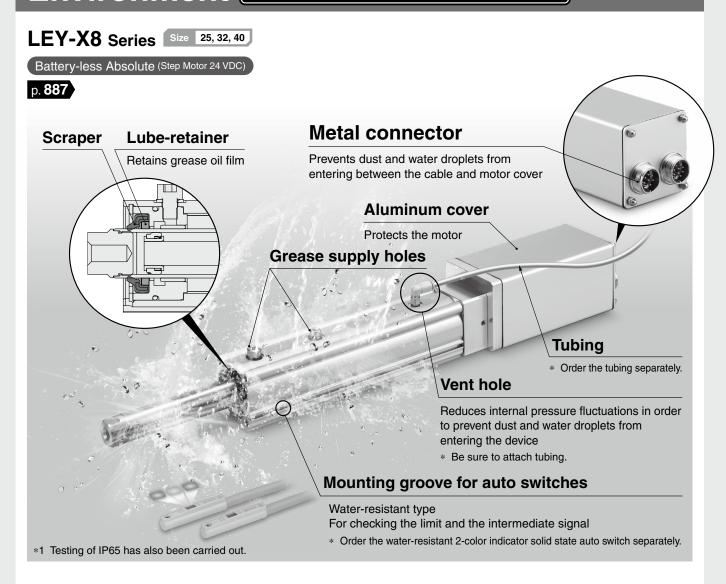
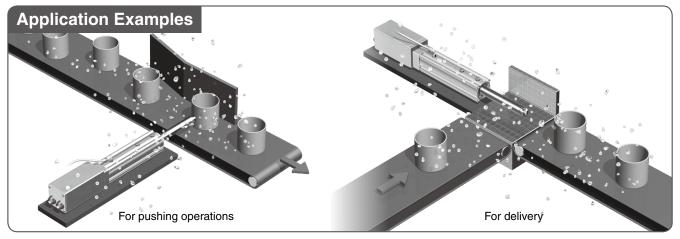
Environment Enclosure: IP65*1 equivalent/IP67 equivalent



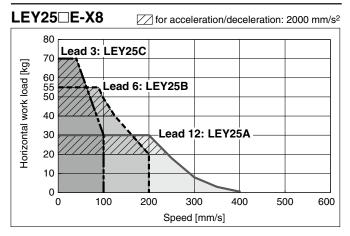
Battery-less absolute encoder compatible

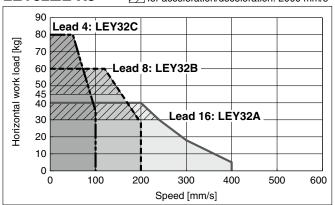


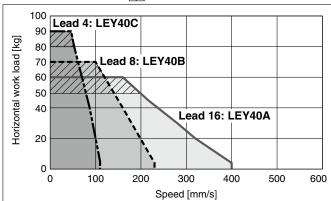


Speed-Work Load Graph (Guide)

Horizontal

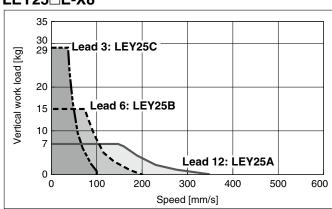




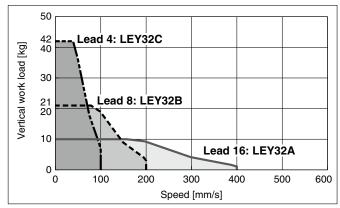


Vertical

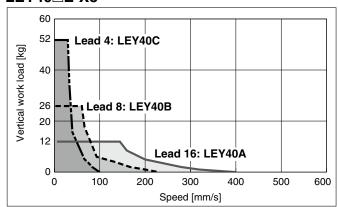
LEY25□E-X8



LEY32□E-X8



LEY40□E-X8



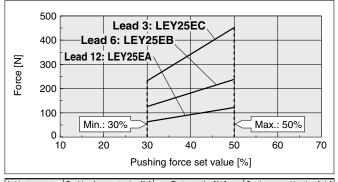
Battery-less Absolute (Step Motor 24 VDC) Dust-tight/Water-jet-proof (IP65 Equivalent/IP67 Equivalent)

Force Conversion Graph (Guide)

Items not listed are the same as those of the standard product. For details, refer to page 421.

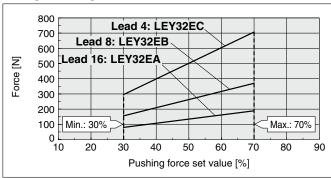
Battery-less Absolute (Step Motor 24 VDC)

LEY25□E-X8



Ambient temperature Pushing force set value [%]		Duty ratio [%]	Continuous pushing time [min]	
40°C or less	50 or less	100	No restriction	

LEY32□E-X8



Duty ratio [%]

100

Continuous pushing time [min]

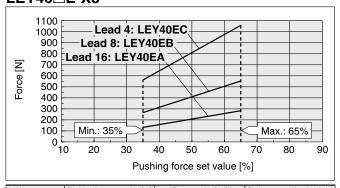
No restriction

LEY40□E-X8

40°C or less

Ambient temperature Pushing force set value [%]

70 or less



Ambient temperature Pushing force set value [%] Continuous pushing time [min] Duty ratio [%] 40°C or less 65 or less 100 No restriction

<Limit Values for Pushing Force and Trigger Level in Relation to Pushing Speed> Without Load

Model	Lead	Pushing speed [mm/s]	Pushing force (Setting input value)	
LEY25□E A/B/C		21 to 35	40 to 50%	
LEY32□E	А	24 to 30	50 to 70%	
LE 132LE	B/C	21 to 30	50 10 70%	
LEY40□E	Α	24 to 30	50 to 65%	
LEY40LE	B/C	21 to 30	30 10 05 /6	

There is a limit to the pushing force in relation to the pushing speed. If the product is operated outside of the range (low pushing force), the completion signal [INP] may be output before the pushing operation has been completed (during the moving operation).

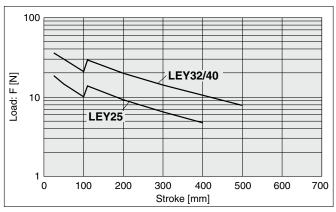
If operating with the pushing speed below the min. speed, please check for operating problems before using the product.

<Set Values for Vertical Upward Transfer Pushing Operations>

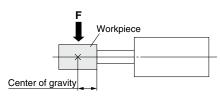
For vertical loads (upward), set the pushing force to the max. value shown below and operate at the work load or less.

Model	odel LEY		EY25□E		LEY32□E		LEY40□E		E
Lead	Α	В	С	Α	В	С	Α	В	С
Work load [kg]	2.5	5	10	4.5	9	18	7	14	28
Pushing force		50%			70%			65%	

Graph of Allowable Lateral Load on the Rod End (Guide)



[Stroke] = [Product stroke] + [Distance from the rod end to the center of gravity of the workpiece]

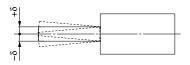


* The changes in the graph waveforms are due to the difference in components of different product strokes.

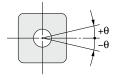
Rod Displacement: δ [mm]

Stroke Size	30	50	100	150	200	250	300	350	400	450	500
25	±0.3	±0.4	±0.7	±0.7	±0.9	±1.1	±1.3	±1.5	±1.7	_	_
32/40	±0.3	±0.4	±0.7	±0.6	±0.8	±1.0	±1.1	±1.3	±1.5	±1.7	±1.8

^{*} The values without a load are shown.



Non-rotating Accuracy of Rod



Size N	Non-rotating accuracy θ
25	±0.8°
32/40	±0.7°

* Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod.

This may cause the deformation of the non-rotating guide, abnormal auto switch responses, play in the internal guide, or an increase in the sliding resistance.







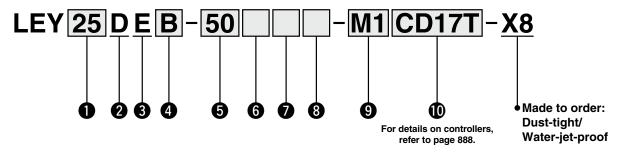


LEY-X8 (Made to Order) Series LEY25, 32, 40 RoHS

Refer to pages 883 to 885 for model selection.

How to Order





1 Size 25 32/40

2 Motor mounting

position				
	D	In-line		

3 Motor type

Е	Battery-less absolute
_	(Step motor 24 VDC)

4 Lead [mm]

Symbol	LEY25	LEY32/40
Α	12	16
В	6	8
С	3	4

5 Stroke [mm]

30	30
to	to
500	500

^{*} For details, refer to the applicable stroke table

6 Motor option

Nil	Without option
В	With lock

Rod end thread

Nil	Rod end female thread		
M	Rod end male thread (1 rod end nut is included.)		

8 Mounting*2

Symbol	Type	Motor mounting position
Symbol	Туре	In-line
Nil	Ends tapped/ Body bottom tapped*3	•
F	Rod flange*3	•

9 Actuator cable type/length

Robotic	Robotic cable [m									
MN	None	M8	8*4							
M1	1.5	MA	10*4							
МЗ	3	MB	15*4							
M5	5	МС	20*4							

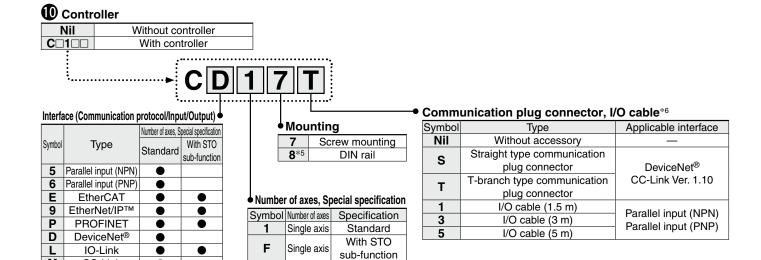
Applicable Stroke Table*1

Applicable Stroke	Standa Unicable Stroke Table													
Stroke [mm]	30	50	100	150	200	250	300	350	400	450	500	Manufacturable stroke range		
LEY25	•	•	•	•	•	•	•	•	•	_	_	30 to 400		
LEY32/40	•	•	•	•	•	•	•	•	•	•	•	30 to 500		

* For auto switches, refer to page 894.

[&]quot;-X8" is not added to an actuator model with a controller part number suffix. Example) "LEY25DEB-100" for the LEY25DEB-100M-M1CD17T-X8

Battery-less Absolute (Step Motor 24 VDC) Dust-tight/Water-jet-proof (IP65 Equivalent/IP67 Equivalent)



- *1 Please contact SMC for non-standard strokes as they are produced as special orders
- The mounting bracket is shipped together with the product but does not come assembled.
- *3 For the horizontal cantilever mounting of the rod flange, or ends tapped types, use the actuator within the following stroke range. · LEY25: 200 or less · LEY32/40: 100 or less

⚠ Caution

CC-Link

M

[CE/UKCA-compliant products]

EMC compliance was tested by combining the electric actuator LEY series and the controller JXC series.

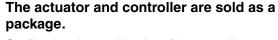
The EMC depends on the configuration of the customer's control panel and the relationship with other electrical equipment and wiring. Therefore, compliance with the EMC directive cannot be certified for SMC components incorporated into the customer's equipment under actual operating conditions. As a result, it is necessary for the customer to verify compliance with the EMC directive for the machinery and equipment as a whole.

[Precautions relating to differences in controller versions]

When the JXC series is to be used in combination with the battery-less absolute encoder, use a controller that is version V3.4 or S3.4 or higher. For details, refer to pages 1077 and 1078.

- *4 Produced upon receipt of order
- *5 The DIN rail is not included. It must be ordered separately.
- *6 Select "Nil" for anything other than DeviceNet®, CC-Link, or parallel input.

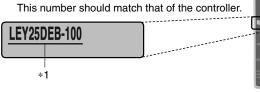
Select "Nil," "S," or "T" for DeviceNet® or CC-Link. Select "Nil," "1," "3," or "5" for parallel input.



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.



Refer to the Operation Manual for using the products. Please download it via our website: https://www.smcworld.com

	Step data input type	EtherCAT direct input type	EtherCAT direct input type with STO sub-function	EtherNet/IP™ direct input type	EtherNet/IP™ direct input type with STO sub-function	PROFINET direct input type	PROFINET direct input type with STO sub-function	DeviceNet® direct input type	IO-Link direct input type	IO-Link direct input type with STO sub-function	CC-Link direct input type
Туре											
Series	JXC51 JXC61	JXCE1	JXCEF	JXC91	JXC9F	JXCP1	JXCPF	JXCD1	JXCL1	JXCLF	JXCM1
Features	Parallel I/O	EtherCAT direct input	EtherCAT direct input with STO sub-function	EtherNet/IP™ direct input	EtherNet/IP™ direct input with STO sub-function	PROFINET direct input	PROFINET direct input with STO sub-function	DeviceNet® direct input	IO-Link direct input	IO-Link direct input with STO sub-function	CC-Link direct input
Compatible motor	Battery-less absolute (Step motor 24 VDC)										
Max. number of						64 pointo					
step data						64 points					
Power supply voltage	24 VDC										
Reference page	1017					10	63				

Specifications

Step Motor (Servo/24 VDC)

		Model		L	EY25□E->	(8	L	EY32□E-X	(8	LI	EY40□E-X	(8		
		Horizontal	(3000 [mm/s ²])	20	40	60	30	45	60	50	60	80		
	Work load [kg]*1	Horizoniai	(2000 [mm/s ²])	30	55	70	40	60	80	60	70	90		
		Vertical	(3000 [mm/s ²])	7	15	29	10	21	42	12	26	52		
	Pushing ford	e [N]*2 *3 *4		63 to 122	126 to 238	232 to 452	80 to 189	156 to 370	296 to 707	132 to 283	266 to 553	562 to 1058		
ည	Speed [mm/s	s]* ⁴		18 to 400 9 to 200 5 to 100 24 to 400 12 to 200 6 to 100 24 to 400 12 to 230 6 to 110										
specifications	Max. acceler	ation/deceler	ation [mm/s²]		3000									
lica	Pushing spe	ed [mm/s]*5			35 or less			30 or less			30 or less			
eci	Positioning I	repeatability [mm]					±0.02						
	Lost motion	[mm]*6						0.1 or less						
Actuator	Screw lead [mm]		12	6	3	16	8	4	16	8	4		
ļ ž	Impact/Vibra	tion resistant	ce [m/s²]*7					50/20						
ĕ	Actuation ty	ре		Ball screw (LEY□D)										
	Guide type			Sliding bushing (Piston rod)										
	Enclosure*8			IP65 equivalent/IP67 equivalent*12										
	Operating te	mperature rai	nge [°C]	5 to 40										
	Operating hu	umidity range	[%RH]	90 or less (No condensation)										
ions	Motor size			□42 □56.4 □56.4										
Electric specifications	Motor type					Batt	ery-less ab	solute (Step	motor 24 V	DC)				
bec	Encoder						Batte	ery-less abs	olute					
it:	Power suppl	y voltage [V]					2	4 VDC ±109	%					
	Power [W]*9	*11		Max. power 48 Max. power 104 Max. power 106										
Lock unit specifications	Type*10			Non-magnetizing lock										
ecific	Holding forc			78 157 294 108 216 421 1					127	265	519			
units	Power [W]*1	1		5 5 5										
흔	Rated voltag	je [V]					2	4 VDC ±109	%					

- *1 Horizontal: The maximum value of the work load. An external guide is necessary to support the load. (Friction coefficient of guide: 0.1 or less) The actual work load and transfer speed change according to the condition of the external guide. Also, speed changes according to the work load. Check the "Model Selection" on page 883.
 - : Speed changes according to the work load. Check the "Model Selection" on page 883. Vertical
 - The values shown in () are the acceleration/deceleration. Set these values to be 3000 [mm/s²] or less.
- *2 Pushing force accuracy is ±20% (F.S.).
- *3 The pushing force values for LEY25□E are 30% to 50%, for LEY32□E are 30% to 70%, and for LEY40□E are 35% to 65%.
 - The pushing force values change according to the duty ratio and pushing speed. Check the "Model Selection" on page 884.
- The speed and force may change depending on the cable length, load, and mounting conditions. Furthermore, if the cable length exceeds 5 m, then it will decrease by up to 10% for each 5 m. (At 15 m: Reduced by up to 20%)
- *5 The allowable speed for pushing operations. When push conveying a workpiece, operate at the vertical work load or less.
- *6 A reference value for correcting errors in reciprocal operation
- *7 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.)

- *8 Cannot be used in an environment where oil such as cutting oil splashes or it is constantly exposed to water
- Take appropriate protective measures. For details on enclosure, refer to the "Enclosure" on page 881.
- Indicates the max. power during operation (including the controller) This value can be used for the selection of the power supply.
- *10 With lock only
- *11 For an actuator with lock, add the power for the lock.
- *12 Excludes the controller body and the connector part on the controller side



Weight

Weight: In-line Motor Type

LEY25D									
Stroke 30 50 100 150 200 250 300 350 400									
Product weight [kg]	1.48	1.55	1.72	1.97	2.15	2.32	2.50	2.67	2.85

LEY32D										
Stroke 30 50 100 150 200 250 300 350 400 450 500										
Product weight [kg] 2.58 2.69 2.98 3.36 3.65 3.94 4.22 4.51 4.80 5.08 5.37										

LEY40D										
Stroke 30 50 100 150 200 250 300 350 400 450 500										
Product weight [kg] 2.93 3.04 3.33 3.71 4.00 4.29 4.57 4.86 5.15 5.43 5.72										

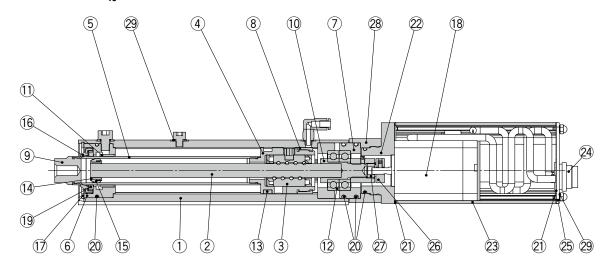
Additional Weight

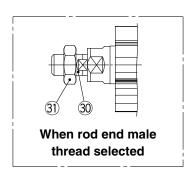
Additional Wei	ght			[kg]
S	25	32	40	
Lock	0.35	0.65	0.65	
Rod end male	Male thread	0.03	0.03	0.03
thread	0.02	0.02	0.02	
Rod flange (includ	0.17	0.20	0.20	



Construction

In-line motor type: $LEY_{40}^{25}D$





Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Anodized
2	Ball screw shaft	Alloy steel	
3	Ball screw nut	Synthetic resin/Alloy steel	
4	Piston	Aluminum alloy	
5	Piston rod	Stainless steel	Hard chrome plating
6	Rod cover	Aluminum alloy	Anodized
7	Bearing holder	Aluminum alloy	
8	Rotation stopper	Resin	
9	Socket	Stainless steel	
10	Connected shaft	Free cutting carbon steel	Nickel plating
11	Bushing	Bearing alloy	
12	Bearing	_	
13	Magnet	_	
14	Wear ring holder	Stainless steel	Stroke 101 mm or more
15	Wear ring	Resin	Stroke 101 mm or more
16	Greater water resistant scraper	Stainless steel/NBR	

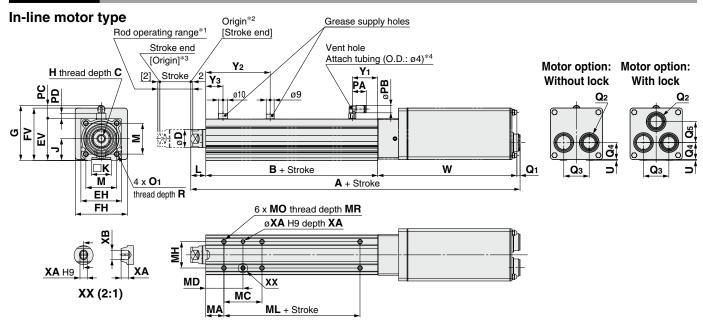
Description Retaining ring Motor	Material Stainless steel	Note
	Stainless steel	
Motor		
	_	
_ube-retainer	Felt	
O-ring	NBR	
Gasket	Chloroprene	
Motor adapter	Aluminum alloy	LEY25 only
Motor cover	Aluminum alloy	Anodized
Metal connector	Zinc die-casted	Chrome plating
End cover	Aluminum alloy	Anodized
Hub	Aluminum alloy	
Spider	NBR	
Motor block	Aluminum alloy	Anodized
Seal washer	Stainless steel/NBR	
Socket (Male thread)	Stainless steel	
Nut	Stainless steel	
	O-ring Gasket Motor adapter Motor cover Metal connector End cover Hub Spider Motor block Geal washer Gocket (Male thread)	O-ring NBR Gasket Chloroprene Motor adapter Aluminum alloy Motor cover Aluminum alloy Metal connector Zinc die-casted End cover Aluminum alloy Aluminum alloy Spider NBR Motor block Aluminum alloy Seal washer Stainless steel/NBR Socket (Male thread) Stainless steel

Replacement Parts/Grease Pack

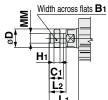
Applied portion	Order no.
Piston rod	GR-S-010 (10 g) GR-S-020 (20 g)

Apply grease on the piston rod periodically.
 Grease should be applied at 1 million cycles or 200 km, whichever comes first.

Dimensions



25 Rod end male thread: LEY32D□-□□M



							[mmj
Size	B ₁	C ₁	D	H ₁	L ₁	L ₂	ММ
25	22	20.5	20	8	38	23.5	M14 x 1.5
32/40	22	20.5	25	8	42	23.5	M14 x 1.5

The L₁ measurement is when the unit is in the original position. At this position, 2 mm at the end.

																		[IIIIII]
Size	Stroke range		4	В	С	D	ЕН	EV	FH	FV	G	н	J	K		М	O 1	R
OIZO	[mm]	Without lock	With lock		•					' '	_ G	••	J		_		01	••
25	30 to 100	262.5	312.5	89.5	13	20	44	44 45.5	57.6 57	E7 7	57.7 61.4	M8 x 1.25	24	17	14.5	34	M5 x 0.8	
25	105 to 400	287.5	337.5	114.5	13	20	44		57.6	37.7				''			IVIO X U.O	
32	30 to 100	273	323	96	13	25	25 51	51 56.5	6.5 69.6	79.6	72.4 M8 x 1.25	31 22	22	18.5	40	M6 x 1.0	10	
32	105 to 500	303	353	126	13	25				79.0	12.4	IVIO X 1.25	31	22	16.5	40	IVIO X 1.0	10
40	30 to 100	295	355	96	10	13 25	51	56.5	69.6	C 70 C	70.4	M0 v 1 05	0.1	00	10.5	40	M6 x 1.0	10
40	105 to 500	325	375	126	13		51		09.6	79.6	72.4	M8 x 1.25	31	22	18.5	40	IVIO X 1.U	10

Size	Stroke range [mm]	РА	РВ	РС	PD	Q ₁	Without lock	2 With lock	Qз	Q4	_)5 With lock	U	Without lock	With lock	Y 1	Y 2	Y 3
25	30 to 100 105 to 400	15.4	8.2	15.9	6.5	3.5	2 x ø22	3 x ø22	28	18.7	_	23	0.9	155	205	28	71 96	19
32	30 to 100 105 to 500	15.4	8.2	15.9	7.1	3.5	2 x ø22	3 x ø22	36	28	_	32	1	155	205	30	75.5 105.5	16
40	30 to 100 105 to 500	15.4	8.2	15.9	7.1	3.5	2 x ø22	3 x ø22	36	28	_	32	1	177	227	30	75.5 105.5	16

Body	Bottom T	apped								[mm]
Size	Stroke range [mm]	MA	МС	MD	МН	ML	МО	MR	XA	ХВ
25	30 to 39	20	24	32	29	50	M5 x 0.8	6.5		
	40 to 100		42	41		50			4	
	101 to 124		42	41						5
	125 to 200		59	49.5		75				
	201 to 400		76	58						
	30 to 39		22	36		50	M6 x 1	8.5		
	40 to 100		36	43		30			5	
32/40	101 to 124	25	5	40	30					6
	125 to 200		53	51.5		80				
	201 to 500		70	60						

- *1 This is the range within which the rod can move when it returns to origin. Make sure that workpieces mounted on the rod do not interfere with other workpieces or the facilities around the rod.
- *2 Position after returning to origin
- *3 [] for when the direction of return to origin has changed
- *4 The vent hole is the port for releasing to atmosphere. Do not apply pressure to this hole. Attach tubing to the vent hole and place the end of the tubing so it is not exposed to dust or water.
- * The direction of rod end width across flats (□K) differs depending on the products.

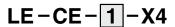
For the mounting bracket dimensions, refer to the Web Catalog.



[mm]

Option: Actuator Cable

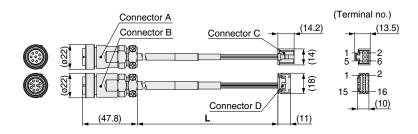
[Metal connector robotic cable for battery-less absolute (Step motor 24 VDC)]



Cable length (L) [m]

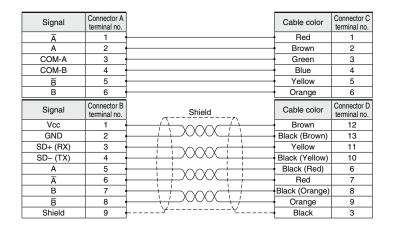
1	1.5
3	3
5	5
8	8*1
Α	10* ¹
В	15* ¹
С	20*1

*1 Produced upon receipt of order

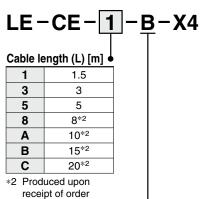


Weight

Product no.	Weight [g]	Note
LE-CE-1-X4	270	
LE-CE-3-X4	440	
LE-CE-5-X4	650	
LE-CE-8-X4	980	Robotic cable
LE-CE-A-X4	1200	
LE-CE-B-X4	1760	
I F-CF-C-X4	2290	



[Metal connector robotic cable with lock for battery-less absolute (Step motor 24 VDC)]

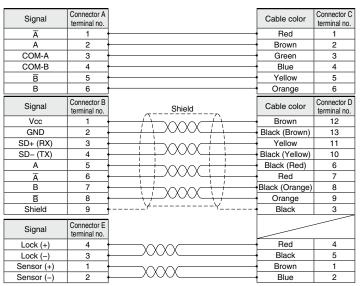


With lock and sensor

Connector A	(Terminal no.)
Connector B Connector C (14.2)	(13.5)
£ ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ±	1 2 5 6
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	12 15 16
Connector D	(10)
(47.8) Connector E L (11)	

Weight

woigin		
Product no.	Weight [g]	Note
LE-CE-1-B-X4	320	
LE-CE-3-B-X4	490	
LE-CE-5-B-X4	700	
LE-CE-8-B-X4	1030	Robotic cable
LE-CE-A-B-X4	1250	
LE-CE-B-B-X4	1810	
LF-CF-C-B-X4	2340	

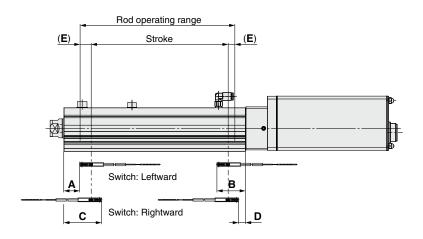


LEY-X8 Series Auto Switch Mounting

Auto Switch Proper Mounting Position

Applicable auto switch: D-M9□A(V)



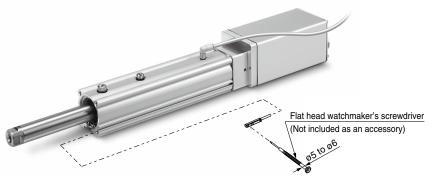


[mm]

	Stroke range		Auto swite	Return to origin	Operating range			
Size		Leftward	mounting	Rightward	l mounting	distance	Operating range	
		Α	В	С	D	E	_	
25	15 to 100	27	62.5	39	50.5	(2)	4.0	
25	105 to 400	52	62.5	64	50.5		4.2	
20/40	20 to 100	30.5	85.5	42.5	53.5	(0)	4.0	
32/40	105 to 500	90.5	85.5	102.5	53.5	(2)	4.9	

- The values in the table above are to be used as a reference when mounting auto switches for stroke end detection. Adjust the auto switch after confirming the operating conditions in the actual setting.
- * Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approx. ±30% dispersion). It may change substantially depending on the ambient environment.

Auto Switch Mounting



Tightening Torque for Auto S	witch Mounting Screw [N·m]
Auto switch model	Tightening torque
D MODAW	0.05 +- 0.40

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

Water Resistant 2-Color Indicator Solid State Auto Switch: Direct Mounting Type (EA D-M9NA(V)/D-M9PA(V)/D-M9BA(V)



Grommet

- Water (coolant) resistant type
- 2-wire load current is reduced (2.5 to 40 mA).
- The proper operating range can be determined by the color of the light. (Red \rightarrow Green \leftarrow Red)
- Using flexible cable as standard



∆Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used. Please contact SMC if using coolant liquid other than water based solution.

Weight

[g]

Auto s	witch model	D-M9NA(V) D-M9PA(V)	D-M9BA(V)
Lead	0.5 m (Nil)	8	7
	1 m (M)	14	13
length	3 m (L)	41	38
longui	5 m (Z)	68	63

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□A, D-M9	9□AV (W	ith indica	tor light)				
Auto switch model	D-M9NA	D-M9NAV	D-M9PA	D-M9PAV	D-M9BA	D-M9BAV	
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular	
Wiring type		3-w	/ire		2-wire		
Output type	NF	PN	PI	NΡ	_		
Applicable load		IC circuit, F		24 VDC relay, PLC			
Power supply voltage	5	5, 12, 24 VDC	_				
Current consumption		10 mA	or less		_		
Load voltage	28 VDC	or less	-	_	24 VDC (10	to 28 VDC)	
Load current		40 mA		2.5 to	40 mA		
Internal voltage drop	0.8 V or le	ess at 10 mA	(2 V or less	at 40 mA)	4 V o	r less	
Leakage current		100 μA or les	s at 24 VDC	;	0.8 mA	or less	
Indicator light			,	d LED illumin ······ Green LE		S.	
Standard			CE/UKC/	A marking			

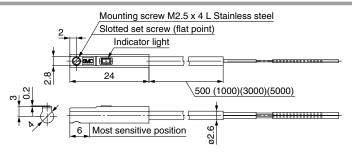
Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto sw	itch model	D-M9NA□	D-M9NAV□ I	D-M9PA□	D-M9PAV□	D-M9BA□	D-M9BAV□
Sheath	Outside diameter [mm]			ø2	2.6		
Insulator	Number of cores	3 c	ores (Brown	n/Blue/Bla	ck)	2 cores (Br	rown/Blue)
irisulator	Outside diameter [mm]			ø0.	.88		
Conductor	Effective area [mm²]			0.	15		
Conductor	Strand diameter [mm]			ø0.	.05		
Min. bendin	g radius [mm]			1	7		

- * Refer to page 1363 for solid state auto switch common specifications.
- * Refer to page 1363 for lead wire lengths.

Dimensions [mm]

D-M9□A



D-M9□AV

