

Compatible actuators

- LEF LEL LEM
- LEY LES LEP
- LER LEH

CC-Link Direct Input Type Step Motor Controller

LECPMJ Series



How to Order

LECPMJ □ □ - □

Controller •

Compatible motor •

Controller type •

Communication plug connector •

Controller mounting •

Actuator part number

P	Step motor (Servo/24 VDC)
MJ	CC-Link direct input type
Nil	None
S	Straight type
T	T-branch type
Nil	Screw mounting
D	DIN rail mounting

* DIN rail is not included. Order it separately.

Part number except cable specifications and actuator options
 Example: Enter "LEFS16B-100"
 for the LEFS16B-100B-S1MJS.

BC	Blank controller <small>Note)</small>
-----------	---------------------------------------

Note) The dedicated software (LEC-BCW) is required.

Communication plug connector

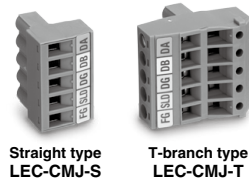
* Part number that is used when ordering the communication plug connector individually.

LEC-CMJ-S

Controller type •

Connector type •

MJ	CC-Link direct input type
S	Straight type
T	T-branch type



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

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

- ① Check the actuator label for model number. This matches the controller.



* Refer to the operation manual for using the products. Please download it via our website, <http://www.smcworld.com>

Precautions on blank controller (LECPMJ□□-BC)

Blank controller is a controller to which the customer can write the data of the actuator to be combined and used. 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.smcworld.com>

Specifications

Item		LECPMJ					
Compatible motor		Step motor (Servo/24 VDC)					
Power supply <small>Note 1)</small>		Power voltage: 24 VDC $\pm 10\%$ <small>Note 2)</small>					
Compatible encoder		Incremental A/B phase (800 pulse/rotation)					
Communication specifications	Fieldbus	CC-Link Ver. 1.10					
	Communication speed [bps]	156 k/625 k/2.5 M/5 M/10 M					
	Communication method	Broadcast polling					
	Station type	Remote device station					
	I/O occupation area	1 station (Input 32 points/4 words Output 32 points/4 words)		2 stations (Input 64 points/8 words Output 64 points/8 words)		4 stations (Input 128 points/16 words Output 128 points/16 words)	
	Applicable communication cable	CC-Link Ver. 1.10 compliant cable (Shielded 3-core twisted pair cable) <small>Note 3)</small>					
	Maximum cable length	Communication speed [bps]	156 k	625 k	2.5 M	5 M	10 M
	Total cable length [m]	1200	900	400	160	100	
Serial communication		RS485 (Modbus protocol)					
Memory		EEPROM					
LED indicator		PWR, ALM, L ERR, L RUN					
Lock control		Forced-lock release terminal <small>Note 4)</small>					
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)					
Storage temperature range [°C]		-10 to 60 (No freezing)					
Storage humidity range [%RH]		90 or less (No condensation)					
Insulation resistance [MΩ]		Between all of external terminals and the case 50 (500 VDC)					
Weight [g]	Body	170 (Screw mounting), 190 (DIN rail mounting)					
	Communication plug connector	10 (Straight type), 20 (T-branch type)					

Note 1) Do not use the power supply of "inrush current prevention type" for the controller power supply.

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

Note 2) The power consumption changes depending on the actuator model. Refer to the specifications of actuator for more details.

Note 3) 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 maximum communication cable length and the cable length between stations.

Note 4) Applicable to non-magnetizing lock.

Mode explanation

Mode type	Description
Single numeric parameter	Can define numerical data in the Movement MOD and another item in the step data directly from the PLC when starting operation by specifying a registered step data No.
Half numeric parameters	Can define numerical data in the Movement MOD, Speed, Position, Acceleration/Pushing force, Pushing speed, or Deceleration/Trigger LV in the step data directly from the PLC when starting operation by specifying a registered step data No.
Full numeric parameters	Can define numerical data in all step data items, Movement MOD, Speed, Position, Acceleration, Pushing speed, Pushing force, Deceleration, Trigger LV, Moving force, Area 1, Area 2, and In position, directly from the PLC to start operation.

Function that can be executed in each mode

Mode setting [Number of occupied stations] <small>Note 5)</small>	Single numeric parameter [1]	Half numeric parameters [2]	Full numeric parameters [4]
Step no. defining operation		○	
Numerical data defining operation		○	
Number of definable numerical data items	1	6	12
Monitor of position/speed		○	
Step data editing		○ <small>Note 6)</small>	
Max. number of connectable controllers <small>Note 7)</small>	42	32	16

Note 5) The modes can be set by registering the number of occupied stations with basic parameter "Option setting 1" of the controller.

Note 6) It is possible to edit it from teaching box/controller setting software for "Single numeric parameter". It is possible to edit it from teaching box/controller setting software and PLC (CC-Link) for "Half numeric parameters" and "Full numeric parameters".

Note 7) Maximum number of units specified in CC-Link communication specifications.

LECPMJ Series

Specifications

Modifiable step data item in each mode

●: Numerical data modifiable items

Mode setting	Step data item												
	Movement MOD	Speed	Position	Acceleration	Pushing force	Pushing speed	Deceleration	Trigger LV	Moving force	Area 1	Area 2	In position	
Single numeric parameter	●												
Half numeric parameters	●	●	●	Only one item can be changed from Acceleration/ Pushing force.		●	Only one item can be changed from Deceleration/ Trigger LV.						
Full numeric parameters	●	●	●	●	●	●	●	●	●	●	●	●	●

Note) Step data items, except items that have been changed, reference data registered in the controller.

Note) Refer to the LECPMJ operation manual for details of the step data items.

Operation example: Single numeric parameter



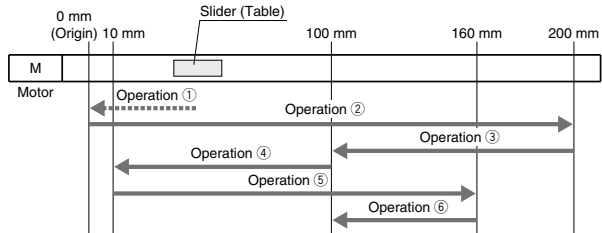
Controller [LECPMJ]

[Step data registered in LECPMJ]

No.	Movement MOD	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
2	1: Absolute	100	200	3000	3000	0	0	0	100	0	0	0.50

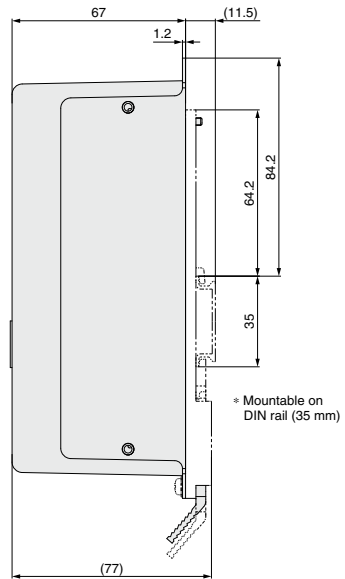
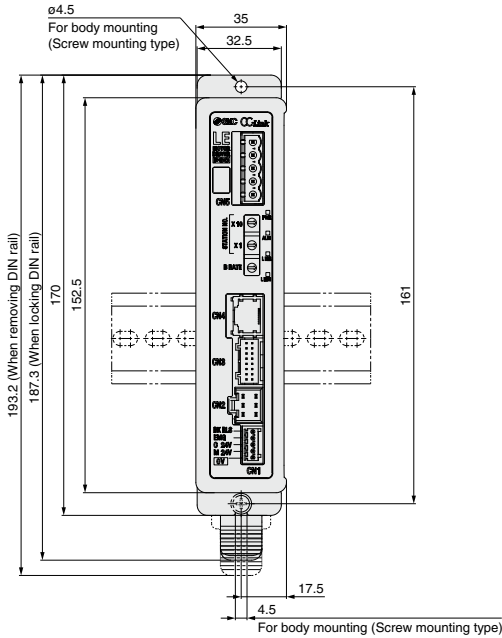
Note) The step data input range changes depending on the actuator model. For details, refer to the operation manual for actuator.

Note) To register the step data, use the controller setting software, teaching box, or data editing function of the LECPMJ.



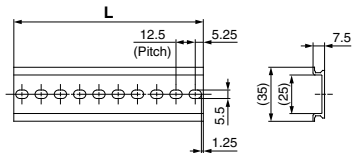
Operations	Description	Position after operation [mm]
Operation ① [Return to origin]	After the servo is turned ON and the SETUP signal is sent, the return to origin will start. After returning to the origin position, the SETON and INP signals are output.	0
Operation ② [Specify Step No.2 to input the DRIVE signal.]		Absolute: 200
Operation ③ [Specify Step No.1 to input the DRIVE signal.]	Step data No. defining operation The operation starts by specifying a registered step data No. to input the DRIVE signal.	Absolute: 100
Operation ④ [Specify Step No.0 to input the DRIVE signal.]		Absolute: 10
Operation ⑤ [Define numerical data in the Movement MOD and Position in Step No.1.] • Movement MOD: 2 (Relative) and Position: 150 are defined from the PLC.	Numerical data defining operation The operation starts by changing the Movement MOD and Position in step data No.1 temporarily by defining numerical data from the PLC.	Relative: 150
Operation ⑥ [Specify Step No.1 to input the DRIVE signal.]		Absolute: 100

Dimensions



DIN rail AXT100-DR-□

* For □, enter a number from the "No." line in the table below.
Refer to the dimensions above for the mounting dimensions.



L Dimension [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

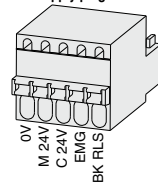
Power Supply Connector: CN1 * Power supply plug is an accessory.
<Applicable cable size> AWG30 (0.5 mm²), cover diameter 2.0 mm or less

CN1 Power Supply Connector Terminal for LECPMJ (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 LECPMJ: LEC-D-1-1

* Accessory



LECPMJ Series

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*
A	10*
B	15*
C	20*

* Produced upon receipt of order (Robotic cable only)

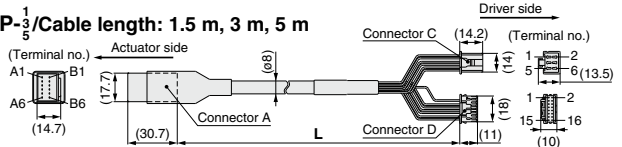
Cable type

	Cable type
Nil	Robotic cable (Flexible cable)
S	Standard cable

Weight

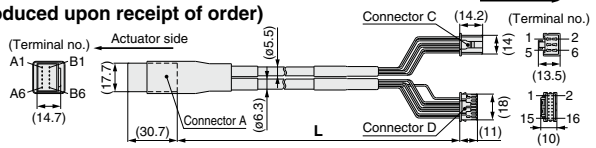
Product no.	Weight [g]	Note
LE-CP-1-S	190	Standard cable
LE-CP-3-S	280	
LE-CP-5-S	460	
LE-CP-1	140	
LE-CP-3	260	
LE-CP-5	420	Robotic cable
LE-CP-8	790	
LE-CP-A	980	
LE-CP-B	1460	
LE-CP-C	1940	

LE-CP- $\frac{1}{5}$ /Cable length: 1.5 m, 3 m, 5 m



LE-CP- $\frac{8}{AC}$ /Cable length: 8 m, 10 m, 15 m, 20 m

(* Produced upon receipt of order)



Signal	Connector A terminal no.	Connector C terminal no.	Cable color	Connector D terminal no.
A	B-1	2	Brown	2
A	A-1	1	Red	1
B	B-2	6	Orange	6
B	A-2	5	Yellow	5
COM-A/COM	B-3	3	Green	3
COM-B/-	A-3	4	Blue	4
Shield				
Vcc	B-4	12	Brown	12
GND	A-4	13	Black	13
A	B-5	7	Red	7
A	A-5	6	Black	6
B	B-6	9	Orange	9
B	A-6	8	Black	8
-	-	3	-	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*
A	10*
B	15*
C	20*

* Produced upon receipt of order (Robotic cable only)

With lock and sensor

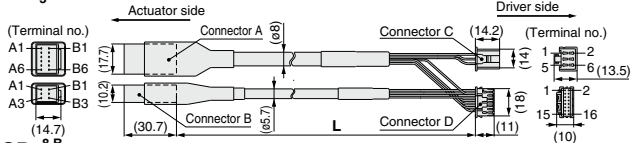
Cable type

	Cable type
Nil	Robotic cable (Flexible cable)
S	Standard cable

Weight

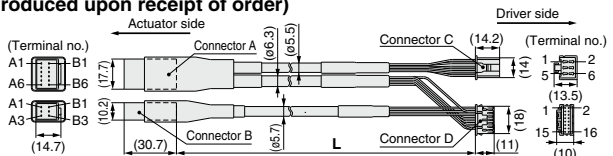
Product no.	Weight [g]	Note
LE-CP-1-B-S	240	Standard cable
LE-CP-3-B-S	380	
LE-CP-5-B-S	630	
LE-CP-1-B	190	Robotic cable
LE-CP-3-B	360	
LE-CP-5-B	590	
LE-CP-8-B	1060	
LE-CP-A-B	1320	
LE-CP-B-B	1920	
LE-CP-C-B	2620	

LE-CP- $\frac{1}{5}$ /Cable length: 1.5 m, 3 m, 5 m



LE-CP- $\frac{8}{AC}$ /Cable length: 8 m, 10 m, 15 m, 20 m

(* Produced upon receipt of order)



Signal	Connector A terminal no.	Connector C terminal no.	Cable color	Connector D terminal no.
A	B-1	2	Brown	2
A	A-1	1	Red	1
B	B-2	6	Orange	6
B	A-2	5	Yellow	5
COM-A/COM	B-3	3	Green	3
COM-B/-	A-3	4	Blue	4
Shield				
Vcc	B-4	12	Brown	12
GND	A-4	13	Black	13
A	B-5	7	Red	7
A	A-5	6	Black	6
B	B-6	9	Orange	9
B	A-6	8	Black	8
-	-	3	-	3

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