	450
LEFS40□□-500□	914.5	944.5	506	678	10	4	600
LEFS40□□-550□	964.5	994.5	556	728	10	4	600
LEFS40□□-600□	1014.5	1044.5	606	778	10	4	600
LEFS40□□-650□	1064.5	1094.5	656	828	12	5	750
LEFS40□□-700□	1114.5	1144.5	706	878	12	5	750
LEFS40□□-750□	1164.5	1194.5	756	928	12	5	750
LEFS40□□-800□	1214.5	1244.5	806	978	14	6	900
LEFS40□□-850□	1264.5	1294.5	856	1028	14	6	900
LEFS40□□-900□	1314.5	1344.5	906	1078	14	6	900
LEFS40□□-950□	1364.5	1394.5	956	1128	16	7	1050
LEFS40□□-1000□	1414.5	1444.5	1006	1178	16	7	1050
LEFS40□□-1100□	1514.5	1544.5	1106	1278	18	8	1200
LEFS40□□-1200□	1614.5	1644.5	1206	1378	18	8	1200

Dimensions: In-line Motor

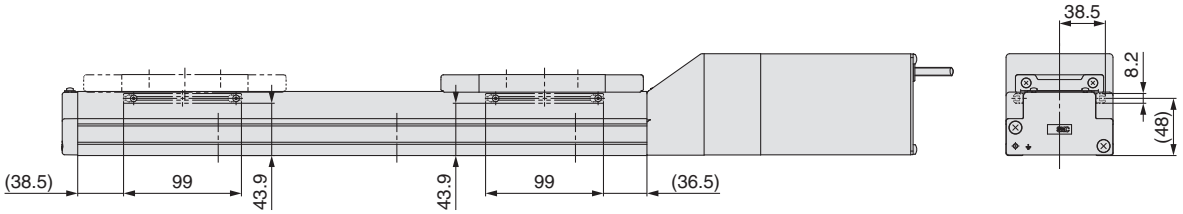
LEFS40

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

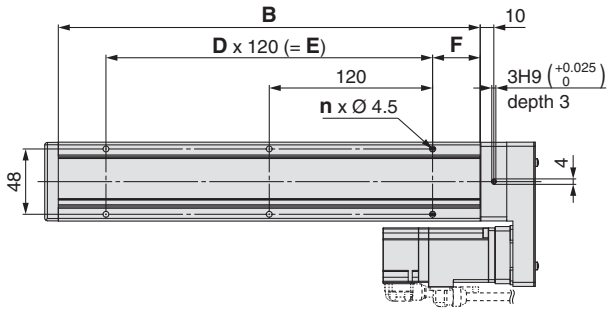


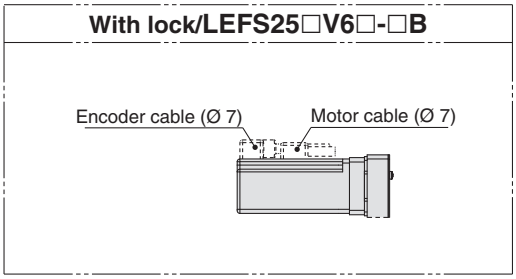
Dimensions [mm]

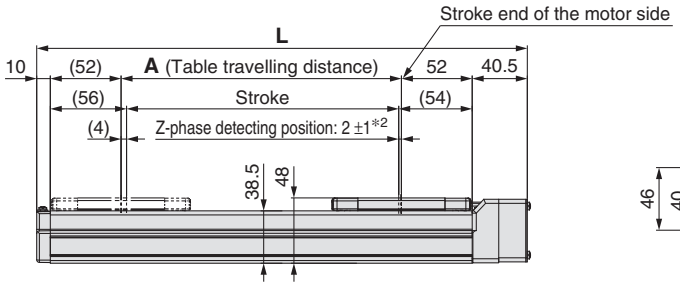
Model	G
LEFS40□□-150□	130
LEFS40□□-200□	280
LEFS40□□-250□	280
LEFS40□□-300□	280
LEFS40□□-350□	430
LEFS40□□-400□	430
LEFS40□□-450□	430
LEFS40□□-500□	580
LEFS40□□-550□	580
LEFS40□□-600□	580
LEFS40□□-650□	730
LEFS40□□-700□	730
LEFS40□□-750□	730
LEFS40□□-800□	880
LEFS40□□-850□	880
LEFS40□□-900□	880
LEFS40□□-950□	1030
LEFS40□□-1000□	1030
LEFS40□□-1100□	1180
LEFS40□□-1200□	1180

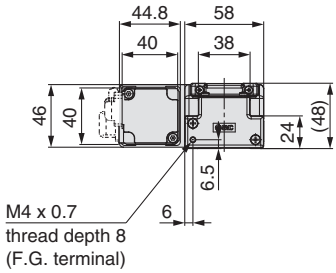
Dimensions: Motor Parallel

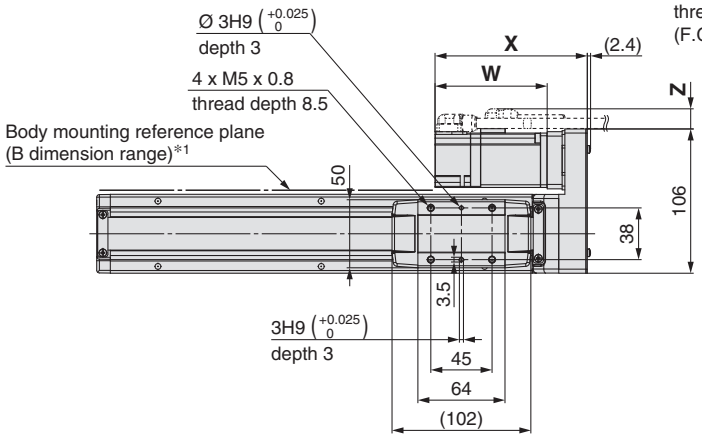
LEFS25R

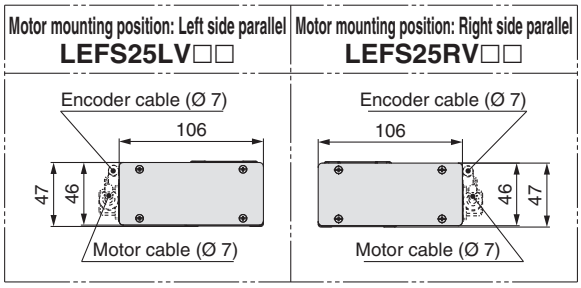












*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 The Z-phase first detecting position from the stroke end of the motor side Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

Motor Dimensions

[mm]

Motor type	X		W		Z	
	Without lock	With lock	Without lock	With lock	Without lock	With lock
V6	112	157	82.5	127.5	11	

Dimensions

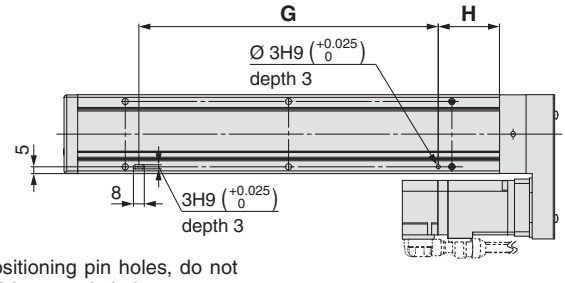
[mm]

Model	L	A	B	n	D	E	F
LEFS25□□□-50□	210.5	56	160	4	—	—	20
LEFS25□□□-100□	260.5	106	210	4	—	—	
LEFS25□□□-150□	310.5	156	260	4	—	—	
LEFS25□□□-200□	360.5	206	310	6	2	240	
LEFS25□□□-250□	410.5	256	360	6	2	240	
LEFS25□□□-300□	460.5	306	410	8	3	360	
LEFS25□□□-350□	510.5	356	460	8	3	360	
LEFS25□□□-400□	560.5	406	510	8	3	360	
LEFS25□□□-450□	610.5	456	560	10	4	480	35
LEFS25□□□-500□	660.5	506	610	10	4	480	
LEFS25□□□-550□	710.5	556	660	12	5	600	
LEFS25□□□-600□	760.5	606	710	12	5	600	
LEFS25□□□-650□	810.5	656	760	12	5	600	
LEFS25□□□-700□	860.5	706	810	14	6	720	
LEFS25□□□-750□	910.5	756	860	14	6	720	
LEFS25□□□-800□	960.5	806	910	16	7	840	

Dimensions: Motor Parallel

LEFS25R

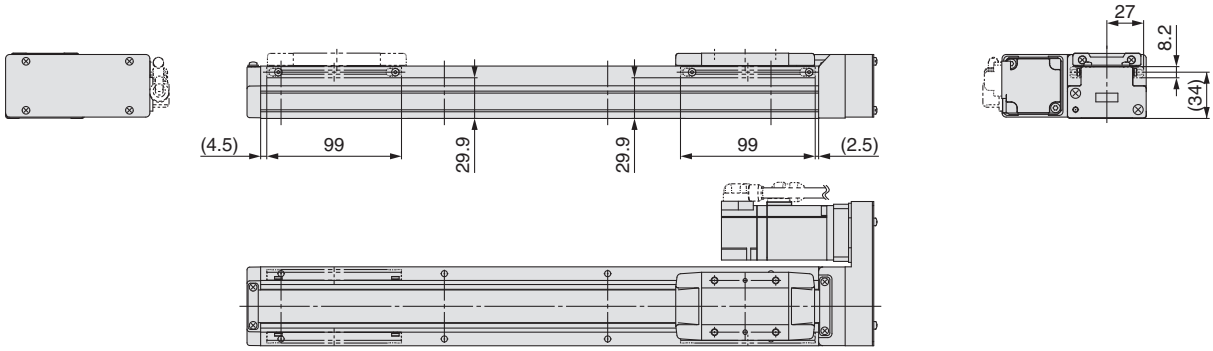
Positioning pin hole*1 (Option): Body bottom



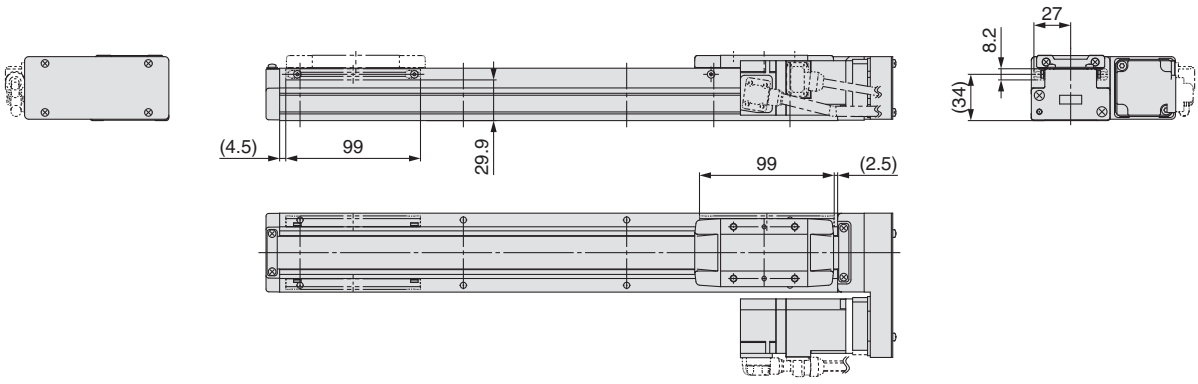
*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS25R



LEFS25L



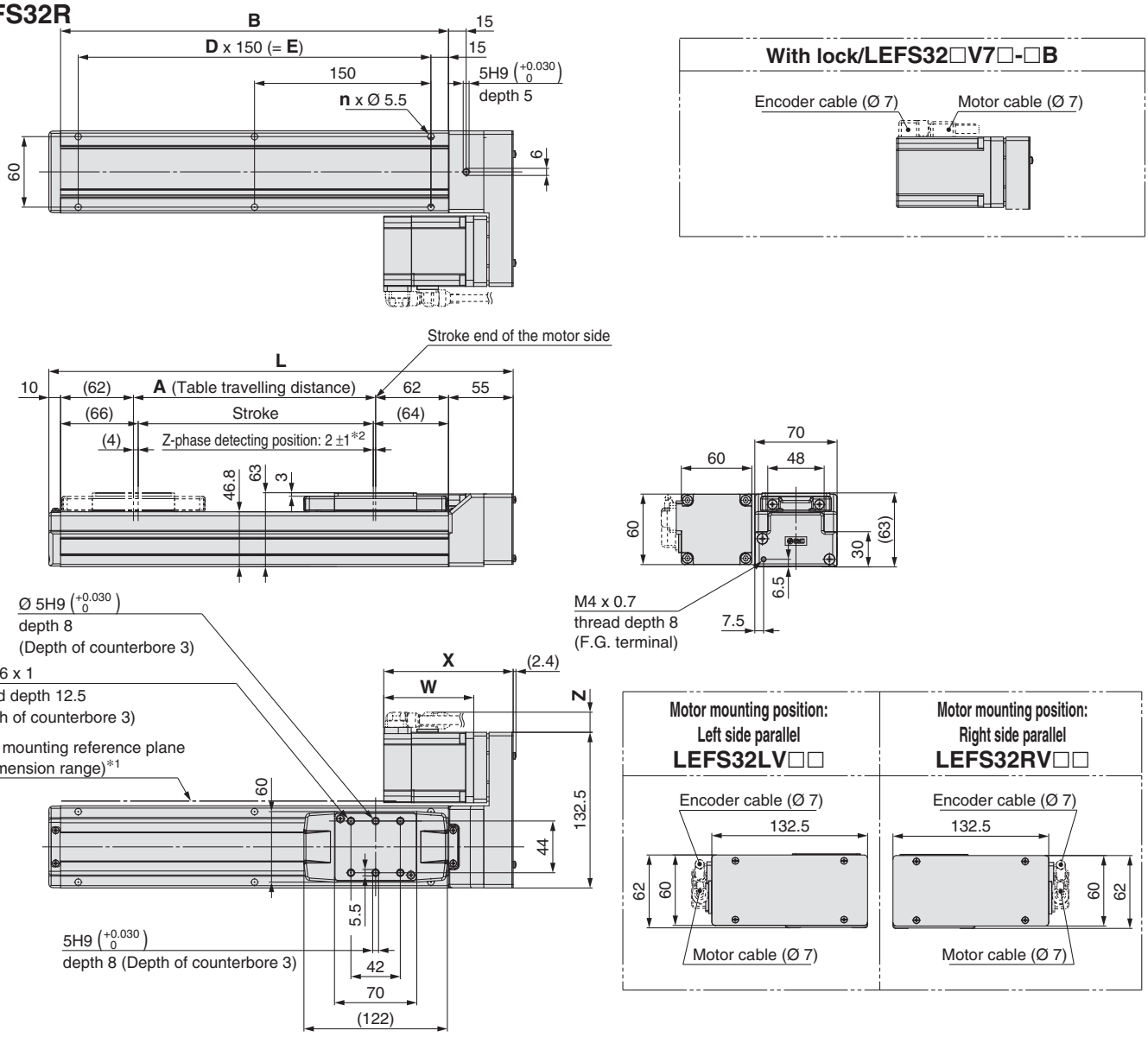
Dimensions [mm]

Model	G	H
LEFS25□□□-50□	100	30
LEFS25□□□-100□	100	45
LEFS25□□□-150□	100	45
LEFS25□□□-200□	220	45
LEFS25□□□-250□	220	45
LEFS25□□□-300□	340	45
LEFS25□□□-350□	340	45
LEFS25□□□-400□	340	45
LEFS25□□□-450□	460	45
LEFS25□□□-500□	460	45
LEFS25□□□-550□	580	45
LEFS25□□□-600□	580	45
LEFS25□□□-650□	580	45
LEFS25□□□-700□	700	45
LEFS25□□□-750□	700	45
LEFS25□□□-800□	820	45

* For strokes of 99 mm or less, only 1 auto switch mounting bracket can be installed on the motor side.

Dimensions: Motor Parallel

LEFS32R



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 The Z-phase first detecting position from the stroke end of the motor side
Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

Motor Dimensions

[mm]

Motor type	X		W		Z	
	Without lock	With lock	Without lock	With lock	Without lock	With lock
V7	113.5	153.5	80	120	14	14

Dimensions

[mm]

Model	L	A	B	n	D	E
LEFS32□□□-50□	245	56	180	4	—	—
LEFS32□□□-100□	295	106	230	4	—	—
LEFS32□□□-150□	345	156	280	4	—	—
LEFS32□□□-200□	395	206	330	6	2	300
LEFS32□□□-250□	445	256	380	6	2	300
LEFS32□□□-300□	495	306	430	6	2	300
LEFS32□□□-350□	545	356	480	8	3	450
LEFS32□□□-400□	595	406	530	8	3	450
LEFS32□□□-450□	645	456	580	8	3	450
LEFS32□□□-500□	695	506	630	10	4	600

Dimensions

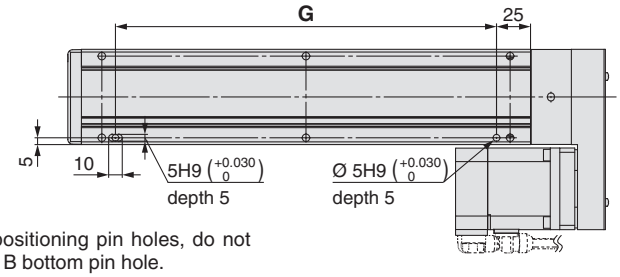
[mm]

Model	L	A	B	n	D	E
LEFS32□□□-550□	745	556	680	10	4	600
LEFS32□□□-600□	795	606	730	10	4	600
LEFS32□□□-650□	845	656	780	12	5	750
LEFS32□□□-700□	895	706	830	12	5	750
LEFS32□□□-750□	945	756	880	12	5	750
LEFS32□□□-800□	995	806	930	14	6	900
LEFS32□□□-850□	1045	856	980	14	6	900
LEFS32□□□-900□	1095	906	1030	14	6	900
LEFS32□□□-950□	1145	956	1080	16	7	1050
LEFS32□□□-1000□	1195	1006	1130	16	7	1050

Dimensions: Motor Parallel

LEFS32R

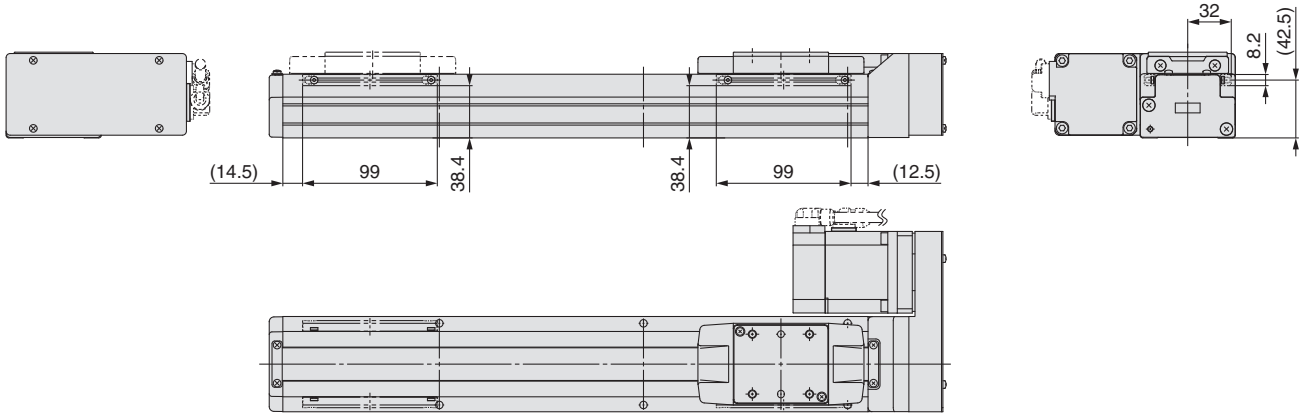
Positioning pin hole*1 (Option): Body bottom



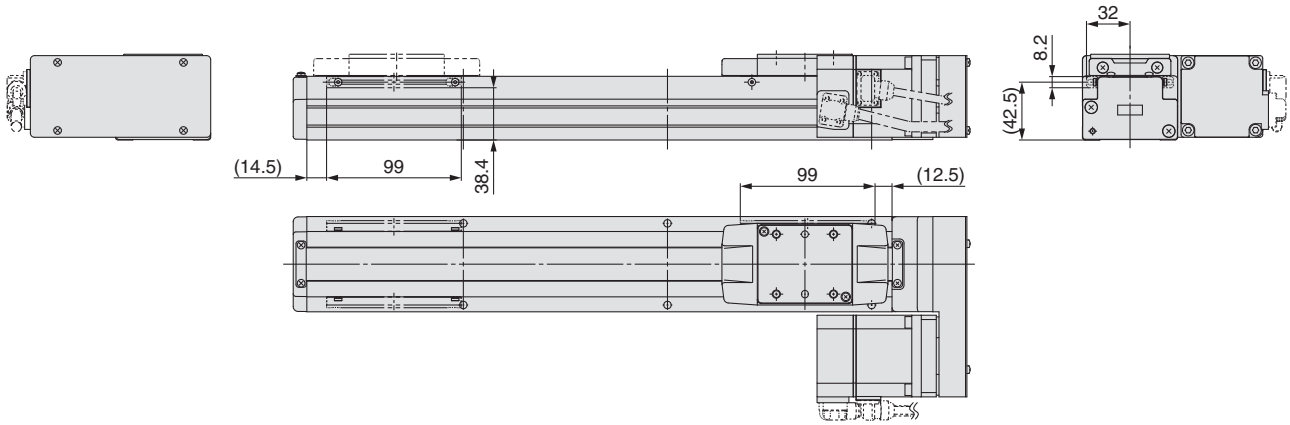
*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS32R



LEFS32L



* For strokes of 9 9 mm or less, only 1 auto switch mounting bracket can be installed on the motor side.

Dimensions [mm]

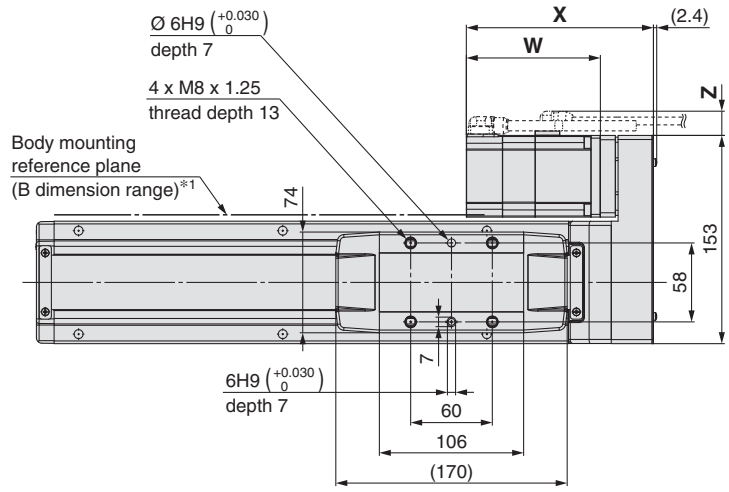
Model	G
LEFS32□□□-50□	130
LEFS32□□□-100□	130
LEFS32□□□-150□	130
LEFS32□□□-200□	280
LEFS32□□□-250□	280
LEFS32□□□-300□	280
LEFS32□□□-350□	430
LEFS32□□□-400□	430
LEFS32□□□-450□	430
LEFS32□□□-500□	580

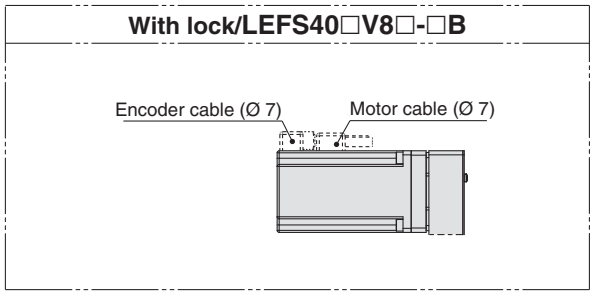
Dimensions [mm]

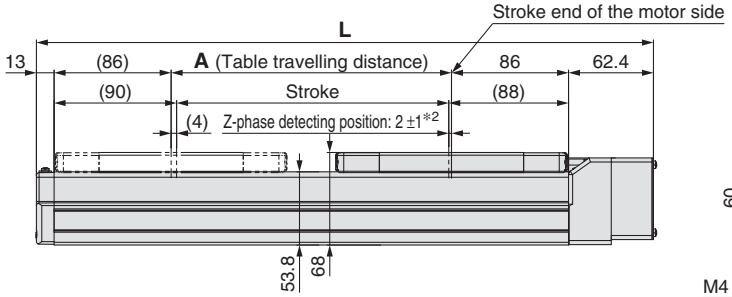
Model	G
LEFS32□□□-550□	580
LEFS32□□□-600□	580
LEFS32□□□-650□	730
LEFS32□□□-700□	730
LEFS32□□□-750□	730
LEFS32□□□-800□	880
LEFS32□□□-850□	880
LEFS32□□□-900□	880
LEFS32□□□-950□	1030
LEFS32□□□-1000□	1030

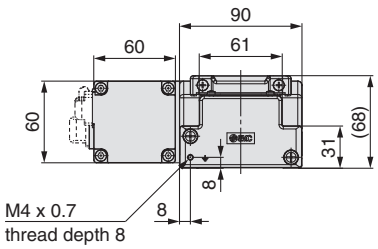
Dimensions: Motor Parallel

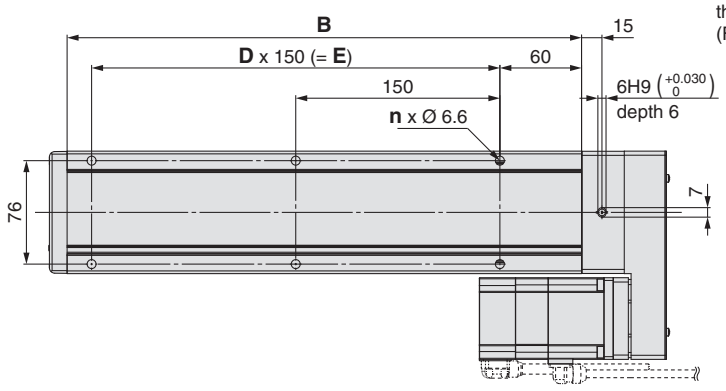
LEFS40R

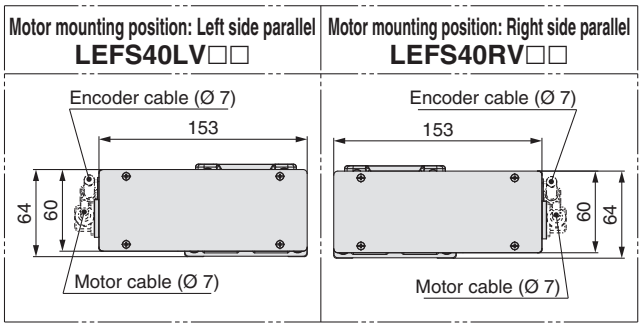












Dimensions

[mm]

Model	L	A	B	n	D	E
LEFS40□□□-150□	403.4	156	328	4	—	150
LEFS40□□□-200□	453.4	206	378	6	2	300
LEFS40□□□-250□	503.4	256	428	6	2	300
LEFS40□□□-300□	553.4	306	478	6	2	300
LEFS40□□□-350□	603.4	356	528	8	3	450
LEFS40□□□-400□	653.4	406	578	8	3	450
LEFS40□□□-450□	703.4	456	628	8	3	450
LEFS40□□□-500□	753.4	506	678	10	4	600
LEFS40□□□-550□	803.4	556	728	10	4	600
LEFS40□□□-600□	853.4	606	778	10	4	600
LEFS40□□□-650□	903.4	656	828	12	5	750
LEFS40□□□-700□	953.4	706	878	12	5	750
LEFS40□□□-750□	1003.4	756	928	12	5	750
LEFS40□□□-800□	1053.4	806	978	14	6	900
LEFS40□□□-850□	1103.4	856	1028	14	6	900
LEFS40□□□-900□	1153.4	906	1078	14	6	900
LEFS40□□□-950□	1203.4	956	1128	16	7	1050
LEFS40□□□-1000□	1253.4	1006	1178	16	7	1050
LEFS40□□□-1100□	1353.4	1106	1278	18	8	1200
LEFS40□□□-1200□	1453.4	1206	1378	18	8	1200

*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 The Z-phase first detecting position from the stroke end of the motor side
Please consult with SMC for adjusting the Z-phase detecting position at the stroke end of the end side.

Motor Dimensions

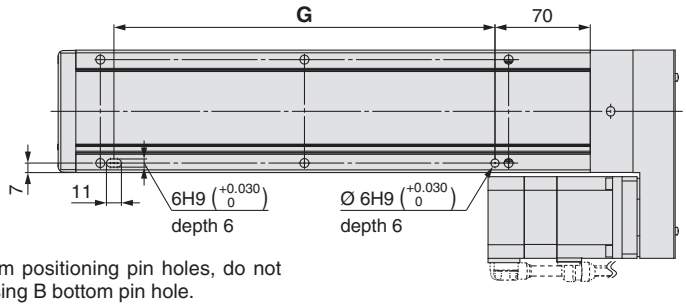
[mm]

Motor type	X		W		Z	
	Without lock	With lock	Without lock	With lock	Without lock	With lock
V8	137.5	177.5	98.5	138.5	14	14

Dimensions: Motor Parallel

LEFS40R

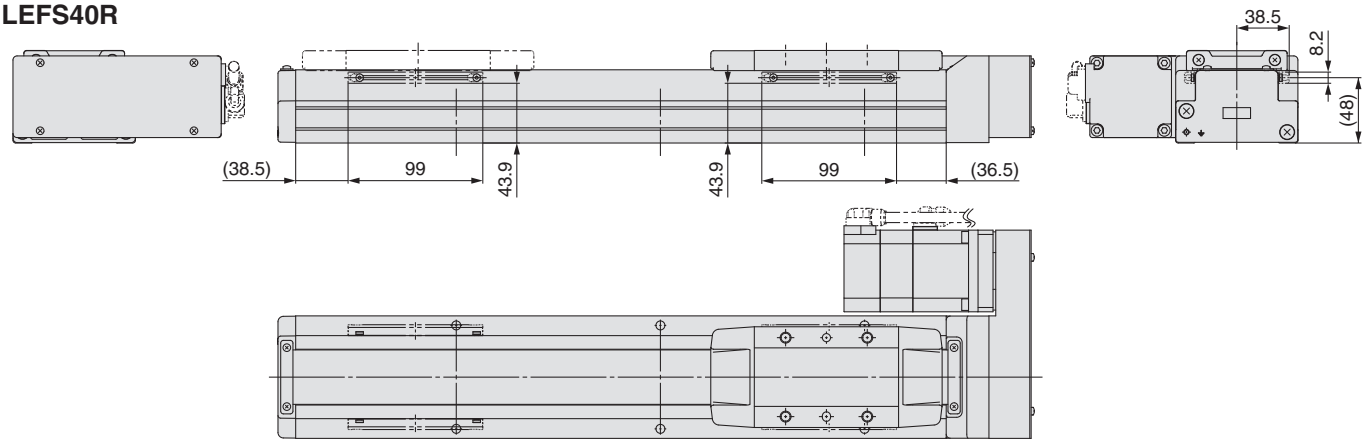
Positioning pin hole*1 (Option): Body bottom



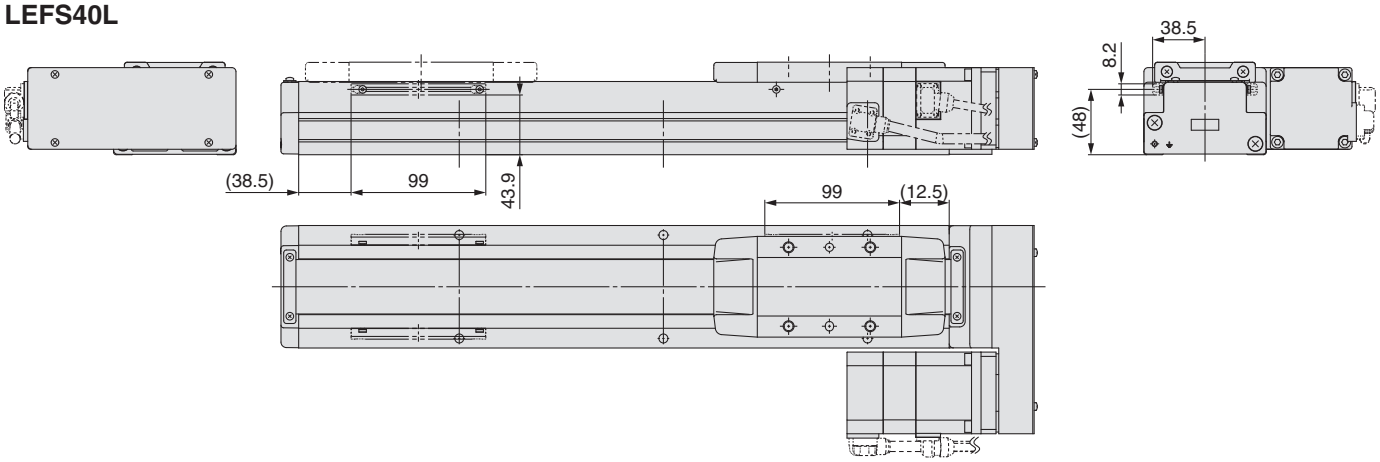
*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

LEFS40R



LEFS40L



Dimensions [mm]

Model	G
LEFS40□□□-150□	130
LEFS40□□□-200□	280
LEFS40□□□-250□	280
LEFS40□□□-300□	280
LEFS40□□□-350□	430
LEFS40□□□-400□	430
LEFS40□□□-450□	430
LEFS40□□□-500□	580
LEFS40□□□-550□	580
LEFS40□□□-600□	580

Dimensions [mm]

Model	G
LEFS40□□□-650□	730
LEFS40□□□-700□	730
LEFS40□□□-750□	730
LEFS40□□□-800□	880
LEFS40□□□-850□	880
LEFS40□□□-900□	880
LEFS40□□□-950□	1030
LEFS40□□□-1000□	1030
LEFS40□□□-1100□	1180
LEFS40□□□-1200□	1180

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

Support Guide/For Ball Screw Drive

LEFG Series LEFG16, 25, 32, 40

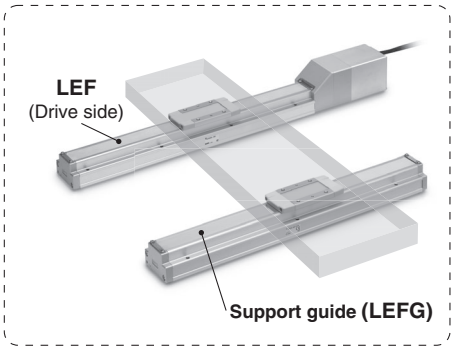
RoHS

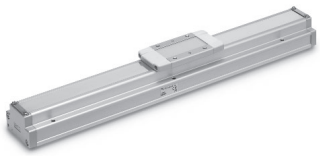
Clean Room Specification ▸ p. 193

The support guide was designed to support workpieces with significant overhang.

- As the dimensions are the same as the LEF series body, installation is simple and contributes to a reduction in installation and assembly labour.
- The standard-equipped seal bands prevent grease from splashing and external foreign matter from entering.

Application example





How to Order

LEF G 32 – S – 200 N

❶ ❷ ❸ ❹

Support guide

❶ Size

16
25
32
40

❷ Type of mounting pitch

Symbol	LEFG16	LEFG25	LEFG32	LEFG40	Note
S	●	●	●	●	Ball screw drive Step motor/Servo motor (24 VDC)/ AC servo motor

❸ Stroke [mm]

50	50
to	to
1200	1200

❹ Grease application (Seal band part)

—	With
N	Without (Roller specification)

Applicable Stroke Table

Ball Screw Drive/S Step Motor (Servo/24 VDC) | Servo Motor (24 VDC) | AC Servo Motor

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
LEFG16-S	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—
LEFG25-S	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—
LEFG32-S	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—
LEFG40-S	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

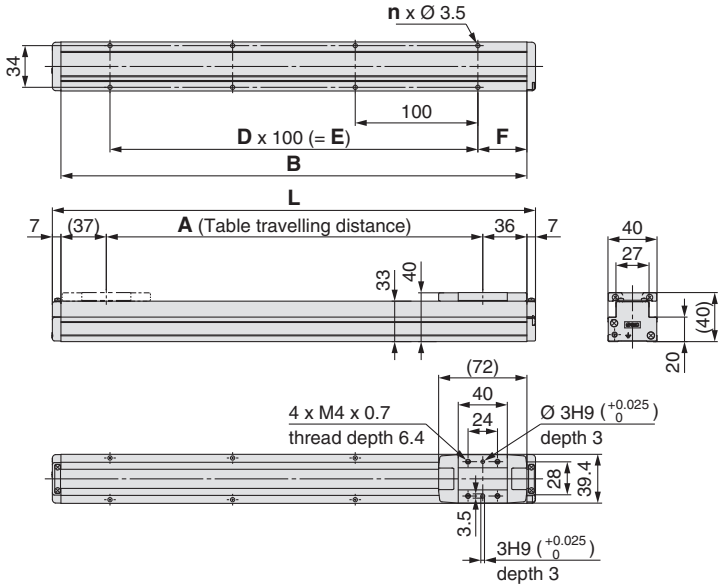
Weight

Ball Screw Drive/S Step Motor (Servo/24 VDC) | Servo Motor (24 VDC) | AC Servo Motor

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
LEFG16-S	0.25	0.31	0.37	0.43	0.49	0.55	0.61	0.67	0.73	0.79	—	—	—	—	—	—	—	—	—	—	—	—
LEFG25-S	0.56	0.67	0.78	0.89	1.00	1.11	1.22	1.33	1.44	1.55	1.66	1.77	1.88	1.99	2.10	2.21	—	—	—	—	—	—
LEFG32-S	0.92	1.08	1.23	1.4	1.56	1.72	1.88	2.04	2.20	2.36	2.52	2.68	2.84	3.00	3.16	3.32	3.48	3.64	3.80	3.96	—	—
LEFG40-S	—	—	2.07	2.29	2.51	2.72	2.94	3.15	3.37	3.58	3.80	4.01	4.23	4.44	4.66	4.87	5.09	5.30	5.52	5.73	6.16	6.59

Dimensions: Ball Screw Drive

LEFG16-S



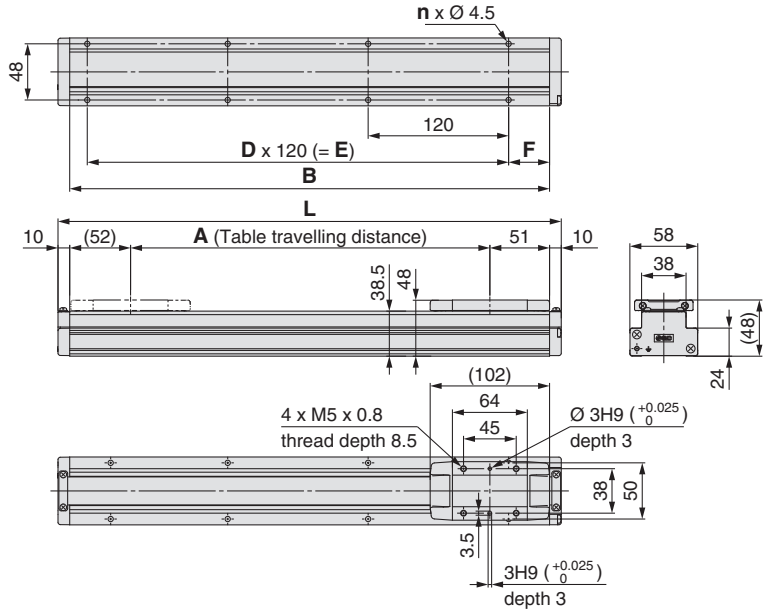
Dimensions [mm]

Model	L	A	B	n	D	E	F
LEFG16-S-50	144	57	130	4	—	—	15
LEFG16-S-100	194	107	180				40
LEFG16-S-150	244	157	230				
LEFG16-S-200	294	207	280	6	2	200	
LEFG16-S-250	344	257	330				

Dimensions [mm]

Model	L	A	B	n	D	E	F
LEFG16-S-300	394	307	380	8	3	300	40
LEFG16-S-350	444	357	430				
LEFG16-S-400	494	407	480	10	4	400	
LEFG16-S-450	544	457	530				
LEFG16-S-500	594	507	580	12	5	500	

LEFG25-S



Dimensions [mm]

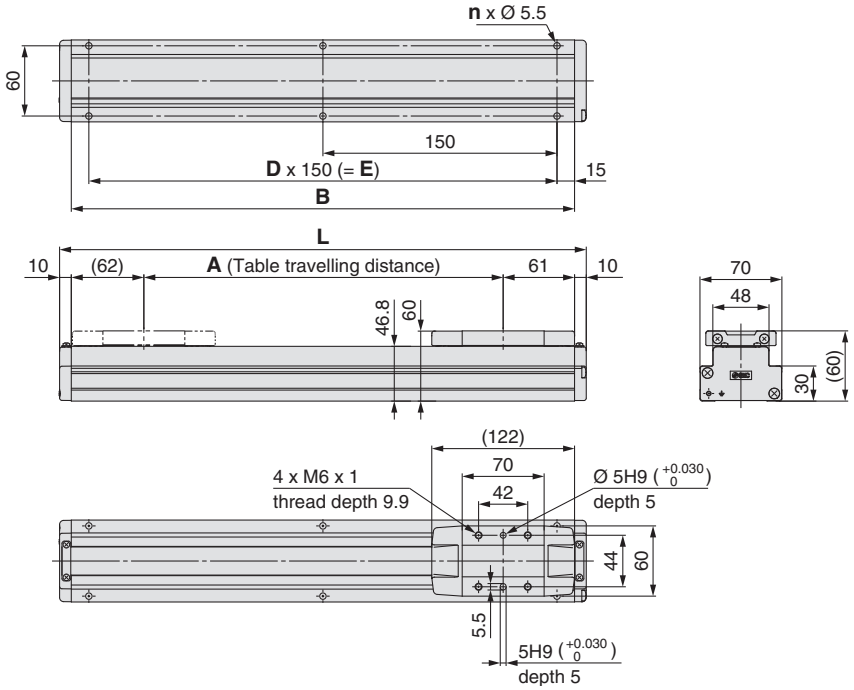
Model	L	A	B	n	D	E	F
LEFG25-S-50	180	57	160	4	—	—	20
LEFG25-S-100	230	107	210				35
LEFG25-S-150	280	157	260				
LEFG25-S-200	330	207	310	6	2	240	
LEFG25-S-250	380	257	360				
LEFG25-S-300	430	307	410	8	3	360	
LEFG25-S-350	480	357	460				
LEFG25-S-400	530	407	510				

Dimensions [mm]

Model	L	A	B	n	D	E	F
LEFG25-S-450	580	457	560	10	4	480	35
LEFG25-S-500	630	507	610				
LEFG25-S-550	680	557	660	12	5	600	
LEFG25-S-600	730	607	710				
LEFG25-S-650	780	657	760				
LEFG25-S-700	830	707	810	14	6	720	
LEFG25-S-750	880	757	860				
LEFG25-S-800	930	807	910	16	7	840	

Dimensions: Ball Screw Drive

LEFG32-S



Dimensions [mm]

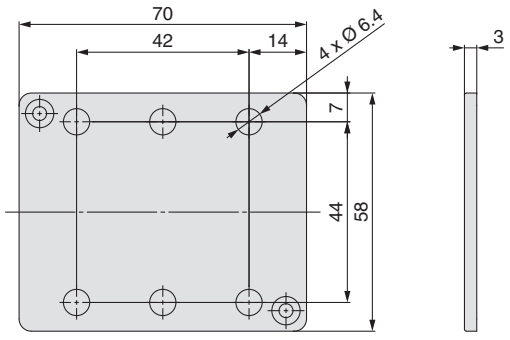
Model	L	A	B	n	D	E
LEFG32-S-50	200	57	180	4	—	—
LEFG32-S-100	250	107	230			
LEFG32-S-150	300	157	280			
LEFG32-S-200	350	207	330	6	2	300
LEFG32-S-250	400	257	380			
LEFG32-S-300	450	307	430			
LEFG32-S-350	500	357	480	8	3	450
LEFG32-S-400	550	407	530			
LEFG32-S-450	600	457	580			
LEFG32-S-500	650	507	630	10	4	600
LEFG32-S-550	700	557	680			
LEFG32-S-600	750	607	730			

Dimensions [mm]

Model	L	A	B	n	D	E
LEFG32-S-650	800	657	780	12	5	750
LEFG32-S-700	850	707	830			
LEFG32-S-750	900	757	880			
LEFG32-S-800	950	807	930	14	6	900
LEFG32-S-850	1000	857	980			
LEFG32-S-900	1050	907	1030			
LEFG32-S-950	1100	957	1080	16	7	1050
LEFG32-S-1000	1150	1007	1130			

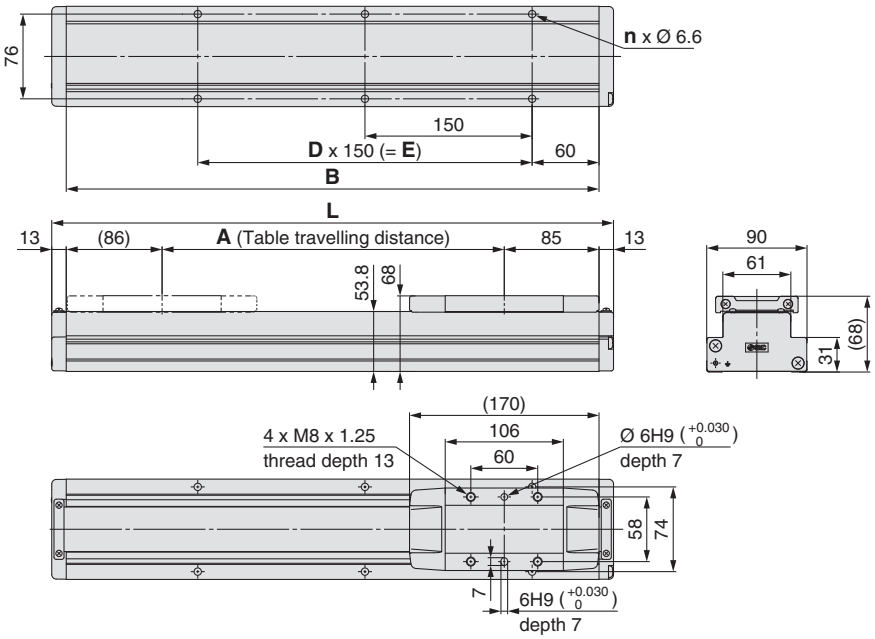
∗ When a support guide is used for the LEFS32R□□□ (Motor parallel type), order a table spacer separately since the table height differs.
Table spacer part number: LEF-TS32

Table spacer
LEF-TS32



Dimensions: Ball Screw Drive

LEFG40-S



Dimensions [mm]

Model	L	A	B	n	D	E
LEFG40-S-150	354	157	328	4	—	150
LEFG40-S-200	404	207	378	6	2	300
LEFG40-S-250	454	257	428			
LEFG40-S-300	504	307	478			
LEFG40-S-350	554	357	528	8	3	450
LEFG40-S-400	604	407	578			
LEFG40-S-450	654	457	628			
LEFG40-S-500	704	507	678	10	4	600
LEFG40-S-550	754	557	728			
LEFG40-S-600	804	607	778			

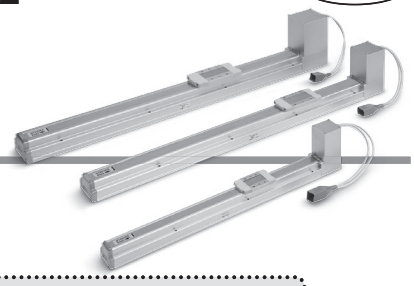
Dimensions [mm]

Model	L	A	B	n	D	E
LEFG40-S-650	854	657	828	12	5	750
LEFG40-S-700	904	707	878			
LEFG40-S-750	954	757	928			
LEFG40-S-800	1004	807	978	14	6	900
LEFG40-S-850	1054	857	1028			
LEFG40-S-900	1104	907	1078			
LEFG40-S-950	1154	957	1128	16	7	1050
LEFG40-S-1000	1204	1007	1178			
LEFG40-S-1100	1304	1107	1278	18	8	1200
LEFG40-S-1200	1404	1207	1378			

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

Electric Actuator/Slider Type Belt Drive

LEFB Series LEFB16, 25, 32



The belt drive actuator cannot be used for vertical applications.

How to Order

LEFB 16 A T – 500 ☐ C N K – R1

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

LEC☐ Series **6P** **1** ☐

JXC☐ Series **CD17T**

❿ ⓫ ⓬

For details on controllers, refer to page 120.

❶ Size

16
25
32

❷ Motor type

Symbol	Type	Applicable size			Compatible controller/driver
		LEFB16	LEFB25	LEFB32	
—	Step motor (Servo/24 VDC)	●	●	●	LECP1 JXCE1 LECPA JXC91 JXCP1 JXCD1 JXCL1
A	Servo motor (24 VDC)	●	●	—	LECA6

❸ Equivalent lead [mm]

T	48

❹ Stroke*1 [mm]

Stroke	Note	
	Size	Applicable stroke
300 to 1000	16	300, 500, 600, 700, 800, 900, 1000
300 to 2000	25	300, 500, 600, 700, 800, 900, 1000, 1200, 1500, 1800, 2000
300 to 2000	32	300, 500, 600, 700, 800, 900, 1000, 1200, 1500, 1800, 2000

❺ Motor option

—	Without option
B	With lock

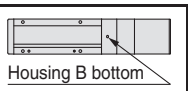
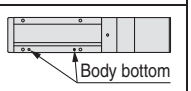
❻ Auto switch compatibility*2 *3 *4 *5

—	None
C	With (Includes 1 mounting bracket)

❼ Grease application (Seal band part)

—	With
N	Without (Roller specification)

❽ Positioning pin hole

—	Housing B bottom*6	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

❾ Actuator cable type/length*8

Standard cable [m]

—	None
S1	1.5*10
S3	3*10
S5	5*10

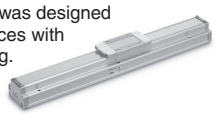
Robotic cable [m]

R1	1.5	RA	10*7
R3	3	RB	15*7
R5	5	RC	20*7
R8	8*7		

Support Guide/*LEFG* Series

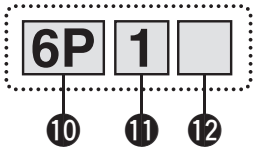
The support guide was designed to support workpieces with significant overhang.

p. 162



For auto switches, refer to pages 167 to 170.

LEC□ Series (For details, refer to page 121.)



⑩ Controller/Driver type*9

—	Without controller/driver	
6N	**LECA6** (Step data input type)	NPN
6P		PNP
1N	**LECP1***10 (Programless type)	NPN
1P		PNP
AN	**LECPA***10 *11 (Pulse input type)	NPN
AP		PNP

⑪ I/O cable length*12, Communication plug

—	Without cable (Without communication plug connector)
1	1.5 m
3	3 m*13
5	5 m*13

⑫ Controller/Driver mounting

—	Screw mounting
D	DIN rail*14

JXC□ Series (For details, refer to page 121)

⑩ Controller

—	Without controller
C□1□□	With controller

Communication protocol

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

For single axis

Mounting

7	Screw mounting
8*14	DIN rail

Communication plug connector for DeviceNet™*15

—	Without plug connector
S	Straight type
T	T-branch type

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 Excluding the LEF16
*3 If 2 or more are required, please order them separately. (Part no.: LEF-D-2-1 For details, refer to page 167.)
*4 Order auto switches separately. (For details, refer to pages 168 to 170.)
*5 When "—" is selected, the product will not come with a built-in magnet for an auto switch, and so a mounting bracket cannot be secured. Be sure to select an appropriate model initially as the product cannot be changed to have auto switch compatibility after purchase.
*6 Refer to the body mounting example on page 203 for the mounting method.
*7 Produced upon receipt of order (Robotic cable only)
*8 The standard cable should only be used on fixed parts. For use on moving parts, select the robotic cable.
*9 For details on controllers/drivers and compatible motors, refer to the compatible controller/driver on the next page.
*10 Only available for the motor type "Step motor"
*11 When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-□) on page 234 separately.
*12 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 213 (For LECA6), page 227 (For LECP1), or page 234 (For LECPA) if I/O cable is required.
*13 When "Pulse input type" is selected for controller/driver types, pulse input usable only with differential. Only 1.5 m cables usable with open collector
*14 The DIN rail is not included. Order it separately.
*15 Select "—" for anything other than DeviceNet™.

⚠Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEF series and the controller LEC/JXC series.
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.

② For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 213 for the noise filter set. Refer to the LECA series Operation Manual for installation.

[UL-compliant products (For the LEC series)]

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

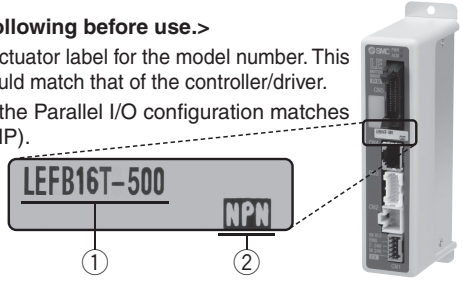
The actuator and controller/driver are sold as a package.

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

<Check the following before use.>

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

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



* Refer to the Operation Manual for using the products. Please download it via our website, https://www.smc.eu

Compatible Controller/Driver

LEC□ Series

Type	Step data input type 	Programless type 	Pulse input type 
Series	**LECA6**	**LECP1**	**LECPA**
Features	Value (Step data) input Standard controller	Capable of setting up operation (step data) without using a PC or teaching box	Operation by pulse signals
Compatible motor	Servo motor (24 VDC)	Step motor (Servo/24 VDC)	
Max. number of step data	64 points	14 points	—
Power supply voltage	24 VDC		
Reference page	205	221	228

JXC□ Series

Type	EtherCAT® direct input type 	EtherNet/IP™ direct input type 	PROFINET direct input type 	DeviceNet™ direct input type 	IO-Link direct input type 
Series	**JXCE1**	**JXC91**	**JXCP1**	**JXCD1**	**JXCL1**
Features	EtherCAT® direct input	EtherNet/IP™ direct input	PROFINET direct input	DeviceNet™ direct input	IO-Link direct input
Compatible motor	Step motor (Servo/24 VDC)				
Max. number of step data	64 points				
Power supply voltage	24 VDC				
Reference page	246				

Specifications

Step Motor (Servo/24 VDC)

Model				LEFB16	LEFB25	LEFB32
Actuator specifications	Stroke [mm]*1			300, 500, 600, 700 800, 900, 1000	300, 500, 600, 700, 800, 900 1000, 1200, 1500, 1800, 2000	300, 500, 600, 700, 800, 900 1000, 1200, 1500, 1800, 2000
	Work load [kg]*2	Horizontal	LECP1/ JXC□1	1	10	19
			LECPA/JXC□$^{2}_{3}$	1	5	14
	Speed [mm/s]*2			48 to 1100	48 to 1400	48 to 1500
	Max. acceleration/deceleration [mm/s^2]			3000		
	Positioning repeatability [mm]			±0.08		
	Lost motion [mm]*3			0.1 or less		
	Equivalent lead [mm]			48	48	48
	Impact/Vibration resistance [m/s^2]*4			50/20		
	Actuation type			Belt		
	Guide type			Linear guide		
	Operating temperature range [°C]			5 to 40		
	Operating humidity range [%RH]			90 or less (No condensation)		
Electric specifications	Motor size			□28	□42	□56.4
	Motor type			Step motor (Servo/24 VDC)		
	Encoder			Incremental A/B phase (800 pulse/rotation)		
	Rated voltage [V]			24 VDC ±10 %		
	Power consumption [W]*5			24	32	52
	Standby power consumption when operating [W]*6			18	16	44
	Max. instantaneous power consumption [W]*7			51	60	127
Lock unit specifications	Type*8			Non-magnetising lock		
	Holding force [N]			4	19	36
	Power consumption [W]*9			2.9	5	5
	Rated voltage [V]			24 VDC ±10 %		

∗1 Please consult with SMC for non-standard strokes as they are produced as special orders.
∗2 Speed changes according to the controller/driver type and work load. Check “Speed–Work Load Graph (Guide)” on page 38.
Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10 % for each 5 m. Cannot be used for vertical applications
∗3 A reference value for correcting an error in reciprocal operation
∗4 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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
∗5 The power consumption (including the controller) is for when the actuator is operating.
∗6 The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation.
∗7 The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.
∗8 With lock only
∗9 For an actuator with lock, add the power consumption for the lock.

Specifications

Servo Motor (24 VDC)

Model			LEFB16A	LEFB25A
Actuator specifications	Stroke [mm]*1		300, 500, 600, 700 800, 900, 1000	300, 500, 600, 700, 800, 900 1000, 1200, 1500, 1800, 2000
	Work load [kg]*2	Horizontal	1	2
	Speed [mm/s]*2		5 to 2000	5 to 2000
	Max. acceleration/deceleration [mm/s²]		3000	
	Positioning repeatability [mm]		±0.08	
	Lost motion [mm]*3		0.1 or less	
	Equivalent lead [mm]		48	48
	Impact/Vibration resistance [m/s²]*4		50/20	
	Actuation type		Belt	
	Guide type		Linear guide	
	Operating temperature range [°C]		5 to 40	
	Operating humidity range [%RH]		90 or less (No condensation)	
Electric specifications	Motor size		□28	□42
	Motor output [W]		30	36
	Motor type		Servo motor (24 VDC)	
	Encoder		Incremental A/B (800 pulse/rotation)/Z phase	
	Rated voltage [V]		24 VDC ±10 %	
	Power consumption [W]*5		78	69
	Standby power consumption when operating [W]*6		Horizontal 4	Horizontal 5
	Max. instantaneous power consumption [W]*7		87	120
Lock unit specifications	Type*8		Non-magnetising lock	
	Holding force [N]		4	19
	Power consumption [W]*9		2.9	5
	Rated voltage [V]		24 VDC ±10 %	

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 Check “Speed–Work Load Graph (Guide)” on page 39 for details. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10 % for each 5 m.
*3 A reference value for correcting an error in reciprocal operation
*4 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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*5 The power consumption (including the controller) is for when the actuator is operating.
*6 The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation.
*7 The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.
*8 With lock only
*9 For an actuator with lock, add the power consumption for the lock.

Weight

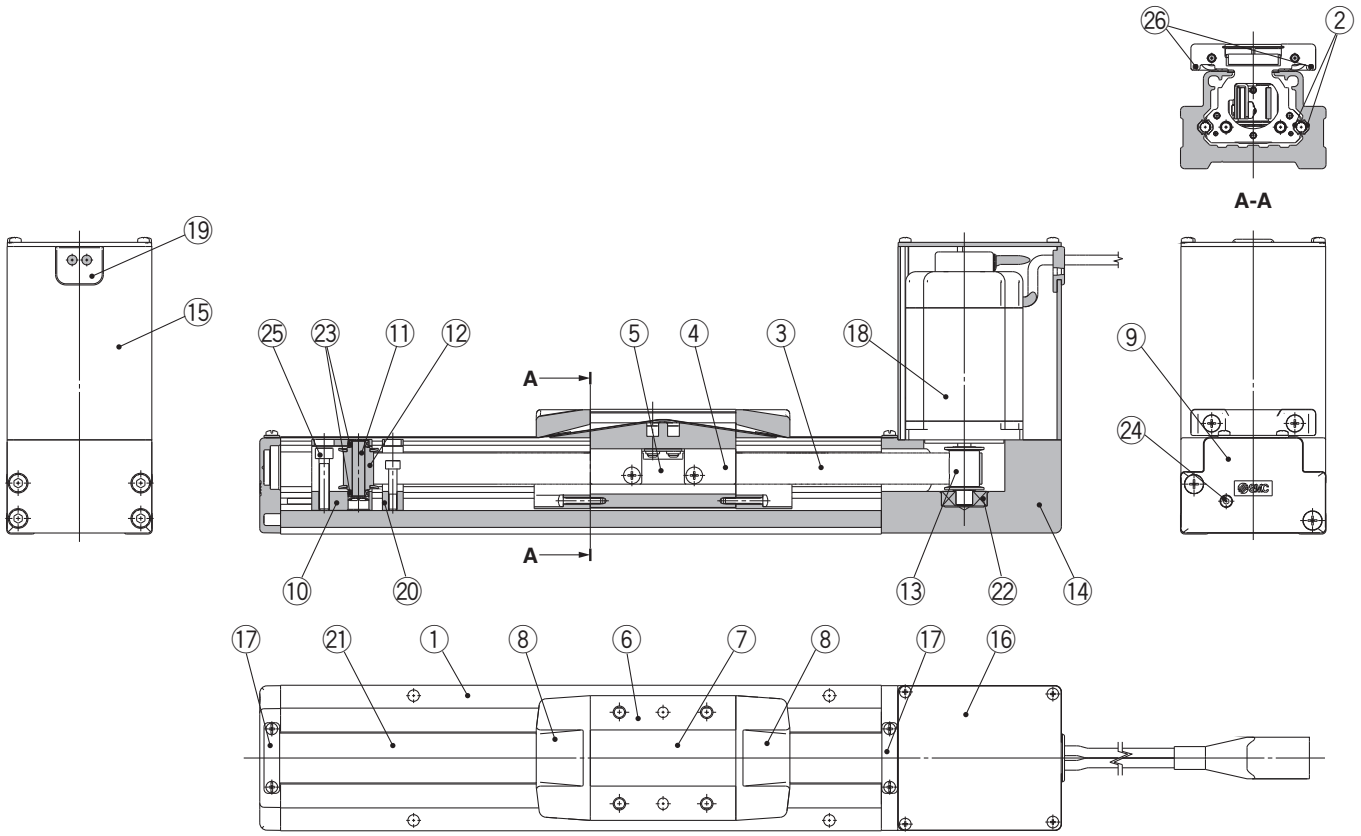
Series	LEFB16						
Stroke [mm]	300	500	600	700	800	900	1000
Product weight [kg]	1.19	1.45	1.58	1.71	1.84	1.97	2.10
Additional weight with lock [kg]	0.12						

Series	LEFB25										
Stroke [mm]	300	500	600	700	800	900	1000	1200	1500	1800	2000
Product weight [kg]	2.39	2.85	3.08	3.31	3.54	3.77	4.00	4.46	5.15	5.84	6.30
Additional weight with lock [kg]	0.26										

Series	LEFB32										
Stroke [mm]	300	500	600	700	800	900	1000	1200	1500	1800	2000
Product weight [kg]	4.12	4.80	5.14	5.48	5.82	6.16	6.50	7.18	8.20	9.22	9.90
Additional weight with lock [kg]	0.53										

Construction

LEFB Series

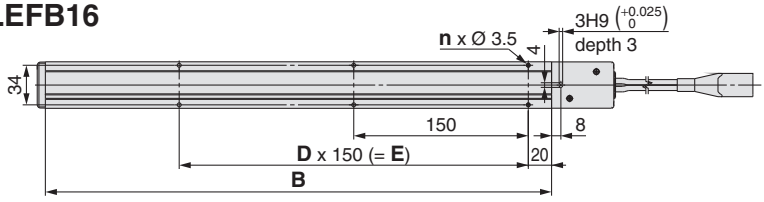


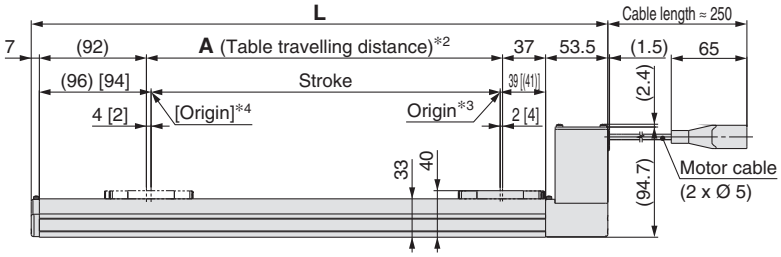
Component Parts

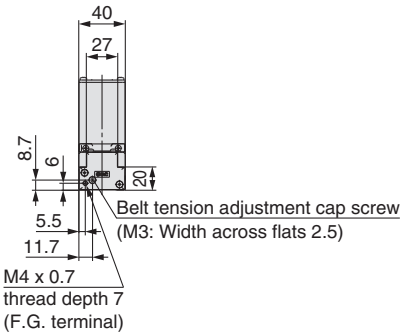
No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**	—	
3	**Belt**	—	
4	**Belt holder**	Carbon steel	Chromating
5	**Belt stopper**	Aluminium alloy	Anodised
6	**Table**	Aluminium alloy	Anodised
7	**Blanking plate**	Aluminium alloy	Anodised
8	**Seal band holder**	Synthetic resin	
9	**Housing A**	Aluminium die-cast	Coating
10	**Pulley holder**	Aluminium alloy	
11	**Pulley shaft**	Stainless steel	
12	**End pulley**	Aluminium alloy	Anodised
13	**Motor pulley**	Aluminium alloy	Anodised
14	**Motor mount**	Aluminium alloy	Anodised
15	**Motor cover**	Aluminium alloy	Anodised
16	**End cover**	Aluminium alloy	Anodised
17	**Band stopper**	Stainless steel	
18	**Motor**	—	
19	**Rubber bushing**	NBR	
20	**Stopper**	Aluminium alloy	
21	**Dust seal band**	Stainless steel	
22	**Bearing**	—	
23	**Bearing**	—	
24	**Tension adjustment cap screw**	Chromium molybdenum steel	Chromating
25	**Pulley retaining screw**	Chromium molybdenum steel	Chromating
26	**Magnet**	—	With auto switch compatibility

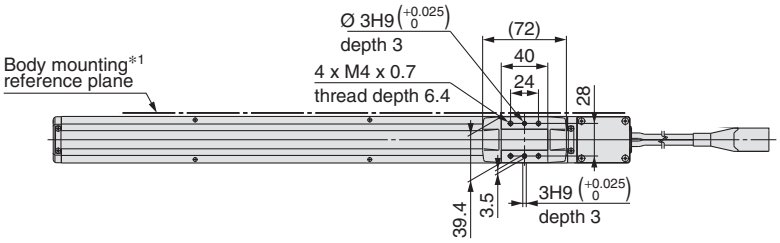
Dimensions: Belt Drive

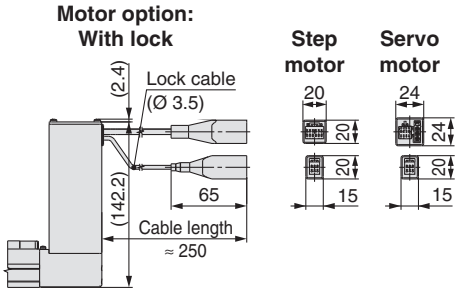
LEFB16



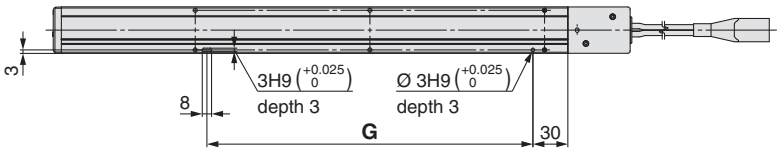








Positioning pin hole*5 (Option): Body bottom



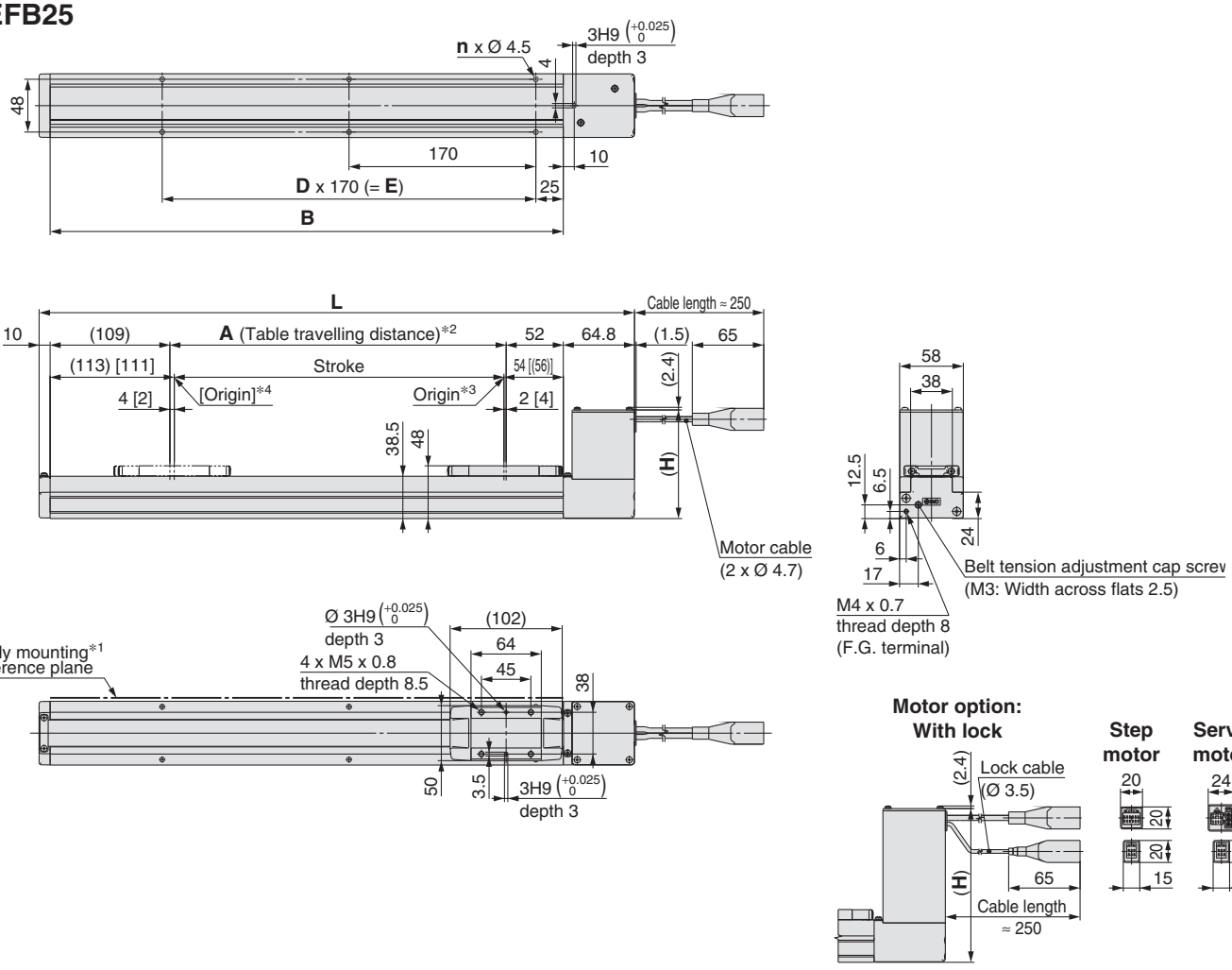
Dimensions [mm]

Model	L	A	B	n	D	E	G
LEFB16□T-300□	495.5	306	435	6	2	300	280
LEFB16□T-500□	695.5	506	635	10	4	600	580
LEFB16□T-600□	795.5	606	735	10	4	600	580
LEFB16□T-700□	895.5	706	835	12	5	750	730
LEFB16□T-800□	995.5	806	935	14	6	900	880
LEFB16□T-900□	1095.5	906	1035	14	6	900	880
LEFB16□T-1000□	1195.5	1006	1135	16	7	1050	1030

∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 2 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 Position after return to origin
∗4 [ ] for when the direction of return to origin has changed
∗5 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

Dimensions: Belt Drive

LEFB25



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 Position after return to origin
*4 [ ] for when the direction of return to origin has changed

[mm]

Model	H
LEFB25T-ST	115.8
LEFB25T-STB	158.8
LEFB25AT-ST	98.8
LEFB25AT-STB	139.8

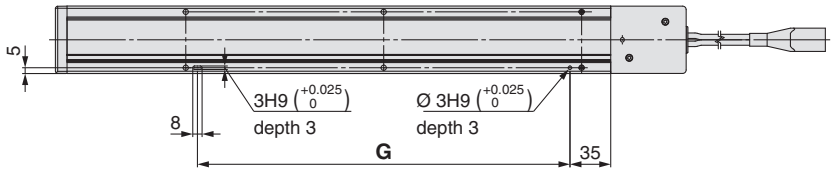
Dimensions

Model	L	A	B	n	D	E
LEFB25□T-300□	541.8	306	467	6	2	340
LEFB25□T-500□	741.8	506	667	8	3	510
LEFB25□T-600□	841.8	606	767	10	4	680
LEFB25□T-700□	941.8	706	867	10	4	680
LEFB25□T-800□	1041.8	806	967	12	5	850
LEFB25□T-900□	1141.8	906	1067	14	6	1020
LEFB25□T-1000□	1241.8	1006	1167	14	6	1020
LEFB25□T-1200□	1441.8	1206	1367	16	7	1190
LEFB25□T-1500□	1741.8	1506	1667	20	9	1530
LEFB25□T-1800□	2041.8	1806	1967	24	11	1870
LEFB25□T-2000□	2241.8	2006	2167	26	12	2040

Dimensions: Belt Drive

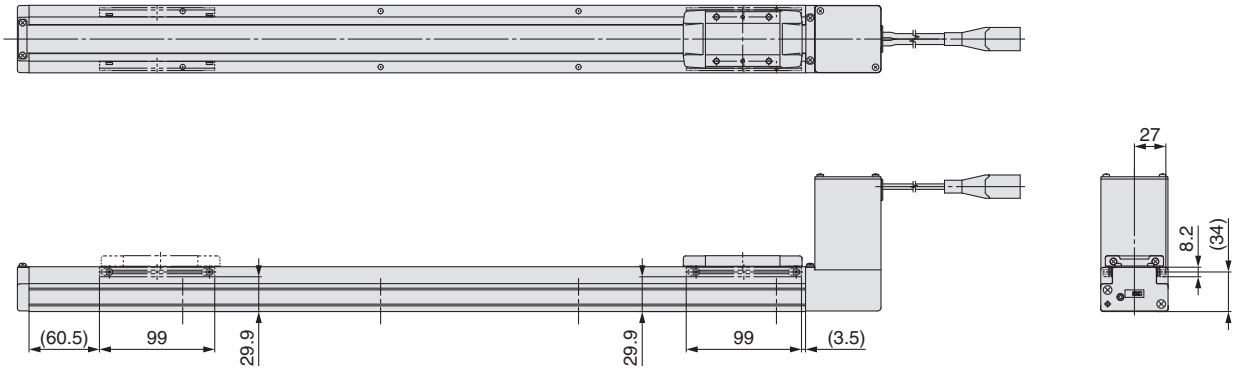
LEFB25

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

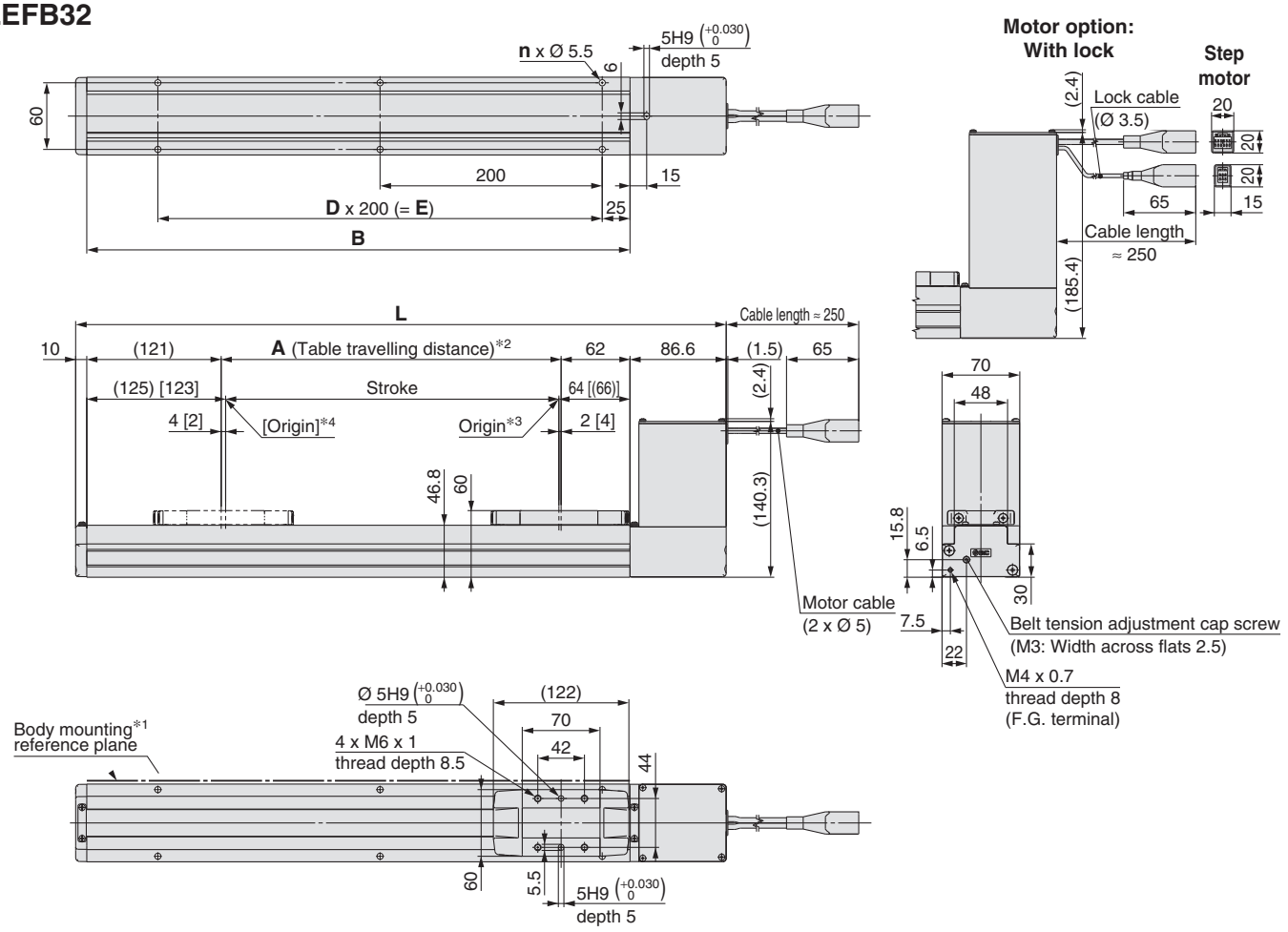


Dimensions [mm]

Model	G
LEFB25□T-300□	320
LEFB25□T-500□	490
LEFB25□T-600□	660
LEFB25□T-700□	660
LEFB25□T-800□	830
LEFB25□T-900□	1000
LEFB25□T-1000□	1000
LEFB25□T-1200□	1170
LEFB25□T-1500□	1510
LEFB25□T-1800□	1850
LEFB25□T-2000□	2020

Dimensions: Belt Drive

LEFB32



Dimensions [mm]

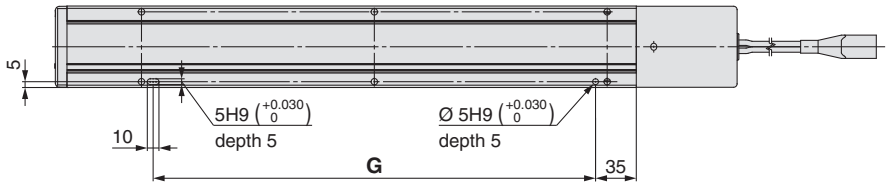
Model	L	A	B	n	D	E
LEFB32□T-300□	585.6	306	489	6	2	400
LEFB32□T-500□	785.6	506	689	8	3	600
LEFB32□T-600□	885.6	606	789	8	3	600
LEFB32□T-700□	985.6	706	889	10	4	800
LEFB32□T-800□	1085.6	806	989	10	4	800
LEFB32□T-900□	1185.6	906	1089	12	5	1000
LEFB32□T-1000□	1285.6	1006	1189	12	5	1000
LEFB32□T-1200□	1485.6	1206	1389	14	6	1200
LEFB32□T-1500□	1785.6	1506	1689	18	8	1600
LEFB32□T-1800□	2085.6	1806	1989	20	9	1800
LEFB32□T-2000□	2285.6	2006	2189	22	10	2000

∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 Position after return to origin
∗4 [ ] for when the direction of return to origin has changed

Dimensions: Belt Drive

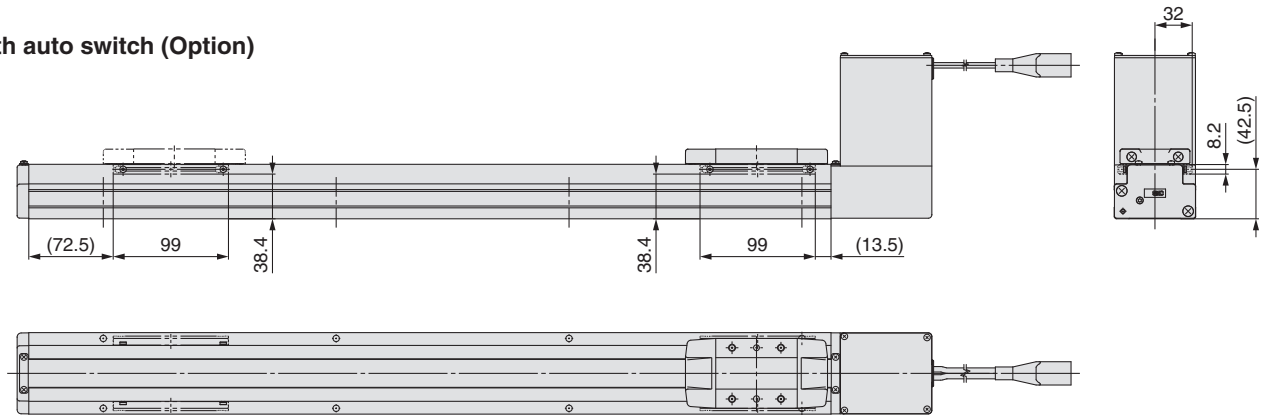
LEFB32

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

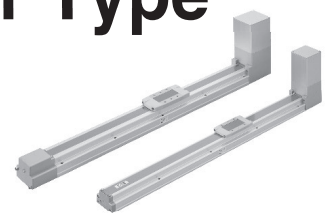


Dimensions [mm]

Model	G
LEFB32□T-300□	380
LEFB32□T-500□	580
LEFB32□T-600□	580
LEFB32□T-700□	780
LEFB32□T-800□	780
LEFB32□T-900□	980
LEFB32□T-1000□	980
LEFB32□T-1200□	1180
LEFB32□T-1500□	1580
LEFB32□T-1800□	1780
LEFB32□T-2000□	1980

Electric Actuator/Slider Type Belt Drive

LEFB Series LEFB25, 32, 40



LECY□ Series ▶ p. 146

* See tables ❸ and ⓫ below.

How to Order

LEFB 40 ☐ S4 S – 300 ☐ C K – S 2 A1 ☐

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬

❶ Size

25
32
40

❷ Motor mounting position

—	Top mounting
U	Bottom mounting

❹ Equivalent lead

S	54 mm

❺ Stroke

300	300 mm
to	to
3000	3000 mm

* For details, refer to the applicable stroke table.

❸ Motor type

Symbol	Type	Output [W]	Actuator size	Compatible driver	UL-compliant
S2*1	AC servo motor (Incremental encoder)	100	25	LECSA□-S1	—
S3		200	32	LECSA□-S3	—
S4		400	40	LECSA2-S4	—
S6*1	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECSC□-S5 LECSS□-S5	—
S7		200	32	LECSB□-S7 LECSC□-S7 LECSS□-S7	—
S8		400	40	LECSB2-S8 LECSC2-S8 LECSS2-S8	—
T6*2, *3	AC servo motor (Absolute encoder)	100	25	LECSB2-T5 LECSC2-T5	—
				LECSS2-T5	●*3
T7*3		200	32	LECSB2-T7 LECSC2-T7	—
				LECSS2-T7	●*3
T8*3		400	40	LECSB2-T8 LECSC2-T8	—
				LECSS2-T8	●*3

*1 For motor type S 2 and S 6 , the compatible driver part number suffixes are S1 and S5 respectively.
*2 For motor type T6, the compatible driver part number suffix is T5.
*3 The only compatible drivers complaint with UL standards are the LECSS2-T5, LECSS2-T7, and LECSS2-T8.

❻ Motor option

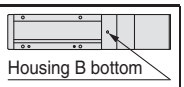
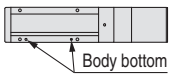
—	Without option
B	With lock

❼ Auto switch compatibility

—	None
C	With (Includes 1 mounting bracket)

* If 2 or more are required, please order them separately. (Part no.: LEF-D-2-1 For details, refer to page 167.)
* Order auto switches separately. (For details, refer to pages 168 to 170.)
* When "—" is selected, the product will not come with a built-in magnet for an auto switch, and so a mounting bracket cannot be secured. Be sure to select an appropriate model initially as the product cannot be changed to have auto switch compatibility after purchase.

❽ Positioning pin hole

—	Housing B bottom*1	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

*1 Refer to the body mounting example on page 203 for the mounting method.

❾ Cable type*1 *2

—	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

*1 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)
*2 Standard cable entry direction is "(A) Axis side." (Refer to page 278 for details.)

❿ Cable length [m]

—	Without cable
2	2
5	5
A	10

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

⓫ Driver type

	Compatible driver	Power supply voltage	Size 25	Size 32	Size 40	UL-compliant
—	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	●	●	●	—
	LECSB2-T□	200 to 240	●	●	●	—
C1	LECSC1-S□	100 to 120	●	●	—	—
C2	LECSC2-S□	200 to 230	●	●	●	—
	LECSC2-T□		●	●	●	—
S1	LECSS1-S□	100 to 120	●	●	—	—
S2	LECSS2-S□	200 to 230	●	●	●	—
	LECSS2-T□	200 to 240	●	●	●	●

* 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)
—: Without cable and driver

⓬ I/O cable length [m]*1

—	Without cable
H	Without cable (Connector only)
1	1.5

*1 When "Without driver" is selected for driver type, only "—: Without cable" can be selected. Refer to page 279 if I/O cable is required. (Options are shown on page 279.)

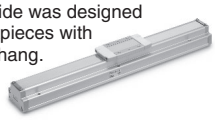
Applicable Stroke Table

●: Standard/○: Produced upon receipt of order

	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
LEFB25	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	—	—
LEFB32	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	●	—
LEFB40	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	●	●

* Please consult with SMC for non-standard strokes as they are produced as special orders.

Support Guide/*LEFG Series*
The support guide was designed to support workpieces with significant overhang.
p. 162



For auto switches, refer to pages 167 to 170.

Compatible Driver

Driver type	Pulse input type/ Positioning type	Pulse input type	CC-Link direct input type	SSCNET Ⅲ type	Pulse input type	CC-Link direct input type	SSCNETⅢ/H type
							
Series	**LECSA**	**LECSB**	**LECSC**	**LECSS**	**LECSB-T**	**LECSC-T**	**LECSS-T**
Number of point tables	Up to 7	—	Up to 255 (2 stations occupied)	—	Up to 255	Up to 255 (2 stations occupied)	—
Pulse input	○	○	—	—	○	—	—
Applicable network	—	—	CC-Link	SSCNET Ⅲ	—	CC-Link	SSCNETⅢ/H
Control encoder	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder
Communication function	USB communication	USB communication, RS422 communication		USB 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)				200 to 240 VAC (50/60Hz)	200 to 230 VAC (50/60Hz)	200 to 240 VAC (50/60 Hz)

Specifications

AC Servo Motor

	Model		LEFB25S$^{2}_{6}$/T6	LEFB32S$^{3}_{7}$/T7	LEFB40S$^{4}_{8}$/T8
Actuator specifications	Stroke [mm]*1		300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000	300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000 2500	300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000 2500, 3000
	Work load [kg]*2	Horizontal	5	15	25
	Max. speed [mm/s]		2000	2000	2000
	Max. acceleration/deceleration [mm/s^2]		20000 (Refer to page 54 for limit according to work load and duty ratio.)*3		
	Positioning repeatability [mm]		±0.06		
	Lost motion [mm]*4		0.1 or less		
	Equivalent lead [mm]		54		
	Impact/Vibration resistance [m/s^2]*5		50/20		
	Actuation type		Belt		
	Guide type		Linear guide		
	Operating temperature range [°C]		5 to 40		
	Operating humidity range [%RH]		90 or less (No condensation)		
Electric specifications	Motor output/Size		100 W/□40	200 W/□60	400 W/□60
	Motor type		AC servo motor (100/200 VAC)		
	Encoder*11		Motor type S2, S3, S4: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7, S8: Absolute 18-bit encoder (Resolution: 262144 p/rev) Motor type T6, T7, T8: Absolute 22-bit encoder (Resolution: 4194304 p/rev) (For LECSB2-T□, LECSS2-T□) Motor type T6, T7, T8: Absolute 18-bit encoder (Resolution: 262144 p/rev) (For LECSC2-T□)		
	Power consumption [W]*6	Horizontal	29	41	72
		Vertical	—	—	—
	Standby power consumption when operating [W]*7	Horizontal	2	2	2
		Vertical	—	—	—
	Max. instantaneous power consumption [W]*8		445	725	1275
Lock unit specifications	Type*9		Non-magnetising lock		
	Holding force [N]		27	54	110
	Power consumption at 20°C [W]*10		6.3	7.9	7.9
	Rated voltage [V]		24 $^{0}_{-10\,\%}$		

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 For details, refer to "Speed–Work Load Graph (Guide)" on page 54.
*3 Maximum acceleration/deceleration changes according to the work load. Check "Work Load–Acceleration/Deceleration Graph" of the catalogue.
*4 A reference value for correcting an error in reciprocal operation
*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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*6 The power consumption (including the driver) is for when the actuator is operating.
*7 The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
*8 The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
*9 Only when motor option "With lock" is selected
*10 For an actuator with lock, add the power consumption for the lock.
*11 For motor type T6, T7, and T8, the resolution will change depending on the driver type.

Weight

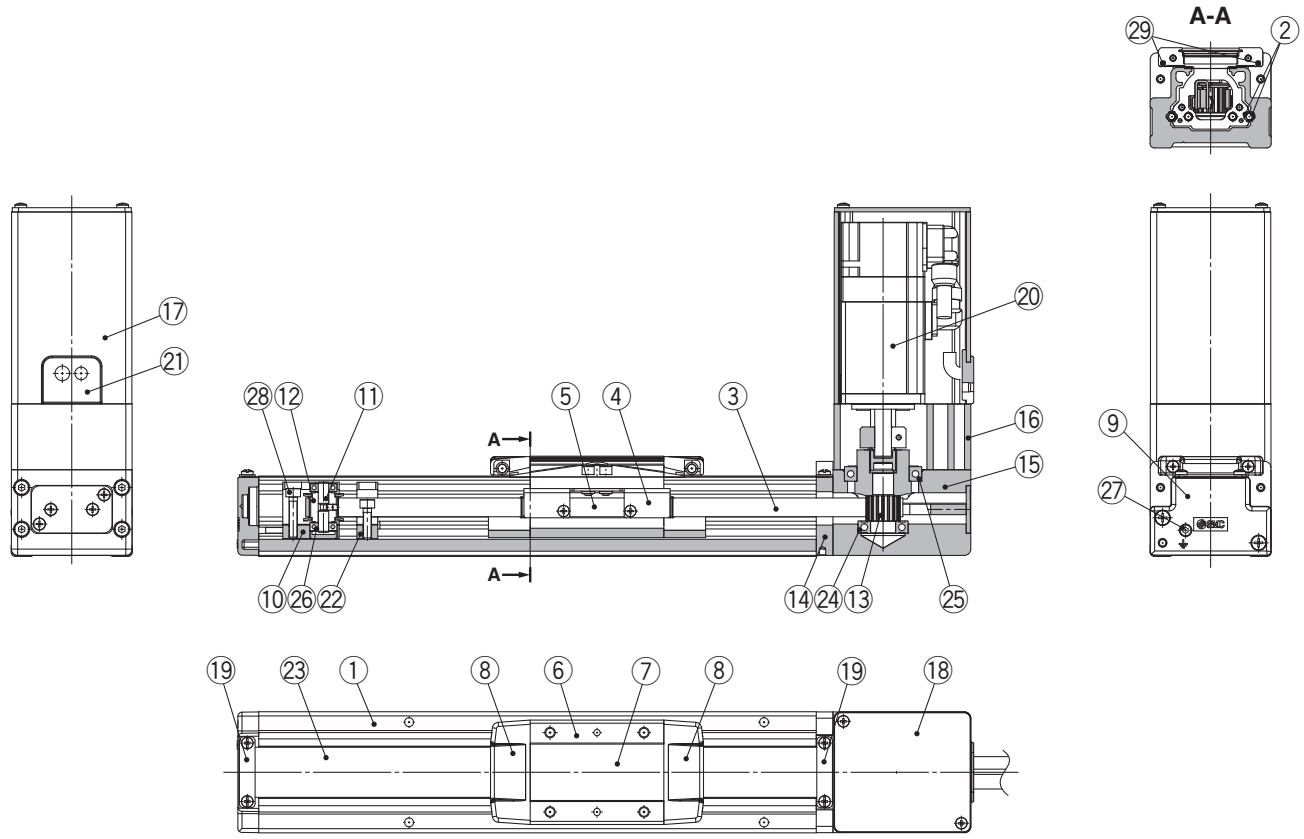
Series		LEFB25□□																	
Stroke [mm]		300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Motor type	S2	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25
	S6	3.06	3.31	3.56	3.81	4.06	4.31	4.56	4.81	5.06	5.31	5.56	5.81	6.06	6.31	6.56	6.81	7.06	7.31
	T6	3.04	3.29	3.54	3.79	4.04	4.29	4.54	4.79	5.04	5.29	5.54	5.79	6.04	6.29	6.54	6.79	7.04	7.29
Additional weight with lock [kg]		S2: 0.2/S6: 0.3/T6: 0.3																	

Series		LEFB32□□																		
Stroke [mm]		300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500
Motor type	S3	4.90	5.25	5.60	5.95	6.30	6.65	7.00	7.35	7.70	8.05	8.40	8.75	9.10	9.45	9.80	10.15	10.50	10.85	12.60
	S7	4.84	5.19	5.54	5.81	6.24	6.59	6.94	7.29	7.64	7.99	8.34	8.69	9.04	9.39	9.74	10.09	10.44	10.79	12.54
	T7	4.81	5.16	5.51	5.78	6.21	6.56	6.91	7.26	7.61	7.96	8.31	8.66	9.01	9.36	9.71	10.06	10.41	10.76	12.51
Additional weight with lock [kg]		S3: 0.4/S7: 0.7/T7: 0.5																		

Series		LEFB40□□																			
Stroke [mm]		300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
Motor type	S4	7.12	7.57	8.02	8.47	8.92	9.37	9.82	10.27	10.72	11.17	11.62	12.07	12.52	12.97	13.42	13.87	14.32	14.72	17.02	19.27
	S8	7.22	7.67	8.12	8.57	9.02	9.47	9.92	10.37	10.82	11.27	11.72	12.17	12.62	13.07	13.52	13.97	14.42	14.82	17.12	19.37
	T8	7.21	7.66	8.11	8.56	9.01	9.46	9.91	10.36	10.81	11.26	11.71	12.16	12.61	13.06	13.51	13.96	14.41	14.81	17.11	19.36
Additional weight with lock [kg]		S4: 0.5/S8: 0.7/T8: 0.5																			

Construction

LEFB25S□S



∗ Motor bottom mounting type is the same.

Component Parts

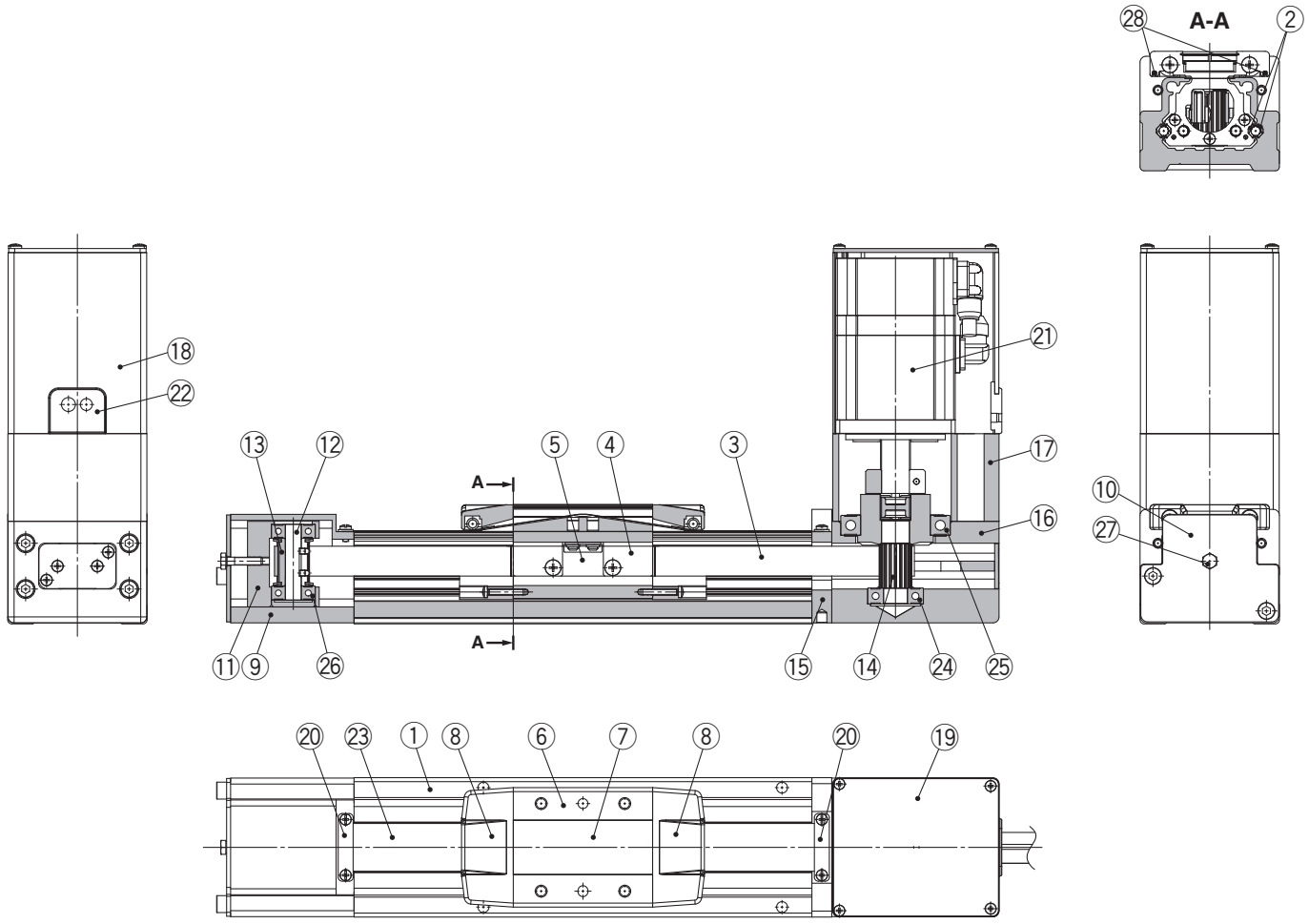
No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**		
3	**Belt**		
4	**Belt holder**	Carbon steel	Chromating
5	**Belt stopper**	Aluminium alloy	Anodised
6	**Table**	Aluminium alloy	Anodised
7	**Blanking plate**	Aluminium alloy	Anodised
8	**Seal band holder**	Synthetic resin	
9	**Housing A**	Aluminium die-cast	Coating
10	**Pulley holder**	Aluminium alloy	
11	**Pulley shaft**	Stainless steel	
12	**End pulley**	Aluminium alloy	Anodised
13	**Motor pulley**	Aluminium alloy	Anodised
14	**Return flange**	Aluminium alloy	Coating
15	**Housing**	Aluminium alloy	Coating

Component Parts

No.	Description	Material	Note
16	**Motor mount**	Aluminium alloy	Coating
17	**Motor cover**	Aluminium alloy	Anodised
18	**Motor end cover**	Aluminium alloy	Anodised
19	**Band stopper**	Stainless steel	
20	**Motor**		
21	**Rubber bushing**	NBR	
22	**Stopper**	Aluminium alloy	
23	**Dust seal band**	Stainless steel	
24	**Bearing**		
25	**Bearing**		
26	**Spacer**	Aluminium alloy	
27	**Tension adjustment cap screw**	Chromium molybdenum steel	Chromating
28	**Pulley retaining screw**	Chromium molybdenum steel	Chromating
29	**Magnet**	—	With auto switch compatibility

Construction

LEFB32/40S□S



∗ Motor bottom mounting type is the same.

Component Parts

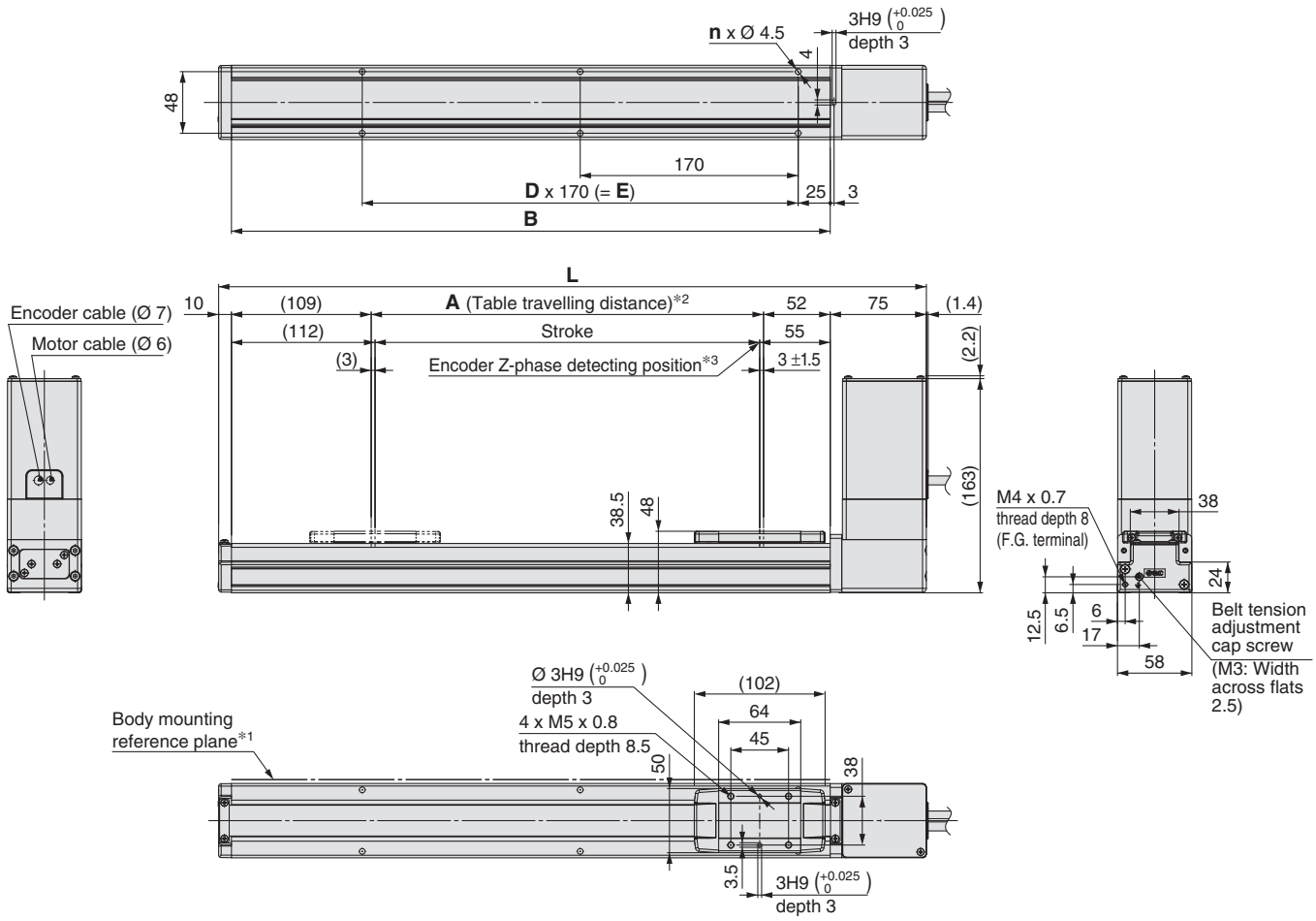
No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**		
3	**Belt**		
4	**Belt holder**	Carbon steel	Chromating
5	**Belt stopper**	Aluminium alloy	Anodised
6	**Table**	Aluminium alloy	Anodised
7	**Blanking plate**	Aluminium alloy	Anodised
8	**Seal band holder**	Synthetic resin	
9	**End block**	Aluminium alloy	Coating
10	**End block cover**		
11	**Pulley holder**	Aluminium alloy	
12	**Pulley shaft**	Stainless steel	
13	**End pulley**	Aluminium alloy	Anodised
14	**Motor pulley**	Aluminium alloy	Anodised

Component Parts

No.	Description	Material	Note
15	**Return flange**	Aluminium alloy	Coating
16	**Housing**	Aluminium alloy	Coating
17	**Motor mount**	Aluminium alloy	Coating
18	**Motor cover**	Aluminium alloy	Anodised
19	**Motor end cover**	Aluminium alloy	Anodised
20	**Band stopper**	Stainless steel	
21	**Motor**		
22	**Rubber bushing**	NBR	
23	**Dust seal band**	Stainless steel	
24	**Bearing**		
25	**Bearing**		
26	**Bearing**		
27	**Tension adjustment bolt**	Chromium molybdenum steel	Chromating
28	**Magnet**	—	With auto switch compatibility

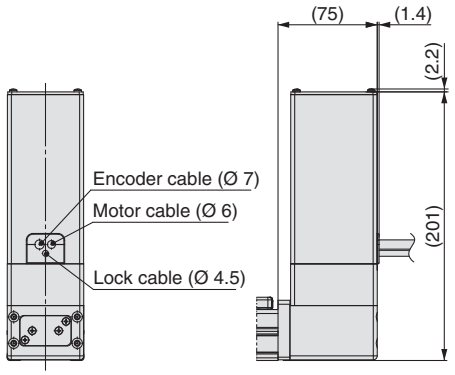
Dimensions: Belt Drive

LEFB25/Motor top mounting type



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

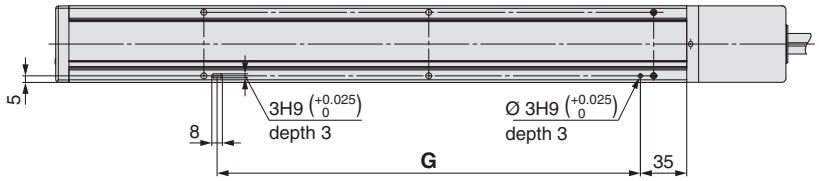
[mm]

Stroke	L	A	B	n	D	E
300	552	306	467	6	2	340
400	652	406	567	8	3	510
500	752	506	667	8	3	510
600	852	606	767	10	4	680
700	952	706	867	10	4	680
800	1052	806	967	12	5	850
900	1152	906	1067	14	6	1020
1000	1252	1006	1167	14	6	1020
1100	1352	1106	1267	16	7	1190
1200	1452	1206	1367	16	7	1190
1300	1552	1306	1467	18	8	1360
1400	1652	1406	1567	20	9	1530
1500	1752	1506	1667	20	9	1530
1600	1852	1606	1767	22	10	1700
1700	1952	1706	1867	22	10	1700
1800	2052	1806	1967	24	11	1870
1900	2152	1906	2067	24	11	1870
2000	2252	2006	2167	26	12	2040

Dimensions: Belt Drive

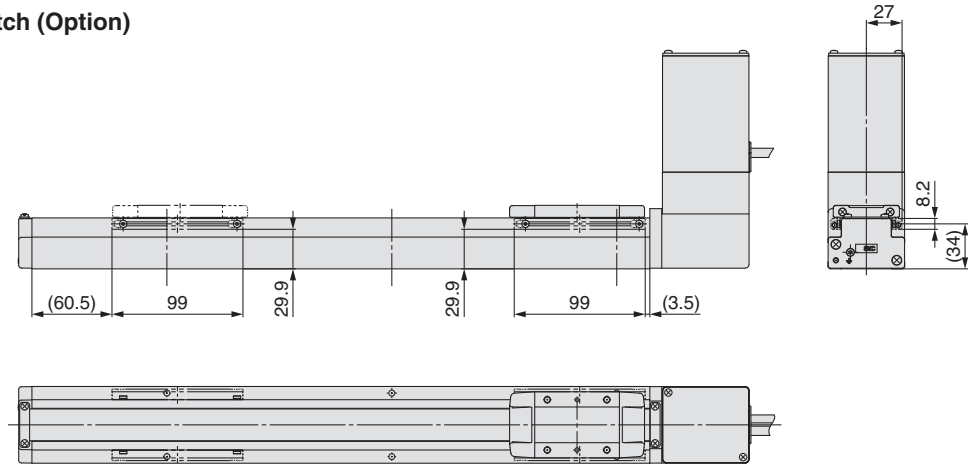
LEFB25/Motor top mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

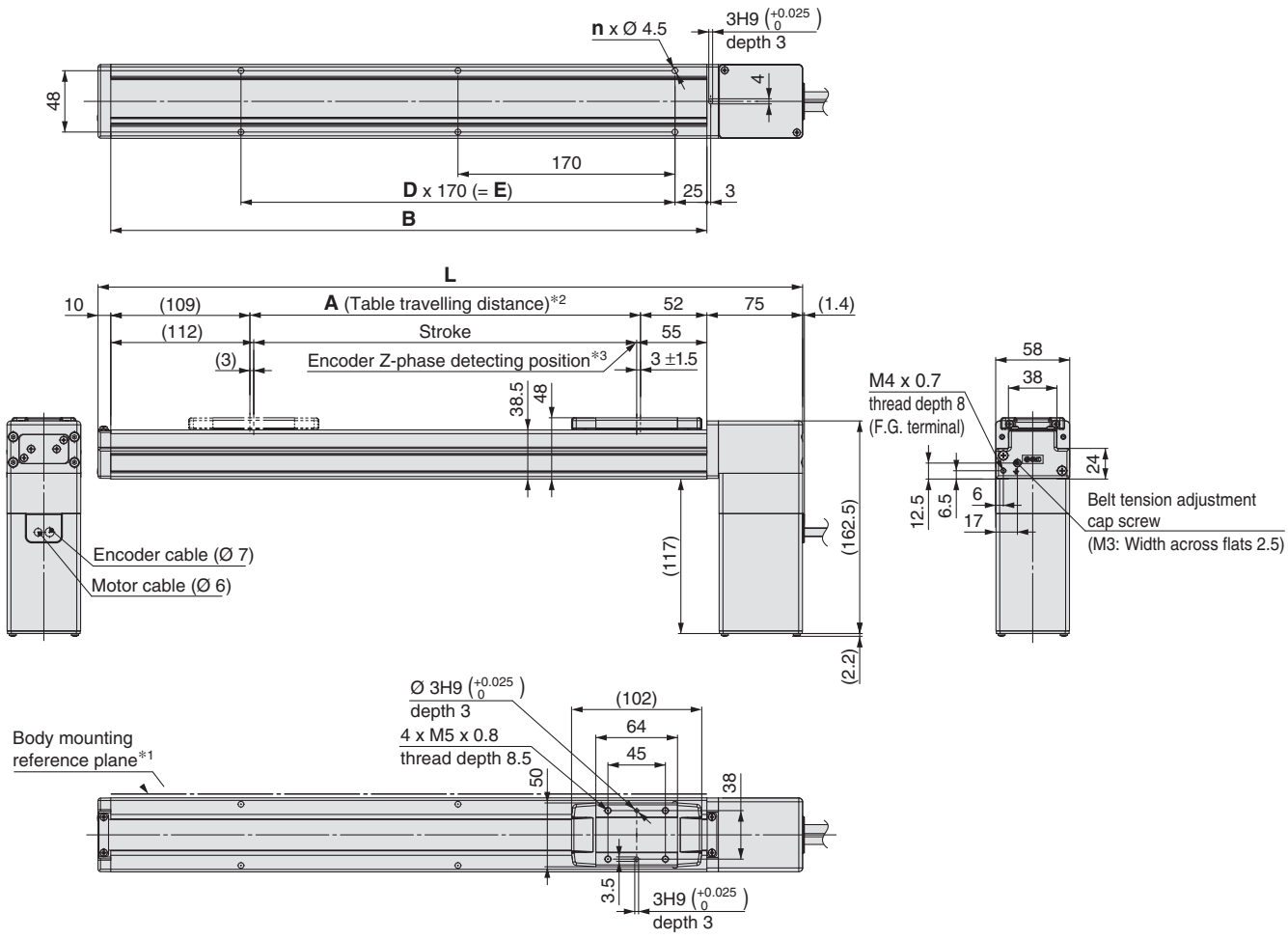


Dimensions [mm]

Stroke	G
300	320
400	490
500	490
600	660
700	660
800	830
900	1000
1000	1000
1100	1170
1200	1170
1300	1340
1400	1510
1500	1510
1600	1680
1700	1680
1800	1850
1900	1850
2000	2020

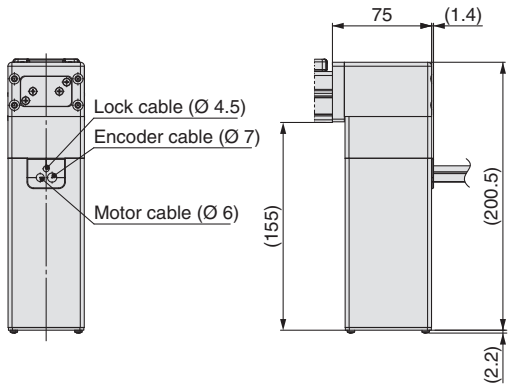
Dimensions: Belt Drive

LEFB25U/Motor bottom mounting type



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

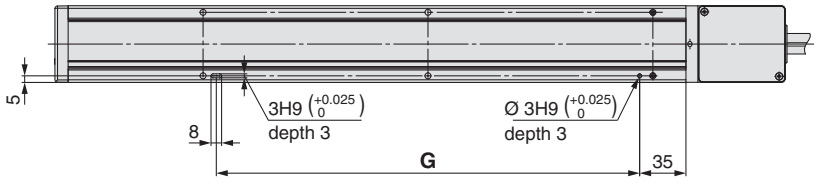
[mm]

Stroke	L	A	B	n	D	E
300	552	306	467	6	2	340
400	652	406	567	8	3	510
500	752	506	667	8	3	510
600	852	606	767	10	4	680
700	952	706	867	10	4	680
800	1052	806	967	12	5	850
900	1152	906	1067	14	6	1020
1000	1252	1006	1167	14	6	1020
1100	1352	1106	1267	16	7	1190
1200	1452	1206	1367	16	7	1190
1300	1552	1306	1467	18	8	1360
1400	1652	1406	1567	20	9	1530
1500	1752	1506	1667	20	9	1530
1600	1852	1606	1767	22	10	1700
1700	1952	1706	1867	22	10	1700
1800	2052	1806	1967	24	11	1870
1900	2152	1906	2067	24	11	1870
2000	2252	2006	2167	26	12	2040

Dimensions: Belt Drive

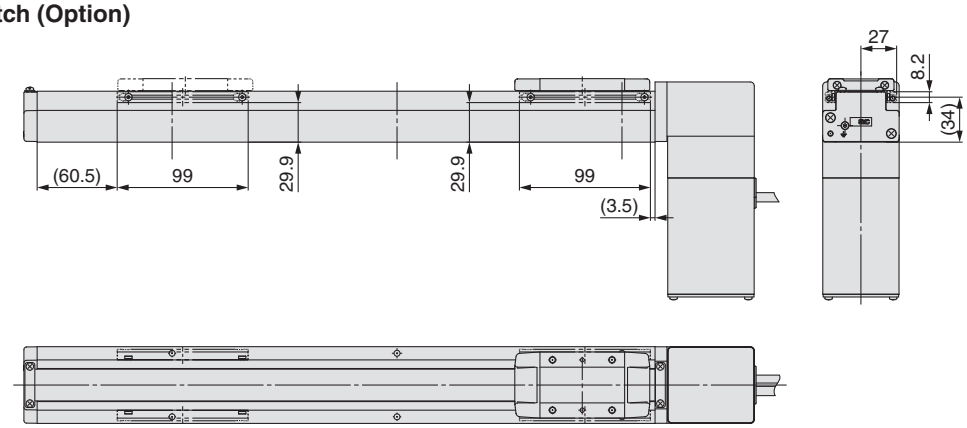
LEFB25U/Motor bottom mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

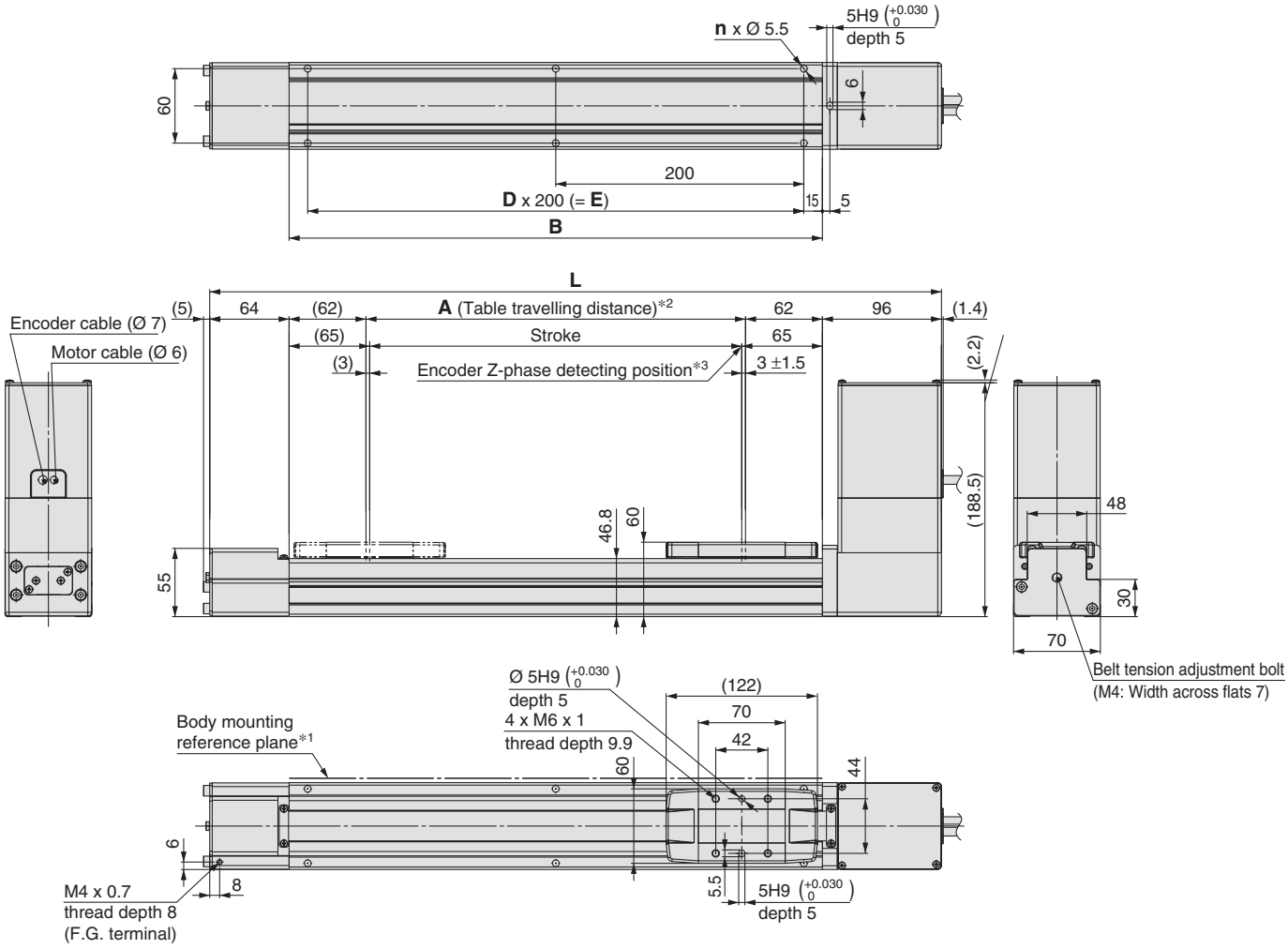


Dimensions [mm]

Stroke	G
300	320
400	490
500	490
600	660
700	660
800	830
900	1000
1000	1000
1100	1170
1200	1170
1300	1340
1400	1510
1500	1510
1600	1680
1700	1680
1800	1850
1900	1850
2000	2020

Dimensions: Belt Drive

LEFB32/Motor top mounting type



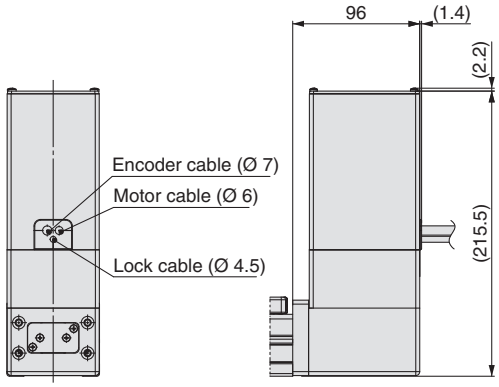
*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 The Z-phase first detecting position from the stroke end of the motor side

Dimensions

[mm]

Stroke	L	A	B	n	D	E
300	590	306	430	6	2	400
400	690	406	530	6	2	400
500	790	506	630	8	3	600
600	890	606	730	8	3	600
700	990	706	830	10	4	800
800	1090	806	930	10	4	800
900	1190	906	1030	12	5	1000
1000	1290	1006	1130	12	5	1000
1100	1390	1106	1230	14	6	1200
1200	1490	1206	1330	14	6	1200
1300	1590	1306	1430	16	7	1400
1400	1690	1406	1530	16	7	1400
1500	1790	1506	1630	18	8	1600
1600	1890	1606	1730	18	8	1600
1700	1990	1706	1830	20	9	1800
1800	2090	1806	1930	20	9	1800
1900	2190	1906	2030	22	10	2000
2000	2290	2006	2130	22	10	2000
2500	2790	2506	2630	28	13	2600

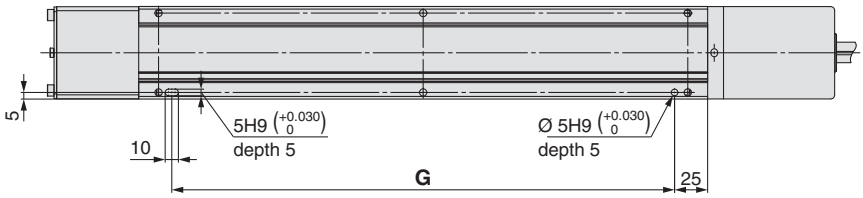
Motor option: With lock



Dimensions: Belt Drive

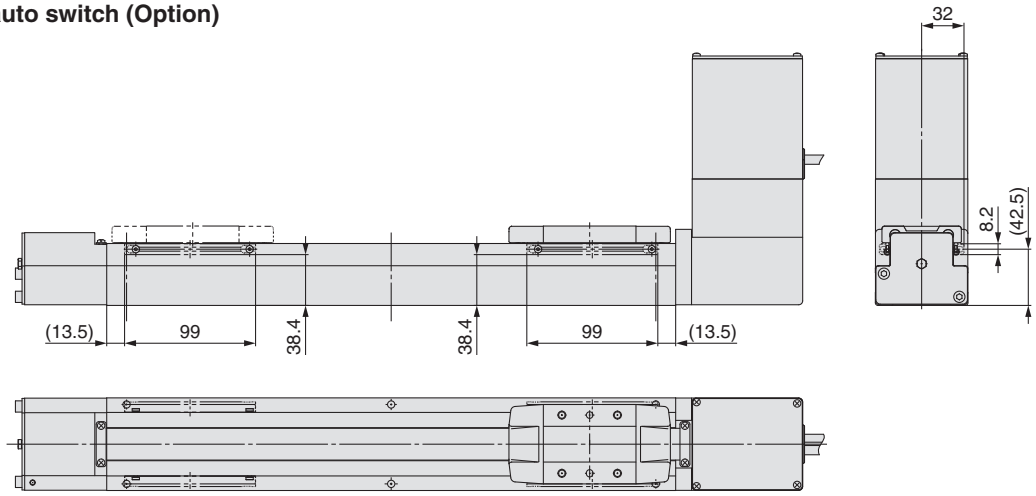
LEFB32/Motor top mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

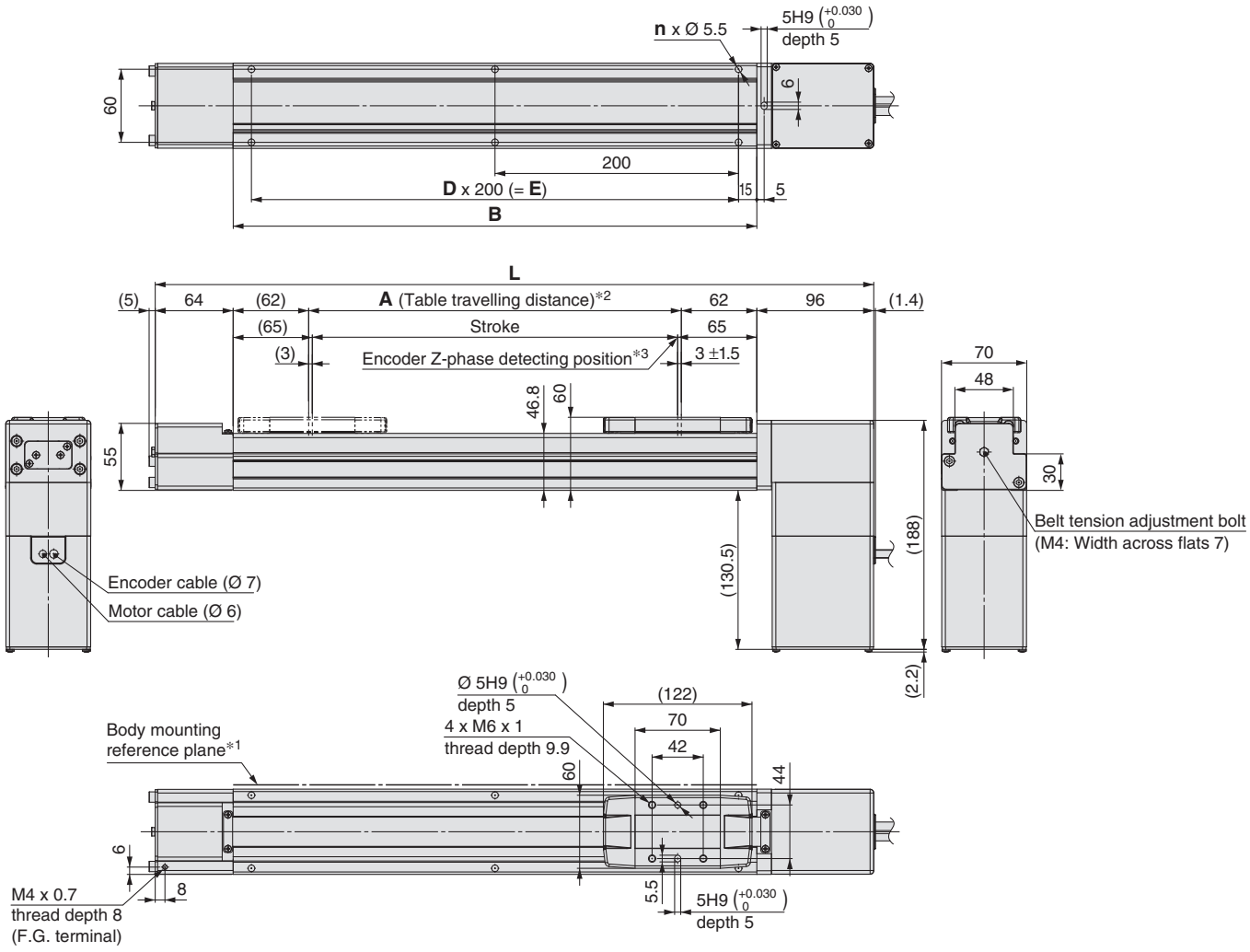


Dimensions [mm]

Stroke	G
300	380
400	380
500	580
600	580
700	780
800	780
900	980
1000	980
1100	1180
1200	1180
1300	1380
1400	1380
1500	1580
1600	1580
1700	1780
1800	1780
1900	1980
2000	1980
2500	2580

Dimensions: Belt Drive

LEFB32U/Motor bottom mounting type

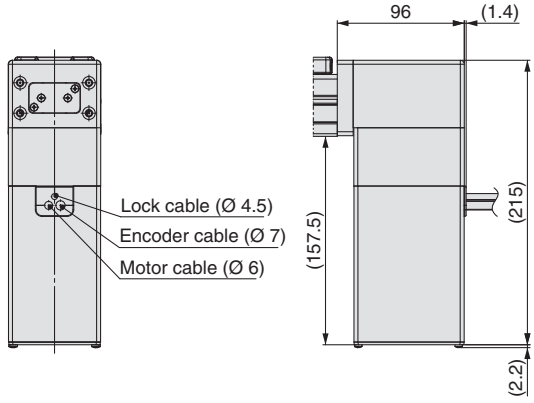


*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)

*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

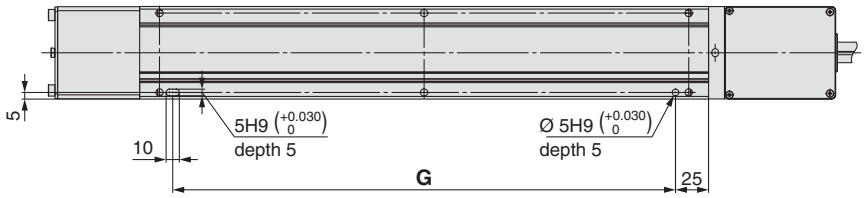
[mm]

Stroke	L	A	B	n	D	E
300	590	306	430	6	2	400
400	690	406	530	6	2	400
500	790	506	630	8	3	600
600	890	606	730	8	3	600
700	990	706	830	10	4	800
800	1090	806	930	10	4	800
900	1190	906	1030	12	5	1000
1000	1290	1006	1130	12	5	1000
1100	1390	1106	1230	14	6	1200
1200	1490	1206	1330	14	6	1200
1300	1590	1306	1430	16	7	1400
1400	1690	1406	1530	16	7	1400
1500	1790	1506	1630	18	8	1600
1600	1890	1606	1730	18	8	1600
1700	1990	1706	1830	20	9	1800
1800	2090	1806	1930	20	9	1800
1900	2190	1906	2030	22	10	2000
2000	2290	2006	2130	22	10	2000
2500	2790	2506	2630	28	13	2600

Dimensions: Belt Drive

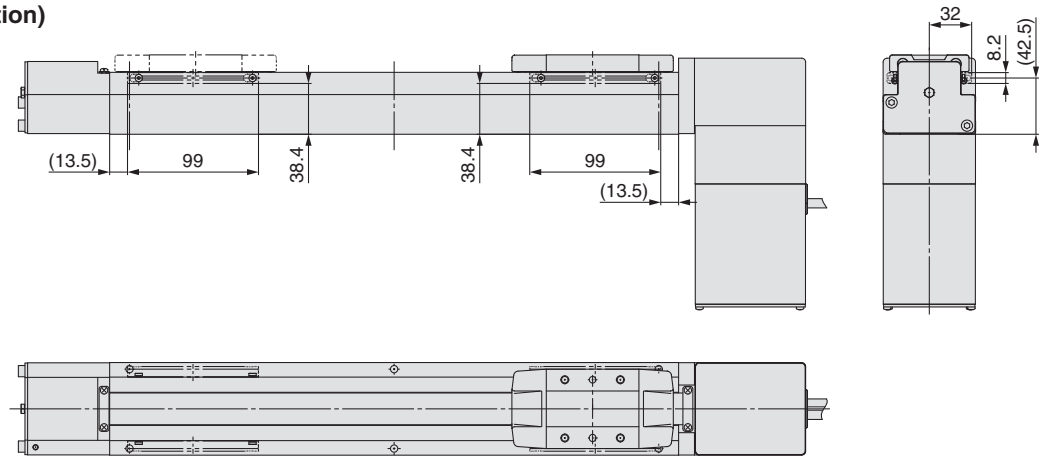
LEFB32U/Motor bottom mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

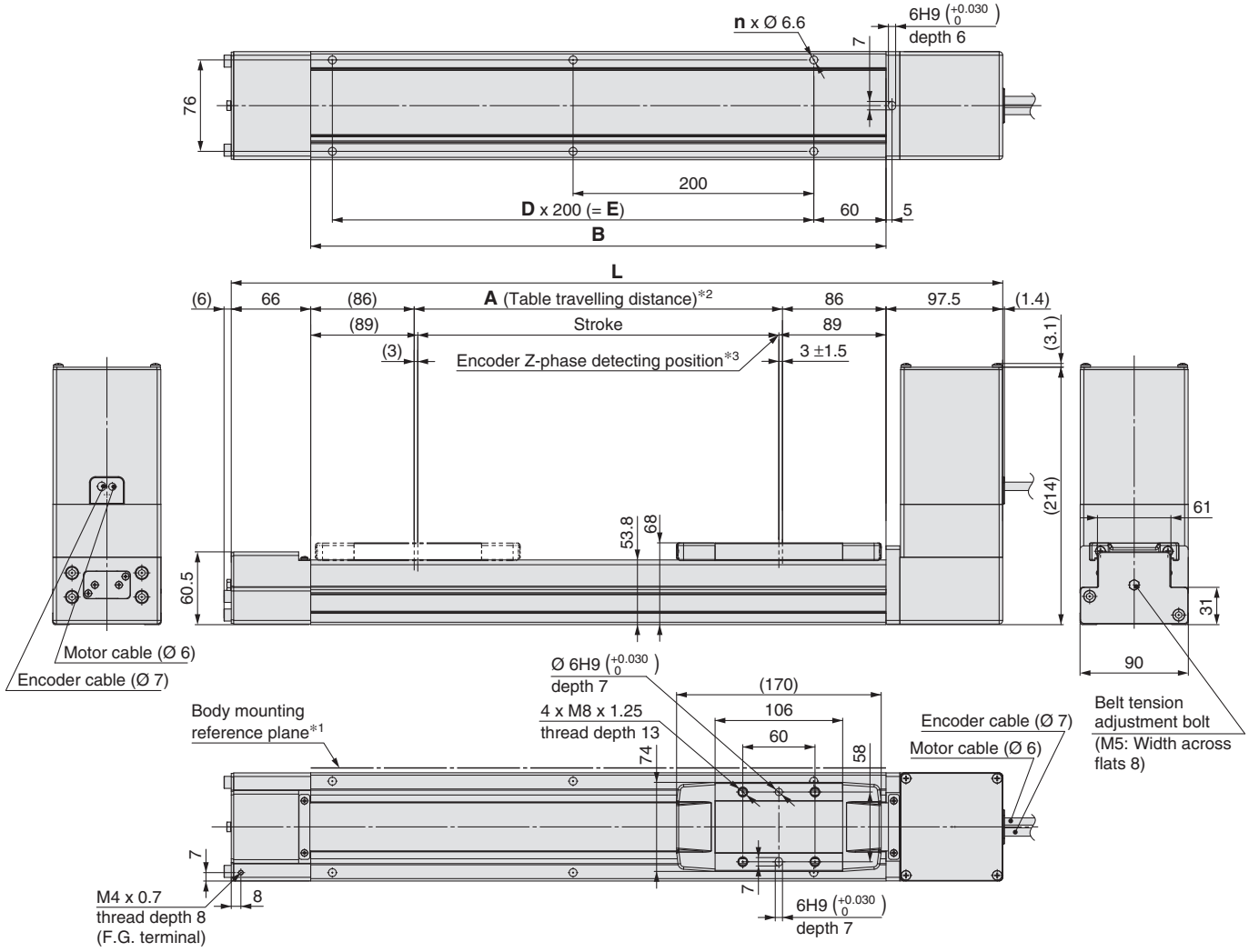


Dimensions [mm]

Stroke	G
300	380
400	380
500	580
600	580
700	780
800	780
900	980
1000	980
1100	1180
1200	1180
1300	1380
1400	1380
1500	1580
1600	1580
1700	1780
1800	1780
1900	1980
2000	1980
2500	2580

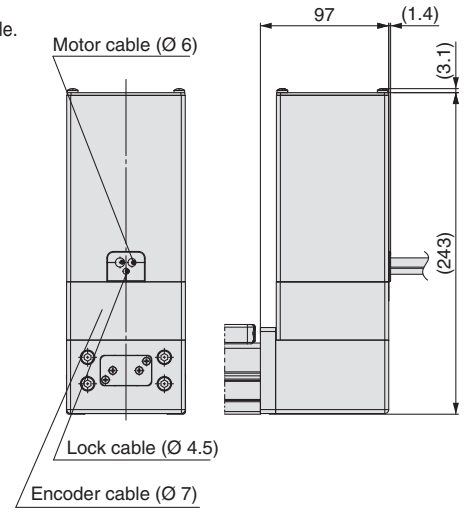
Dimensions: Belt Drive

LEFB40/Motor top mounting type



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

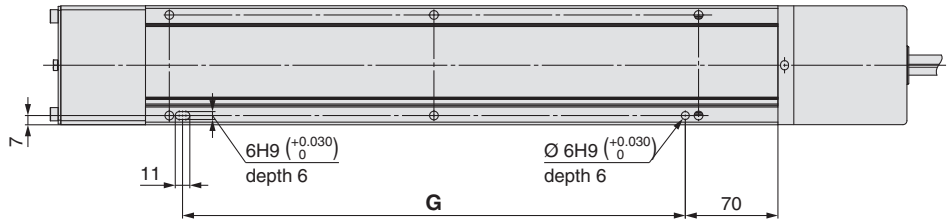
[mm]

Stroke	L	A	B	n	D	E
300	641.5	306	478	6	2	400
400	741.5	406	578	6	2	400
500	841.5	506	678	8	3	600
600	941.5	606	778	8	3	600
700	1041.5	706	878	10	4	800
800	1141.5	806	978	10	4	800
900	1241.5	906	1078	12	5	1000
1000	1341.5	1006	1178	12	5	1000
1100	1441.5	1106	1278	14	6	1200
1200	1541.5	1206	1378	14	6	1200
1300	1641.5	1306	1478	16	7	1400
1400	1741.5	1406	1578	16	7	1400
1500	1841.5	1506	1678	18	8	1600
1600	1941.5	1606	1778	18	8	1600
1700	2041.5	1706	1878	20	9	1800
1800	2141.5	1806	1978	20	9	1800
1900	2241.5	1906	2078	22	10	2000
2000	2341.5	2006	2178	22	10	2000
2500	2841.5	2506	2678	28	13	2600
3000	3341.5	3006	3178	32	15	3000

Dimensions: Belt Drive

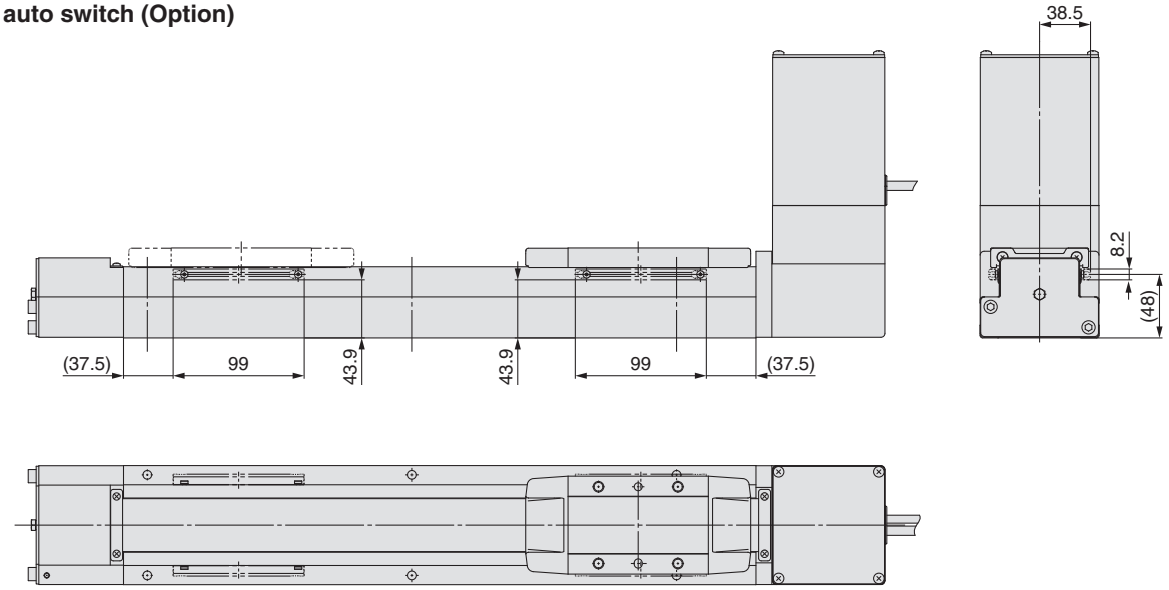
LEFB40/Motor top mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

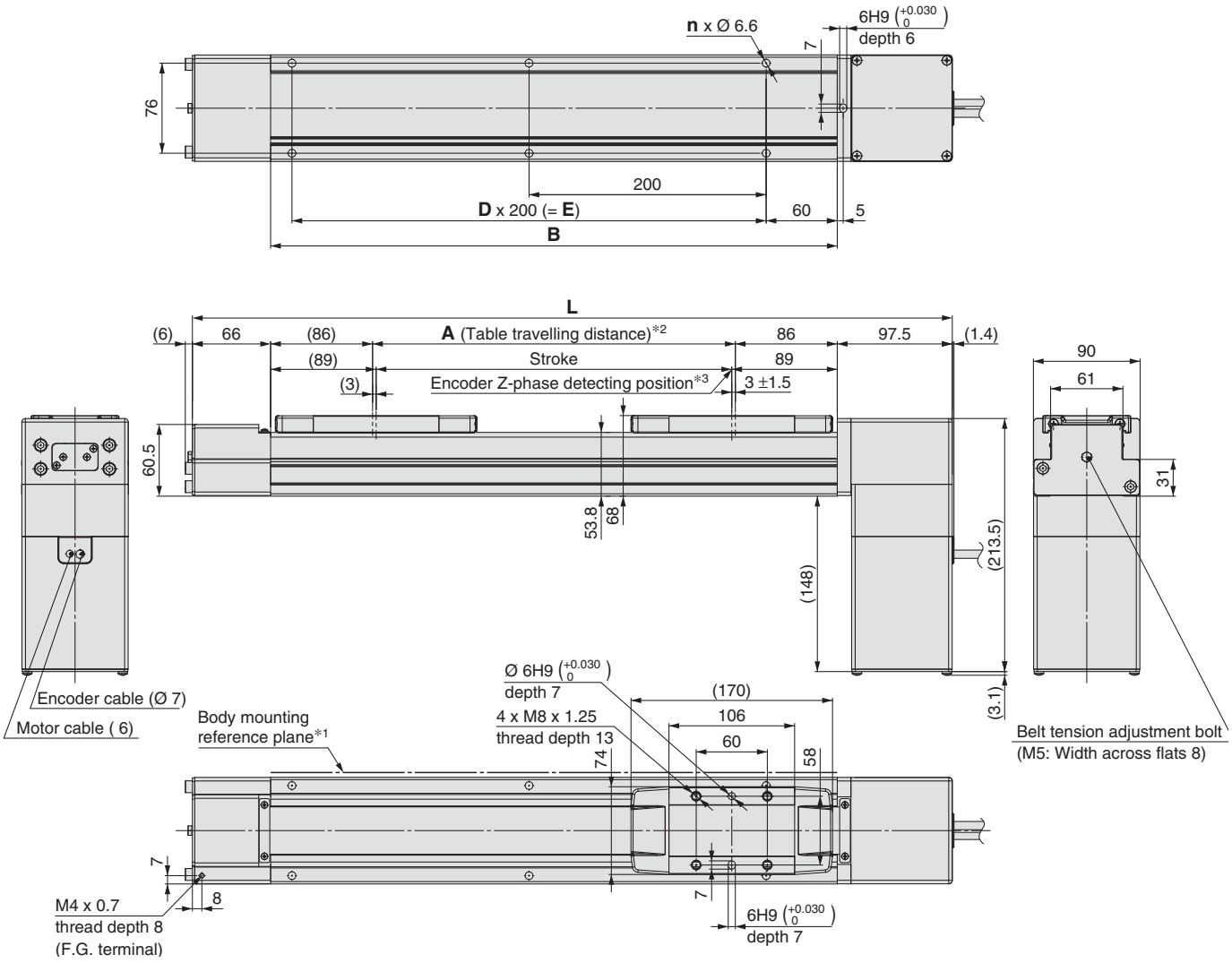


Dimensions [mm]

Stroke	G
300	380
400	380
500	580
600	580
700	780
800	780
900	980
1000	980
1100	1180
1200	1180
1300	1380
1400	1380
1500	1580
1600	1580
1700	1780
1800	1780
1900	1980
2000	1980
2500	2580
3000	2980

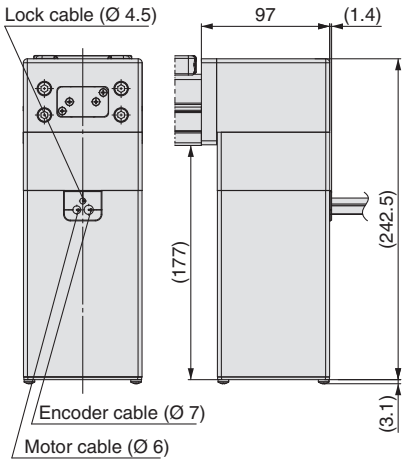
Dimensions: Belt Drive

LEFB40U/Motor bottom mounting type



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

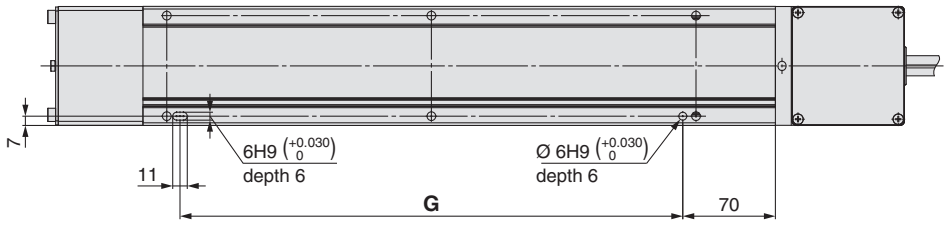
[mm]

Stroke	L	A	B	n	D	E
300	641.5	306	478	6	2	400
400	741.5	406	578	6	2	400
500	841.5	506	678	8	3	600
600	941.5	606	778	8	3	600
700	1041.5	706	878	10	4	800
800	1141.5	806	978	10	4	800
900	1241.5	906	1078	12	5	1000
1000	1341.5	1006	1178	12	5	1000
1100	1441.5	1106	1278	14	6	1200
1200	1541.5	1206	1378	14	6	1200
1300	1641.5	1306	1478	16	7	1400
1400	1741.5	1406	1578	16	7	1400
1500	1841.5	1506	1678	18	8	1600
1600	1941.5	1606	1778	18	8	1600
1700	2041.5	1706	1878	20	9	1800
1800	2141.5	1806	1978	20	9	1800
1900	2241.5	1906	2078	22	10	2000
2000	2341.5	2006	2178	22	10	2000
2500	2841.5	2506	2678	28	13	2600
3000	3341.5	3006	3178	32	15	3000

Dimensions: Belt Drive

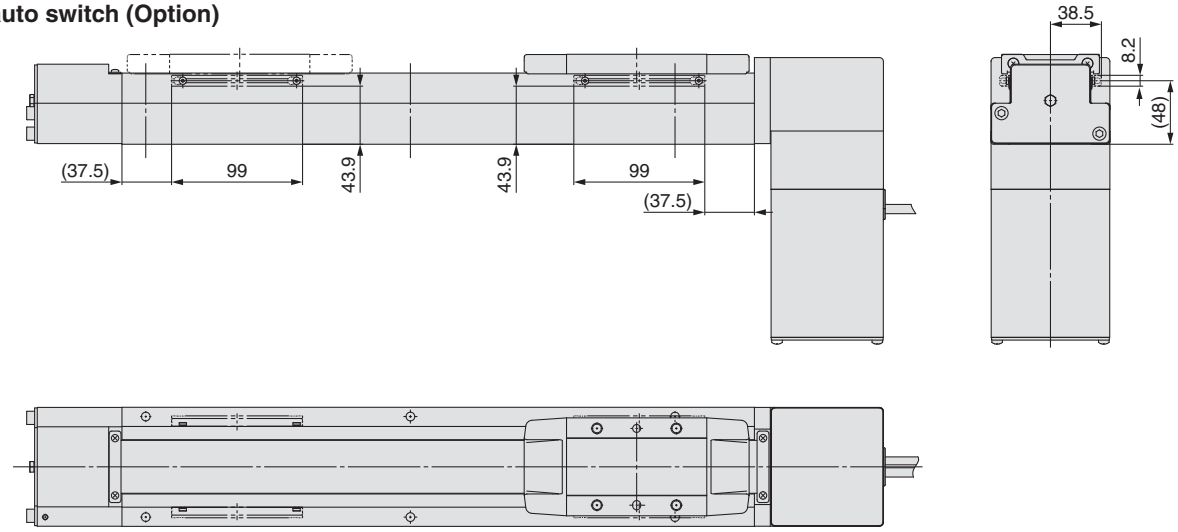
LEFB40U/Motor bottom mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)



Dimensions [mm]

Stroke	G
300	380
400	380
500	580
600	580
700	780
800	780
900	980
1000	980
1100	1180
1200	1180
1300	1380
1400	1380
1500	1580
1600	1580
1700	1780
1800	1780
1900	1980
2000	1980
2500	2580
3000	2980

Electric Actuator/Slider Type Belt Drive

LEFB Series LEFB25, 32, 40

LECS□ Series ▶ p. 130

How to Order

LEFB **32** **□** **V7** **S** – **300** **B** **C** **K** – **S** **3** **M2** **□**

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬

❶ Size

25
32
40

❷ Motor mounting position

—	Top mounting
U	Bottom mounting

❸ Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6*1	AC servo motor (Absolute encoder)	100	25	LECYM2-V5/LECYU2-V5
V7		200	32	LECYM2-V7/LECYU2-V7
V8		400	40	LECYM2-V8/LECYU2-V8

*1 For motor type V6, the compatible driver part number suffix is V5.

❹ Equivalent lead [mm]

S	54

❺ Stroke [mm]

300	300
to	to
3000	3000

❻ Motor option

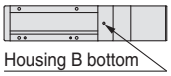
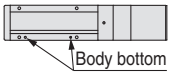
—	Without option
B	With lock

❼ Auto switch compatibility

—	None
C	With (Includes 1 mounting bracket)

* If 2 or more are required, please order them separately. (Part no.: LEF-D-2-1 For details, refer to page 167.)
* Order auto switches separately. (For details, refer to pages 168 to 170.)
* When "—" is selected, the product will not come with a built-in magnet for an auto switch, and so a mounting bracket cannot be secured. Be sure to select an appropriate model initially as the product cannot be changed to have auto switch compatibility after purchase.

❽ Positioning pin hole

—	Housing B bottom*1	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

*1 Refer to the body mounting example on page 203 for the mounting method.

❾ Cable type

—	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

❿ Actuator cable length [m]

—	Without cable
3	3
5	5
A	10
C	20

⓫ Driver type

	Compatible driver	Power supply voltage [V]
—	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

⓬ I/O cable length [m]*1

—	Without cable
H	Without cable (Connector only)
1	1.5

*1 When "Without driver" is selected for driver type, only "—: Without cable" can be selected.
Refer to page 292 if I/O cable is required. (Options are shown on page 292.)

Applicable Stroke Table

●: Standard/○: Produced upon receipt of order

	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000	Manufacturable stroke range [mm]
LEFB25	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	—	—	300 to 2000
LEFB32	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	●	—	300 to 2500
LEFB40	●	●	●	●	●	●	●	●	○	●	○	○	●	○	○	○	○	●	●	●	300 to 3000

* Please consult with SMC for non-standard strokes as they are produced as special orders.

For auto switches, refer to pages 167 to 170.

Compatible Driver

Driver type	MECHATROLINK-Ⅱ type 	MECHATROLINK-Ⅲ type 
Series	**LECYM**	**LECYU**
Applicable network	MECHATROLINK-Ⅱ	MECHATROLINK-Ⅲ
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage [V]	200 to 230 VAC (50/60 Hz)	
Reference page	285	

Specifications

AC Servo Motor

Model			LEFB25V6	LEFB32V7	LEFB40V8
Actuator specifications	Stroke [mm]*1		300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000	300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000 2500	300, 400, 500 600, 700, 800 900, 1000, (1100) 1200, (1300, 1400) 1500, (1600, 1700) (1800, 1900), 2000 2500, 3000
	Work load [kg]*2	Horizontal	5	15	25
	Max. speed [mm/s]		2000	2000	2000
	Max. acceleration/deceleration [mm/s²]		20000 (Refer to page 54 for limit according to work load and duty ratio.)*3		
	Positioning repeatability [mm]		±0.06		
	Lost motion [mm]*4		0.1 or less		
	Equivalent lead [mm]		54		
	Impact/Vibration resistance [m/s²]*5		50/20		
	Actuation type		Belt		
	Guide type		Linear guide		
	Operating temperature range [°C]		5 to 40		
	Operating humidity range [%RH]		90 or less (No condensation)		
Electric specifications	Motor output/Size		100 W/□40	200 W/□60	400 W/□60
	Motor type		AC servo motor (200 VAC)		
	Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)		
	Power consumption [W]*6	Horizontal	29	41	72
		Vertical	—	—	—
	Standby power consumption when operating [W]*7	Horizontal	2	2	2
		Vertical	—	—	—
	Max. instantaneous power consumption [W]*8		445	725	1275
Lock unit specifications	Type*9		Non-magnetising lock		
	Holding force [N]		27	54	110
	Power consumption at 20°C [W]*10		5.5	6.0	6.0
	Rated voltage [V]		24 VDC $^{+10}_{0}$ %		

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 For details, refer to “Speed–Work Load Graph (Guide)” on page 54.
*3 Maximum acceleration/deceleration changes according to the work load. Check “Work Load–Acceleration/Deceleration Graph (Guide)” of the catalogue.
*4 A reference value for correcting an error in reciprocal operation
*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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*6 The power consumption (including the driver) is for when the actuator is operating.
*7 The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
*8 The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
*9 Only when motor option “With lock” is selected
*10 For an actuator with lock, add the power consumption for the lock.

Weight

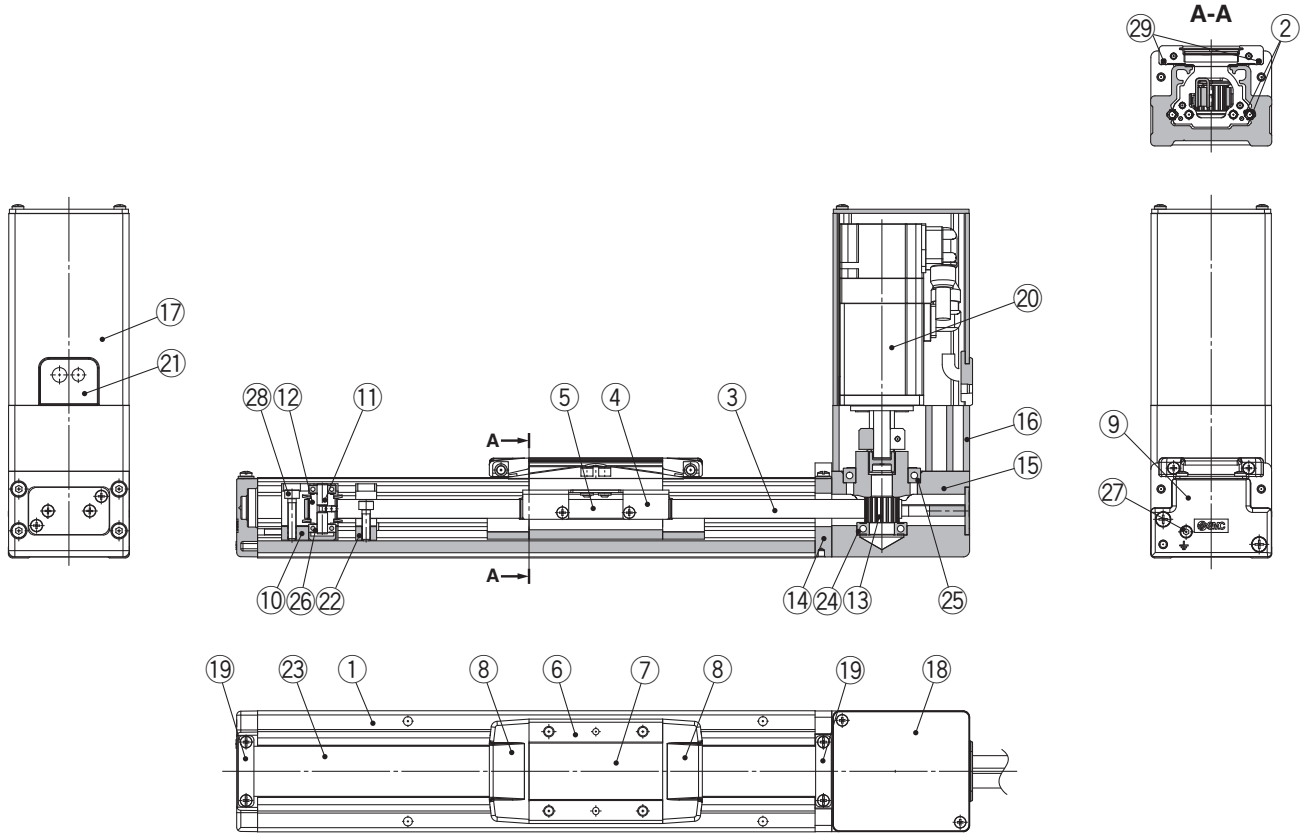
Series	LEFB25																	
Stroke [mm]	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
Product weight [kg]	3.06	3.31	3.56	3.81	4.06	4.31	4.56	4.81	5.06	5.31	5.56	5.81	6.06	6.31	6.56	6.81	7.06	7.31
Additional weight with lock [kg]	0.3																	

Series	LEFB32																		
Stroke [mm]	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500
Product weight [kg]	4.90	5.25	5.60	5.95	6.30	6.65	7.00	7.35	7.70	8.05	8.40	8.75	9.10	9.45	9.80	10.15	10.50	10.85	12.60
Additional weight with lock [kg]	0.7																		

Series	LEFB40																			
Stroke [mm]	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
Product weight [kg]	7.22	7.67	8.12	8.57	9.02	9.47	9.92	10.37	10.82	11.27	11.72	12.17	12.62	13.07	13.52	13.97	14.42	14.82	17.12	19.37
Additional weight with lock [kg]	0.7																			

Construction

LEFB25V6S



∗ Motor bottom mounting type is the same.

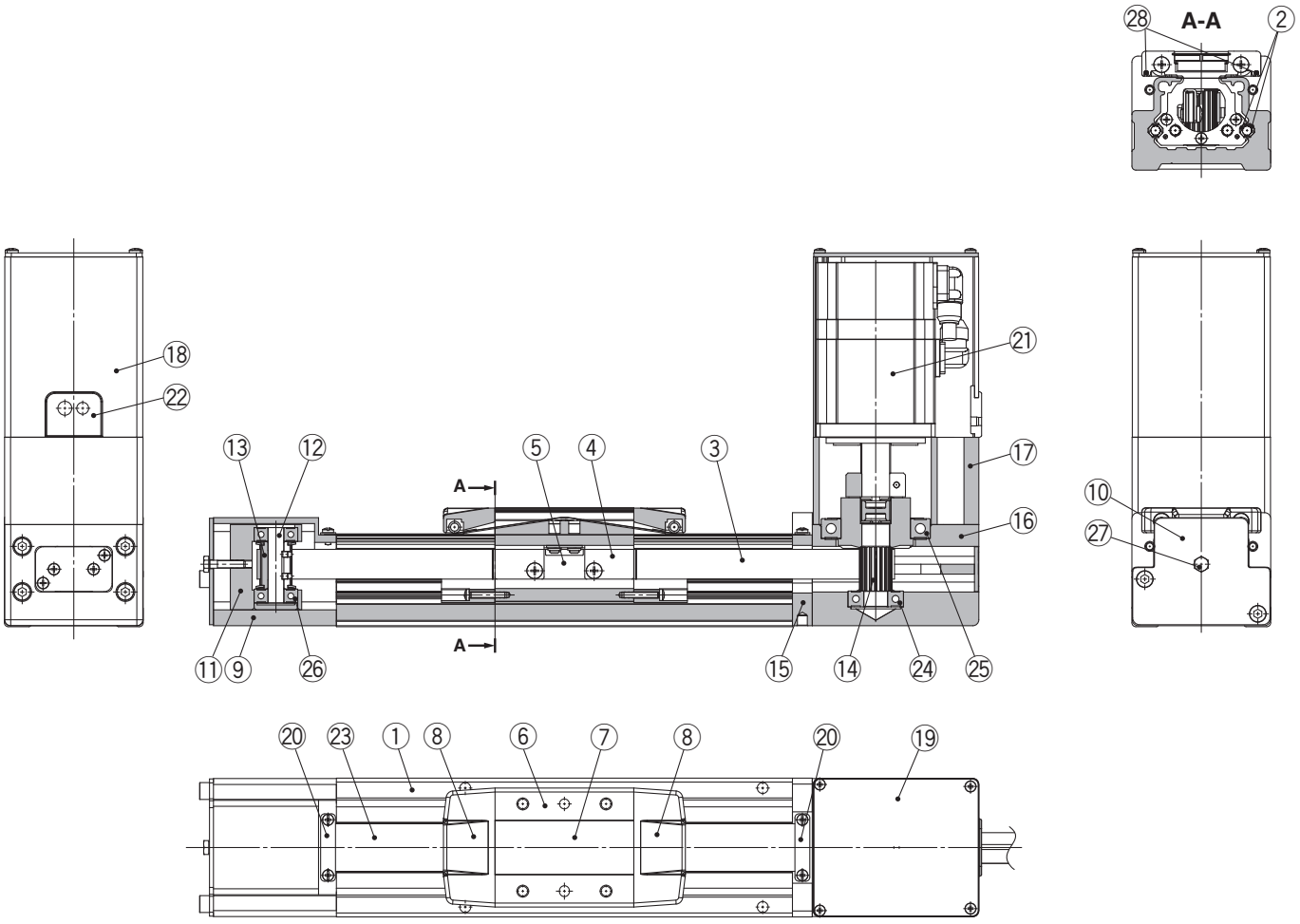
Component Parts

No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**		
3	**Belt**		
4	**Belt holder**	Carbon steel	Chromating
5	**Belt stopper**	Aluminium alloy	Anodised
6	**Table**	Aluminium alloy	Anodised
7	**Blanking plate**	Aluminium alloy	Anodised
8	**Seal band holder**	Synthetic resin	
9	**Housing A**	Aluminium die-cast	Coating
10	**Pulley holder**	Aluminium alloy	
11	**Pulley shaft**	Stainless steel	
12	**End pulley**	Aluminium alloy	Anodised
13	**Motor pulley**	Aluminium alloy	Anodised
14	**Return flange**	Aluminium alloy	Coating
15	**Housing**	Aluminium alloy	Coating

No.	Description	Material	Note
16	**Motor mount**	Aluminium alloy	Coating
17	**Motor cover**	Aluminium alloy	Anodised
18	**Motor end cover**	Aluminium alloy	Anodised
19	**Band stopper**	Stainless steel	
20	**Motor**		
21	**Rubber bushing**	NBR	
22	**Stopper**	Aluminium alloy	
23	**Dust seal band**	Stainless steel	
24	**Bearing**		
25	**Bearing**		
26	**Spacer**	Aluminium alloy	
27	**Tension adjustment cap screw**	Chromium molybdenum steel	Chromating
28	**Pulley retaining screw**	Chromium molybdenum steel	Chromating
29	**Magnet**	—	With auto switch compatibility

Construction

LEFB32/40V□S



∗ Motor bottom mounting type is the same.

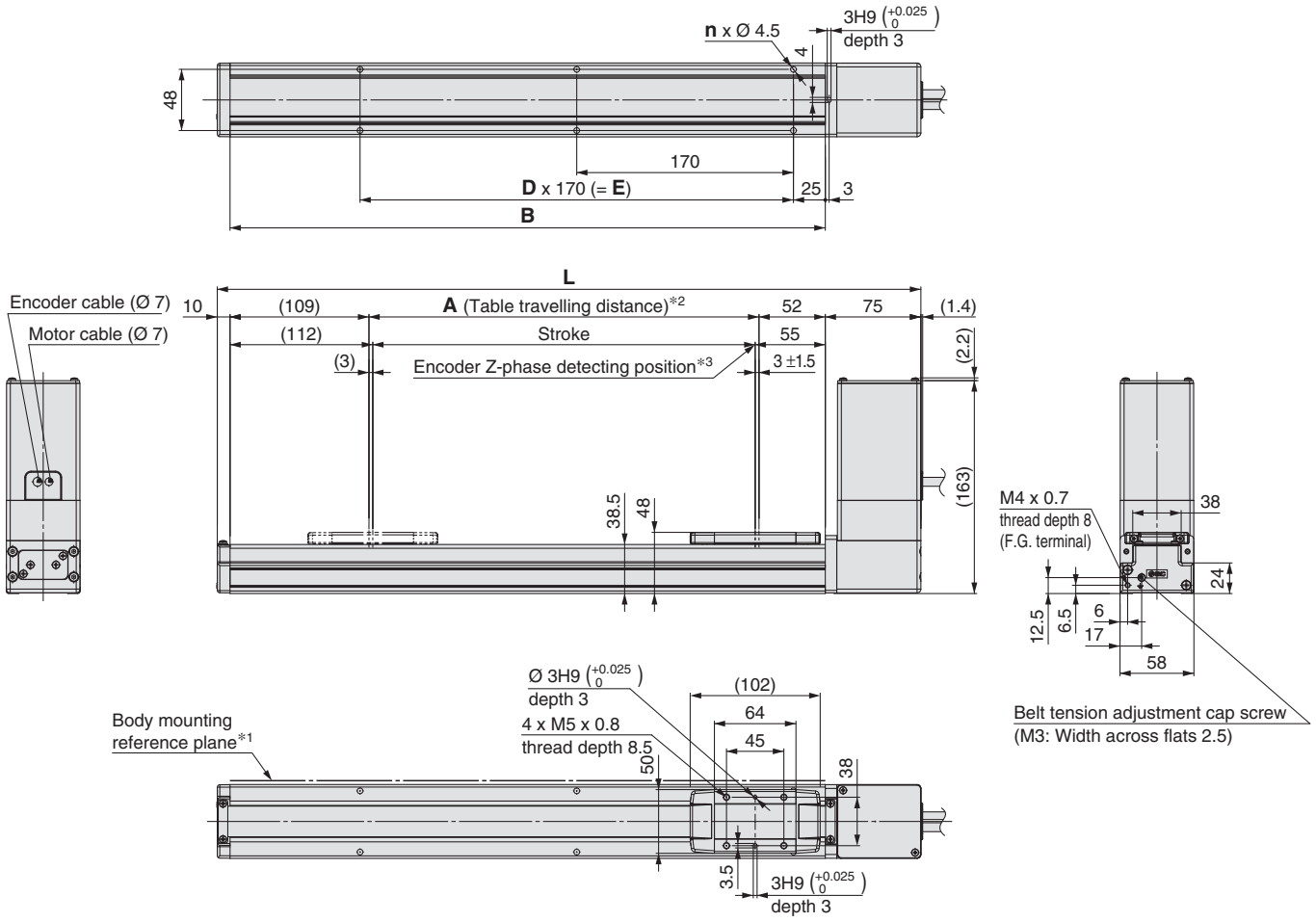
Component Parts

No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Rail guide**		
3	**Belt**		
4	**Belt holder**	Carbon steel	Chromating
5	**Belt stopper**	Aluminium alloy	Anodised
6	**Table**	Aluminium alloy	Anodised
7	**Blanking plate**	Aluminium alloy	Anodised
8	**Seal band stopper**	Synthetic resin	
9	**End block**	Aluminium alloy	Coating
10	**End block cover**		
11	**Pulley holder**	Aluminium alloy	
12	**Pulley shaft**	Stainless steel	
13	**End pulley**	Aluminium alloy	Anodised
14	**Motor pulley**	Aluminium alloy	Anodised

No.	Description	Material	Note
15	**Return flange**	Aluminium alloy	Coating
16	**Housing**	Aluminium alloy	Coating
17	**Motor mount**	Aluminium alloy	Coating
18	**Motor cover**	Aluminium alloy	Anodised
19	**Motor end cover**	Aluminium alloy	Anodised
20	**Band stopper**	Stainless steel	
21	**Motor**		
22	**Rubber bushing**	NBR	
23	**Dust seal band**	Stainless steel	
24	**Bearing**		
25	**Bearing**		
26	**Bearing**		
27	**Tension adjustment bolt**	Chromium molybdenum steel	Chromating
28	**Magnet**	—	With auto switch compatibility

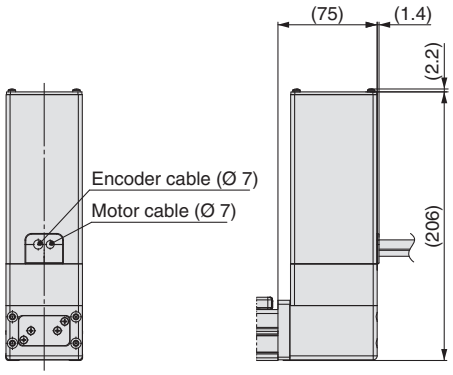
Dimensions: Belt Drive

LEFB25/Motor top mounting type



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



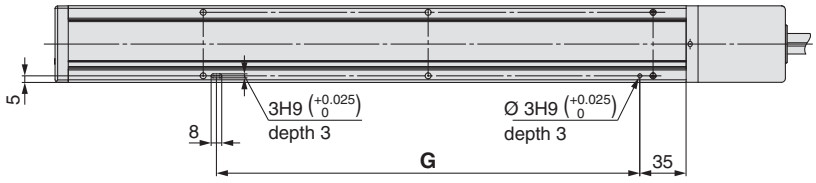
Dimensions [mm]

Stroke	L	A	B	n	D	E
300	552	306	467	6	2	340
400	652	406	567	8	3	510
500	752	506	667	8	3	510
600	852	606	767	10	4	680
700	952	706	867	10	4	680
800	1052	806	967	12	5	850
900	1152	906	1067	14	6	1020
1000	1252	1006	1167	14	6	1020
1100	1352	1106	1267	16	7	1190
1200	1452	1206	1367	16	7	1190
1300	1552	1306	1467	18	8	1360
1400	1652	1406	1567	20	9	1530
1500	1752	1506	1667	20	9	1530
1600	1852	1606	1767	22	10	1700
1700	1952	1706	1867	22	10	1700
1800	2052	1806	1967	24	11	1870
1900	2152	1906	2067	24	11	1870
2000	2252	2006	2167	26	12	2040

Dimensions: Belt Drive

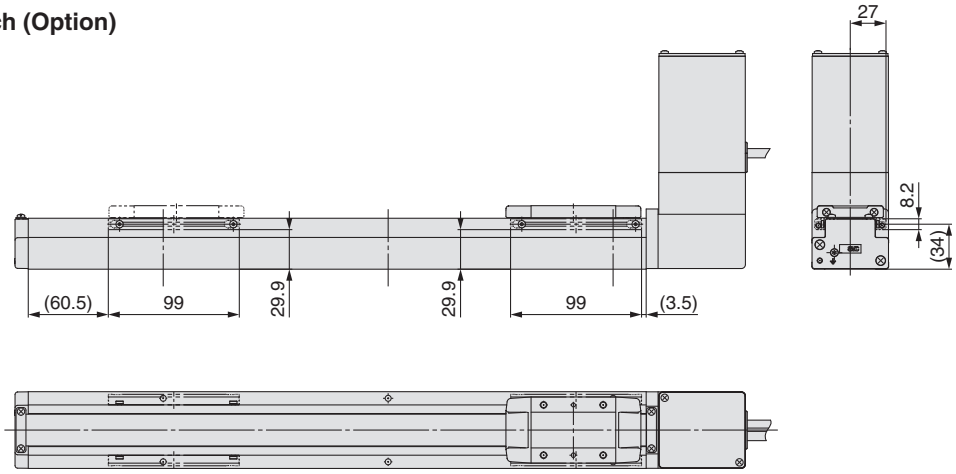
LEFB25/Motor top mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

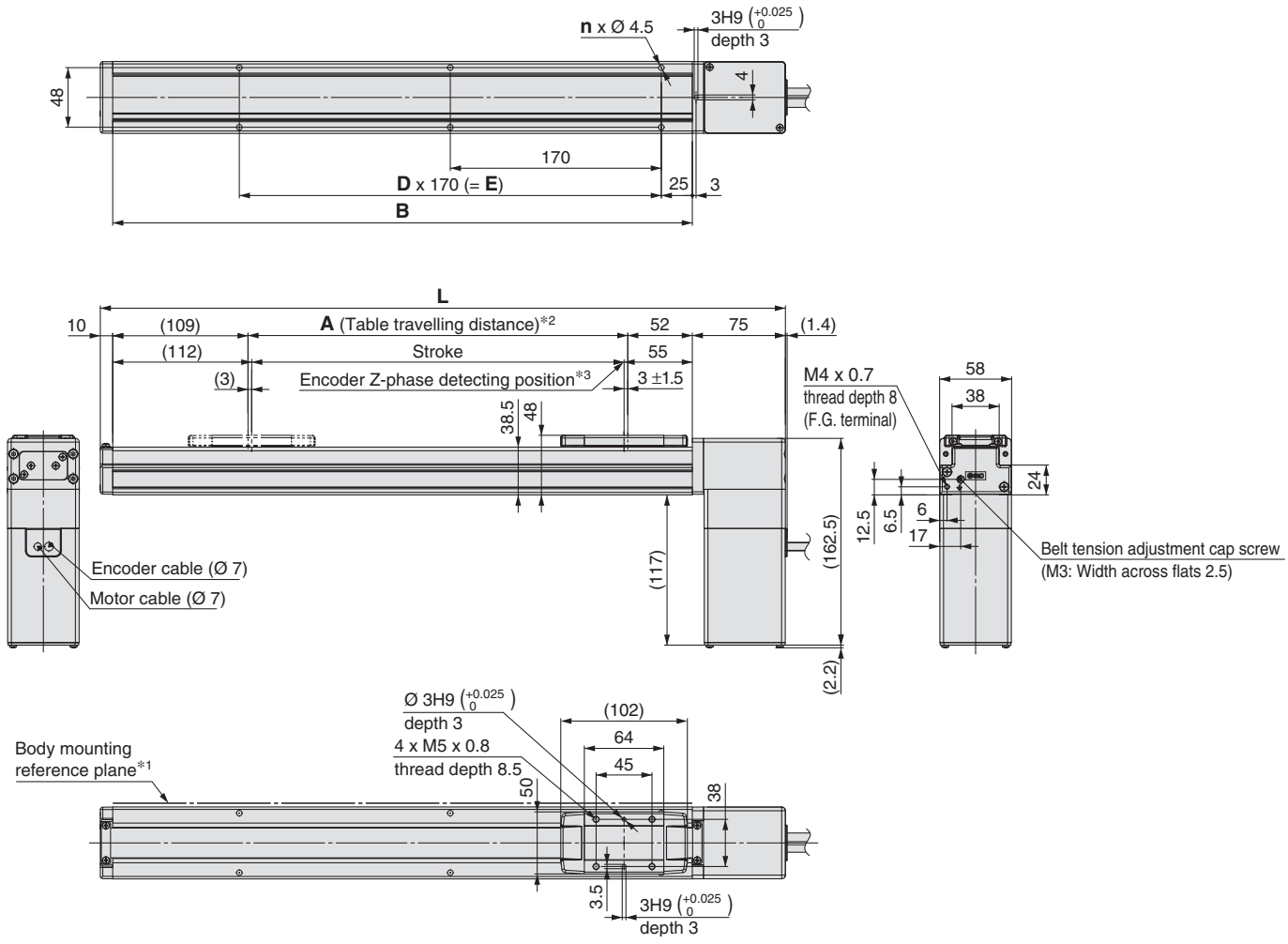


Dimensions [mm]

Stroke	G
300	320
400	490
500	490
600	660
700	660
800	830
900	1000
1000	1000
1100	1170
1200	1170
1300	1340
1400	1510
1500	1510
1600	1680
1700	1680
1800	1850
1900	1850
2000	2020

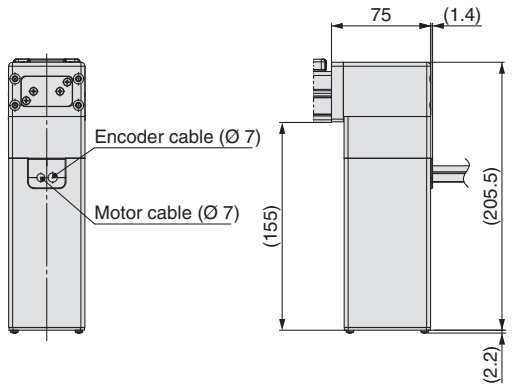
Dimensions: Belt Drive

LEFB25U/Motor bottom mounting type



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

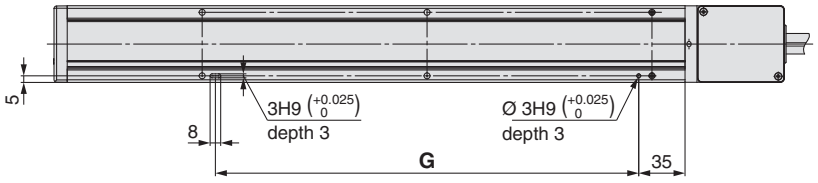
[mm]

Stroke	L	A	B	n	D	E
300	552	306	467	6	2	340
400	652	406	567	8	3	510
500	752	506	667	8	3	510
600	852	606	767	10	4	680
700	952	706	867	10	4	680
800	1052	806	967	12	5	850
900	1152	906	1067	14	6	1020
1000	1252	1006	1167	14	6	1020
1100	1352	1106	1267	16	7	1190
1200	1452	1206	1367	16	7	1190
1300	1552	1306	1467	18	8	1360
1400	1652	1406	1567	20	9	1530
1500	1752	1506	1667	20	9	1530
1600	1852	1606	1767	22	10	1700
1700	1952	1706	1867	22	10	1700
1800	2052	1806	1967	24	11	1870
1900	2152	1906	2067	24	11	1870
2000	2252	2006	2167	26	12	2040

Dimensions: Belt Drive

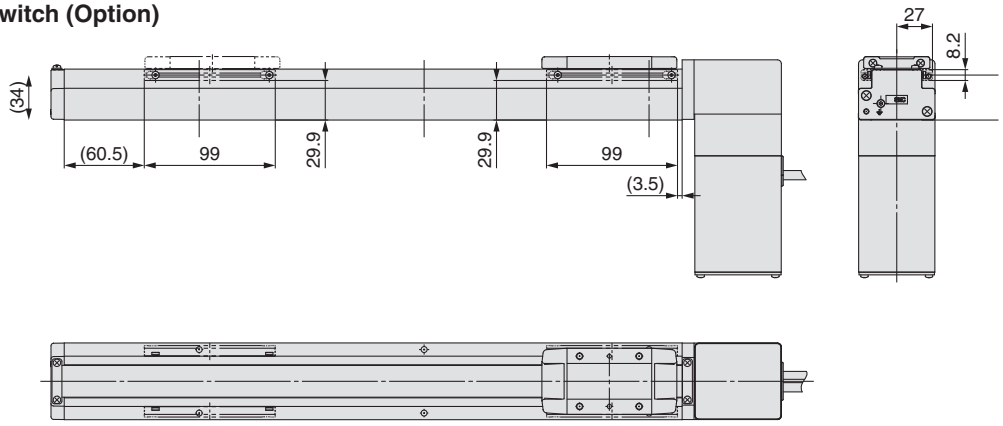
LEFB25U/Motor bottom mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

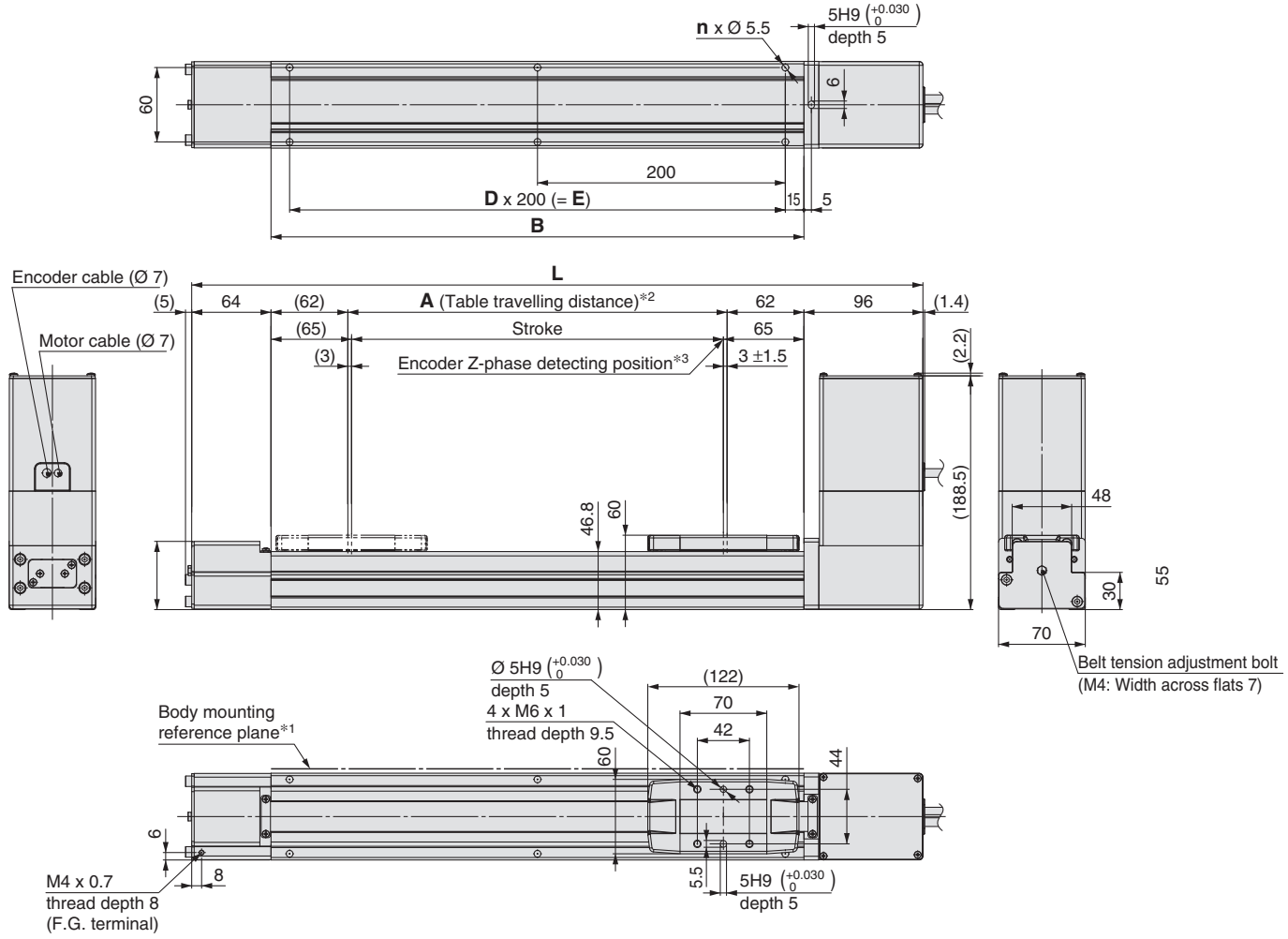


Dimensions [mm]

Stroke	G
300	320
400	490
500	490
600	660
700	660
800	830
900	1000
1000	1000
1100	1170
1200	1170
1300	1340
1400	1510
1500	1510
1600	1680
1700	1680
1800	1850
1900	1850
2000	2020

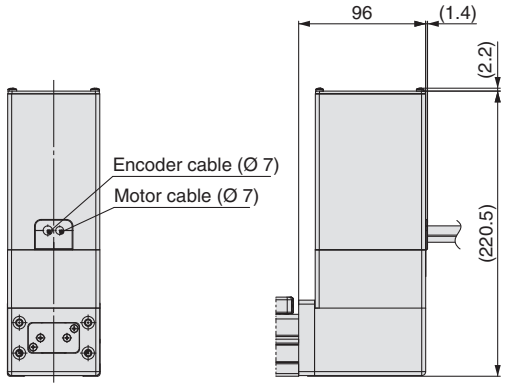
Dimensions: Belt Drive

LEFB32/Motor top mounting type



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

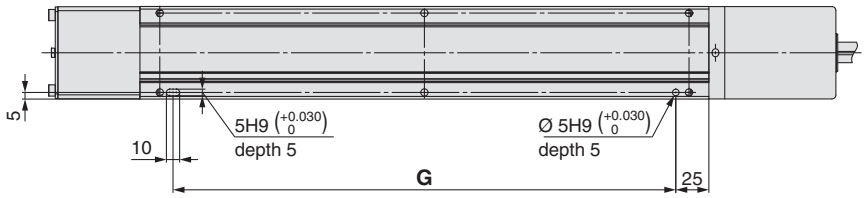
[mm]

Stroke	L	A	B	n	D	E
300	590	306	430	6	2	400
400	690	406	530	6	2	400
500	790	506	630	8	3	600
600	890	606	730	8	3	600
700	990	706	830	10	4	800
800	1090	806	930	10	4	800
900	1190	906	1030	12	5	1000
1000	1290	1006	1130	12	5	1000
1100	1390	1106	1230	14	6	1200
1200	1490	1206	1330	14	6	1200
1300	1590	1306	1430	16	7	1400
1400	1690	1406	1530	16	7	1400
1500	1790	1506	1630	18	8	1600
1600	1890	1606	1730	18	8	1600
1700	1990	1706	1830	20	9	1800
1800	2090	1806	1930	20	9	1800
1900	2190	1906	2030	22	10	2000
2000	2290	2006	2130	22	10	2000
2500	2790	2506	2630	28	13	2600

Dimensions: Belt Drive

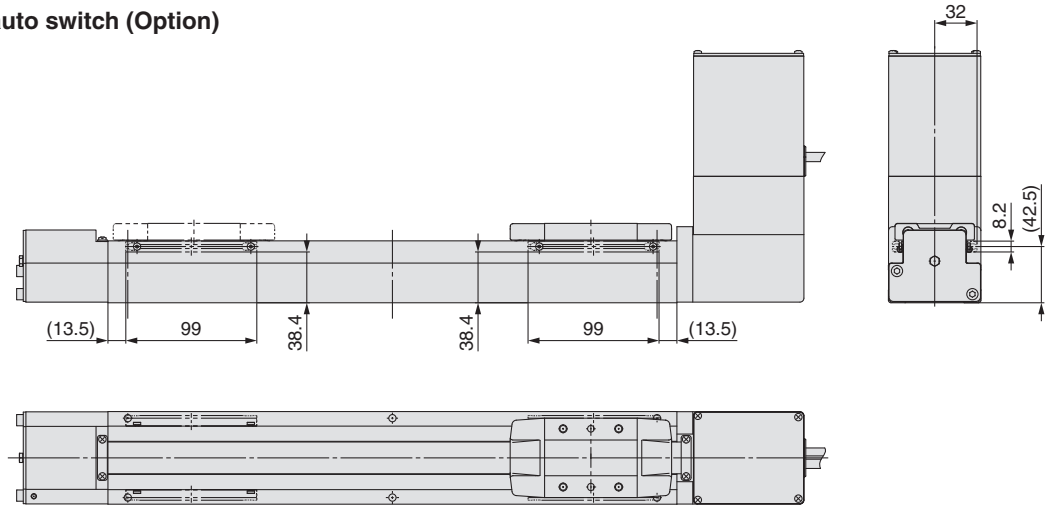
LEFB32/Motor top mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

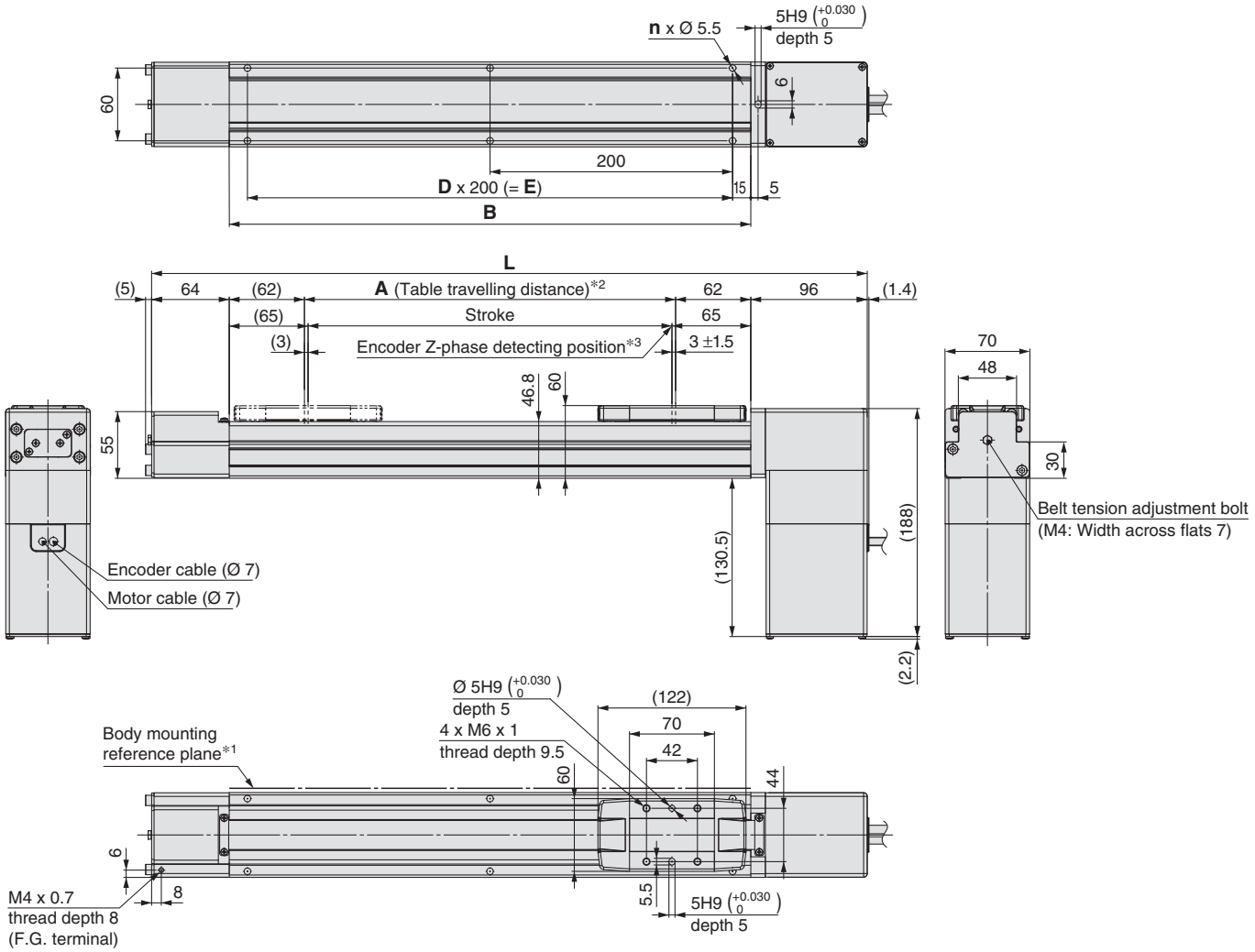


Dimensions [mm]

Stroke	G
300	380
400	380
500	580
600	580
700	780
800	780
900	980
1000	980
1100	1180
1200	1180
1300	1380
1400	1380
1500	1580
1600	1580
1700	1780
1800	1780
1900	1980
2000	1980
2500	2580

Dimensions: Belt Drive

LEFB32U/Motor bottom mounting type

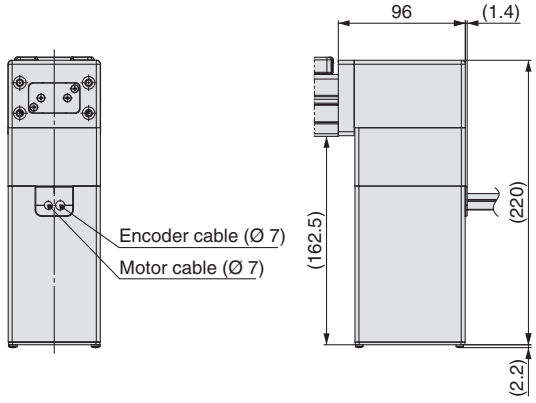


*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)

*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



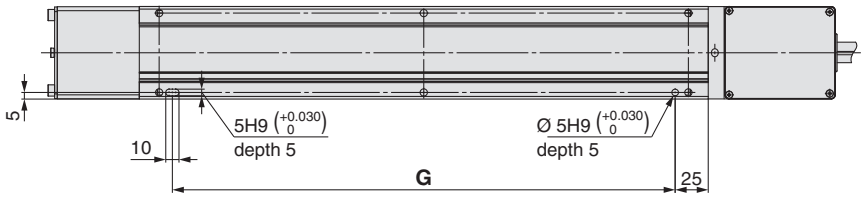
Dimensions [mm]

Stroke	L	A	B	n	D	E
300	590	306	430	6	2	400
400	690	406	530	6	2	400
500	790	506	630	8	3	600
600	890	606	730	8	3	600
700	990	706	830	10	4	800
800	1090	806	930	10	4	800
900	1190	906	1030	12	5	1000
1000	1290	1006	1130	12	5	1000
1100	1390	1106	1230	14	6	1200
1200	1490	1206	1330	14	6	1200
1300	1590	1306	1430	16	7	1400
1400	1690	1406	1530	16	7	1400
1500	1790	1506	1630	18	8	1600
1600	1890	1606	1730	18	8	1600
1700	1990	1706	1830	20	9	1800
1800	2090	1806	1930	20	9	1800
1900	2190	1906	2030	22	10	2000
2000	2290	2006	2130	22	10	2000
2500	2790	2506	2630	28	13	2600

Dimensions: Belt Drive

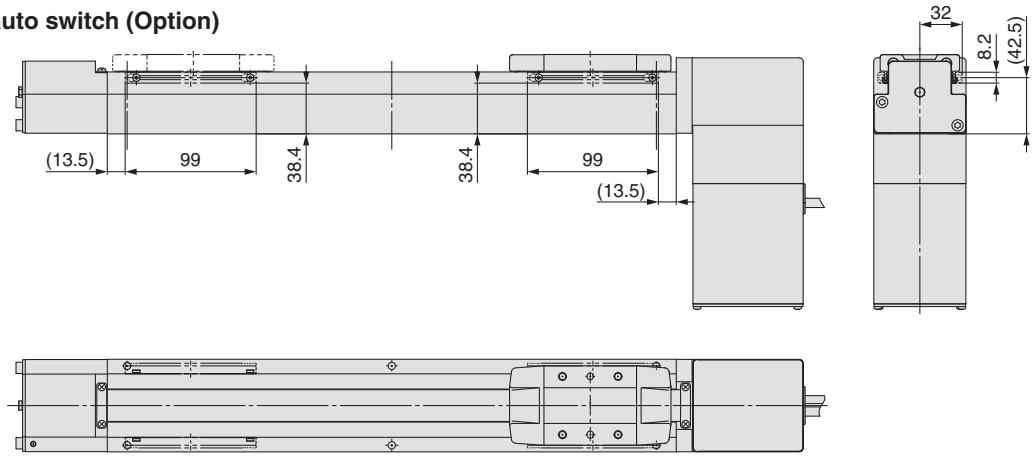
LEFB32U/Motor bottom mounting type

Positioning pin hole *1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

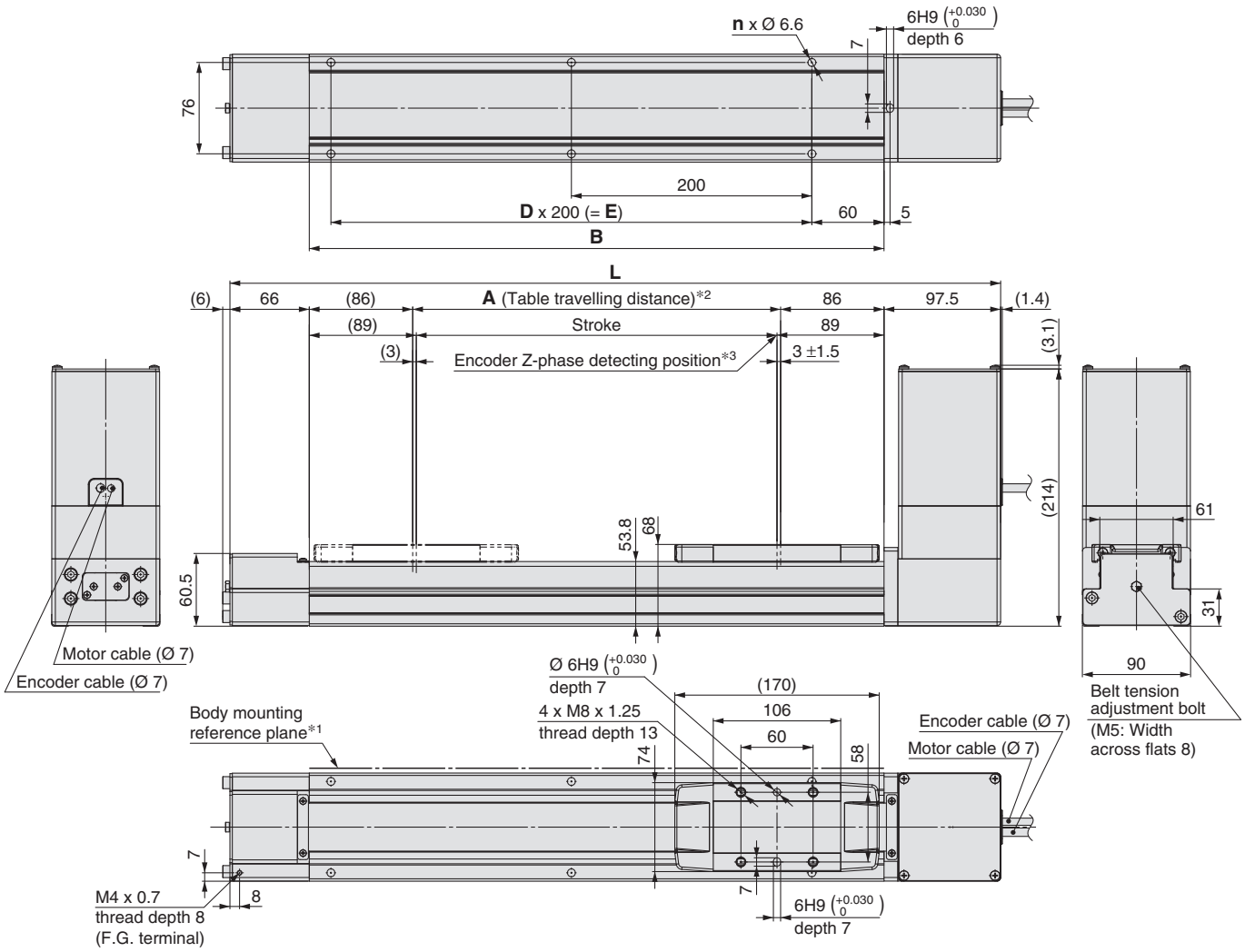


Dimensions [mm]

Stroke	G
300	380
400	380
500	580
600	580
700	780
800	780
900	980
1000	980
1100	1180
1200	1180
1300	1380
1400	1380
1500	1580
1600	1580
1700	1780
1800	1780
1900	1980
2000	1980
2500	2580

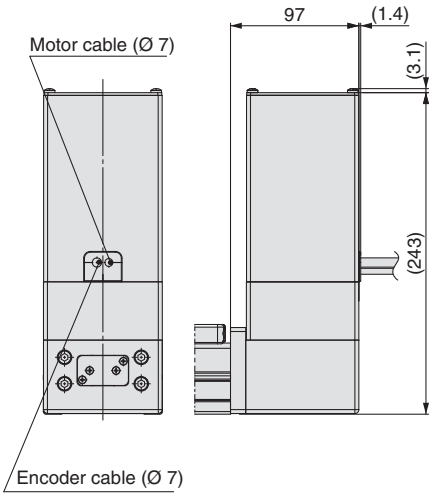
Dimensions: Belt Drive

LEFB40/Motor top mounting type



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

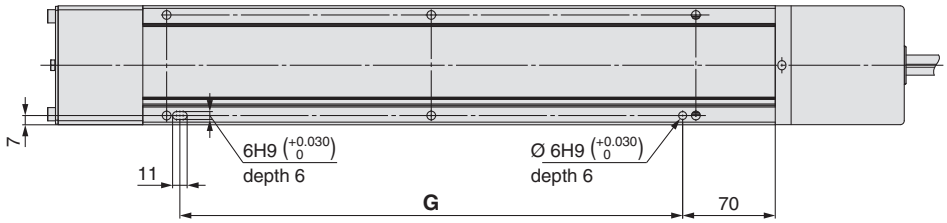
[mm]

Stroke	L	A	B	n	D	E
300	641.5	306	478	6	2	400
400	741.5	406	578	6	2	400
500	841.5	506	678	8	3	600
600	941.5	606	778	8	3	600
700	1041.5	706	878	10	4	800
800	1141.5	806	978	10	4	800
900	1241.5	906	1078	12	5	1000
1000	1341.5	1006	1178	12	5	1000
1100	1441.5	1106	1278	14	6	1200
1200	1541.5	1206	1378	14	6	1200
1300	1641.5	1306	1478	16	7	1400
1400	1741.5	1406	1578	16	7	1400
1500	1841.5	1506	1678	18	8	1600
1600	1941.5	1606	1778	18	8	1600
1700	2041.5	1706	1878	20	9	1800
1800	2141.5	1806	1978	20	9	1800
1900	2241.5	1906	2078	22	10	2000
2000	2341.5	2006	2178	22	10	2000
2500	2841.5	2506	2678	28	13	2600
3000	3341.5	3006	3178	32	15	3000

Dimensions: Belt Drive

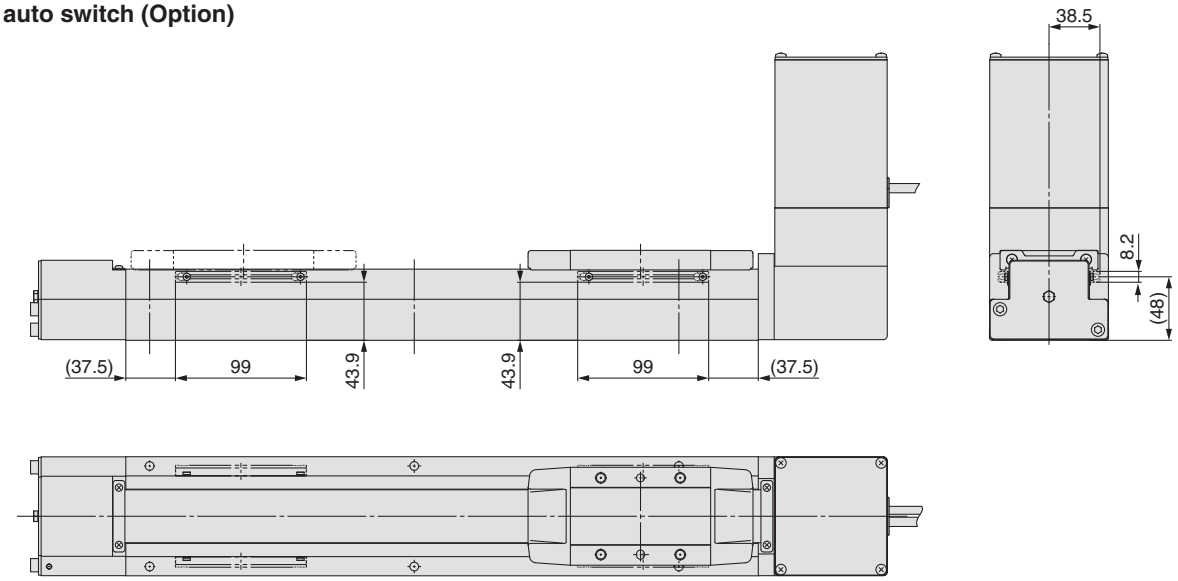
LEFB40/Motor top mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)

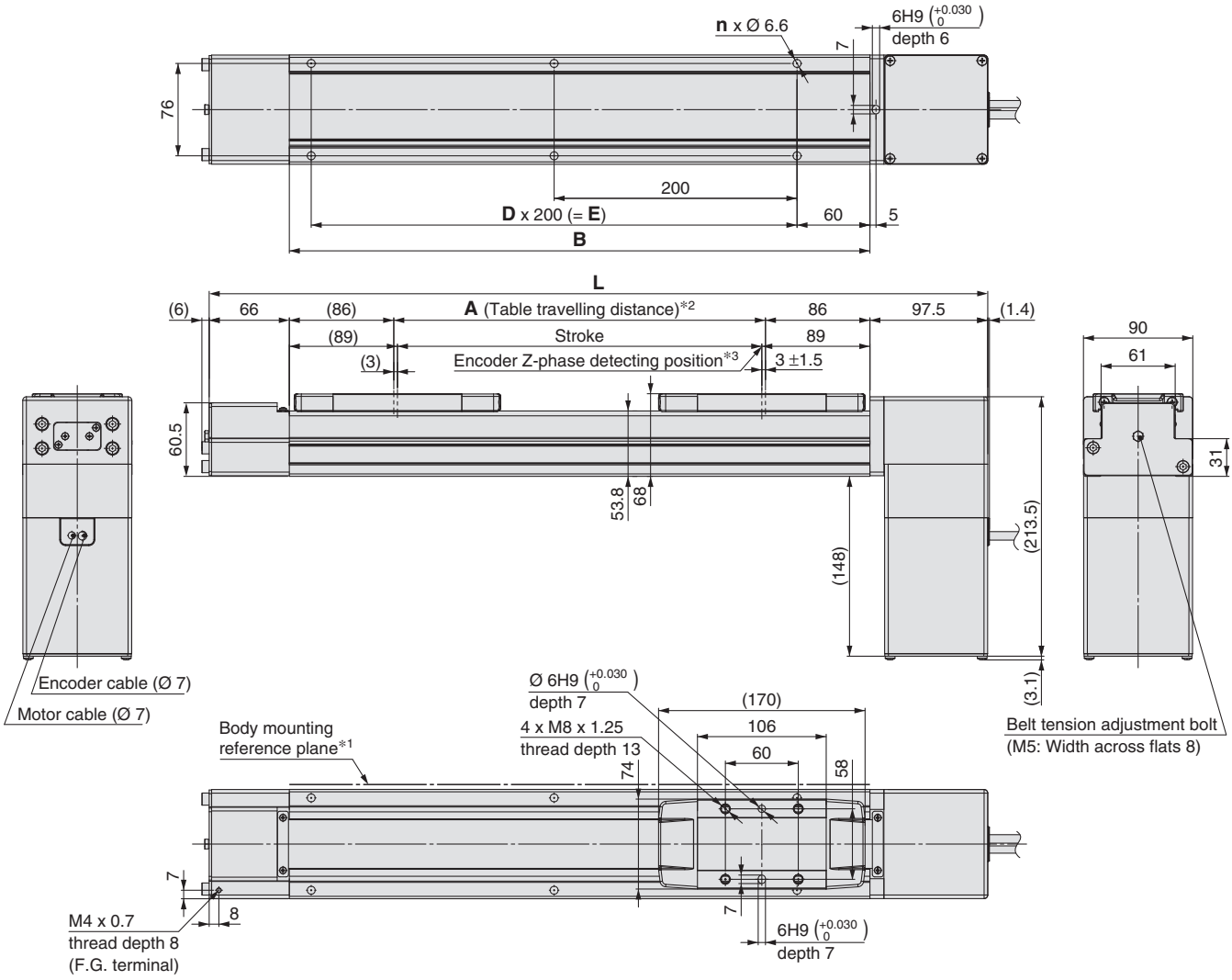


Dimensions [mm]

Stroke	G
300	380
400	380
500	580
600	580
700	780
800	780
900	980
1000	980
1100	1180
1200	1180
1300	1380
1400	1380
1500	1580
1600	1580
1700	1780
1800	1780
1900	1980
2000	1980
2500	2580
3000	2980

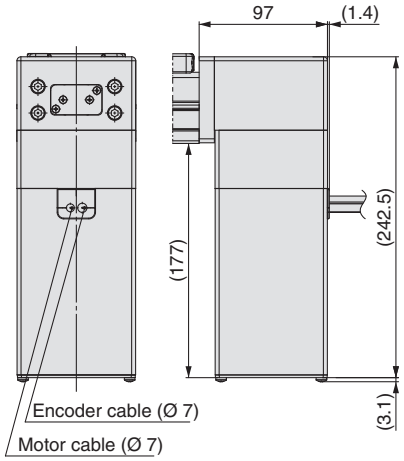
Dimensions: Belt Drive

LEFB40U/Motor bottom mounting type



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
∗2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
∗3 The Z-phase first detecting position from the stroke end of the motor side

Motor option: With lock



Dimensions

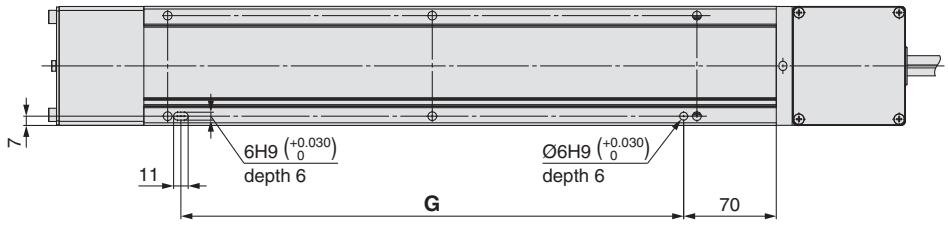
[mm]

Stroke	L	A	B	n	D	E
300	641.5	306	478	6	2	400
400	741.5	406	578	6	2	400
500	841.5	506	678	8	3	600
600	941.5	606	778	8	3	600
700	1041.5	706	878	10	4	800
800	1141.5	806	978	10	4	800
900	1241.5	906	1078	12	5	1000
1000	1341.5	1006	1178	12	5	1000
1100	1441.5	1106	1278	14	6	1200
1200	1541.5	1206	1378	14	6	1200
1300	1641.5	1306	1478	16	7	1400
1400	1741.5	1406	1578	16	7	1400
1500	1841.5	1506	1678	18	8	1600
1600	1941.5	1606	1778	18	8	1600
1700	2041.5	1706	1878	20	9	1800
1800	2141.5	1806	1978	20	9	1800
1900	2241.5	1906	2078	22	10	2000
2000	2341.5	2006	2178	22	10	2000
2500	2841.5	2506	2678	28	13	2600
3000	3341.5	3006	3178	32	15	3000

Dimensions: Belt Drive

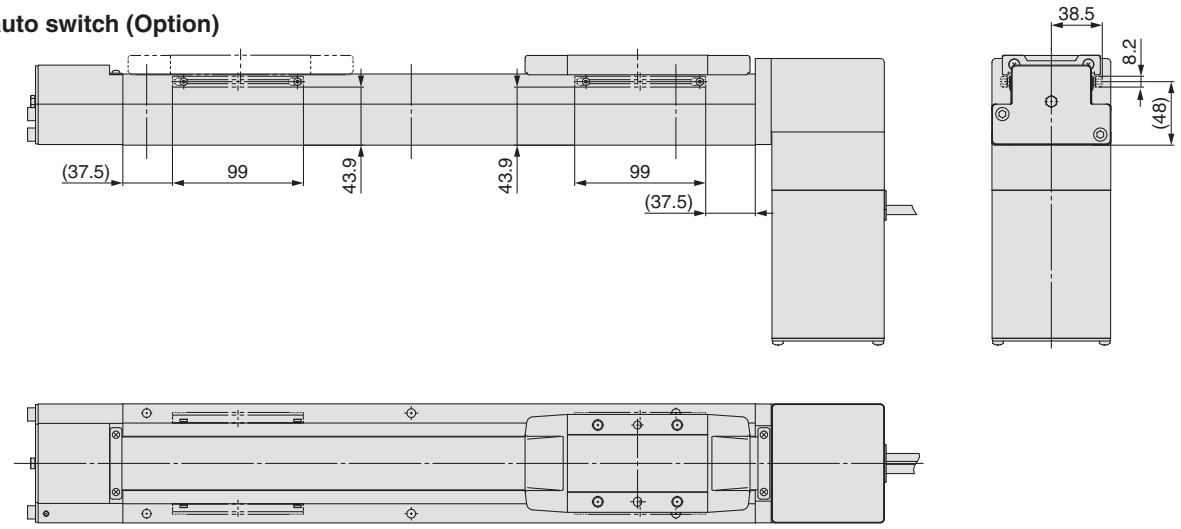
LEFB40U/Motor bottom mounting type

Positioning pin hole*1 (Option): Body bottom



*1 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

With auto switch (Option)



Dimensions [mm]

Stroke	G
300	380
400	380
500	580
600	580
700	780
800	780
900	980
1000	980
1100	1180
1200	1180
1300	1380
1400	1380
1500	1580
1600	1580
1700	1780
1800	1780
1900	1980
2000	1980
2500	2580
3000	2980

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

Support Guide/For Belt Drive

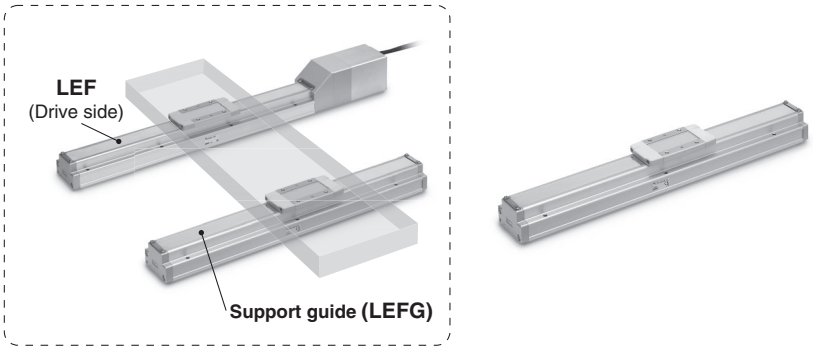
LEFG Series LEFG16, 25, 32, 40

RoHS

The support guide was designed to support workpieces with significant overhang.

- As the dimensions are the same as the LEF series body, installation is simple and contributes to a reduction in installation and assembly labour.
- The standard-equipped seal bands prevent grease from splashing and external foreign matter from entering.

Application example



How to Order

LEF **G** **32** – **BT** – **300** **N**

❶ ❷ ❸ ❹

G: Support guide

❶ Size

16
25
32
40

❷ Type of mounting pitch

Symbol	LEFG16	LEFG25	LEFG32	LEFG40	Note	
BT	●	●	●	—	Belt drive	Step motor/Servo motor (24 VDC)
BS	—	●	●	●		AC servo motor

❸ Stroke [mm]

300	300
to	to
3000	3000

❹ Grease application (Seal band part)

—	With
N*1	Without (Roller specification)

*1 Only the mounting pitch type "BT" is applicable. All "BS" are roller specifications.

Applicable Stroke Table

Belt Drive/BT Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Model \ Stroke [mm]	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
LEFG16-BT	●	—	—	—	●	—	●	—	●	—	●	—	●	—	●
LEFG25-BT	●	—	—	—	●	—	●	—	●	—	●	—	●	—	●
LEFG32-BT	●	—	—	—	●	—	●	—	●	—	●	—	●	—	●

Model \ Stroke [mm]	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
LEFG16-BT	—	—	—	—	—	—	—	—	—	—
LEFG25-BT	—	●	—	—	●	—	—	●	—	●
LEFG32-BT	—	●	—	—	●	—	—	●	—	●

Belt Drive/BS AC Servo Motor

Model \ Stroke [mm]	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
LEFG25-BS	●	—	●	—	●	—	●	—	●	—	●	—	●	—	●
LEFG32-BS	●	—	●	—	●	—	●	—	●	—	●	—	●	—	●
LEFG40-BS	●	—	●	—	●	—	●	—	●	—	●	—	●	—	●

Model \ Stroke [mm]	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
LEFG25-BS	●	●	●	●	●	●	●	●	●	●	—	—
LEFG32-BS	●	●	●	●	●	●	●	●	●	●	●	—
LEFG40-BS	●	●	●	●	●	●	●	●	●	●	●	●

Weight

Belt Drive/BT

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

Model \ Stroke [mm]	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
LEFG16-BT	0.62	—	—	—	0.86	—	0.98	—	1.1	—	1.22	—	1.34	—	1.46
LEFG25-BT	1.25	—	—	—	1.69	—	1.91	—	2.13	—	2.35	—	2.57	—	2.79
LEFG32-BT	1.92	—	—	—	2.56	—	2.88	—	3.20	—	3.52	—	3.84	—	4.16

Model \ Stroke [mm]	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
LEFG16-BT	—	—	—	—	—	—	—	—	—	—
LEFG25-BT	—	3.23	—	—	3.89	—	—	4.55	—	4.99
LEFG32-BT	—	4.80	—	—	5.76	—	—	6.72	—	7.36

Belt Drive/BS

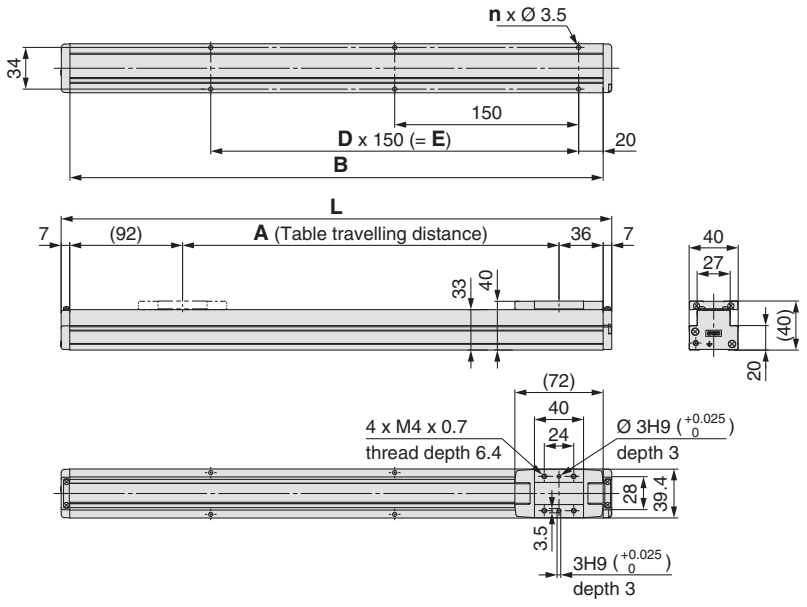
AC Servo Motor

Model \ Stroke [mm]	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
LEFG25-BS	1.25	—	—	—	1.69	—	1.91	—	2.13	—	2.35	—	2.57	—	2.79
LEFG32-BS	1.72	—	2.04	—	2.36	—	2.68	—	3.00	—	3.32	—	3.64	—	3.96
LEFG40-BS	2.72	—	3.15	—	3.58	—	4.01	—	4.44	—	4.87	—	5.30	—	5.73

Model \ Stroke [mm]	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
LEFG25-BS	3.01	3.23	3.45	3.67	3.89	4.11	4.33	4.55	4.77	4.99	—	—
LEFG32-BS	4.28	4.60	4.92	5.24	5.56	5.88	6.20	6.52	6.84	7.16	8.76	—
LEFG40-BS	6.16	6.59	7.02	7.45	7.88	8.31	8.74	9.17	9.60	10.03	12.18	14.33

Dimensions: Belt Drive

Step motor/Servo motor (24 VDC): LEFG16-BT



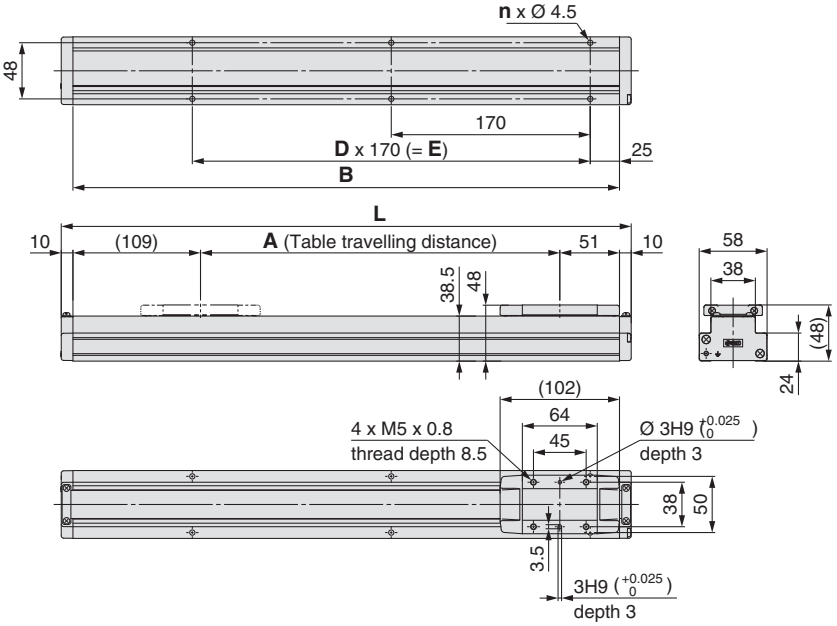
Dimensions

[mm]

Model	L	A	B	n	D	E
LEFG16-BT-300	449	307	435	6	2	300
LEFG16-BT-500	649	507	635	10	4	600
LEFG16-BT-600	749	607	735			
LEFG16-BT-700	849	707	835	12	5	750
LEFG16-BT-800	949	807	935	14	6	900
LEFG16-BT-900	1049	907	1035			
LEFG16-BT-1000	1149	1007	1135	16	7	1050

Dimensions: Belt Drive

Step motor/Servo motor (24 VDC): LEFG25-BT



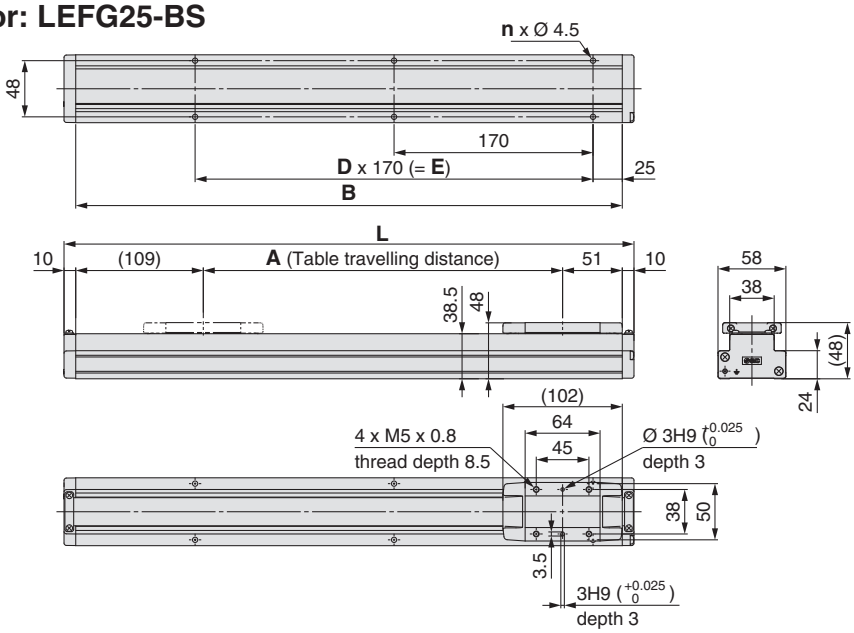
Dimensions [mm]

Model	L	A	B	n	D	E
LEFG25-BT-300	487	307	467	6	2	340
LEFG25-BT-500	687	507	667	8	3	510
LEFG25-BT-600	787	607	767	10	4	680
LEFG25-BT-700	887	707	867			
LEFG25-BT-800	987	807	967	12	5	850
LEFG25-BT-900	1087	907	1067	14	6	1020
LEFG25-BT-1000	1187	1007	1167			

Dimensions [mm]

Model	L	A	B	n	D	E
LEFG25-BT-1200	1387	1207	1367	16	7	1190
LEFG25-BT-1500	1687	1507	1667	20	9	1530
LEFG25-BT-1800	1987	1807	1967	24	11	1870
LEFG25-BT-2000	2187	2007	2167	26	12	2040

AC servo motor: LEFG25-BS



Dimensions [mm]

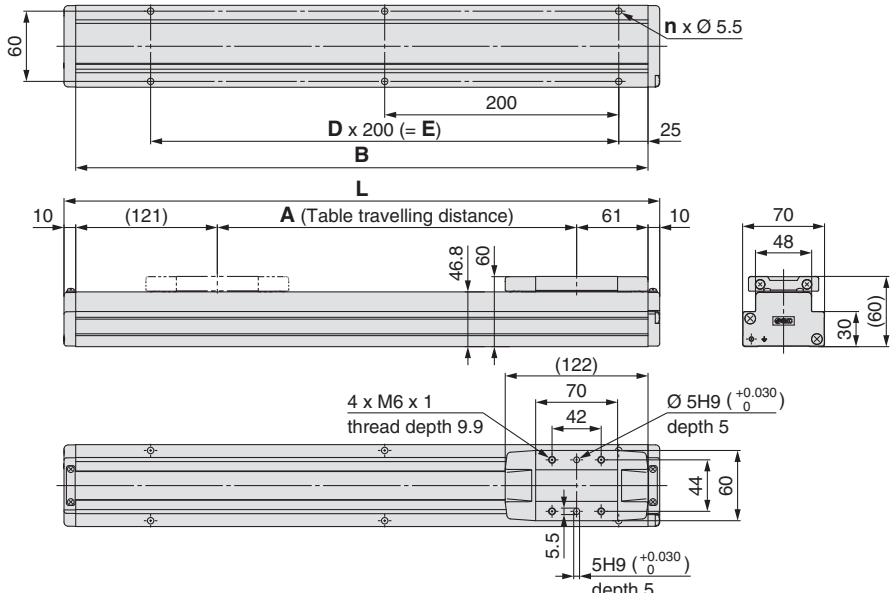
Model	L	A	B	n	D	E
LEFG25-BS-300	487	307	467	6	2	340
LEFG25-BS-400	587	407	567	8	3	510
LEFG25-BS-500	687	507	667			
LEFG25-BS-600	787	607	767	10	4	680
LEFG25-BS-700	887	707	867			
LEFG25-BS-800	987	807	967	12	5	850
LEFG25-BS-900	1087	907	1067	14	6	1020
LEFG25-BS-1000	1187	1007	1167			
LEFG25-BS-1100	1287	1107	1267	16	7	1190
LEFG25-BS-1200	1387	1207	1367			

Dimensions [mm]

Model	L	A	B	n	D	E
LEFG25-BS-1300	1487	1307	1467	18	8	1360
LEFG25-BS-1400	1587	1407	1567	20	9	1530
LEFG25-BS-1500	1687	1507	1667			
LEFG25-BS-1600	1787	1607	1767	22	10	1700
LEFG25-BS-1700	1887	1707	1867			
LEFG25-BS-1800	1987	1807	1967	24	11	1870
LEFG25-BS-1900	2087	1907	2067			
LEFG25-BS-2000	2187	2007	2167	26	12	2040

Dimensions: Belt Drive

Step motor/Servo motor (24 VDC): LEFG32-BT



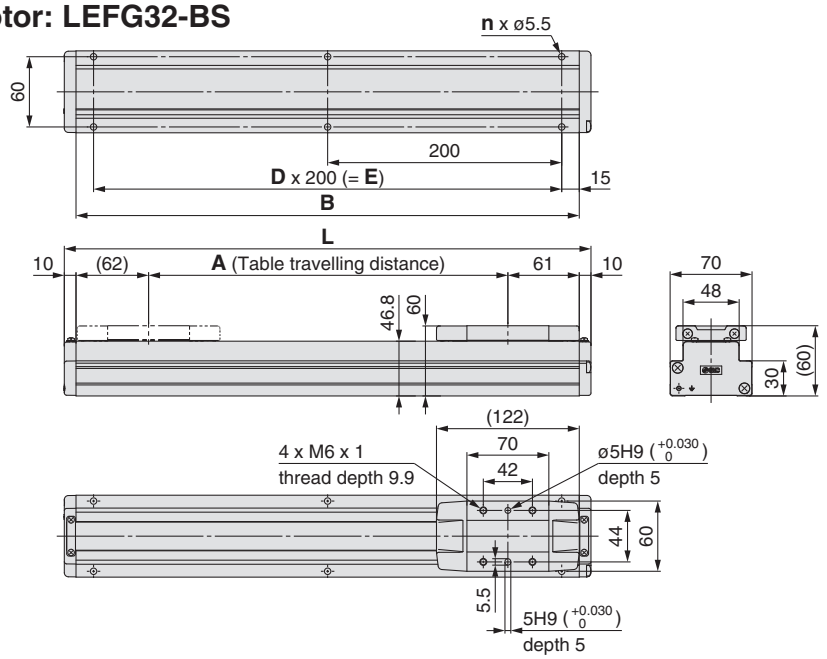
Dimensions [mm]

Model	L	A	B	n	D	E
LEFG32-BT-300	509	307	489	6	2	400
LEFG32-BT-500	709	507	689	8	3	600
LEFG32-BT-600	809	607	789			
LEFG32-BT-700	909	707	889	10	4	800
LEFG32-BT-800	1009	807	989			
LEFG32-BT-900	1109	907	1089	12	5	1000
LEFG32-BT-1000	1209	1007	1189			

Dimensions [mm]

Model	L	A	B	n	D	E
LEFG32-BT-1200	1409	1207	1389	14	6	1200
LEFG32-BT-1500	1709	1507	1689	18	8	1600
LEFG32-BT-1800	2009	1807	1989	20	9	1800
LEFG32-BT-2000	2209	2007	2189	22	10	2000

AC servo motor: LEFG32-BS



Dimensions [mm]

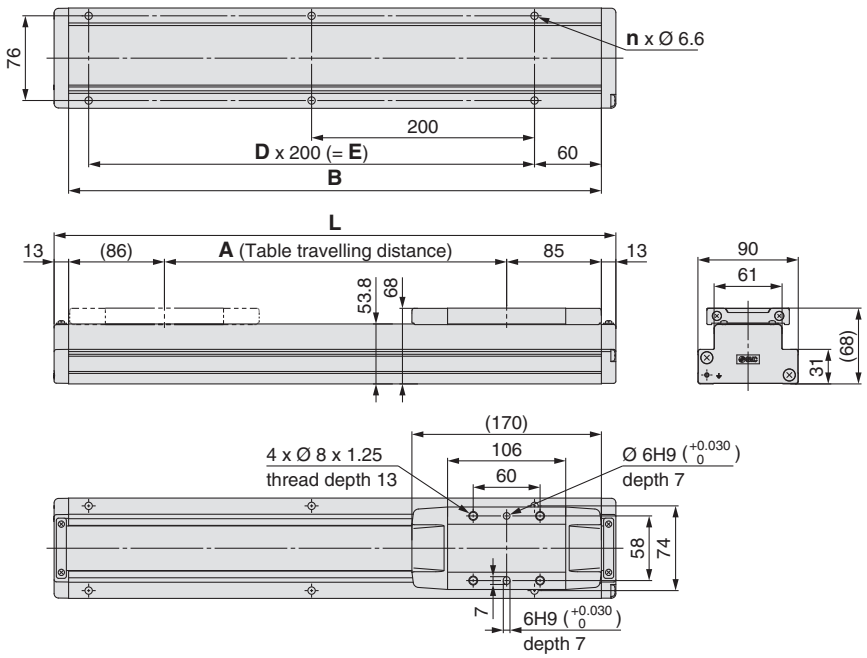
Model	L	A	B	n	D	E
LEFG32-BS-300	450	307	430	6	2	400
LEFG32-BS-400	550	407	530			
LEFG32-BS-500	650	507	630	8	3	600
LEFG32-BS-600	750	607	730			
LEFG32-BS-700	850	707	830	10	4	800
LEFG32-BS-800	950	807	930			
LEFG32-BS-900	1050	907	1030	12	5	1000
LEFG32-BS-1000	1150	1007	1130			
LEFG32-BS-1100	1250	1107	1230	14	6	1200
LEFG32-BS-1200	1350	1207	1330			

Dimensions [mm]

Model	L	A	B	n	D	E
LEFG32-BS-1300	1450	1307	1430	16	7	1400
LEFG32-BS-1400	1550	1407	1530			
LEFG32-BS-1500	1650	1507	1630	18	8	1600
LEFG32-BS-1600	1750	1607	1730			
LEFG32-BS-1700	1850	1707	1830	20	9	1800
LEFG32-BS-1800	1950	1807	1930			
LEFG32-BS-1900	2050	1907	2030	22	10	2000
LEFG32-BS-2000	2150	2007	2130			
LEFG32-BS-2500	2650	2507	2630	28	13	2600

Dimensions: Belt Drive

AC servo motor: LEFG40-BS



Dimensions [mm]

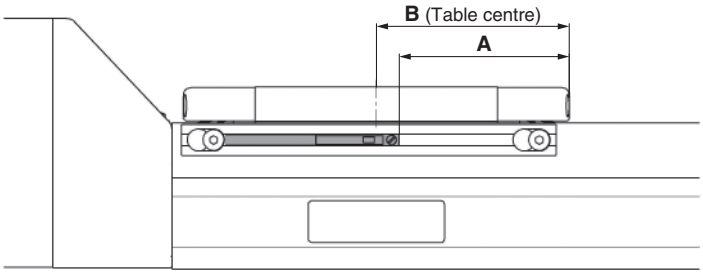
Model	L	A	B	n	D	E
LEFG40-BS-300	504	307	478	6	2	400
LEFG40-BS-400	604	407	578			
LEFG40-BS-500	704	507	678	8	3	600
LEFG40-BS-600	804	607	778			
LEFG40-BS-700	904	707	878	10	4	800
LEFG40-BS-800	1004	807	978			
LEFG40-BS-900	1104	907	1078	12	5	1000
LEFG40-BS-1000	1204	1007	1178			
LEFG40-BS-1100	1304	1107	1278	14	6	1200
LEFG40-BS-1200	1404	1207	1378			

Dimensions [mm]

Model	L	A	B	n	D	E
LEFG40-BS-1300	1504	1307	1478	16	7	1400
LEFG40-BS-1400	1604	1407	1578			
LEFG40-BS-1500	1704	1507	1678	18	8	1600
LEFG40-BS-1600	1804	1607	1778			
LEFG40-BS-1700	1904	1707	1878	20	9	1800
LEFG40-BS-1800	2004	1807	1978			
LEFG40-BS-1900	2104	1907	2078	22	10	2000
LEFG40-BS-2000	2204	2007	2178			
LEFG40-BS-2500	2704	2507	2678	28	13	2600
LEFG40-BS-3000	3204	3007	3178	32	15	3000

Auto Switch Mounting

Auto Switch Mounting Position



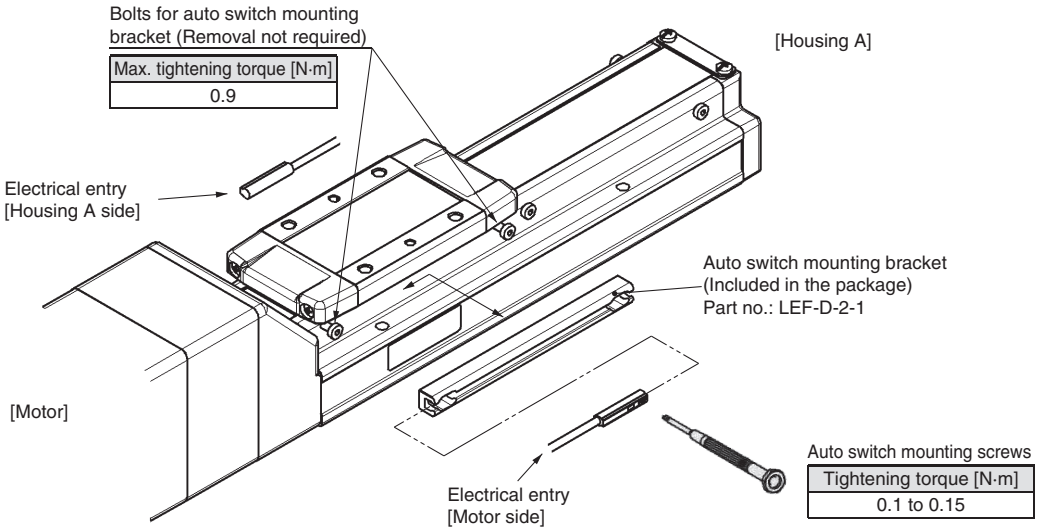
[mm]

Model	Size	A	B	Operating range
LEFS LEFB	25	45	51	4.9
	32	55	61	3.9
	40	79	85	5.3

* The applicable auto switch is D-M9 (N/P/B) (W) (M/L/Z).
* The operating range is a guideline including hysteresis, not meant to be guaranteed. There may be large variations depending on the ambient environment.
* Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Mounting

Rotate the bolts for auto switch mounting bracket three to four times to loosen them (Removing them is not required), and slide and remove the auto switch mounting bracket. Then, insert a switch into the groove on the mounting bracket.
As the mounting bolts for installing the product body interfere with the auto switch mounting bracket, mount the auto switch mounting bracket after installing the product body. After installing product body, tighten the bolts for the auto switch mounting bracket.



* The applicable auto switch is D-M9 (N/P/B) (W) (M/L/Z).
* The direction of the lead wire entry is specified. If it is mounted in the opposite direction, the auto switch may malfunction.
* Tighten the auto switch mounting screws (provided together with the auto switch), using a precision screwdriver with a handle diameter of approximately 5 to 6 mm.
* If more than two auto switch mounting brackets are required, please order them separately. All eight bolts for attaching the auto switch mounting bracket at the stroke end are tightened into the body when the product is shipped.
  For 50-mm stroke type, only four bolts are tightened on the motor side.

Solid State Auto Switch
Direct Mounting Type
D-M9N/D-M9P/D-M9B

Refer to the SMC website: https://www.smc.eu for details on products that are compliant with international standards.

Grommet

- **2-wire load current is reduced (2.5 to 40 mA).**
- **Using flexible cable as standard spec.**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□, D-M9□V (With indicator light)			
Auto switch model	D-M9N	D-M9P	D-M9B
Electrical entry direction	In-line		
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 illuminates when turned ON.		
Standard	CE marking, RoHS		

⚠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.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9N	D-M9P	D-M9B
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

∗ Refer to the https://www.smc.eu for solid state auto switch common specifications.
∗ Refer to the https://www.smc.eu for lead wire lengths.

Weight

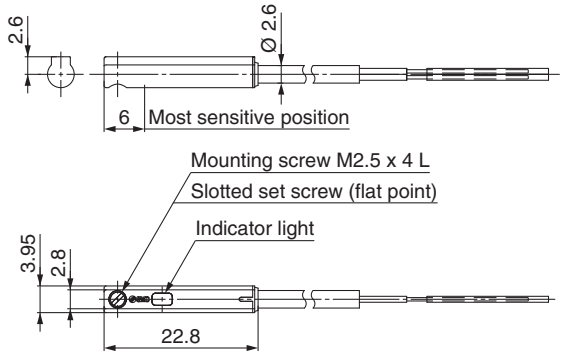
[g]

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

Dimensions

[mm]

D-M9□

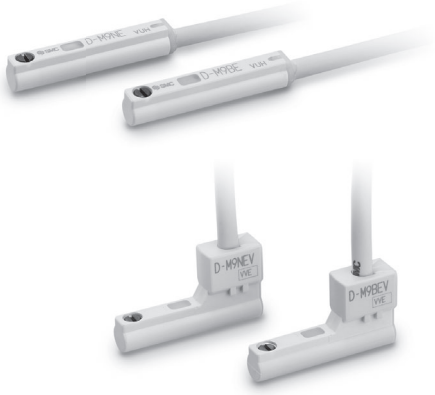


Normally Closed Solid State Auto Switch Direct Mounting Type
D-M9NE(V)/D-M9PE(V)/D-M9BE(V)

Refer to the SMC website: https://www.smc.eu for details on products that are compliant with international standards.

Grommet

- **Output signal turns on when no magnetic force is detected.**
- **Can be used for the actuator adopted by the solid state auto switch D-M9 series (excluding special order products)**



⚠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□E, D-M9□EV (With indicator light)						
Auto switch model	D-M9NE	D-M9NEV	D-M9PE	D-M9PEV	D-M9BE	D-M9BEV
Electrical entry direction	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 illuminates when turned ON.					
Standard	CE marking, RoHS					

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

∗ Refer to the https://www.smc.eu for solid state auto switch common specifications.
∗ Refer to the https://www.smc.eu for lead wire lengths.

Weight

[g]

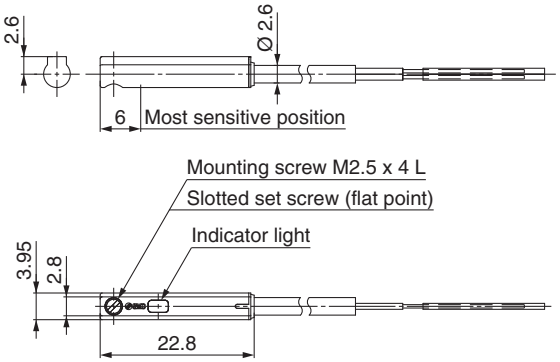
Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Lead wire length	0.5 m (—)	8		7
	1 m (**M**)∗1	14		13
	3 m (**L**)	41		38
	5 m (**Z**)∗1	68		63

∗1 The 1 m and 5 m options are produced upon receipt of order.

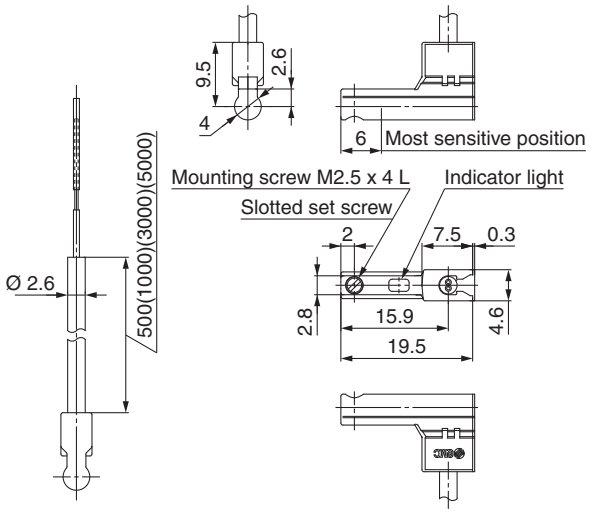
Dimensions

[mm]

D-M9□E



D-M9□EV



SMC

2-Colour Indicator Solid State Auto Switch Direct Mounting Type
D-M9NW/D-M9PW/D-M9BW

Refer to the SMC website: https://www.smc.eu for details on products that are compliant with international standards.

Grommet

- **2-wire load current is reduced (2.5 to 40 mA).**
- **Using flexible cable as standard spec.**
- **The proper operating range can be determined by the colour 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-M9PW	D-M9BW
Electrical entry direction	In-line		
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 illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking, RoHS		

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NW	D-M9PW	D-M9BW
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

∗ Refer to the https://www.smc.eu for solid state auto switch common specifications.
∗ Refer to the https://www.smc.eu for lead wire lengths.

Weight

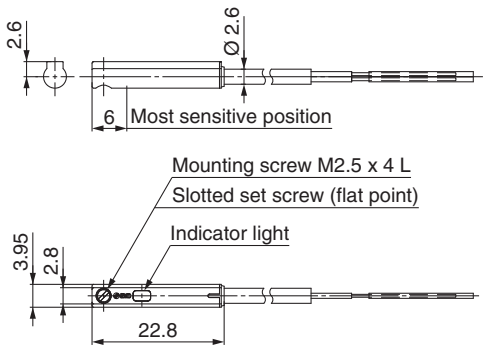
[g]

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

Dimensions

[mm]

D-M9□W



Environment

Clean Room Specification

● ISO Class 4*1 (ISO 14644-1)

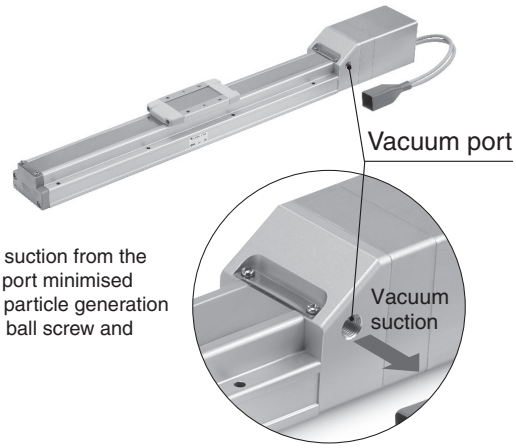
- Built-in vacuum piping
- It is possible to mount the main body without removing the external cover, etc.
- Body-integrated linear guide specification

*1 Changes depending on the suction flow rate

Slider Type
Ball Screw Drive/11-LEFS Series

Step Motor (Servo/24 VDC) Servo Motor (24 VDC) **Type**
p. 177

AC Servo Motor **Type** p. 186



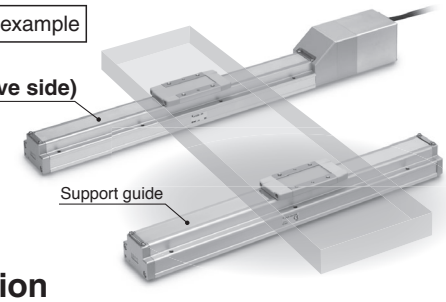
Vacuum suction from the vacuum port minimised external particle generation from the ball screw and guide.

Support Guide/11-LEFG Series
p. 193

The support guide was designed to support workpieces with significant overhang.

- As the dimensions are the same as the LEF series body, installation is simple and contributes to a reduction in installation and assembly labour.
- The standard-equipped seal bands prevent grease from splashing and external foreign matter from entering.

Application example



⚠Caution

After installing the actuator on the drive side, align it with the support guide. If the mounting flatness exceeds 0 . 1 , install a floating mechanism separately on the workpiece installation surface (table).

Secondary Battery Compatible

● Copper (Cu) and zinc (Zn) free*1

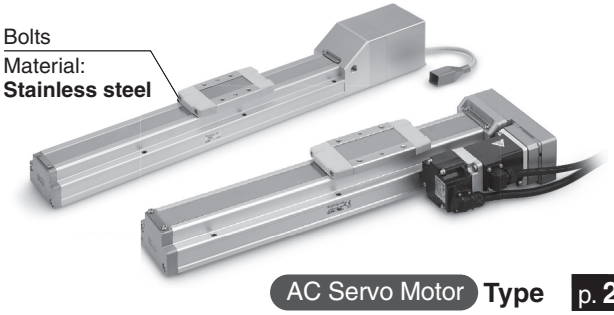
*1 Excludes motors, cables, controllers/drivers

● Compatible with dew points as low as -70 °C

Uses grease compatible with low dew points

Slider Type
Ball Screw Drive/25A-LEFS

Step Motor (Servo/24 VDC) Servo Motor (24 VDC) **Type**
p. 197



AC Servo Motor **Type** p. 200

Motor type \ Size	16	25	32	40
Step motor (Servo/24 VDC)	●	●	●	●
Servo motor (24 VDC)	●	●		
AC servo motor		●	●	●

* Copper and zinc materials are used for the motors, cables, controllers/drivers.

Particle Generation Characteristics

11-LEFS Series ▶p. 177, 186

Particle Generation Measuring Method

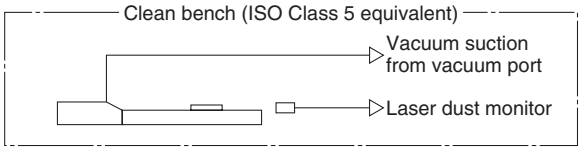
The particle generation data for SMC Clean Series are measured in the following test method.

■ 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 using the light scattering 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)



Particle generation measuring circuit

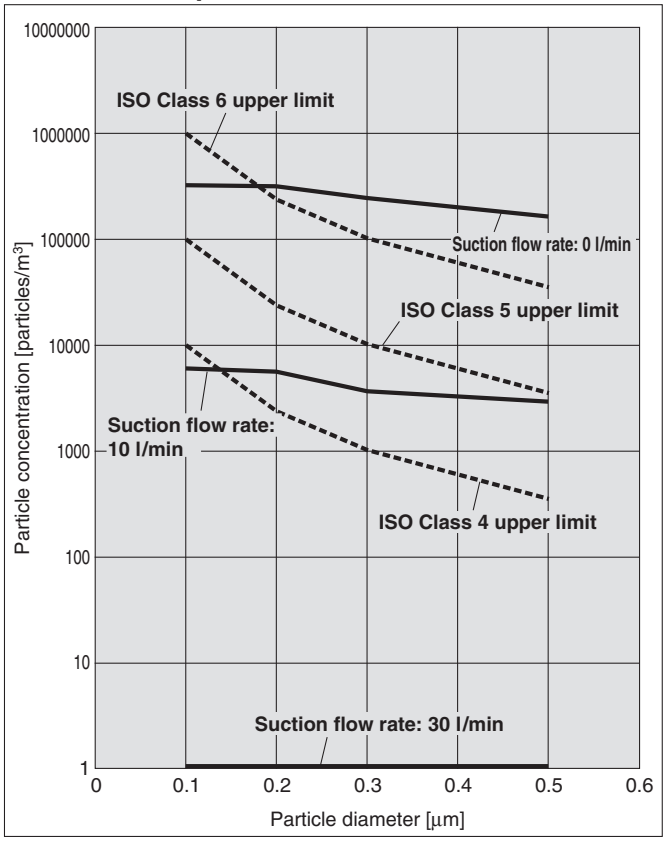
■ Evaluation Method

To obtain the measured values of particle concentration, the accumulated value*1 of particles captured every 5 minutes, by the laser dust monitor, is converted into the particle concentration in every 1 m^3.
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*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.

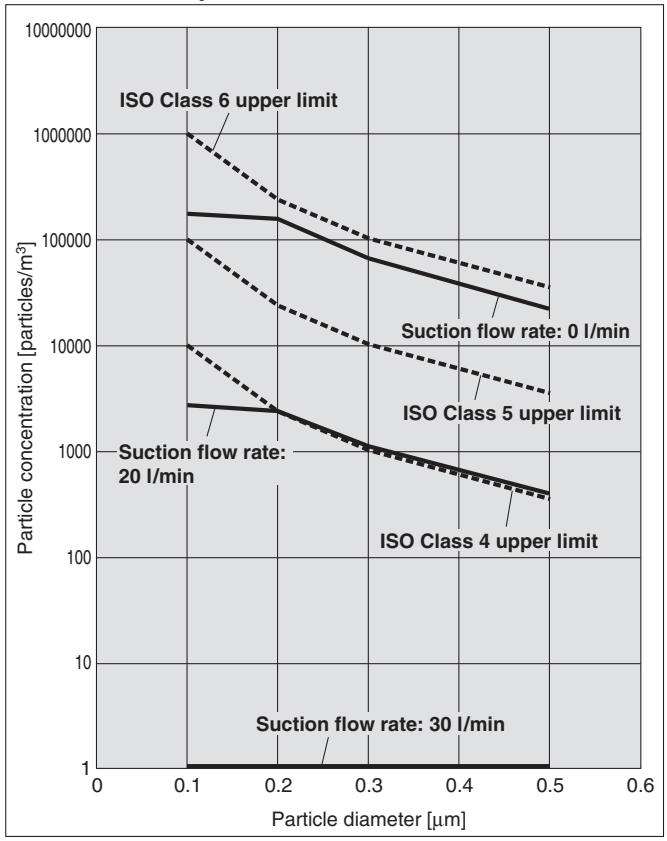
∗1 Sampling air flow rate: Number of particles contained in 141.5 L (ANR) of air
∗2 Actuator: 1 million cycles
∗ The particle generation characteristics (pages 174 and 175) provide a guide for selection but is not guaranteed.
∗ When the suction flow rate is 0 l/min, the particle concentration is measured during operation without suction.

Particle Generation Characteristics
Step Motor (Servo/24 VDC), Servo Motor (24 VDC)

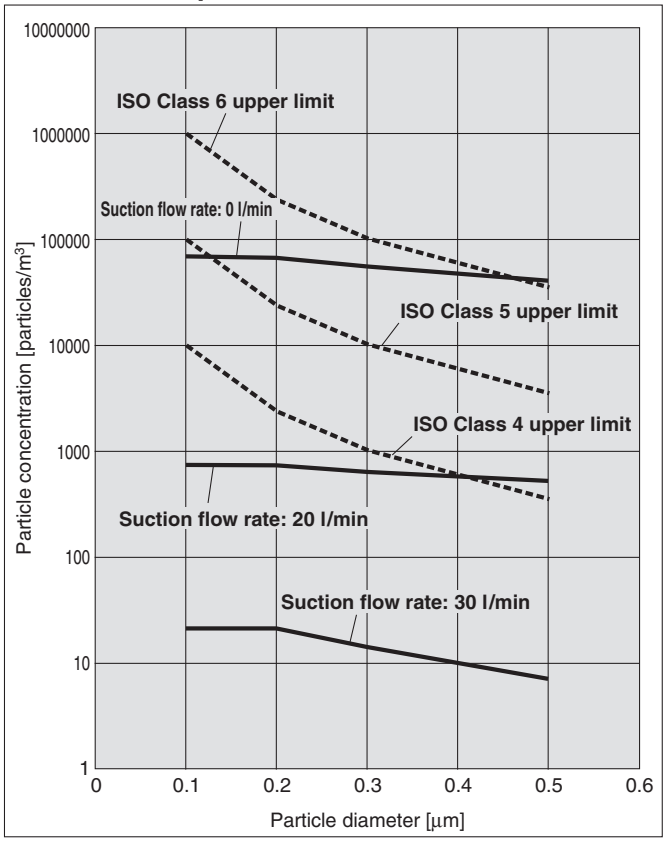
11-LEFS16 Speed 500 mm/s



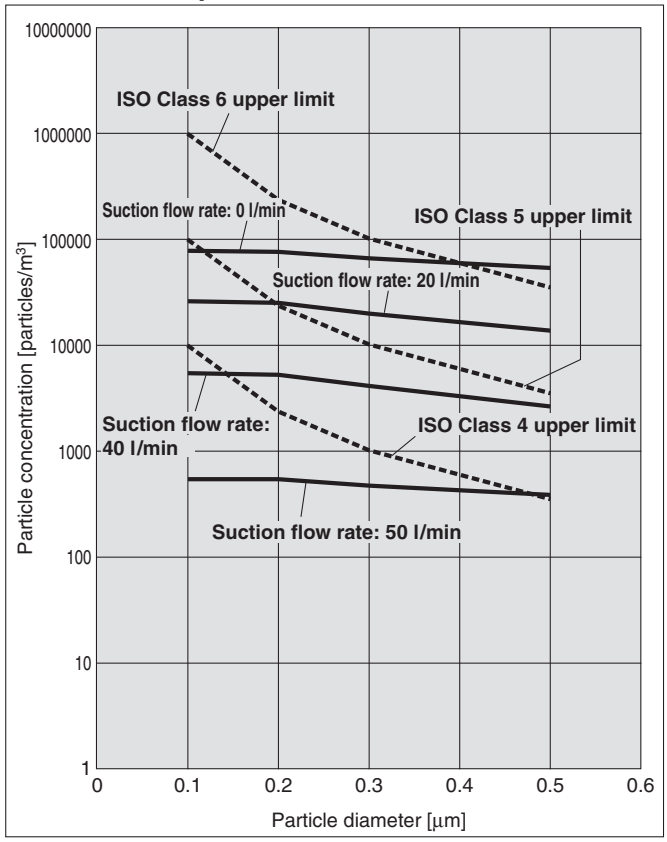
11-LEFS25 Speed 500 mm/s



11-LEFS32 Speed 500 mm/s

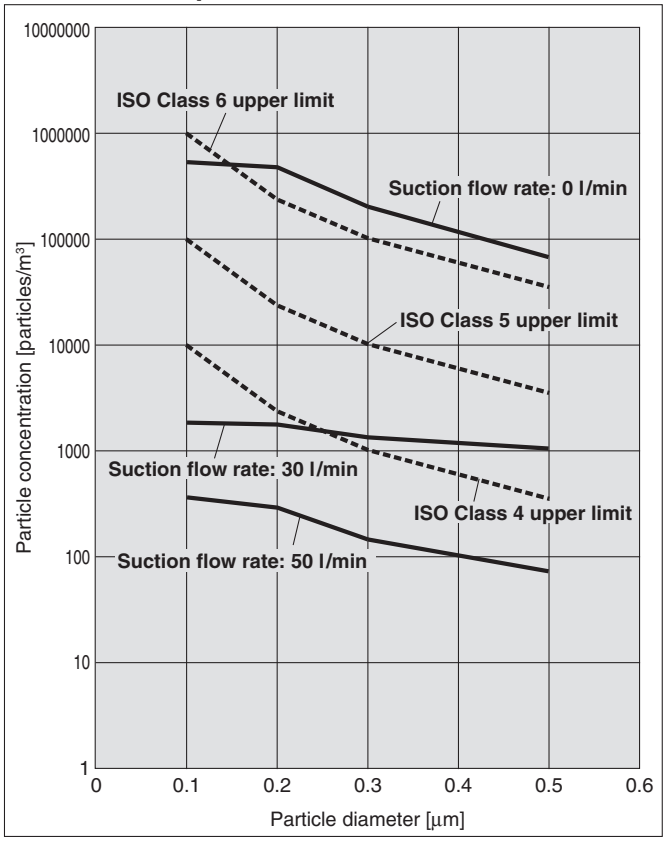


11-LEFS40 Speed 500 mm/s

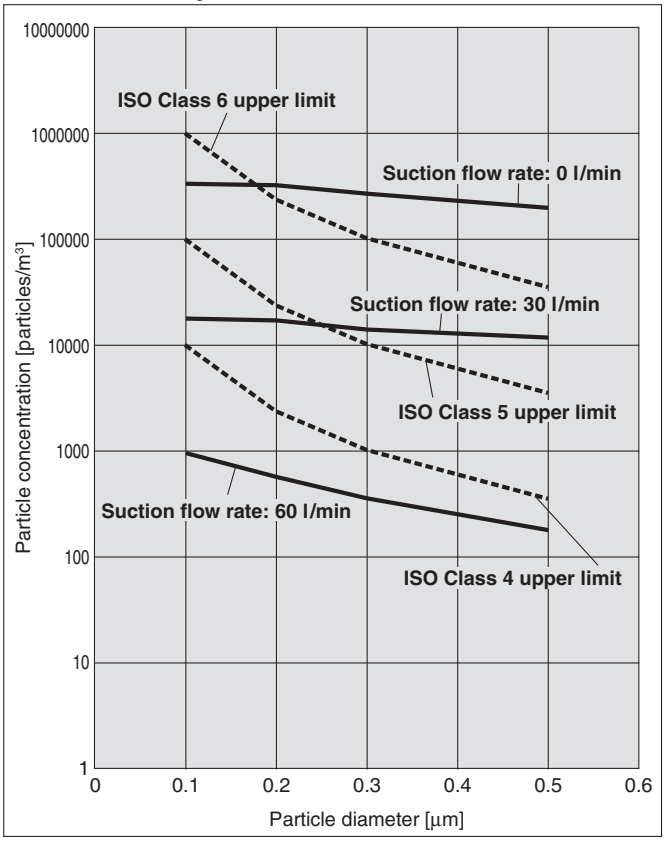


Particle Generation Characteristics
AC Servo Motor (100/200/400 W)

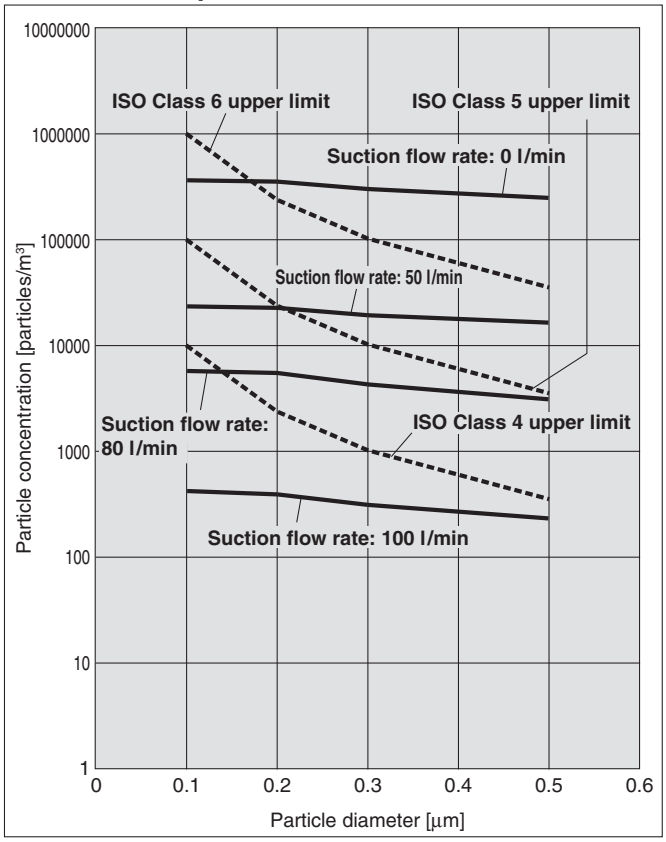
11-LEFS25 Speed 900 mm/s



11-LEFS32 Speed 1000 mm/s



11-LEFS40 Speed 1000 mm/s

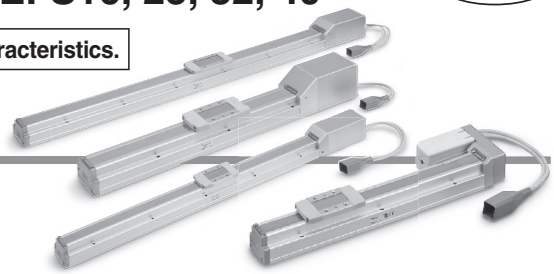


Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Electric Actuator/Slider Type
Ball Screw Drive Clean Room Specification

11-LEFS Series LEFS16, 25, 32, 40

Refer to page 35 for model selection and page 173 for particle generation characteristics.



How to Order

11 – LEFS H 25 A B – 200 ❻ ❼ K – S1

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

Clean Series

11	Vacuum type

LEC□ Series

6P ❿ **1** ⓫ ⓬

JXC□ Series

CD17T ❿

For details on controllers, refer to page 178.

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

16
25
32
40

❸ Motor type

Symbol	Type	Applicable size				Compatible controller/driver
		LEFS16	LEFS25	LEFS32	LEFS40	
—	Step motor (Servo/24 VDC)	●	●	●	●	LECP1 JXCE1 LECPA JXC91 JXCP1 JXCD1 JXCL1
A	Servo motor (24 VDC)	●	●	—	—	LECA6

❹ Lead [mm]

Symbol	11-LEFS16	11-LEFS25	11-LEFS32	11-LEFS40
A	10	12	16	20
B	5	6	8	10

❺ Stroke*1 [mm]

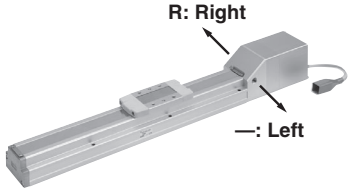
Stroke	Note	
	Size	Applicable stroke
50 to 500	16	50, 100, 150, 200, 250, 300, 350, 400, 450, 500
50 to 600	25	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600
50 to 800	32	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800
150 to 1000	40	150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000

❻ Motor option

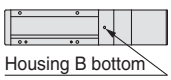
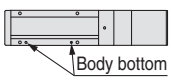
—	Without option
B	With lock

❼ Vacuum port

—	Left
R	Right



❽ Positioning pin hole

—	Housing B bottom*2	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

❾ Actuator cable type/length*4

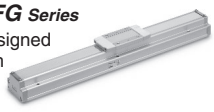
Standard cable [m]	
—	None
S1	1.5*6
S3	3*6
S5	5*6

Robotic cable			[m]
R1	1.5	RA	10*3
R3	3	RB	15*3
R5	5	RC	20*3
R8	8*3		

Support Guide/*11-LEFG Series*

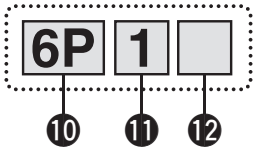
The support guide was designed to support workpieces with significant overhang.

p. 193



For auto switches, refer to pages 167 to 170.

LEC□ Series (For details, refer to page 179.)



⑩ Controller/Driver type*5

—	Without controller/driver	
6N	**LECA6** (Step data input type)	NPN
6P		PNP
1N	**LECP1***6 (Programless type)	NPN
1P		PNP
AN	**LECPA***6 *7 (Pulse input type)	NPN
AP		PNP

⑪ I/O cable length*8, Communication plug

—	Without cable (Without communication plug connector)
1	1.5 m
3	3 m*9
5	5 m*9

⑫ Controller/Driver mounting

—	Screw mounting
D	DIN rail*10

JXC□ Series (For details, refer to page 179.)

⑩ Controller

—	Without controller
C□1□□	With controller

Communication protocol

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

For single axis

Mounting

7	Screw mounting
8*10	DIN rail

Communication plug connector for DeviceNet™*11

—	Without plug connector
S	Straight type
T	T-branch type

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 Refer to the body mounting example on page 203 for the mounting method.
*3 Produced upon receipt of order (Robotic cable only)
*4 The standard cable should only be used on fixed parts. For use on moving parts, select the robotic cable.
*5 For details on controllers/drivers and compatible motors, refer to the compatible controller/driver on the next page.
*6 Only available for the motor type "Step motor"
*7 When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-□) on page 234 separately.
*8 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 213 (For LECA6), page 227 (For LECP1), or page 234 (For LECPA) if I/O cable is required.
*9 When "Pulse input type" is selected for controller/driver types, pulse input usable only with differential. Only 1.5 m cables usable with open collector
*10 The DIN rail is not included. Order it separately.
*11 Select "—" for anything other than DeviceNet™.

⚠Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEF series and the controller LEC/JXC series.
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.

② For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 213 for the noise filter set. Refer to the LECA series Operation Manual for installation.

[UL-compliant products (For the LEC series)]

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

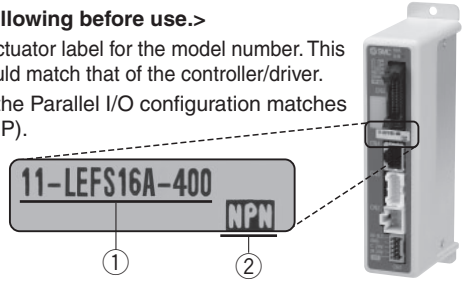
The actuator and controller/driver are sold as a package.

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

<Check the following before use.>

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

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



* Refer to the Operation Manual for using the products. Please download it via our website, https://www.smc.eu

Compatible Controller/Driver

LEC□ Series

Type	Step data input type 	Programless type 	Pulse input type 
Series	**LECA6**	**LECP1**	**LECPA**
Features	Value (Step data) input Standard controller	Capable of setting up operation (step data) without using a PC or teaching box	Operation by pulse signals
Compatible motor	Servo motor (24 VDC)	Step motor (Servo/24 VDC)	
Max. number of step data	64 points	14 points	—
Power supply voltage	24 VDC		
Reference page	205	221	228

JXC□ Series

Type	EtherCAT® direct input type 	EtherNet/IP™ direct input type 	PROFINET direct input type 	DeviceNet™ direct input type 	IO-Link direct input type 
Series	**JXCE1**	**JXC91**	**JXCP1**	**JXCD1**	**JXCL1**
Features	EtherCAT® direct input	EtherNet/IP™ direct input	PROFINET direct input	DeviceNet™ direct input	IO-Link direct input
Compatible motor	Step motor (Servo/24 VDC)				
Max. number of step data	64 points				
Power supply voltage	24 VDC				
Reference page	246				

Specifications

Step Motor (Servo/24 VDC)

Model				11-LEFS16		11-LEFS25		11-LEFS32		11-LEFS40	
Actuator specifications	Stroke [mm]*1			50 to 500		50 to 600		50 to 800		150 to 1000	
	Work load [kg] *2	Horizontal	LECP1 JXCE1/91/P1/D1	14	15	25	30	45	50	55	65
			LECPA/JXC□$^{2}_{3}$	9	10	20	20	40	45	50	60
		Vertical		2	4	7.5	15	10	20	2	23
	Speed [mm/s]*2			10 to 500	5 to 250	12 to 500	6 to 250	16 to 500	8 to 250	20 to 500	10 to 250
	Max. acceleration/deceleration [mm/s^2]			3000							
	Positioning repeatability [mm]		Basic type	±0.02							
			High-precision type	±0.015							
	Lost motion*3 [mm]		Basic type	0.1 or less							
			High-precision type	0.05 or less							
	Lead [mm]			10	5	12	6	16	8	20	10
	Impact/Vibration resistance [m/s^2]*4			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)							
	Cleanliness class*5			ISO Class 4 (ISO 14644-1)							
	Grease	Ball screw /Linear guide portion		Low particle generation grease							
Electric specifications	Motor size			□28		□42		□56.4			
	Motor type			Step motor (Servo/24 VDC)							
	Encoder			Incremental A/B phase (800 pulse/rotation)							
	Rated voltage [V]			24 VDC ±10 %							
	Power consumption [W]*6			22		38		50		100	
	Standby power consumption when operating [W]*7			18		16		44		43	
	Max. instantaneous power consumption [W]*8			51		57		123		141	
Lock unit specifications	Type*9			Non-magnetising lock							
	Holding force [N]			20	39	78	157	108	216	113	225
	Power consumption [W]*10			2.9		5		5		5	
	Rated voltage [V]			24 VDC ±10 %							

∗1 Please consult with SMC for non-standard strokes as they are produced as special orders.
∗2 Speed changes according to the controller/driver type and work load. Check “Speed–Work Load Graph (Guide)” on pages 36 and 37.
Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10 % for each 5 m.
∗3 A reference value for correcting an error in reciprocal operation
∗4 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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
∗5 The amount of particle generation changes according to the operating conditions and suction flow rate. Refer to the particle generation characteristics for details.
∗6 The power consumption (including the controller) is for when the actuator is operating.
∗7 The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during the operation.
∗8 The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.
∗9 With lock only
∗10 For an actuator with lock, add the power consumption for the lock.

Specifications

Servo Motor (24 VDC)

Model			11-LEFS16A		11-LEFS25A	
Actuator specifications	Stroke [mm]*1		50 to 500		50 to 600	
	Work load*2 [kg]	Horizontal	7	10	11	18
		Vertical	2	4	2.5	5
	Speed [mm/s]*2		1 to 500	1 to 250	2 to 500	1 to 250
	Max. acceleration/deceleration [mm/s²]		3000			
	Positioning repeatability [mm]	Basic type	±0.02			
		High-precision type	±0.015			
	Lost motion*3 [mm]	Basic type	0.1 or less			
		High-precision type	0.05 or less			
	Lead [mm]		10	5	12	6
	Impact/Vibration resistance [m/s²]*4		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)			
	Cleanliness class*5		ISO Class 4 (ISO 14644-1)			
	Grease	Ball screw /Linear guide portion	Low particle generation grease			
Electric specifications	Motor size		□28		□42	
	Motor output [W]		30		36	
	Motor type		Servo motor (24 VDC)			
	Encoder		Incremental A/B (800 pulse/rotation)/Z phase			
	Rated voltage [V]		24 VDC ±10 %			
	Power consumption [W]*6		63		102	
	Standby power consumption when operating [W]*7		Horizontal 4/Vertical 9		Horizontal 4/Vertical 9	
	Max. instantaneous power consumption [W]*8		70		113	
Lock unit specifications	Type*9		Non-magnetising lock			
	Holding force [N]		20	39	78	157
	Power consumption [W]*10		2.9		5	
	Rated voltage [V]		24 VDC ±10 %			

∗1 Please consult with SMC for non-standard strokes as they are produced as special orders.
∗2 Check "Speed–Work Load Graph (Guide)" on page 39 for details. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10 % for each 5 m.
∗3 A reference value for correcting an error in reciprocal operation
∗4 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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
∗5 The amount of particle generation changes according to the operating conditions and suction flow rate. Refer to the particle generation characteristics for details.
∗6 The power consumption (including the controller) is for when the actuator is operating.
∗7 The standby power consumption when operating (including the controller) is for when the actuator is stopped in the set position during operation.
∗8 The maximum instantaneous power consumption (including the controller) is for when the actuator is operating. This value can be used for the selection of the power supply.
∗9 With lock only
∗10 For an actuator with lock, add the power consumption for the lock.

Weight

Series	11-LEFS16									
Stroke [mm]	50	100	150	200	250	300	350	400	450	500
Product weight [kg]	0.83	0.90	0.98	1.05	1.13	1.20	1.28	1.35	1.43	1.50
Additional weight with lock [kg]	0.12									

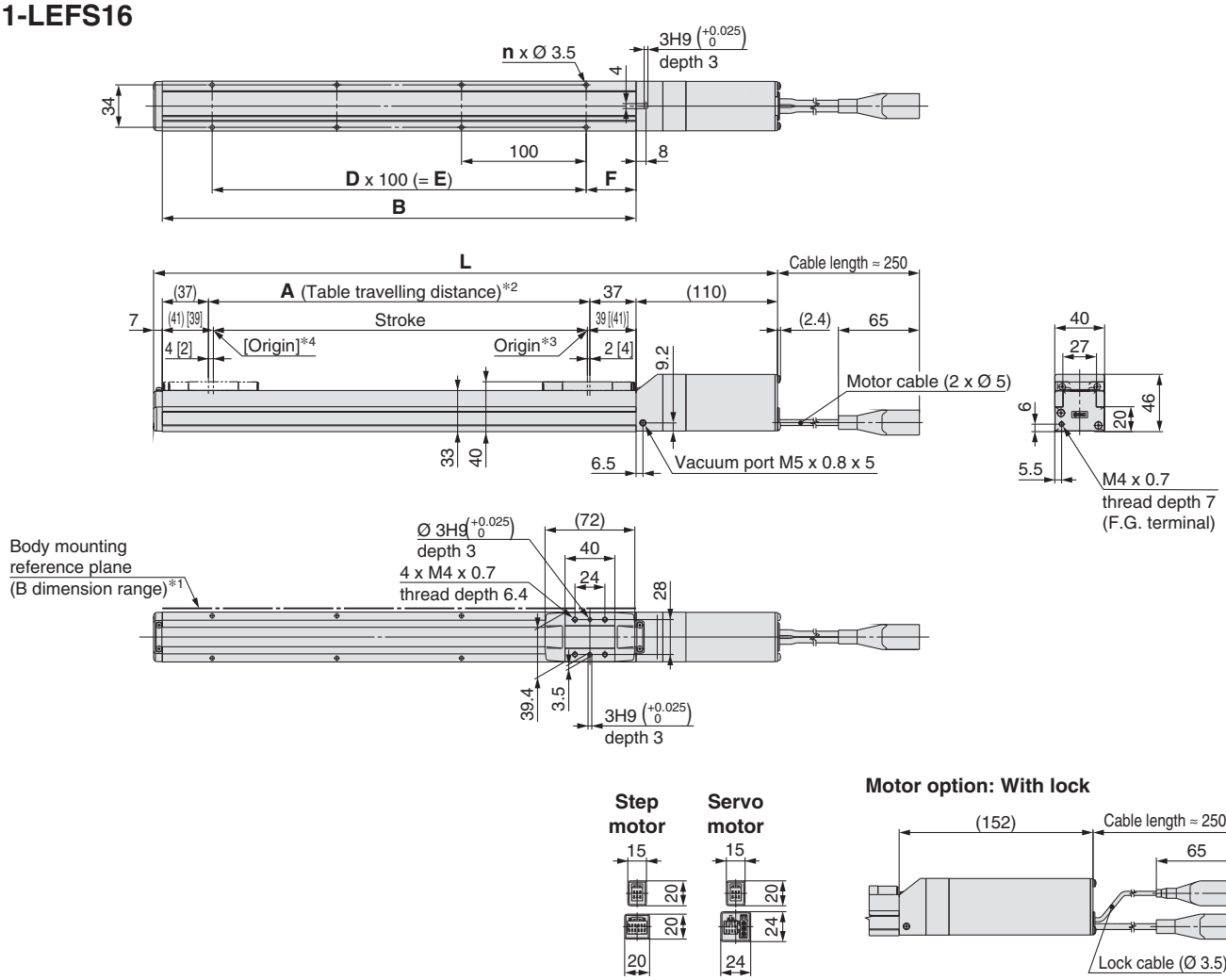
Series	11-LEFS25											
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600
Product weight [kg]	1.70	1.84	1.98	2.12	2.26	2.40	2.54	2.68	2.82	2.96	3.10	3.24
Additional weight with lock [kg]	0.26											

Series	11-LEFS32															
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Product weight [kg]	3.15	3.35	3.55	3.75	3.95	4.15	4.35	4.55	4.75	4.95	5.15	5.35	5.55	5.75	5.95	6.15
Additional weight with lock [kg]	0.53															

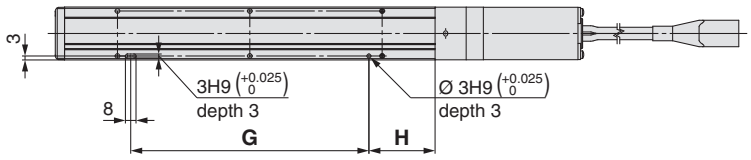
Series	11-LEFS40																	
Stroke [mm]	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Product weight [kg]	5.37	5.65	5.93	6.21	6.49	6.77	7.15	7.33	7.61	7.89	8.17	8.45	8.75	9.01	9.29	9.57	9.85	10.13
Additional weight with lock [kg]	0.53																	

Dimensions: Ball Screw Drive

11-LEFS16



Positioning pin hole*5 (Option): Body bottom



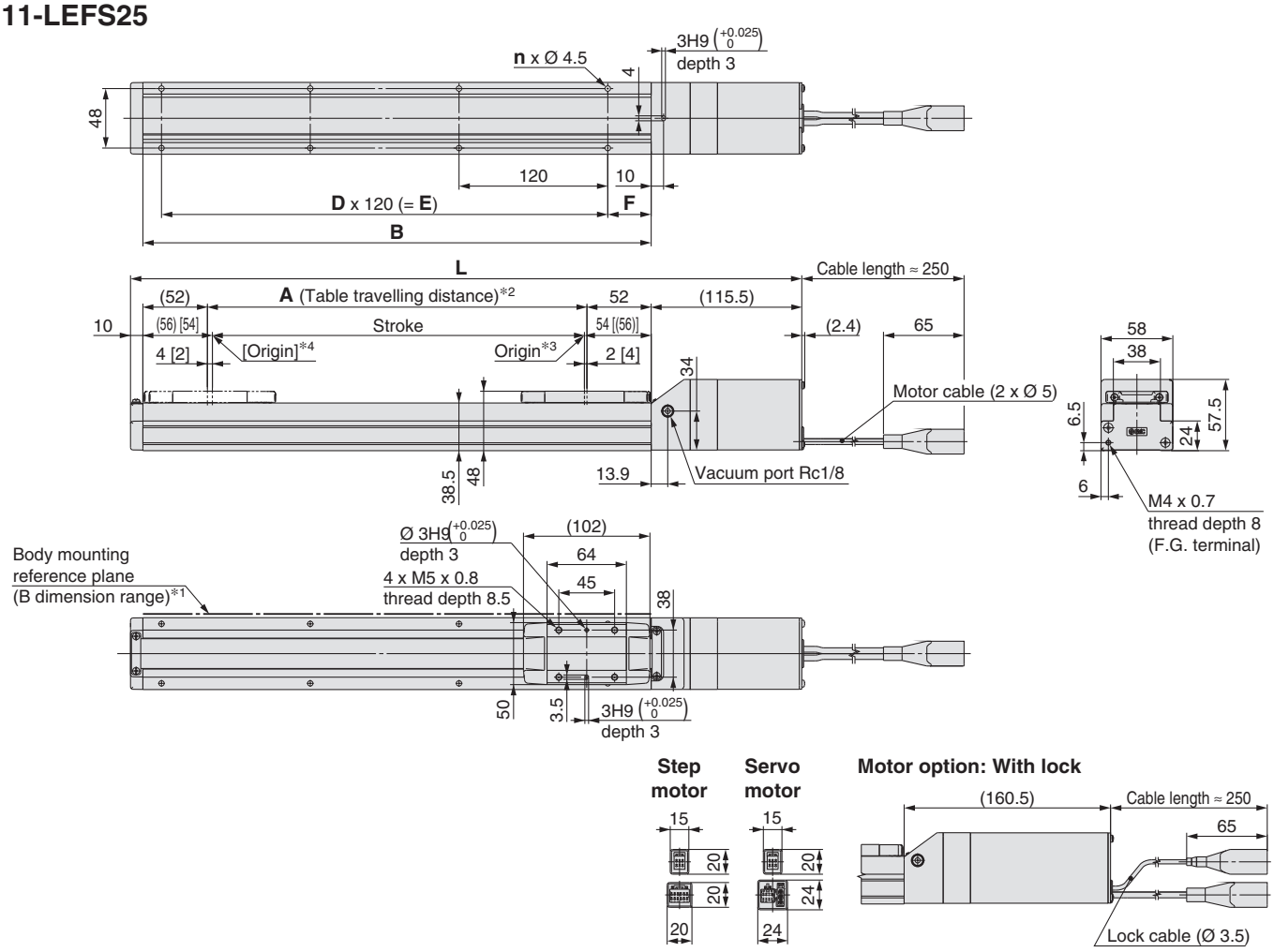
*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 2 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 Position after return to origin
*4 [ ] for when the direction of return to origin has changed
*5 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

Dimensions [mm]

Model	L		A	B	n	D	E	F	G	H
	Without lock	With lock								
11-LEFS16□-50□	247	289	56	130	4	—	—	15	80	25
11-LEFS16□-100□	297	339	106	180	4	—	—	40	80	50
11-LEFS16□-150□	347	389	156	230	4	—	—		80	50
11-LEFS16□-200□	397	439	206	280	6	2	200		180	50
11-LEFS16□-250□	447	489	256	330	6	2	200		180	50
11-LEFS16□-300□	497	539	306	380	8	3	300		280	50
11-LEFS16□-350□	547	589	356	430	8	3	300		280	50
11-LEFS16□-400□	597	639	406	480	10	4	400		380	50
11-LEFS16□-450□	647	689	456	530	10	4	400		380	50
11-LEFS16□-500□	697	739	506	580	12	5	500		480	50

Dimensions: Ball Screw Drive

11-LEFS25

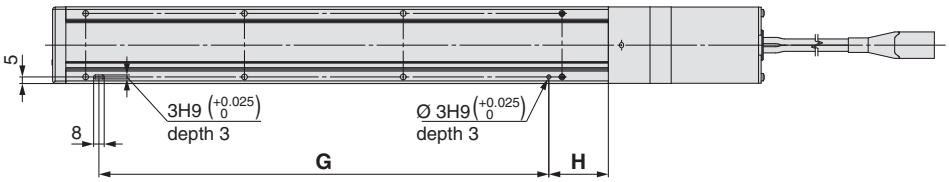


Step motor

Servo motor

Motor option: With lock

Positioning pin hole*5 (Option): Body bottom



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 Position after return to origin

*4 [ ] for when the direction of return to origin has changed

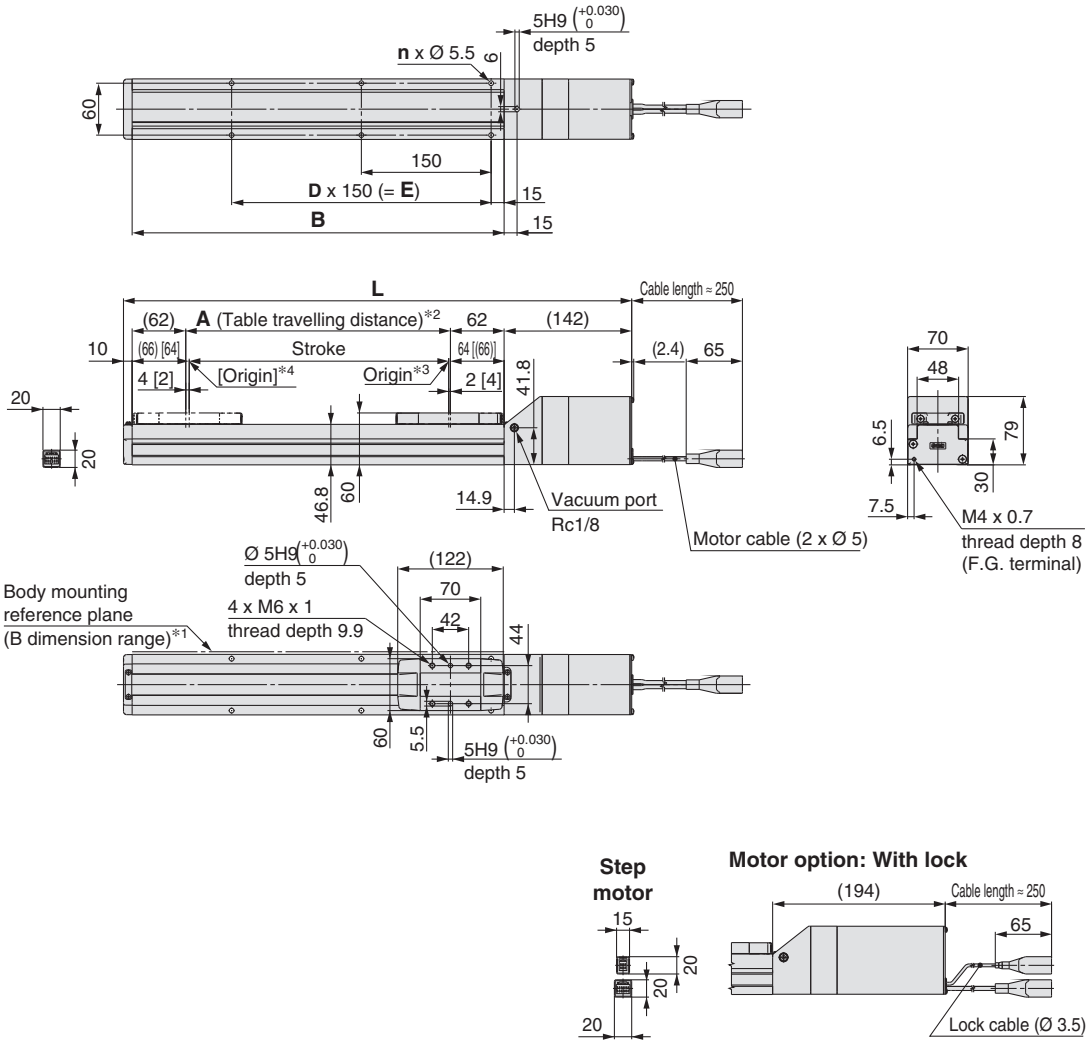
*5 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

Dimensions [mm]

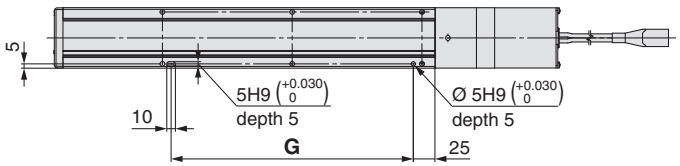
Model	L		A	B	n	D	E	F	G	H
	Without lock	With lock								
11-LEFS25□-50□	285.5	330.5	56	160	4	—	—	20	100	30
11-LEFS25□-100□	335.5	380.5	106	210	4	—	—	35	100	45
11-LEFS25□-150□	385.5	430.5	156	260	4	—	—		100	45
11-LEFS25□-200□	435.5	480.5	206	310	6	2	240		220	45
11-LEFS25□-250□	485.5	530.5	256	360	6	2	240		220	45
11-LEFS25□-300□	535.5	580.5	306	410	8	3	360		340	45
11-LEFS25□-350□	585.5	630.5	356	460	8	3	360		340	45
11-LEFS25□-400□	635.5	680.5	406	510	8	3	360		340	45
11-LEFS25□-450□	685.5	730.5	456	560	10	4	480		460	45
11-LEFS25□-500□	735.5	780.5	506	610	10	4	480		460	45
11-LEFS25□-550□	785.5	830.5	556	660	12	5	600		580	45
11-LEFS25□-600□	835.5	880.5	606	710	12	5	600		580	45

Dimensions: Ball Screw Drive

11-LEFS32



Positioning pin hole*5 (Option): Body bottom



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 Position after return to origin

*4 [ ] for when the direction of return to origin has changed

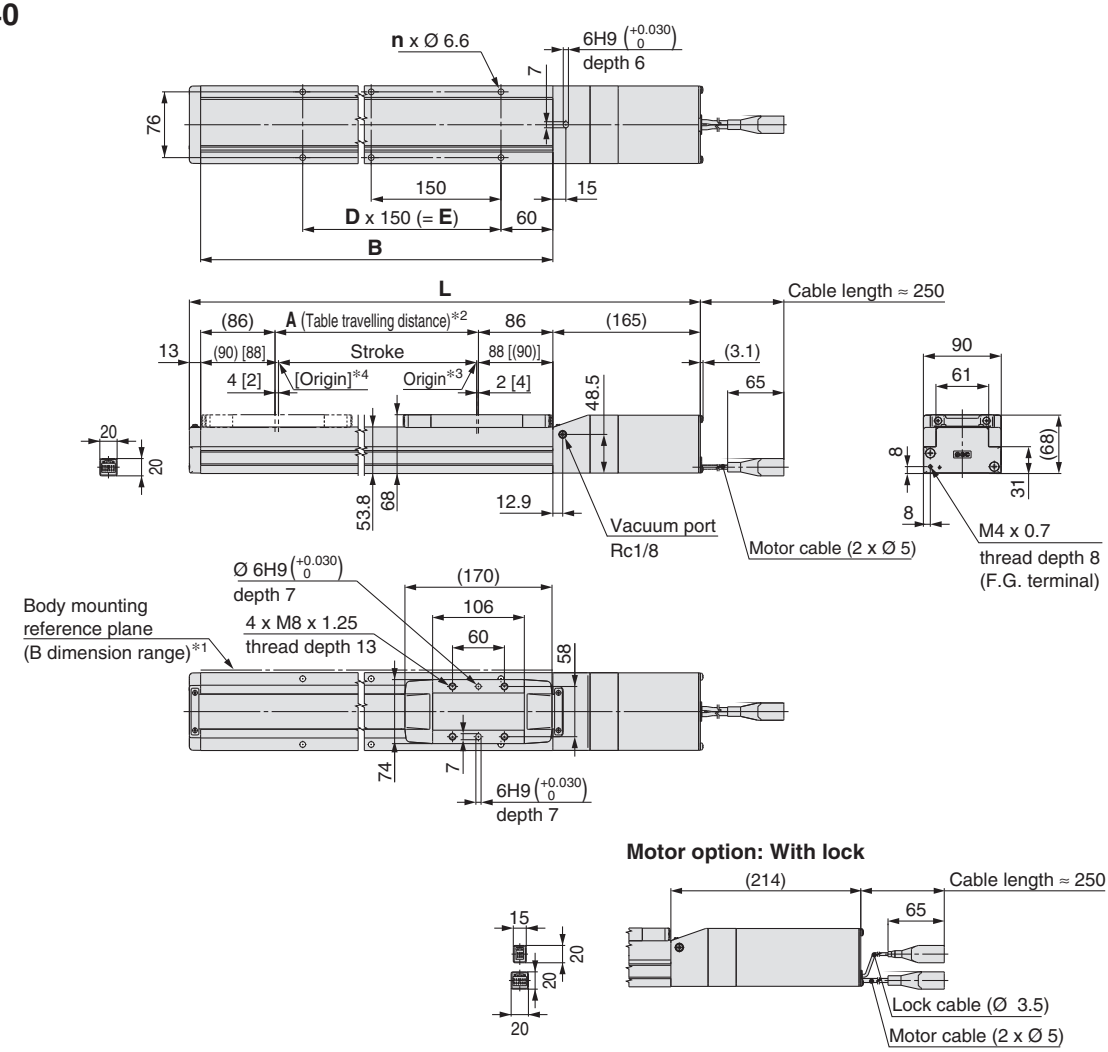
*5 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

Dimensions [mm]

Model	L		A	B	n	D	E	G
	Without lock	With lock						
11-LEFS32□-50□	332	384	56	180	4	—	—	130
11-LEFS32□-100□	382	434	106	230	4	—	—	130
11-LEFS32□-150□	432	484	156	280	4	—	—	130
11-LEFS32□-200□	482	534	206	330	6	2	300	280
11-LEFS32□-250□	532	584	256	380	6	2	300	280
11-LEFS32□-300□	582	634	306	430	6	2	300	280
11-LEFS32□-350□	632	684	356	480	8	3	450	430
11-LEFS32□-400□	682	734	406	530	8	3	450	430
11-LEFS32□-450□	732	784	456	580	8	3	450	430
11-LEFS32□-500□	782	834	506	630	10	4	600	580
11-LEFS32□-550□	832	884	556	680	10	4	600	580
11-LEFS32□-600□	882	934	606	730	10	4	600	580
11-LEFS32□-650□	932	984	656	780	12	5	750	730
11-LEFS32□-700□	982	1034	706	830	12	5	750	730
11-LEFS32□-750□	1032	1084	756	880	12	5	750	730
11-LEFS32□-800□	1082	1134	806	930	14	6	900	880

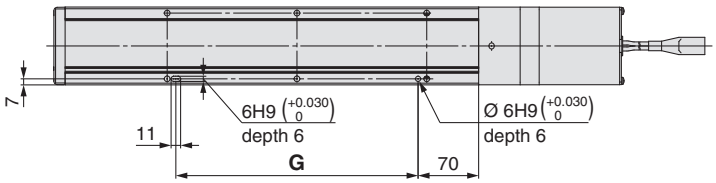
Dimensions: Ball Screw Drive

11-LEFS40



Motor option: With lock

Positioning pin hole*5 (Option): Body bottom



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm) In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 Position after return to origin

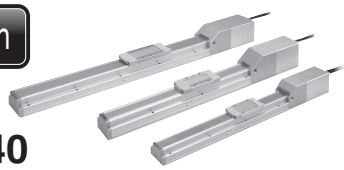
*4 [ ] for when the direction of return to origin has changed

*5 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

Dimensions [mm]

Model	L		A	B	n	D	E	G
	Without lock	With lock						
11-LEFS40□-150□	506	555	156	328	4	—	150	130
11-LEFS40□-200□	556	605	206	378	6	2	300	280
11-LEFS40□-250□	606	655	256	428	6	2	300	280
11-LEFS40□-300□	656	705	306	478	6	2	300	280
11-LEFS40□-350□	706	755	356	528	8	3	450	430
11-LEFS40□-400□	756	805	406	578	8	3	450	430
11-LEFS40□-450□	806	855	456	628	8	3	450	430
11-LEFS40□-500□	856	905	506	678	10	4	600	580
11-LEFS40□-550□	906	955	556	728	10	4	600	580
11-LEFS40□-600□	956	1005	606	778	10	4	600	580
11-LEFS40□-650□	1006	1055	656	828	12	5	750	730
11-LEFS40□-700□	1056	1105	706	878	12	5	750	730
11-LEFS40□-750□	1106	1155	756	928	12	5	750	730
11-LEFS40□-800□	1156	1205	806	978	14	6	900	880
11-LEFS40□-850□	1206	1255	856	1028	14	6	900	880
11-LEFS40□-900□	1256	1305	906	1078	14	6	900	880
11-LEFS40□-950□	1306	1355	956	1128	16	7	1050	1030
11-LEFS40□-1000□	1356	1405	1006	1178	16	7	1050	1030

Electric Actuator/Slider Type
Ball Screw Drive Clean Room Specification



11-LEFS Series LEFS25, 32, 40

Refer to page 43 for model selection and page 173 for particle generation characteristics.

c UL us * See the table below. RoHS

LECY□ Series ▶ p. 188

How to Order

11 – LEFS H 25 S2 B – 100 ❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬

Clean Series

11	Vacuum type

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

25
32
40

❹ Lead [mm]

Symbol	11-LEFS25	11-LEFS32	11-LEFS40
A	12	16	20
B	6	8	10

❺ Stroke [mm]

50	50
to	to
1000	1000

* For details, refer to the applicable stroke table below.

❻ Motor option

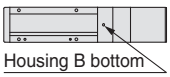
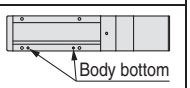
—	Without option
B	With lock

❸ Motor type

Symbol	Type	Output [W]	Actuator size	Compatible driver	UL-compliant
S2∗1	AC servo motor (Incremental encoder)	100	25	LECSA□-S1	—
S3		200	32	LECSA□-S3	—
S4		400	40	LECSA2-S4	—
S6∗1	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECSC□-S5 LECSS□-S5	—
S7		200	32	LECSB□-S7 LECSC□-S7 LECSS□-S7	—
S8		400	40	LECSB2-S8 LECSC2-S8 LECSS2-S8	—
T6∗2, ∗3	AC servo motor (Absolute encoder)	100	25	LECSB2-T5 LECSC2-T5	—
				LECSS2-T5	●∗3
T7∗3		200	32	LECSB2-T7 LECSC2-T7	—
				LECSS2-T7	●∗3
T8∗3		400	40	LECSB2-T8 LECSC2-T8	—
				LECSS2-T8	●∗3

∗1 For motor type S2 and S6, the compatible driver part number suffixes are S1 and S5 respectively.
∗2 For motor type T6, the compatible driver part number suffix is T5.
∗3 The only compatible drivers complaint with UL standards are the LECSS2-T5, LECSS2-T7, and LECSS2-T8.

❽ Positioning pin hole

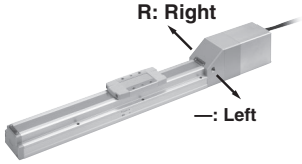
—	Housing B bottom∗1	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

∗1 Refer to the body mounting example on page 203 for the mounting method.

❼ Vacuum port∗1

—	Left
R	Right
D	Both left and right

∗1 Select "D" for the vacuum port for suction of 50 L/min (ANR) or more.



❾ Cable type∗1 ∗2

—	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

∗1 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)
∗2 Standard cable entry direction is "(B) Counter axis side." (Refer to page 286 for details.)

❿ Cable length∗1

—	Without cable
2	2 m
5	5 m
A	10 m

∗1 The length of the encoder, motor and lock cables are the same.

⓫ Driver type

	Compatible driver	Power supply voltage [V]	Size 25	32	40	UL-compliant
—	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	●	●	●	—
	LECSB2-T□	200 to 240	●	●	●	—
C1	LECSC1-S□	100 to 120	●	●	—	—
C2	LECSC2-S□	200 to 230	●	●	●	—
	LECSC2-T□		●	●	●	—
S1	LECSS1-S□	100 to 120	●	●	—	—
S2	LECSS2-S□	200 to 230	●	●	●	—
	LECSS2-T□	200 to 240	●	●	●	●

∗ 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)
—: Without cable and driver

⓬ I/O cable length [m]∗1

—	Without cable
H	Without cable (Connector only)
1	1.5

∗1 When "Without driver" is selected for driver type, only "—: Without cable" can be selected.
Refer to page 279 if I/O cable is required.
(Options are shown on page 279.)

Applicable Stroke Table

●: Standard

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
11-LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—
11-LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—
11-LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

∗ Please consult with SMC for non-standard strokes as they are produced as special orders.

Support Guide/*LEFG Series*
The support guide was designed to support workpieces with significant overhang. p. 193

Compatible Driver

Driver type	Pulse input type/ Positioning type	Pulse input type	CC-Link direct input type	SSCNET Ⅲ type	Pulse input type	CC-Link direct input type	SSCNET Ⅲ/H type
							
Series	**LECSA**	**LECSB**	**LECSC**	**LECSS**	**LECSB-T**	**LECSC-T**	**LECSS-T**
Number of point tables	Up to 7	—	Up to 255 (2 stations occupied)	—	Up to 255	Up to 255 (2 stations occupied)	—
Pulse input	○	○	—	—	○	—	—
Applicable network	—	—	CC-Link	SSCNET Ⅲ	—	CC-Link	SSCNET Ⅲ/H
Control encoder	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder
Communication function	USB communication	USB communication, RS422 communication	USB communication, RS422 communication	USB 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)				200 to 240 VAC (50/60 Hz)	200 to 230 VAC (50/60 Hz)	200 to 240 VAC (50/60 Hz)

Specifications

11-LEFS25, 32, 40 AC Servo Motor

Model				11-LEFS25S$^{2}_{6}$/T6		11-LEFS32S$^{3}_{7}$/T7		11-LEFS40S$^{4}_{8}$/T8	
Actuator specifications	Stroke [mm]*1			50 to 600		50 to 800		150 to 1000	
	Work load [kg]*2		Horizontal	20	20	40	45	50	60
			Vertical	8	15	10	20	15	30
	Max. speed [mm/s]*3	Stroke range	Up to 400	900	450	1000	500	1000	500
			401 to 500	720	360	1000	500	1000	500
			501 to 600	540	270	800	400	1000	500
			601 to 700	—	—	620	310	940	470
			701 to 800	—	—	500	250	760	380
			801 to 900	—	—	—	—	620	310
			901 to 1000	—	—	—	—	520	260
	Max. acceleration/deceleration [mm/s^2]			5000 (Refer to pages 45 to 47 for limit according to work load and duty ratio.)					
	Positioning repeatability [mm]		Basic type	±0.02					
			High-precision type	±0.01					
	Lost motion [mm]*4		Basic type	0.1 or less					
			High-precision type	0.05 or less					
	Lead [mm]			12	6	16	8	20	10
	Impact/Vibration resistance [m/s^2]*5			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)					
	Cleanliness class*6			ISO Class 4 (ISO 14644-1) Class 10 (Fed.Std.209E)					
	Grease	Ball screw /Linear guide portion		Low particle generation grease					
Electric specifications	Motor output/Size			100 W/□40		200 W/□60		400 W/□60	
	Motor type			AC servo motor (100/200 VAC)					
	Encoder*12			Motor type S2, S3, S4: Incremental 17-bit encoder (Resolution: 131072 p/rev) Motor type S6, S7, S8: Absolute 18-bit encoder (Resolution: 262144 p/rev) Motor type T6, T7, T8: Absolute 22-bit encoder (Resolution: 4194304 p/rev) (For LECSB2-T□, LECSS2-T□) Motor type T6, T7, T8: Absolute 18-bit encoder (Resolution: 262144 p/rev) (For LECSC2-T□)				
	Power consumption [W]*7		Horizontal	45		65		210	
			Vertical	145		175		230	
	Standby power consumption when operating [W]*8		Horizontal	2		2		2	
			Vertical	8		8		18	
	Max. instantaneous power consumption [W]*9			445		725		1275	
Lock unit specifications	Type*10			Non-magnetising lock					
	Holding force [N]			131	255	197	385	330	660
	Power consumption at 20°C [W]*11			6.3		7.9		7.9	
	Rated voltage [V]			24 VDC $^{0}_{-10}$ %					

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 For details, refer to "Speed–Work Load Graph (Guide)" on page 44.
*3 The allowable speed changes according to the stroke.
*4 A reference value for correcting an error in reciprocal operation
*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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 4 5 to 2 0 0 0 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*6 The amount of particle generation changes according to the operating conditions and suction flow rate. Refer to the particle generation characteristics for details.
*7 The power consumption (including the driver) is for when the actuator is operating.
*8 The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
*9 The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
*10 Only when motor option "With lock" is selected
*11 For an actuator with lock, add the power consumption for the lock.
*12 For motor type T6, T7, and T8, the resolution will change depending on the driver type.

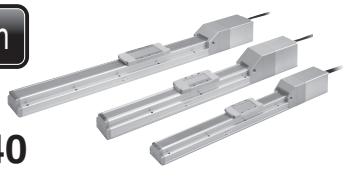
Weight

Series		11-LEFS25S□											
Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600
Motor type	S2	2.00	2.14	2.28	2.44	2.56	2.69	2.84	2.99	3.12	3.24	3.40	3.54
	S6	2.06	2.20	2.34	2.50	2.62	2.75	2.90	3.05	3.18	3.30	3.46	3.60
	T6	2.04	2.18	2.32	2.48	2.60	2.73	2.88	3.03	3.16	3.28	3.44	3.58
Additional weight with lock [kg]		S2: 0.2/S6: 0.3/T6: 0.3											

Series		11-LEFS32S□															
Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Motor type	S3	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40
	S7	3.34	3.54	3.74	3.94	4.14	4.34	4.54	4.74	4.94	5.14	5.34	5.54	5.74	5.94	6.14	6.34
	T7	3.31	3.51	3.71	3.91	4.11	4.31	4.51	4.71	4.91	5.11	5.31	5.51	5.71	5.91	6.11	6.31
Additional weight with lock [kg]		S3: 0.4/S7: 0.7/T7: 0.5															

Series		11-LEFS40S□																	
Stroke [mm]		150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Motor type	S4	5.82	6.10	6.38	6.65	6.95	7.25	7.51	7.80	8.07	8.25	8.63	8.90	9.20	9.45	9.76	10.05	10.32	10.60
	S8	5.92	6.20	6.48	6.75	7.05	7.35	7.61	7.90	8.17	8.35	8.73	9.00	9.30	9.55	9.86	10.15	10.42	10.70
	T8	5.91	6.19	6.47	6.74	7.04	7.34	7.60	7.89	8.16	8.34	8.72	8.99	9.29	9.54	9.85	10.14	10.41	10.69
Additional weight with lock [kg]		S4: 0.5/S8: 0.7/T8: 0.5																	

Electric Actuator/Slider Type
Ball Screw Drive Clean Room Specification
11-LEFS Series LEFS25, 32, 40



Refer to page 51 for model selection and page 173 for particle generation characteristics.

LECS□ Series ▶p. 184

How to Order

11 – LEFS H 25 V6 B – 100 □ □ K – S 3 M2 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬

Clean Series

11	Vacuum type

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

25
32
40

❹ Lead [mm]

Symbol	11-LEFS25	11-LEFS32	11-LEFS40
A	12	16	20
B	6	8	10

❺ Stroke [mm]

50	50
to	to
1000	1000

∗ For details, refer to the applicable stroke table below.

❻ Motor option

—	Without option
B	With lock

❸ Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6∗1	AC servo motor (Absolute encoder)	100	25	LECYM2-V5/LECYU2-V5
V7		200	32	LECYM2-V7/LECYU2-V7
V8		400	40	LECYM2-V8/LECYU2-V8

∗1 For motor type V6, the compatible driver part number suffix is V5.

❽ Positioning pin hole

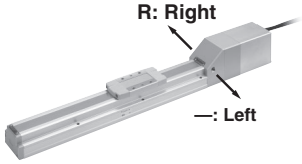
—	Housing B bottom∗1	Housing B bottom
K	Body bottom 2 locations	Body bottom

∗1 Refer to the body mounting example on page 203 for the mounting method.

❼ Vacuum port∗1

—	Left
R	Right
D	Both left and right

∗1 Select "D" for the vacuum port for suction of 50 l/min (ANR) or more.



❾ Cable type∗1 ∗2

—	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

∗1 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)

∗2 Standard cable entry direction is "(B) Counter axis side." (Refer to page 278 for details.)

⓬ I/O cable length [m]∗1

—	Without cable
H	Without cable (Connector only)
1	1.5

∗1 When "Without driver" is selected for driver type, only "—: Without cable" can be selected.
Refer to page 279 if I/O cable is required.
(Options are shown on page 279.)

⓫ Driver type

	Compatible driver	Power supply voltage [V]
—	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

⓾ Actuator cable length [m]

—	Without cable
3	3
5	5
A	10
C	20

Applicable Stroke Table ●: Standard

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
11-LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—
11-LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—
11-LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

∗ Please consult with SMC for non-standard strokes as they are produced as special orders.

Support Guide/*LEFG Series*
The support guide was designed to support workpieces with significant overhang. p. 193

For auto switches, refer to pages 167 to 170.

Compatible Driver

Driver type	MECHATROLINK-Ⅱ type 	MECHATROLINK-Ⅲ type 
Series	LECYM	LECYU
Applicable network	MECHATROLINK-Ⅱ	MECHATROLINK-Ⅲ
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage [V]	200 to 230 VAC (50/60 Hz)	
Reference page	285	

Specifications

AC Servo Motor

Model			11-LEFS25□V6		11-LEFS32□V7		11-LEFS40□V8	
Actuator specifications	Stroke [mm]*1		50 to 800		50 to 1000		150 to 1200	
	Work load [kg]*2	Horizontal	20	20	40	45	50	60
		Vertical	8	15	10	20	15	30
	Max. speed*3 [mm/s] / Stroke range	Up to 400	900	450	1000	500	1000	500
		401 to 500	720	360	1000	500	1000	500
		501 to 600	540	270	800	400	1000	500
		601 to 700	420	210	620	310	940	470
		701 to 800	330	160	500	250	760	380
		801 to 900	—	—	410	200	620	310
		901 to 1000	—	—	340	170	520	260
		1001 to 1100	—	—	—	—	440	220
		1101 to 1200	—	—	—	—	380	190
	Max. acceleration/deceleration [mm/s²]		20000 (Refer to pages 45 to 47 for limit according to work load and duty ratio.)					
	Positioning repeatability [mm]	Basic type	±0.02					
		High-precision type	±0.01					
	Lost motion [mm]*4	Basic type	0.1 or less					
		High-precision type	0.05 or less					
	Lead [mm]		12	6	16	8	20	10
	Impact/Vibration resistance [m/s²]*5		50/20					
	Actuation type		Ball screw (LEFS□), Ball screw + Belt (LEFS□$^{R}_{L}$)					
	Guide type		Linear guide					
	Operating temperature range [°C]		5 to 40					
	Operating humidity range [%RH]		90 or less (No condensation)					
	Cleanliness class*6		ISO Class 4 (ISO 14644-1) Class 10 (Fed.Std.209E)					
	Grease	Ball screw /Linear guide portion	Low particle generation grease					
Electric specifications	Motor output/Size		100 W/□40		200 W/□60		400 W/□60	
	Motor type		AC servo motor (200 VAC)					
	Encoder		Absolute 20-bit encoder (Resolution: 1048576 p/rev)					
	Power consumption [W]*7	Horizontal	45		65		210	
		Vertical	145		175		230	
	Standby power consumption when operating [W]*8	Horizontal	2		2		2	
		Vertical	8		8		18	
	Max. instantaneous power consumption [W]*9		445		725		1275	
Lock unit specifications	Type*10		Non-magnetising lock					
	Holding force [N]		131	255	197	385	330	660
	Power consumption at 20°C [W]*11		5.5		6		6	
	Rated voltage [V]		24 VDC $^{+10\ \%}_{0}$					

*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 For details, refer to "Speed–Work Load Graph (Guide)" on page 52.
*3 The allowable speed changes according to the stroke.
*4 A reference value for correcting an error in reciprocal operation
*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. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 45 to 2000 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*6 The amount of particle generation changes according to the operating conditions and suction flow rate. Refer to the particle generation characteristics for details.
*7 The power consumption (including the driver) is for when the actuator is operating.
*8 The standby power consumption when operating (including the driver) is for when the actuator is stopped in the set position during the operation.
*9 The maximum instantaneous power consumption (including the driver) is for when the actuator is operating.
*10 Only when motor option "With lock" is selected
*11 For an actuator with lock, add the power consumption for the lock.

Weight

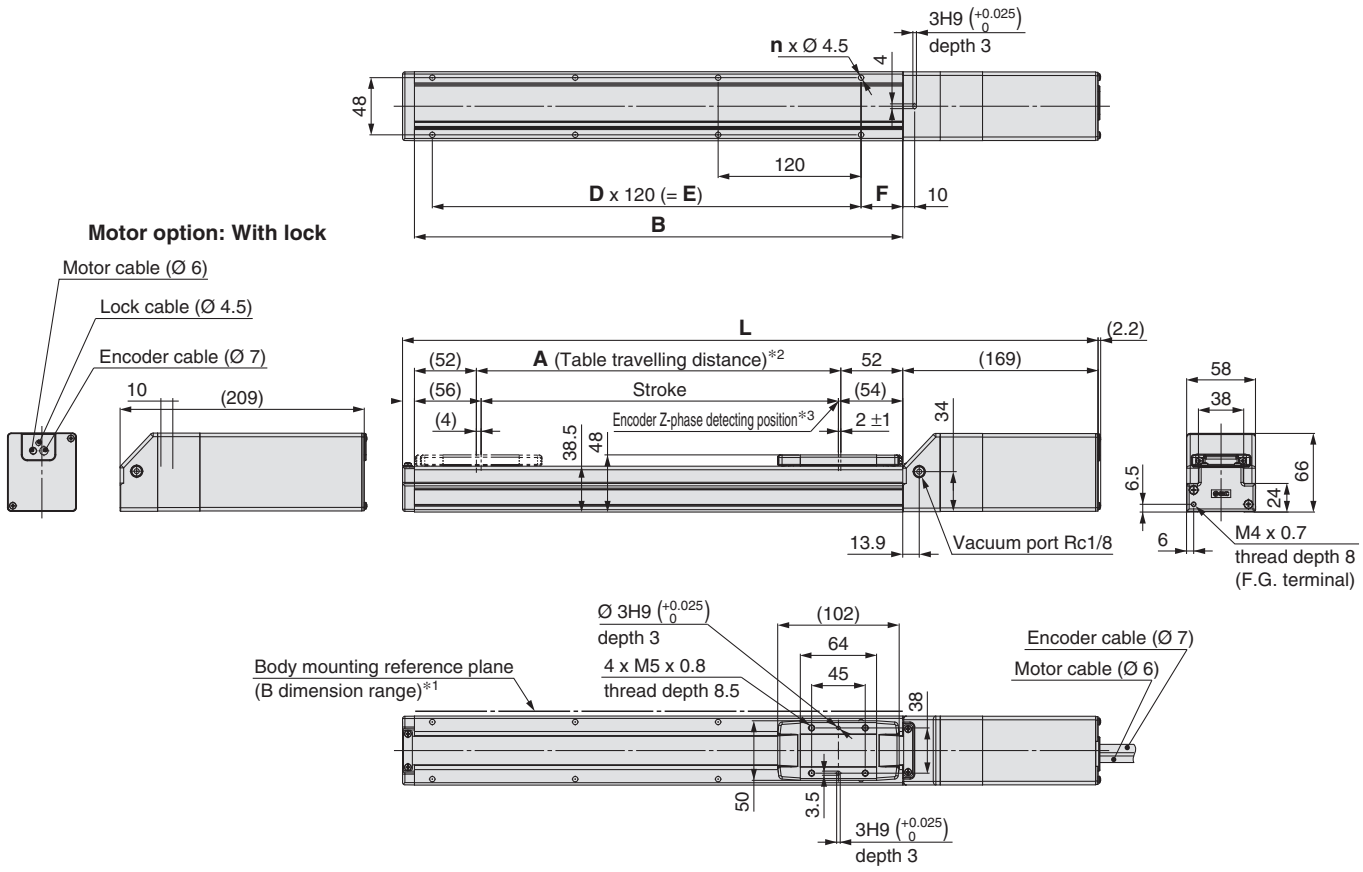
Series	11-LEFS25□V6															
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Product weight [kg]	2.06	2.20	2.34	2.50	2.62	2.75	2.90	3.05	3.18	3.30	3.46	3.60	3.74	3.88	4.02	4.20
Additional weight with lock [kg]	0.3															

Series	11-LEFS32□V7																				
Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Product weight [kg]	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20
Additional weight with lock [kg]	0.7																			

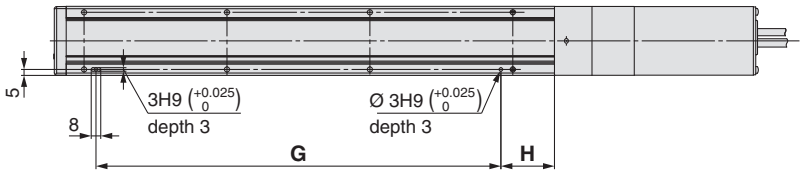
Series	11-LEFS40□V8																				
Stroke [mm]	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200
Product weight [kg]	5.92	6.20	6.48	6.75	7.05	7.35	7.61	7.90	8.17	8.35	8.73	9.00	9.30	9.55	9.86	10.15	10.42	10.70	11.26	11.82
Additional weight with lock [kg]	0.7																			

Dimensions: Ball Screw Drive

11-LEFS25



Positioning pin hole*4 (Option): Body bottom



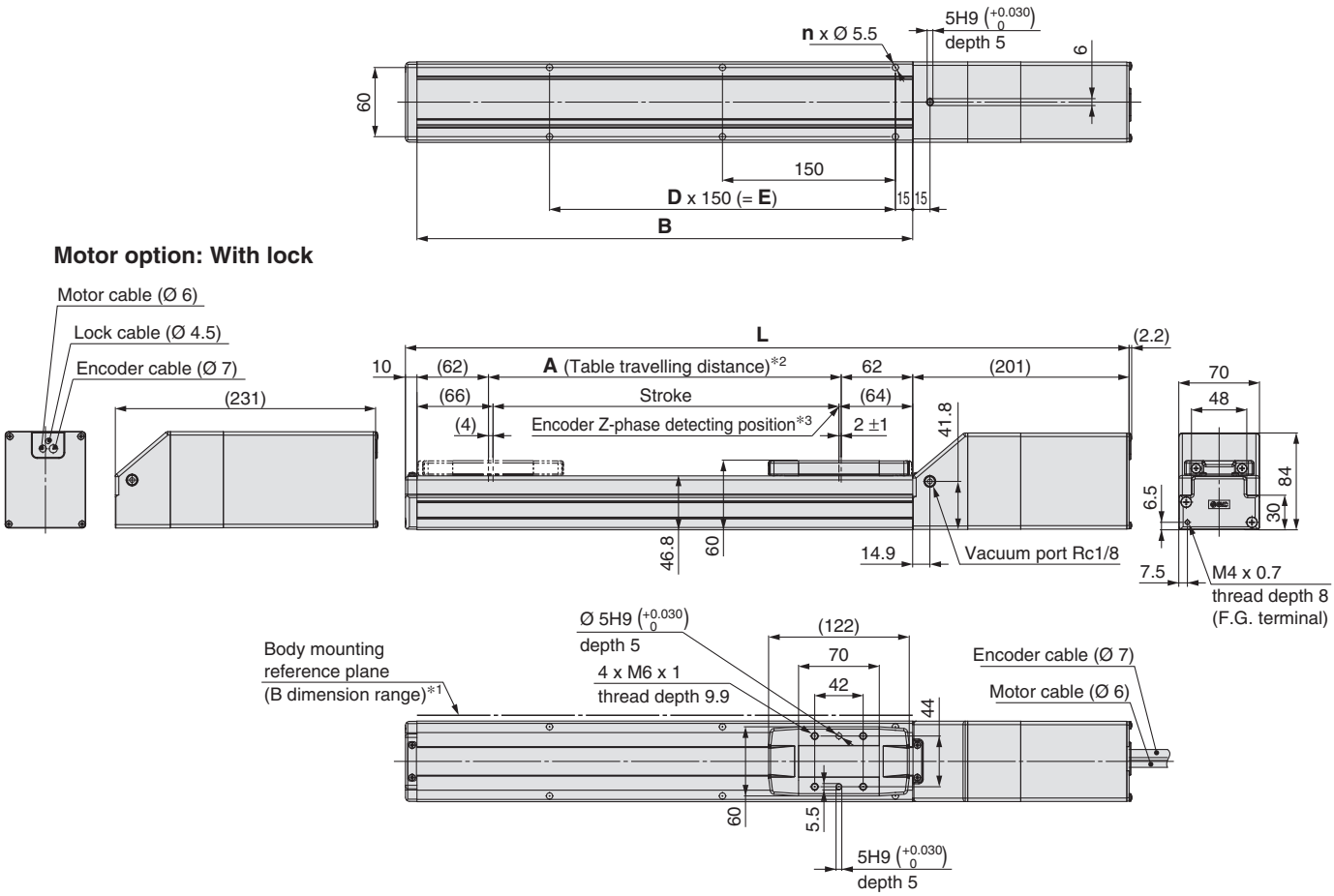
*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.
*2 This is the distance within which the table can move when it returns to origin.
Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.
*3 The Z-phase first detecting position from the stroke end of the motor side
*4 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

Dimensions [mm]

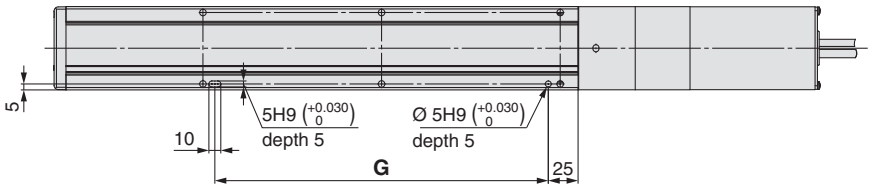
Model	L		A	B	n	D	E	F	G	H
	Without lock	With lock								
11-LEFS25□□-50□	339	379	56	160	4	—	—	20	100	30
11-LEFS25□□-100□	389	429	106	210	4	—	—	35	100	45
11-LEFS25□□-150□	439	479	156	260	4	—	—		100	45
11-LEFS25□□-200□	489	529	206	310	6	2	240		220	45
11-LEFS25□□-250□	539	579	256	360	6	2	240		220	45
11-LEFS25□□-300□	589	629	306	410	8	3	360		340	45
11-LEFS25□□-350□	639	679	356	460	8	3	360		340	45
11-LEFS25□□-400□	689	729	406	510	8	3	360		340	45
11-LEFS25□□-450□	739	779	456	560	10	4	480		460	45
11-LEFS25□□-500□	789	829	506	610	10	4	480		460	45
11-LEFS25□□-550□	839	879	556	660	12	5	600		580	45
11-LEFS25□□-600□	889	929	606	710	12	5	600		580	45

Dimensions: Ball Screw Drive

11-LEFS32



Positioning pin hole*4 (Option): Body bottom



*1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering. (Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

*2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

*3 The Z-phase first detecting position from the stroke end of the motor side

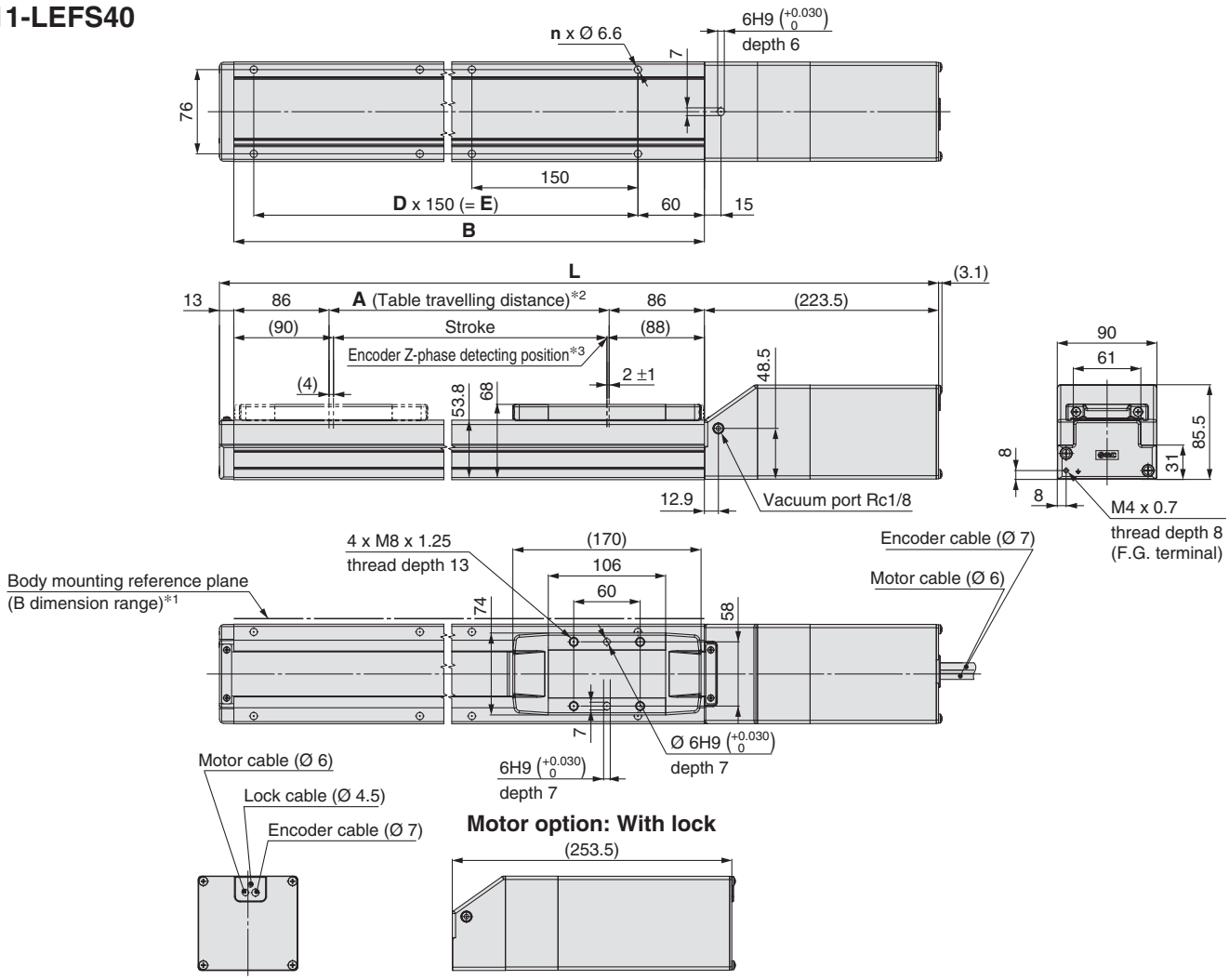
*4 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

Dimensions [mm]

Model	L		A	B	n	D	E	G
	Without lock	With lock						
11-LEFS32□□-50□	391	421	56	180	4	—	—	130
11-LEFS32□□-100□	441	471	106	230	4	—	—	130
11-LEFS32□□-150□	491	521	156	280	4	—	—	130
11-LEFS32□□-200□	541	571	206	330	6	2	300	280
11-LEFS32□□-250□	591	621	256	380	6	2	300	280
11-LEFS32□□-300□	641	671	306	430	6	2	300	280
11-LEFS32□□-350□	691	721	356	480	8	3	450	430
11-LEFS32□□-400□	741	771	406	530	8	3	450	430
11-LEFS32□□-450□	791	821	456	580	8	3	450	430
11-LEFS32□□-500□	841	871	506	630	10	4	600	580
11-LEFS32□□-550□	891	921	556	680	10	4	600	580
11-LEFS32□□-600□	941	971	606	730	10	4	600	580
11-LEFS32□□-650□	991	1021	656	780	12	5	750	730
11-LEFS32□□-700□	1041	1071	706	830	12	5	750	730
11-LEFS32□□-750□	1091	1121	756	880	12	5	750	730
11-LEFS32□□-800□	1141	1171	806	930	14	6	900	880

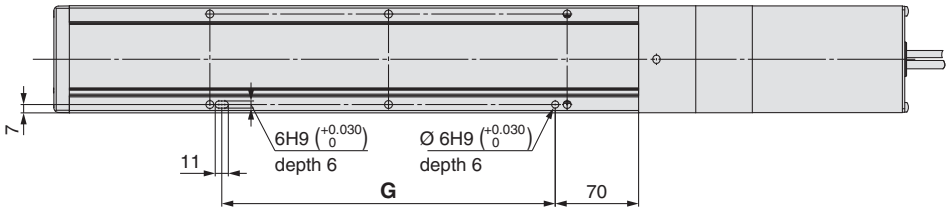
Dimensions: Ball Screw Drive

11-LEFS40



Motor option: With lock

Positioning pin hole*4 (Option): Body bottom



∗1 When mounting the actuator using the body mounting reference plane, set the height of the opposite surface or pin to be 3 mm or more because of round chamfering.
(Recommended height 5 mm)
In addition, be aware that surfaces other than the body mounting reference plane (B dimension range) may slightly protrude from the body mounting reference plane. Be sure to provide a clearance of 1 mm or more to avoid interference with workpieces, facilities, etc.

∗2 This is the distance within which the table can move when it returns to origin. Make sure workpieces mounted on the table do not interfere with the workpieces and facilities around the table.

∗3 The Z-phase first detecting position from the stroke end of the motor side

∗4 When using the body bottom positioning pin holes, do not simultaneously use the housing B bottom pin hole.

Dimensions [mm]

Model	L		A	B	n	D	E	G
	Without lock	With lock						
11-LEFS40□□-150□	564.5	594.5	156	328	4	—	150	130
11-LEFS40□□-200□	614.5	644.5	206	378	6	2	300	280
11-LEFS40□□-250□	664.5	694.5	256	428	6	2	300	280
11-LEFS40□□-300□	714.5	744.5	306	478	6	2	300	280
11-LEFS40□□-350□	764.5	794.5	356	528	8	3	450	430
11-LEFS40□□-400□	814.5	844.5	406	578	8	3	450	430
11-LEFS40□□-450□	864.5	894.5	456	628	8	3	450	430
11-LEFS40□□-500□	914.5	944.5	506	678	10	4	600	580
11-LEFS40□□-550□	964.5	994.5	556	728	10	4	600	580
11-LEFS40□□-600□	1014.5	1044.5	606	778	10	4	600	580
11-LEFS40□□-650□	1064.5	1094.5	656	828	12	5	750	730
11-LEFS40□□-700□	1114.5	1144.5	706	878	12	5	750	730
11-LEFS40□□-750□	1164.5	1194.5	756	928	12	5	750	730
11-LEFS40□□-800□	1214.5	1244.5	806	978	14	6	900	880
11-LEFS40□□-850□	1264.5	1294.5	856	1028	14	6	900	880
11-LEFS40□□-900□	1314.5	1344.5	906	1078	14	6	900	880
11-LEFS40□□-950□	1364.5	1394.5	956	1128	16	7	1050	1030
11-LEFS40□□-1000□	1414.5	1444.5	1006	1178	16	7	1050	1030

Support Guide

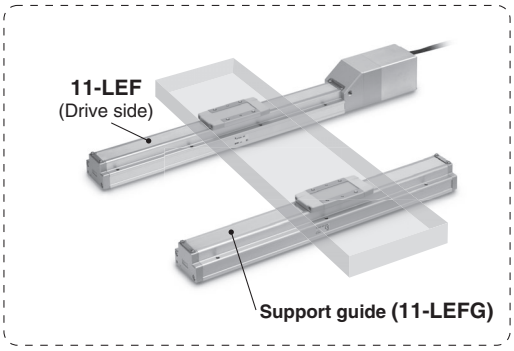
11-LEFG Series 11-LEFG16, 25, 32, 40

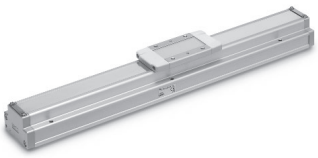
RoHS

The support guide was designed to support workpieces with significant overhang.

- As the dimensions are the same as the 11-LEF series body, installation is simple and contributes to a reduction in installation and assembly labour.
- The standard-equipped seal bands prevent grease from splashing and external foreign matter from entering.

Application example





How to Order

11 – LEF G 32 – S – 200

- 11: Clean series
- G: Support guide
- 32: ❶ Size
- S: ❷ Type of mounting pitch
- 200: ❸ Stroke [mm]

❶ Size

16
25
32
40

❷ Type of mounting pitch

Symbol	11-LEFG16	11-LEFG25	11-LEFG32	11-LEFG40	Note
S	●	●	●	●	Ball screw drive Step motor/Servo motor (24 VDC)/AC servo motor

❸ Stroke [mm]

50	50
to	to
1000	1000

Applicable Stroke Table

Ball Screw Drive: S Step Motor (Servo/24 VDC) Servo Motor (24 VDC) AC Servo Motor

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
11-LEFG16-S	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—	—
11-LEFG25-S	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—
11-LEFG32-S	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—
11-LEFG40-S	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

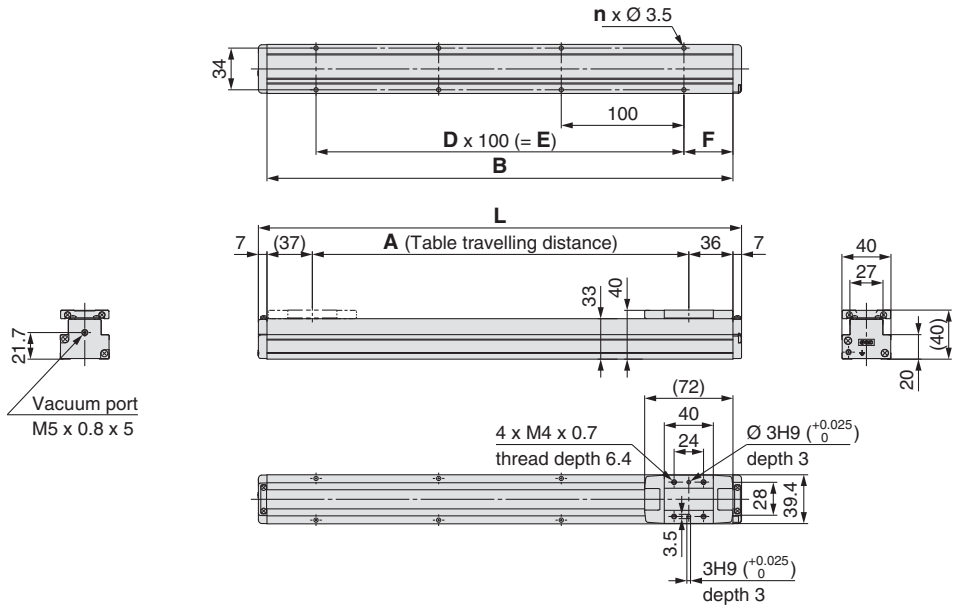
Weight

Ball Screw Drive: S Step Motor (Servo/24 VDC) Servo Motor (24 VDC) AC Servo Motor

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
11-LEFG16-S	0.25	0.31	0.37	0.43	0.49	0.55	0.61	0.67	0.73	0.79	—	—	—	—	—	—	—	—	—	—
11-LEFG25-S	0.56	0.67	0.78	0.89	1.00	1.11	1.22	1.33	1.44	1.55	1.66	1.77	—	—	—	—	—	—	—	—
11-LEFG32-S	0.92	1.08	1.23	1.4	1.56	1.72	1.88	2.04	2.20	2.36	2.52	2.88	2.84	3.00	3.16	3.22	—	—	—	—
11-LEFG40-S	—	—	2.07	2.29	2.51	2.72	2.94	3.15	3.37	3.58	3.80	4.01	4.23	4.44	4.66	4.87	5.09	5.30	5.52	5.73

Dimensions: Ball Screw Drive

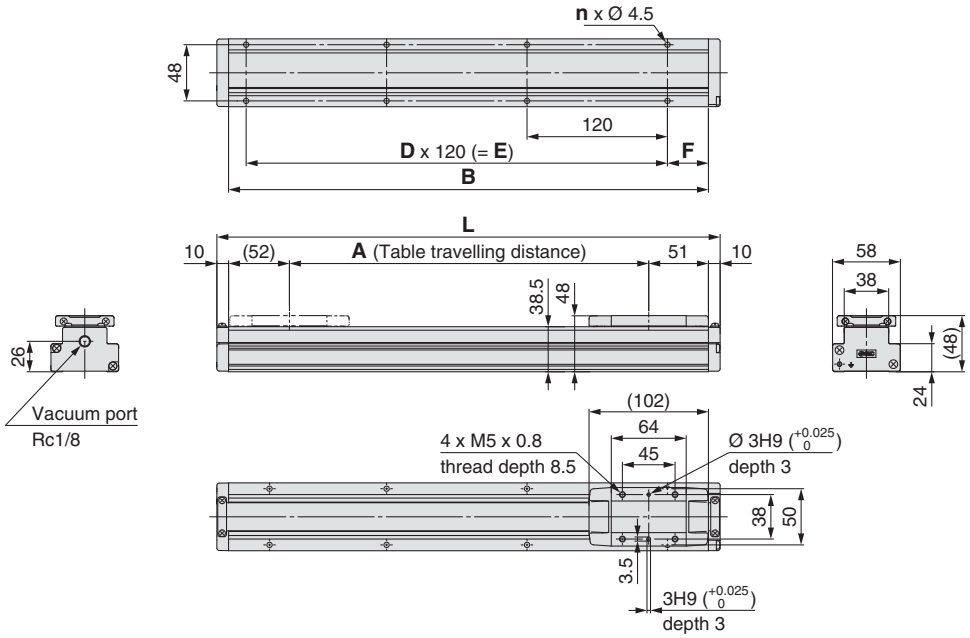
11-LEFG16-S



Dimensions [mm]

Model	L	A	B	n	D	E	F
11-LEFG16-S-50	144	57	130	4	—	—	15
11-LEFG16-S-100	194	107	180				40
11-LEFG16-S-150	244	157	230				
11-LEFG16-S-200	294	207	280	6	2	200	
11-LEFG16-S-250	344	257	330				
11-LEFG16-S-300	394	307	380	8	3	300	
11-LEFG16-S-350	444	357	430				
11-LEFG16-S-400	494	407	480	10	4	400	
11-LEFG16-S-450	544	457	530				
11-LEFG16-S-500	594	507	580	12	5	500	

11-LEFG25-S



Dimensions [mm]

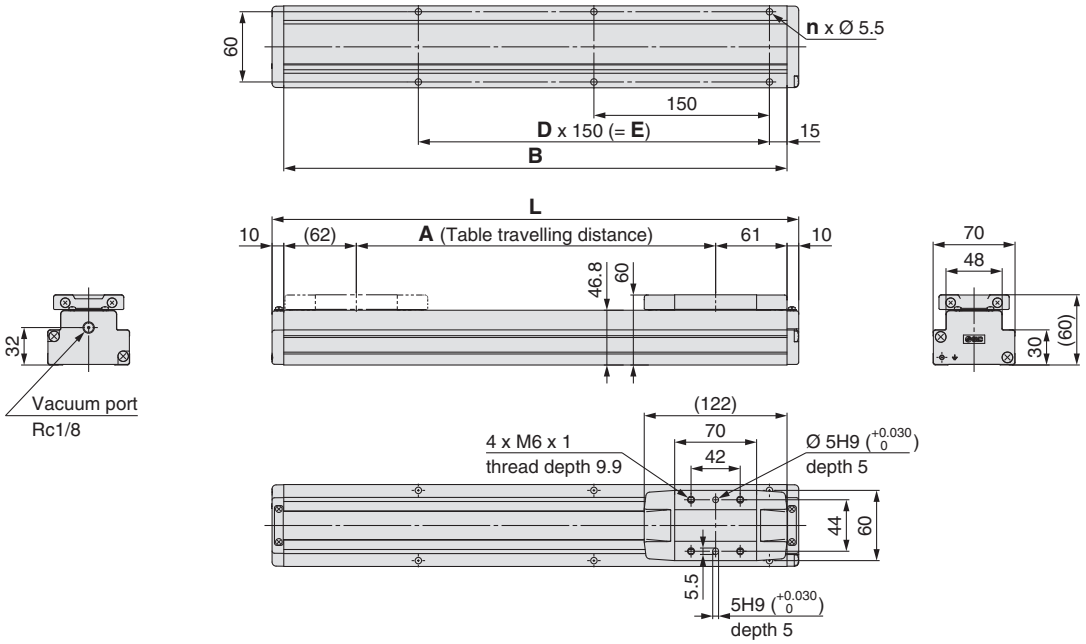
Model	L	A	B	n	D	E	F
11-LEFG25-S-50	180	57	160	4	—	—	20
11-LEFG25-S-100	230	107	210				35
11-LEFG25-S-150	280	157	260				
11-LEFG25-S-200	330	207	310	6	2	240	
11-LEFG25-S-250	380	257	360				
11-LEFG25-S-300	430	307	410	8	3	360	
11-LEFG25-S-350	480	357	460				
11-LEFG25-S-400	530	407	510				

Dimensions [mm]

Model	L	A	B	n	D	E	F
11-LEFG25-S-450	580	457	560	10	4	480	35
11-LEFG25-S-500	630	507	610				
11-LEFG25-S-550	680	557	660	12	5	600	
11-LEFG25-S-600	730	607	710				

Dimensions: Ball Screw Drive

11-LEFG32-S



Dimensions [mm]

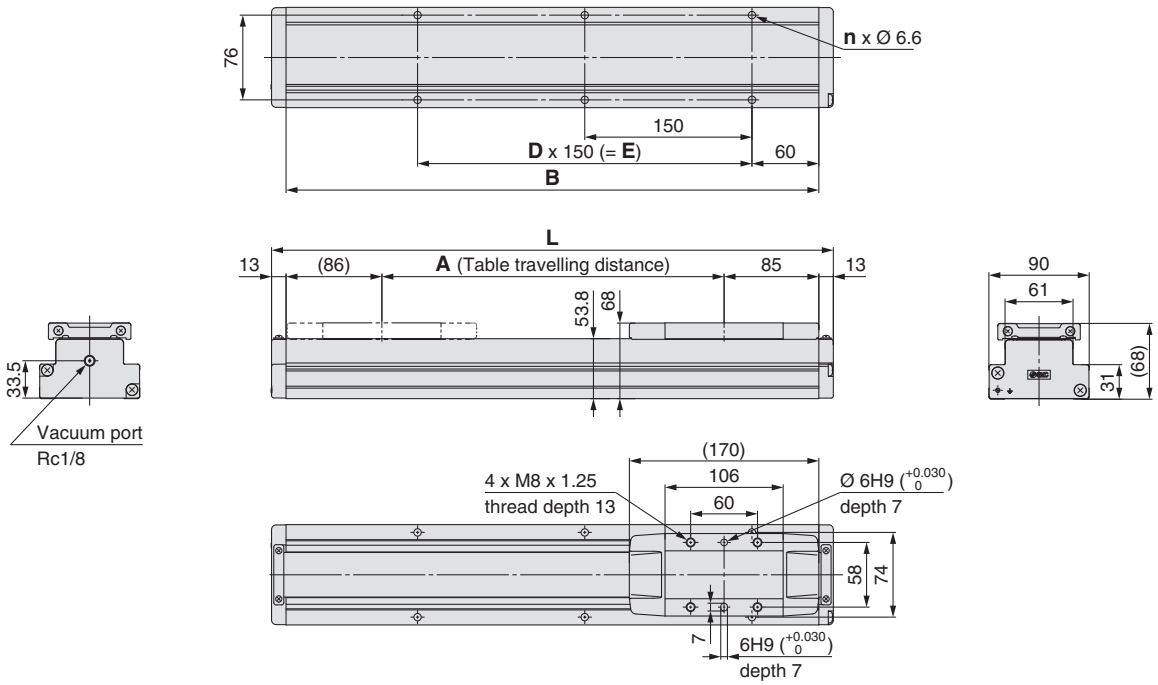
Model	L	A	B	n	D	E
11-LEFG32-S-50	200	57	180	4	—	—
11-LEFG32-S-100	250	107	230			
11-LEFG32-S-150	300	157	280			
11-LEFG32-S-200	350	207	330	6	2	300
11-LEFG32-S-250	400	257	380			
11-LEFG32-S-300	450	307	430			
11-LEFG32-S-350	500	357	480	8	3	450
11-LEFG32-S-400	550	407	530			
11-LEFG32-S-450	600	457	580			

Dimensions [mm]

Model	L	A	B	n	D	E
11-LEFG32-S-500	650	507	630	10	4	600
11-LEFG32-S-550	700	557	680			
11-LEFG32-S-600	750	607	730			
11-LEFG32-S-650	800	657	780	12	5	750
11-LEFG32-S-700	850	707	830			
11-LEFG32-S-750	900	757	880			
11-LEFG32-S-800	950	807	930	14	6	900

Dimensions: Ball Screw Drive

11-LEFG40-S



Dimensions [mm]

Model	L	A	B	n	D	E
11-LEFG40-S-150	354	157	328	4	—	150
11-LEFG40-S-200	404	207	378	6	2	300
11-LEFG40-S-250	454	257	428			
11-LEFG40-S-300	504	307	478			
11-LEFG40-S-350	554	357	528	8	3	450
11-LEFG40-S-400	604	407	578			
11-LEFG40-S-450	654	457	628			
11-LEFG40-S-500	704	507	678	10	4	600
11-LEFG40-S-550	754	557	728			
11-LEFG40-S-600	804	607	778			

Dimensions [mm]

Model	L	A	B	n	D	E
11-LEFG40-S-650	854	657	828	12	5	750
11-LEFG40-S-700	904	707	878			
11-LEFG40-S-750	954	757	928			
11-LEFG40-S-800	1004	807	978	14	6	900
11-LEFG40-S-850	1054	857	1028			
11-LEFG40-S-900	1104	907	1078			
11-LEFG40-S-950	1154	957	1128	16	7	1050
11-LEFG40-S-1000	1204	1007	1178			

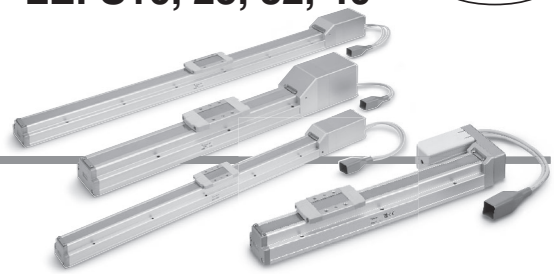
Step Motor (Servo/24 VDC) Servo Motor (24 VDC)

Electric Actuator/Slider Type

Ball Screw Drive Secondary Battery Compatible

25A-LEFS Series LEFS16, 25, 32, 40

Refer to page 35 for model selection.



How to Order

25A-LEFS H 25 R A B - 200 K - S1

Series compatible with secondary batteries

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

LEC□ Series **6P** **1** □

JXC□ Series **CD17T**

❿ ⓫ ⓬

For details on controllers, refer to page 198.

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

16
25
32
40

❸ Motor mounting position

—	In-line
R	Right side parallel
L	Left side parallel

❹ Motor type

Symbol	Type	Applicable size				Compatible controller/driver
		LEFS16	LEFS25	LEFS32	LEFS40	
—	Step motor (Servo/24 VDC)	●	●	●	●	LECP1 JXCE1 LECPA JXC91 JXCP1 JXCD1 JXCL1
A	Servo motor (24 VDC)	●	●	—	—	LECA6

❺ Lead [mm]

Symbol	LEFS16	LEFS25	LEFS32	LEFS40
A	10	12	16	20
B	5	6	8	10

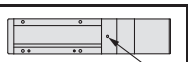
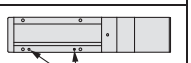
❻ Stroke*1 [mm]

Stroke	Note	
	Size	Applicable stroke
50 to 500	16	50, 100, 150, 200, 250, 300, 350, 400, 450, 500
50 to 600	25	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600
50 to 800	32	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800
150 to 1000	40	150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000

❼ Motor option

—	Without option
B	With lock

❽ Positioning pin hole

—	Housing B bottom*2	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

❾ Actuator cable type/length*4

Standard cable [m]

—	None
S1	1.5*6
S3	3*6
S5	5*6

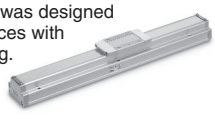
Robotic cable [m]

R1	1.5	RA	10*3
R3	3	RB	15*3
R5	5	RC	20*3
R8	8*3		

Support Guide/*LEFG Series*

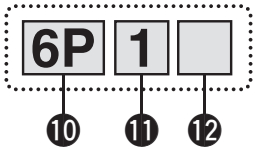
The support guide was designed to support workpieces with significant overhang.

p. 115



For auto switches, refer to pages 167 to 170.

LEC□ Series (For details, refer to page 199.)



⑩ Controller/Driver type*5

—	Without controller/driver	
6N	**LECA6** (Step data input type)	NPN
6P		PNP
1N	**LECP1***6 (Programless type)	NPN
1P		PNP
AN	**LECPA***6 *7 (Pulse input type)	NPN
AP		PNP

⑪ I/O cable length*8, Communication plug

—	Without cable (Without communication plug connector)
1	1.5 m
3	3 m*9
5	5 m*9

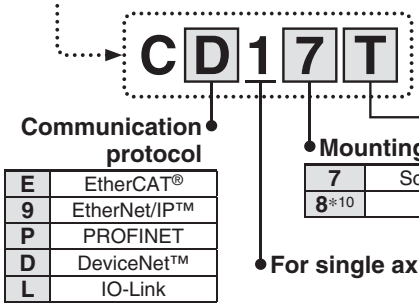
⑫ Controller/Driver mounting

—	Screw mounting
D	DIN rail*10

JXC□ Series (For details, refer to page 199.)

⑩ Controller

—	Without controller
C□1□□	With controller



*1 Please consult with SMC for non-standard strokes as they are produced as special orders.
*2 Refer to the body mounting example on page 203 for the mounting method.
*3 Produced upon receipt of order (Robotic cable only)
*4 The standard cable should only be used on fixed parts. For use on moving parts, select the robotic cable.
*5 For details on controllers/drivers and compatible motors, refer to the compatible controller/driver on the next page.
*6 Only available for the motor type "Step motor"
*7 When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-□) on page 234 separately.
*8 When "Without controller/driver" is selected for controller/driver types, I/O cable cannot be selected. Refer to page 213 (For LECA6), page 227 (For LECP1), or page 234 (For LECPA) if I/O cable is required.
*9 When "Pulse input type" is selected for controller/driver types, pulse input usable only with differential. Only 1.5 m cables usable with open collector
*10 The DIN rail is not included. Order it separately.
*11 Select "—" for anything other than DeviceNet™.

⚠Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LEF series and the controller LEC/JXC series.
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.

② For the servo motor (24 VDC) specification, EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 213 for the noise filter set. Refer to the LECA series Operation Manual for installation.

[UL-compliant products (For the LEC series)]

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

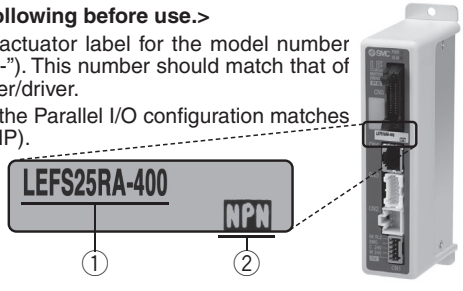
The actuator and controller/driver are sold as a package.

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

<Check the following before use.>

① Check the actuator label for the model number (after "25A-"). This number should match that of the controller/driver.

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



* Refer to the Operation Manual for using the products. Please download it via our website, https://www.smc.eu

Compatible Controller/Driver

LEC□ Series

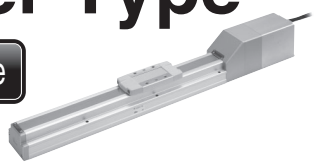
Type	Step data input type 	Programless type 	Pulse input type 
Series	**LECA6**	**LECP1**	**LECPA**
Features		Capable of setting up operation (step data) without using a PC or teaching box	Operation by pulse signals
Compatible motor	Servo motor (24 VDC)	Step motor (Servo/24 VDC)	
Max. number of step data	64 points	14 points	—
Power supply voltage	24 VDC		
Reference page	205	221	228

JXC□ Series

Type	EtherCAT® direct input type 	EtherNet/IP™ direct input type 	PROFINET direct input type 	DeviceNet™ direct input type 	IO-Link direct input type 
Series	**JXCE1**	**JXC91**	**JXCP1**	**JXCD1**	**JXCL1**
Features	EtherCAT® direct input	EtherNet/IP™ direct input	PROFINET direct input	DeviceNet™ direct input	IO-Link direct input
Compatible motor	Step motor (Servo/24 VDC)				
Max. number of step data	64 points				
Power supply voltage	24 VDC				
Reference page	246				

Electric Actuator/Slider Type

Ball Screw Drive Secondary Battery Compatible



25A-LEFS Series LEFS25, 32, 40

Refer to page 43 for model selection.

LECY□ Series ▶p. 201

CE cULus * See the table below. RoHS

How to Order

25A-LEFS H 32 R S3 B – 200 □ K – S 2 A2 □

Series compatible with secondary batteries

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

25
32
40

❸ Motor mounting position

—	In-line
R	Right side parallel
L	Left side parallel

❺ Lead [mm]

Symbol	25A-LEFS25	25A-LEFS32	25A-LEFS40
A	12	16	20
B	6	8	10

❻ Stroke [mm]

50	50
to	to
1000	1000

* For details, refer to the applicable stroke table below.

❼ Motor option

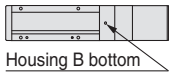
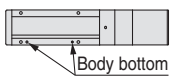
—	Without option
B	With lock

❹ Motor type

Symbol	Type	Output [W]	Actuator size	Compatible driver	UL-compliant
S2*1	AC servo motor (Incremental encoder)	100	25	LECSA□-S1	—
S3		200	32	LECSA□-S3	—
S4		400	40	LECSA2-S4	—
S6*1	AC servo motor (Absolute encoder)	100	25	LECSB□-S5 LECSC□-S5 LECSS□-S5	—
S7		200	32	LECSB□-S7 LECSC□-S7 LECSS□-S7	—
S8		400	40	LECSB2-S8 LECSC2-S8 LECSS2-S8	—
T6*2, *3		100	25	LECSB2-T5 LECSC2-T5	—
				LECSS2-T5	●*3
T7*3		200	32	LECSB2-T7 LECSC2-T7	—
				LECSS2-T7	●*3
T8*3		400	40	LECSB2-T8 LECSC2-T8	—
				LECSS2-T8	●*3

*1 For motor type S 2 and S 6 , the compatible driver part number suffixes are S1 and S5 respectively.
*2 For motor type T6, the compatible driver part number suffix is T5.
*3 The only compatible drivers complaint with UL standards are the LECSS2-T5, LECSS2-T7, and LECSS2-T8.

❽ Positioning pin hole

—	Housing B bottom*1	 Housing B bottom
K	Body bottom 2 locations	 Body bottom

*1 Refer to the body mounting example on page 203 for the mounting method.

❾ Cable type*1 *2

—	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

*1 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)
*2 Standard cable entry direction is
· Parallel: (A) Axis side
· In-line: (B) Counter axis side

❿ Cable length*1 [m]

—	Without cable
2	2
5	5
A	10

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

⓫ Driver type

	Compatible driver	Power supply voltage [V]	Size 25	Size 32	Size 40	UL-compliant
—	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	●	●	●	—
	LECSB2-T□	200 to 240	●	●	●	—
C1	LECSC1-S□	100 to 120	●	●	—	—
C2	LECSC2-S□	200 to 230	●	●	●	—
	LECSC2-T□		●	●	●	—
S1	LECSS1-S□	100 to 120	●	●	—	—
S2	LECSS2-S□	200 to 230	●	●	●	—
	LECSS2-T□	200 to 240	●	●	●	●

⓬ I/O cable length [m]*3

—	Without cable
H	Without cable (Connector only)
1	1.5

*3 When "Without driver" is selected for driver type, only "—: Without cable" can be selected. Refer to page 279 if I/O cable is required. (Options are shown on page 279.)

Applicable Stroke Table

●: Standard

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	Manufacturable stroke range [mm]
25A-LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	50 to 600
25A-LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	50 to 800
25A-LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	150 to 1000

* Please consult with SMC for non-standard strokes as they are produced as special orders.

* When a driver type is selected, a cable is included. Select the cable type and cable length.
Example) S2S2: Standard cable (2 m) + Driver (LECSS2)
S2 : Standard cable (2 m)
— : Without cable and driver

* The 25A- series specifications and dimensions are the same as those of the standard model.

Compatible Driver

Driver type	Pulse input type/ Positioning type	Pulse input type	CC-Link direct input type	SSCNETⅢ type	Pulse input type	CC-Link direct input type	SSCNETⅢ/H type
Series	LECSA	LECSB	LECSC	LECSS	LECSB-T	LECSC-T	LECSS-T
Number of point tables	Up to 7	—	Up to 255 (2 stations occupied)	—	Up to 255	Up to 255 (2 stations occupied)	—
Pulse input	○	○	—	—	○	—	—
Applicable network	—	—	CC-Link	SSCNETⅢ	—	CC-Link	SSCNETⅢ/H
Control encoder	Incremental 17-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder	Absolute 18-bit encoder	Absolute 22-bit encoder
Communication function	USB communication	USB communication, RS422 communication	USB communication, RS422 communication	USB 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)				200 to 240 VAC (50/60 Hz)	200 to 230 VAC (50/60 Hz)	200 to 240 VAC (50/60 Hz)

* Copper and zinc materials are used for the motors, cables, controllers/drivers.

Electric Actuator/Slider Type

Ball Screw Drive

Secondary Battery Compatible

25A-LEFS Series LEFS25, 32, 40

CE RoHS

Refer to page 51 for model selection.

LECS□ Series ▶ p. 200

How to Order

25A-LEFS **H** **32** **R** **V7** **B** – **200** □ **K** – **S** **2** **M2** □

Series compatible with secondary batteries

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬

❶ Accuracy

—	Basic type
H	High-precision type

❷ Size

25
32
40

❸ Motor mounting position

—	In-line
R	Right side parallel
L	Left side parallel

❺ Lead [mm]

Symbol	LEFS25	LEFS32	LEFS40
A	12	16	20
B	6	8	10

❻ Stroke [mm]

50	50
to	to
1000	1000

∗ For details, refer to the applicable stroke table below.

❼ Motor option

—	Without option
B	With lock

❹ Motor type

Symbol	Type	Output [W]	Size	Compatible driver
V6∗1	AC servo motor (Absolute encoder)	100	25	LECYM2-V5/LECYU2-V5
V7		200	32	LECYM2-V7/LECYU2-V7
V8		400	40	LECYM2-V8/LECYU2-V8

∗1 For motor type V 6 , the compatible driver part number suffix is V5.

❽ Positioning pin hole

—	Housing B bottom∗1	Housing B bottom
K	Body bottom 2 locations	Body bottom

∗1 Refer to the body mounting example on page 203 for the mounting method.

❾ Cable type∗1 ∗2

—	Without cable
S	Standard cable
R	Robotic cable (Flexible cable)

∗1 The motor and encoder cables are included. (The lock cable is also included when the motor with lock option is selected.)

∗2 Standard cable entry direction is
- Parallel: (A) Axis side
- In-line: (B) Counter axis side

❿ Cable length∗1 **[m]**

—	Without cable
3	3
5	5
A	10
C	20

∗1 The length of the encoder, motor and lock cables are the same.

⓫ Driver type

	Compatible driver	Power supply voltage [V]
—	Without driver	—
M2	LECYM2-V□	200 to 230
U2	LECYU2-V□	200 to 230

⓬ I/O cable length [m]∗3

—	Without cable
H	Without cable (Connector only)
1	1.5

∗3 When "Without driver" is selected for driver type, only "—: Without cable" can be selected. Refer to page 292 if I/O cable is required. (Options are shown on page 292.)

Applicable Stroke Table

●: Standard

Model \ Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	Manufacturable stroke range [mm]
25A-LEFS25	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	50 to 600
25A-LEFS32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—	—	50 to 800
25A-LEFS40	—	—	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	150 to 1000

∗ Please consult with SMC for non-standard strokes as they are produced as special orders.

∗ The 25A- series specifications and dimensions are the same as those of the standard model.

Compatible Driver

Driver type	MECHATROLINK-Ⅱ type	MECHATROLINK-Ⅲ type
		
Series	**LECYM**	**LECYU**
Applicable network	MECHATROLINK-Ⅱ	MECHATROLINK-Ⅲ
Control encoder	Absolute 20-bit encoder	
Communication device	USB communication, RS-422 communication	
Power supply voltage [V]	200 to 230 VAC (50/60 Hz)	
Reference page	285	

∗ Copper and zinc materials are used for the motors, cables, controllers/drivers.

LEF Series
Electric Actuator
Specific Product Precautions 1

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For electric actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Design

⚠Caution

1. Do not apply a load in excess of the specification limits.

Select a suitable actuator by work load and allowable moment. If a load in excess of the specification limits is applied to the guide, adverse effects such as the generation of play in the guide, reduced accuracy, or reduced service life of the product may occur.

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

This can cause a malfunction.

Selection

⚠Warning

1. Do not increase the speed in excess of the specification limits.

Select a suitable actuator by the relationship between the allowable work load and speed, and the allowable speed of each stroke. If the product is used outside of the specification limits, adverse effects such as the generation of noise, reduced accuracy, or reduced service life of the product may occur.

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

This can cause a malfunction.

3. When the product repeatedly cycles with partial strokes (see the table below), operate it at a full stroke at least once every few dozen cycles.

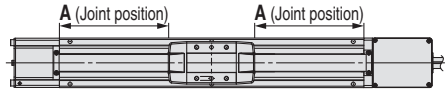
Failure to do so may result in the product running out of lubrication.

Model	Partial stroke
LEF□16	40 mm or less
LEF□25	65 mm or less
LEF□32	70 mm or less
LEF□40	105 mm or less

4 . When external force is to be applied to the table, it is necessary to add the external force to the work load as the total carried load when selecting a size.

When a cable duct or flexible moving tube is attached to the actuator, the sliding resistance of the table will increase, which may lead to the malfunction of the product.

5. When the stroke exceeds 2000 mm, a joint needs to be added to the guide rail for extension. When passing over the joint, slight vibration may occur.



Size	Stroke	A
32	2500	370
40	2500	320
	3000	820

Handling

⚠Caution

1. Set the [In position] in the step data to at least 0.5 (at least 1 for the belt type).

If it is set any lower, the completion signal of the [In position] may not be properly output.

Handling

⚠Caution

2. INP output signal

1) Positioning operation

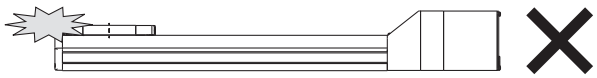
When the product comes within the set range of the step data [In position], the INP output signal will turn ON.

Initial value: Set to [0.50] or higher.

3. Never allow the table to collide with the stroke end except during return to origin.

When incorrect instructions are inputted, such as those which cause the product to operate outside of the specification limits or outside of the actual stroke through changes in the controller/driver settings and/or origin position, the table may collide with the stroke end of the actuator. Be sure to check these points before use.

If the table collides with the stroke end of the actuator, the guide, belt, or internal stopper may break. This can result in 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.

4. The moving force should be the initial value.

If the moving force is set below the initial value, it may cause the generation of an alarm.

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

Check the model selection section of the catalogue.

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

Additional force will cause the displacement of the origin position since it is based on the detected motor torque.

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

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

8. Do not apply strong impact or an excessive moment while mounting a workpiece.

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

9. Keep the flatness of the mounting surface within 0.1 mm/500 mm.

If a workpiece or base does not sit evenly on the body of the product, play in the guide or an increase in sliding resistance may occur.

10. When mounting the product, secure a bending diameter of 40 mm or longer for the cable.

11. Do not allow a workpiece to collide with the table during the positioning operation or within the positioning range.

12. For the model where grease is applied to the dust seal band for sliding, when wiping off the grease to remove foreign matter, etc., be sure to reapply grease afterward.

13. When bottom mounted, the dust seal band may become warped.

LEF Series
Electric Actuator
Specific Product Precautions 2

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For electric actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

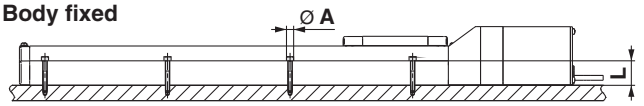
Handling

⚠Caution

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

Tightening the screws with a higher torque than recommended may cause a malfunction and/or decrease in guide accuracy, while 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.

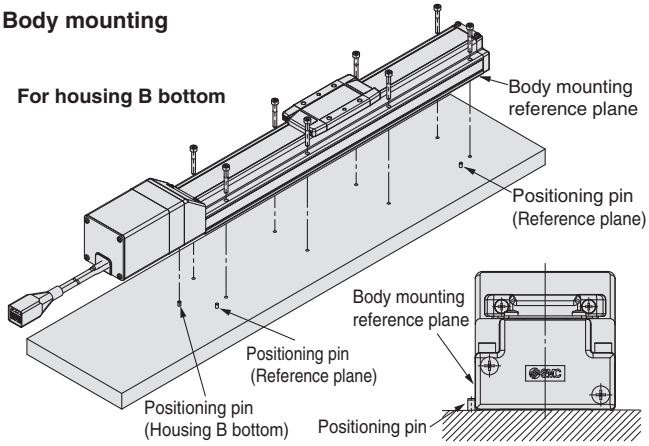
Body fixed



Model	Screw size	Max. tightening torque [N·m]	ø**A** [mm]	**L** [mm]
LEF□16	M3	0.6	3.5	20
LEF□25	M4	1.5	4.5	24
LEF□32	M5	3.0	5.5	30
LEF□40	M6	5.2	6.6	31

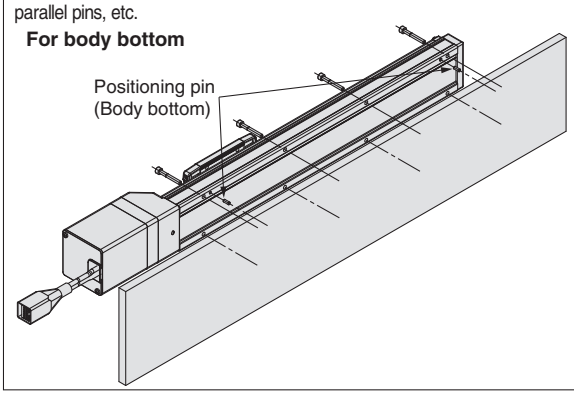
Body mounting

For housing B bottom

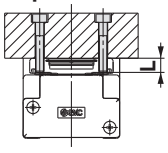


The travelling parallelism is the reference plane for the body mounting reference plane.
If the travelling parallelism for a table is required, set the reference plane against parallel pins, etc.

For body bottom



Workpiece fixed



Model	Screw size	Max. tightening torque [N·m]	**L** (Max. screw-in depth) [mm]
LEF□16	M4 x 0.7	1.5	6
LEF□25	M5 x 0.8	3.0	8
LEF□32	M6 x 1	5.2	9
LEFS40	M8 x 1.25	12.5	13

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

15. Do not operate by fixing the table and moving the actuator body.

16. The belt drive actuator cannot be used for vertical applications.

17. Check the specifications for the minimum speed of each actuator.

Failure to do so may result in unexpected malfunctions such as knocking.

18. In the case of the belt drive actuator, vibration may occur during operation at speeds within the actuator specifications due to the operating conditions. Change the speed setting to a speed that does not cause vibration.

19. When fluctuations in the load are caused during operation, malfunction, noise, or alarm generation may occur. (In the case of the AC servo motor)

The gain tuning may not be suitable for fluctuating loads. Adjust the gain properly by following the instructions in the driver manual.

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∗1	○	○	○

∗1 Select whichever comes first.

- **Items for visual appearance check**
  1. Loose set screws, Abnormal amount of dirt, etc.
  2. Check for visible damage, Check of cable joint
  3. Vibration, Noise
- **Items for internal check**
  1. Lubricant condition on moving parts
  2. Loose or mechanical play in fixed parts or fixing screws
- **Items for belt check**

Stop operation immediately and replace the belt when any of the following occur. In addition, ensure your operating environment and conditions satisfy the requirements specified for the product.

a. Tooth shape canvas is worn out
Canvas fibre becomes fuzzy, Rubber is coming off and the fibre has become whitish, Lines of fibres have become unclear

b. Peeling off or wearing of the side of the belt
Belt corner has become rounded and frayed threads stick out

c. Belt is partially cut
Belt is partially cut, Foreign matter caught in the teeth of other parts is causing damage

d. A vertical line on belt teeth is visible
Damage which is made when the belt runs on the flange

e. Rubber back of the belt is softened and sticky

f . Cracks on the back of the belt are visible

Controller/Driver
LEC□/JXC□ Series

<Single Axis Controllers>

Step Data Input Type ..... p. 206

Servo Motor (24 VDC)
LECA6 Series

Gateway Unit ..... p. 217

LEC-G Series

Gateway Unit ..... p. 221

Step Motor (Servo/24 VDC)
LECP1 Series

Programless Type ..... p. 228

Step Motor (Servo/24 VDC)
LECPA Series

EtherCAT®/EtherNet/IP™/PROFINET/DeviceNet™/IO-Link Direct Input Type ..... p. 238

JXC□ Series

EtherCAT®

EtherNet/IP™

PROFINET®

DeviceNet™

IO-Link

<Multi-Axis Controllers>

EtherNet/IP™ Direct Input Type ..... p. 247

For 3 axes **JXC92 Series**

Parallel I/O/EtherNet/IP™ Direct Input Type ..... p. 249

For 4 axes

JXC73 Series
JXC83 Series

JXC93 Series
EtherNet/IP™

Controller (Step Data Input Type)
Servo Motor (24 VDC)
LECA6 Series

How to Order

⚠Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LE series and the controller LEC series.
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.

② For the LECA6 series (servo motor controller), EMC compliance was tested by installing a noise filter set (LEC-NFA). Refer to page 213 for the noise filter set. Refer to the LECA Operation Manual for installation.

[UL-compliant products]

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

LE C A 6 P □ □ – □

Controller

Compatible motor

A	Servo motor (24 VDC)

Number of step data (Points)

6	64

Parallel I/O type

N	NPN
P	PNP

I/O cable length [m]

—	Without cable
1	1.5
3	3
5	5

Option

—	Screw mounting
D∗1	DIN rail mounting

∗1 The DIN rail is not included. Order it separately.

Actuator part number

	Without cable specifications and actuator options Example: Enter "**LEFS16A-400**" for the LEFS16A-400B-R16N1.
BC	Blank controller∗1

∗1 Requires dedicated software (LEC-BCW)

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

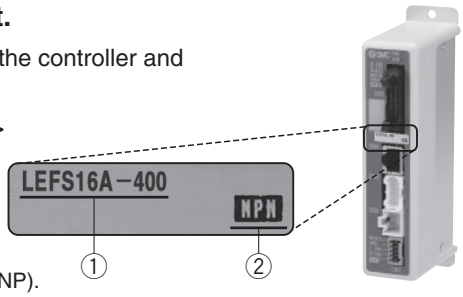
The controller is sold as single unit after the compatible actuator is set.

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

<Check the following before use.>

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

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



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

Precautions for blank controllers (LEC□6□□-BC)

A blank controller is a controller to which the customer can write the data of the actuator it is to be combined and used with. Use the dedicated software (LEC-BCW) for data writing.

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

SMC website
https://www.smc.eu

Specifications

Basic Specifications

Item	LECA6
Compatible motor	Servo motor (24 VDC)
Power supply∗1	Power voltage: 24 VDC ±10 %∗2 [Including motor drive power, control power, stop, lock release]
Parallel input	11 inputs (Photo-coupler isolation)
Parallel output	13 outputs (Photo-coupler isolation)
Compatible encoder	Incremental A/B (800 pulse/rotation)/Z phase
Serial communication	RS485 (Modbus protocol compliant)
Memory	EEPROM
LED indicator	LED (Green/Red) one of each
Lock control	Forced-lock release terminal∗3
Cable length [m]	I/O cable: 5 or less, Actuator cable: 20 or less
Cooling system	Natural air cooling
Operating temperature range [°C]	0 to 40 (No freezing)
Operating humidity range [%RH]	90 or less (No condensation)
Storage temperature range [°C]	-10 to 60 (No freezing)
Storage humidity range [%RH]	90 or less (No condensation)
Insulation resistance [MΩ]	Between the housing and SG terminal: 50 (500 VDC)
Weight [g]	150 (Screw mounting), 170 (DIN rail mounting)

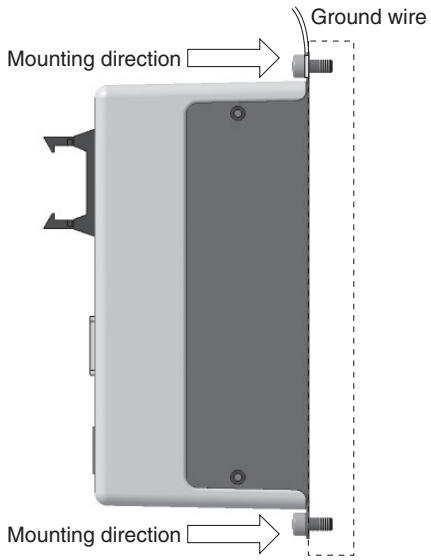
∗1 Do not use the power supply of "inrush current prevention type" for the controller power supply. When compliance with UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

∗2 The power consumption changes depending on the actuator model. Refer to the specifications of actuator for more details.

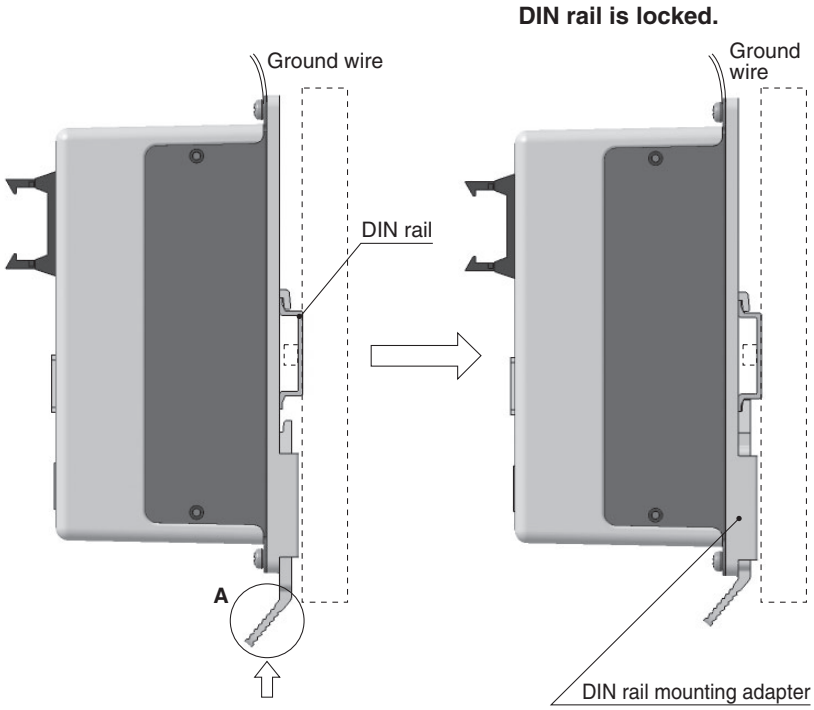
∗3 Applicable to non-magnetising locks

How to Mount

a) Screw mounting (LECA6□□-□)
(Installation with two M4 screws)



b) DIN rail mounting (LECA6□□D-□)
(Installation with the DIN rail)

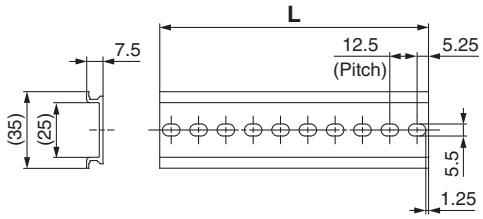


Hook the controller on the DIN rail and press the lever of section **A** in the arrow direction to lock it.

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

DIN rail
AXT100-DR-□

∗ For □, enter a number from the No. line in the table below.
Refer to the dimension drawings on page 208 for the mounting dimensions.



L Dimensions [mm]

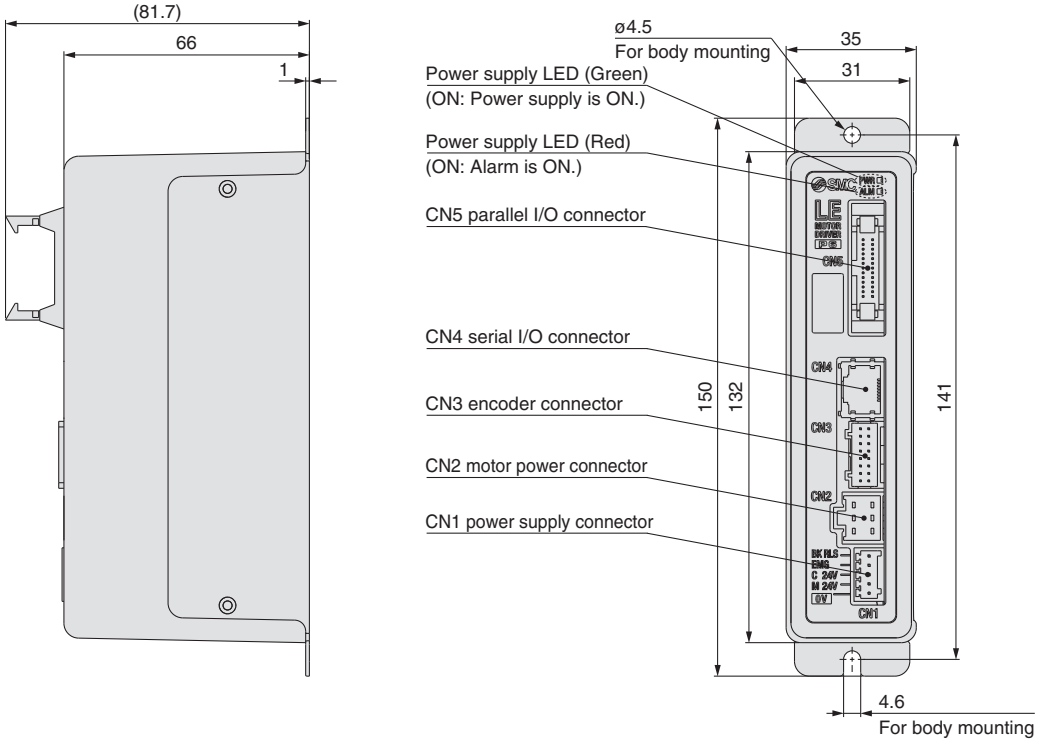
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5
No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
L	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

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

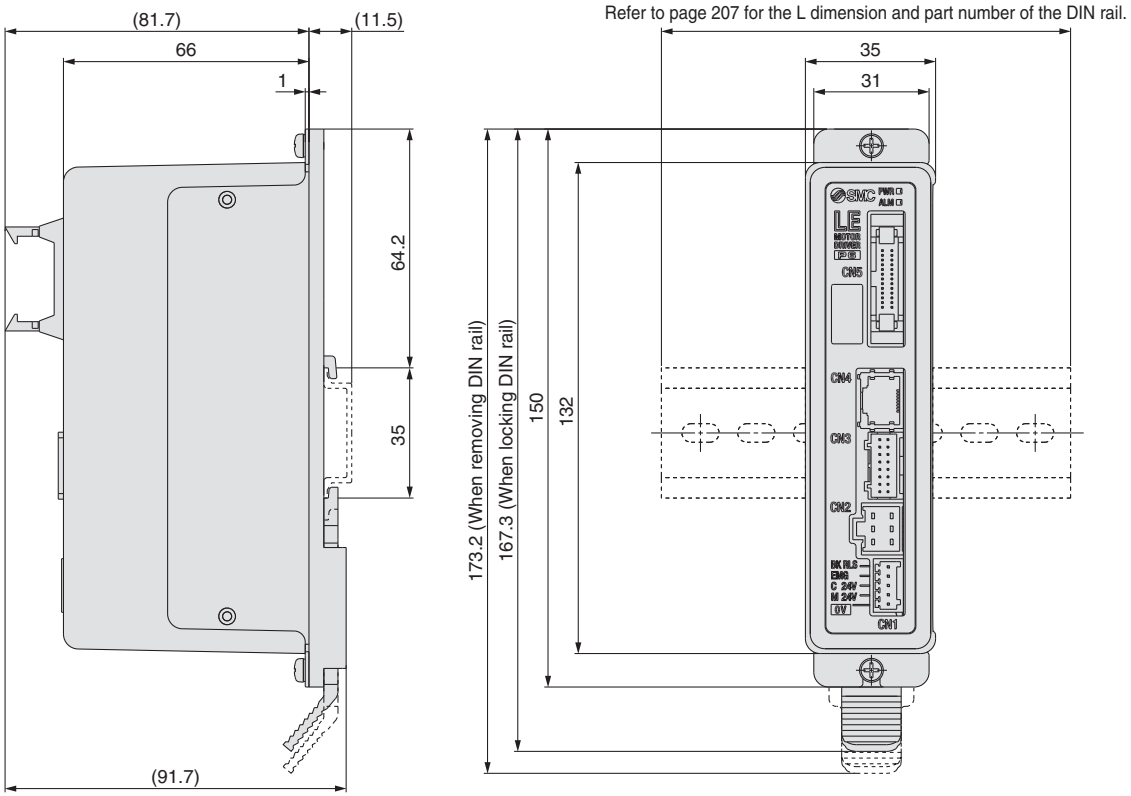
This should be used when the DIN rail mounting adapter is mounted onto a screw mounting type controller afterward.

Dimensions

a) Screw mounting (LECA6□□-□)



b) DIN rail mounting (LECA6□□D-□)



Wiring Example 1

Power Supply Connector: CN1

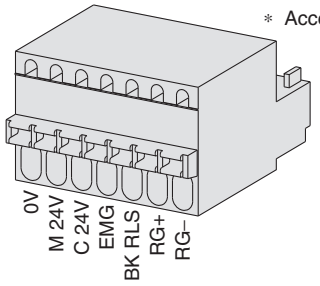
∗ The power supply plug is an accessory.
<Applicable cable size> AWG20 (0.5 mm²), cover diameter 2.0 mm or less

CN1 Power Supply Connector Terminal for LECA6 (PHOENIX CONTACT FK-MC0.5/7-ST-2.5)

Terminal name	Function	Details
0V	Common supply (–)	M 24V terminal/C 24V terminal/EMG terminal/BK RLS terminal are common (–).
M 24V	Motor power supply (+)	Motor power supply (+) supplied to the controller
C 24V	Control power supply (+)	Control power supply (+) supplied to the controller
EMG	Stop (+)	Input (+) for releasing the stop
BK RLS	Lock release (+)	Input (+) for releasing the lock
RG+	Regenerative output 1	Regenerative output terminals for external connection
RG–	Regenerative output 2	(Not necessary to connect them in the combination with the LE series standard specifications.)

Power supply plug for LECA6: LEC-D-1-2

∗ Accessory



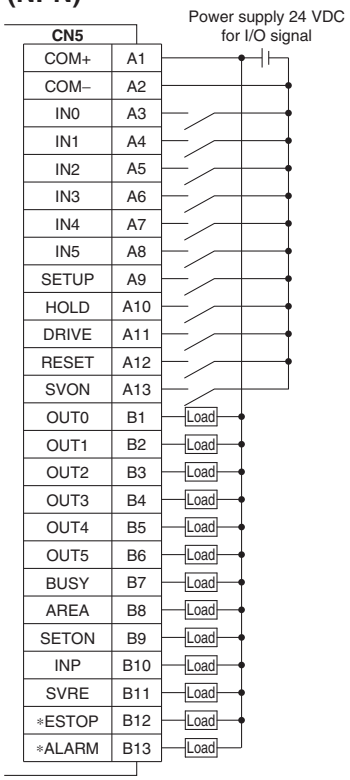
Wiring Example 2

Parallel I/O Connector: CN5

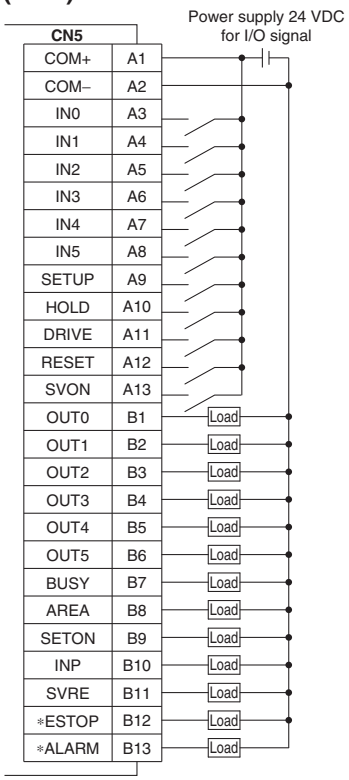
∗ When you connect a PLC to the CN5 parallel I/O connector, use the I/O cable (LEC-CN5-□).
∗ The wiring changes depending on the type of parallel I/O (NPN or PNP).

Wiring diagram

LECA6N□□-□ (NPN)



LECA6P□□-□ (PNP)



Input Signal

Name	Details
COM+	Connects the power supply 24 V for input/output signal
COM–	Connects the power supply 0 V for input/output signal
IN0 to IN5	Step data specified bit no. (Input is instructed by combining IN0 to 5.)
SETUP	Instruction to return to origin
HOLD	Temporarily stops operation
DRIVE	Instruction to drive
RESET	Resets alarm and interrupts operation
SVON	Servo ON instruction

Output Signal

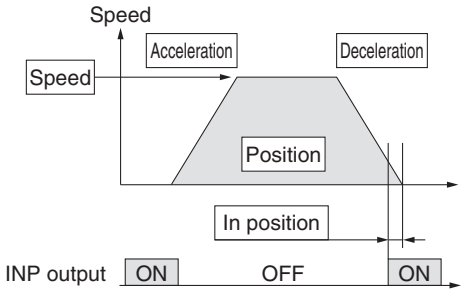
Name	Details
OUT0 to OUT5	Outputs the step data no. during operation
BUSY	Outputs when the actuator is moving
AREA	Outputs within the step data area output setting range
SETON	Outputs when returning to origin
INP	Outputs when target position or target force is reached (Turns on when the positioning or pushing is completed.)
SVRE	Outputs when servo is on
∗ESTOP∗1	OFF when EMG stop is instructed
∗ALARM∗1	OFF when alarm is generated

∗1 Signal of negative-logic circuit (N.C.)

Step Data Setting

1. Step data setting for positioning

In this setting, the actuator moves toward and stops at the target position.
The following diagram shows the setting items and operation.
The setting items and set values for this operation are stated below.



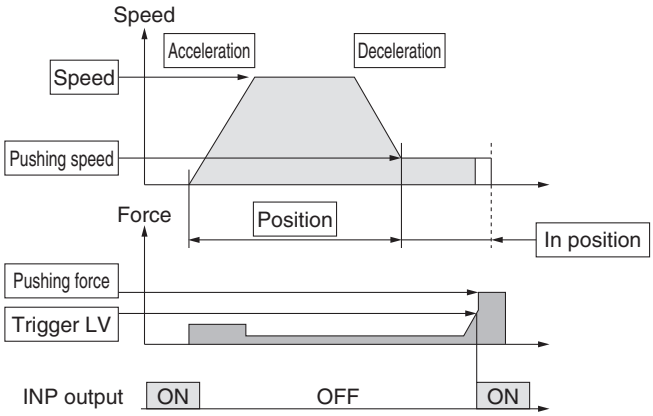
◎: Need to be set.
○: Need to be adjusted as required.
—: Setting is not required.

Step Data (Positioning)

Necessity	Item	Details
◎	Movement MOD	When the absolute position is required, set Absolute. When the relative position is required, set Relative.
◎	Speed	Transfer speed to the target position
◎	Position	Target position
○	Acceleration	Parameter which defines how rapidly the actuator reaches the speed set. The higher the set value, the faster it reaches the speed set.
○	Deceleration	Parameter which defines how rapidly the actuator comes to stop. The higher the set value, the quicker it stops.
◎	Pushing force	Set 0. (If values 1 to 100 are set, the operation will be changed to the pushing operation.)
—	Trigger LV	Setting is not required.
—	Pushing speed	Setting is not required.
○	Moving force	Max. torque during the positioning operation (No specific change is required.)
○	Area 1, Area 2	Condition that turns on the AREA output signal.
○	In position	Condition that turns on the INP output signal. When the actuator enters the range of [in position], the INP output signal turns on. (It is unnecessary to change this from the initial value.) When it is necessary to output the arrival signal before the operation is completed, make the value larger.

2. Step data setting for pushing

The actuator moves toward the pushing start position, and when it reaches that position, it starts pushing with the set force or less.
The following diagram shows the setting items and operation.
The setting items and set values for this operation are stated below.



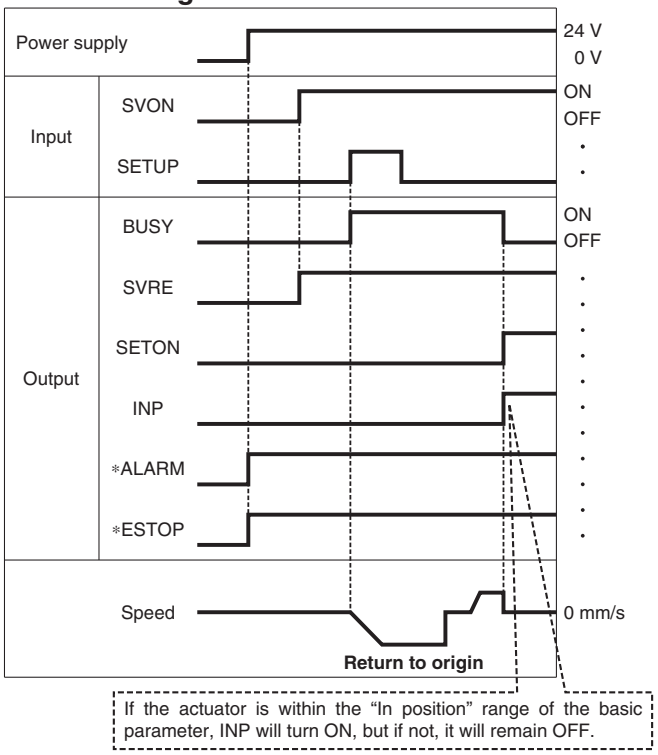
◎: Need to be set.
○: Need to be adjusted as required.

Step Data (Pushing)

Necessity	Item	Details
◎	Movement MOD	When the absolute position is required, set Absolute. When the relative position is required, set Relative.
◎	Speed	Transfer speed to the pushing start position
◎	Position	Pushing start position
○	Acceleration	Parameter which defines how rapidly the actuator reaches the speed set. The higher the set value, the faster it reaches the speed set.
○	Deceleration	Parameter which defines how rapidly the actuator comes to stop. The higher the set value, the quicker it stops.
◎	Pushing force	Pushing force ratio is defined. The setting range differs depending on the electric actuator type. Refer to the operation manual for the electric actuator.
◎	Trigger LV	Condition that turns on the INP output signal. The INP output signal turns on when the generated force exceeds the value. Trigger level should be the pushing force or less.
○	Pushing speed	Pushing speed during pushing. When the speed is set fast, the electric actuator and workpieces might be damaged due to the impact when they hit the end, so this set value should be smaller. Refer to the operation manual for the electric actuator.
○	Moving force	Max. torque during the positioning operation (No specific change is required.)
○	Area 1, Area 2	Condition that turns on the AREA output signal.
◎	In position	Transfer distance during pushing. If the transferred distance exceeds the setting, it stops even if it is not pushing. If the transfer distance is exceeded, the INP output signal will not turn on.

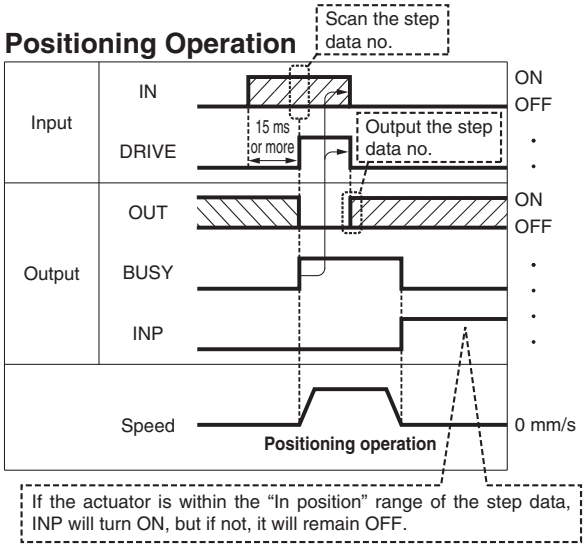
Signal Timing

Return to Origin



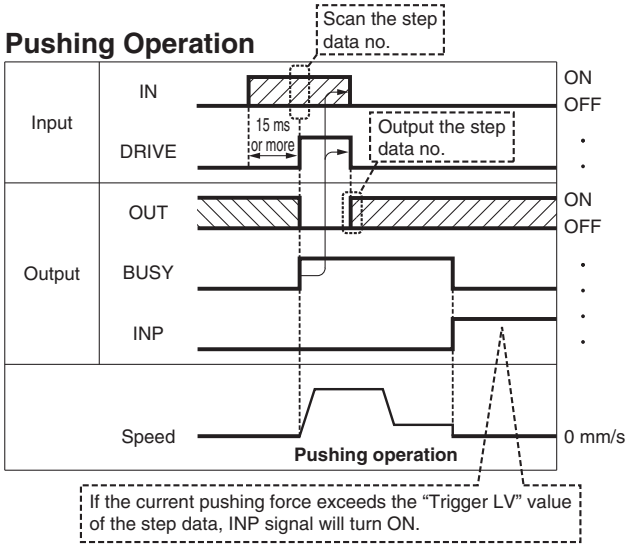
∗ “∗ALARM” and “∗ESTOP” are expressed as negative-logic circuits.

Positioning Operation

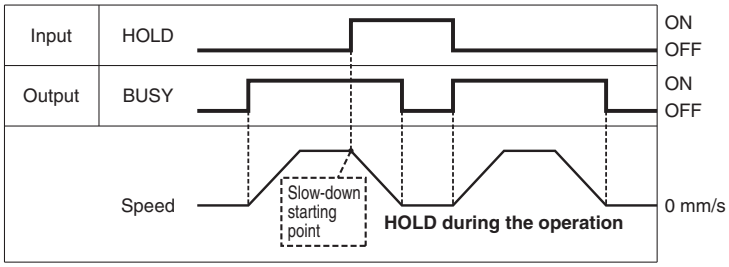


∗ “OUT” is output when “DRIVE” is changed from ON to OFF.
Refer to the operation manual for details on the controller for the LEM series.
(When power supply is applied, “DRIVE” or “RESET” is turned ON or “∗ESTOP” is turned OFF, all of the “OUT” outputs are OFF.)

Pushing Operation

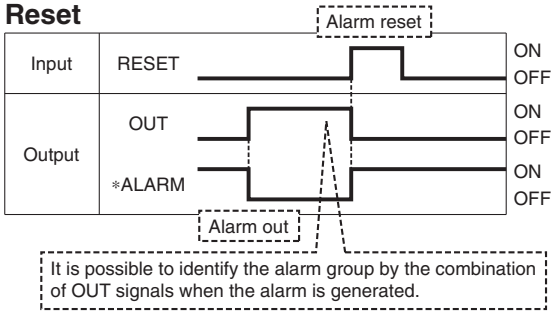


HOLD



∗ When the actuator is within the “In position” range in the pushing operation, it does not stop even if HOLD signal is input.

Reset



∗ “∗ALARM” is expressed as a negative-logic circuit.

Options: Actuator Cable

[Robotic cable for servo motor (24 VDC)]

LE − CA − 1

Cable length (L) [m]

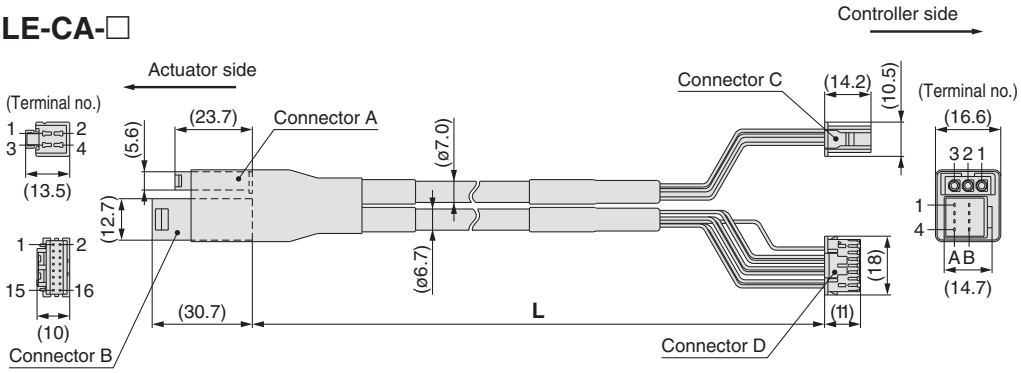
1	1.5
3	3
5	5
8	8*1
A	10*1
B	15*1
C	20*1

*1 Produced upon receipt of order

Weight

Product no.	Weight [g]
LE-CA-1	220
LE-CA-3	420
LE-CA-5	700
LE-CA-8	1100
LE-CA-A	1370
LE-CA-B	2050
LE-CA-C	2720

LE-CA-□



Signal	Connector A terminal no.	Cable colour	Connector C terminal no.
U	1	Red	1
V	2	White	2
W	3	Black	3

Signal	Connector B terminal no.	Cable colour	Connector D terminal no.
Vcc	B-1	Brown	12
GND	A-1	Black	13
$\overline{A}$	B-2	Red	7
A	A-2	Black	6
$\overline{B}$	B-3	Orange	9
B	A-3	Black	8
$\overline{Z}$	B-4	Yellow	11
Z	A-4	Black	10
		—	3

Shield

Connection of shield material

[Robotic cable with lock and sensor for servo motor (24 VDC)]

LE − CA − 1 − B

Cable length (L) [m]

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

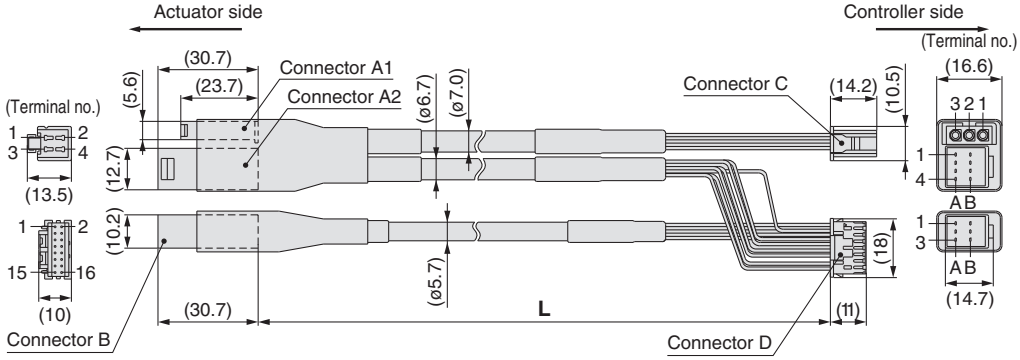
*1 Produced upon receipt of order

With lock and sensor

Weight

Product no.	Weight [g]
LE-CA-1-B	270
LE-CA-3-B	520
LE-CA-5-B	870
LE-CA-8-B	1370
LE-CA-A-B	1710
LE-CA-B-B	2560
LE-CA-C-B	3400

LE-CA-□-B



Signal	Connector A1 terminal no.	Cable colour	Connector C terminal no.
U	1	Red	1
V	2	White	2
W	3	Black	3

Signal	Connector A2 terminal no.	Cable colour	Connector D terminal no.
Vcc	B-1	Brown	12
GND	A-1	Black	13
$\overline{A}$	B-2	Red	7
A	A-2	Black	6
$\overline{B}$	B-3	Orange	9
B	A-3	Black	8
$\overline{Z}$	B-4	Yellow	11
Z	A-4	Black	10
		—	3

Shield

Connection of shield material

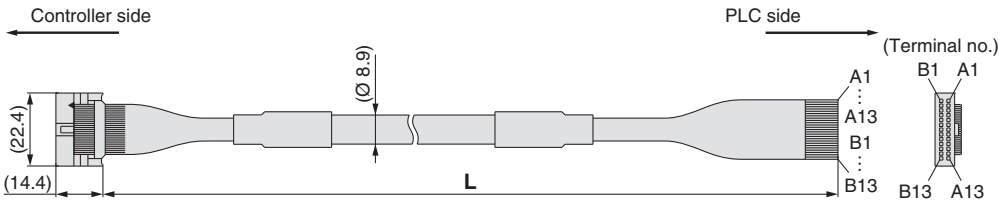
Signal	Connector B terminal no.	Cable colour	Connector D terminal no.
Lock (+)	B-1	Red	4
Lock (–)	A-1	Black	5
Sensor (+)	B-3	Brown	1
Sensor (–)	A-3	Black	2

Option: I/O Cable

LEC − CN5 − 1

Cable length (L) [m]

1	1.5
3	3
5	5



∗ Conductor size: AWG28

Connector pin no.	Insulation colour	Dot mark	Dot colour
A1	Light brown	■	Black
A2	Light brown	■	Red
A3	Yellow	■	Black
A4	Yellow	■	Red
A5	Light green	■	Black
A6	Light green	■	Red
A7	Grey	■	Black
A8	Grey	■	Red
A9	White	■	Black
A10	White	■	Red
A11	Light brown	■ ■	Black
A12	Light brown	■ ■	Red
A13	Yellow	■ ■	Black

Connector pin no.	Insulation colour	Dot mark	Dot colour
B1	Yellow	■ ■	Red
B2	Light green	■ ■	Black
B3	Light green	■ ■	Red
B4	Grey	■ ■	Black
B5	Grey	■ ■	Red
B6	White	■ ■	Black
B7	White	■ ■	Red
B8	Light brown	■ ■ ■	Black
B9	Light brown	■ ■ ■	Red
B10	Yellow	■ ■ ■	Black
B11	Yellow	■ ■ ■	Red
B12	Light green	■ ■ ■	Black
B13	Light green	■ ■ ■	Red
—	Shield		

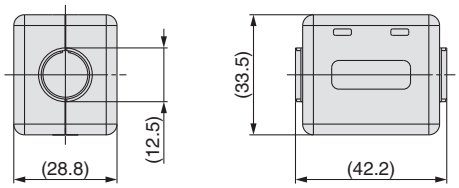
Weight

Product no.	Weight [g]
LEC-CN5-1	170
LEC-CN5-3	320
LEC-CN5-5	520

Option: Noise Filter Set for Servo Motor (24 VDC)

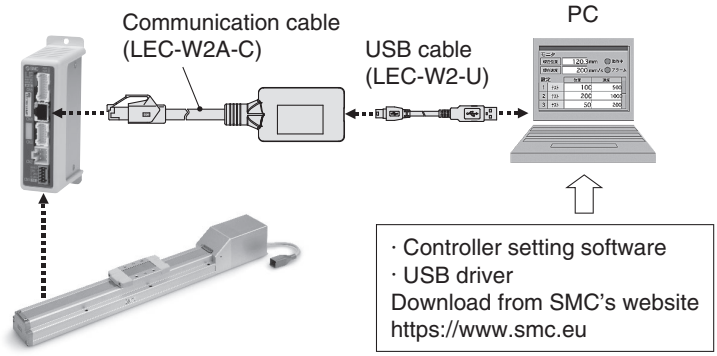
LEC − NFA

Contents of the set: 2 noise filters (Manufactured by WURTH ELEKTRONIK: 74271222)



∗ Refer to the LECA6 series Operation Manual for installation.

LEC Series
Communication Cable for Controller Setting/LEC-W2A-□



How to Order

LEC-W2A-C
- C: Communication cable

LEC-W2-U
- U: USB cable

Compatible Controller/Driver

Step data input type	**LECA6 Series**
Pulse input type	**LECPA Series**
Step Motor Controller	**JXCE1/91/P1/D1/L1 Series**

∗ When connecting to a JXCE1/91/P1/D1/L1 series product, use a conversion cable (P5062-5) as a relay.

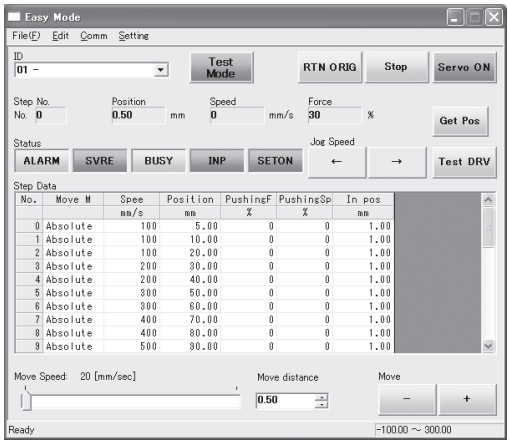
Hardware Requirements

OS	Windows®7, Windows®8.1, Windows®10
Communication interface	USB 1.1 or USB 2.0 ports
Display	1024 x 768 or more

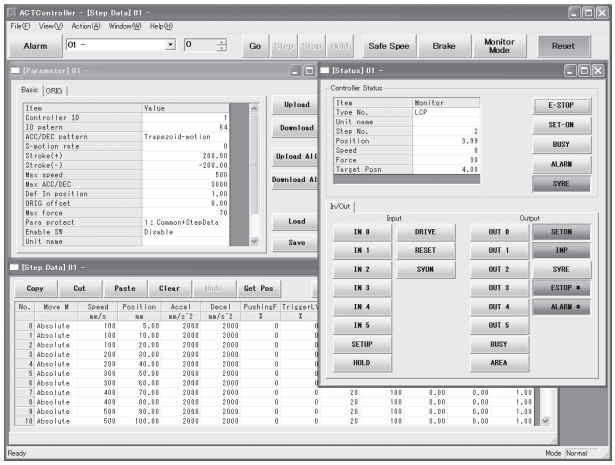
∗ Windows®7, Windows®8.1 and Windows®10 are registered trademarks of Microsoft Corporation in the United States.

Screen Example

Easy mode screen example



Normal mode screen example



Easy operation and simple setting

- Allowing to set and display actuator step data such as position, speed, force, etc.
- Setting of step data and test drive can be performed on the same page.
- Can be used to jog and move at a constant rate

Detailed setting

- Step data can be set in detail.
- Signals and terminal status can be monitored.
- Parameters can be set.
- JOG and constant rate movement, return to origin, test drive and testing of forced output can be performed.

LEC Series
Teaching Box/LEC-T1

How to Order

LEC-T1-3EG

Teaching box

Cable length [m]

3	3

Initial language

J	Japanese
E	English

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

Stop switch

G	Equipped with stop switch

Enable switch

—	None
S	Equipped with enable switch

∗ Interlock switch for jog and test function

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

Option
- **Enable switch is provided.**

Specifications

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

[CE-compliant products]
The EMC compliance of the teaching box was tested with a step motor controller (servo/24 VDC) and an applicable actuator.
[UL-compliant products]
When compliance with UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

Easy Mode

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

Menu Operations Flowchart

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

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

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

Jog
Return to origin
Jog operation

Test
1 step operation

ALM
Active alarm display
Alarm reset

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

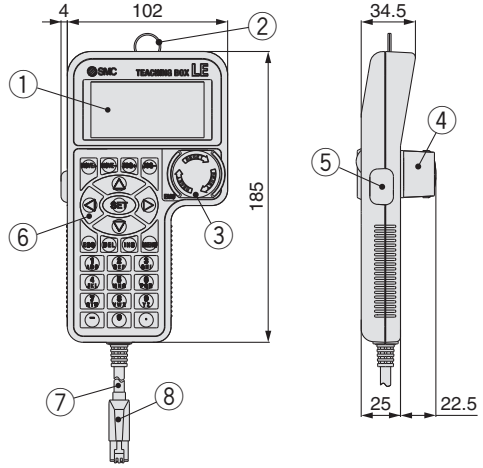
Normal Mode

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

Menu Operations Flowchart

- **Menu**: Step data, Parameter, Monitor, Test, ALM, File, TB setting, Reconnect
- **Step data**: Step data no., Movement MOD, Speed, Position, Acceleration, Deceleration, Pushing force, Trigger LV, Pushing speed, Moving force, Area 1, 2, In position
- **Parameter**: Basic, ORIG
  - **Basic setting**
  - **ORIG setting**
- **Monitor**: Drive, Output signal, Input signal, Output terminal, Input terminal
  - **DRV monitor**: Position, Speed, Torque, Step no., Last step no.
  - **Output signal monitor**
  - **Input signal monitor**
  - **Output terminal monitor**
  - **Input terminal monitor**
- **Test**: JOG/MOVE, Return to ORIG, Test drive, Forced output
- **ALM**: Status, ALM Log record
  - **Status**: Active alarm display, Alarm reset
  - **ALM Log record display**: Log entry display
- **File**: Data saving, Load to controller, File deletion, File protection (Ver. 2.**)
- **TB setting**: Easy/Normal, Language, Backlight, LCD contrast, Beep, Max. connection axis, Password, Distance unit
- **Reconnect**

Dimensions



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

Gateway Unit
LEC-G Series

How to Order

⚠Caution

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

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

Gateway unit **LEC-G MJ2 □**

Applicable Fieldbus protocols

MJ2	CC-Link Ver. 2.0
DN1	DeviceNet™
PR1	PROFIBUS DP
EN1	EtherNet/IP™

Mounting

—	Screw mounting
D*1	DIN rail

*1 The DIN rail is not included. Order it separately.

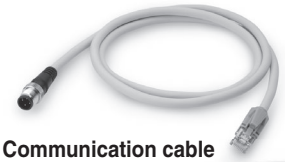
Cable **LEC-CG 1-L**

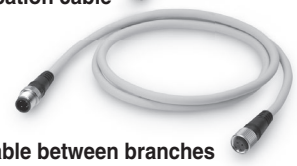
Cable type

1	Communication cable
2	Cable between branches

Cable length

K	0.3 m
L	0.5 m
1	1 m


Communication cable


Cable between branches

Branch connector **LEC-CGD**

Branch connector

Terminating resistor **LEC-CGR**

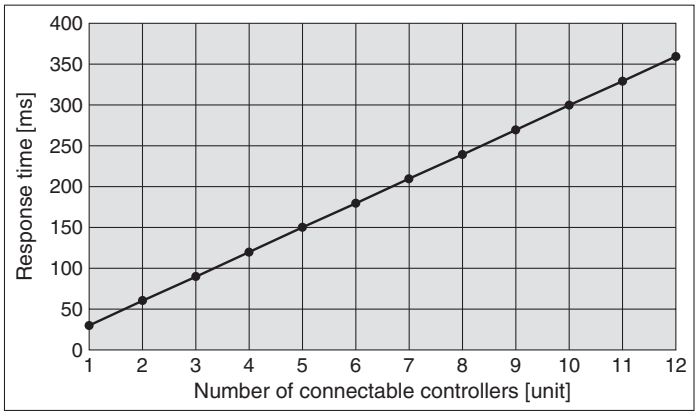
Specifications

Model			LEC-GMJ2□	LEC-GDN1□	LEC-GPR1□	LEC-GEN1□
Communication specifications	Applicable system	Fieldbus	CC-Link	DeviceNet™	PROFIBUS DP	EtherNet/IP™
		Version*1	Ver. 2.0	Release 2.0	V1	Release 1.0
	Communication speed [bps]		156 k/625 k/2.5 M /5 M/10 M	125 k/250 k/500 k	9.6 k/19.2 k/45.45 k/ 93.75 k/187.5 k/500 k/ 1.5 M/3 M/6 M/12 M	10 M/100 M
	Configuration file*2		—	EDS file	GSD file	EDS file
	I/O occupation area		4 stations occupied (8 times setting) Input 896 points 108 words Output 896 points 108 words	Input 200 bytes Output 200 bytes	Input 57 words Output 57 words	Input 256 bytes Output 256 bytes
	Power supply for communication	Power supply voltage [V]*6	—	11 to 25 VDC	—	—
		Internal current consumption [mA]	—	100	—	—
	Communication connector specifications		Connector (Accessory)	Connector (Accessory)	D-sub	RJ45
	Terminating resistor		Not included	Not included	Not included	Not included
Power supply voltage [V]*6			24 VDC ±10 %			
Current consumption [mA]	Not connected to teaching box		200			
	Connected to teaching box		300			
EMG output terminal			30 VDC 1 A			
Controller specifications	Applicable controllers		LECA6 Series			
	Communication speed [bps]*3		115.2 k/230.4 k			
	Max. number of connectable controllers*4		12	8*5	5	12
Accessories			Power supply connector, communication connector		Power supply connector	
Operating temperature range [°C]			0 to 40 (No freezing)			
Operating humidity range [%RH]			90 or less (No condensation)			
Storage temperature range [°C]			–10 to 60 (No freezing)			
Storage humidity range [%RH]			90 or less (No condensation)			
Weight [g]			200 (Screw mounting), 220 (DIN rail mounting)			

*1 Please note that versions are subject to change.
*2 Each file can be downloaded from the SMC website: https://www.smc.eu.
*3 When using a teaching box (LEC-T1-□), set the communication speed to 115.2 kbps.
*4 A communication response time for 1 controller is approximately 30 ms.
Refer to "Communication Response Time Guideline" for response times when several controllers are connected.
*5 For step data input, up to 12 controllers connectable.
*6 When compliance with UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

Communication Response Time Guideline

Response time between gateway unit and controllers depends on the number of controllers connected to the gateway unit. For response time, refer to the graph below.

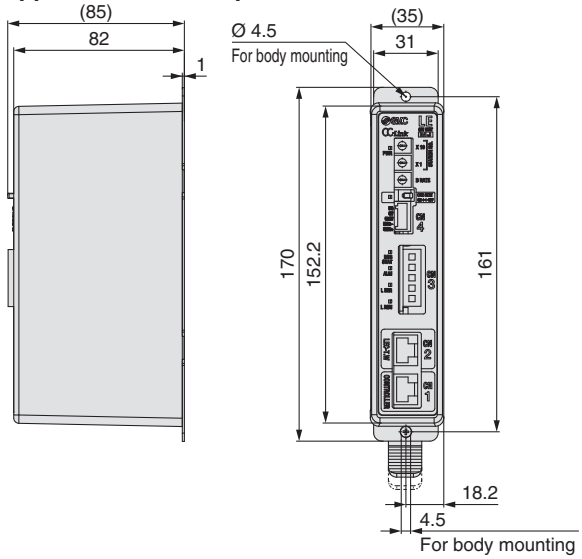


* This graph shows delay times between gateway unit and controllers. Fieldbus network delay time is not included.

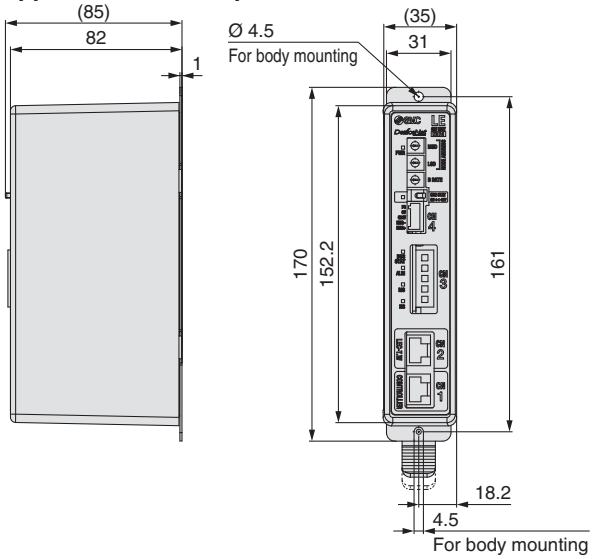
Dimensions

Screw mounting (LEC-G□□□)

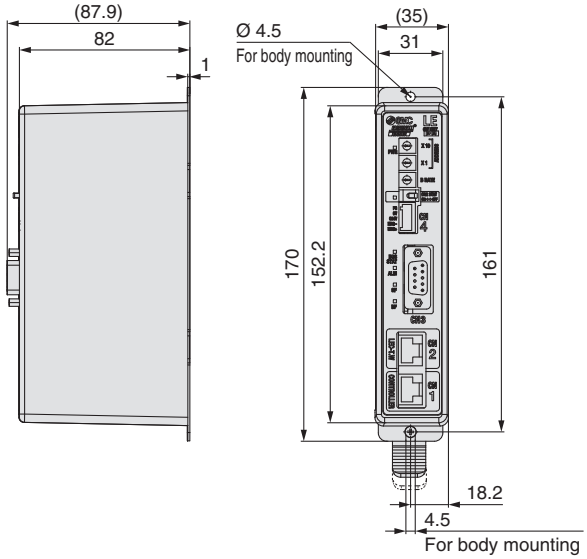
Applicable Fieldbus protocol: CC-Link Ver. 2.0



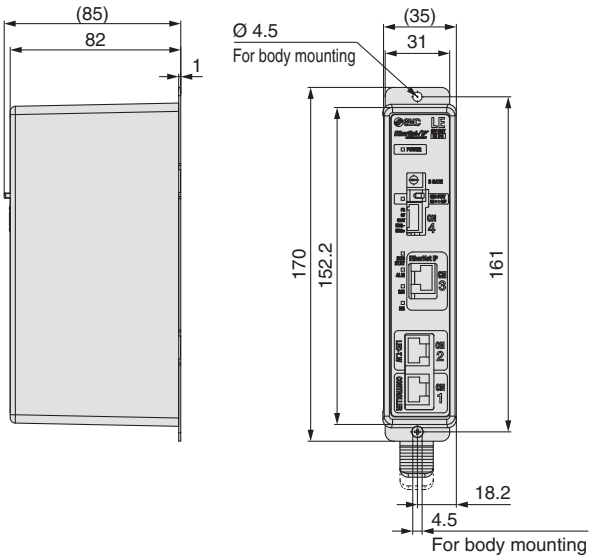
Applicable Fieldbus protocol: DeviceNet™



Applicable Fieldbus protocol: PROFIBUS DP



Applicable Fieldbus protocol: EtherNet/IP™

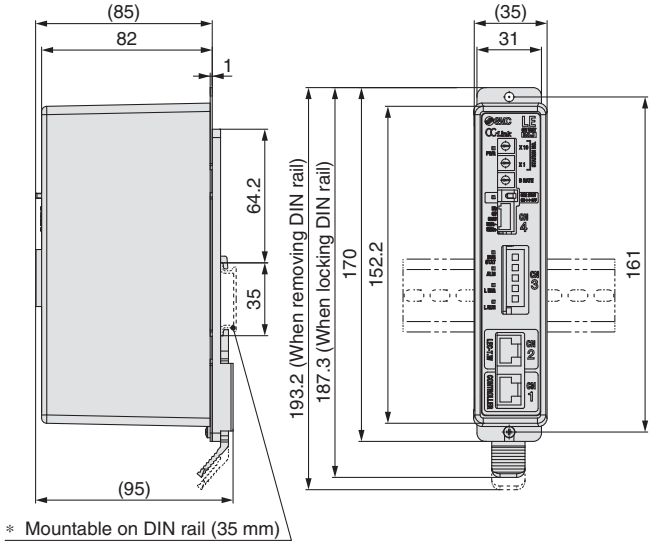


■**Trademark** DeviceNet™ is a trademark of ODVA. EtherNet/IP™ is a trademark of ODVA.

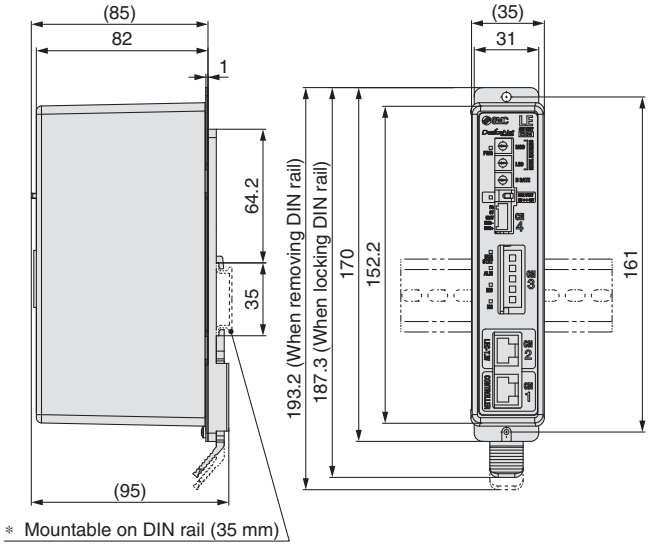
Dimensions

DIN rail mounting (LEC-G□□□D)

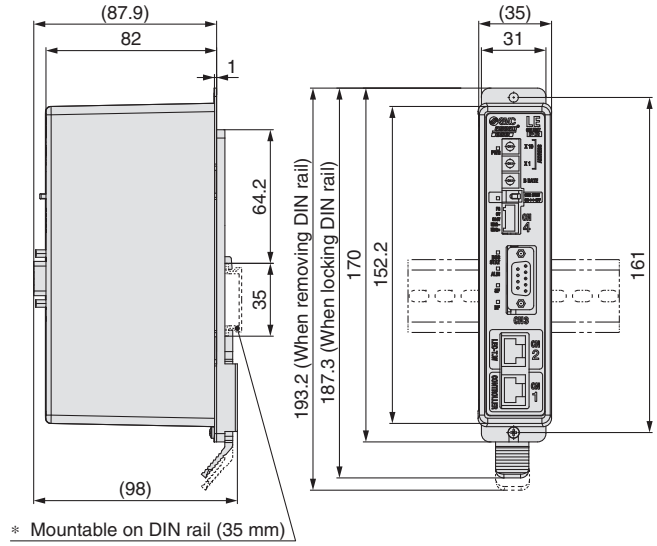
Applicable Fieldbus protocol: CC-Link Ver. 2.0



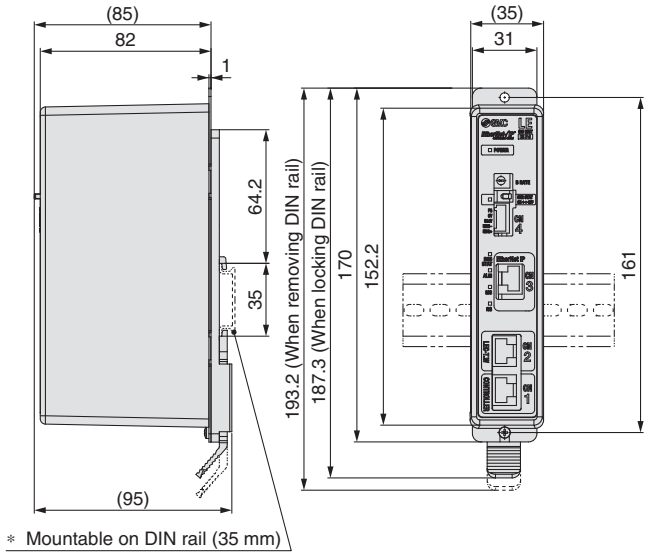
Applicable Fieldbus protocol: DeviceNet™



Applicable Fieldbus protocol: PROFIBUS DP

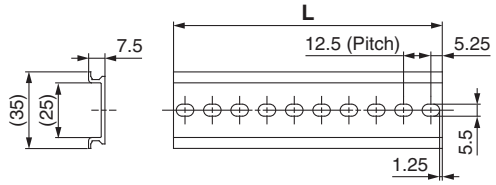


Applicable Fieldbus protocol: EtherNet/IP™



DIN rail
AXT100-DR-□

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



L Dimensions [mm]

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

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

Wiring Example

Power Supply Connector: CN1

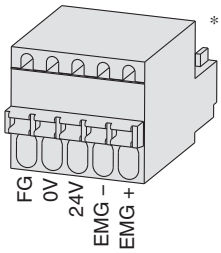
* The power supply plug is an accessory.
<Applicable cable size> AWG20 (0.5 mm^2), cover diameter 2.0 mm or less

CN1 Power Supply Connector Terminal for LEC-G (PHOENIX CONTACT FK-MC0.5/5-ST-2.5)

Terminal name	Function	Details
EMG +	EMG signal output +	Output terminal of the emergency stop switch of the teaching box
EMG –	EMG signal output –	
24V	Power supply + terminal	Power supply terminal of the Gateway unit (Power to the teaching box is supplied from this terminal)
0V	Power supply – terminal	
FG	FG terminal	Grounding terminal

Power supply plug for LEC-G: LEC-D-1-1

* Accessory



Programless Controller

LECP1 Series

How to Order

LE C P 1 P 1 [ ] – LEFS16A-400

Controller

Compatible motor

P	Step motor (Servo/24 VDC)

Number of step data (Points)

1	14 (Programless)

Parallel I/O type

N	NPN
P	PNP

I/O cable length [m]

—	Without cable
1	1.5
3	3
5	5

Option

—	Screw mounting
D∗1	DIN rail mounting

∗1 The DIN rail is not included. Order it separately.

Actuator part number

(Without cable specifications and actuator options)
Example: Enter "LEFS16A-400" for the LEFS16A-400B-R11N1.

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

⚠Caution

[CE-compliant products]
EMC compliance was tested by combining the electric actuator LE series and the controller LEC series.
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.
[UL-compliant products]
When compliance with UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

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

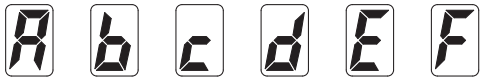
∗ Refer to the operation manual for using the products. Please download it via our website, https://www.smc.eu

Specifications

Basic Specifications

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

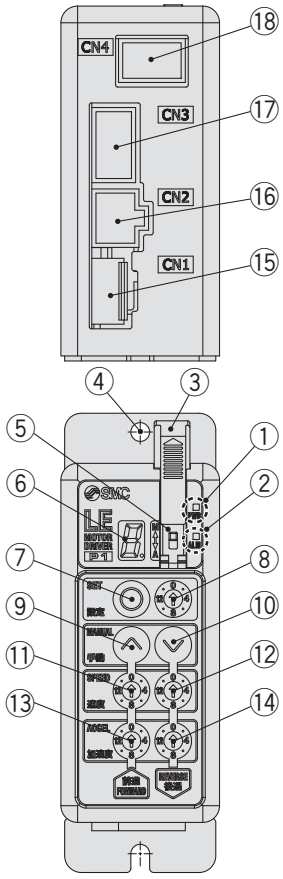
∗1 Do not use the power supply of "inrush current prevention type" for the controller input power supply. When compliance with UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.
∗2 The power consumption changes depending on the actuator model. Refer to the each actuator's operation manual, etc., for details.
∗3 "10" to "15" in decimal number are displayed as follows in the 7-segment LED.



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

∗4 Applicable to non-magnetising locks

Controller Details



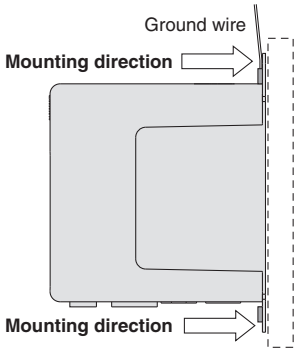
No.	Display	Description	Details
①	**PWR**	Power supply LED	Power supply ON/Servo ON : Green turns on Power supply ON/Servo OFF: Green flashes
②	**ALM**	Alarm LED	With alarm : Red turns on Parameter setting : Red flashes
③	—	Cover	Change and protection of the mode switch (Close the cover after changing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

How to Mount

Controller mounting shown below.

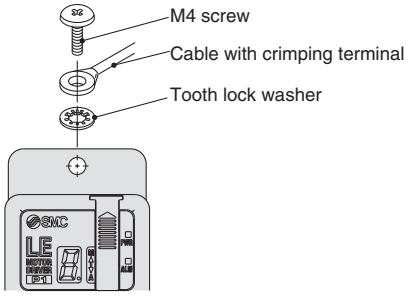
1. Mounting screw (LECP1□□-□)

(Installation with two M4 screws)



2. Grounding

Tighten the screw with the washer when mounting the ground wire as shown below.

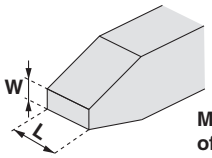


∗ When size 25 or more of the LE series are used, the space between the controllers should be 10 mm or more.

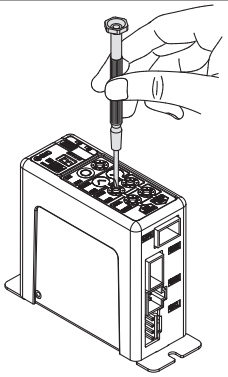
⚠Caution

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

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

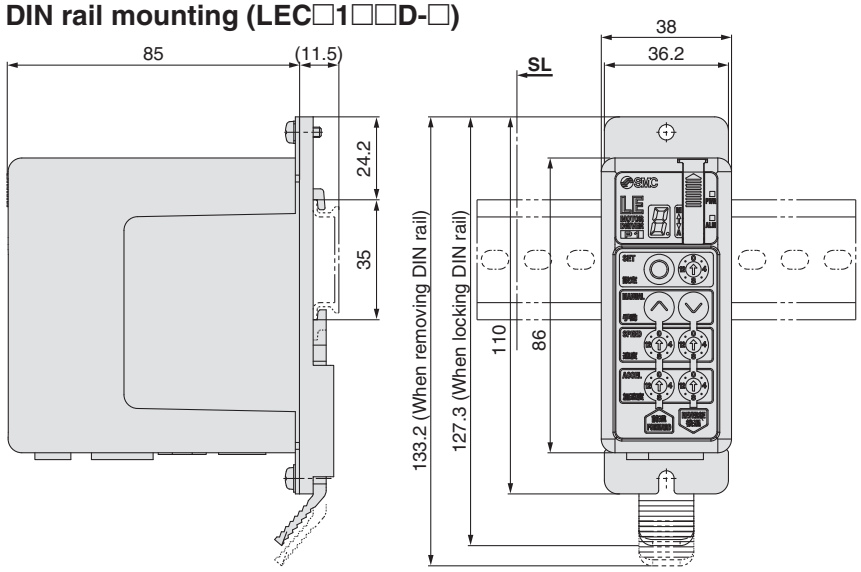


Magnified view of the end of the screwdriver



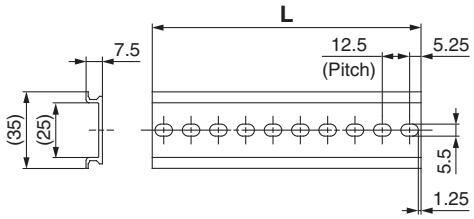
Dimensions

DIN rail mounting (LEC□1□□D-□)



DIN rail AXT100-DR-□

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



L Dimensions [mm]

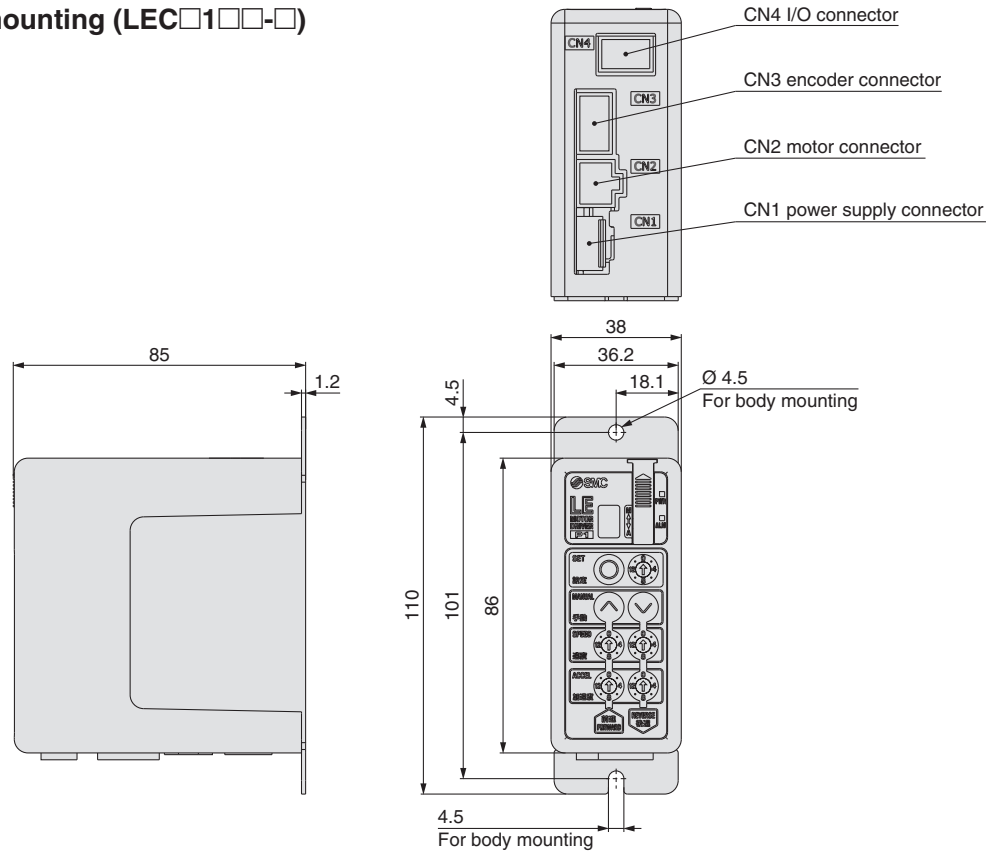
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
L	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273

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

DIN rail mounting adapter
LEC-1-D0 (with 2 mounting screws)

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

Screw mounting (LEC□1□□-□)



Wiring Example 1

Power Supply Connector: CN1

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

CN1 Power Supply Connector Terminal for LECP1

Terminal name	Cable colour	Function	Details
0V	Blue	Common supply (–)	M 24V terminal/C 24V terminal/BK RLS terminal are common (–).
M 24V	White	Motor power supply (+)	Motor power supply (+) supplied to the controller
C 24V	Brown	Control power supply (+)	Control power supply (+) supplied to the controller
BK RLS	Black	Lock release (+)	Input (+) for releasing the lock

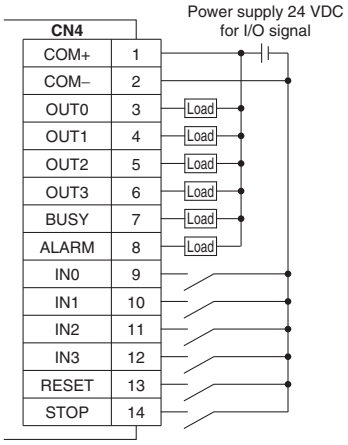
Power supply cable for LECP1 (LEC-CK1-1)

Wiring Example 2

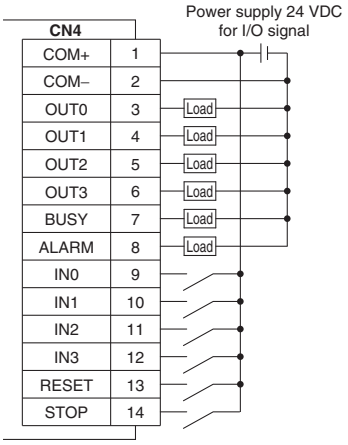
Parallel I/O Connector: CN4

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

■NPN



■PNP



Input Signal

Name	Details
COM+	Connects the power supply 24 V for input/output signal
COM–	Connects the power supply 0 V for input/output signal
IN0 to IN3	• Instruction to drive (input as a combination of IN0 to IN3) • Instruction to return to origin (IN0 to IN3 all ON simultaneously) Example - (instruction to drive for position no. 5) IN3: OFF, IN2: ON, IN1: OFF, IN0: ON
RESET	Alarm reset and operation interruption During operation: deceleration stop from position at which signal is input (servo ON maintained) While alarm is active: alarm reset
STOP	Instruction to stop (after maximum deceleration stop, servo OFF)

Output Signal

Name	Details
OUT0 to OUT3	Turns on when the positioning or pushing is completed. (Output is instructed in the combination of OUT0 to 3.) Example - (operation complete for position no. 3) OUT3: OFF, OUT2: OFF, OUT1: ON, OUT0: ON
BUSY	Outputs when the actuator is moving
*ALARM*1	Not output when alarm is active or servo OFF

*1 Signal of negative-logic circuit (N.C.)

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

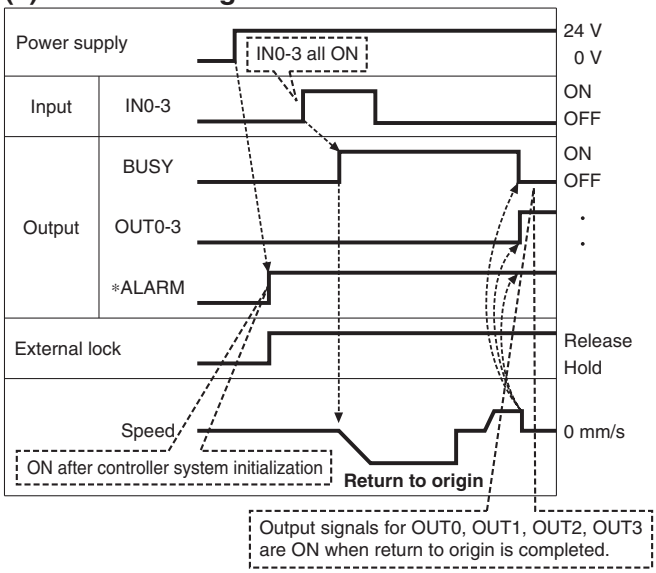
Position number	IN3	IN2	IN1	IN0
1	○	○	○	●
2	○	○	●	○
3	○	○	●	●
4	○	●	○	○
5	○	●	○	●
6	○	●	●	○
7	○	●	●	●
8	●	○	○	○
9	●	○	○	●
10 (A)	●	○	●	○
11 (B)	●	○	●	●
12 (C)	●	●	○	○
13 (D)	●	●	○	●
14 (E)	●	●	●	○
Return to origin	●	●	●	●

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

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

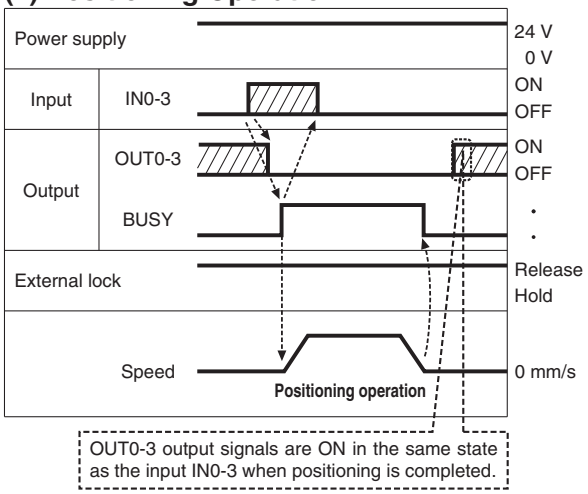
Signal Timing

(1) Return to Origin

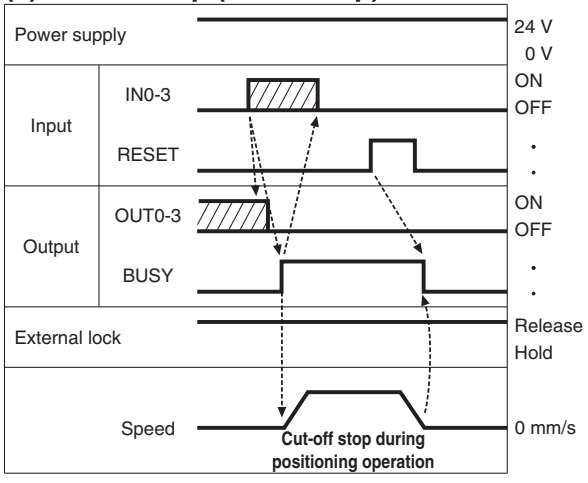


∗ "∗ALARM" is expressed as a negative-logic circuit.

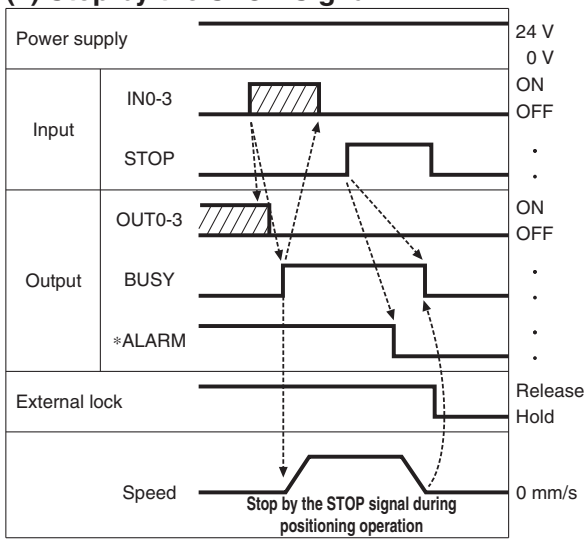
(2) Positioning Operation



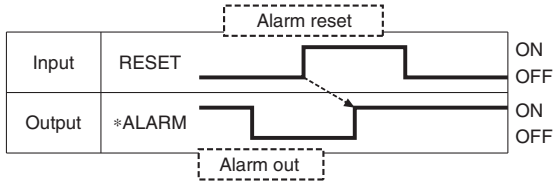
(3) Cut-off Stop (Reset Stop)



(4) Stop by the STOP Signal



(5) Alarm Reset



∗ "∗ALARM" is expressed as a negative-logic circuit.

Options: Actuator Cable

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

LE − CP − 1 − ☐

Cable length (L) [m]

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

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

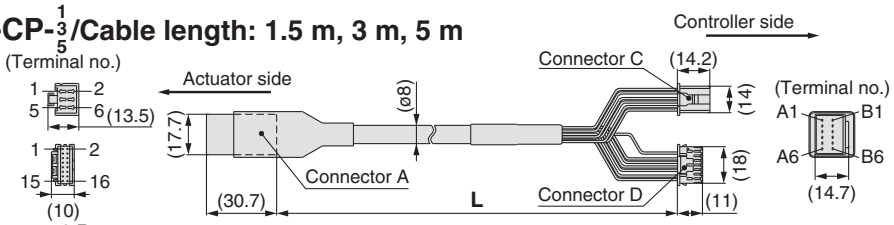
Cable type

—	Robotic cable (Flexible cable)
S	Standard cable

Weight

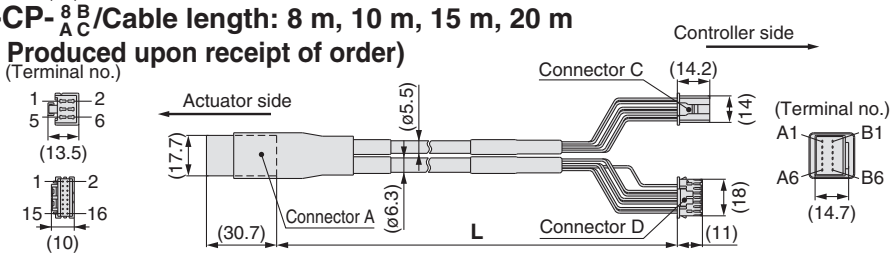
Product no.	Weight [g]	Note
LE-CP-1-S	190	Standard cable
LE-CP-3-S	280	
LE-CP-5-S	460	
LE-CP-1	140	Robotic cable
LE-CP-3	260	
LE-CP-5	420	
LE-CP-8	790	
LE-CP-A	980	
LE-CP-B	1460	
LE-CP-C	1940	

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



LE-CP-$^{8}_{A}$ $^{B}_{C}$/Cable length: 8 m, 10 m, 15 m, 20 m

(*1 Produced upon receipt of order)



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

Shield

Signal	Connector A terminal no.	Cable colour	Connector D terminal no.
Vcc	B-4	Brown	12
GND	A-4	Black	13
$\overline{A}$	B-5	Red	7
A	A-5	Black	6
$\overline{B}$	B-6	Orange	9
B	A-6	Black	8
		—	3

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

LE − CP − 1 − B − ☐

Cable length (L) [m]

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

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

With lock and sensor

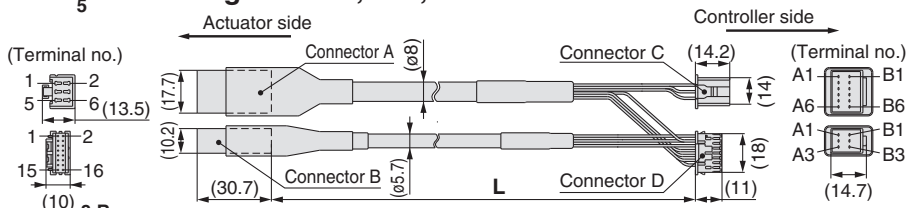
Cable type

—	Robotic cable (Flexible cable)
S	Standard cable

Weight

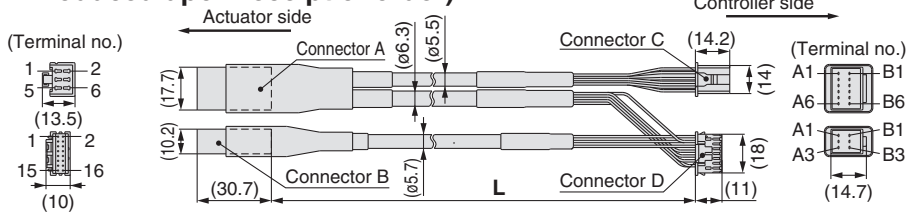
Product no.	Weight [g]	Note
LE-CP-1-B-S	240	Standard cable
LE-CP-3-B-S	380	
LE-CP-5-B-S	630	
LE-CP-1-B	190	Robotic cable
LE-CP-3-B	360	
LE-CP-5-B	590	
LE-CP-8-B	1060	
LE-CP-A-B	1320	
LE-CP-B-B	1920	
LE-CP-C-B	2620	

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



LE-CP-$^{8}_{A}$ $^{B}_{C}$/Cable length: 8 m, 10 m, 15 m, 20 m

(*1 Produced upon receipt of order)



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

Shield

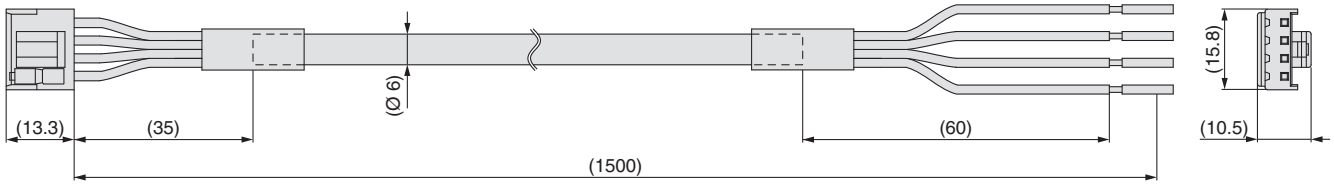
Signal	Connector A terminal no.	Cable colour	Connector D terminal no.
Vcc	B-4	Brown	12
GND	A-4	Black	13
$\overline{A}$	B-5	Red	7
A	A-5	Black	6
$\overline{B}$	B-6	Orange	9
B	A-6	Black	8
		—	3

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

Options

[Power supply cable]

LEC−CK1−1



Terminal name	Covered colour	Function
0V	Blue	Common supply (–)
M 24V	White	Motor power supply (+)
C 24V	Brown	Control power supply (+)
BK RLS	Black	Lock release (+)

∗ Conductor size: AWG20

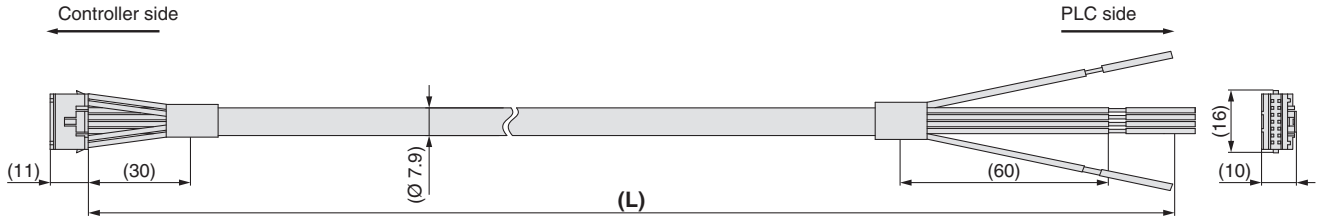
Weight: 90 g

[I/O cable]

LEC−CK4−□

Cable length (L) [m]

1	1.5
3	3
5	5



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

∗ Conductor size: AWG26

Weight

Product no.	Weight [g]
LEC-CK4-1	100
LEC-CK4-3	200
LEC-CK4-5	330

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

Step Motor Driver
LECPA Series

How to Order

⚠Caution

[CE-compliant products]

① EMC compliance was tested by combining the electric actuator LE series and the LECPA series. The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.

② For the LECPA series (step motor driver), EMC compliance was tested by installing a noise filter set (LEC-NFA).
Refer to page 234 for the noise filter set. Refer to the LECPA Operation Manual for installation.

[UL-compliant products]

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

LECP AP 1 ☐ – LEFS16B-100

Driver type

AN	Pulse input type (NPN)
AP	Pulse input type (PNP)

I/O cable length [m]

—	None
1	1.5
3	3*1
5	5*1

*1 Pulse input usable only with differential. Only 1.5 m cables usable with open collector.

Driver mounting

—	Screw mounting
D*1	DIN rail

*1 The DIN rail is not included. Order it separately.

Actuator part number

Without cable specifications and actuator options
Example: Enter "**LEFS16B-100**"
for the LEFS16B-100B-R1AN1D.

BC	Blank controller*1

*1 Requires dedicated software (LEC-BCW)

* When controller equipped type is selected when ordering the LE series, you do not need to order this driver.
* When pulse signals are open collector, order the current limiting resistor (LEC-PA-R-☐) separately.

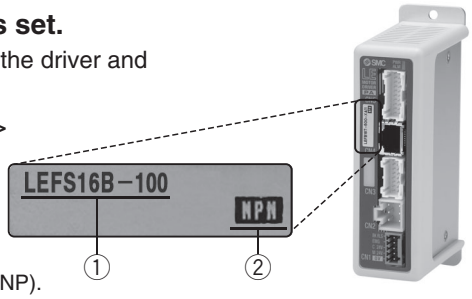
The driver is sold as single unit after the compatible actuator is set.

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

<Check the following before use.>

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

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



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

Precautions for blank controllers (LECPA☐☐-BC)

A blank controller is a controller to which the customer can write the data of the actuator it is to be combined and used with. Use the dedicated software (LEC-BCW) for data writing.

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

SMC website
https://www.smc.eu

Specifications

Item	LECPA
Compatible motor	Step motor (Servo/24 VDC)
Power supply*1	Power voltage: 24 VDC ±10 %*2 [Including motor drive power, control power, stop, lock release]
Parallel input	5 inputs (Except photo-coupler isolation, pulse input terminal, COM terminal)
Parallel output	9 outputs (Photo-coupler isolation)
Pulse signal input	Maximum frequency: 60 kpps (Open collector), 200 kpps (Differential) Input method: 1 pulse mode (Pulse input in direction), 2 pulse mode (Pulse input in differing directions)
Compatible encoder	Incremental A/B phase (Encoder resolution: 800 pulse/rotation)
Serial communication	RS485 (Modbus protocol compliant)
Memory	EEPROM
LED indicator	LED (Green/Red) one of each
Lock control	Forced-lock release terminal*3
Cable length [m]	I/O cable: 1.5 or less (Open collector), 5 or less (Differential), Actuator cable: 20 or less
Cooling system	Natural air cooling
Operating temperature range [°C]	0 to 40 (No freezing)
Operating humidity range [%RH]	90 or less (No condensation)
Storage temperature range [°C]	−10 to 60 (No freezing)
Storage humidity range [%RH]	90 or less (No condensation)
Insulation resistance [MΩ]	Between the housing and SG terminal: 50 (500 VDC)
Weight [g]	120 (Screw mounting), 140 (DIN rail mounting)

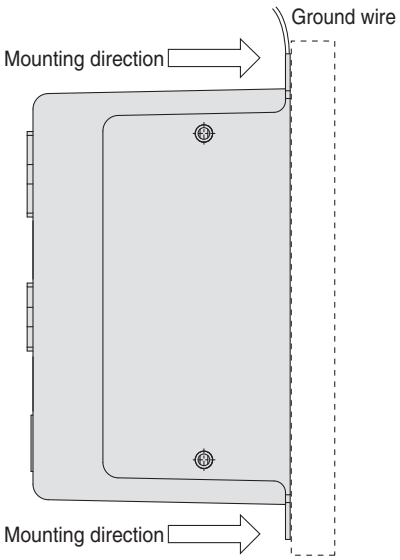
*1 Do not use the power supply of "inrush current prevention type" for the driver power supply. When compliance with UL is required, the electric actuator and driver should be used with a UL1310 Class 2 power supply.

*2 The power consumption changes depending on the actuator model. Refer to the specifications of actuator for more details.

*3 Applicable to non-magnetising locks

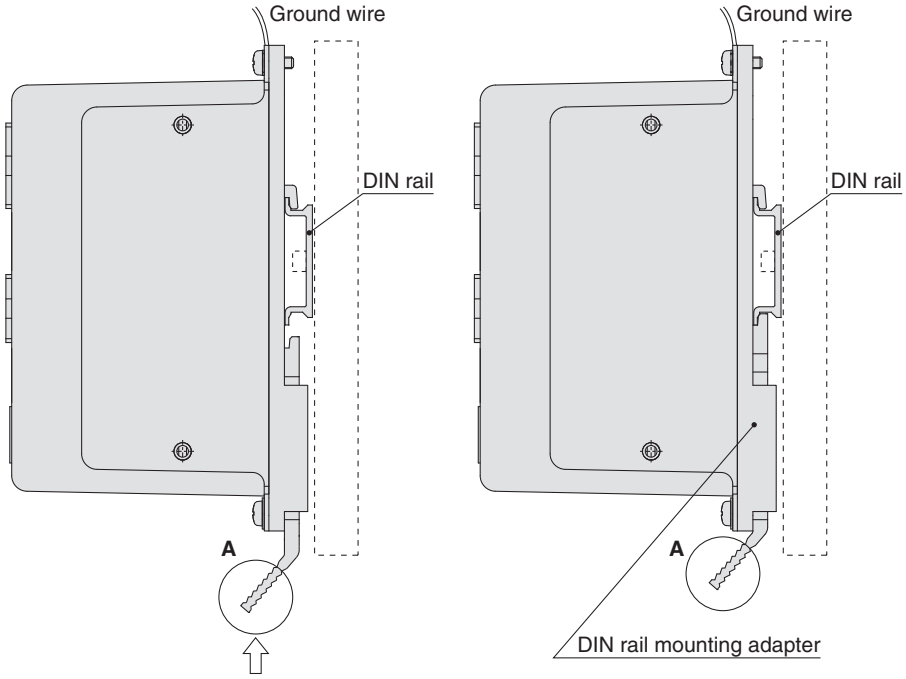
How to Mount

a) Screw mounting (LECPA□□-□) (Installation with two M4 screws)



b) DIN rail mounting (LECPA□□D-□) (Installation with the DIN rail)

DIN rail is locked.

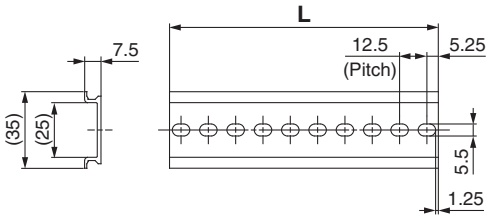


Hook the driver on the DIN rail and press the lever of section **A** in the arrow direction to lock it.

∗ The space between the drivers should be 10 mm or more.

DIN rail
AXT100-DR-□

∗ For □, enter a number from the No. line in the table below.
Refer to the dimension drawings on page 230 for the mounting dimensions.



L Dimensions [mm]

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

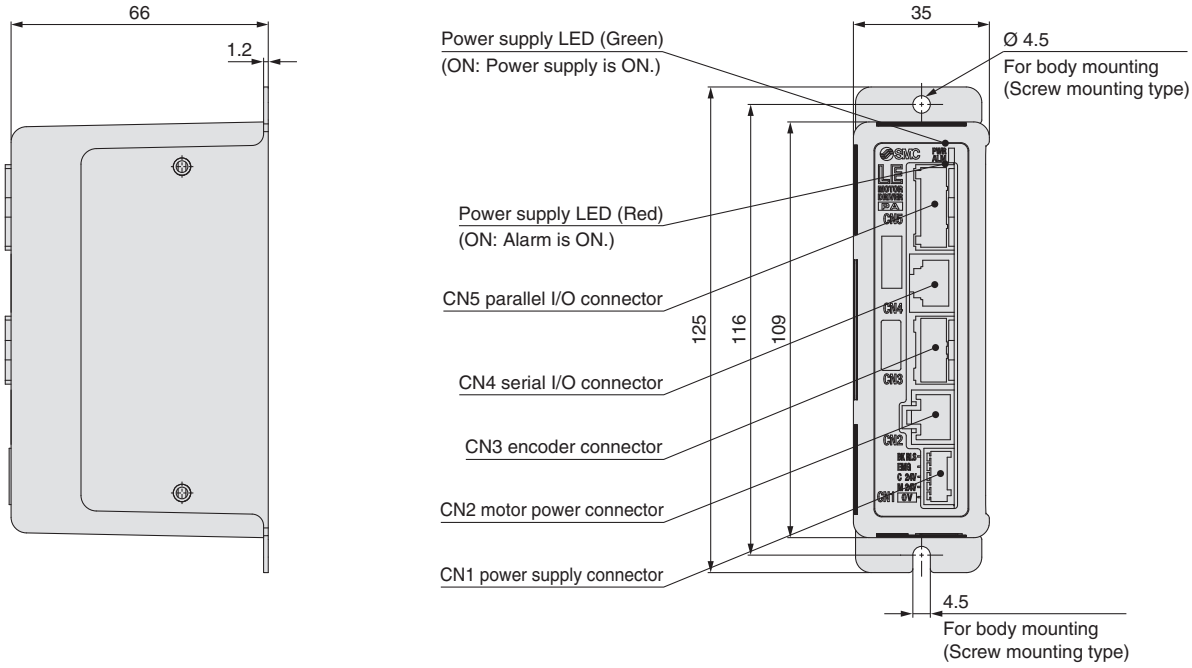
No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
L	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

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

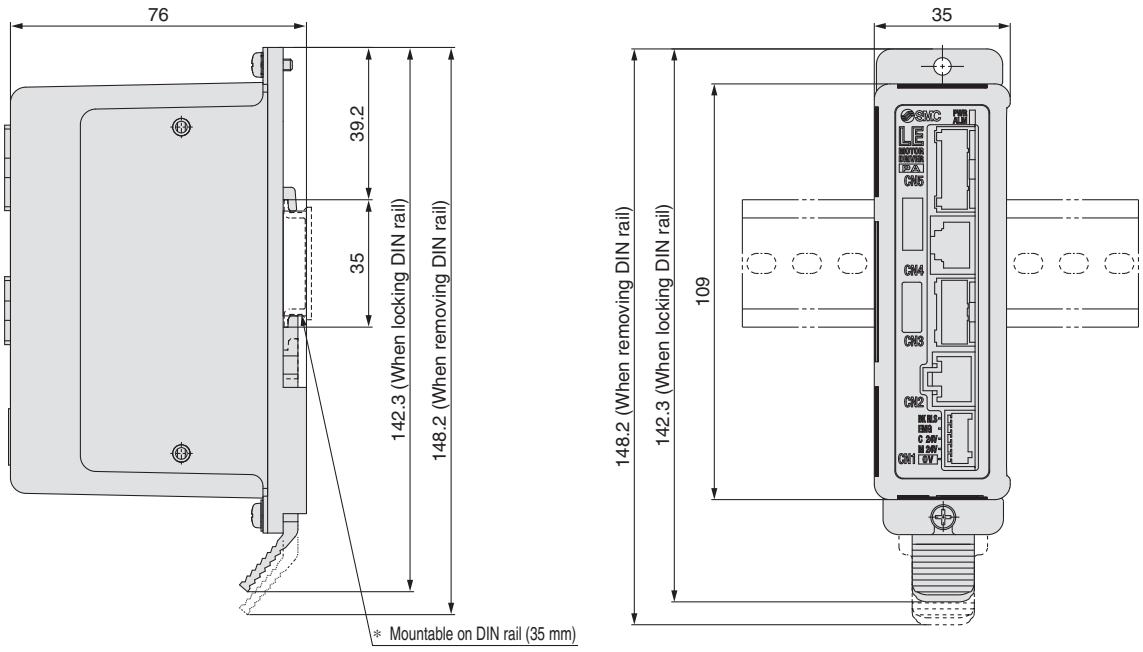
This should be used when the DIN rail mounting adapter is mounted onto a screw mounting type driver afterward.

Dimensions

a) Screw mounting (LECPA□□-□)



b) DIN rail mounting (LECPA□□D-□)



Wiring Example 1

Power Supply Connector: CN1

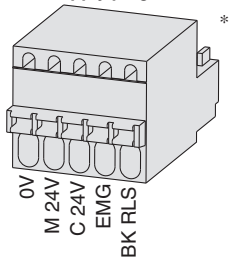
* The power supply plug is an accessory.
<Applicable cable size> AWG20 (0.5 mm^2), cover diameter 2.0 mm or less

CN1 Power Supply Connector Terminal for LECPA (PHOENIX CONTACT FK-MC0.5/5-ST-2.5)

Terminal name	Function	Details
0V	Common supply (–)	M 24V terminal/C 24V terminal/EMG terminal/BK RLS terminal are common (–).
M 24V	Motor power supply (+)	Motor power supply (+) supplied to the driver
C 24V	Control power supply (+)	Control power supply (+) supplied to the driver
EMG	Stop (+)	Input (+) for releasing the stop
BK RLS	Lock release (+)	Input (+) for releasing the lock

Power supply plug for LECPA: LEC-D-1-1

* Accessory



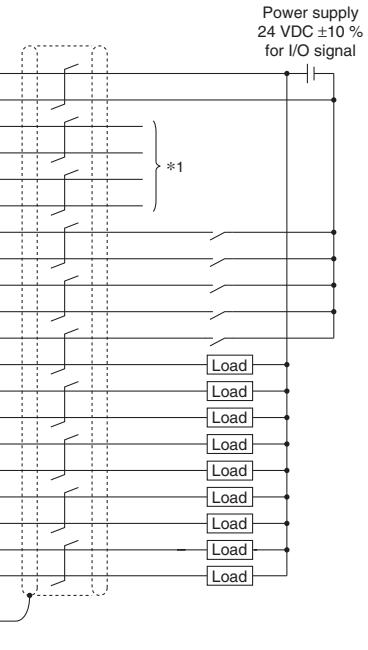
Wiring Example 2

Parallel I/O Connector: CN5

* When you connect a PLC to the CN5 parallel I/O connector, use the I/O cable (LEC-CL5-□).
* The wiring changes depending on the type of parallel I/O (NPN or PNP).

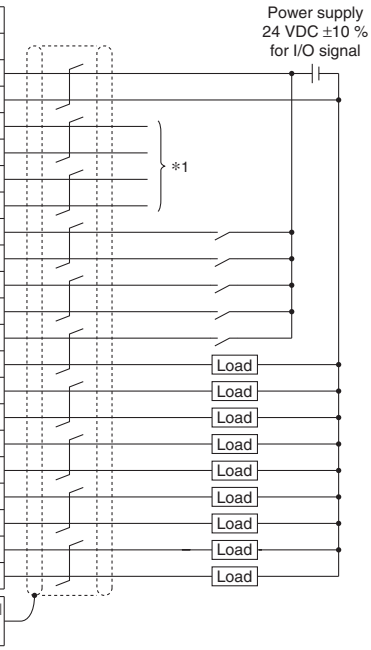
LECPAN□□-□ (NPN)

CN5		
Terminal name	Function	Pin no.
COM+	24 V	1
COM–	0 V	2
NP+	Pulse signal	3
NP–	Pulse signal	4
PP+	Pulse signal	5
PP–	Pulse signal	6
SETUP	Input	7
RESET	Input	8
SVON	Input	9
CLR	Input	10
TL	Input	11
TLOUT	Output	12
WAREA	Output	13
BUSY	Output	14
SETON	Output	15
INP	Output	16
SVRE	Output	17
*ESTOP*2	Output	18
*ALARM*2	Output	19
AREA	Output	20
FG	Round terminal 0.5-5	



LECPAP□□-□ (PNP)

CN5		
Terminal name	Function	Pin no.
COM+	24 V	1
COM–	0 V	2
NP+	Pulse signal	3
NP–	Pulse signal	4
PP+	Pulse signal	5
PP–	Pulse signal	6
SETUP	Input	7
RESET	Input	8
SVON	Input	9
CLR	Input	10
TL	Input	11
TLOUT	Output	12
WAREA	Output	13
BUSY	Output	14
SETON	Output	15
INP	Output	16
SVRE	Output	17
*ESTOP*2	Output	18
*ALARM*2	Output	19
AREA	Output	20
FG	Round terminal 0.5-5	



*1 For pulse signal wiring method, refer to "Pulse Signal Wiring Details".
*2 Output when the power supply of the driver is ON. (N.C.)

Input Signal

Name	Details
COM+	Connects the power supply 24 V for input/output signal
COM–	Connects the power supply 0 V for input/output signal
SETUP	Instruction to return to origin
RESET	Alarm reset
SVON	Servo ON instruction
CLR	Deviation reset
TL	Instruction to pushing operation

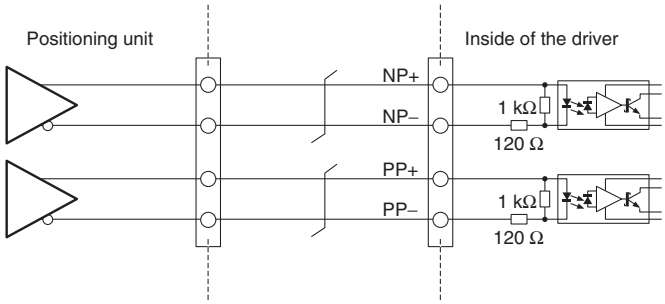
Output Signal

Name	Details
BUSY	Outputs when the actuator is operating
SETON	Outputs when returning to origin
INP	Outputs when target position is reached
SVRE	Outputs when servo is on
*ESTOP*3	Not output when EMG stop is instructed
*ALARM*3	Not output when alarm is generated
AREA	Outputs within the area output setting range
WAREA	Outputs within W-AREA output setting range
TLOUT	Outputs during pushing operation

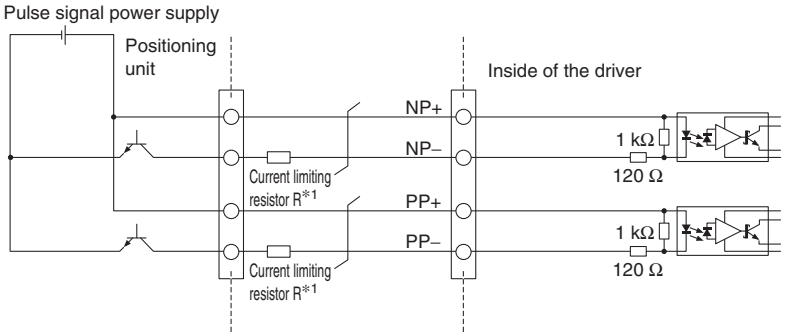
*3 Signal of negative-logic circuit ON (N.C.)

Pulse Signal Wiring Details

•Pulse signal output of positioning unit is differential output



•Pulse signal output of positioning unit is open collector output

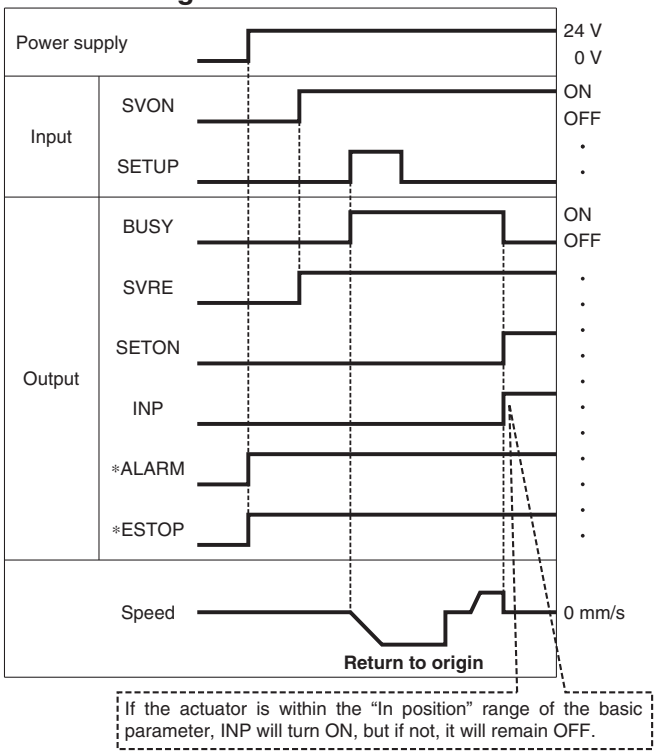


*1 Connect the current limiting resistor R in series to correspond to the pulse signal voltage.

Pulse signal power supply voltage	Current limiting resistor R specifications	Current limiting resistor part no.
24 VDC ±10 %	3.3 kΩ ±5 % (0.5 W or more)	LEC-PA-R-332
5 VDC ±5 %	390 Ω ±5 % (0.1 W or more)	LEC-PA-R-391

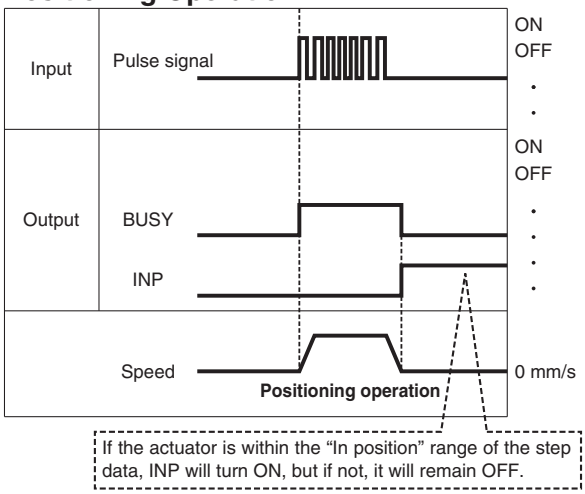
Signal Timing

Return to Origin

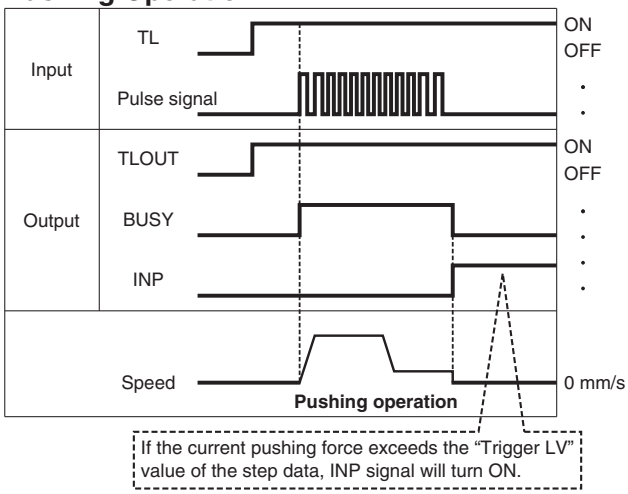


∗ "∗ALARM" and "∗ESTOP" are expressed as negative-logic circuits.

Positioning Operation

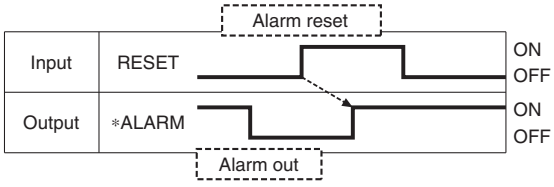


Pushing Operation



∗ If pushing operation is stopped when there is no pulse deviation, the moving part of the actuator may pulsate.

Alarm Reset



∗ "∗ALARM" is expressed as a negative-logic circuit.

Options: Actuator Cable

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

LE – CP – 1 – ☐

Cable length (L) [m]

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

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

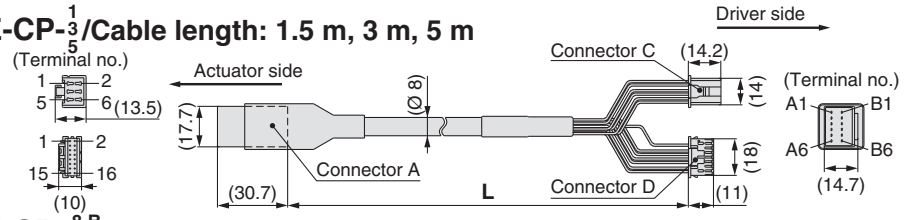
Cable type

—	Robotic cable (Flexible cable)
S	Standard cable

Weight

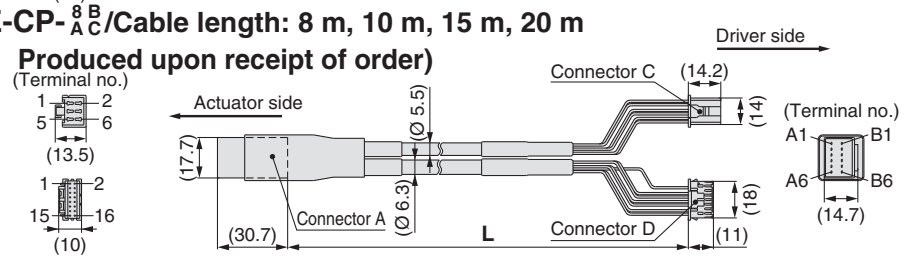
Product no.	Weight [g]	Note
LE-CP-1-S	190	Standard cable
LE-CP-3-S	280	
LE-CP-5-S	460	
LE-CP-1	140	Robotic cable
LE-CP-3	260	
LE-CP-5	420	
LE-CP-8	790	
LE-CP-A	980	
LE-CP-B	1460	
LE-CP-C	1940	

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



LE-CP-$^{8}_{A}$$^{B}_{C}$/Cable length: 8 m, 10 m, 15 m, 20 m

(*1 Produced upon receipt of order)



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

Cable colour	Connector D terminal no.
Brown	12
Black	13
Red	7
Black	6
Orange	9
Black	8
—	3

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

LE – CP – 1 – B – ☐

Cable length (L) [m]

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

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

With lock and sensor

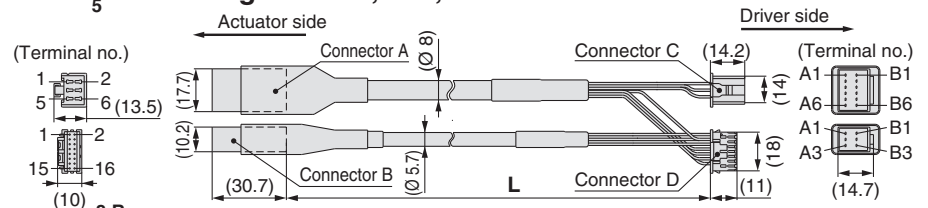
Cable type

—	Robotic cable (Flexible cable)
S	Standard cable

Weight

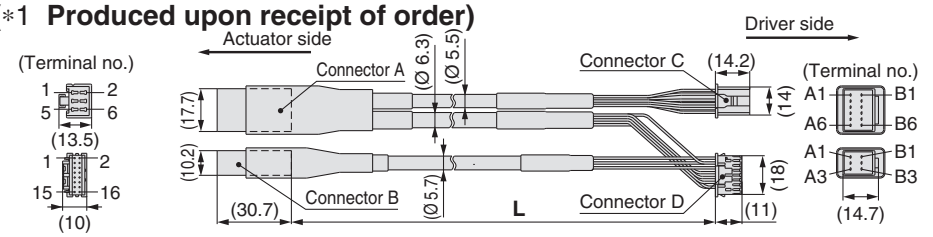
Product no.	Weight [g]	Note
LE-CP-1-B-S	240	Standard cable
LE-CP-3-B-S	380	
LE-CP-5-B-S	630	
LE-CP-1-B	190	Robotic cable
LE-CP-3-B	360	
LE-CP-5-B	590	
LE-CP-8-B	1060	
LE-CP-A-B	1320	
LE-CP-B-B	1920	
LE-CP-C-B	2620	

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



LE-CP-$^{8}_{A}$$^{B}_{C}$/Cable length: 8 m, 10 m, 15 m, 20 m

(*1 Produced upon receipt of order)



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

Cable colour	Connector D terminal no.
Brown	12
Black	13
Red	7
Black	6
Orange	9
Black	8
—	3

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

Options

[I/O cable]

LEC-C L5-1

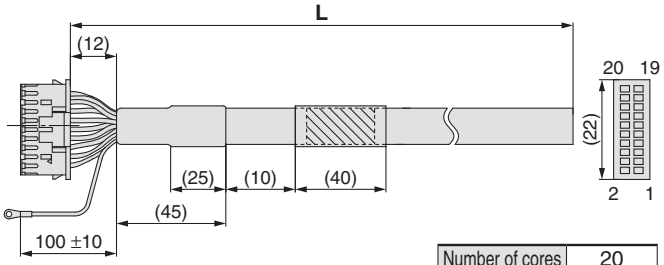
I/O cable type

L5	For LECPA

I/O cable length (L)

1	1.5 m
3	3 m*1
5	5 m*1

*1 Pulse input usable only with differential. Only 1.5 m cables usable with open collector



Number of cores	20
AWG size	24

Pin no.	Insulation colour	Dot mark	Dot colour
1	Light brown	■	Black
2	Light brown	■	Red
3	Yellow	■	Black
4	Yellow	■	Red
5	Light green	■	Black
6	Light green	■	Red
7	Grey	■	Black
8	Grey	■	Red
9	White	■	Black
10	White	■	Red
11	Light brown	■■	Black

Pin no.	Insulation colour	Dot mark	Dot colour
12	Light brown	■■	Red
13	Yellow	■■	Black
14	Yellow	■■	Red
15	Light green	■■	Black
16	Light green	■■	Red
17	Grey	■■	Black
18	Grey	■■	Red
19	White	■■	Black
20	White	■■	Red
Round terminal 0.5-5	Green		

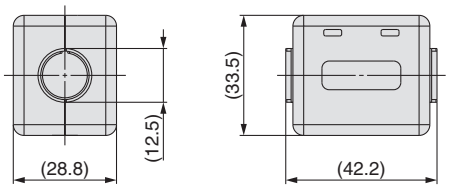
Weight

Product no.	Weight [g]
LEC-CL5-1	190
LEC-CL5-3	370
LEC-CL5-5	610

[Noise filter set]
Step Motor Driver (Pulse Input Type)

LEC-NFA

Contents of the set: 2 noise filters
(Manufactured by WURTH ELEKTRONIK: 74271222)



* Refer to the LECPA series Operation Manual for installation.

[Current limiting resistor]

This optional resistor (LEC-PA-R-□) is used when the pulse signal output of the positioning unit is open collector output.

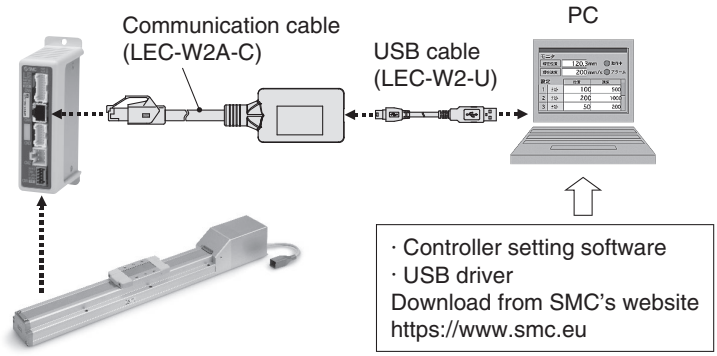
LEC-PA-R-□

Current limiting resistor

Symbol	Resistance	Pulse signal power supply voltage
332	3.3 kΩ ±5 %	24 VDC ±10 %
391	390 Ω ±5 %	5 VDC ±5 %

* Select a current limiting resistor that corresponds to the pulse signal power supply voltage.
* For the LEC-PA-R-□, two pieces are shipped as a set.
* For pulse signal wiring details, refer to page 231.

LEC Series
Communication Cable for Controller Setting/LEC-W2A-□



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

How to Order

LEC-W2A-C
- C: Communication cable

LEC-W2-U
- U: USB cable

Compatible Controller/Driver

Step data input type	**LECA6 Series**
Pulse input type	**LECPA Series**
Step Motor Controller	**JXCE1/91/P1/D1/L1 Series**

∗ When connecting to a JXCE1/91/P1/D1/L1 series product, use a conversion cable (P5062-5) as a relay.

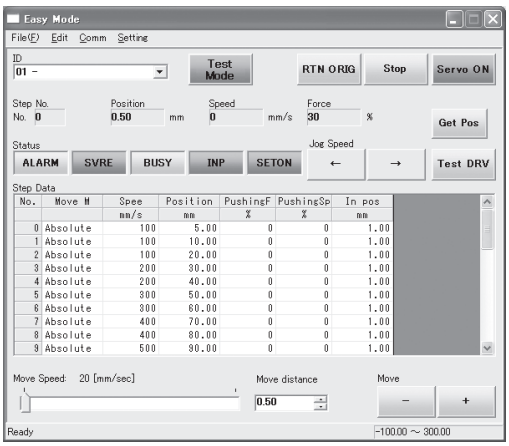
Hardware Requirements

OS	Windows®7, Windows®8.1, Windows®10
Communication interface	USB 1.1 or USB 2.0 ports
Display	1024 x 768 or more

∗ Windows®7, Windows®8.1 and Windows®10 are registered trademarks of Microsoft Corporation in the United States.

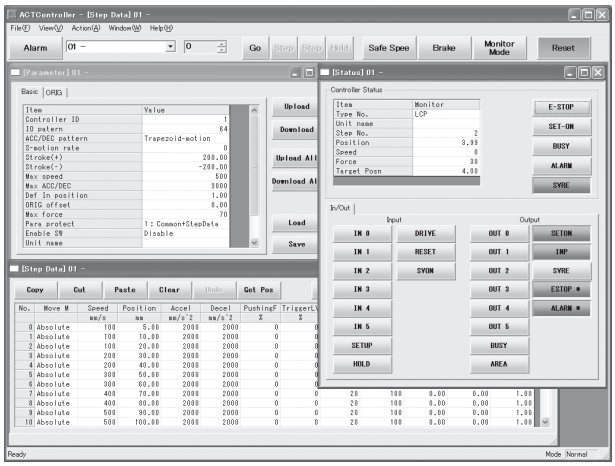
Screen Example

Easy mode screen example



Easy operation and simple setting
- Allowing to set and display actuator step data such as position, speed, force, etc.
- Setting of step data and test drive can be performed on the same page.
- Can be used to jog and move at a constant rate

Normal mode screen example



Detailed setting
- Step data can be set in detail.
- Signals and terminal status can be monitored.
- Parameters can be set.
- JOG and constant rate movement, return to origin, test drive and testing of forced output can be performed.

LEC Series
Teaching Box/LEC-T1

How to Order

LEC-T1-3EG

Teaching box

Cable length [m]

3	3

Initial language

J	Japanese
E	English

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

Enable switch

—	None
S	Equipped with enable switch

∗ Interlock switch for jog and test function

Stop switch

G	Equipped with stop switch

Specifications

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

[CE-compliant products]
The EMC compliance of the teaching box was tested with a step motor controller (servo/24 VDC) and an applicable actuator.
[UL-compliant products]
When compliance with UL is required, the electric actuator and driver should be used with a UL1310 Class 2 power supply.

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

Option
- **Enable switch is provided.**

Easy Mode

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

Menu Operations Flowchart

Menu
Data
Monitor
Jog
Test
ALM
TB setting

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

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

Jog
Return to origin
Jog operation

Test*1
1 step operation

ALM
Active alarm display
Alarm reset

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

∗1 Not compatible with the LECPA

Normal Mode

Function	Details
Step data	• Step data setting
Parameter	• Parameters setting
Test	• Jog operation/Constant rate movement • Return to origin • Test drive*1 (Specify a maximum of 5 step data and operate.) • Forced output (Forced signal output, Forced terminal output)*2
Monitor	• Drive monitor • Output signal monitor*2 • Input signal monitor*2 • Output terminal monitor • Input terminal monitor
ALM	• Active alarm display (Alarm reset) • Alarm log record display
File	• Data saving Save the step data and parameters of the driver which is being used for communication (it is possible to save four files, with one set of step data and parameters defined as one file). • Load to driver Loads the data which is saved in the teaching box to the driver which is being used for communication. • Delete the saved data. • File protection (Ver. 2.**)
TB setting	• Display setting (Easy/Normal mode) • Language setting (Japanese/English) • Backlight setting • LCD contrast setting • Beep sound setting • Max. connection axis • Distance unit (mm/inch)
Reconnect	• Reconnection of axis

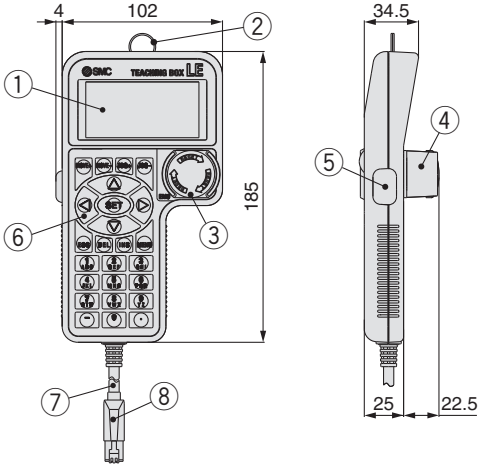
Menu Operations Flowchart

- **Menu**: Step data, Parameter, Monitor, Test, ALM, File, TB setting, Reconnect
- **Step data**: Step data no., Movement MOD, Speed, Position, Acceleration, Deceleration, Pushing force, Trigger LV, Pushing speed, Moving force, Area 1, 2, In position
- **Parameter**: Basic, ORIG
  - **Basic setting**
  - **ORIG setting**
- **Monitor**: Drive, Output signal*2, Input signal*2, Output terminal, Input terminal
  - **DRV monitor**: Position, Speed, Torque, Step no., Last step no.
  - **Output signal monitor**
  - **Input signal monitor**
  - **Output terminal monitor**
  - **Input terminal monitor**
- **Test**: JOG/MOVE, Return to ORIG, Test drive*1, Forced output*2
- **ALM**: Status, ALM Log record
  - **Status**: Active alarm display, Alarm reset
  - **ALM Log record display**: Log entry display
- **File**: Data saving, Load to driver, File deletion, File protection (Ver. 2.**)
- **TB setting**: Easy/Normal, Language, Backlight, LCD contrast, Beep, Max. connection axis, Password, Distance unit
- **Reconnect**

*1 Not compatible with the LECPA

*2 The following signals are compatible with LECPA with TB Ver. 2.10 or newer.
Input: CLR, TL
Output: TLOUT

Dimensions



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

Step Motor Controller

JXCE1/91/P1/D1/L1 Series

How to Order

JXC D 1 7 T –

Communication protocol

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

For single axis

Mounting

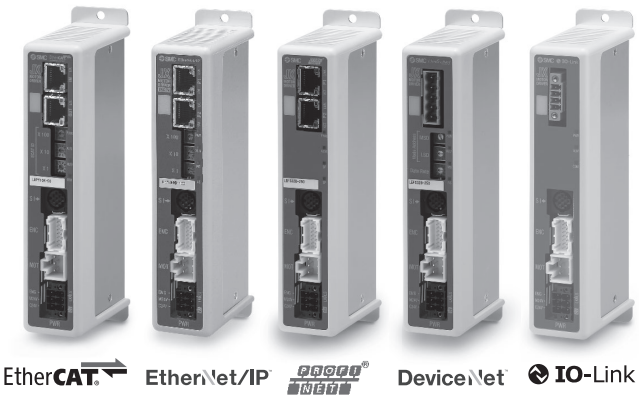
7	Screw mounting
8*1	DIN rail

*1 The DIN rail is not included. It must be ordered separately. (Refer to page 243.)

Option

—	Without option
S	With straight type DeviceNet™ communication plug for JXCD1
T	With T-branch type DeviceNet™ communication plug for JXCD1

* Select "—" for anything other than JXCD1.



Actuator part number

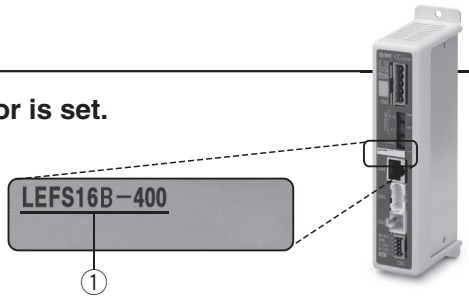
Without cable specifications and actuator options Example: Enter "**LEFS16B-100**" for the LEFS16B-100B-S1□□.	
BC	Blank controller*1

*1 Requires dedicated software (JXC-BCW)

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

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

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



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

Precautions for blank controllers (JXC□1□□-BC)

A blank controller is a controller to which the customer can write the data of the actuator it is to be combined and used with. Use the dedicated software (JXC-BCW) for data writing.

- Please download the dedicated software (JXC-BCW) via our website.
- Order the controller setting kit (JXC-W2) separately to use this software.

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

Specifications

Model			JXCE1	JXC91	JXCP1	JXCD1	JXCL1
Network			EtherCAT®	EtherNet/IP™	PROFINET	DeviceNet™	IO-Link
Compatible motor			Step motor (Servo/24 VDC)				
Power supply			Power voltage: 24 VDC ±10 %				
Current consumption (Controller)			200 mA or less	130 mA or less	200 mA or less	100 mA or less	100 mA or less
Compatible encoder			Incremental A/B phase (800 pulse/rotation)				
Communication specifications	Applicable system	Protocol	EtherCAT®*2	EtherNet/IP™*2	PROFINET*2	DeviceNet™	IO-Link
		Version*1	Conformance Test Record V.1.2.6	Volume 1 (Edition 3.14) Volume 2 (Edition 1.15)	Specification Version 2.32	Volume 1 (Edition 3.14) Volume 3 (Edition 1.13)	Version 1.1 Port Class A
	Communication speed		100 Mbps*2	10/100 Mbps*2 (Automatic negotiation)	100 Mbps*2	125/250/500 kbps	230.4 kbps (COM3)
	Configuration file*3		ESI file	EDS file	GSDML file	EDS file	IODD file
	I/O occupation area		Input 20 bytes Output 36 bytes	Input 36 bytes Output 36 bytes	Input 36 bytes Output 36 bytes	Input 4, 10, 20 bytes Output 4, 12, 20, 36 bytes	Input 14 bytes Output 22 bytes
	Terminating resistor		Not included				
Memory			EEPROM				
LED indicator			PWR, RUN, ALM, ERR	PWR, ALM, MS, NS	PWR, ALM, SF, BF	PWR, ALM, MS, NS	PWR, ALM, COM
Cable length [m]			Actuator cable: 20 or less				
Cooling system			Natural air cooling				
Operating temperature range [°C]			0 to 40 (No freezing)				
Operating humidity range [%RH]			90 or less (No condensation)				
Insulation resistance [MΩ]			Between all external terminals and the case: 50 (500 VDC)				
Weight [g]			220 (Screw mounting) 240 (DIN rail mounting)	210 (Screw mounting) 230 (DIN rail mounting)	220 (Screw mounting) 240 (DIN rail mounting)	210 (Screw mounting) 230 (DIN rail mounting)	190 (Screw mounting) 210 (DIN rail mounting)

*1 Please note that versions are subject to change.
*2 Use a shielded communication cable with CAT5 or higher for the PROFINET, EtherNet/IP™, and EtherCAT®.
*3 The files can be downloaded from the SMC website: https://www.smc.eu.

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

Example of Operation Command

In addition to the step data input of 64 points maximum in each communication protocol, the changing of each parameter can be performed in real time via numerical data defined operation.
* Numerical values other than “Moving force,” “Area 1,” and “Area 2” can be used to perform operation under numerical instructions from JXCL1.

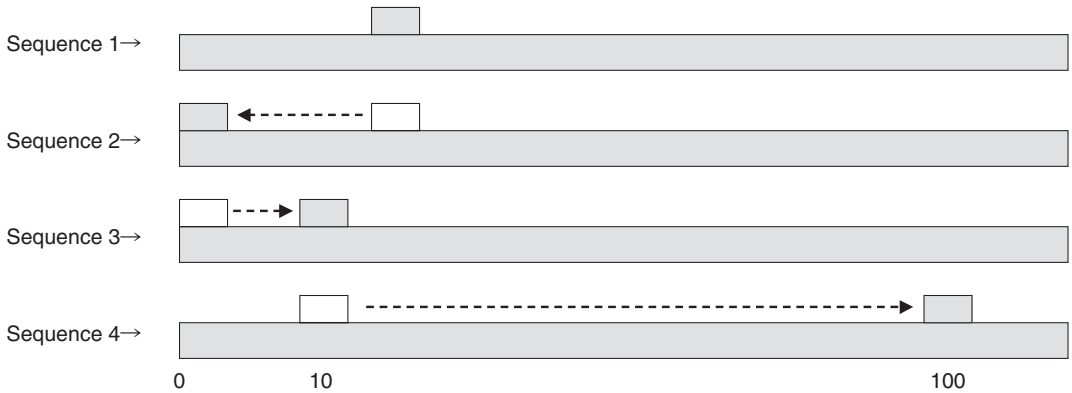
<Application example> Movement between 2 points

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

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

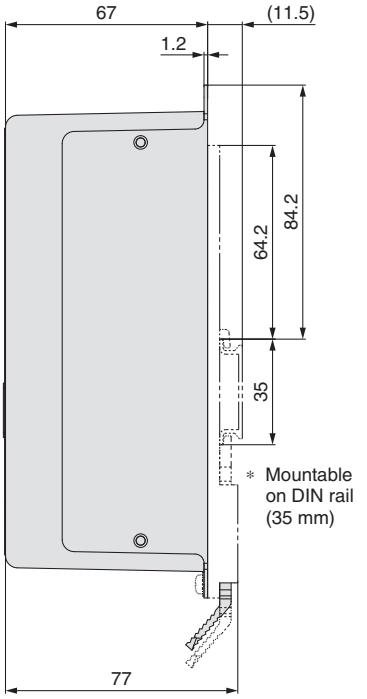
<Numerical data defined operation>
Sequence 1: Servo ON instruction
Sequence 2: Instruction to return to origin
Sequence 3: Specify step data No. 0 and turn ON the input instruction flag (position). Input 10 in the target position. Subsequently the start flag turns ON.
Sequence 4: Turn ON step data No.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

The same operation can be performed with any operation command.

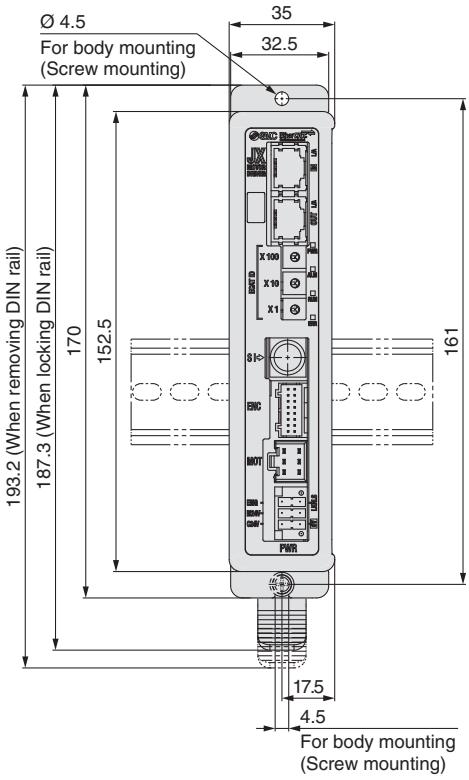


Dimensions

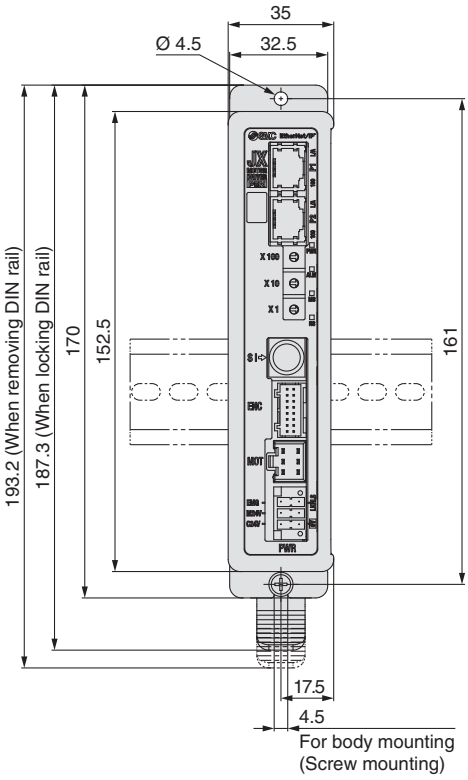
JXCE1/JXC91



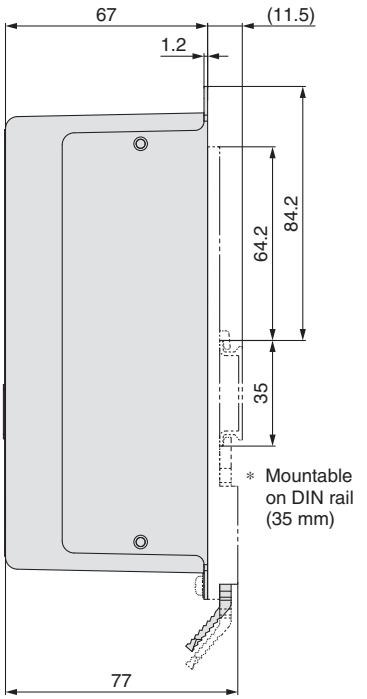
JXCE1



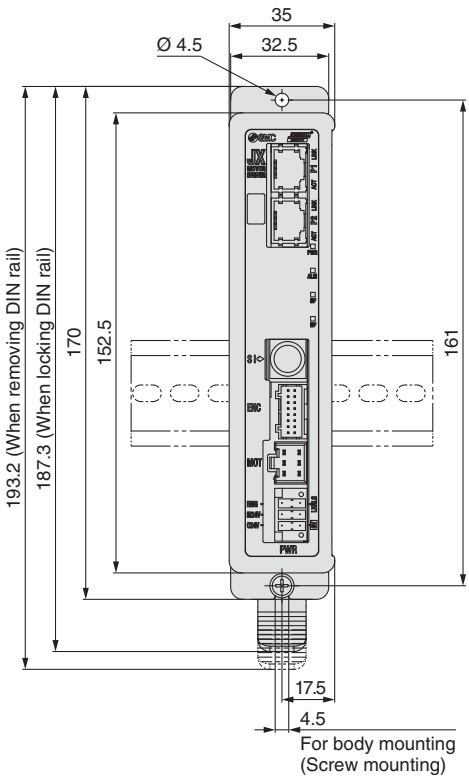
JXC91



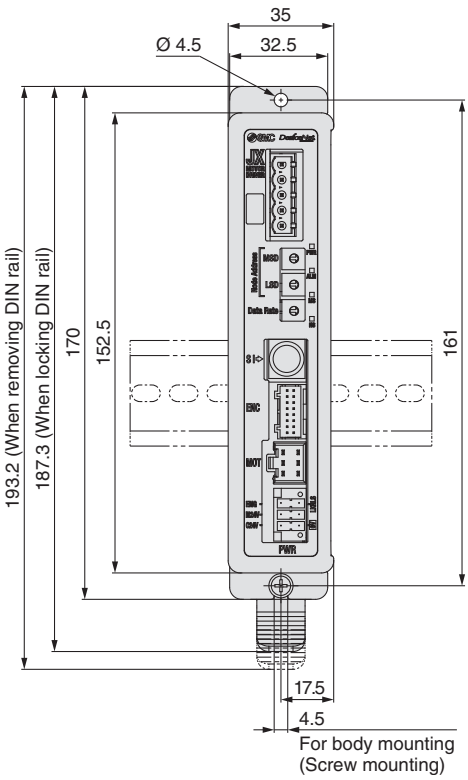
JXCP1/JXCD1



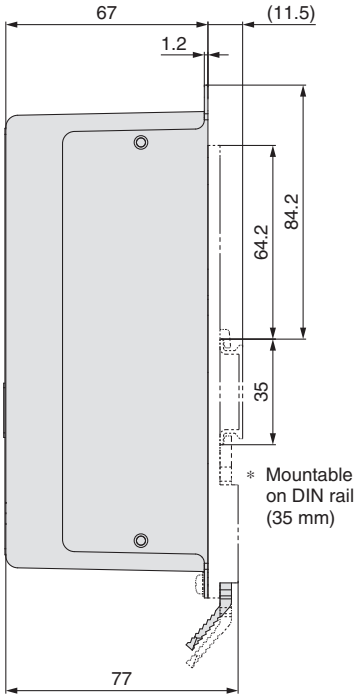
JXCP1



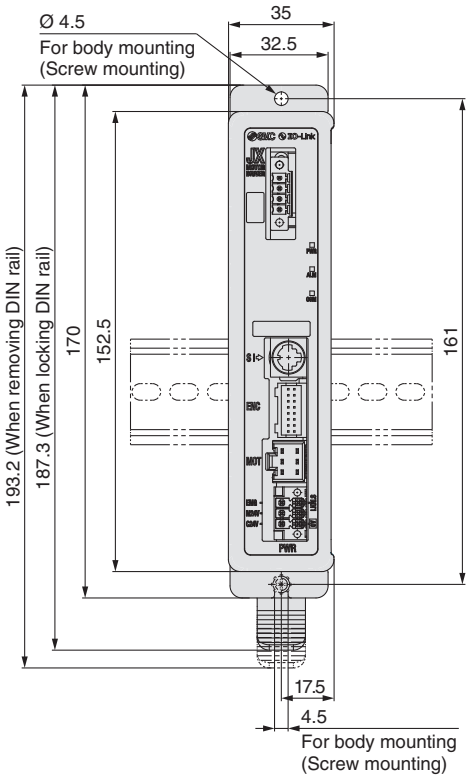
JXCD1

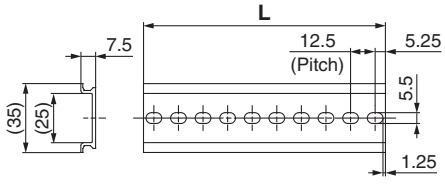


Dimensions



JXCL1





L Dimensions [mm]

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

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

Options: Actuator Cable

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

LE − CP − 1 − ☐

Cable length (L) [m]

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

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

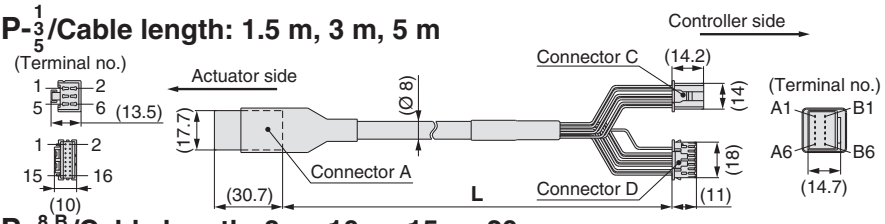
Cable type

—	Robotic cable (Flexible cable)
S	Standard cable

Weight

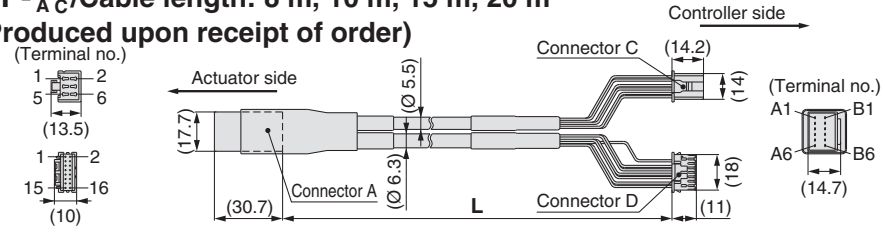
Product no.	Weight [g]	Note
LE-CP-1-S	190	Standard cable
LE-CP-3-S	280	
LE-CP-5-S	460	
LE-CP-1	140	Robotic cable
LE-CP-3	260	
LE-CP-5	420	
LE-CP-8	790	
LE-CP-A	980	
LE-CP-B	1460	
LE-CP-C	1940	

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



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

(*1 Produced upon receipt of order)



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

Cable colour	Connector D terminal no.
Brown	12
Black	13
Red	7
Black	6
Orange	9
Black	8
—	3

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

LE − CP − 1 − B − ☐

Cable length (L) [m]

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

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

With lock and sensor

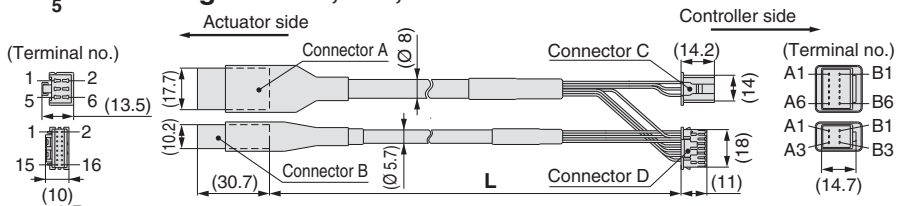
Cable type

—	Robotic cable (Flexible cable)
S	Standard cable

Weight

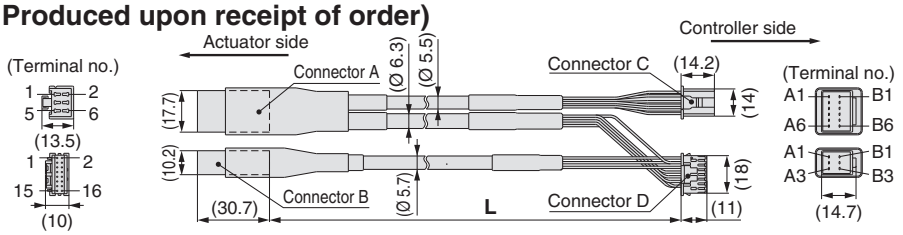
Product no.	Weight [g]	Note
LE-CP-1-B-S	240	Standard cable
LE-CP-3-B-S	380	
LE-CP-5-B-S	630	
LE-CP-1-B	190	Robotic cable
LE-CP-3-B	360	
LE-CP-5-B	590	
LE-CP-8-B	1060	
LE-CP-A-B	1320	
LE-CP-B-B	1920	
LE-CP-C-B	2620	

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



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

(*1 Produced upon receipt of order)



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

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

Options

■ Controller setting kit JXC-W2

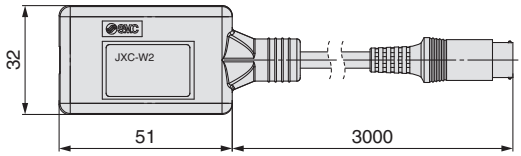
[Contents]
① Communication cable
② USB cable
③ Controller setting software
∗ A conversion cable (P5062-5) is not required.

JXC − W2 − □

Contents

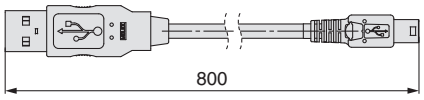
—	A kit includes: Communication cable, USB cable, Controller setting software
C	Communication cable
U	USB cable
S	Controller setting software (CD-ROM)

① Communication cable JXC-W2-C

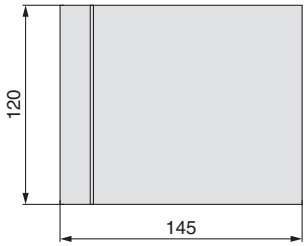


∗ It can be connected to the controller directly.

② USB cable JXC-W2-U



③ Controller setting software (CD-ROM) JXC-W2-S



■ DIN rail mounting adapter LEC-3-D0

∗ With 2 mounting screws

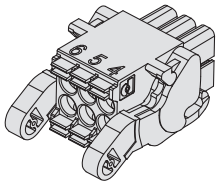
This should be used when the DIN rail mounting adapter is mounted onto a screw mounting type controller afterward.

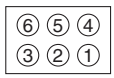
■ DIN rail AXT100-DR-□

∗ For □, enter a number from the No. line in the table on page 241. Refer to the dimension drawings on pages 240 and 241 for the mounting dimensions.

■ Power supply plug JXC-CPW

∗ The power supply plug is an accessory.





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

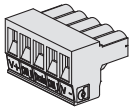
Power supply plug

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

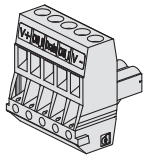
■ Communication plug connector

For DeviceNet™

Straight type JXC-CD-S



T-branch type JXC-CD-T



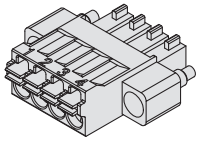
Communication plug connector for DeviceNet™

Terminal name	Details
V+	Power supply (+) for DeviceNet™
CAN_H	Communication wire (High)
Drain	Grounding wire/Shielded wire
CAN_L	Communication wire (Low)
V–	Power supply (–) for DeviceNet™

For IO-Link

Straight type JXC-CL-S

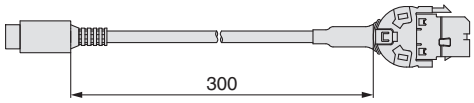
∗ The communication plug connector for IO-Link is an accessory.



Communication plug connector for IO-Link

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

■ Conversion cable P5062-5 (Cable length: 300 mm)



∗ To connect the teaching box (LEC-T1-3□G□) or controller setting kit (LEC-W2) to the controller, a conversion cable is required.

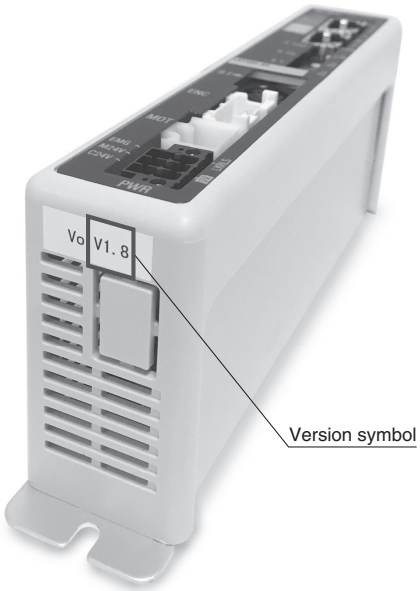
JXCE1/91/P1/D1/L1 Series
Precautions Related to Differences in Controller Versions

As the controller version of the JXC series differs, the internal parameters are not compatible.

■ If using the JXC□1□-BC, please use the latest version of the JXC-BCW (parameter writing tool).

■ There are currently 3 versions available: version 1 products (V1.□ or S1.□), version 2 products (V2.□ or S2.□), and version 3 products (V3.□ or S3.□). Keep in mind that in order to write a backup file (.bkp) to another controller with the JXC-BCW, it needs to be the same version as the controller that created the file. (For example, a backup file created by a version 1 product can only be written to another version 1 product, and so on.)

Identifying Version Symbols



JXC□1 Series Version V3.□ or S3.□ Products

XR V3.0

Applicable models

JXC91□ Series

XR S3.0 T1.0

Applicable models

JXCD1□ Series
JXCE1□ Series
JXCP1□ Series
JXCL1□ Series

JXC□1 Series Version V2.□ or S2.□ Products

WP V2.1

Applicable models

JXC91□ Series

WP S2.2 T1.1

Applicable models

JXCD1□ Series
JXCE1□ Series
JXCP1□ Series
JXCL1□ Series

JXC□1 Series Version V1.□ or S1.□ Products

XR V1.0

Applicable models

JXC91□ Series

XR S1.0 T1.0

Applicable models

JXCD1□ Series
JXCE1□ Series
JXCP1□ Series
JXCL1□ Series

LEC Series
Teaching Box/LEC-T1

How to Order

LEC-T1-3EG□

Teaching box

Cable length [m]

3	3

Initial language

J	Japanese
E	English

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

Stop switch

G	Equipped with stop switch

Enable switch

—	None
S	Equipped with enable switch

∗ Interlock switch for jog and test function

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

Option
- **Enable switch is provided.**

Specifications

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

[CE-compliant products]
The EMC compliance of the teaching box was tested with a step motor controller (servo/24 VDC) and an applicable actuator.
[UL-compliant products]
When compliance with UL is required, the electric actuator and controller should be used with a UL1310 Class 2 power supply.

Easy Mode

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

Menu Operations Flowchart

Menu
Data
Monitor
Jog
Test
ALM
TB setting

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

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

Jog
Return to origin
Jog operation

Test
1 step operation

ALM
Active alarm display
Alarm reset

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

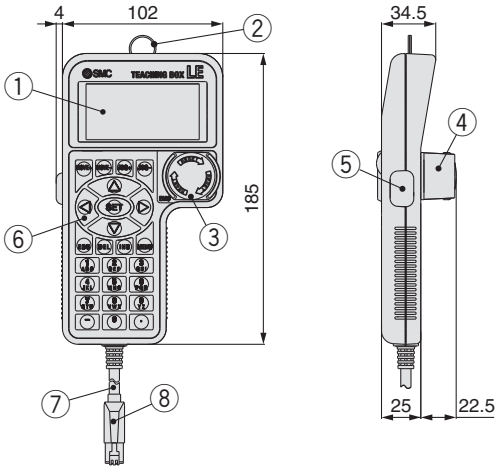
Normal Mode

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

Menu Operations Flowchart

- **Menu**
  - Step data
  - Parameter
  - Monitor
  - Test
  - ALM
  - File
  - TB setting
  - Reconnect
- **Step data**
  - Step data no.
  - Movement MOD
  - Speed
  - Position
  - Acceleration
  - Deceleration
  - Pushing force
  - Trigger LV
  - Pushing speed
  - Moving force
  - Area 1, 2
  - In position
- **Parameter**
  - Basic
  - ORIG
  - **Basic setting**
  - **ORIG setting**
- **Monitor**
  - Drive
  - Output signal
  - Input signal
  - Output terminal
  - Input terminal
  - **DRV monitor**
    - Position, Speed, Torque
    - Step no.
    - Last step no.
  - **Output signal monitor**
  - **Input signal monitor**
  - **Output terminal monitor**
  - **Input terminal monitor**
- **Test**
  - JOG/MOVE
  - Return to ORIG
  - Test drive
  - Forced output
- **ALM**
  - Status
  - ALM Log record
  - **Status**
    - Active alarm display
    - Alarm reset
  - **ALM Log record display**
    - Log entry display
- **File**
  - Data saving
  - Load to controller
  - File deletion
  - File protection (Ver. 2.**)
- **TB setting**
  - Easy/Normal
  - Language
  - Backlight
  - LCD contrast
  - Beep
  - Max. connection axis
  - Password
  - Distance unit
- **Reconnect**

Dimensions



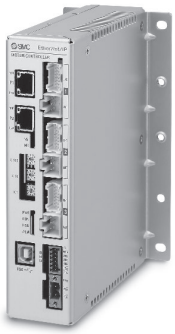
No.	Description	Function
1	**LCD**	A screen of liquid crystal display (with backlight)
2	**Ring**	A ring for hanging the teaching box
3	**Stop switch**	When switch is pushed in, the switch locks and stops. The lock is released when it is turned to the right.
4	**Stop switch guard**	A guard for the stop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

3-Axis Step Motor Controller
(EtherNet/IP™ Type)
JXC92 Series

How to Order

■ EtherNet/IP™ Type (JXC92)

Controller



JXC 9 2 7

- **EtherNet/IP™ type**
- **3-axis type**
- **Mounting**

Symbol	Mounting
7	Screw mounting
8	DIN rail

∗ Order the actuator separately, including the actuator cable.
(Example: LEFS16B-100B-S1)
∗ For the “Speed–Work Load” graph of the actuator, refer to page 37.

Specifications

For the setting of functions and operation methods, refer to the operation manual on the SMC website: https://www.smc.eu

EtherNet/IP™ Type (JXC92)

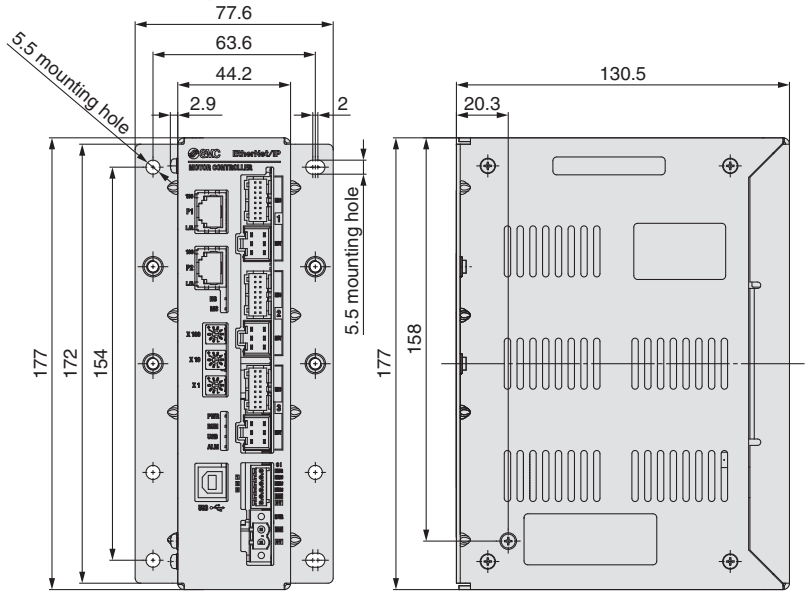
Item		Specifications
Number of axes		Max. 3 axes
Compatible motor		Step motor (Servo/24 VDC)
Compatible encoder		Incremental A/B phase (Encoder resolution: 800 pulse/rotation)
Power supply∗1		Control power supply Power voltage: 24 VDC ±10 % Max. current consumption: 500 mA Motor power supply Power voltage: 24 VDC ±10 % Max. current consumption: Based on the connected actuator∗2
Communication	**Protocol**	EtherNet/IP™∗3
	Communication speed	10 Mbps/100 Mbps (automatic negotiation)
	Communication method	Full duplex/Half duplex (automatic negotiation)
	Configuration file	EDS file
	Occupied area	Input 16 bytes/Output 16 bytes
	IP address setting range	Manual setting by switches: From 192.168.1.1 to 254, Via DHCP server: Arbitrary address
	Vendor ID	7 h (SMC Corporation)
	Product type	2 Bh (Generic Device)
	Product code	DEh
Serial communication		USB2.0 (Full Speed 12 Mbps)
Memory		Flash-ROM
LED indicator		PWR, RUN, USB, ALM, NS, MS, L/A, 100
Lock control		Forced-lock release terminal∗4
Cable length		Actuator cable: 20 m or less
Cooling system		Natural air cooling
Operating temperature range		0 °C to 40 °C (No freezing)
Operating humidity range		90 % RH or less (No condensation)
Storage temperature range		-10 °C to 60 °C (No freezing)
Storage humidity range		90 % RH or less (No condensation)
Insulation resistance		Between all external terminals and the case: 50 MΩ (500 VDC)
Weight		600 g (Screw mounting), 650 g (DIN rail mounting)

∗1 Do not use a power supply with inrush current protection for the motor drive power supply.
∗2 Power consumption depends on the actuator connected. Refer to the actuator specifications for further details.
∗3 EtherNet/IP™ is a trademark of ODVA.
∗4 Applicable to non-magnetising locks

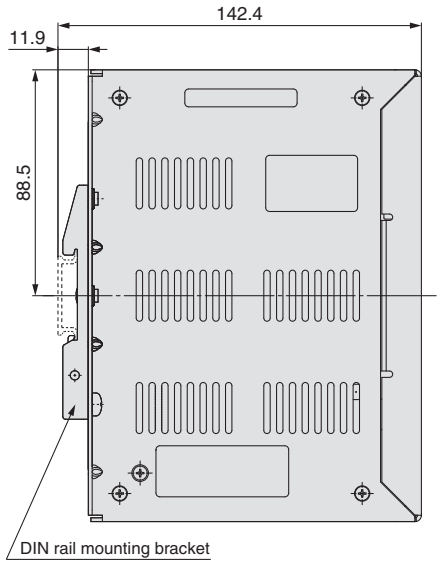
Dimensions

EtherNet/IP™ Type JXC92

Screw mounting

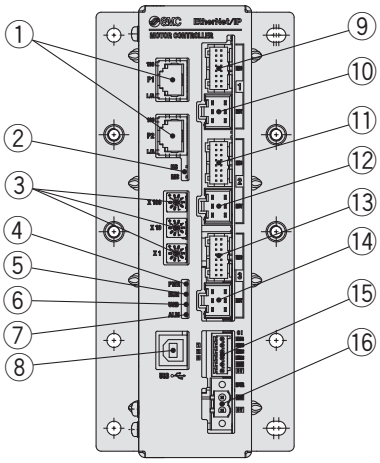


DIN rail mounting



Controller Details

EtherNet/IP™ Type JXC92



No.	Name	Description	Details
①	**P1, P2**	EtherNet/IP™ communication connector	Connect Ethernet cable.
②	**NS, MS**	Communication status LED	Displays the status of the EtherNet/IP™ communication
③	**X100** **X10** **X1**	IP address setting switches	Switch to set the 4th byte of the IP address by X1, X10 and X100.
④	**PWR**	Power supply LED (Green)	Power supply ON: Green turns on Power supply OFF: Green turns off
⑤	**RUN**	Operation LED (Green)	Running in EtherNet/IP™: Green turns on Running via USB communication: Green flashes Stopped: Green turns off
⑥	**USB**	USB connection LED (Green)	USB connected: Green turns on USB not connected: Green turns off
⑦	**ALM**	Alarm LED (Red)	With alarm: Red turns on Without alarm: Red turns off
⑧	**USB**	Serial communication connector	Connect to a PC via the USB cable.
⑨	**ENC** 1	Encoder connector (16 pins)	Axis 1: Connect the actuator cable.
⑩	**MOT** 1	Motor power connector (6 pins)	
⑪	**ENC** 2	Encoder connector (16 pins)	Axis 2: Connect the actuator cable.
⑫	**MOT** 2	Motor power connector (6 pins)	
⑬	**ENC** 3	Encoder connector (16 pins)	Axis 3: Connect the actuator cable.
⑭	**MOT** 3	Motor power connector (6 pins)	
⑮	**CI**	Control power supply connector∗1	Control power supply (+), All axes stop (+), Axis 1 lock release (+), Axis 2 lock release (+), Axis 3 lock release (+), Common (–)
⑯	**M PWR**	Motor power supply connector∗1	Motor power supply (+), Motor power supply (–)

∗1 Connectors are included. (Refer to page 253.)

4-Axis Step Motor Controller
(Parallel I/O/EtherNet/IP™ Type)
JXC73/83/93 Series

CE RoHS

How to Order

■ **Parallel I/O (JXC73/83)**

Controller

JXC 7 3 2

I/O type

Symbol	I/O type
7	NPN
8	PNP

4-axis type

I/O cable, mounting

Symbol	I/O cable	Mounting
1	1.5 m	Screw mounting
2	1.5 m	DIN rail
3	3 m	Screw mounting
4	3 m	DIN rail
5	5 m	Screw mounting
6	5 m	DIN rail
7	None	Screw mounting
8	None	DIN rail

∗ Two I/O cables are included.

■ **EtherNet/IP™ Type (JXC93)**

Controller

JXC 9 3 7

EtherNet/IP™ type

4-axis type

Mounting

Symbol	Mounting
7	Screw mounting
8	DIN rail

∗ Order the actuator separately, including the actuator cable.
(Example: LEFS16B-100B-S1)
∗ For the “Speed–Work Load” graph of the actuator, refer to page 37.

Specifications

For the setting of functions and operation methods, refer to the operation manual on the SMC website: https://www.smc.eu

Parallel I/O (JXC73/83)

Item	Specifications
Number of axes	Max. 4 axes
Compatible motor	Step motor (Servo/24 VDC)
Compatible encoder	Incremental A/B phase (Encoder resolution: 800 pulse/rotation)
Power supply∗1	Main control power supply Power voltage: 24 VDC ±10 % Max. current consumption: 300 mA Motor power supply, Motor control power supply (Common) Power voltage: 24 VDC ±10 % Max. current consumption: Based on the connected actuator∗2
Parallel input	16 inputs (Photo-coupler isolation)
Parallel output	32 outputs (Photo-coupler isolation)
Serial communication	USB2.0 (Full Speed 12 Mbps)
Memory	Flash-ROM/EEPROM
LED indicator	PWR, RUN, USB, ALM
Lock control	Forced-lock release terminal∗3
Cable length	I/O cable: 5 m or less, Actuator cable: 20 m or less
Cooling system	Natural air cooling
Operating temperature range	0 °C to 40 °C (No freezing)
Operating humidity range	90 % RH or less (No condensation)
Storage temperature range	-10 °C to 60 °C (No freezing)
Storage humidity range	90 % RH or less (No condensation)
Insulation resistance	Between all external terminals and the case: 50 MΩ (500 VDC)
Weight	1050 g (Screw mounting), 1100 g (DIN rail mounting)

∗1 Do not use a power supply with inrush current protection for the motor drive power and motor control power supply.
∗2 Power consumption depends on the actuator connected. Refer to the actuator specifications for further details.
∗3 Applicable to non-magnetising locks

For the setting of functions and operation methods, refer to the operation manual on the SMC website: https://www.smc.eu

EtherNet/IP™ Type (JXC93)

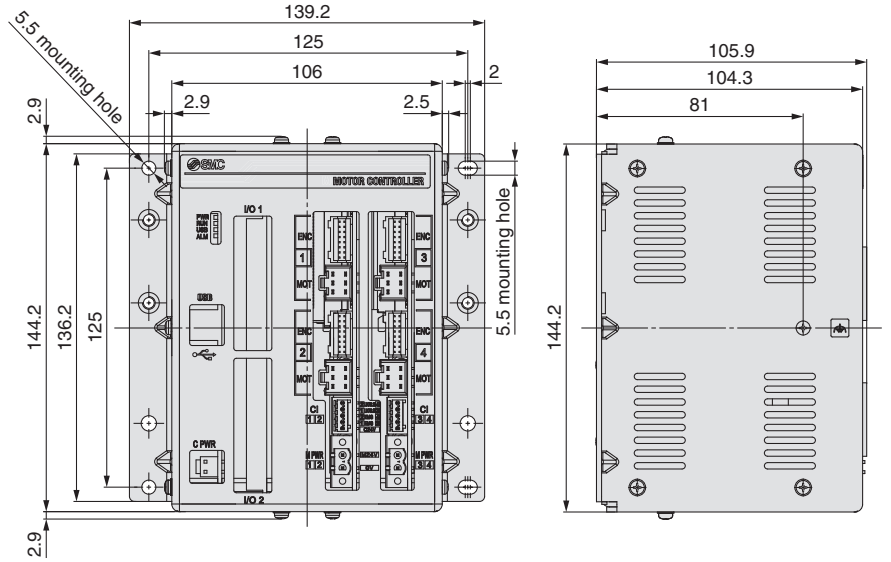
Item		Specifications
Number of axes		Max. 4 axes
Compatible motor		Step motor (Servo/24 VDC)
Compatible encoder		Incremental A/B phase (Encoder resolution: 800 pulse/rotation)
Power supply∗1		Main control power supply Power voltage: 24 VDC ±10 % Max. current consumption: 350 mA Motor power supply, Motor control power supply (Common) Power voltage: 24 VDC ±10 % Max. current consumption: Based on the connected actuator∗2
Communication	**Protocol**	EtherNet/IP™∗4
	Communication speed	10 Mbps/100 Mbps (automatic negotiation)
	Communication method	Full duplex/Half duplex (automatic negotiation)
	Configuration file	EDS file
	Occupied area	Input 16 bytes/Output 16 bytes
	IP address setting range	Manual setting by switches: From 192.168.1.1 to 254, Via DHCP server: Arbitrary address
	Vendor ID	7 h (SMC Corporation)
	Product type	2 Bh (Generic Device)
	Product code	DCh
Serial communication		USB2.0 (Full Speed 12 Mbps)
Memory		Flash-ROM/EEPROM
LED indicator		PWR, RUN, USB, ALM, NS, MS, L/A, 100
Lock control		Forced-lock release terminal∗3
Cable length		Actuator cable: 20 m or less
Cooling system		Natural air cooling
Operating temperature range		0 °C to 40 °C (No freezing)
Operating humidity range		90 % RH or less (No condensation)
Storage temperature range		-10 °C to 60 °C (No freezing)
Storage humidity range		90 % RH or less (No condensation)
Insulation resistance		Between all external terminals and the case: 50 MΩ (500 VDC)
Weight		1050 g (Screw mounting), 1100 g (DIN rail mounting)

∗1 Do not use a power supply with inrush current protection for the motor drive power and motor control power supply.
∗2 Power consumption depends on the actuator connected. Refer to the actuator specifications for further details.
∗3 Applicable to non-magnetising locks
∗4 EtherNet/IP™ is a trademark of ODVA.

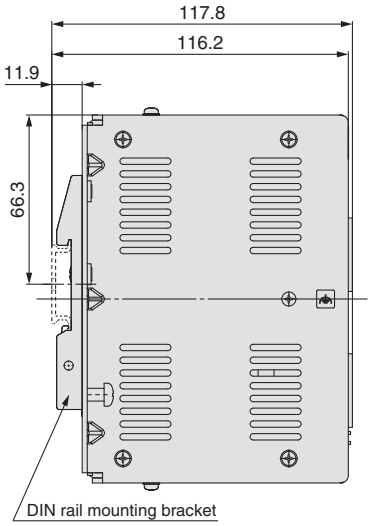
Dimensions

Parallel I/O JXC73/83

Screw mounting

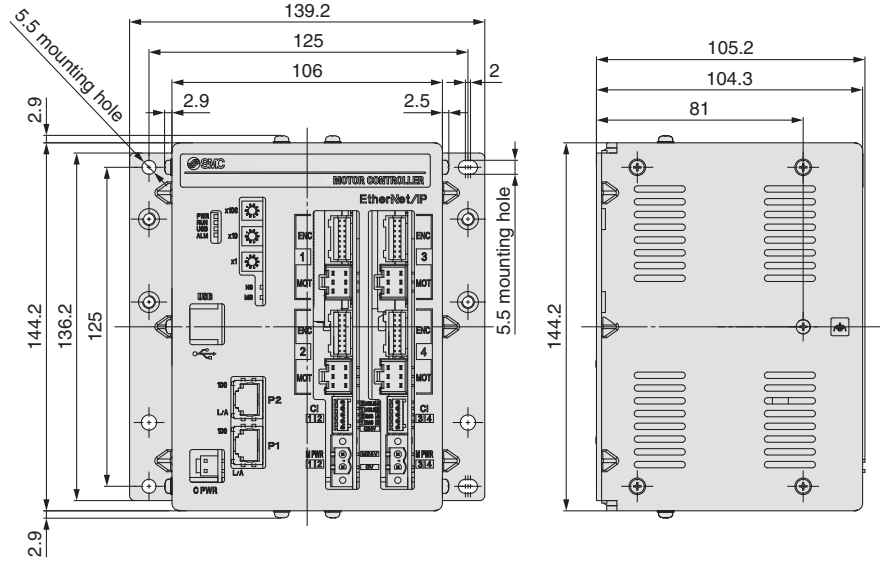


DIN rail mounting

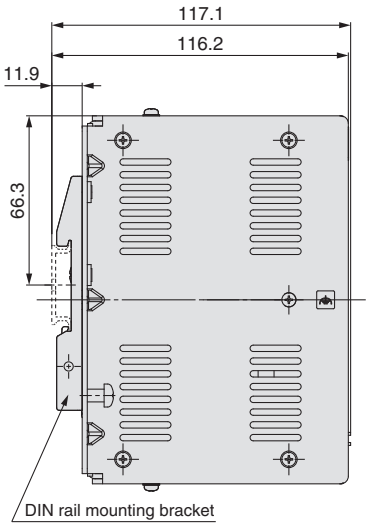


EtherNet/IP™ Type JXC93

Screw mounting

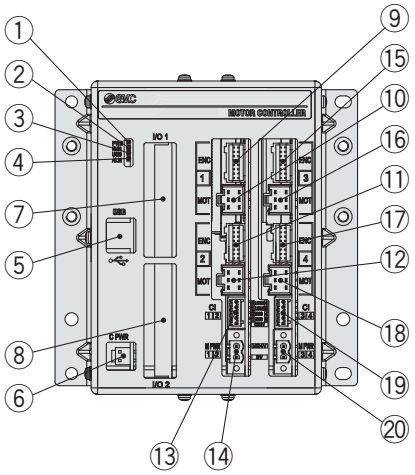


DIN rail mounting



Controller Details

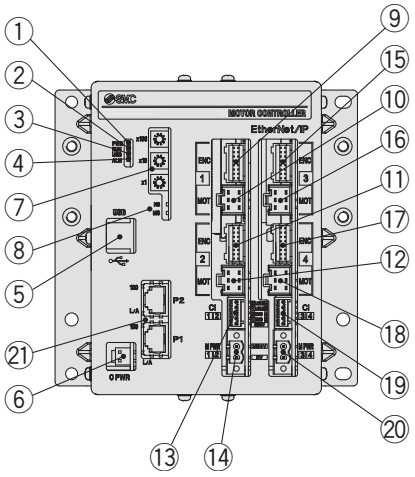
Parallel I/O JXC73/83



No.	Name	Description	Details
①	**PWR**	Power supply LED (Green)	Power supply ON: Green turns on Power supply OFF: Green turns off
②	**RUN**	Operation LED (Green)	Running in parallel I/O: Green turns on Running via USB communication: Green flashes Stopped: Green turns off
③	**USB**	USB connection LED (Green)	USB connected: Green turns on USB not connected: Green turns off
④	**ALM**	Alarm LED (Red)	With alarm: Red turns on Without alarm: Red turns off
⑤	**USB**	Serial communication	Connect to a PC via the USB cable.
⑥	**C PWR**	Main control power supply connector (2 pins)*1	Main control power supply (+) (–)
⑦	**I/O 1**	Parallel I/O connector (40 pins)	Connect to a PLC via the I/O cable.
⑧	**I/O 2**	Parallel I/O connector (40 pins)	Connect to a PLC via the I/O cable.
⑨	**ENC** 1	Encoder connector (16 pins)	Axis 1: Connect the actuator cable.
⑩	**MOT** 1	Motor power connector (6 pins)	
⑪	**ENC** 2	Encoder connector (16 pins)	Axis 2: Connect the actuator cable.
⑫	**MOT** 2	Motor power connector (6 pins)	
⑬	**CI** 1 2	Motor control power supply connector*1	Motor control power supply (+), Axis 1 stop (+), Axis 1 lock release (+), Axis 2 stop (+), Axis 2 lock release (+)
⑭	**M PWR** 1 2	Motor power supply connector*1	For Axis 1, 2. Motor power supply (+), Common (–)
⑮	**ENC** 3	Encoder connector (16 pins)	Axis 3: Connect the actuator cable.
⑯	**MOT** 3	Motor power connector (6 pins)	
⑰	**ENC** 4	Encoder connector (16 pins)	Axis 4: Connect the actuator cable.
⑱	**MOT** 4	Motor power connector (6 pins)	
⑲	**CI** 3 4	Motor control power supply connector*1	Motor control power supply (+), Axis 3 stop (+), Axis 3 lock release (+), Axis 4 stop (+), Axis 4 lock release (+)
⑳	**M PWR** 3 4	Motor power supply connector*1	For Axis 3, 4. Motor power supply (+), Common (–)

*1 Connectors are included. (Refer to page 253.)

EtherNet/IP™ Type JXC93



No.	Name	Description	Details
①	**PWR**	Power supply LED (Green)	Power supply ON: Green turns on Power supply OFF: Green turns off
②	**RUN**	Operation LED (Green)	Running in EtherNet/IP™: Green turns on Running via USB communication: Green flashes Stopped: Green turns off
③	**USB**	USB connection LED (Green)	USB connected: Green turns on USB not connected: Green turns off
④	**ALM**	Alarm LED (Red)	With alarm: Red turns on Without alarm: Red turns off
⑤	**USB**	Serial communication	Connect to a PC via the USB cable.
⑥	**C PWR**	Main control power supply connector (2 pins)*1	Main control power supply (+) (–)
⑦	**x100** **x10** **x1**	IP address setting switches	Switch to set the 4th byte of the IP address by X1, X10 and X100.
⑧	**MS, NS**	Communication status LED	Displays the status of the EtherNet/IP™ communication
⑨	**ENC** 1	Encoder connector (16 pins)	Axis 1: Connect the actuator cable.
⑩	**MOT** 1	Motor power connector (6 pins)	
⑪	**ENC** 2	Encoder connector (16 pins)	Axis 2: Connect the actuator cable.
⑫	**MOT** 2	Motor power connector (6 pins)	
⑬	**CI** 1 2	Motor control power supply connector*1	Motor control power supply (+), Axis 1 stop (+), Axis 1 lock release (+), Axis 2 stop (+), Axis 2 lock release (+)
⑭	**M PWR** 1 2	Motor power supply connector*1	For Axis 1, 2. Motor power supply (+), Common (–)
⑮	**ENC** 3	Encoder connector (16 pins)	Axis 3: Connect the actuator cable.
⑯	**MOT** 3	Motor power connector (6 pins)	
⑰	**ENC** 4	Encoder connector (16 pins)	Axis 4: Connect the actuator cable.
⑱	**MOT** 4	Motor power connector (6 pins)	
⑲	**CI** 3 4	Motor control power supply connector*1	Motor control power supply (+), Axis 3 stop (+), Axis 3 lock release (+), Axis 4 stop (+), Axis 4 lock release (+)
⑳	**M PWR** 3 4	Motor power supply connector*1	For Axis 3, 4. Motor power supply (+), Common (–)
㉑	**P1, P2**	EtherNet/IP™ communication connector	Connect Ethernet cable.

*1 Connectors are included. (Refer to page 253.)

Wiring Example 1

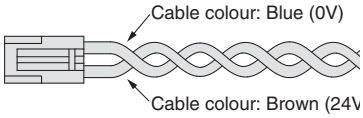
Cable with Main Control Power Supply Connector (For 4 Axes)*1: C PWR 1 pc.

For 4 Axes: JXC73/83/93

Terminal name	Function	Details
+24V	Main control power supply (+)	Power supply (+) supplied to the main control
24–0V	Main control power supply (–)	Power supply (–) supplied to the main control

*1 Part no.: JXC-C1 (Cable length: 1.5 m)

Cable with main control power supply connector



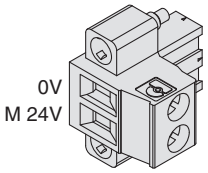
Motor Power Supply Connector (For 3/4 Axes)*2: M PWR 2 pcs.*3

For 3 Axes: JXC92; For 4 Axes: JXC73/83/93

Terminal name	Function	Details	Note
0V	Motor power supply (–)	Power supply (–) supplied to the motor power	For 3 axes JXC92
		The M 24V terminal, C 24V terminal, EMG terminal, and LKRLS terminal are common (–).	For 4 axes JXC73/83/93
M 24V	Motor power supply (+)	Power supply (+) supplied to the motor power	

*2 Manufactured by PHOENIX CONTACT (Part no.: MSTB2, 5/2-STF-5, 08)
*3 1 pc. for 3 axes (JXC92)

Motor power supply connector



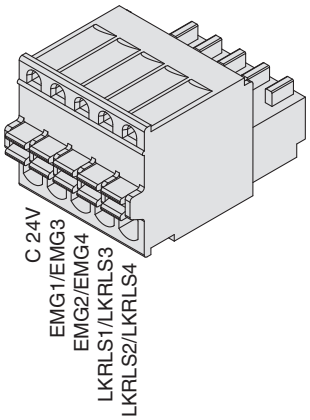
Motor Control Power Supply Connector (For 4 Axes)*4: CI 2 pcs.

For 4 Axes: JXC73/83/93

Terminal name	Function	Details
C 24V	Motor control power supply (+)	Power supply (+) supplied to the motor control
EMG1/EMG3	Stop (+)	Axis 1/Axis 3: Input (+) for releasing the stop
EMG2/EMG4	Stop (+)	Axis 2/Axis 4: Input (+) for releasing the stop
LKRLS1/LKRLS3	Lock release (+)	Axis 1/Axis 3: Input (+) for releasing the lock
LKRLS2/LKRLS4	Lock release (+)	Axis 2/Axis 4: Input (+) for releasing the lock

*4 Manufactured by PHOENIX CONTACT (Part no.: FK-MC0, 5/5-ST-2, 5)

Motor control power supply connector



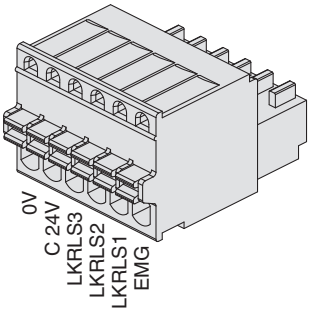
Control Power Supply Connector (For 3 Axes)*5: CI 1 pc.

For 3 Axes: JXC92

Terminal name	Function	Details
0V	Control power supply (–)	The C 24V terminal, LKRLS terminal, and EMG terminal are common (–).
C 24V	Control power supply (+)	Power supply (+) supplied to the control
LKRLS3	Lock release (+)	Axis 3: Input (+) for releasing the lock
LKRLS2	Lock release (+)	Axis 2: Input (+) for releasing the lock
LKRLS1	Lock release (+)	Axis 1: Input (+) for releasing the lock
EMG	Stop (+)	All axes: Input (+) for releasing the stop

*5 Manufactured by PHOENIX CONTACT (Part no.: FK-MC0, 5/6-ST-2, 5)

Control power supply connector



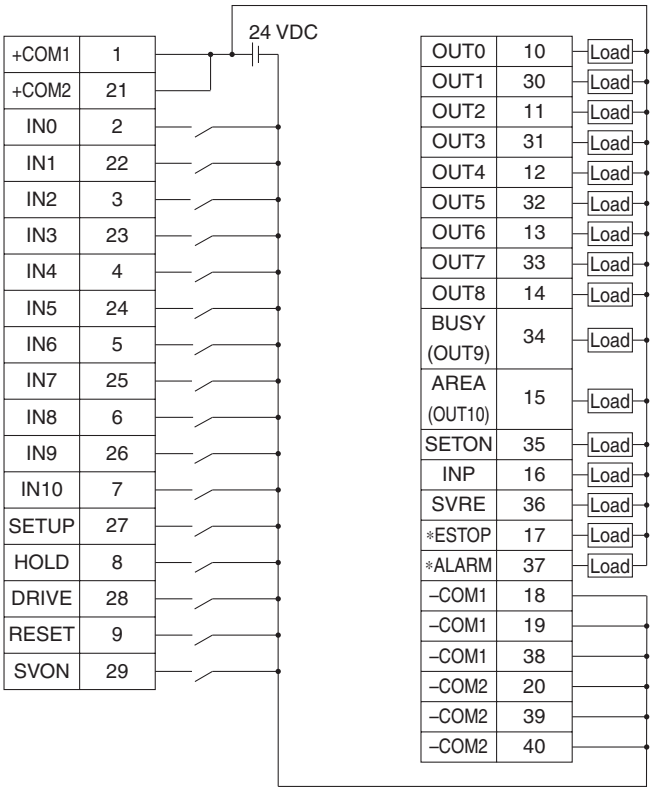
Wiring Example 2

Parallel I/O Connector

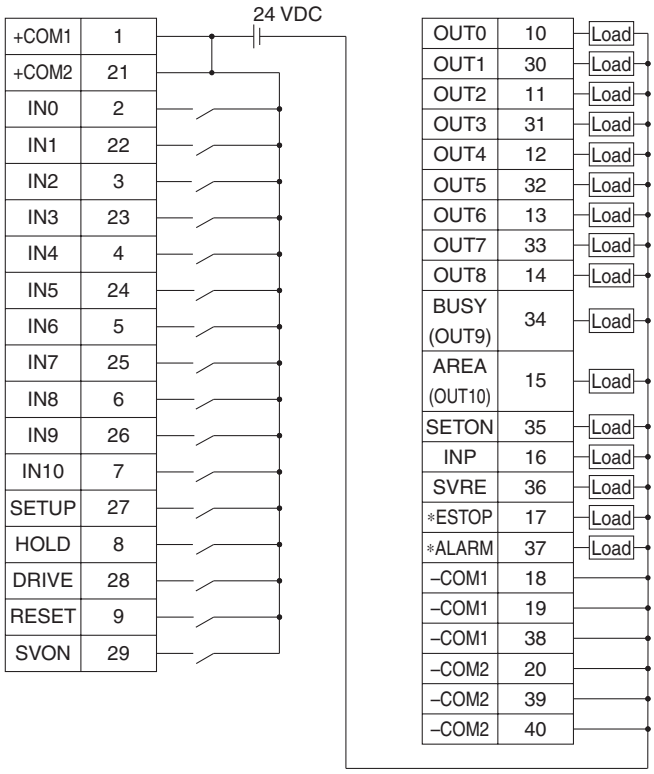
* When you connect a PLC to the I/O 1 or I/O 2 parallel I/O connector, use the I/O cable (JXC-C2-□).
* The wiring changes depending on the type of parallel I/O (NPN or PNP).

I/O 1 Wiring example

NPN JXC73



PNP JXC83



I/O 1 Input Signal

Name	Details
+COM1 +COM2	Connects the power supply 24 V for input/output signal
IN0 to IN8	Step data specified bit no. (Standard: When 512 points are used)
IN9 IN10	Step data specified extension bit no. (Extension: When 2048 points are used)
SETUP	Instruction to return to origin
HOLD	Temporarily stops operation
DRIVE	Instruction to drive
RESET	Resets alarm and interrupts operation
SVON	Servo ON instruction

I/O 1 Output Signal

Name	Details
OUT0 to OUT8	Outputs the step data no. during operation
BUSY (OUT9)	Outputs when the operation of the actuator is in progress
AREA (OUT10)	Outputs when all actuators are within the area output range
SETON	Outputs when the return to origin of all actuators is completed
INP	Outputs when the positioning or pushing of all actuators is completed
SVRE	Outputs when servo is ON
*ESTOP*1	OFF when EMG stop is instructed
*ALARM*1	OFF when alarm is generated
–COM1 –COM2	Connects the power supply 0 V for input/output signal

*1 Negative-logic circuit signal

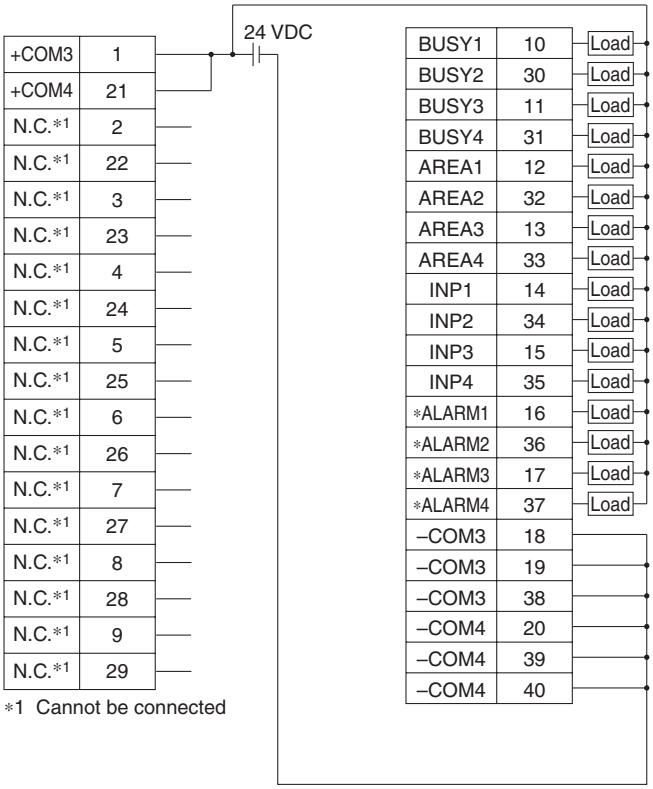
Wiring Example 2

Parallel I/O Connector

* When you connect a PLC to the I/O 1 or I/O 2 parallel I/O connector, use the I/O cable (JXC-C2-□).
* The wiring changes depending on the type of parallel I/O (NPN or PNP).

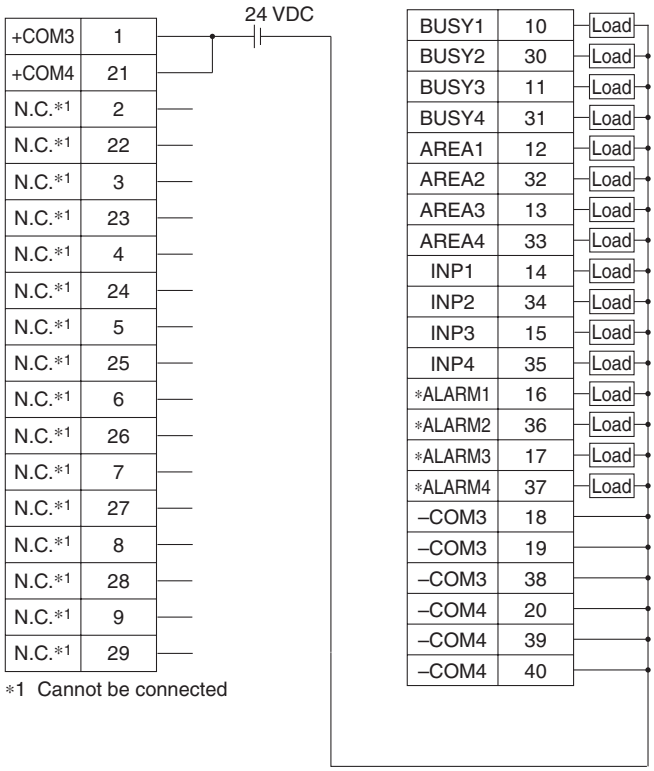
I/O 2 Wiring example

NPN JXC73



*1 Cannot be connected

PNP JXC83



*1 Cannot be connected

I/O 2 Input Signal

Name	Details
+COM3 +COM4	Connects the power supply 24 V for input/output signal
N.C.	Cannot be connected

I/O 2 Output Signal

Name	Details
BUSY1	Busy signal for axis 1
BUSY2	Busy signal for axis 2
BUSY3	Busy signal for axis 3
BUSY4	Busy signal for axis 4
AREA1	Area signal for axis 1
AREA2	Area signal for axis 2
AREA3	Area signal for axis 3
AREA4	Area signal for axis 4
INP1	Positioning or pushing completion signal for axis 1
INP2	Positioning or pushing completion signal for axis 2
INP3	Positioning or pushing completion signal for axis 3
INP4	Positioning or pushing completion signal for axis 4
*ALARM1*2	Alarm signal for axis 1
*ALARM2*2	Alarm signal for axis 2
*ALARM3*2	Alarm signal for axis 3
*ALARM4*2	Alarm signal for axis 4
–COM3 –COM4	Connects the power supply 0 V for input/output signal

*2 Negative-logic circuit signal

Options

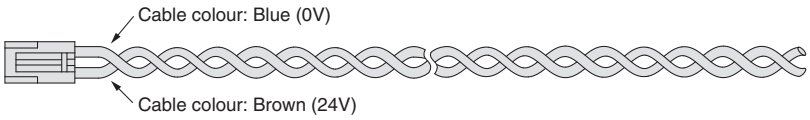
Cable with main control power supply connector

For 4 Axes: JXC73/83/93

JXC − C1

Cable length: 1.5 m (Accessory)

Number of cores	2
AWG size	AWG20



I/O cable (1 pc.)

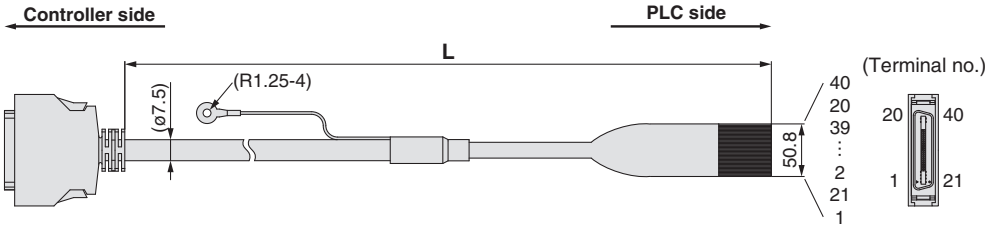
For 4 Axes: JXC73/83

JXC − C2 − □

Cable length (L) [m]

1	1.5
3	3
5	5

Number of cores	40
AWG size	AWG28



Pin no.	Wire colour	Pin no.	Wire colour	Pin no.	Wire colour	Pin no.	Wire colour
1	Orange (Black 1)	6	Orange (Black 2)	11	Orange (Black 3)	16	Orange (Black 4)
21	Orange (Red 1)	26	Orange (Red 2)	31	Orange (Red 3)	36	Orange (Red 4)
2	Grey (Black 1)	7	Grey (Black 2)	12	Grey (Black 3)	17	Grey (Black 4)
22	Grey (Red 1)	27	Grey (Red 2)	32	Grey (Red 3)	37	Grey (Red 4)
3	White (Black 1)	8	White (Black 2)	13	White (Black 3)	18	White (Black 4)
23	White (Red 1)	28	White (Red 2)	33	White (Red 3)	38	White (Red 4)
4	Yellow (Black 1)	9	Yellow (Black 2)	14	Yellow (Black 3)	19	Yellow (Black 4)
24	Yellow (Red 1)	29	Yellow (Red 2)	34	Yellow (Red 3)	39	Yellow (Red 4)
5	Pink (Black 1)	10	Pink (Black 2)	15	Pink (Black 3)	20	Pink (Black 4)
25	Pink (Red 1)	30	Pink (Red 2)	35	Pink (Red 3)	40	Pink (Red 4)

Weight

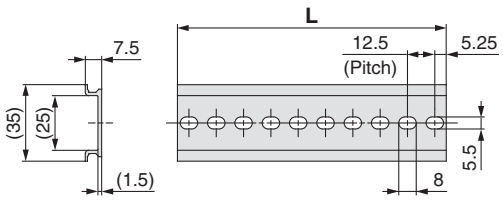
Product no.	Weight [g]
JXC-C2-1	160
JXC-C2-3	300
JXC-C2-5	480

DIN rail

For 3 Axes: JXC92 | For 4 Axes: JXC73/83/93

AXT100 − DR − □

∗ For □, enter a number from the No. line in the table below. Refer to the dimension drawings on pages 248 and 261 for the mounting dimensions.



L Dimensions

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

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

DIN rail mounting bracket (with 6 mounting screws)

For 3 Axes: JXC92 | For 4 Axes: JXC73/83/93

JXC − Z1

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

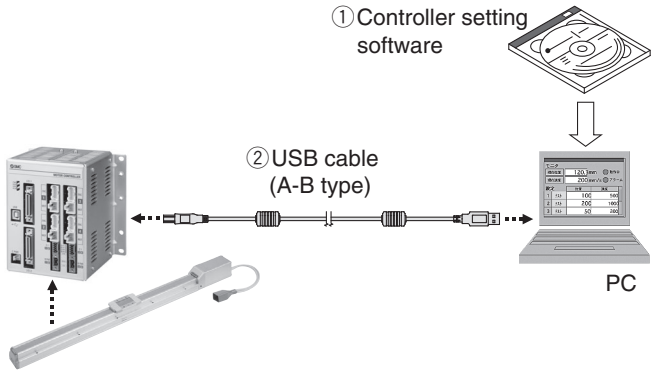
Options

Controller setting kit

For 4 Axes
JXC73/83/93

JXC – W1

Controller setting kit
(Japanese and English are available.)



Contents

①Controller setting software (CD-ROM)
②USB cable (Cable length: 3 m)

Description		Model
①	Controller setting software	JXC-W1-1
②	USB cable	JXC-W1-2 (The same cable as the JXC-MA1-2)

∗ Can be ordered separately

Hardware Requirements

PC/AT compatible machine with Windows 7 or Windows 8.1 and USB1.1 or USB2.0 port

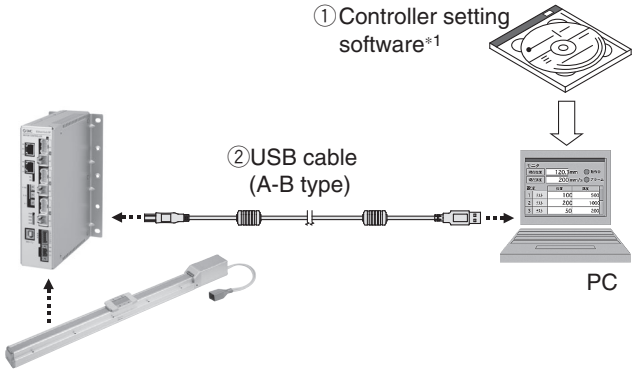
∗ Windows® is a registered trademark of Microsoft Corporation in the United States.

Controller setting kit

For 3 Axes
JXC92

JXC – MA1∗1

Controller setting kit
(Japanese and English are available.)



Contents

①Controller setting software (CD-ROM)∗1
②USB cable (Cable length: 3 m)

Description		Model
①	Controller setting software	JXC-MA1-1
②	USB cable	JXC-MA1-2 (The same cable as the JXC-W1-2)

∗ Can be ordered separately

Hardware Requirements

PC/AT compatible machine with Windows 7 or Windows 8.1 and USB1.1 or USB2.0 port

∗1 The controller setting software also includes software dedicated for 4 axes.
∗ Windows® is a registered trademark of Microsoft Corporation in the United States.

Options: Actuator Cable

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

For 3 Axes	For 4 Axes
JXC92	JXC73/83/93

LE − CP − 1 − □

Cable length (L) [m]

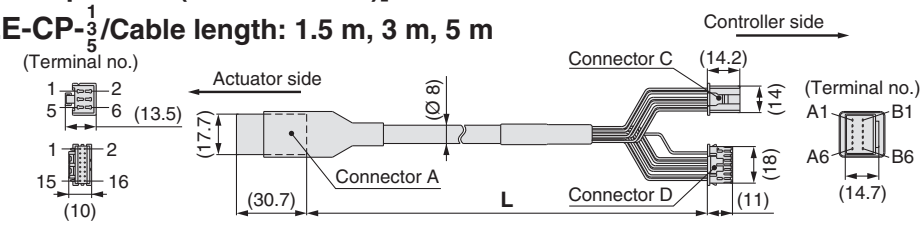
1	1.5
3	3
5	5
8	8*1
A	10*1
B	15*1
C	20*1

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

Cable type

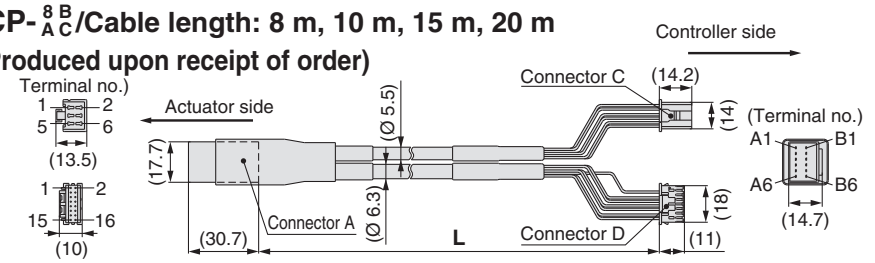
—	Robotic cable (Flexible cable)
S	Standard cable

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



LE-CP-8, A, B, C/Cable length: 8 m, 10 m, 15 m, 20 m

(*1 Produced upon receipt of order)



Weight

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

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

Cable colour	Connector D terminal no.
Brown	12
Black	13
Red	7
Black	6
Orange	9
Black	8
—	3

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

For 3 Axes	For 4 Axes
JXC92	JXC73/83/93

LE − CP − 1 − B − □

Cable length (L) [m]

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

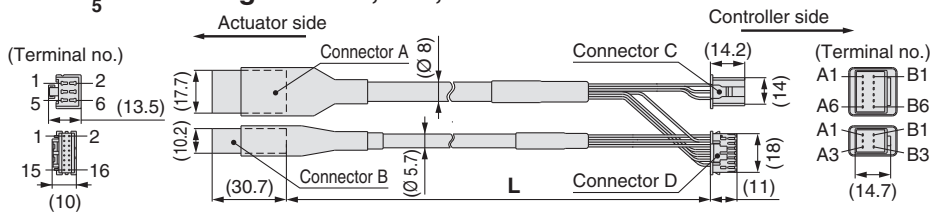
*1 Produced upon receipt of order (Robotic cable only)

With lock and sensor

Cable type

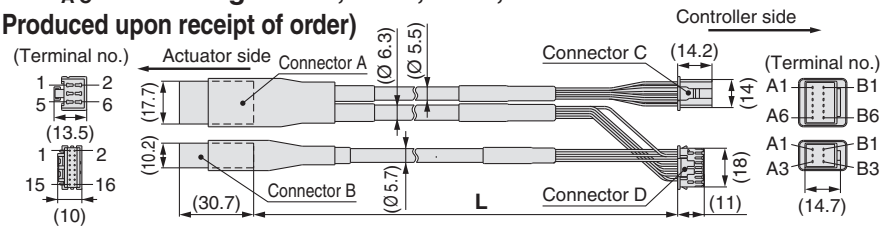
—	Robotic cable (Flexible cable)
S	Standard cable

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



LE-CP-8, A, B, C/Cable length: 8 m, 10 m, 15 m, 20 m

(*1 Produced upon receipt of order)



Weight

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

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

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

AC Servo Motor Driver
LECS□/LECY□ Series

Pulse Input Type/Positioning Type

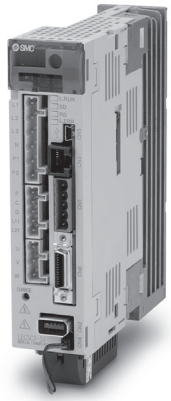
Incremental Type
LECSA Series

Pulse Input Type

Absolute Type
LECSB Series

CC-Link Direct Input Type

Absolute Type
LECSC Series



SSCNET Ⅲ Type

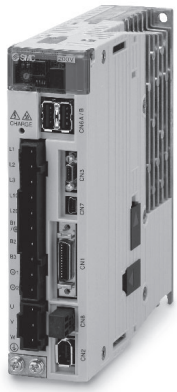
Absolute Type
LECSS Series

SSCNET Ⅲ/H Type

Absolute Type
LECSS-T Series

MECHATROLINK-Ⅱ Type

Absolute Type
LECYM Series



MECHATROLINK-Ⅲ Type

Absolute Type
LECYU Series

AC Servo Motor Driver

LECS□ Series

Power supply voltage	**100 to 120 VAC 200 to 230 VAC**
Motor capacity	**100/200/400 W**

Incremental Type

LECSA Series (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 p/rev)
- **Parallel input:** 6 inputs
  output: 4 outputs

Absolute Type

LECSB Series (Pulse input type)

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

LECSC Series (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 are occupied)**
- **Up to 32 drivers can be connected (when 2 stations are 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 p/rev)

LECSS Series (SSCNET Ⅲ type)

SSCNET III
SERVO SYSTEM CONTROLLER NETWORK

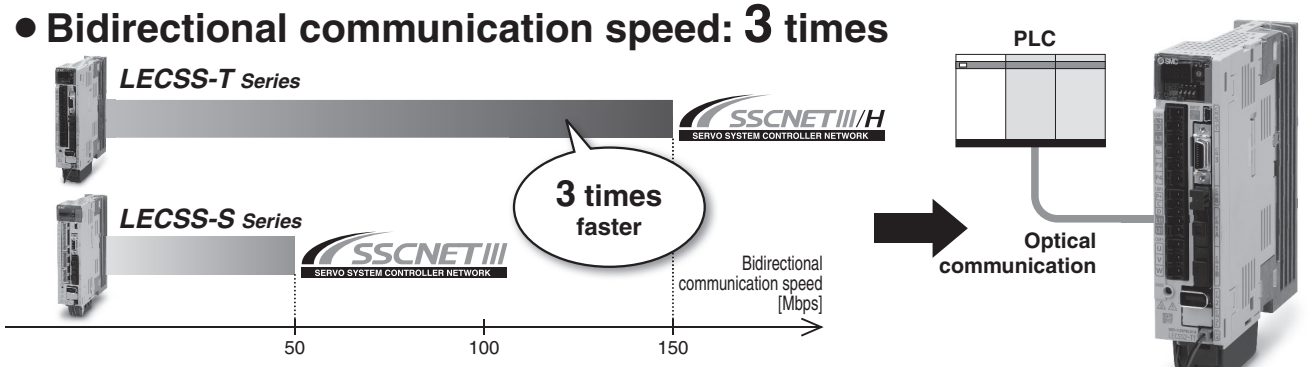
- **Compatible with Mitsubishi Electric's servo system controller network**
- **Reduced wiring and SSCNET Ⅲ optical cable for one-touch connection**
- **The SSCNET Ⅲ optical cable provides enhanced noise resistance.**
- **Up to 16 drivers can be connected with SSCNET Ⅲ communication.**
- **Applicable Fieldbus protocol:** SSCNET Ⅲ
  (High-speed optical communication, Max. bidirectional communication speed: 50 Mbps)
- **Control encoder:** Absolute 18-bit encoder (Resolution: 262144 p/rev)

AC Servo Motor Driver
LECSS-T Series

Power supply voltage	200 to 230 VAC
Motor capacity	100/200/400 W

SSCNET Ⅲ/H Compatible *LECSS-T Series*

- **Applicable Fieldbus protocol:** SSCNET Ⅲ/H (High-speed optical communication, max. bidirectional communication speed: **150** Mbps)
- **Bidirectional communication speed: 3 times**

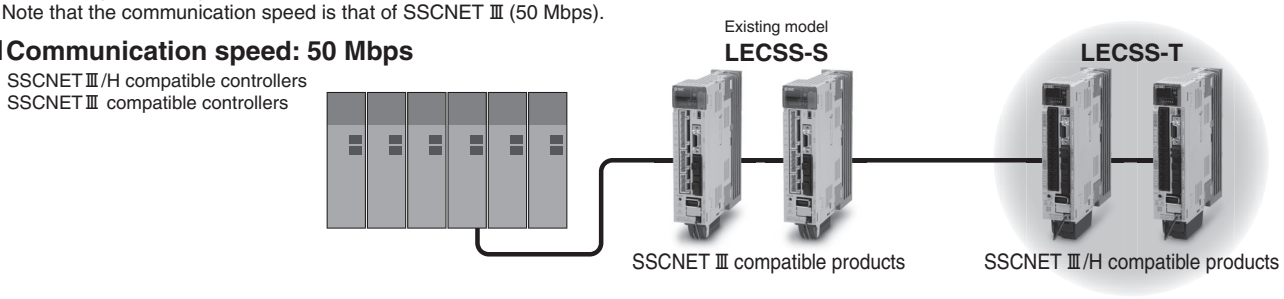


- **SSCNET Ⅲ/H and SSCNET Ⅲ products are compatible.**

SSCNET Ⅲ/H compatible products can be added to existing SSCNET Ⅲ systems for system expansion.
Reassembly of the system (new installation of master PLC) is not required.

＊ Note that the communication speed is that of SSCNET Ⅲ (50 Mbps).

■Communication speed: 50 Mbps



- **Improved noise resistance**
- **STO (Safe Torque Off) safety function available**
- **Control encoder: Absolute 22-bit encoder (Resolution: 4194304 p/rev)**

Absolute Type

LECSS-T Series (SSCNET Ⅲ/H type)

SSCNET Ⅲ/H SERVO SYSTEM CONTROLLER NETWORK

- **Applicable Fieldbus protocol**: SSCNET Ⅲ/H (High-speed optical communication, max. bidirectional communication speed: 150 Mbps)
- **Bidirectional communication speed**: 3 times
- **SSCNET Ⅲ/H and SSCNET Ⅲ products are compatible.**
- **Improved noise resistance**
- **STO (Safe Torque Off) safety function available**
- **Control encoder**: Absolute 22-bit encoder (Resolution: 4194304 p/rev)

AC Servo Motor Driver

LECY□ Series

Power supply voltage	200 to 230 VAC
Motor capacity	100/200/400 W

Absolute Type

LECYM Series (MECHATROLINK-Ⅱ type)

MECHATROLINK-Ⅱ

- **Applicable Fieldbus protocol**: MECHATROLINK-Ⅱ
- **Number of connectable drivers**: 30 units (Transmission distance: Max. 50 m in total)
- **Max. transmission speed**: 10 Mbps
- **Min. transmission cycle**: 250 μs
- **Control encoder**: Absolute 20-bit encoder (Resolution: 1048576 p/rev)
- **STO (Safe Torque Off) safety function available**
- **Compliant with the SEMI F47 Standard (Torque limit for low DC power supply voltage for main circuit)**

LECYU Series (MECHATROLINK-Ⅲ type)

MECHATROLINK-Ⅲ

- **Applicable Fieldbus protocol**: MECHATROLINK-Ⅲ
- **Number of connectable drivers**: 62 units (Transmission distance: Max. 75 m between stations)
- **Max. transmission speed**: 100 Mbps
- **Min. transmission cycle**: 125 μs
- **Control encoder**: Absolute 20-bit encoder (Resolution: 1048576 p/rev)
- **STO (Safe Torque Off) safety function available**
- **Compliant with the SEMI F47 Standard (Torque limit for low DC power supply voltage for main circuit)**

AC Servo Motor Driver
Incremental Type
LECSA Series **(Pulse Input Type/Positioning Type)**
Absolute Type
LECSB **(Pulse Input Type)** ***/LECSC*** **(CC-Link Direct Input Type)**
LECSS **(SSCNET Ⅲ Type)** ***/LECSS-T*** **(SSCNET Ⅲ/H Type)** ***Series***


LECSA LECSB LECSC LECSS LECSS-T

CE c UL us LISTED ∗ LECSS-T only RoHS

How to Order

LECSA/LECSB/LECSC/LECSS

LECS A 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

∗ **If an I/O connector (CN1) is required, order the part number "LE-CSN□" separately.**
∗ **If an I/O cable (CN1) is required, order the part number "LEC-CSN□-1" separately.**
(Since the electric actuator will not operate without emergency stop (EMG) wiring for the LECSB, an I/O connector or an I/O cable is required.)

Compatible motor type

Symbol	Type	Capacity	Encoder
S1	AC servo motor (S2∗1)	100 W	Incremental
S3	AC servo motor (S3∗1)	200 W	
S4	AC servo motor (S4∗1)∗2	400 W	
S5	AC servo motor (S6∗1)	100 W	Absolute
S7	AC servo motor (S7∗1)	200 W	
S8	AC servo motor (S8∗1)∗2	400 W	

∗1 The symbol shows the motor type (actuator).
∗2 Only available for power supply voltage "200 to 230 VAC"

LECSS-T

LECS S 2 – T5

Driver type

S	SSCNET Ⅲ/H type (For absolute encoder)

Power supply voltage

2	200 to 240 VAC, 50/60 Hz

∗ **If an I/O connector (CN1) is required, order the part number "LE-CSNS" separately.**
∗ **If an I/O cable (CN1) is required, order the part number "LEC-CSNS-1" separately.**

Compatible motor type

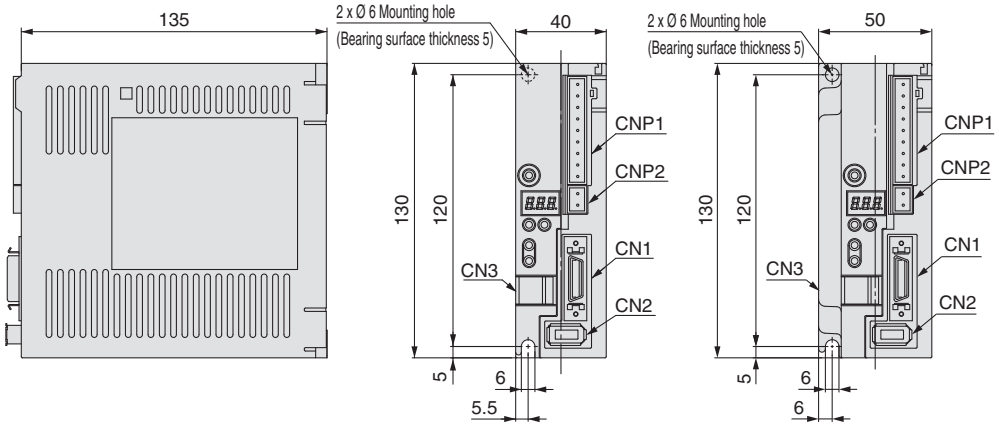
Symbol	Type	Capacity	Encoder
T5	AC servo motor (T6∗1)	100 W	Absolute
T7	AC servo motor (T7∗1)	200 W	
T8	AC servo motor (T8∗1)	400 W	

∗1 The symbol shows the motor type (actuator).

Dimensions

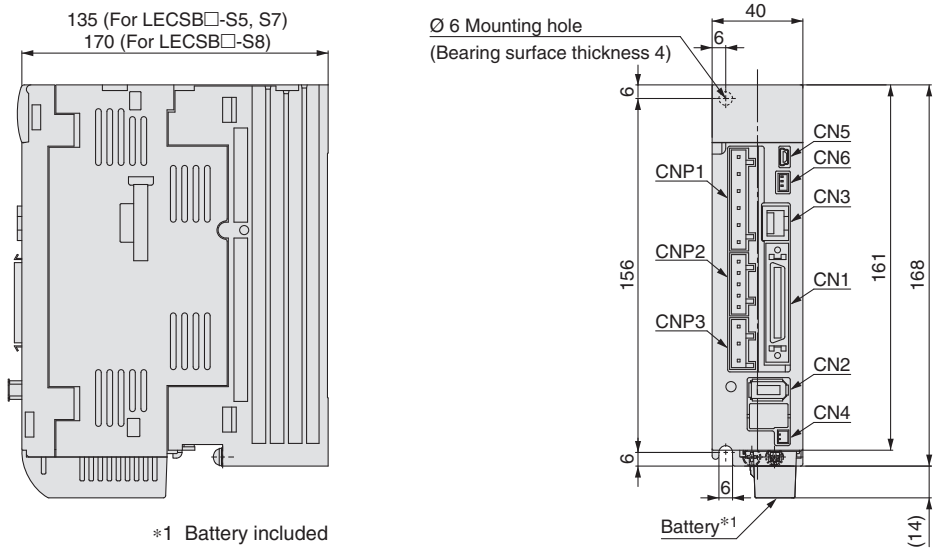
LECSA□

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□

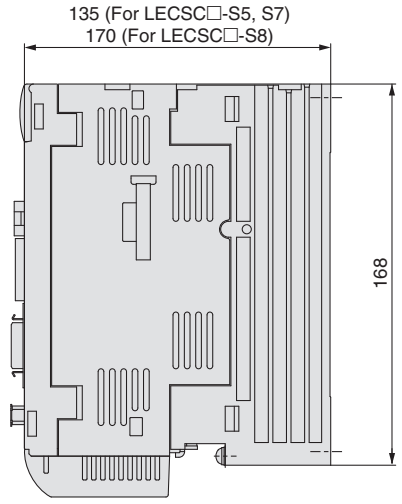


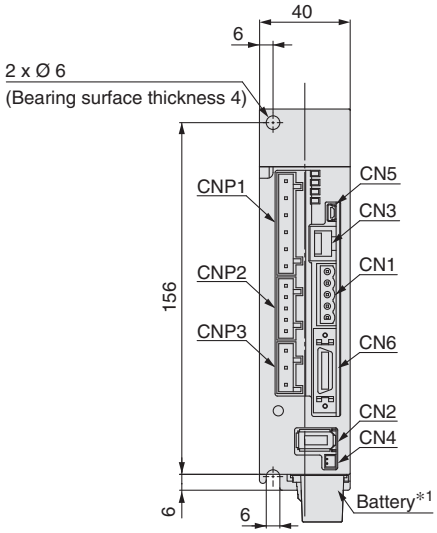
*1 Battery included

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

Dimensions

LECSC□

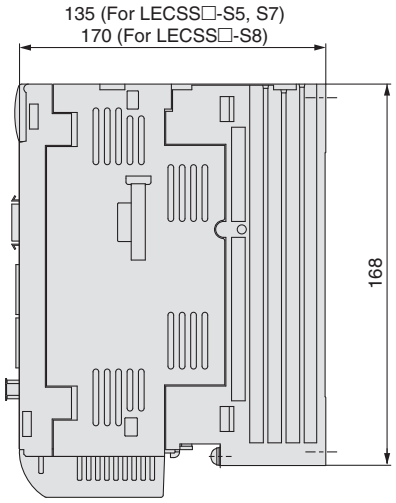


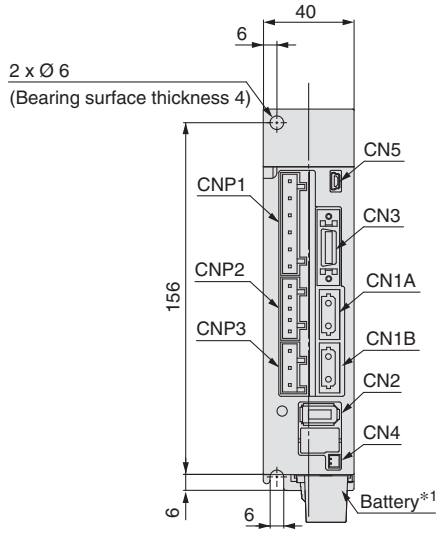


Connector name	Description
CN1	CC-Link connector
CN2	Encoder connector
CN3	RS-422 communication connector
CN4	Battery connector
CN5	USB communication connector
CN6	I/O signal connector
CNP1	Main circuit power supply connector
CNP2	Control circuit power supply connector
CNP3	Servo motor power connector

*1 Battery included

LECSS□

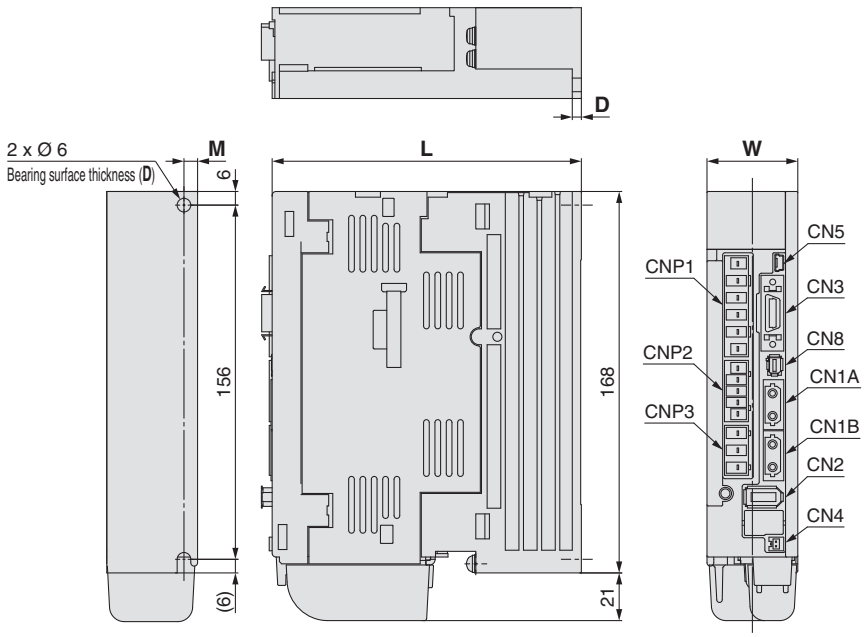




Connector name	Description
CN1A	Front axis connector for SSCNET Ⅲ optical cable
CN1B	Rear axis connector for SSCNET Ⅲ optical cable
CN2	Encoder connector
CN3	I/O signal connector
CN4	Battery connector
CN5	USB communication connector
CNP1	Main circuit power supply connector
CNP2	Control circuit power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

*1 Battery included

LECSS2-T□



Connector name	Description
CN1A	Front axis connector for SSCNET Ⅲ/H
CN1B	Rear axis connector for SSCNET Ⅲ/H
CN2	Encoder connector
CN3	I/O signal connector
CN4	Battery connector
CN5	USB communication connector
CN8	STO input signal connector
CNP1	Main circuit power supply connector
CNP2	Control circuit power supply connector
CNP3	Servo motor power connector

Dimensions [mm]

Model	W	L	D	M
LECSS2-T5	40	135	4	6
LECSS2-T7				
LECSS2-T8		170	5	

* Battery included

Specifications

LECSA Series

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)*2				
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

LECSB Series

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)*2				
Function	In-position range setting [pulse]	0 to ±10000 (Command pulse unit)				
	Error excessive	±3 rotations				
	Torque limit	Parameter setting or external analogue 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.
*2 If the command pulse input is open collector method, it supports only the sink (NPN) type interface. It does not correspond to the source (PNP) type interface.

Specifications

LECSC Series

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.				
Command method	**Remote register input**		Available with CC-Link communication (2 stations occupied)				
	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, RS-422 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.

LECSS Series

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

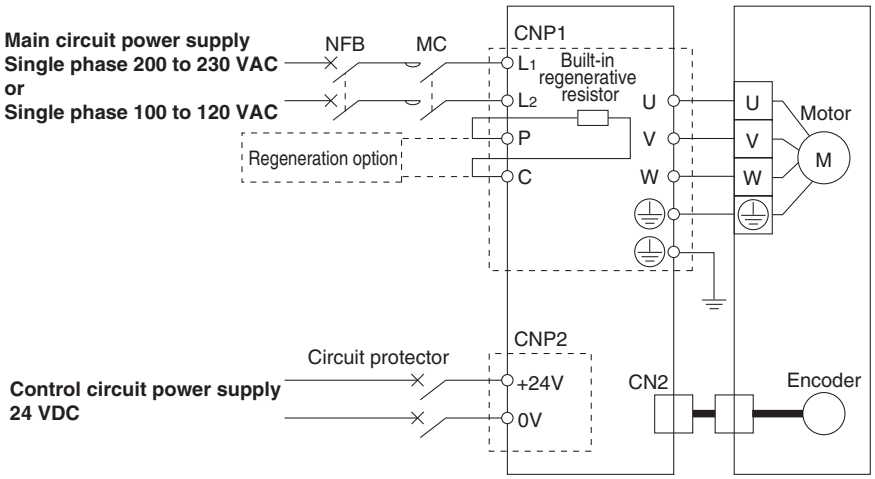
Specifications

LECSS-T Series

Model		LECSS2-T5	LECSS2-T7	LECSS2-T8
Compatible motor capacity [W]		100	200	400
Compatible encoder		Absolute 22-bit encoder (Resolution: 4194304 p/rev)		
Main power supply	Power voltage [V]	Three phase 200 to 240 VAC (50/60 Hz), Single phase 200 to 240 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]	Three phase 170 to 264 VAC (50/60 Hz), Single phase 170 to 264 VAC (50/60 Hz)		
	Rated current [A]	0.9	1.5	2.6
Control power supply	Control power supply voltage [V]	Single phase 200 to 240 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]	Single phase 170 to 264 VAC		
	Rated current [A]	0.2		
Applicable Fieldbus protocol		SSCNET Ⅲ/H (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

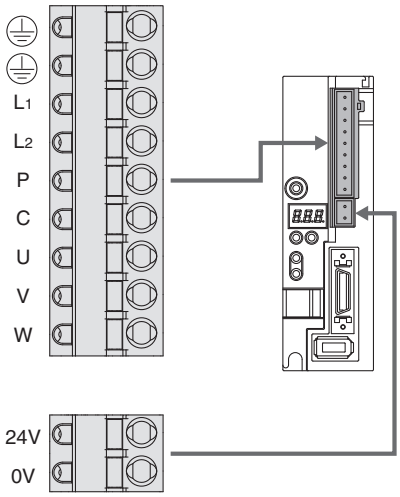
LECSA□-□



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)
L_1	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
L_2		
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)	



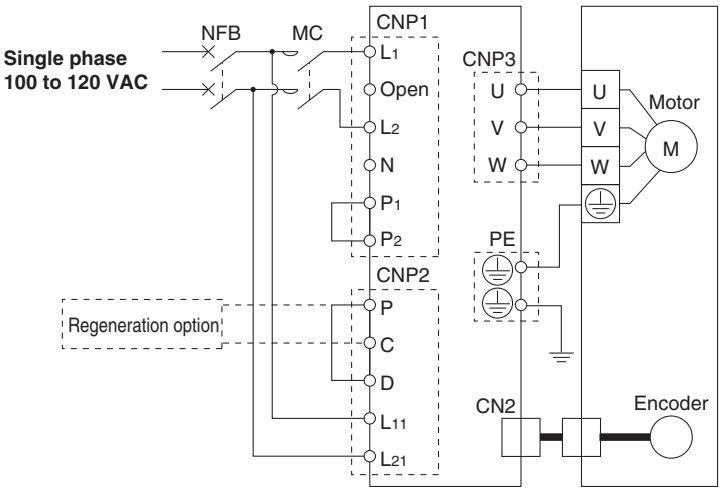
Control Circuit Power Supply Connector: CNP2

∗ 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

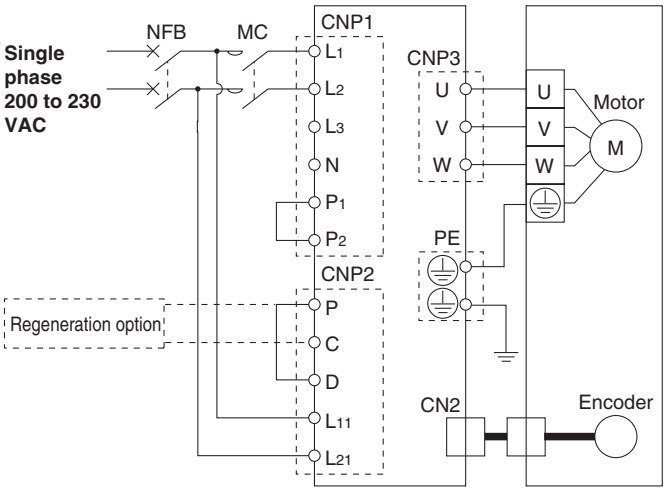
Power Supply Wiring Example: LECSB, LECSC, LECSS

LECSB1-□
LECSC1-□
LECSS1-□

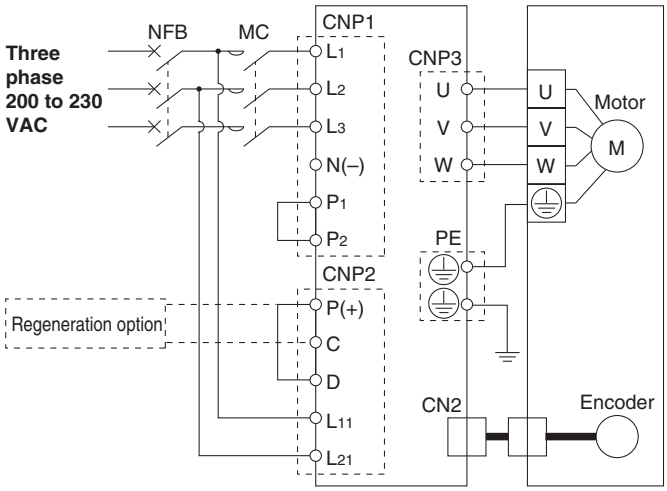


LECSB2-□
LECSC2-□
LECSS2-□

For single phase 200 VAC



For three phase 200 VAC



∗ For single phase 200 to 230 VAC, power supply should be connected to L_1 and L_2 terminals, with nothing connected to L_3.

Main Circuit Power Supply Connector: CNP1 ∗ Accessory

Terminal name	Function	Details
L_1	Main circuit power supply	Connect the main circuit power supply. LECSB1/LECSC1/LECSS1: Single phase 100 to 120 VAC, 50/60 Hz Connection terminal: L_1, L_2 LECSB2/LECSC2/LECSS2: Single phase 200 to 230 VAC, 50/60 Hz Connection terminal: L_1, L_2 Three phase 200 to 230 VAC, 50/60 Hz Connection terminal: L_1, L_2, L_3
L_2		
L_3		
N	Do not connect.	
P_1	Connect between P_1 and P_2. (Connected at time of shipping)	
P_2		

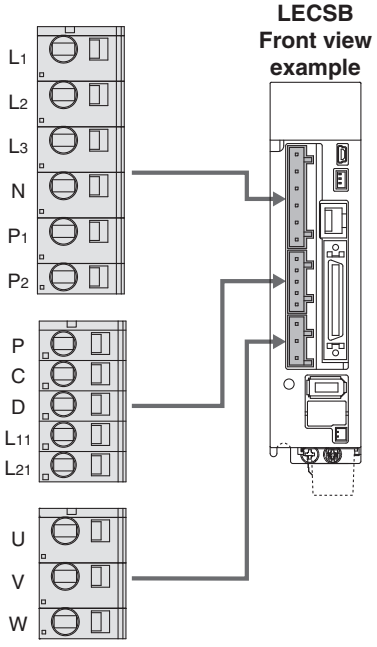
Control Circuit Power Supply Connector: CNP2 ∗ Accessory

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		
L_{11}	Control circuit power supply	Connect the control circuit power supply. LECSB1/LECSC1/LECSS1: Single phase 100 to 120 VAC, 50/60 Hz Connection terminal: L_{11}, L_{21} LECSB2/LECSC2/LECSS2: Single phase 200 to 230 VAC, 50/60 Hz Connection terminal: L_{11}, L_{21} Three phase 200 to 230 VAC, 50/60 Hz Connection terminal: L_{11}, L_{21}
L_{21}		

Motor Connector: CNP3 ∗ Accessory

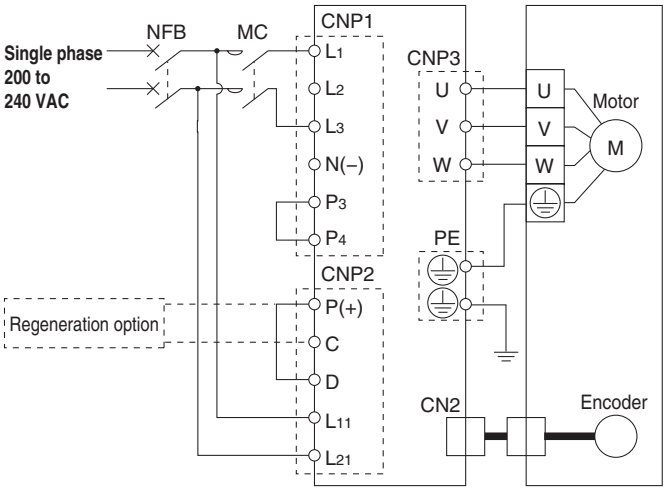
Terminal name	Function	Details
U	Servo motor power (U)	Connect to motor cable (U, V, W).
V	Servo motor power (V)	
W	Servo motor power (W)	

LECSB Front view example

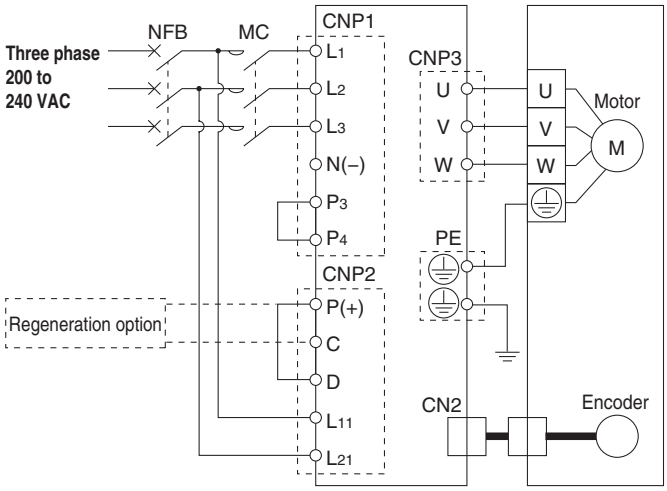


Power Supply Wiring Example: LECSS2-T□

For single phase 200 VAC



For three phase 200 VAC



∗ For single phase 200 to 240 VAC, power supply should be connected to L_1 and L_3 terminals, with nothing connected to L_2. Please note that the wiring locations differ from the LECS□.

Main Circuit Power Supply Connector: CNP1 ∗ Accessory

Terminal name	Function	Details
L_1	Main circuit power supply	Connect the main circuit power supply. LECSS2: Single phase 200 to 240 VAC, 50/60 Hz Connection terminal: L_1, L_3 Three phase 200 to 240 VAC, 50/60 Hz Connection terminal: L_1, L_2, L_3
L_2		
L_3		
N(–)	Do not connect.	
P_3	Connect between P_3 and P_4. (Connected at time of shipping)	
P_4		

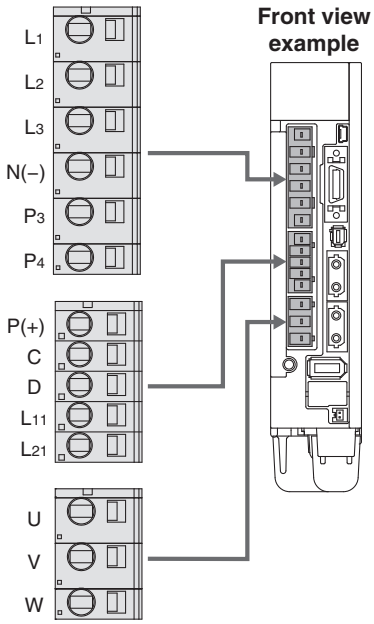
Control Circuit Power Supply Connector: CNP2 ∗ Accessory

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		
L_{11}	Control circuit power supply	Connect the control circuit power supply. LECSS2: Single phase 200 to 240 VAC, 50/60 Hz Connection terminal: L_{11}, L_{21} Three phase 200 to 240 VAC, 50/60 Hz Connection terminal: L_{11}, L_{21}
L_{21}		

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)	

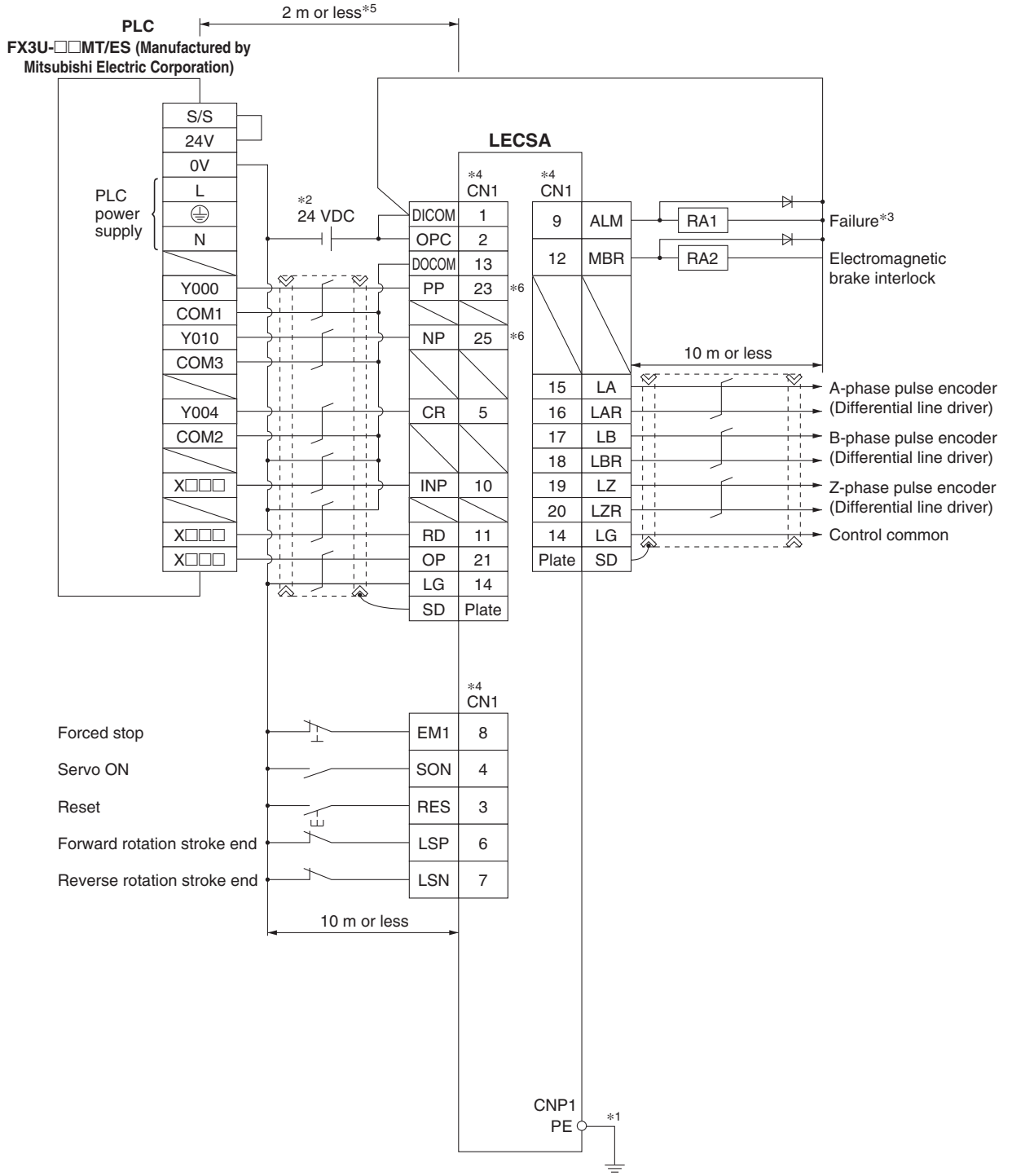
LECSS2-T□ Front view example



Control Signal Wiring Example: LECSA

LECSA□-□

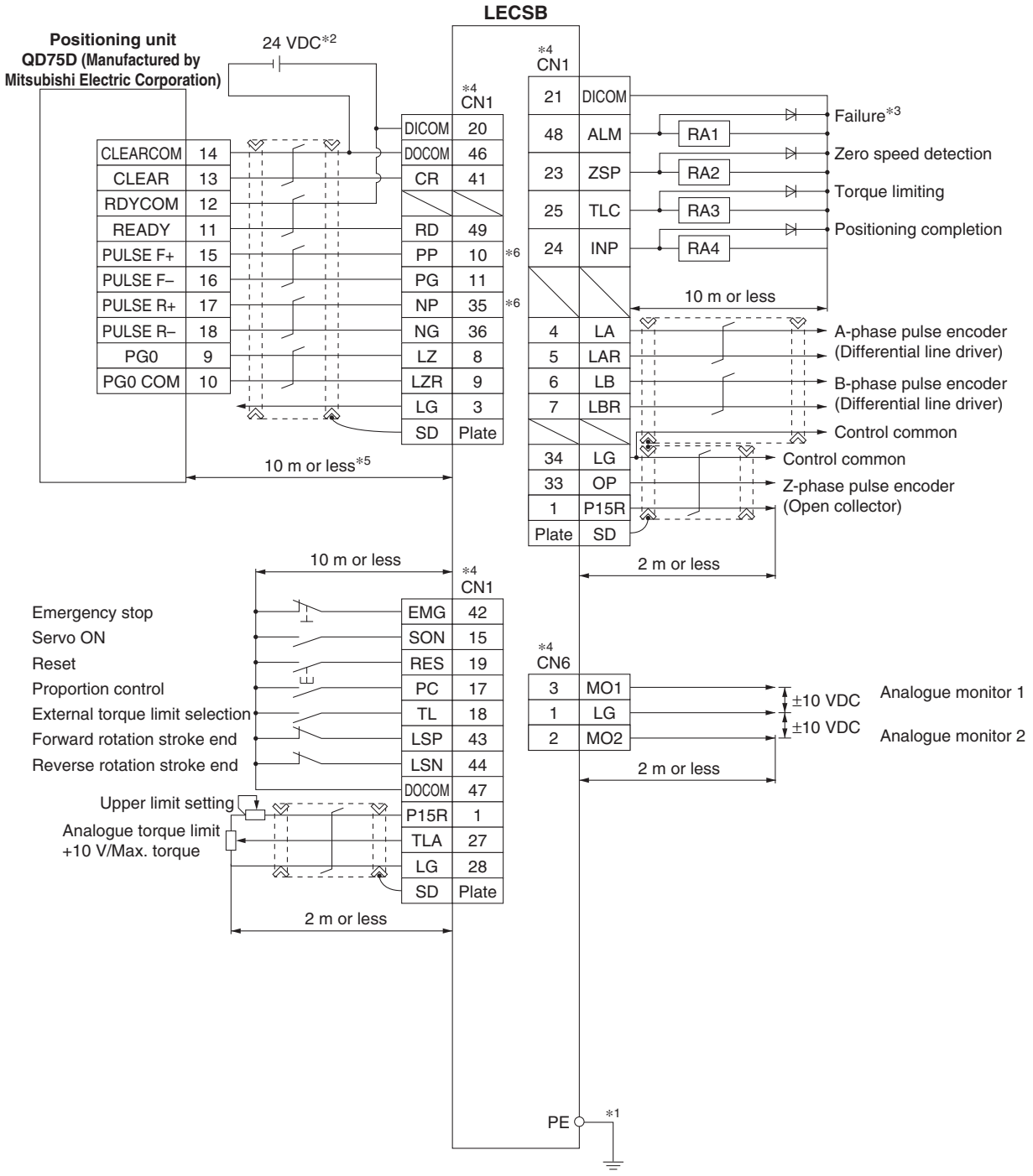
This wiring example shows connection with a PLC (FX3U-□□MT/ES) manufactured by Mitsubishi Electric Corporation as when used in position control mode. Refer to the LECSA series Operation Manual and any technical literature or operation manuals for your PLC and positioning unit before connecting to another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



*1 For preventing electric shock, be sure to connect the driver main circuit power supply connector (CNP1)'s protective earth (PE) terminal (marked ⏚) to the control panel's protective earth (PE).
*2 For interface use, supply 24 VDC ±10 % 200 mA using an external source. 200 mA is the value when all I/O command signals are being used. In addition, reducing the number of inputs/outputs can decrease the current capacity. Refer to the Operation Manual for required current for interface.
*3 The failure (ALM) is normally ON. When it is OFF (alarm occurs), stop the PLC signal using the sequence program.
*4 Signals of the same name are connected inside the driver.
*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.
*6 If the command pulse input is open collector method, it supports only the sink (NPN) type interface. It does not correspond to the source (PNP) type interface.

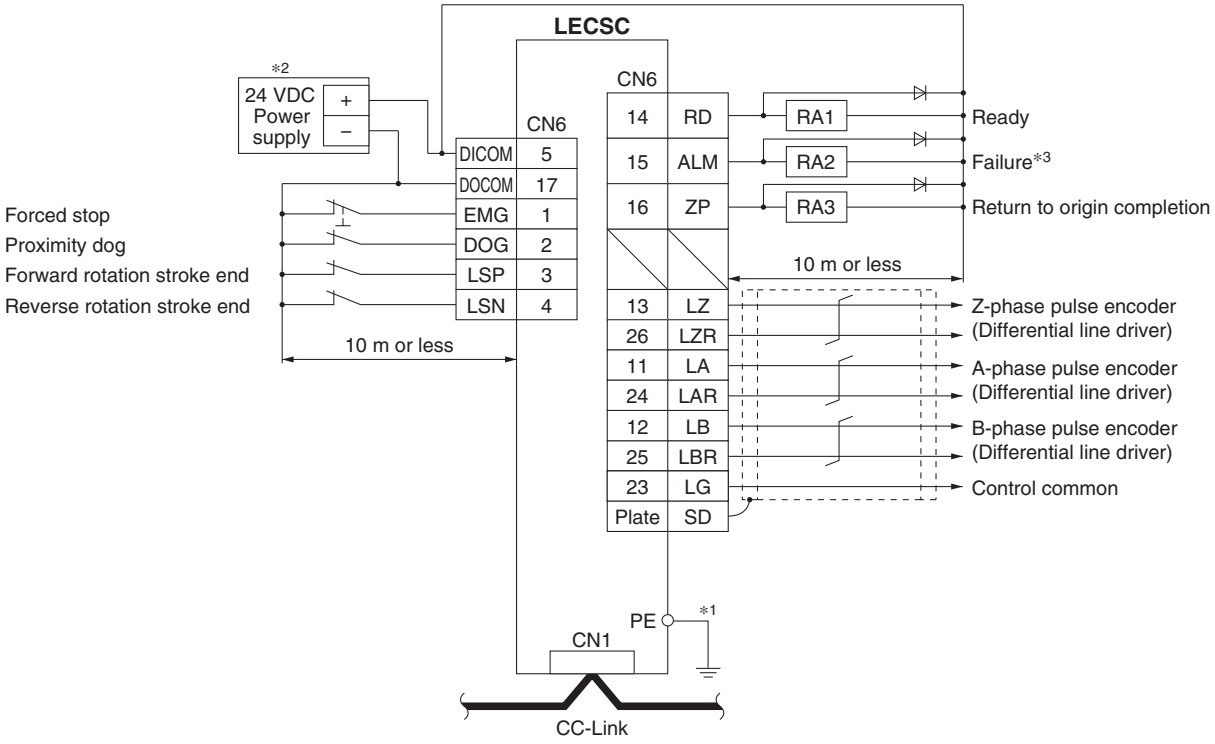
Control Signal Wiring Example: LECSB

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



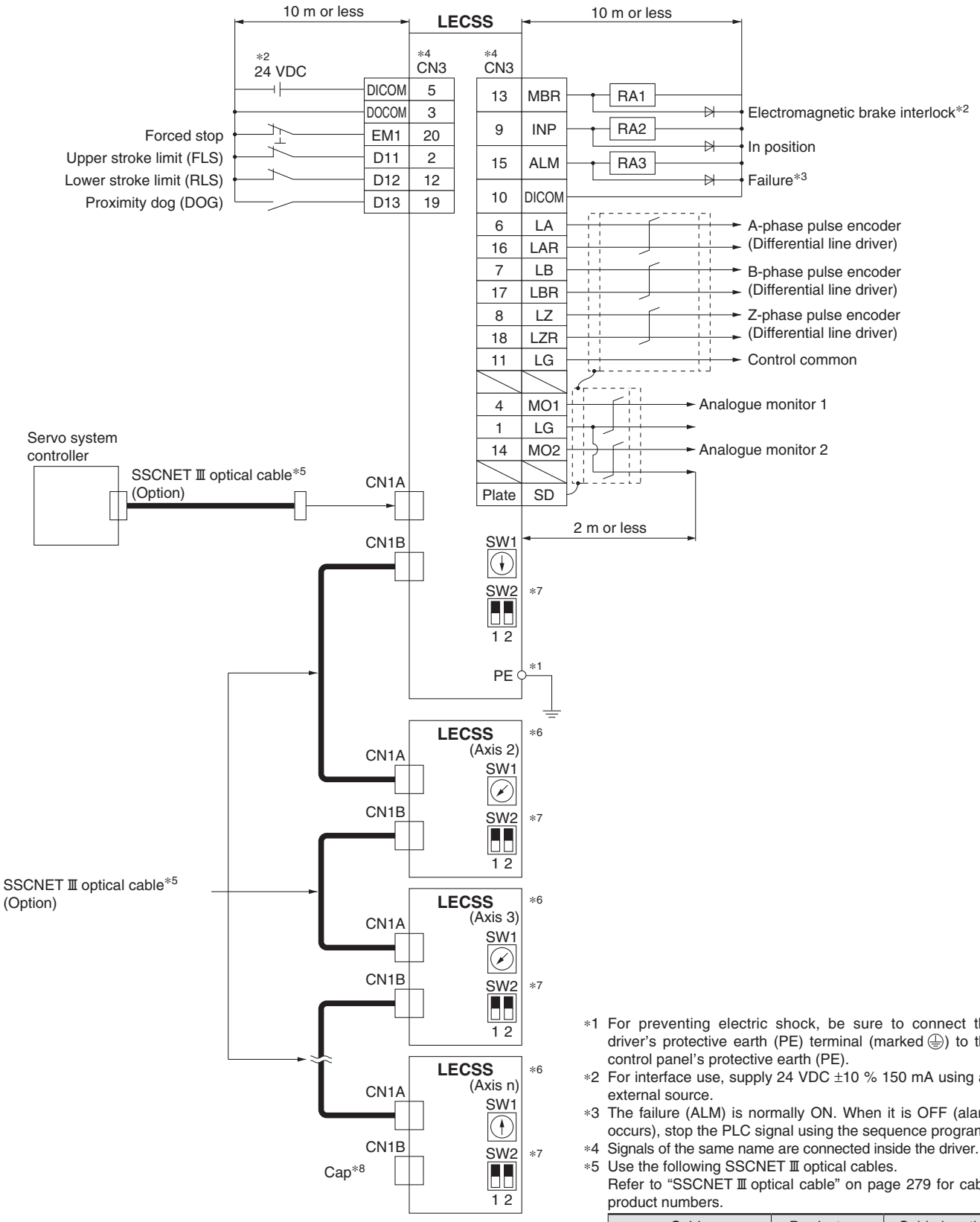
*1 For preventing electric shock, be sure to connect the driver's protective earth (PE) terminal (marked ⏚) to the control panel's protective earth (PE).
*2 For interface use, supply 24 VDC ±10 % 300 mA using an external source.
*3 The failure (ALM) is normally ON. When it is OFF (alarm occurs), stop the PLC signal using the sequence program.
*4 Signals of the same name are connected inside the driver.
*5 For command pulse input with a differential line driver method. For open collector method, it is 2 m or less.
*6 If the command pulse input is open collector method, it supports only the sink (NPN) type interface. It does not correspond to the source (PNP) type interface.

Control Signal Wiring Example: LECSC



∗1 For preventing electric shock, be sure to connect the driver's protective earth (PE) terminal (marked ⏚) to the control panel's protective earth (PE).
∗2 For interface use, supply 24 VDC ±10 % 150 mA using an external source.
∗3 The failure (ALM) is normally ON. When it is OFF (alarm occurs), stop the PLC signal using the sequence program.

Control Signal Wiring Example: LECSS



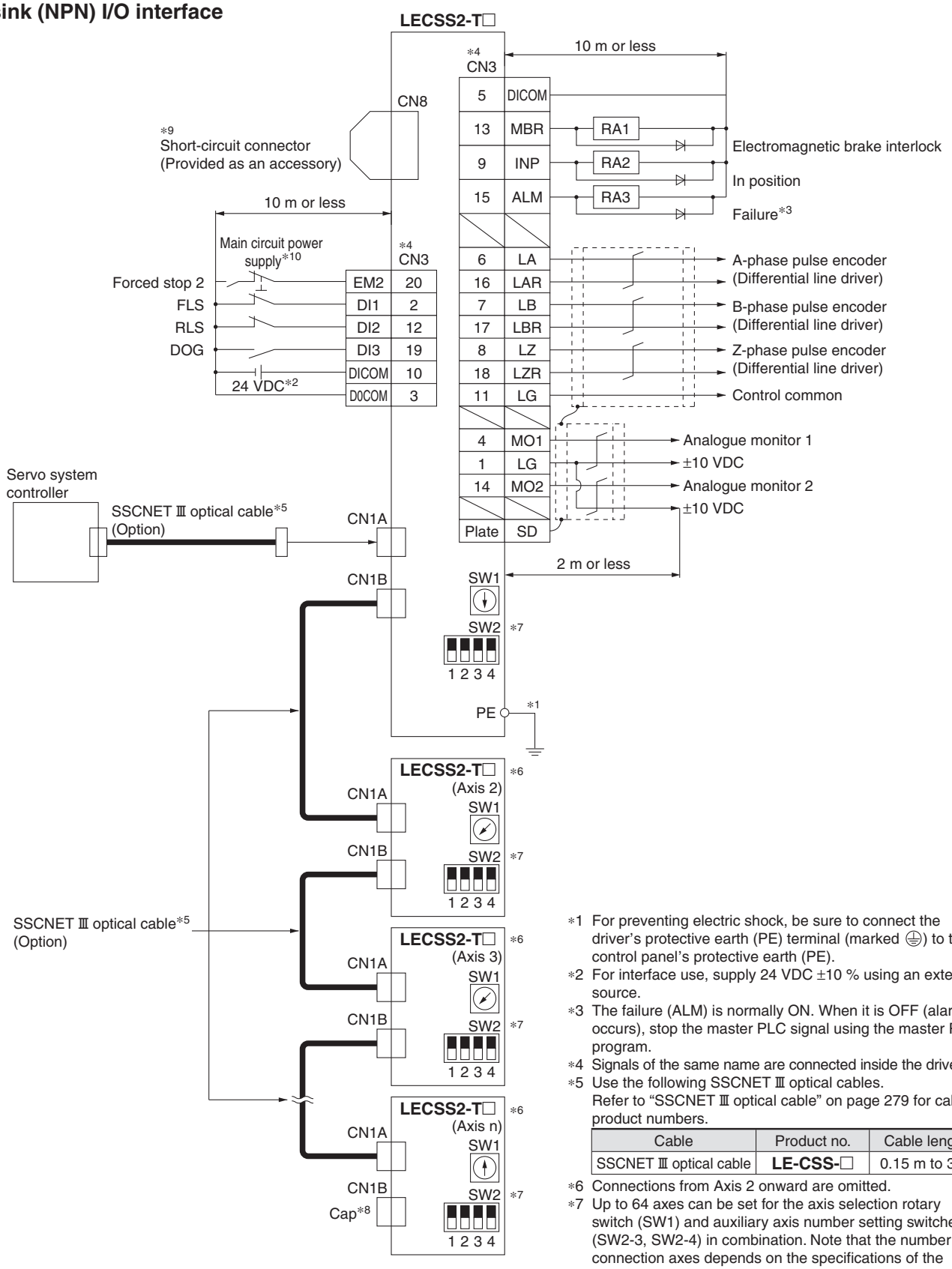
*1 For preventing electric shock, be sure to connect the driver's protective earth (PE) terminal (marked ⏚) to the control panel's protective earth (PE).
*2 For interface use, supply 24 VDC ±10 % 150 mA using an external source.
*3 The failure (ALM) is normally ON. When it is OFF (alarm occurs), stop the PLC signal using the sequence program.
*4 Signals of the same name are connected inside the driver.
*5 Use the following SSCNET Ⅲ optical cables.
Refer to "SSCNET Ⅲ optical cable" on page 279 for cable product numbers.

Cable	Product no.	Cable length
SSCNET Ⅲ optical cable	**LE-CSS-□**	0.15 m to 3 m

*6 Connections from Axis 2 onward are omitted.
*7 Up to 16 axes can be set.
*8 Be sure to place a cap on unused CN1A/CN1B.

Control Signal Wiring Example: LECSS2-T□

For sink (NPN) I/O interface



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

∗2 For interface use, supply 24 VDC ±10 % using an external source.

∗3 The failure (ALM) is normally ON. When it is OFF (alarm occurs), stop the master PLC signal using the master PLC program.

∗4 Signals of the same name are connected inside the driver.

∗5 Use the following SSCNET Ⅲ optical cables.
Refer to "SSCNET Ⅲ optical cable" on page 279 for cable product numbers.

Cable	Product no.	Cable length
SSCNET Ⅲ optical cable	**LE-CSS-□**	0.15 m to 3 m

∗6 Connections from Axis 2 onward are omitted.

∗7 Up to 64 axes can be set for the axis selection rotary switch (SW1) and auxiliary axis number setting switches (SW2-3, SW2-4) in combination. Note that the number of connection axes depends on the specifications of the master PLC.

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

∗9 When not using the STO function, use the driver with the short-circuit connector (provided as an accessory) inserted.

∗10 Configure a circuit to turn off EM2 when the main circuit power is turned off to prevent any unexpected restarts of the driver.

Options

Motor cable, Lock cable, Encoder cable (LECS□, LECSS-T common)

LE − CS M − S 5 A

Motor type

S	AC servo motor

Cable description

M	Motor cable
B	Lock cable
E	Encoder cable

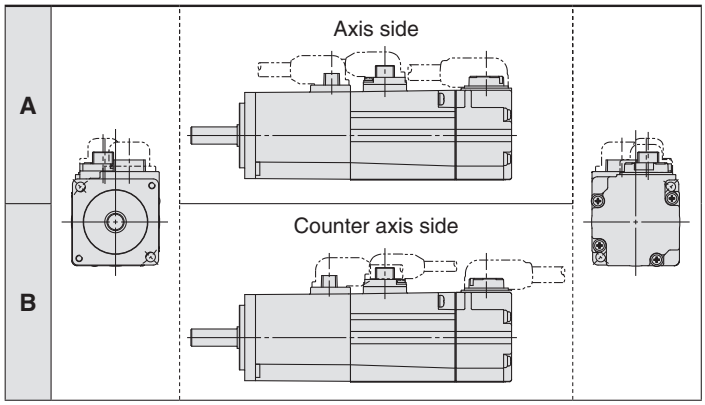
Cable type

S	Standard cable
R	Robotic cable

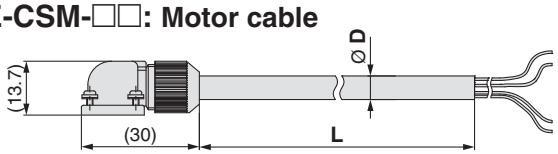
Cable length (L) [m]

2	2
5	5
A	10

Direction of connector



LE-CSM-□□: Motor cable

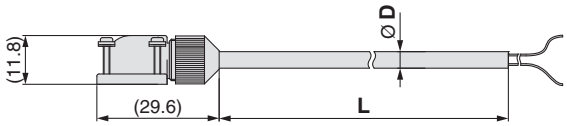


Product no.	øD
LE-CSM-S□A	6.2
LE-CSM-S□B	
LE-CSM-R□A	5.7
LE-CSM-R□B	

Weight

Product no.	Length [m]	Weight [g]
LE-CSM-S2□	2	180
LE-CSM-S5□	5	400
LE-CSM-SA□	10	800
LE-CSM-R2□	2	180
LE-CSM-R5□	5	400
LE-CSM-RA□	10	800

LE-CSB-□□: Lock cable*1

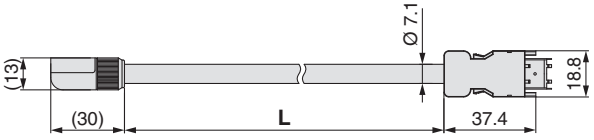


Product no.	øD
LE-CSB-S□A	4.7
LE-CSB-S□B	
LE-CSB-R□A	4.5
LE-CSB-R□B	

Weight

Product no.	Length [m]	Weight [g]
LE-CSB-S2□	2	80
LE-CSB-S5□	5	200
LE-CSB-SA□	10	400
LE-CSB-R2□	2	80
LE-CSB-R5□	5	200
LE-CSB-RA□	10	400

LE-CSE-□□: Encoder cable



Weight

Product no.	Length [m]	Weight [g]
LE-CSE-S2□	2	220
LE-CSE-S5□	5	600
LE-CSE-SA□	10	1200
LE-CSE-R2□	2	220
LE-CSE-R5□	5	600
LE-CSE-RA□	10	1200

*1 If using an actuator with a lock, a lock cable is required.

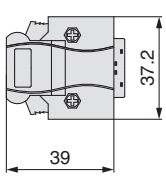
I/O connector (Without cable, Connector only)

LE − CSN A

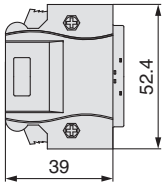
Driver type

A	LECSA□, LECSC□
B	LECSB□
S	LECSS□-S□/LECSS2-T□

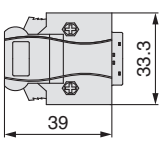
LE-CSNA



LE-CSNB



LE-CSNS



Weight

Product no.	Weight [g]
LE-CSNA	25
LE-CSNB	30
LE-CSNS	16

* LE-CSNA: 10126-3000PE (connector)/10326-52F0-008 (shell kit) manufactured by 3M Japan Limited or equivalent
  LE-CSNB: 10150-3000PE (connector)/10350-52F0-008 (shell kit) manufactured by 3M Japan Limited or equivalent
  LE-CSNS: 10120-3000PE (connector)/10320-52F0-008 (shell kit) manufactured by 3M Japan Limited or equivalent
* Applicable conductor size: AWG24 to 30
* If using the LECSB, emergency stop (EMG) wiring is required in all cases. (The electric actuator will not operate without the wiring.) Prepare an I/O connector or an I/O cable in advance.

Options

SSCNET Ⅲ optical cable (LECSS□-S□, LECSS2-T□)

LE − CSS − 1

Motor type

S	AC servo motor

Cable description

S	SSCNET Ⅲ optical cable

Cable length

L	0.15 m
K	0.3 m
J	0.5 m
1	1 m
3	3 m

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

Weight

Product no.	Length [m]	Weight [g]
LE-CSS-L	0.15	100
LE-CSS-K	0.3	100
LE-CSS-J	0.5	200
LE-CSS-1	1	200
LE-CSS-3	3	200

I/O cable

LEC − CSN A − 1

Driver type

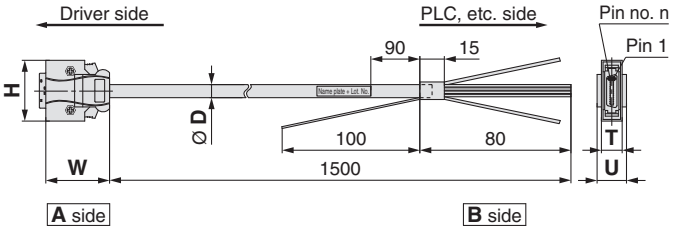
A	For LECSA□, LECSC□
B	For LECSB□
S	For LECSS□-S□/LECSS2-T□

Cable length (L) [m]

1	1.5

Weight

Product no.	Weight [g]
LEC-CSNA	303
LEC-CSNB	472
LEC-CSNS	221



∗ LEC-CSNA-1: 10126-3000PE (connector)/10326-52F0-008 (shell kit) manufactured by 3M Japan Limited or equivalent
LEC-CSNB-1: 10150-3000PE (connector)/10350-52F0-008 (shell kit) manufactured by 3M Japan Limited or equivalent
LEC-CSNS-1: 10120-3000PE (connector)/10320-52F0-008 (shell kit) manufactured by 3M Japan Limited or equivalent
∗ Conductor size: AWG24
∗ If using the LECSB, emergency stop (EMG) wiring is required in all cases. (The electric actuator will not operate without the wiring.) Prepare an I/O connector or an I/O cable in advance.

Cable O.D.

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

Dimensions/Pin Nos.

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

Wiring

LEC-CSNA-1: Pin nos. 1 to 26
LEC-CSNB-1: Pin nos. 1 to 50
LEC-CSNS-1: Pin nos. 1 to 20

Connector pin no.		Pair no. of wire	Insulation colour	Dot mark	Dot colour
A side	1	1	Orange	▬	Red
	2			▬	Black
	3	2	Light Grey	▬	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 Grey	▬ ▬	Red
	14			▬ ▬	Black
	15	8	White	▬ ▬	Red
	16			▬ ▬	Black
	17	9	Yellow	▬ ▬	Red
	18			▬ ▬	Black

Connector pin no.		Pair no. of wire	Insulation colour	Dot mark	Dot colour
A side	19	10	Pink	▬ ▬	Red
	20			▬ ▬	Black
	21	11	Orange	▬ ▬ ▬	Red
	22			▬ ▬ ▬	Black
	23	12	Light Grey	▬ ▬ ▬	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 Grey	▬ ▬ ▬ ▬	Red
	34			▬ ▬ ▬ ▬	Black

Connector pin no.		Pair no. of wire	Insulation colour	Dot mark	Dot colour
A side	35	18	White	▬ ▬ ▬ ▬	Red
	36			▬ ▬ ▬ ▬	Black
	37	19	Yellow	▬ ▬ ▬ ▬	Red
	38			▬ ▬ ▬ ▬	Black
	39	20	Pink	▬ ▬ ▬ ▬	Red
	40			▬ ▬ ▬ ▬	Black
	41	21	Orange	▬ ▬ ▬ ▬ ▬	Red
	42			▬ ▬ ▬ ▬ ▬	Black
	43	22	Light Grey	▬ ▬ ▬ ▬ ▬	Red
	44			▬ ▬ ▬ ▬ ▬	Black
	45	23	White	▬ ▬ ▬ ▬ ▬	Red
	46			▬ ▬ ▬ ▬ ▬	Black
	47	24	Yellow	▬ ▬ ▬ ▬ ▬	Red
	48			▬ ▬ ▬ ▬ ▬	Black
	49	25	Pink	▬ ▬ ▬ ▬ ▬	Red
	50			▬ ▬ ▬ ▬ ▬	Black

Options

Regeneration option (LECS□ common)

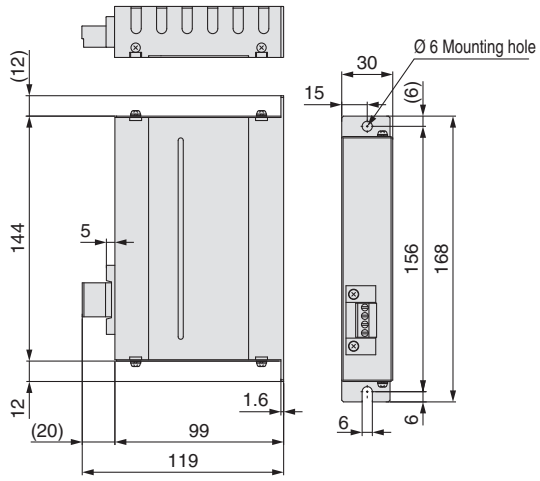
LEC − MR − RB − 12

Regeneration option type

032	Allowable regenerative power 30 W
12	Allowable regenerative power 100 W

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

LEC-MR-RB-032

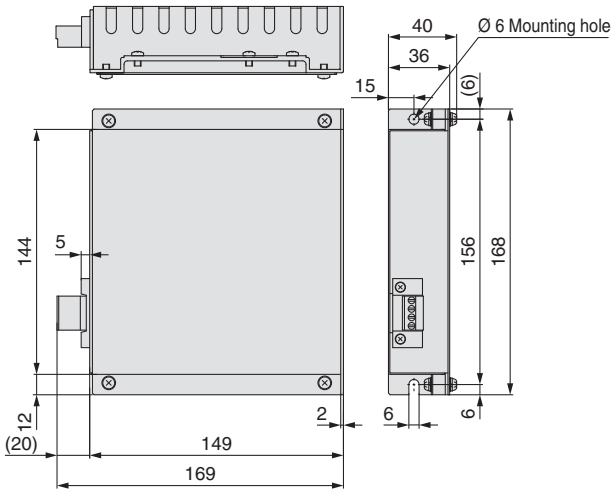


Weight

Product no.	Weight [kg]
LEC-MR-RB-032	0.5

∗ MR-RB032 manufactured by Mitsubishi Electric Corporation

LEC-MR-RB-12



Weight

Product no.	Weight [kg]
LEC-MR-RB-12	1.1

∗ MR-RB12 manufactured by Mitsubishi Electric Corporation

Options

LECSA LECSB LECSC LECSS LECSS2-T□
Drivers

USB cable

PC

Setup software
(MR Configurator2™)

Setup software (MR Configurator2™) (LECSA, LECSB, LECSC, LECSS, LECSS-T common)

LEC−MRC2 E

Display language

—	Japanese version
E	English version
C	Chinese version

∗ SW1DNC-MRC2-□ manufactured by Mitsubishi Electric Corporation
Refer to Mitsubishi Electric Corporation's website for operating environment and version upgrade information.
MR Configurator2™ is a registered trademark or trademark of Mitsubishi Electric Corporation.

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

Compatible PC

When using setup software (MR Configurator2™), use an IBM PC/AT compatible PC that meets the following operating conditions.

Hardware Requirements

Equipment		Setup software (MR Configurator2™) **LEC-MRC2□**
∗1, 2, 3, 4, 5, 6, 7, 8, 9, 10 PC	OS	Microsoft® Windows® 10 Edition Microsoft® Windows® 10 Enterprise Microsoft® Windows® 10 Pro Microsoft® Windows® 10 Home Microsoft® Windows® 8.1 Enterprise Microsoft® Windows® 8.1 Pro Microsoft® Windows® 8.1 Microsoft® Windows® 8 Enterprise Microsoft® Windows® 8 Pro Microsoft® Windows® 8 Microsoft® Windows® 7 Ultimate Microsoft® Windows® 7 Enterprise Microsoft® Windows® 7 Professional Microsoft® Windows® 7 Home Premium Microsoft® Windows® 7 Starter Microsoft® Windows Vista® Ultimate Microsoft® Windows Vista® Enterprise Microsoft® Windows Vista® Business Microsoft® Windows Vista® Home Premium Microsoft® Windows Vista® Home Basic Microsoft® Windows® XP Professional, Service Pack 3 or later Microsoft® Windows® XP Home Edition, Service Pack 3 or later
	Hard disk	1 GB or more of free space
	Communication interface	Use USB port.
Display		Resolution 1024 x 768 or more Must be capable of high colour (16-bit) display. Connectable with the PC above
Keyboard		Connectable with the PC above
Mouse		Connectable with the PC above
Printer		Connectable with the PC above
USB cable∗11		LEC-MR-J3USB

∗1 Before using a PC for setting LECSA point table method/program operation method, upgrade to version 1.18U (Japanese version)/ version 1.19V (English version) or later. Refer to Mitsubishi Electric Corporation's website for version upgrade information.
∗2 Windows® and Windows Vista® are registered trademarks of Microsoft Corporation in the United States and other countries.
∗3 On some PCs, setup software (MR Configurator2™) may not run properly.
∗4 The following functions cannot be used. If any of the following functions is used, this product may not operate normally.
· Start of application in Windows® compatible mode
· Fast User Switching
· Remote Desktop
· Windows XP Mode
· Windows Touch or Touch
· Modern UI
· Client Hyper-V
· Tablet Mode
· Virtual desktop
· 64-bit OSs are not supported, except for Microsoft® Windows®7 or later.
∗5 Multi-display is set, the screen of this product may not operate normally.
∗6 The size of the text or other items on the screen is not changed to the specified value (96 DPI, 100 %, 9 pt, etc.), the screen of this product may not operate normally.
∗7 Changed the resolution of the screen during operating, the screen of this product may not operate normally.
∗8 Please use by "Standard User," "Administrator" in Windows Vista® or later.
∗9 Using a PC for setting Windows®10, upgrade to version 1.52E or later.
Using a PC for setting Windows®8.1, upgrade to version 1.25B or later.
Using a PC for setting Windows®8, upgrade to version 1.20W or later.
Refer to Mitsubishi Electric Corporation's website for version upgrade information.
∗10 If .NET Framework 3.5 (including .NET 2.0 and 3.0) have been disabled in Windows®7 or later, it is necessary to enable it.
∗11 Order USB cable separately.
· This cable is compatible with the setup software (MR Configurator™: LEC-MR-SETUP221□).

Setup Software Compatible Drivers

Compatible driver	Setup software	
	MR Configurator™	MR Configurator2™
	LEC-MR-SETUP221□	LEC-MRC2□
LECSA	○	○
LECSB	○	○
LECSC	○	○
LECSS□-S□	○	○
LECSS2-T□	—	○

Options

USB cable (3 m)
(LECSA, LECSB, LECSC, LECSS, LECSS-T common)

LEC−MR−J3USB

* MR-J3USBCBL3M manufactured by Mitsubishi Electric Corporation

Weight: 140 g

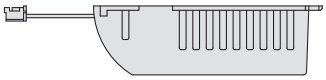
Cable for connecting PC and driver when using the setup software (MR Configurator2™)
Do not use any cable other than this cable.

Battery (Only for LECSB, LECSC, and LECSS)

LEC−MR−J3BAT

* MR-J3BAT manufactured by Mitsubishi Electric Corporation

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



Weight: 30 g

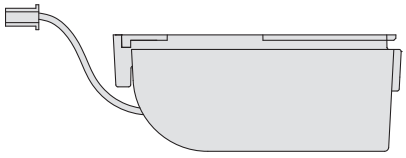
* The LEC-MR-J 3 BAT is a single battery that uses lithium metal battery ER6V.
When transporting lithium metal batteries and devices with built-in lithium metal batteries by a method subject to UN regulations, it is necessary to apply measures according to the regulations stipulated in the United Nations Recommendations on the Transport of Dangerous Goods, the Technical Instructions (ICAO-TI) of the International Civil Aviation Organisation (ICAO), and the International Maritime Dangerous Goods Code (IMDG CODE) of the International Maritime Organisation (IMO). If a customer is transporting products such as shown above, it is necessary to confirm the latest regulations, or the laws and regulations of the country of transport on your own, in order to apply the proper measures. Please contact SMC sales representative for details.

Battery (Only for LECSS2-T□)

LEC−MR−BAT6V1SET

* MR-BAT6V1SET manufactured by Mitsubishi Electric Corporation

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



Weight: 60 g

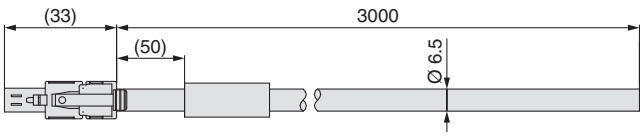
* The LEC-MR-BAT6V1SET is an assembled battery that uses lithium metal battery 2CR17335A.
When transporting lithium metal batteries and devices with built-in lithium metal batteries by a method subject to UN regulations, it is necessary to apply measures according to the regulations stipulated in the United Nations Recommendations on the Transport of Dangerous Goods, the Technical Instructions (ICAO-TI) of the International Civil Aviation Organisation (ICAO), and the International Maritime Dangerous Goods Code (IMDG CODE) of the International Maritime Organisation (IMO). If a customer is transporting products such as shown above, it is necessary to confirm the latest regulations, or the laws and regulations of the country of transport on your own, in order to apply the proper measures. Please contact SMC sales representative for details.

STO cable (3 m) (Only for LECSS2-T□)

LEC−MR−D05UDL3M

* MR-D05UDL3M manufactured by Mitsubishi Electric Corporation

Cable for connecting the driver and device, when using the safety function
Do not use any cable other than this cable.



Weight: 500 g

LECS□ Series
Specific Product Precautions 1

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For electric actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Design / Selection

⚠Warning

1. Be sure to apply the specified voltage.
Otherwise, malfunction or breakage may occur. If the applied voltage is lower than the specified voltage, it is possible that the load will not be able to be moved due to an internal voltage drop of the driver. Please check the operating voltage before use.

2. Do not operate the product beyond the specifications.
Otherwise, a fire, malfunction, or actuator damage may result. Please check the specifications before use.

3. Install an emergency stop circuit.
Please install an emergency stop outside of the enclosure so that the system operation can be stopped immediately and the power supply can be intercepted.

4. In order to prevent any damage caused by the breakdown or malfunction of the driver and its peripheral devices, a backup system should be established in advance by giving a multiple-layered structure or a fail-safe design to the equipment, etc.

5. If a danger of human injury is expected due to abnormal heat generation, smoking, ignition, etc., of the driver and its peripheral devices, cut off the power supply of the product and the system immediately.

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

Handling

⚠Warning

1. Do not touch the inside of the driver and its peripheral devices.
Doing so may cause an electric shock or damage to the driver.

2. Do not perform the operation or setting of the product with wet hands.
Doing so may cause an electric shock.

3. Products with damage or those missing any components should not be used.
An electric shock, fire, or injury may result.

4. Use only the specified combination between the electric actuator and driver.
Failure to do so may cause damage to the actuator or the driver.

5. Be careful not to be hit by workpieces while the actuator is moving.
It may cause an injury.

6. Do not connect the power supply or power on the product before confirming the area to which the workpiece moves is safe.
The movement of the workpiece may cause an accident.

7. Do not touch the product when it is energised and for some time after power has been disconnected, as it is very hot.
Doing so may lead to a burn due to the high temperature.

8. Before installation, wiring, and maintenance, the voltage should be checked with a tester 5 minutes after the power supply has been turned off.
Otherwise, an electric shock, fire, or injury may result.

Handling

⚠Warning

9. Static electricity may cause malfunction or break the driver. Do not touch the driver while power is supplied.
When touching the driver for maintenance, take sufficient measures to eliminate static electricity.

10. Do not use the product in an area where dust, powder dust, water, chemicals, or oil is in the air.
It will cause failure or malfunction.

11. Do not use the product in an area where a magnetic field is generated.
It will cause failure or malfunction.

12. Do not install the product in an environment containing flammable gas, explosive gas, or corrosive gas.
It could lead to fire, explosion, or corrosion.

13. Radiant heat from strong heat sources, such as a furnace, direct sunlight, etc., should not be applied to the product.
It will cause failure of the driver or its peripheral devices.

14. Do not use the product in an environment subject to a temperature cycle.
It will cause failure of the driver or its peripheral devices.

15. Do not use the product in a place where surges are generated.
When there are units that generate a large amount of surge around the product (e.g. solenoid type lifters, high-frequency induction furnaces, motors, etc.), this may cause deterioration or damage to the product's internal circuit. Avoid sources of surge generation and crossed lines.

16. Do not install the product in an environment under the effect of vibrations and impacts.
It will cause failure or malfunction.

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

Installation

⚠Warning

1. Install the driver and its peripheral devices on a fireproof material.
Direct installation on or near a flammable material may cause a fire.

2. Do not install the product in a place subject to vibrations and impacts.
It will cause failure or malfunction.

3. The driver should be mounted on a vertical wall in a vertical direction. Also, be sure not to cover the driver's suction/exhaust ports.

4. Install the driver and its peripheral devices on a flat surface.
If the mounting surface is distorted or uneven, an unacceptable force may be added to the housing, etc., causing problems.

Specific Product Precautions 2

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For electric actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Power Supply

⚠Caution

1. Use a power supply that has low noise between lines and between the power and ground.
In cases where noise is high, an isolation transformer should be used.

2. To prevent lightning surges, appropriate measures should be taken. Ground the surge absorber for lightning separately from the grounding of the driver and its peripheral devices.

Wiring

⚠Warning

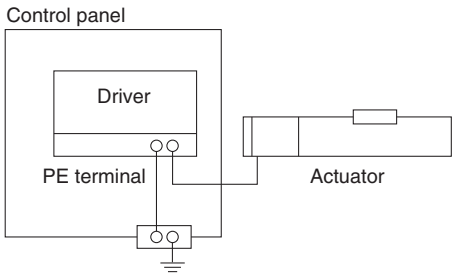
1. The driver will be damaged if a commercial power supply (100/200 V) is added to the driver's servo motor power (U, V, and W). Be sure to check wiring for mistakes when the power supply is turned on.

2. Connect the ends of the U, V, and W wires of the motor cable correctly to the phases (U, V, and W) of the servo motor power. If these wires do not match up, the servo motor cannot be controlled.

Grounding

⚠Warning

1. For grounding the 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 a malfunction is caused by the ground, please disconnect it.

Maintenance

⚠Warning

1. Perform a maintenance and inspection periodically.
Confirm wiring and screws are not loose.
Loose screws or wires may cause unintentional malfunction.

2. Conduct an appropriate functional inspection after completing the maintenance and inspection.
At times where the equipment or machinery does not operate properly, conduct an emergency stop of the system. Otherwise, an unexpected malfunction may occur and it will become impossible to ensure safety. Conduct a test of the emergency stop in order to confirm the safety of the equipment.

3. Do not disassemble, modify, or repair the driver and its peripheral devices.

4. Do not put anything conductive or flammable inside the driver.
It may cause a fire.

5. Do not conduct an insulation resistance test or withstand voltage test on this product.

6. Ensure sufficient space for maintenance activities.
Design the system allowing the required space for maintenance and inspection.

MECHATROLINK Compatible

AC Servo Motor Driver
Absolute Type
LECYM/LECYU Series

(MECHATROLINK-Ⅱ Type) (MECHATROLINK-Ⅲ Type)

LECYM LECYU

CE RoHS

How to Order

Driver **LECY M 2 −** ☐

Driver type

M	MECHATROLINK-Ⅱ type (For absolute encoder)
U	MECHATROLINK-Ⅲ type (For absolute encoder)

Power supply voltage

2	200 to 230 VAC, 50/60 Hz

∗ **If an I/O connector (CN1) is required, order the part number "LE-CYNA" separately.**
∗ **If an I/O cable (CN1) is required, order the part number "LEC-CSNA-1" separately.**

Compatible motor type

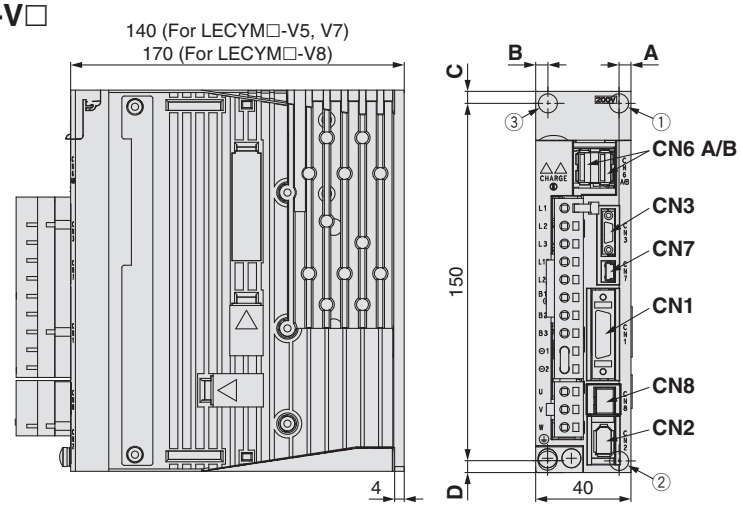
Symbol	Type	Capacity	Encoder
V5	AC servo motor (V6∗1)	100 W	Absolute
V7	AC servo motor (V7∗1)	200 W	
V8	AC servo motor (V8∗1)	400 W	

∗1 The symbol shows the motor type (actuator).

Dimensions

MECHATROLINK-Ⅱ type

LECYM2-V☐



Connector name	Description
CN1	I/O signal connector
CN2	Encoder connector
CN3∗1	Digital operator connector
CN6A	MECHATROLINK-Ⅱ communication connector
CN6B	MECHATROLINK-Ⅱ communication connector
CN7	PC connector
CN8	Safety connector

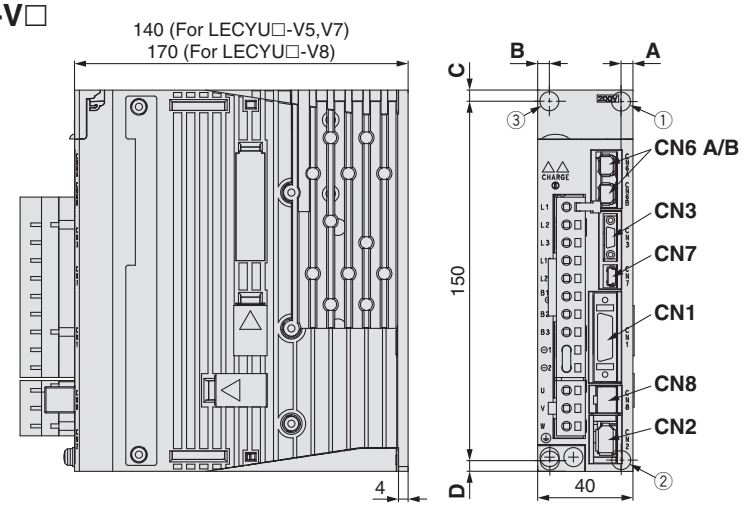
∗1 Digital operator is JUSP-OP05A-1-E manufactured by YASKAWA Electric Corporation. When using the digital operator, it should be provided by the customer.

Motor capacity	Hole position	Mounting dimensions A	B	C	D	Mounting hole
V5 (100 W)	①②	5	—	5	5	ø5
V7 (200 W)	①②	5	—	5	5	
V8 (400 W)	②③	5	5	5	5	

∗ The mounting hole position varies depending on the motor capacity.

MECHATROLINK-Ⅲ type

LECYU2-V☐



Connector name	Description
CN1	I/O signal connector
CN2	Encoder connector
CN3∗1	Digital operator connector
CN6A	MECHATROLINK-Ⅲ communication connector
CN6B	MECHATROLINK-Ⅲ communication connector
CN7	PC connector
CN8	Safety connector

∗1 Digital operator is JUSP-OP05A-1-E manufactured by YASKAWA Electric Corporation. When using the digital operator, it should be provided by the customer.

Motor capacity	Hole position	Mounting dimensions A	B	C	D	Mounting hole
V5 (100 W)	①②	5	—	5	5	ø5
V7 (200 W)	①②	5	—	5	5	
V8 (400 W)	②③	5	5	5	5	

∗ The mounting hole position varies depending on the motor capacity.

SMC

Specifications

MECHATROLINK-Ⅱ Type

Model			LECYM2-V5	LECYM2-V7	LECYM2-V8
Compatible motor capacity [W]			100	200	400
Compatible encoder			Absolute 20-bit encoder (Resolution: 1048576 p/rev)		
Main circuit power supply	Power voltage [V]		Three phase 200 to 230 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]		Three phase 170 to 253 VAC		
Control power supply	Power voltage [V]		Single phase 200 to 230 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]		Single phase 170 to 253 VAC		
Power supply capacity (at rated output) [A]			0.91	1.6	2.8
Input circuit			NPN (Sink circuit)/PNP (Source circuit)		
Parallel input (7 inputs)	Number of optional allocations	7 inputs	[Initial allocation] · Homing deceleration switch (/DEC) · External latch (/EXT 1 to 3) · Forward run prohibited (P-OT), reverse run prohibited (N-OT) [Can be allocated by setting the parameters] · Forward external torque limit (/P-CL), reverse external torque limit (/N-CL) Signal allocations can be performed, and positive and negative logic can be changed.		
Parallel output (4 outputs)	Number of fixed allocations	1 output	· Servo alarm (ALM)		
	Number of optional allocations	3 outputs	[Initial allocation] · Lock (/BK) [Can be allocated by setting the parameters] · Positioning completion (/COIN) · Speed limit detection (/VLT) · Speed coincidence detection (/V-CMP) · Rotation detection (/TGON) · Warning (/WARN) · Servo ready (/S-RDY) · Near (/NEAR) · Torque limit detection (/CLT) Signal allocations can be performed, and positive and negative logic can be changed.		
MECHATROLINK communication	Communication protocol		MECHATROLINK-Ⅱ		
	Station address		41H to 5FH		
	Transmission speed		10 Mbps		
	Transmission cycle		250 μs, 0.5 ms to 4 ms (Multiples of 0.5 ms)		
	Number of transmission bytes		17 bytes, 32 bytes		
	Max. number of stations		30		
	Cable length		Overall cable length: 50 m or less, Cable length between the stations: 0.5 m or more		
Command method	Control method		Position, speed, or torque control with MECHATROLINK-Ⅱ communication		
	Command input		MECHATROLINK-Ⅱ command (Motion, data setting, monitoring, or adjustment)		
Function	Gain adjustment		Tuning-less/Advanced auto tuning/One-parameter tuning		
	Communication setting		USB communication, RS-422 communication		
	Torque limit		Internal torque limit, external torque limit, and torque limit by analogue command		
	Encoder output		Phase A, B, Z: Line driver output		
	Emergency stop		CN8 Safety function		
	Overtravel		Dynamic brake stop, deceleration to a stop, or free run to a stop at P-OT or N-OT		
	Alarm		Alarm signal, MECHATROLINK-Ⅱ command		
Operating temperature range [°C]			0 to 55 (No freezing)		
Operating humidity range [%RH]			90 or less (No condensation)		
Storage temperature range [°C]			-20 to 85 (No freezing)		
Storage humidity range [%RH]			90 or less (No condensation)		
Insulation resistance [MΩ]			10 MΩ (500 VDC)		
Weight [g]			900		1000

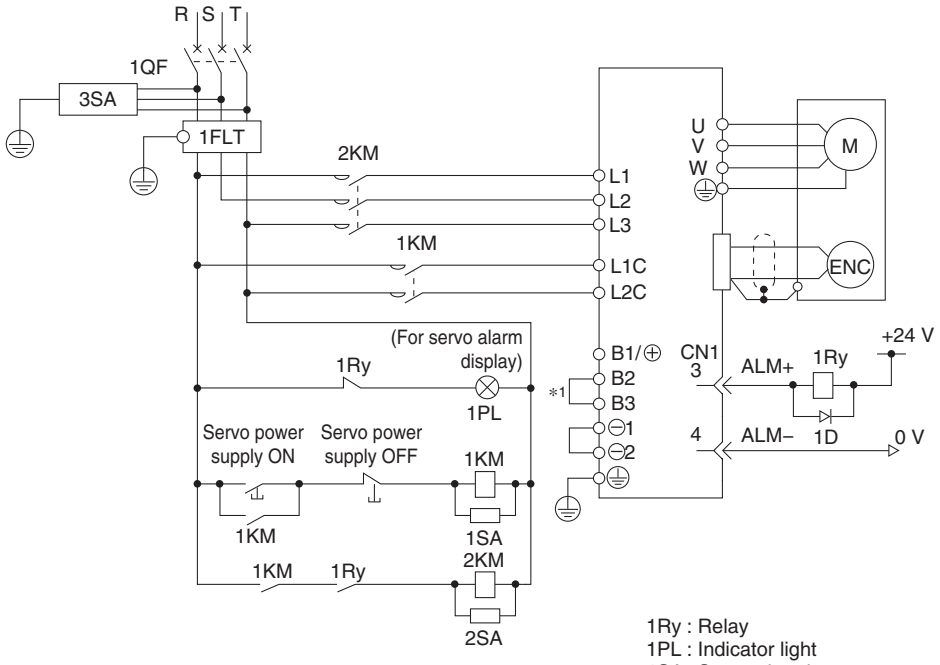
Specifications

MECHATROLINK-Ⅲ Type

Model			LECYU2-V5	LECYU2-V7	LECYU2-V8
Compatible motor capacity [W]			100	200	400
Compatible encoder			Absolute 20-bit encoder (Resolution: 1048576 p/rev)		
Main circuit power supply	Power voltage [V]		Three phase 200 to 230 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]		Three phase 170 to 253 VAC		
Control power supply	Power voltage [V]		Single phase 200 to 230 VAC (50/60 Hz)		
	Allowable voltage fluctuation [V]		Single phase 170 to 253 VAC		
Power supply capacity (at rated output) [A]			0.91	1.6	2.8
Input circuit			NPN (Sink circuit)/PNP (Source circuit)		
Parallel input (7 inputs)	Number of optional allocations	7 inputs	[Initial allocation] · Homing deceleration switch (/DEC) · External latch (/EXT 1 to 3) · Forward run prohibited (P-OT), reverse run prohibited (N-OT) [Can be allocated by setting the parameters] · Forward external torque limit (/P-CL), reverse external torque limit (/N-CL) Signal allocations can be performed, and positive and negative logic can be changed.		
Parallel output (4 outputs)	Number of fixed allocations	1 output	· Servo alarm (ALM)		
	Number of optional allocations	3 outputs	[Initial allocation] · Lock (/BK) [Can be allocated by setting the parameters] · Positioning completion (/COIN) · Speed limit detection (/VLT) · Speed coincidence detection (/V-CMP) · Rotation detection (/TGON) · Warning (/WARN) · Servo ready (/S-RDY) · Near (/NEAR) · Torque limit detection (/CLT) Signal allocations can be performed, and positive and negative logic can be changed.		
MECHATROLINK communication	Communication protocol		MECHATROLINK-Ⅲ		
	Station address		03H to EFH		
	Transmission speed		100 Mbps		
	Transmission cycle		125 μs, 250 μs, 500 μs, 750 μs, 1 ms to 4 ms (Multiples of 0.5 ms)		
	Number of transmission bytes		16 bytes, 32 bytes, 48 bytes		
	Max. number of stations		62		
	Cable length		Cable length between the stations: 0.5 m or more, 75 m or less		
Command method	Control method		Position, speed, or torque control with MECHATROLINK-Ⅲ communication		
	Command input		MECHATROLINK-Ⅲ command (Motion, data setting, monitoring, or adjustment)		
Function	Gain adjustment		Tuning-less/Advanced auto tuning/One-parameter tuning		
	Communication setting		USB communication, RS-422 communication		
	Torque limit		Internal torque limit, external torque limit, and torque limit by analogue command		
	Encoder output		Phase A, B, Z: Line driver output		
	Emergency stop		CN8 Safety function		
	Overtravel		Dynamic brake stop, deceleration to a stop, or free run to a stop at P-OT or N-OT		
	Alarm		Alarm signal, MECHATROLINK-Ⅲ command		
Operating temperature range [°C]			0 to 55 (No freezing)		
Operating humidity range [%RH]			90 or less (No condensation)		
Storage temperature range [°C]			-20 to 85 (No freezing)		
Storage humidity range [%RH]			90 or less (No condensation)		
Insulation resistance [MΩ]			10 MΩ (500 VDC)		
Weight [g]			900		1000

Power Supply Wiring Example: LECY□

■Three phase 200 V LECYM2-□ LECYU2-□



1QF : Molded-case circuit breaker
1FLT: Noise filter
1KM : Magnetic contactor (for control power supply)
2KM : Magnetic contactor (for main circuit power supply)

1Ry : Relay
1PL : Indicator light
1SA : Surge absorber
2SA : Surge absorber
3SA : Surge absorber
1D : Flywheel diode

*1 For the LECY□2-V5, LECY□2-V7 and LECY□2-V8, terminals B2 and B3 are not short-circuited. Do not short-circuit these terminals.

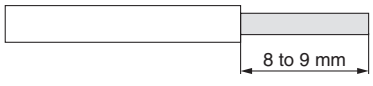
Main Circuit Power Supply Connector * Accessory

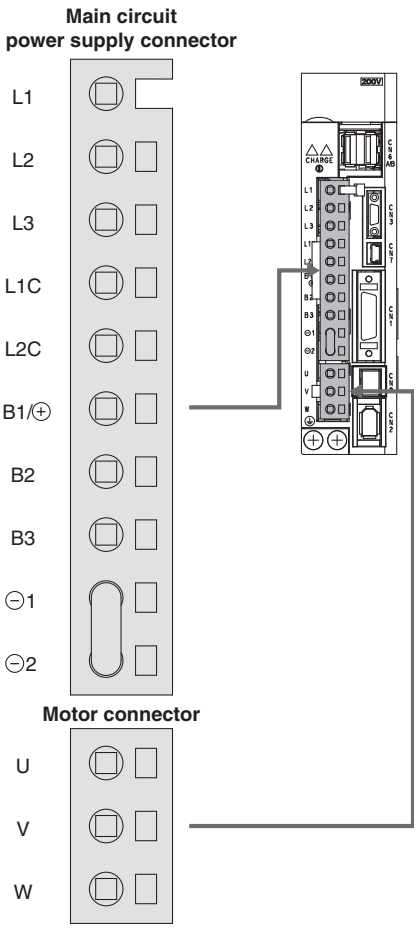
Terminal name	Function	Details
L1	Main circuit power supply	Connect the main circuit power supply. Single phase 200 to 230 VAC, 50/60 Hz Connection terminal: L1, L2 Three phase 200 to 230 VAC, 50/60 Hz Connection terminal: L1, L2, L3
L2		
L3		
L1C	Control power supply	Connect the control power supply. Single phase 200 to 230 VAC, 50/60 Hz Connection terminal: L1C, L2C
L2C		
B1/⊕	External regenerative resistor connection terminal	When the regenerative resistor is required, connect it between terminals B1⊕ and B2.
B2		
B3		
⊖1	Main circuit negative terminal	⊖1 and ⊖2 are connected at shipment.
⊖2		

Motor Connector * Accessory

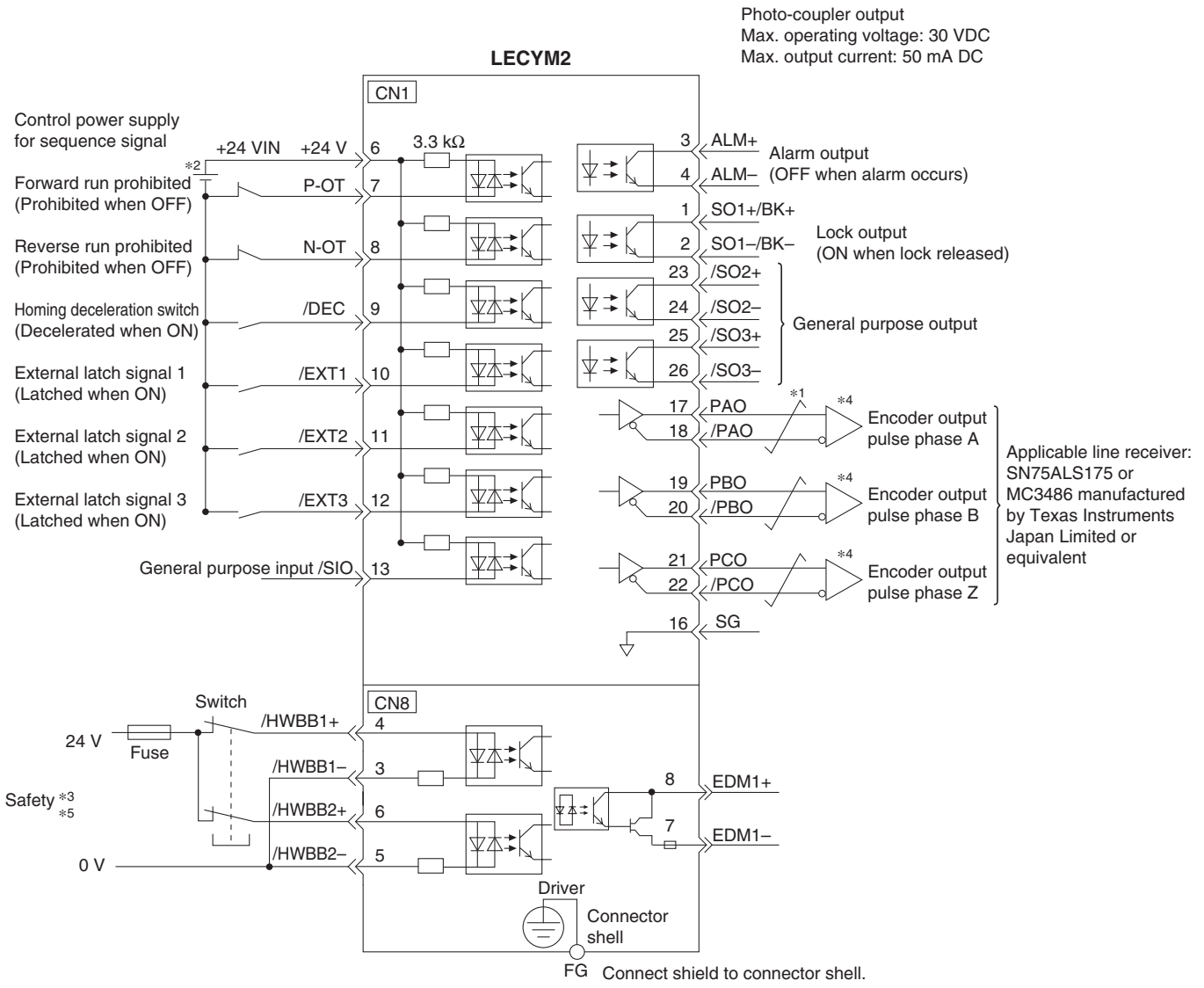
Terminal name	Function	Details
U	Servo motor power (U)	Connect to motor cable (U, V, W).
V	Servo motor power (V)	
W	Servo motor power (W)	

Power Supply Wire Specifications

Item	Specifications
Applicable wire size	L1, L2, L3, L1C, L2C Single wire, Twisted wire, AWG14 (2.0 mm^2)
Stripped wire length	



Control Signal Wiring Example: LECYM



*1 ⫽ shows twisted-pair wires.

*2 The 24 VDC power supply is not included. Use a 24 VDC power supply with double insulation or reinforced insulation.

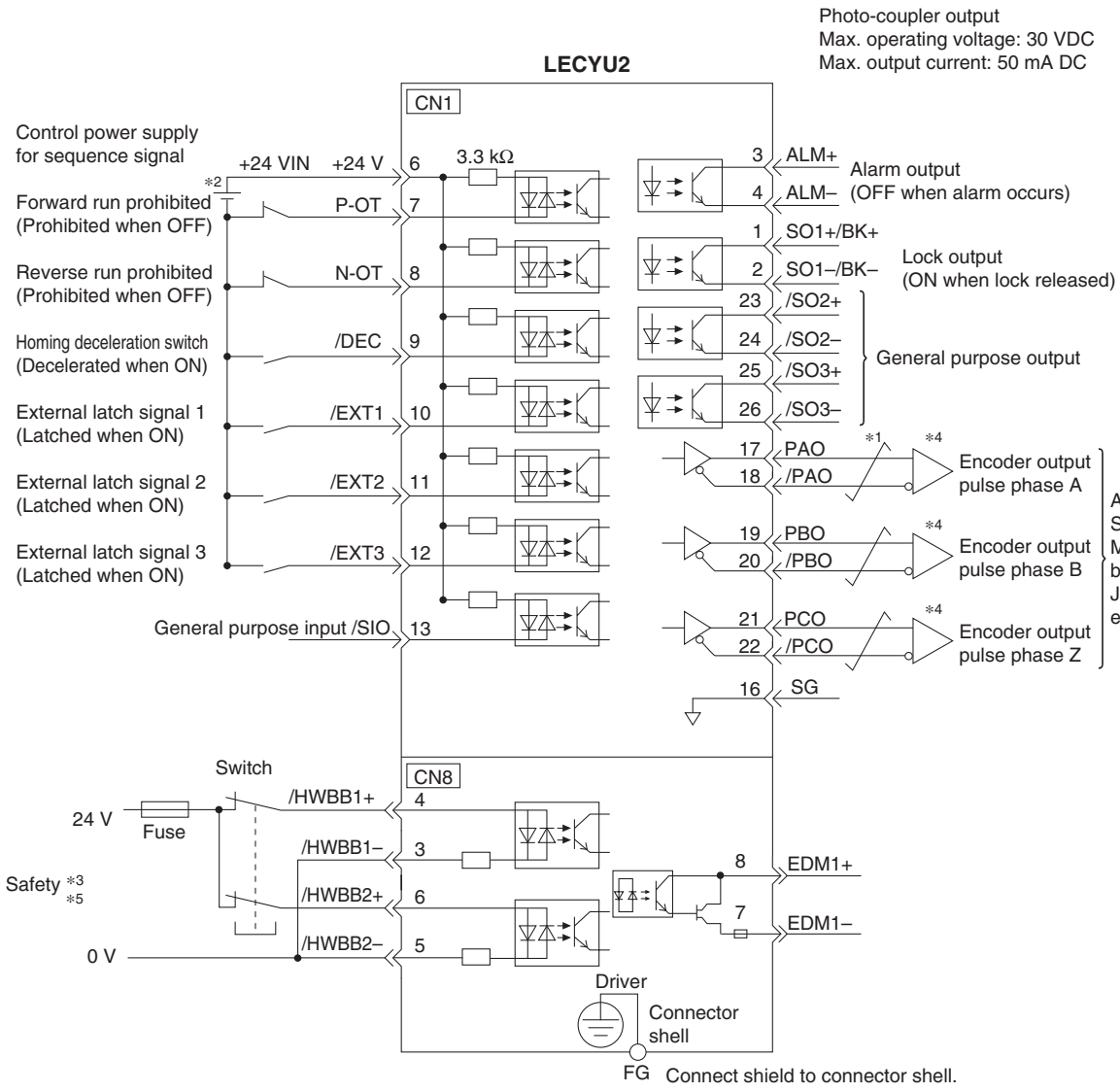
*3 When using the safety function, a safety function device must be connected to the wiring that is necessary to activate the safety function. Otherwise, the servo motor is not turned ON. When not using the safety function, use the driver with the Safety Jumper Connector (provided as an accessory) inserted into the CN8.

*4 Always use line receivers to receive the output signals.

** The functions allocated to the input signals /DEC, P-OT, N-OT, /EXT 1 , /EXT 2 and /EXT 3 , and the output signals /SO 1 , /SO 2 and /SO 3 can be changed by setting the parameters.

*5 It is a safety function equivalent to the STO function (IEC 61800-5-2) using the hard wire base block function (HWBB).

Control Signal Wiring Example: LECYU



∗1 ⫽ shows twisted-pair wires.
∗2 The 24 VDC power supply is not included. Use a 24 VDC power supply with double insulation or reinforced insulation.
∗3 When using the safety function, a safety function device must be connected to the wiring that is necessary to activate the safety function. Otherwise, the servo motor is not turned ON. When not using the safety function, use the driver with the Safety Jumper Connector (provided as an accessory) inserted into the CN8.
∗4 Always use line receivers to receive the output signals.
∗∗ The functions allocated to the input signals /DEC, P-OT, N-OT, /EXT 1 , /EXT 2 and /EXT 3 , and the output signals /SO 1 , /SO 2 and /SO 3 can be changed by setting the parameters.
∗5 It is a safety function equivalent to the STO function (IEC 61800-5-2) using the hard wire base block function (HWBB).

Options

Motor cable, Motor cable for lock option, Encoder cable (LECYM/LECYU common)

LE − CY M − S 5 A − 5

Motor type

Y	AC servo motor

Cable description

M	Motor cable
B	Motor cable for lock option
E	Encoder cable (With battery case)

Cable type

S	Standard cable
R	Robotic cable

Cable length (L) [m]

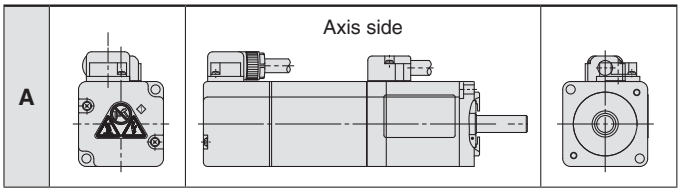
3	3
5	5
A	10
C	20

Motor capacity

5	100 W
7	200/400 W

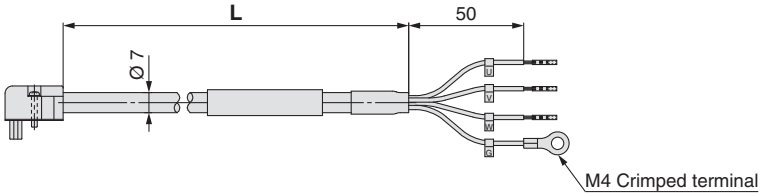
∗ For encoder cable, the suffix "–□" (Motor capacity) is not necessary.

Direction of connector

A	

∗ The cable entry direction is axis side only.

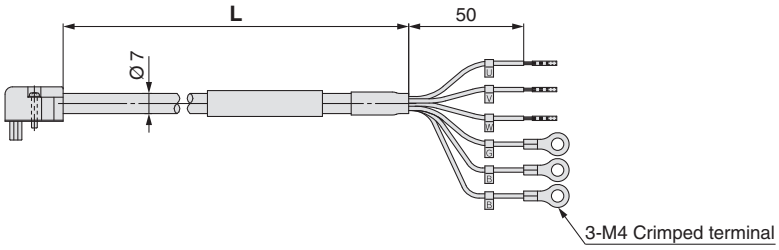
LE-CYM-□□A-□: Motor cable



Weight

Product no.	Length [m]	Weight [g]	Note
LE-CYM-S3A-5	3	250	100 W
LE-CYM-S5A-5	5	390	
LE-CYM-SAA-5	10	750	
LE-CYM-SCA-5	20	1500	
LE-CYM-S3A-7	3	250	200/ 400 W
LE-CYM-S5A-7	5	390	
LE-CYM-SAA-7	10	750	
LE-CYM-SCA-7	20	1500	
LE-CYM-R3A-5	3	220	100 W
LE-CYM-R5A-5	5	350	
LE-CYM-RAA-5	10	670	
LE-CYM-RCA-5	20	1300	
LE-CYM-R3A-7	3	220	200/ 400 W
LE-CYM-R5A-7	5	350	
LE-CYM-RAA-7	10	670	
LE-CYM-RCA-7	20	1300	

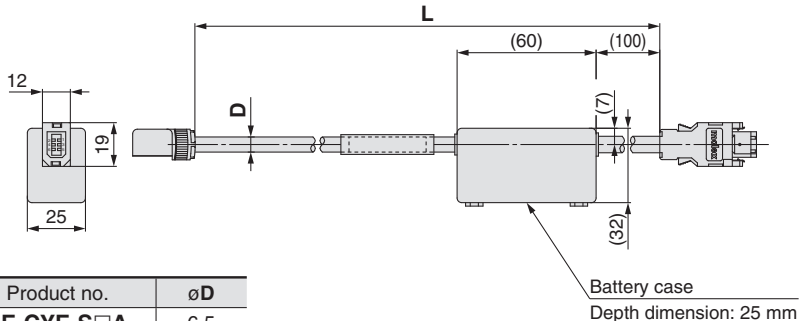
LE-CYB-□□A-□: Motor cable for lock option



Weight

Product no.	Length [m]	Weight [g]	Note
LE-CYB-S3A-5	3	240	100 W
LE-CYB-S5A-5	5	390	
LE-CYB-SAA-5	10	750	
LE-CYB-SCA-5	20	1490	
LE-CYB-S3A-7	3	240	200/ 400 W
LE-CYB-S5A-7	5	390	
LE-CYB-SAA-7	10	750	
LE-CYB-SCA-7	20	1490	
LE-CYB-R3A-5	3	220	100 W
LE-CYB-R5A-5	5	350	
LE-CYB-RAA-5	10	670	
LE-CYB-RCA-5	20	1300	
LE-CYB-R3A-7	3	220	200/ 400 W
LE-CYB-R5A-7	5	350	
LE-CYB-RAA-7	10	670	
LE-CYB-RCA-7	20	1300	

LE-CYE-□□A: Encoder cable



Product no.	øD
LE-CYE-S□A	6.5
LE-CYE-R□A	6.8

Weight

Product no.	Length [m]	Weight [g]
LE-CYE-S3A	3	230
LE-CYE-S5A	5	360
LE-CYE-SAA	10	680
LE-CYE-SCA	20	1250
LE-CYE-R3A	3	220
LE-CYE-R5A	5	330
LE-CYE-RAA	10	660
LE-CYE-RCA	20	1240

∗ LE-CYM-S□A-□ is JZSP-CSM0□-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
LE-CYB-S□A-□ is JZSP-CSM1□-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
LE-CYE-S□A is JZSP-CSP05-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
LE-CYM-R□A-□ is JZSP-CSM2□-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
LE-CYB-R□A-□ is JZSP-CSM3□-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
LE-CYE-R□A is JZSP-CSP25-□□-E manufactured by YASKAWA CONTROLS CO., LTD.

Options

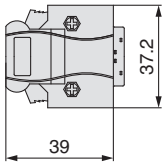
I/O connector (Without cable, Connector only)

LE − CYN A

Driver type

A	For LECYM2, LECYU2

LE-CYNA



* LE-CYNA: 10126-3000PE (connector)/10326-52F0-008 (shell kit) manufactured by 3M Japan Limited or equivalent
* Conductor size: AWG24 to 30

I/O cable

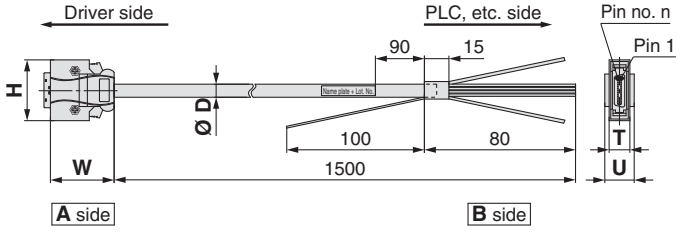
LEC − CSN A − 1

Driver type

A	For LECYM2, LECYU2

Cable length (L) [m]

1	1.5



* LEC-CSNA-1: 10126-3000PE (connector)/10326-52F0-008 (shell kit) manufactured by 3M Japan Limited or equivalent
* Conductor size: AWG24

Wiring

LEC-CSNA-1: Pin nos. 1 to 26

	Connector pin no.	Pair no. of wire	Insulation colour	Dot mark	Dot colour
A side	1	1	Orange	▬	Red
	2			▬	Black
	3	2	Light grey	▬	Red
	4			▬	Black
	5	3	White	▬	Red
	6			▬	Black
	7	4	Yellow	▬	Red
	8			▬	Black
	9	5	Pink	▬	Red
	10			▬	Black

	Connector pin no.	Pair no. of wire	Insulation colour	Dot mark	Dot colour
A side	11	6	Orange	▬ ▬	Red
	12			▬ ▬	Black
	13	7	Light grey	▬ ▬	Red
	14			▬ ▬	Black
	15	8	White	▬ ▬	Red
	16			▬ ▬	Black
	17	9	Yellow	▬ ▬	Red
	18			▬ ▬	Black
	19	10	Pink	▬ ▬	Red
	20			▬ ▬	Black

	Connector pin no.	Pair no. of wire	Insulation colour	Dot mark	Dot colour
A side	21	11	Orange	▬ ▬ ▬	Red
	22			▬ ▬ ▬	Black
	23	12	Light grey	▬ ▬ ▬	Red
	24			▬ ▬ ▬	Black
	25	13	White	▬ ▬ ▬	Red
	26			▬ ▬ ▬	Black

Cable O.D.

Product no.	Ø D
LEC-CSNA-1	11.1

Dimensions/Pin No.

Product no.	W	H	T	U	Pin no. n
LEC-CSNA-1	39	37.2	12.7	14	14

Options

MECHATROLINK cable type

LEC−CY M − 1

Motor type

Y	AC servo motor

Cable description

M	MECHATROLINK-Ⅱ cable
U	MECHATROLINK-Ⅲ cable

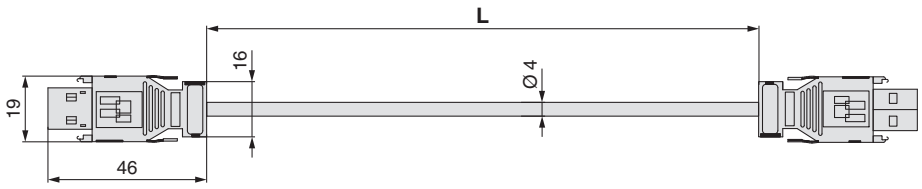
Cable length (L)

L*1	0.2 m
J	0.5 m
1	1 m
3	3 m

*1 Not available for the MECHATROLINK-Ⅱ cable

* LEC-CYM-□ is JEPMC-W6002-□□-E manufactured by YASKAWA CONTROLS CO., LTD.
* LEC-CYU-□ is JEPMC-W6012-□□-E manufactured by YASKAWA CONTROLS CO., LTD.

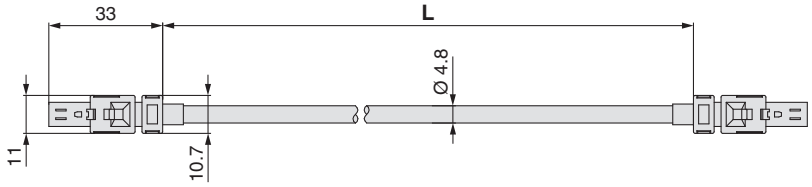
MECHATROLINK-Ⅱ cable



Weight

Product no.	Length [m]	Weight [g]
LE-CYM-J	0.5	50
LE-CYM-1	1	80
LE-CYM-3	3	200

MECHATROLINK-Ⅲ cable



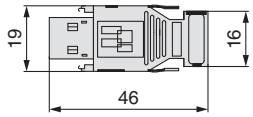
Weight

Product no.	Length [m]	Weight [g]
LE-CYU-L	0.2	21
LE-CYU-J	0.5	41
LE-CYU-1	1	75
LE-CYU-3	3	205

Terminating connector for MECHATROLINK-Ⅱ

LEC−CYRM

* LEC-CYRM is JEPMC-W6022-E manufactured by YASKAWA CONTROLS CO., LTD.



Weight: 10 g

Options

LECYM2 LECYU2
Drivers

USB cable

PC

Setup software (SigmaWin+™) (LECYM/LECYU common)

∗ Please download the SigmaWin+™ via our website: https://www.smc.eu
SigmaWin+™ is a registered trademark or trademark of YASKAWA Electric Corporation.

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

Compatible PC

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

Hardware Requirements

Equipment		Setup software (SigmaWin+™)
PC ∗1, 2, 3, 4	OS	Windows® XP∗5, Windows Vista®, Windows® 7 (32-bit/64-bit)
	Available HD space	350 MB or more (When the software is installed, 400 MB or more is recommended.)
	Communication interface	Use USB port.
Display		XVGA monitor (1024 x 768 or more, "The small font is used.") 256 colour or more (65536 colour or more is recommended.) Connectable with the PC above
Keyboard		Connectable with the PC above
Mouse		Connectable with the PC above
Printer		Connectable with the PC above
USB cable		LEC-JZ-CVUSB∗6
Other		Adobe Reader Ver. 5.0 or higher (∗ Except Ver. 6.0)

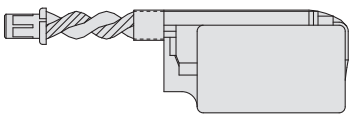
∗1 Windows, Windows Vista®, Windows® 7 are registered trademarks of Microsoft Corporation in the United States and/or other countries.
∗2 On some PCs, this software may not run properly.
∗3 Not compatible with 64-bit Windows® XP and 64-bit Windows Vista®
∗4 For Windows® XP, please use it by the administrator authority (When installing and using it.).
∗5 In PC that uses the program to correct the problem of HotfixQ328310, it is likely to fail in the installation. In that case, please use the program to correct the problem of HotfixQ329623.
∗6 Order USB cable separately.

Battery (LECYM/LECYU common)

LEC−JZ−CVBAT

∗ JZSP-BA01 manufactured by YASKAWA CONTROLS CO., LTD.

Battery for replacement
Absolute position data is maintained by installing the battery to the battery case of the encoder cable.



Weight: 10 g

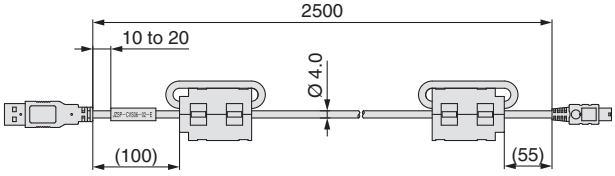
∗ The LEC-JZ-CVBAT is a single battery that uses lithium metal battery ER3V.
When transporting lithium metal batteries and devices with built-in lithium metal batteries by a method subject to UN regulations, it is necessary to apply measures according to the regulations stipulated in the United Nations Recommendations on the Transport of Dangerous Goods, the Technical Instructions (ICAO-TI) of the International Civil Aviation Organisation (ICAO), and the International Maritime Dangerous Goods Code (IMDG CODE) of the International Maritime Organisation (IMO). If a customer is transporting products such as shown above, it is necessary to confirm the latest regulations, or the laws and regulations of the country of transport on your own, in order to apply the proper measures. Please contact SMC sales representative for details.

USB cable (2.5 m)

LEC−JZ−CVUSB

∗ JZSP-CVS06-02-E manufactured by YASKAWA CONTROLS CO., LTD.

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



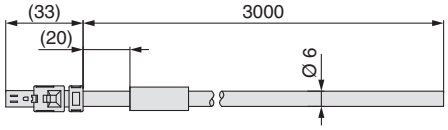
Weight: 150 g

Cable for safety function device (3 m)

LEC−JZ−CVSAF

∗ JZSP-CVH03-03-E manufactured by YASKAWA CONTROLS CO., LTD.

Cable for connecting the driver and device when using the safety function
Do not use any cable other than this cable.



Weight: 160 g

LECYM/LECYU Series
AC Servo Motor Driver
Specific Product Precautions 1

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For electric actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Design / Selection

⚠Warning

1. Be sure to apply the specified voltage.
Otherwise, malfunction or breakage may occur. If the applied voltage is lower than the specified voltage, it is possible that the load will not be able to be moved due to an internal voltage drop of the driver. Please check the operating voltage before use.

2. Do not operate the product beyond the specifications.
Otherwise, a fire, malfunction, or actuator damage may result. Please check the specifications before use.

3. Install an emergency stop circuit.
Please install an emergency stop outside of the enclosure so that the system operation can be stopped immediately and the power supply can be intercepted.

4. In order to prevent any damage caused by the breakdown or malfunction of the driver and its peripheral devices, a backup system should be established in advance by giving a multiple-layered structure or a fail-safe design to the equipment, etc.

5. If a danger of human injury is expected due to abnormal heat generation, smoking, ignition, etc., of the driver and its peripheral devices, cut off the power supply of the product and the system immediately.

Handling

⚠Warning

1. Do not touch the inside of the driver and its peripheral devices.
Doing so may cause an electric shock or damage to the driver.

2. Do not perform the operation or setting of the product with wet hands.
Doing so may cause an electric shock.

3. Products with damage or those missing any components should not be used.
An electric shock, fire, or injury may result.

4. Use only the specified combination between the electric actuator and driver.
Failure to do so may cause damage to the actuator or the driver.

5. Be careful not to be hit by workpieces while the actuator is moving.
It may cause an injury.

6. Do not connect the power supply or power on the product before confirming the area to which the workpiece moves is safe.
The movement of the workpiece may cause an accident.

7. Do not touch the product when it is energised and for some time after power has been disconnected, as it is very hot.
Doing so may lead to a burn due to the high temperature.

8. Before installation, wiring, and maintenance, the voltage should be checked with a tester 5 minutes after the power supply has been turned off.
Otherwise, an electric shock, fire, or injury may result.

Handling

⚠Warning

9. Static electricity may cause malfunction or break the driver. Do not touch the driver while power is supplied.
When touching the driver for maintenance, take sufficient measures to eliminate static electricity.

10. Do not use the product in an area where dust, powder dust, water, chemicals, or oil is in the air.
It will cause failure or malfunction.

11. Do not use the product in an area where a magnetic field is generated.
It will cause failure or malfunction.

12. Do not install the product in an environment containing flammable gas, explosive gas, or corrosive gas.
It could lead to fire, explosion, or corrosion.

13. Radiant heat from strong heat sources, such as a furnace, direct sunlight, etc., should not be applied to the product.
It will cause failure of the driver or its peripheral devices.

14. Do not use the product in an environment subject to a temperature cycle.
It will cause failure of the driver or its peripheral devices.

15. Do not use the product in a place where surges are generated.
When there are units that generate a large amount of surge around the product (e.g. solenoid type lifters, high-frequency induction furnaces, motors, etc.), this may cause deterioration or damage to the product's internal circuit. Avoid sources of surge generation and crossed lines.

16. Do not install the product in an environment under the effect of vibrations and impacts.
It will cause failure or malfunction.

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

Installation

⚠Warning

1. Install the driver and its peripheral devices on a fireproof material.
Direct installation on or near a flammable material may cause a fire.

2. Do not install the product in a place subject to vibrations and impacts.
It will cause failure or malfunction.

3. The driver should be mounted on a vertical wall in a vertical direction. Also, be sure not to cover the driver's suction/exhaust ports.

4. Install the driver and its peripheral devices on a flat surface.
If the mounting surface is distorted or uneven, an unacceptable force may be added to the housing, etc., causing problems.

LECYM/LECYU Series
AC Servo Motor Driver
Specific Product Precautions 2

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For electric actuator and auto switch precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Power Supply

⚠Caution

1. Use a power supply that has low noise between lines and between the power and ground.
In cases where noise is high, an isolation transformer should be used.

2. To prevent lightning surges, appropriate measures should be taken. Ground the surge absorber for lightning separately from the grounding of the driver and its peripheral devices.

Wiring

⚠Warning

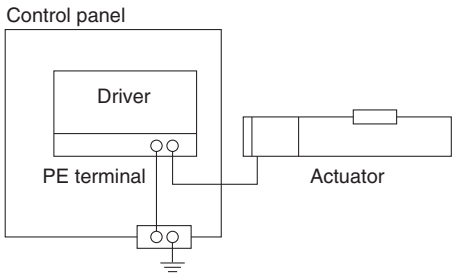
1. The driver will be damaged if a commercial power supply (100/200 V) is added to the driver's servo motor power (U, V, and W). Be sure to check wiring for mistakes when the power supply is turned on.

2. Connect the ends of the U, V, and W wires of the motor cable correctly to the phases (U, V, and W) of the servo motor power. If these wires do not match up, the servo motor cannot be controlled.

Grounding

⚠Warning

1. For grounding the 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 a malfunction is caused by the ground, please disconnect it.

Maintenance

⚠Warning

1. Perform a maintenance and inspection periodically.
Confirm wiring and screws are not loose.
Loose screws or wires may cause unintentional malfunction.

2. Conduct an appropriate functional inspection after completing the maintenance and inspection.
At times where the equipment or machinery does not operate properly, conduct an emergency stop of the system. Otherwise, an unexpected malfunction may occur and it will become impossible to ensure safety. Conduct a test of the emergency stop in order to confirm the safety of the equipment.

3. Do not disassemble, modify, or repair the driver and its peripheral devices.

4. Do not put anything conductive or flammable inside the driver.
It may cause a fire.

5. Do not conduct an insulation resistance test or withstand voltage test on this product.

6. Ensure sufficient space for maintenance activities.
Design the system allowing the required space for maintenance and inspection.

⚠ 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 catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

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

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

4. 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 catalogue.
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 catalogue for the particular products.

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

Compliance Requirements

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

⚠ Caution

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.
Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Revision History

Edition C	- Size 40 has been added. - The LECP1 series programless controller has been added. - A standard cable has been added to the actuator cable types. - The AC servo motor (100/200/400 W) type has been added. - The LECSA/LECSB series AC servo motor driver has been added. - Number of pages has been increased from 44 to 80.	PY
Edition D	- The LEFB series (belt drive) AC servo motor has been added. - The 11-LEFS series (ball screw drive) clean room specification has been added. - The LECPA series step motor driver has been added. - The LEC-G series gateway unit has been added. - The LECSC/LECSS series AC servo motor driver has been added. - UL-compliant products have been added. - The controller setting kit (LEC-W2) has been changed. - Number of pages has been increased from 80 to 148.	RP
Edition E	- Stroke variations have been expanded. - The motor parallel type has been added. - Screw leads have been added. - A support guide has been added. - Actuator specifications according to the controller/driver type have been changed. - The Speed–Work load graphs according to the controller/driver type have been changed. - The lost motion has been added. - The positioning repeatability of the LEFB has been changed. - Number of pages has been increased from 148 to 184.	SR
Edition F	- An option without grease applied to the seal band part has been added. (Excludes the LEFB) - Auto switches and mounting brackets have been added. - Positioning pin holes (Body bottom, 2 locations) have been added. - The JXC series step motor controller has been added. - The controller setting kit has been changed to the communication cable for controller setting (LEC-W2A). - Errors in text have been corrected. - Number of pages has been increased from 184 to 312.	YQ

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