

EC-S3

EC-DS3

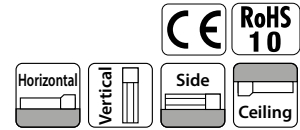
<With digital speed controller>

Simple
Dust-
proofStraight
MotorBody Width
40
mm**24v**
Stepper
Motor

■ Model Specification Items

EC

Series	Type	Lead	Stroke	Power / I/O cable length	Options
S3	Standard	H 6mm M 4mm L 2mm	50 ↓ 300 50mm ↓ 300mm (Every 50mm)	Refer to "Power / I/O Cable Length" below	Refer to "Options" below



(Note) The photos above are for motor installed on top (MOT).

■ Stroke					
Stroke (mm)	S3	DS3	Stroke (mm)	S3	DS3
50	○	○	200	○	○
100	○	○	250	○	○
150	○	○	300	○	○

■ Options * Please check the Options reference pages to confirm each option.		
Name	Option code	Reference page
RCON-EC connection specification (Note 1)	ACR	2-373
Brake	B	2-373
Foot bracket	FT	2-377
Specified grease specification	G1/G5	2-381
Motor mounting direction changed (bottom) (Note 2)	MOB	2-381
Motor mounting direction changed (left) (Note 2)	MOL	2-381
Motor mounting direction changed (right) (Note 2)	MOR	2-381
Motor mounting direction changed (up) (Note 2)	MOT	2-381
Non-motor end specification	NM	2-384
PNP specification	PN	2-384
Slider part roller specification	SR	2-386
split motor and controller power supply specification	TMD2	2-387
Battery-less absolute encoder specification	WA	2-388
Wireless communication specification	WL	2-388
Wireless axis operation specification	WL2	2-388

(Note 1) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected.
 (Note 2) Be sure to enter a code in the "Options" field in "Model Specification Items."

POINT
Selection
Notes

- (1) The actuator specifications display the payload's maximum value, but it will vary depending on the acceleration and speed. Please refer to "Table of Payload by Speed/Acceleration" for more details.
- (2) If performing push-motion operations, refer to the "Correlation between Torque and Current Limit" diagram. The torques listed are only reference values.
- (3) Pay close attention to the installation orientation.
- (4) Reference value of the overhang load length is under 100mm in the Ma, Mb, and Mc directions.
- (5) The center of gravity of the attached object should be less than 1/2 of the overhang distance. Even when the overhang distance and load moment are within the allowable range, the operating conditions should be moderated if some abnormal vibration or noise is observed.

■ Power / I/O Cable Length

■ Standard connector cables

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 4) (with connectors on both ends)
		CB-EC-PWBIO□□□-RB supplied	CB-REC-PWBIO□□□-RB supplied
0	No cable	○ (Note 3)	○
1 ~ 3	1 ~ 3m	○	○
4 ~ 5	4 ~ 5m	○	○
6 ~ 7	6 ~ 7m	○	○
8 ~ 10	8 ~ 10m	○	○

(Note 3) Only terminal block connector is supplied. Please refer to P. 2-394 for details.
 (Note 4) If RCON-EC connection specification (ACR) is selected as an option.
 (Note) The robot cable is standard.

■ Four-way connector cables

Cable code	Cable length	User wiring specification (flying leads)	RCON-EC connection specification (Note 5) (with connectors on both ends)
		CB-EC2-PWBIO□□□-RB supplied	CB-REC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	○	○
S4 ~ S5	4 ~ 5m	○	○
S6 ~ S7	6 ~ 7m	○	○
S8 ~ S10	8 ~ 10m	○	○

(Note 5) If RCON-EC connection specification (ACR) is selected as an option.
 (Note) The robot cable is standard.

Main Specifications

		Item	Description		
Lead		Ball screw lead (mm)	6	4	2
Horizontal	Payload	Max. payload (kg)	3.5	6	9
	Speed / acceleration/ deceleration	Max. speed (mm/s)	420	280	140
		Min. speed (mm/s)	8	5	3
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.5	0.3	0.3
Vertical	Payload	Max. payload (kg)	1.5	2.5	3.5
	Speed / acceleration/ deceleration	Max. speed (mm/s)	420	280	140
		Min. speed (mm/s)	8	5	3
		Rated acceleration/deceleration (G)	0.3	0.3	0.3
		Max. acceleration/deceleration (G)	0.3	0.3	0.3
Push		Max. push force (N)	45	68	136
		Max. push speed (mm/s)	20	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake		
		Brake holding force (kgf)	1.5	2.5	3.5
Stroke		Min. stroke (mm)	50	50	50
		Max. stroke (mm)	300	300	300
		Stroke pitch (mm)	50	50	50

Item	Description
Driving system	Ball screw $\phi 6$ mm rolled C10
Positioning repeatability	± 0.05 mm
Lost motion	- (two-point positioning function; cannot be represented)
Base	Dedicated aluminum extruded material (A6063SS-T5 equivalent), black alumite treatment
Linear guide	Linear motion infinite circulating type
Static allowable moment	Ma: 9.5N-m
	Mb: 13.5N-m
	Mc: 15.1N-m
Dynamic allowable moment (Note 6)	Ma: 3.8N-m
	Mb: 5.4N-m
	Mc: 6.1N-m
Ambient operating temperature/humidity	0~40°C, 85% RH or less (Non-condensing)
Degree of protection	IP20
Vibration & shock resistance	4.9m/s ²
Overseas standards	CE marking, RoHS directive
Motor type	Stepper motor ($\square 28$)
Encoder Type	Incremental/battery-less absolute
Number of encoder pulses	800 pulse/rev

(Note 6) Based on the standard rated operation life of 5,000km. Operation life varies according to operating and mounting conditions.

Slider type moment direction

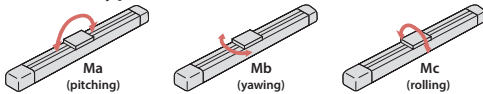


Table of Payload by Speed/Acceleration

The unit for payload is kg.

Lead 6

Orientation Speed (mm/s)	Horizontal Acceleration (G)			Vertical Acceleration (G)
	0.3	0.5	0.3	
0	3.5	3	1.5	
120	3.5	3	1.5	
210	3.5	3	1.5	
255	3.5	3	1.5	
315	3.5	3	1.5	
360	3.5	3	1.5	
420	3	2.5	1	

Lead 4

Orientation Speed (mm/s)	Horizontal Acceleration (G)		Vertical Acceleration (G)
	0.3	0.3	
0	6	2.5	
80	6	2.5	
140	6	2.5	
170	6	2.5	
210	6	2.5	
240	5.5	2.5	
280	4.5	2	

Lead 2

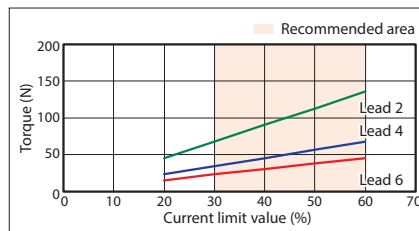
Orientation Speed (mm/s)	Horizontal Acceleration (G)		Vertical Acceleration (G)
	0.3	0.3	
0	9	3.5	
40	9	3.5	
70	9	3.5	
85	9	3.5	
105	9	3.5	
120	9	3	
140	8	2.5	

Stroke and Max Speed

Lead (mm)	50~150 (Every 50mm)	200 (mm)	250 (mm)	300 (mm)
6	420	300	210	150
4	280	200	140	100
2	140	100	70	50

(Unit: mm/s)

Correlation between Torque and Current Limit



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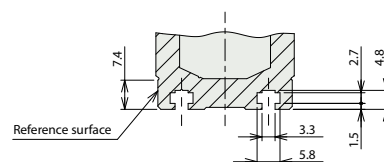
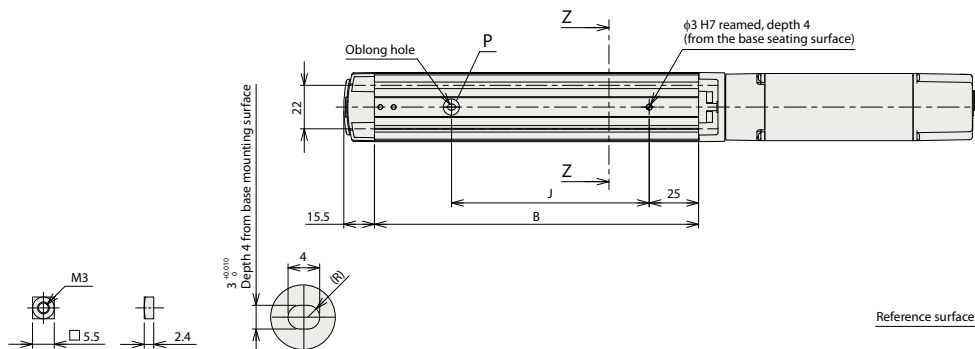
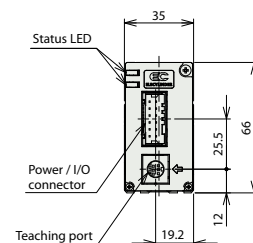
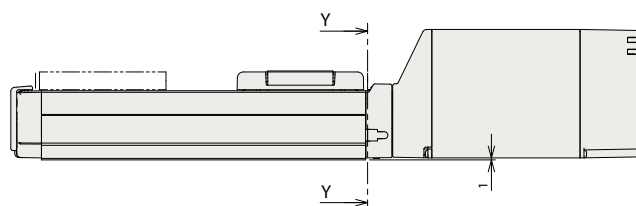
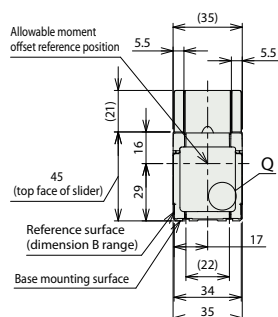
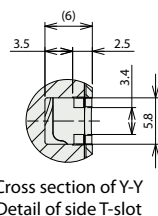
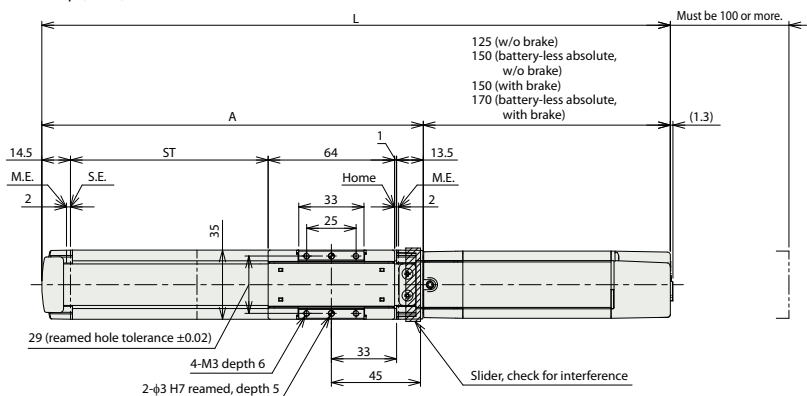
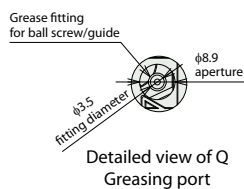
Dust-and splash-proof

Option

■ EC-S3

(Note) The figures below are for motor installed on top (MOT).

ST: Stroke
M.E: Mechanical end
S.E: Stroke end



Supplied square nut
(6 pieces supplied)

Detailed view of P
Details of base oblong hole

Cross section of Z-Z
Details of T-slot (dimension B range)

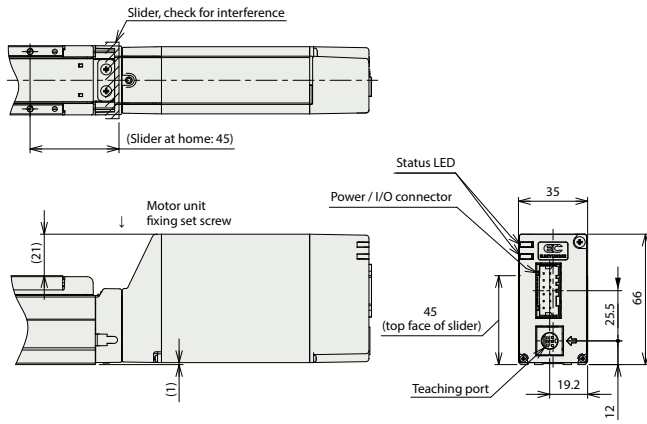
■ Dimensions by stroke

Stroke			50	100	150	200	250	300
L	Incremental	Without brake	268	318	368	418	468	518
		With brake	293	343	393	443	493	543
	Battery-less absolute	Without brake	293	343	393	443	493	543
		With brake	313	363	413	463	513	563
A			143	193	243	293	343	393
B			114	164	214	264	314	364
J			50	100	150	200	250	300

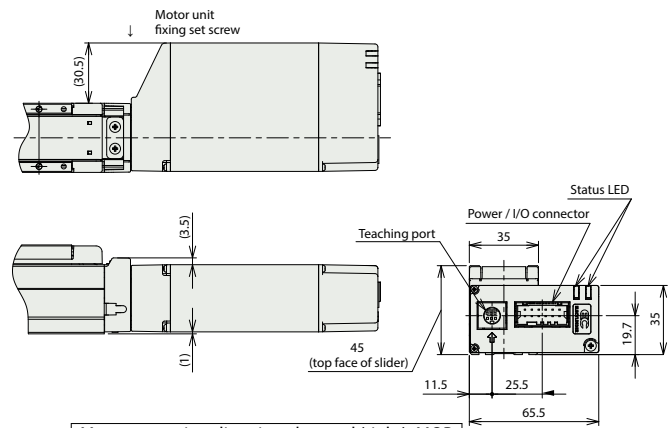
■ **Mass by stroke**

Stroke		50	100	150	200	250	300
Mass (kg)	Without brake	0.7	0.8	0.9	1.0	1.1	1.2
	With brake	0.8	0.9	1.0	1.1	1.2	1.3

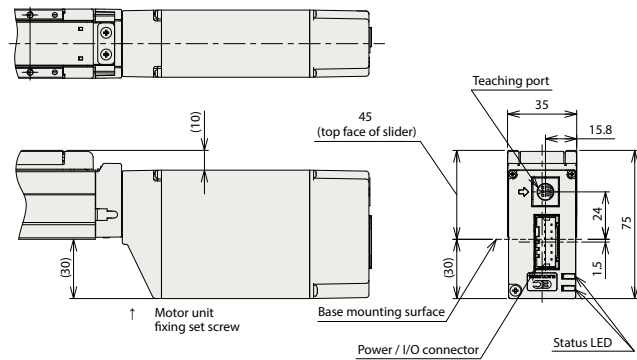
■ Motor mounting direction changed (option)



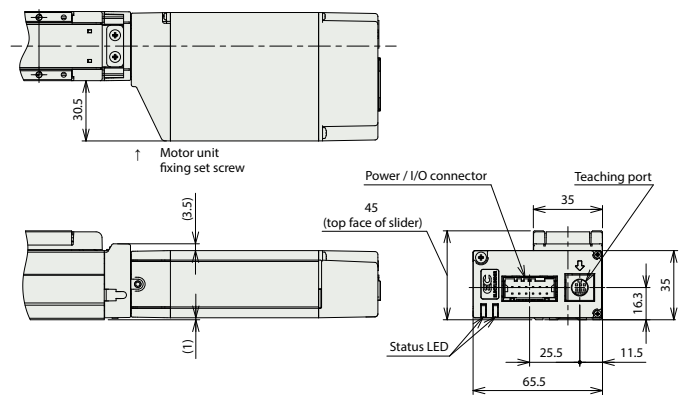
Motor mounting direction changed (up): MOT



Motor mounting direction changed (right): MOR



Motor mounting direction changed (bottom): MOB



Motor mounting direction changed (left): MOL

Ten great features

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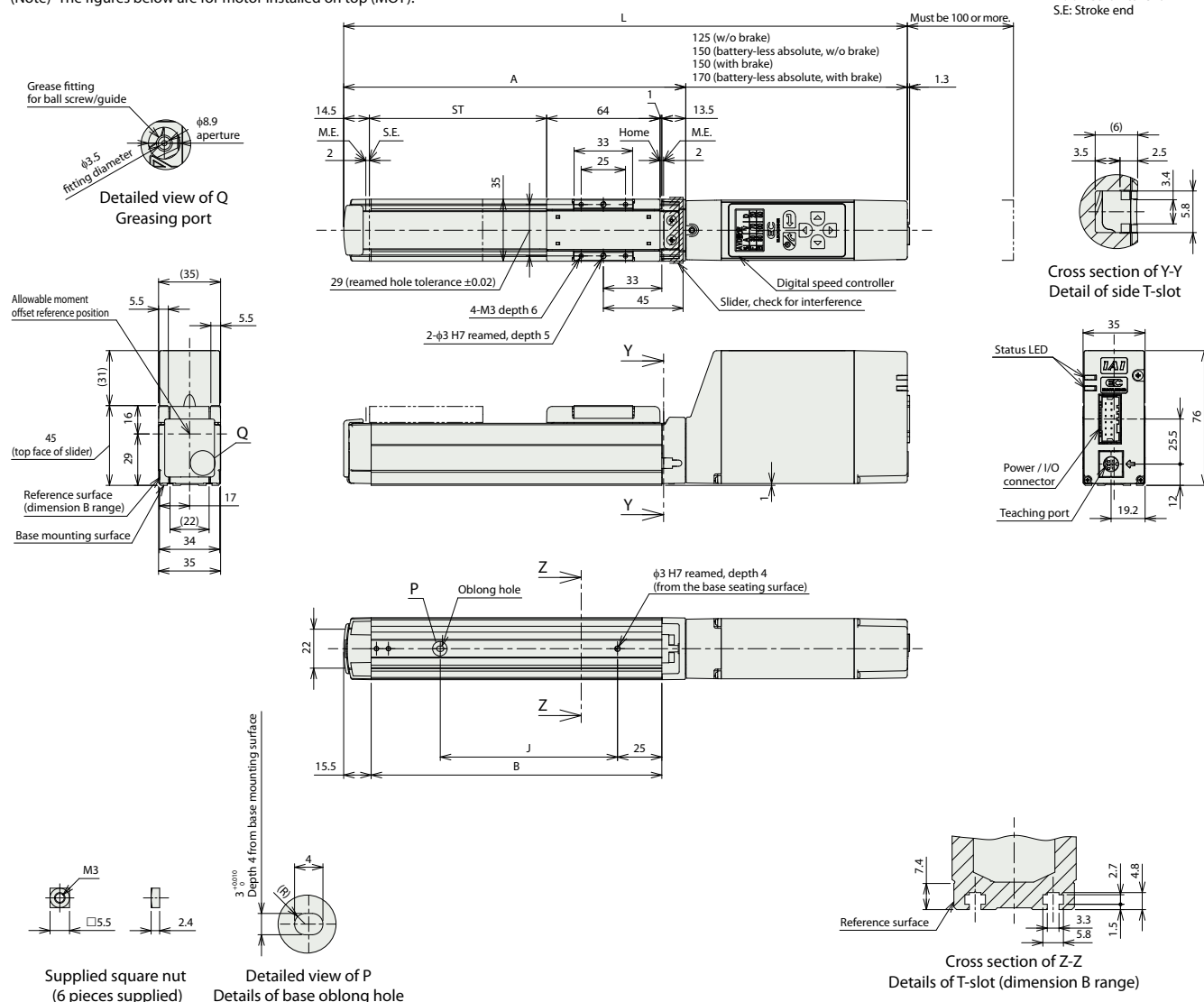
Dust-and splash-proof

Option

■ EC-DS3 <with digital speed controller>

(Note) When the slider is returning to its home position, please be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
 (Note) The figures below are for motor installed on top (MOT).

ST: Stroke
 M.E: Mechanical end
 S.E: Stroke end



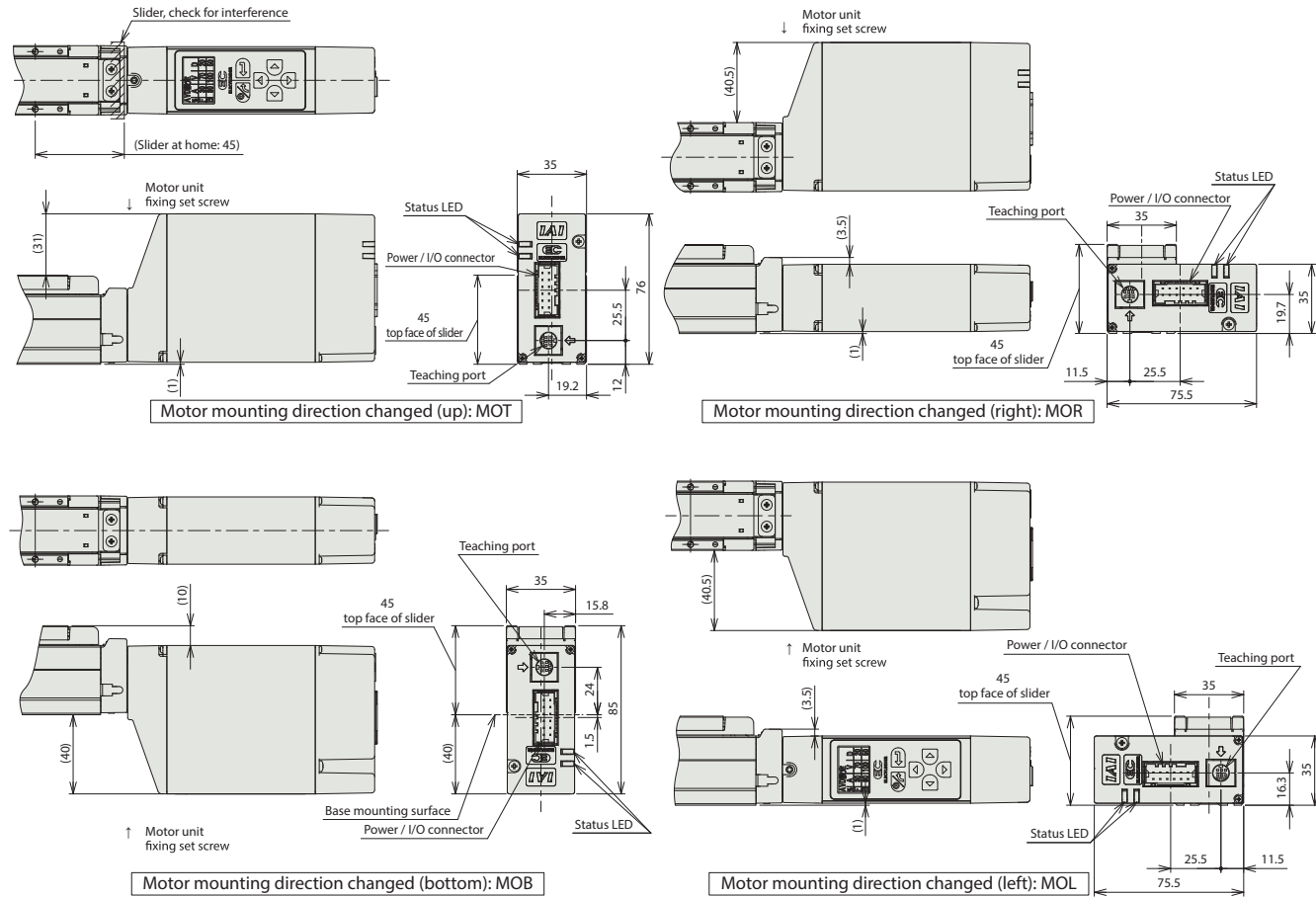
■ Dimensions by stroke

Stroke			50	100	150	200	250	300
L	Incremental	Without brake	268	318	368	418	468	518
		With brake	293	343	393	443	493	543
	Battery-less absolute	Without brake	293	343	393	443	493	543
		With brake	313	363	413	463	513	563
A			143	193	243	293	343	393
B			114	164	214	264	314	364
J			50	100	150	200	250	300

■ Mass by stroke

Stroke		50	100	150	200	250	300
Mass (kg)	Without brake	0.8	0.9	1.0	1.1	1.2	1.3
	With brake	0.9	1.0	1.1	1.2	1.3	1.4

Motor mounting direction changed (option)



Applicable Controllers

(Note) The EC series is equipped with a built-in controller. Please refer to P. 2-391 for details on built-in controllers.

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