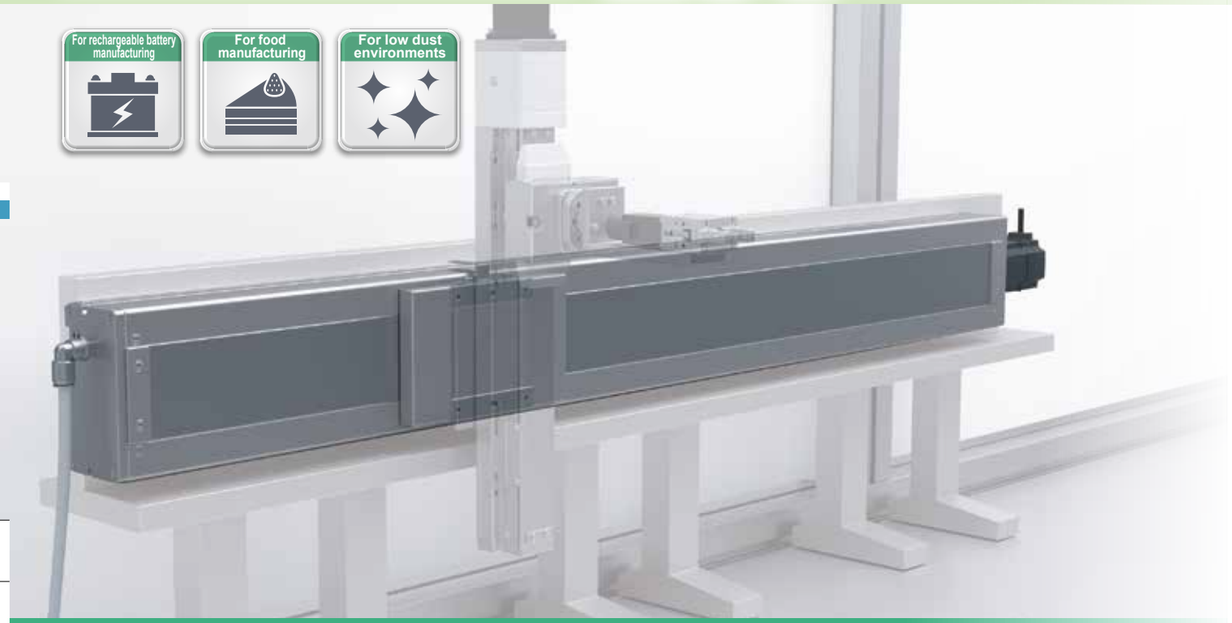
ECS

Slider Type
(Ball Screw Drive, Low Particle Emission Specification)

Electric Actuator
Stepping Motor
Motorless Specification

CONTENTS

ECS Series



For High-Load Transport (Low Particle Emission Model)

Line-up	Body Size / Motor size	14 □56	14 □60	Catalog page
Low dust specification **ECS**		●	●	566
Supports low dust specifications and rechargeable battery manufacturing processes **ECS-P4**		●	●	CC-1226AA
Low dust specifications / compatible with food manufacturing processes **ECS-FP1**		●	●	CC-1271AA

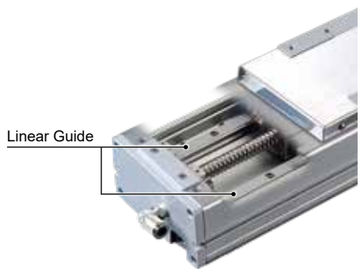
List of supported motor manufacturers * Refer to each model page for the compatible model and capacity

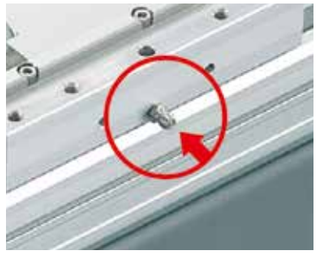
Stepping Motor

Oriental Motor Co., Ltd. MinebeaMitsumi Incorporated Dyadic Systems Co., Ltd.

Supports high-load transfer

It has a high-rigidity structure with two built-in linear guides to firmly support the load. A grease nipple is equipped on the side of the actuator. It is possible to grease the ball screw and guide all at once from the outside without disassembling the main body. Significantly reduces maintenance man-hours.

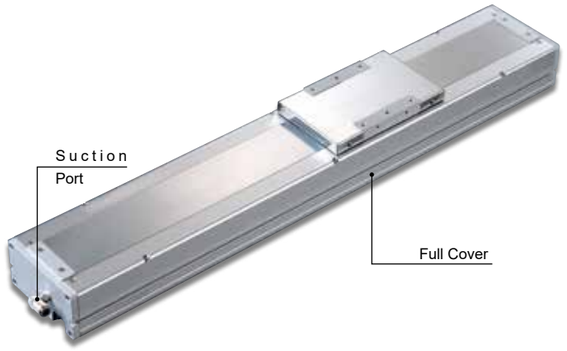


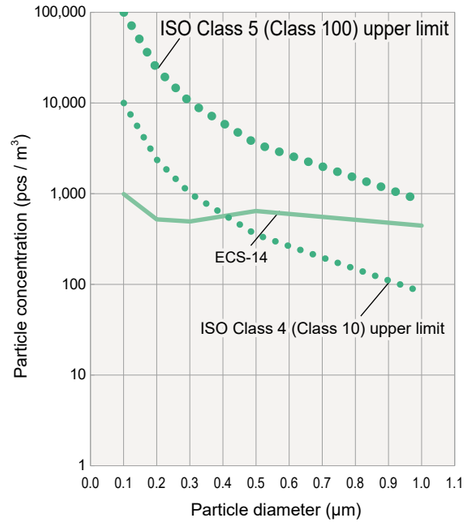


*Select by model No.

Low Particle Emission Structure

The actuator body has a full cover with few gaps, and dust is exhausted outside through a suction port. Ideal for liquid crystal panel production lines and food lines.



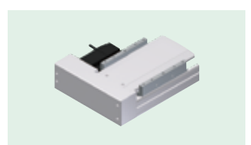


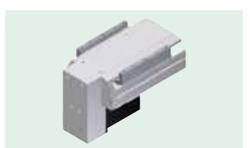
* Please refer to the catalog text for data acquisition conditions. This is not a guaranteed value.

Motor fold-back variations

We have prepared a total of 4 motor fold-back variations that can be selected according to the equipment.


Straight Mounting


Right Side Return Mount


Bottom Side Return Mount


Left Side Fold-back Mounting

System Table

Type	Model No.		Applicable Motor Size	Body Width (mm)	Screw Lead (mm)	Max. Payload (kg) *2 Horizontal *1	Max. Payload (kg) *2 Vertical	Stroke (mm) and Max. Speed (mm/s) *3	Page
Low Particle Emission Type		ECS-14	□56 □60	135	5	110	33	50 mm: 250 (1.40 sec / *4 2.60 sec); 100: 225 (*4 5.34 sec); 150: 200 (*4 5.34 sec); 200: 175 (*4 5.34 sec); 250: 150 (*4 5.34 sec); 300: 125 (*4 8.60 sec)	570
					10	88	22	50 mm: 500 (0.80 sec / 1.40 sec); 100: 450 (2.77 sec); 150: 400 (2.77 sec); 200: 350 (2.77 sec); 250: 300 (2.77 sec); 300: 250 (4.40 sec)	
					16	48	10	50 mm: 800 (0.58 sec / 0.95 sec); 100: 720 (1.75 sec); 150: 640 (1.75 sec); 200: 560 (1.75 sec); 250: 480 (1.75 sec); 300: 400 (2.83 sec)	
					20	40	8	50 mm: 1000 (0.50 sec / 0.80 sec); 100: 900 (1.49 sec); 150: 800 (1.49 sec); 200: 700 (1.49 sec); 250: 600 (1.49 sec); 300: 500 (2.30 sec)	

*1 The payload when wall mounted is the same as for horizontal installation.
*2 The rated thrust and maximum payload values are the allowable values for the actuator body. The actual thrust and payload may be limited by the motor used by the customer.
*3 The maximum speed is based on the assumption that the customer-mounted motor can output a rotational speed of 3000 rpm. The max. speed is restricted by the stroke. Do not operate at speeds exceeding the limit.
*4 ⏱ shows the Positioning time. This is the case when a specific stroke is operated under horizontal installation, at max. speed, and max. acceleration/deceleration. Please note that this is not the value at max. payload.

Model Number Configuration

Model No. Notation Method

ECS - 14 - 05 040 - E A C N C B N P

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

❶ Body Size

14	Body width 135 mm

❷ Screw Lead

05	5 mm
10	10 mm
16	16 mm
20	20 mm

❸ Stroke

005 to 105	50 mm (every 50 mm) 1050 mm

❹ Motor mounting direction *1

E	Straight Mounting
R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left Side Fold-back Mounting

❺ Mounting Motor Specifications

A, B, C	Refer to the list on the page at right

❻ Motor Size

B	□56
C	□60

❼ Origin sensor (1 pc) *1

N	None
A	Inside, motor side
B	Inside, opposite motor side
C	Outside, motor side (Shipped included)
D	Outside, opposite motor side (Shipped included)

❽ Limit sensor (2 pcs) *2

N	None
A	Inside
B	Outside

❾ Grease nipple

N	None (Body mounting direction: Standard)
R	Right direction
L	Left direction

❿ Positioning pin hole

N	None
P	Yes

*1 Sensor dogs are assembled at shipment regardless of the presence of the sensor.

Screw Lead / Stroke Compatibility Table by Body Size

❶ Body Size	❷ Screw Lead	❸ Stroke
14	05	005 to 105
	10	
	16	
	20	

Model Number Display Example

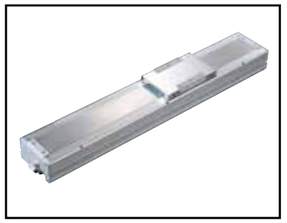
ECS-14-05040-EACNCBNP

❶ Body Size : 14 Series
❷ Screw lead : 5 mm
❸ Stroke : 400 mm
❹ Motor Mounting Direction : Straight Mounting
❺ Mounting motor specification : A (Refer to the table on the page at right)
❻ Motor Size : □60
❼ Origin sensor : Outside motor side
❽ Limit sensor : Outside
❾ Grease nipple : None (Body mounting direction: Standard)
❿ Locating pin hole : Yes

*This product is available only for the actuator (and motor mounting part) and does not include a motor. The motor and driver should be prepared, mounted, and adjusted by the customer.

Recommended Stepping Motor List

Code	Manufacturer name	Series	56□	□60
A	Oriental Motor Co., Ltd.	AZ	-	AZM66□0□ AZM69□0□
		AR	-	ARM66□0□ ARM69□0□
B	MinebeaMitsumi Incorporated	A17 PM/A23 KM	A23 KM□□□□CSTBCN	-
C	Dyadic Systems Co., Ltd.	RMJ	RMJ0611, RMJ1211	-



Electric Actuator Ball Screw Drive Slider Type Low Particle Emission Specification

ECS-14 Series

Inline Motor Mount Type

● Stepping motor size : □56, □60

Model No. Notation Method

ECS - 14 - 05 - 040 - E A B N N N N P

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

❶ Body Size

14	Body width 135 mm

❷ Screw Lead

05	5 mm
10	10 mm
16	16 mm
20	20 mm

❸ Stroke

005 to 105	50 mm (every 50 mm) 1050 mm

❹ Motor Mounting Direction

E	Straight Mounting

❺ Mounting Motor Specifications

A B C	Select the mounting motor specification from the table below.

❻ Motor Size

B	□56
C	□60

❼ Origin sensor (1 pc) *1, *2, *3

N	None
A	Inside, motor side
B	Inside, opposite motor side
C	Outside, motor side
D	Outside, opposite motor side

❽ limit sensors (2 pcs) *1, *2, *3

N	None
A	Inside
B	Outside

❾ Grease nipple *3, *4

N	None (Body mounting direction: Standard)
R	Right direction
L	Left direction

❿ Positioning pin hole

N	None
P	Yes

*1 The home sensor and limit sensor are a set. If either is "None," please select "None" for the other as well.
*2 If the sensor is mounted on the inside, the position cannot be adjusted by the customer. (Shipped attached)
If the sensor is mounted on the outside, the position can be adjusted by the customer. (Shipped included)
*3 If you wish to use the home sensor, limit sensor, and grease nipple in the same direction, please contact us.
*4 Here, "Body mounting direction: Standard means mounting from the bottom.

Manufacturer	□56	□60
Oriental Motor Co., Ltd.	-	A
MinebeaMitsumi Incorporated	B	-
Dyadic Systems Co., Ltd.	C	-

* Refer to P. 569 for motor model No.

Specifications

Applicable Motor Size		□56, □60 Stepping Motor			
Drive Method		Ball screw ø16			
Ball Screw Accuracy Grade		C7			
Stroke	mm	50 to 1050			
Screw lead	mm	5	10	16	20
Max. Payload *1	Horizontal kg	110	88	48	40
	Vertical kg	33	22	10	8
Max. Speed	mm/s	250	500	800	1000
Rated thrust *1	N	1388	694	433	347
Repeatability	mm	±0.01			
Lost Motion	mm	0.1 or less			
Drive part mass	kg	1.6			
Other inertia	kg·cm²	0.074			
Coefficient of friction		0.05			
Mechanical efficiency		0.8			
Ball screw length		Stroke + 200			
Dynamic allowable load	N	6567			
Static Allowable Moment	N·m	MP: 552 MY: 551 MR: 485			
Dynamic allowable moment	N·m	MP: 262.7 MY: 262.7 MR: 261.0			
Operating ambient temperature, humidity		0 to 40°C (no freezing) 35 to 80%RH (no condensation)			
Storage Ambient Temperature, Humidity		-10 to 50°C (no freezing) 35 to 80%RH (no condensation)			
Atmosphere		No corrosive gas, explosive gas, or dust			

*1 The rated thrust and maximum payload values are the allowable values for the actuator body. The actual thrust and payload may be limited by the motor used by the customer.

Stroke and Max. Speed

(mm/s)

Screw Lead \ Stroke	100 to 750	800	850	900	950	1050
5	250	225	200	175	150	125
10	500	450	400	350	300	250
16	800	720	640	560	480	400
20	1000	900	800	700	600	500

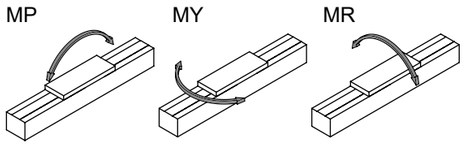
* The max. speed is the speed when the motor mounted by the customer can output a rotation speed of 3000 rpm. The max. speed is restricted by the stroke. Do not operate at speeds exceeding the limit.

Allowable Overhang Length

* Refer to P. 578 for details.

Moment Direction

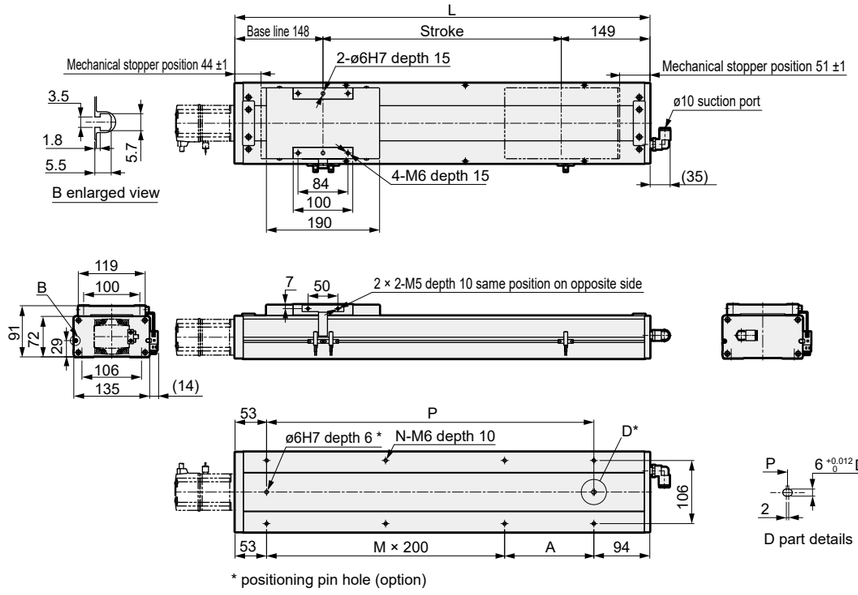
MP MY MR



External Dimension Drawing Motor Straight Mounting

● ECS-14-□□□□□-E

● Refer to P. 581 for grease nipple dimensions.

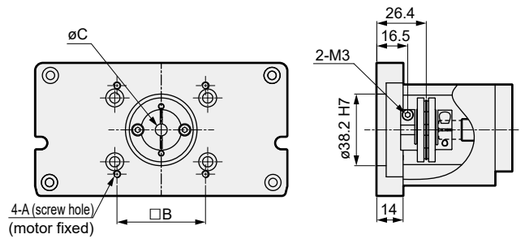


* positioning pin hole (option)

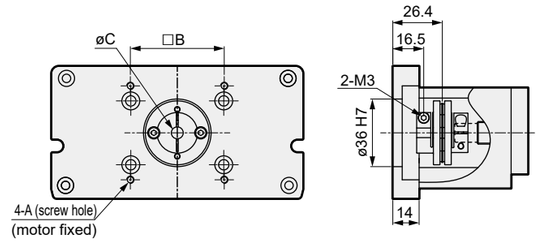
Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	347	397	447	497	547	597	647	697	747	797	847	897	947	997	1047	1097	1147	1197	1247	1297	1347
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Weight (kg)	10.5	11.1	11.7	12.3	12.9	13.5	14.1	14.7	15.3	15.9	16.5	17.1	17.7	18.3	18.9	19.5	20.1	20.7	21.3	21.9	22.5

Motor Mounting Part

● ECS-14-E (□56)



● ECS-14-E (□60)



Mounting Motor Specification		A	B	C	Motor mounting bolt
A	□60	M4 Depth 14	50	10	4-M4 x L16
B	□56	M4 Depth 14	47.14	6.35	4-M4 x L16
C	□56	M4 Depth 14	47.14	8	4-M4 x L16

List of Accessories

[Motor Mounting Parts]

Mounting Motor Specification	Coupling	Fitting	Motor Size	Motor mounting bolts	
				Size	Quantity
A	Shipped attached	Shipped included	□56 □60	M4	4
B				M4	4
C				M4	4

* For fitting details, please refer to P. 582.

[Home Sensor / Limit Sensor]

Manufacturer	Model	Quantity
OMRON	EE-SX672	3

* For sensor specifications, please refer to P. 580.

Electric Actuator Ball Screw Drive Slider Type Low Particle Emission Specification

ECS-14 Series

Reverse Parallel Motor Mount Type

● Stepping motor size : □56, □60

Model No. Notation Method

ECS - 14 - 05 - 050 - R A B N N N N P

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

❶ Body Size	
14	Body width 135 mm

❷ Screw Lead	
05	5 mm
10	10 mm
16	16 mm
20	20 mm

❸ Stroke	
005 to 105	50 mm (every 50 mm) 1050 mm

❹ Motor mounting direction*5	
R	Right Side Return Mount
D	Bottom Side Return Mount
L	Left Side Fold-back Mounting

❺ Mounting Motor Specifications	
A	Select the mounting motor specification from the table below.
B	
C	

❻ Motor Size	
B	□56
C	□60

❼ Origin sensor (1 pc)*1, *2, *3	
N	None
A	Inside, motor side
B	Inside, opposite motor side
C	Outside, motor side
D	Outside, opposite motor side

❽ limit sensors (2 pcs) *1, *2, *3	
N	None
A	Inside
B	Outside

❾ Grease nipple *3, *4, *5	
N	None (Body mounting direction: Standard)
R	Right direction
L	Left direction

❿ Positioning pin hole	
N	None
P	Yes

*1 The home sensor and limit sensor are a set. If either is "None," please select "None" for the other as well.
*2 If the sensor is mounted on the inside, the position cannot be adjusted by the customer. (Shipped attached) If the sensor is mounted on the outside, the position can be adjusted by the customer. (Shipped included)
*3 If you wish to use the home sensor, limit sensor, and grease nipple in the same direction, please contact us.
*4 Here, "Body mounting direction: Standard means mounting from the bottom.
*5 If "R" is selected for the motor mounting direction, "R" cannot be selected for the grease nipple. If "L" is selected, "L" cannot be selected for the grease nipple.

Manufacturer	□56	□60
Oriental Motor Co., Ltd.	-	A
MinebeaMitsumi Incorporated	B	-
Dyadic Systems Co., Ltd.	C	-

* Refer to P. 569 for motor model No.

Specifications

Applicable Motor Size		□56, □60 Stepping Motor			
Drive Method		Ball screw ø16			
Ball Screw Accuracy Grade		C7			
Stroke	mm	50 to 1050			
Screw lead	mm	5	10	16	20
Max. Payload *1	Horizontal kg	110	88	48	40
	Vertical kg	33	22	10	8
Max. Speed	mm/s	250	500	800	1000
Rated thrust *1	N	1388	694	433	347
Repeatability	mm	±0.01			
Lost Motion	mm	0.1 or less			
Drive part mass	kg	1.6			
Other inertia	kg·cm²	0.870			
Coefficient of friction		0.05			
Mechanical efficiency		0.8			
Ball screw length		Stroke + 200			
Dynamic allowable load	N	6567			
Static Allowable Moment	N·m	MP : 552 MY : 551 MR : 485			
Dynamic allowable moment	N·m	MP : 262.7 MY : 262.7 MR : 261.0			
Operating ambient temperature, humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage Ambient Temperature, Humidity		-10 to 50°C (No freezing) 35 to 80% RH (no condensation)			
Atmosphere		No corrosive gas, explosive gas, or dust			

*1 The rated thrust and maximum payload values are the allowable values for the actuator body. The actual thrust and payload may be limited by the motor used by the customer.

Stroke and Max. Speed

(mm/s)

Screw Lead \ Stroke	100 to 750	800	850	900	950	1050
5	250	225	200	175	150	125
10	500	450	400	350	300	250
16	800	720	640	560	480	400
20	1000	900	800	700	600	500

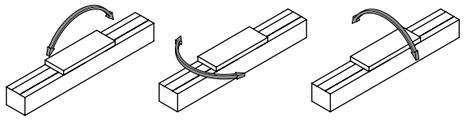
* The max. speed is the speed when the motor mounted by the customer can output a rotation speed of 3000 rpm. The max. speed is restricted by the stroke. Do not operate at speeds exceeding the limit.

Allowable Overhang Length

* Refer to P. 578 for details.

Moment Direction

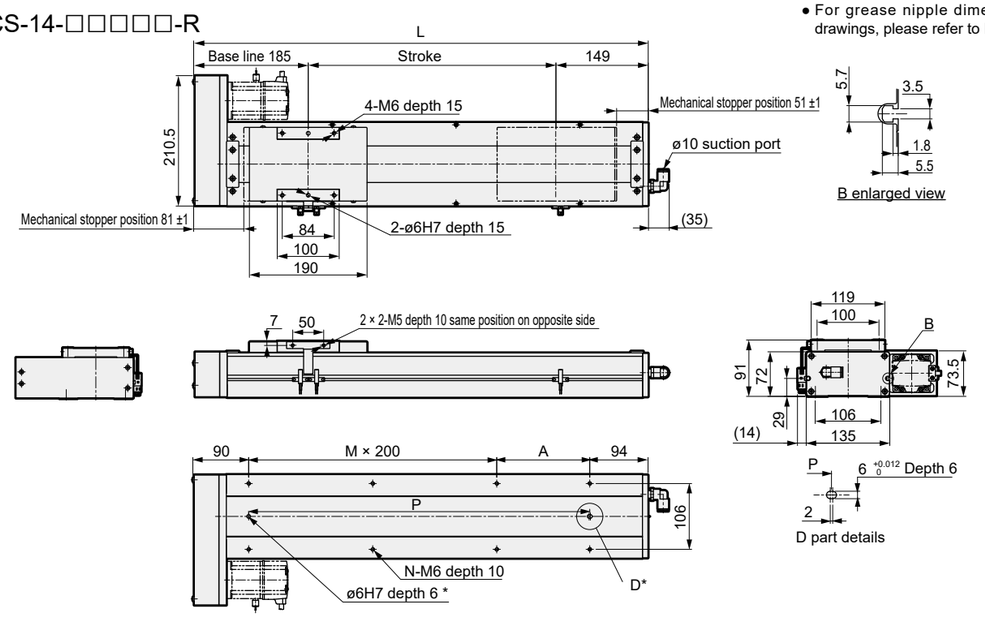
MP MY MR



External Dimension Drawing Motor Right Side Fold-back Mounting

● ECS-14-□□□□□-R

• For grease nipple dimension drawings, please refer to P. 581.

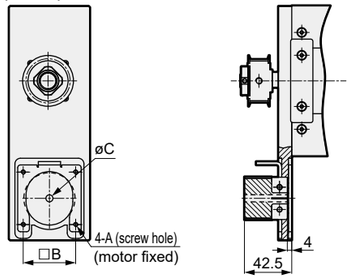


* positioning pin hole (option)

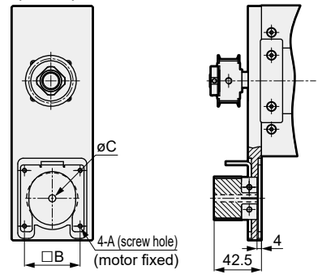
Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	384	434	484	534	584	634	684	734	784	834	884	934	984	1034	1084	1134	1184	1234	1284	1334	1384
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Weight (kg)	11.0	11.6	12.2	12.8	13.4	14.0	14.7	15.3	15.9	16.5	17.1	17.8	18.4	19.0	19.6	20.2	20.9	21.5	22.1	22.7	23.3

Motor Mounting Part

● ECS-14-R (□56)



● ECS-14-R (□60)



Mounting Motor Specification		A	B	C	Motor mounting bolt
A	□60	M4	50	10	4-M4 x L20
B	□56	M4	47.14	6.35	4-M4 x L20
C	□56	M4	47.14	8	4-M4 x L20

List of Accessories

[Motor Mounting Parts]

Mounting Motor Specification	Timing belt, pulley	Fitting	Motor Size	Motor mounting bolts Size	Quantity
A	Shipped included	Shipped included	□56 □60	M4	4
B				M4	4
C				M4	4

* For fitting details, please refer to P. 582.

[Home Sensor / Limit Sensor]

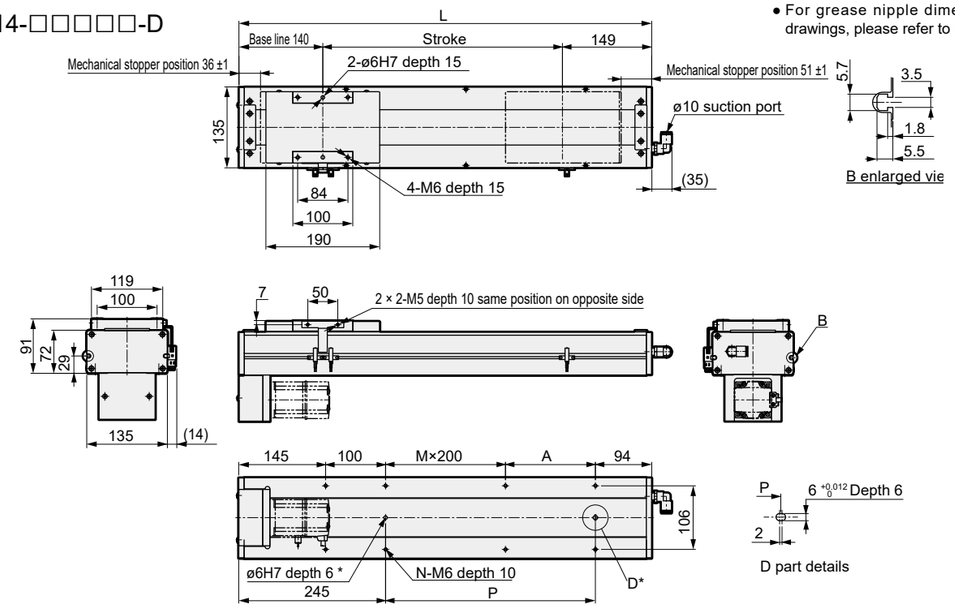
Manufacturer	Model	Quantity
OMRON	EE-SX672	3

* For sensor specifications, please refer to P. 580.

External Dimension Drawing Motor Bottom Side Fold-back Mounting

●ECS-14-□□□□□-D

• For grease nipple dimension drawings, please refer to P. 581.

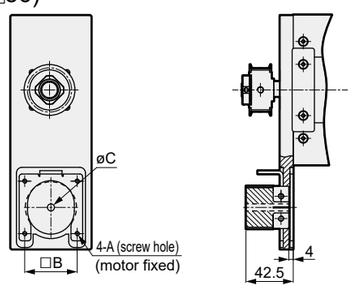


* positioning pin hole (option) The only positioning pin hole on stroke 50 is a round hole.

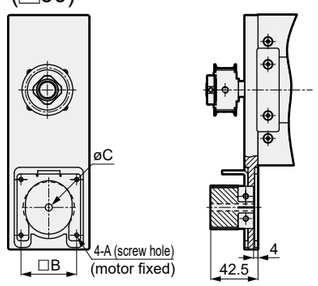
Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	339	389	439	489	539	589	639	689	739	789	839	889	939	989	1039	1089	1139	1189	1239	1289	1339
A	0	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
P	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Weight (kg)	11.0	11.6	12.2	12.8	13.4	14.0	14.7	15.3	15.9	16.5	17.1	17.8	18.4	19.0	19.6	20.2	20.9	21.5	22.1	22.7	23.3

Motor Mounting Part

● ECS-14-D (□56)



● ECS-14-D (□60)



Mounting Motor Specification		A	B	C	Motor mounting bolt
A	□60	M4	50	10	4-M4 x L20
B	□56	M4	47.14	6.35	4-M4 x L20
C	□56	M4	47.14	8	4-M4 x L20

List of Accessories

[Motor Mounting Parts]

Mounting Motor Specification	Timing belt, pulley	Fitting	Motor Size	Motor mounting bolts	
				Size	Quantity
A	Shipped included	Shipped included	□56 □60	M4	4
B				M4	4
C				M4	4

* For fitting details, please refer to P. 582.

[Home Sensor / Limit Sensor]

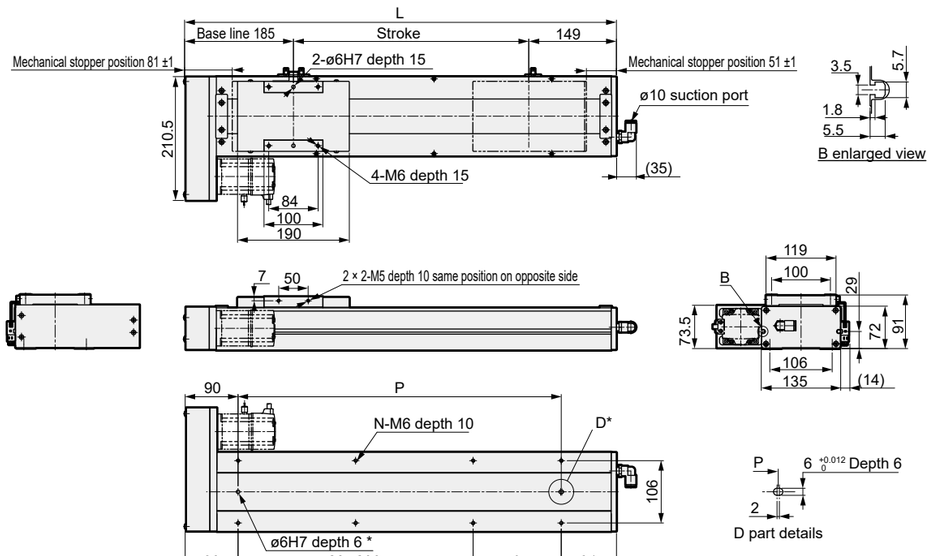
Manufacturer	Model	Quantity
OMRON	EE-SX672	3

* For sensor specifications, please refer to P. 580.

External Dimension Drawing Motor Left Side Fold-back Mounting

●ECS-14-□□□□□-L

• For grease nipple dimension drawings, please refer to P. 581.

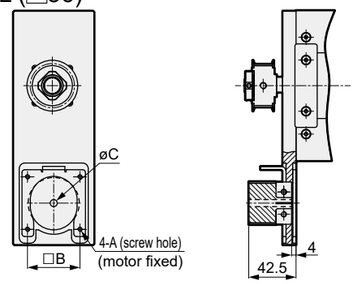


* positioning pin hole (option)

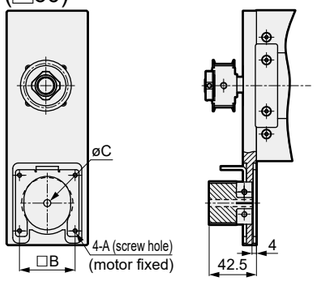
Stroke (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	384	434	484	534	584	634	684	734	784	834	884	934	984	1034	1084	1134	1184	1234	1284	1334	1384
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Weight (kg)	11.0	11.6	12.2	12.8	13.4	14.0	14.7	15.3	15.9	16.5	17.1	17.8	18.4	19.0	19.6	20.2	20.9	21.5	22.1	22.7	23.3

Motor Mounting Part

● ECS-14-L (□56)



● ECS-14-L (□60)



Mounting Motor Specification		A	B	C	Motor mounting bolt
A	□60	M4	50	10	4-M4 x L20
B	□56	M4	47.14	6.35	4-M4 x L20
C	□56	M4	47.14	8	4-M4 x L20

List of Accessories

[Motor Mounting Parts]

Mounting Motor Specification	Timing belt, pulley	Fitting	Motor Size	Motor mounting bolts	
				Size	Quantity
A	Shipped included	Shipped included	□56 □60	M4	4
B				M4	4
C				M4	4

* For fitting details, please refer to P. 582.

[Home Sensor / Limit Sensor]

Manufacturer	Model	Quantity
OMRON	EE-SX672	3

* For sensor specifications, please refer to P. 580.

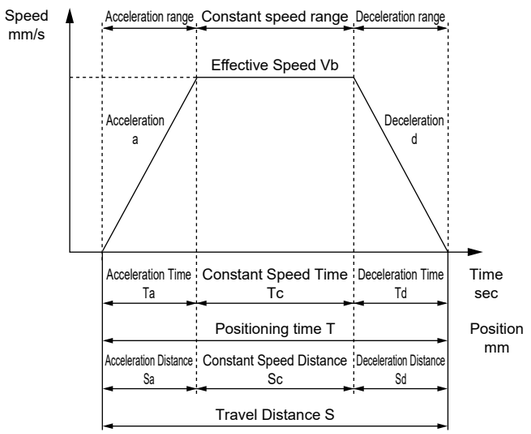
Model Selection

STEP-1 Confirmation of Payload

Payload varies depending on mounting orientation, screw lead, and motor performance. Select the size and screw lead by referring to the selection table (P. 566) and the specification table for each model. For motor performance, please contact each motor manufacturer. For motor selection, please use the actuator information (mechanical efficiency, etc.) provided in the specifications column.

STEP-2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time. Select the speed and acceleration/deceleration from the specification table for each model and the motor selected by the customer.



	Content	Code	Unit	Remarks
Setting Value	Set Speed	V	mm/s	
	Set Acceleration	a	mm/s^2	
	Set Deceleration	d	mm/s^2	
	Travel Distance	S	mm	
Calculated Value	Reached Speed	Vmax	mm/s	$= \{2 \times a \times d \times S / (a + d)\}^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	= Vb/a [0.2 sec or more]
	Deceleration Time	Td	s	= Vb/d [0.2 sec or more]
	Constant Speed Time	Tc	s	= Sc / Vb
	Acceleration Distance	Sa	mm	$= (a \times Ta^2) / 2$
	Deceleration Distance	Sd	mm	$= (d \times Td^2) / 2$
	Constant Speed Distance	Sc	mm	= S - (Sa + Sd)
	Positioning Time	T	s	= Ta + Tc + Td

* Do not use at speeds exceeding the specifications.
* Acceleration/deceleration setting by acceleration/deceleration time varies with set speed and stroke.
* Depending on the acceleration/deceleration and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Please use an acceleration/deceleration time of 0.2 sec or more.
* 1 G ≈ 9.8 m/s^2.
* The customer sets the speed and acceleration/deceleration from the selected motor. For selecting a motor and calculating speed and acceleration/deceleration, please use the actuator information (mechanical efficiency, etc.) provided in the specifications section.

STEP-3 Confirming Allowable Overhang Length

Confirm that the overhang length of the load during operation is within the allowable overhang length (P. 578).

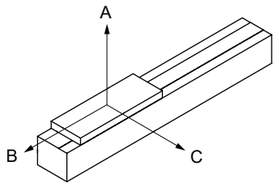
For details on selection, please contact our sales representative.

MEMO

Servo motor compatible
EBS
EBR
ETS
ECS
Ending

Allowable Overhang Length (ECS Series)

[Horizontal Installation]



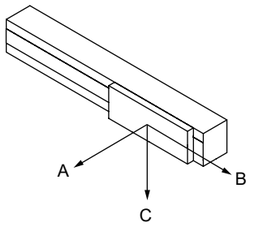
[Allowable Overhang Length]

●ECS-14

Motor Mounting	Acceleration/ Deceleration Time Sec	Screw Lead	Payload kg	Overhang mm		
				A	B	C
Straight · Fold-back	0.2	5	60	2300	250	240
			80	1600	180	170
			95	1150	145	140
		10	30	2000	500	450
			50	1400	280	250
			75	1000	170	160
		16	10	2200	1200	1000
			20	1600	600	500
			44	800	260	220
		20	10	2300	1200	1000
			20	1400	600	500
			35	1000	330	290

* The above values are the allowable values for the actuator body, and the actual payload may be limited by the motor used by the customer.
* When using in a ceiling-mounted configuration, select the maximum payload, dynamic allowable load, dynamic allowable moment, and overhang length as 1/3 of the specified values. Please use the overhang length to the load's center of gravity within each A, B, and C direction.

[When Wall-Mounted]



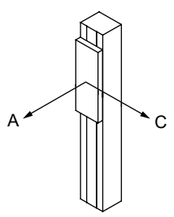
[Allowable Overhang Length]

●ECS-14

Motor Mounting	Acceleration/ Deceleration Time Sec	Screw Lead	Payload kg	Overhang mm		
				A	B	C
Straight · Fold-back	0.2	5	60	240	250	1600
			80	170	180	1200
			95	140	145	1050
		10	30	420	460	1500
			50	240	250	1000
			75	150	160	700
		16	10	1050	1200	2650
			20	500	620	1450
			44	230	270	800
		20	10	1000	1200	1900
			20	500	600	1000
			35	270	300	600

* The above values are the allowable values for the actuator body, and the actual payload may be limited by the motor used by the customer.
* When using in a ceiling-mounted configuration, select the maximum payload, dynamic allowable load, dynamic allowable moment, and overhang length as 1/3 of the specified values. Please use the overhang length to the load's center of gravity within each A, B, and C direction.

[Vertical Installation]



[Allowable Overhang Length]

●ECS-14

Motor Mounting	Acceleration/ Deceleration Time Sec	Screw Lead	Payload kg	Overhang mm	
				A	C
Straight · Fold-back	0.2	5	20	755	755
			25	605	605
			27	560	560
		10	10	1350	1350
			15	900	900
			18	750	750
		16	2	2400	2400
			4	1700	1700
			7	1300	1300
		20	6	1200	1200

* The above values are the allowable values for the actuator body, and the actual payload may be limited by the motor used by the customer.
* When using in a ceiling-mounted configuration, select the maximum payload, dynamic allowable load, dynamic allowable moment, and overhang length as 1/3 of the specified values. Please use the overhang length to the load's center of gravity within each A, B, and C direction.

MEMO

Servo motor compatible
EBS
EBR
ETS
ECS
Ending

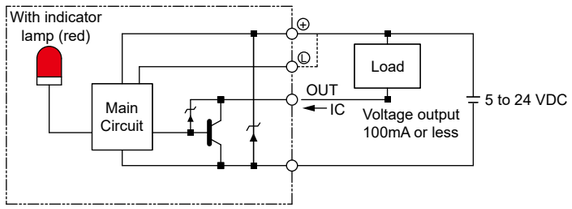
Home Sensor, Limit Sensor

	Manufacturer	Model
Outer mounting sensor	OMRON	EE-SX672
Inner mounting sensor	OMRON	EE-SX674

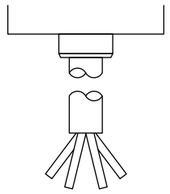
Performance

Item	Specifications
Hysteresis	0.025 mm or less
Light source (peak emission wavelength)	GaAs infrared emitting diode (940 nm)
Indicator Light	Lights up when light is received (red)
Power Supply Voltage	5 to 24 VDC ±10% Ripple (p-p) 10% or less
Current Consumption	35 mA or less (NPN type)
Control output	NPN type : NPN open collector output 5 to 24 VDC 100 mA or less Off-state current 0.5 mA or less, residual voltage 0.8 V or less (at load current 100 mA) Residual voltage: 0.4 V or less (with 40 mA load current)
Ambient illuminance	Illuminance at Light-Receiving Surface : Fluorescent Lamp : 1,000 lx or less
Ambient Temperature Range	Operating : -25 to +55°C Storage : -30 to +80°C (however, no freezing or condensation)
Ambient humidity range	Operating : 5 to 85 %RH Storage : 5 to 95 %RH (however, no freezing or condensation)
Enclosure	IP50 IEC60529 standard
Cord length	2 m (Connector with cord (EE-1006 2 M))

Output circuit



Wiring Diagram



Terminal arrangement

Brown	5 to 24 VDC
Pink	L
Blue	0 V
Black	OUTPUT

Sensor Dog Dimension Drawing

E/D	Motor Mounting Direction			
	R		L	
	Without grease nipple	With grease nipple	Without grease nipple	With grease nipple
	Fig. 1	Fig. 1	Fig. 2	Fig. 1	Fig. 2

Fig. 1

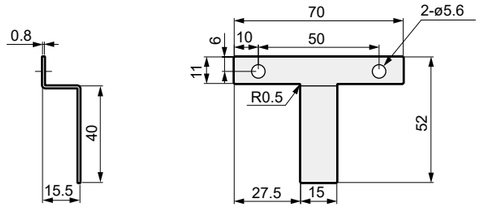
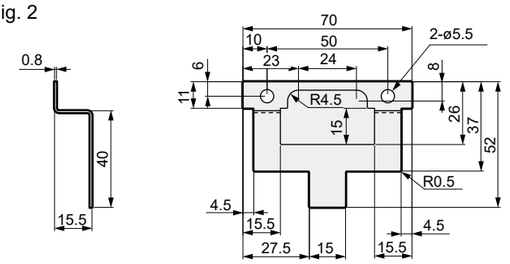
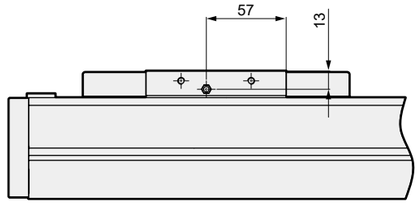


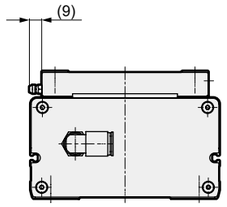
Fig. 2



Grease Nipple Dimension Drawing

* Symmetrical with respect to the actuator.





List of Accessories

Basic Type

Motor Mounting Bolts (Common for all motor mounting directions)

Mounting Motor Specification	Motor Size	Size	Quantity
A	□56 □60	M4	4
B		M4	4
C		M4	4

By Motor Mounting Direction

Model No.	Attached Part Name	Attached Quantity
E (External direct mounting)	Coupling (Assembled shipment)	1 pc
R (Right fold-back mounting) L (Left fold-back mounting) D (Bottom fold-back mounting)	Timing Belt	1 pc.
	Pulley	1 pc

When home/limit sensor is selected *1

Sensor mounting direction	Shipment Form	Quantity
Inner sensor	Shipped assembled in fixed position	3 pcs. *2
Outer sensor	Shipped attached *3	

*1 The shipping form for the home and limit sensors varies depending on whether they are mounted inside or outside.
*2 If "None" is selected for either the home sensor or the limit sensor, the other will also be "None".
*3 Sensor mounting screws are also attached.

Fitting for Suction Port

Fitting Model Number	Shipment Form	Quantity
GWL10-8	Shipped attached	1 pc.

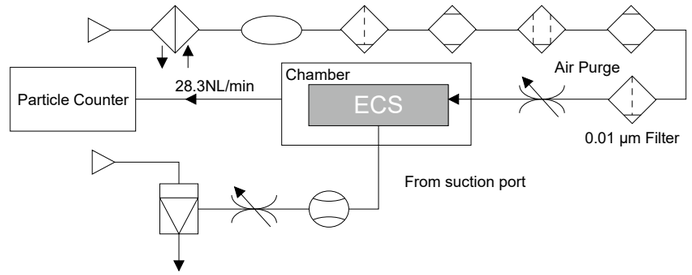
Maintenance Parts

● Maintenance parts (external mounted sensor)

Basic Price Model Number	Applicable Models	Part
		
ETS-22008-000001	All models	Body
ETS-22008-000006		Cable

Particle Emission Characteristics Reference Data

Test Circuit



Measurement Method

① Test sample set in acrylic resin chamber.

② Clean air supplied in the same quantity as the particle counter intake rate (28.3 NL/min).

③ Set in a clean bench of ISO Class 4 (Class 10) within the chamber.

④ Test sample activated, particle concentration change over time measured up to required measurement time.

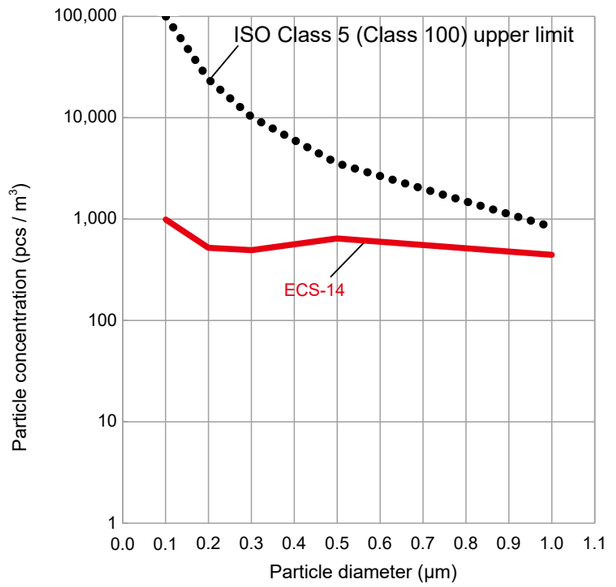
⑤ Test sample operating speed

Measurement Conditions

Item		Content
Test Sample	Model No.	For ECS-14-20040, operating speed 800 mm/sec
	Acceleration/Deceleration Time	0.3 sec
	Air Suction Volume	60.0 NL/min for ECS-14-20040
Chamber	Internal Volume	28.3 Nℓ
Particle Counter	Name	Laser dust monitor
	Minimum measurable particle size	0.1 μm
	Suction Volume	28.3 NL/min
Setting Conditions	Sampling	10 min
	Interval	40 min
	Measurement Time	50 h

Particle Emission Data

Data is measured under the above conditions and is not guaranteed.



To Use This Product Safely

Be sure to read this before use.
For general information on Electric Actuators, please refer to Intro 15.

Individual Precautions: Electric Actuator ECS Series

During Design and Selection

Danger

■ Do not use in locations where hazardous materials such as ignitable, flammable, or explosive substances are present.
There is a possibility of ignition, fire, or explosion.

■ Ensure that the product is free of water droplets and oil droplets. This can cause fire or failure.

■ When mounting the product, be sure to securely hold and fix it (including the workpiece).
There is a risk of injury due to the product tipping over, falling, or malfunctioning.

Warning

■ Use within the product's specified operating range.

■ If there is a risk of danger to the human body, install a protective cover.
● If the moving parts of the electric actuator pose a particular danger to the human body, design the structure so that people cannot enter the drive range of the electric actuator or directly touch that area.

■ Design a safety circuit or equipment so that damage to equipment, injury to persons, etc., does not occur when the machine stops in the event of a system failure such as emergency stop or power outage.

■ Install indoors with low humidity.
In places exposed to rain or high humidity (over 85% RH, with condensation), there is a risk of electric leakage and fire. Oil drops and oil mist are also strictly prohibited.
● Use in such environments can cause damage and malfunction.

■ Use and store in accordance with the working/storage temperatures and where there is no condensation.
(Storage temperature : -10 °C to 50 °C, Storage humidity : 35 % to 80 %, Operating Temperature : 0 °C to 40 °C, Operating humidity : 35 % to 80 %)
This can cause abnormal product stoppage or reduced service life. If heat accumulates, ventilate.

■ Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. In addition, this product has not been considered for chemical resistance.
This can cause failure, explosion, or fire.

■ Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
This can cause malfunction or failure.

■ Consider the possibility of power source failure.
● Take measures so that even if the power source fails, it will not cause injury to people or damage to the equipment.

■ Take the operational status into consideration if the machine is reactivated after emergency or abnormal stops.
● Design the system so that restarting does not cause harm to people or damage to equipment.
Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device.
Consider the possibility of failure of the installed motor.
Take measures to prevent injury to personnel or damage to equipment in the event of a power source failure.

■ Avoid using this product where vibration and impact are present.

■ Do not apply a load to the product that is greater than or equal to the allowable load listed in the materials for selection.

Caution

■ Do not use in a range where the moving table could collide with the stroke end and break.

■ Regarding installing, setting up, adjusting and maintaining the product, read through the instruction manual and operate correctly.

■ Indicate the maintenance conditions in the device's instruction manual.
● The functionality of this product may be significantly reduced and safety may not be ensured depending on the usage conditions, environment, and maintenance. If maintenance is performed correctly, the product's functions can be fully utilized.

■ The product is manufactured in conformity with the related standards. Never disassemble or modify.

■ Refer to the instruction manual of the motor mounted to the product and control for your safety before wiring and designing.

■ The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.

■ Do not pressurize from the suction port. Lubricating grease may scatter, potentially reducing product life.

■ The required air suction volume for this product varies by model. Please use the required air suction volume for your model.

ECS-14
60 NL/min or less

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site(https://www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual.

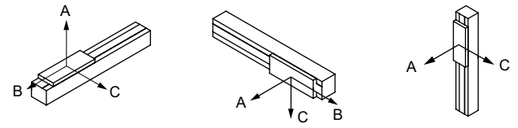
ECSModel Selection Check Sheet → CKD (Contact)

Please fill out this form and send it to your nearest sales office. We will respond with the model selection results.

Customer :

Company		Department	
Name		E-mail	
TEL		FAX	

Selection Conditions :

Desired Model	(ECS)-	
Basic Specifications	Max. Stroke : mm, Ball screw lead :	mm
Operating Conditions	Moving stroke : mm, travel time : s	
	Set Speed : mm/s	
	Set acceleration/deceleration : mm/s² (set acceleration/deceleration time :	s)
	Repeatability : ± mm	
Load Conditions	Slider Type	
	Load weight : kg	
	Mounting Orientation: Horizontal / Wall-mounted / Vertical / Ceiling-mounted / Other 	
	Distance from slider center to load's center of gravity	
	Direction A : mm	
	Direction B : mm	
	Direction C : mm	
	Pressing load : None / Yes (N) During operation / When stopped Direction of force on slider center ( )	
Operating Environment	Ambient Temperature : °C, Ambient Humidity : %	
	Atmosphere :	
Motor Used	Manufacturer : , Model No. :	
	Motor capacity, size :	
Special Notes		